



Namib Sand Sea

World Heritage Nomination

ANNEXES

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Front cover image:

Endless sand supply from the South Atlantic to the Namib Sand
Sea at Sandwich Harbour (Paul van Schalkwyk)

Inside front cover image:

The Namib Sand Sea from space (NASA Johnson Space Center
<http://eol.jsc.nasa.gov>)

Back cover image:

An aerial view does not do justice to the magnificent dunes at
Sossus Vlei (Paul van Schalkwyk)

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ANNEXES

**Nomination dossier to UNESCO for inscription
into the World Heritage List**

2012

Namibia National Committee for World Heritage

Annex 1

Management Plan



Namib Sand Sea Management Plan

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Abbreviations

CEO – Chief Executive Officer
DEA – Directorate of Environmental Affairs (in MET)
EIA – Environmental Impact Assessment
EMP – Environmental Management Plan
EPL – Exclusive Prospecting Licence
HQ – Headquarters / Head Office
IBA – Important Bird Area
IPA – Important Plant Area
IUCN – World Conservation Union
MDP – Management and Development Plan
MET – Ministry of Environment and Tourism
MFMR – Ministry of Fisheries and Marine Resources
NATH – Namibian Academy for Tourism and Hospitality
NGO – Non Governmental Organisation
NNF – Namibia Nature Foundation
NNP – Namib-Naukluft Park
ORV – Offroad Vehicle
TORs – Terms of Reference
SEA – Strategic Environmental Assessment
SSCSI – Sites of Special Conservation or Scientific Interest
WHC – World Heritage Centre

INTRODUCTION

This Management Plan sets out the vision, aim, objectives and underlying principles to ensure the maintenance of the outstanding values of the Namib Sand Sea. It also sets out the primary areas for actions to ensure effective and sustainable conservation management of those values and the attributes through which they are expressed. The mechanisms that sustain the geological, ecological and population dynamics that established and maintain the Namib Sand Sea are often at such a large scale that intervention is neither required nor possible, while other management activity is at such a small local scale that it is best implemented through on the spot decisions by conservation staff. Those minor activities are well known to management staff as routine procedures for which they have been trained and instructed through standard operating procedures. The Management Plan therefore does not address issues outside the scope of human abilities or those that are standard operational duties.

Effective implementation of the Namib Sand Sea Management Plan is only possible if all managers and conservation staff subscribe to its principles and strive to implement the identified actions. It can be expected that the plan has weaknesses that need to be identified and addressed in future revisions. All management and conservation staff are therefore encouraged to identify those shortcomings and the inevitable challenges that will emerge from activities and pressures that are not yet adequately addressed. Innovative solutions to existing and new challenges require accurate observation of the effects and records of the condition of places before and after the problems became clear. That routine yet often underappreciated contribution of conservation staff at all levels has allowed the progressive evolution of the management approach, which is accepted and appreciated as the basis of this plan and a critical component of future revisions.

The Management Plan will be reviewed every five years and revised where required through the input of all conservation staff and stakeholder consultation. Major interim changes or additions to the management plan, e.g. to address new conditions in the management framework or rapidly emerging threats, will consist of amendments approved by the management authority. Such amendments will be attached to the master plan for inclusion in the following review.

The Management Plan is a practical tool to guide activity and operational planning by all managers and stakeholders. It is essential that all existing staff and future appointees responsible for the Namib Sand Sea should familiarize themselves with its contents. It should furthermore be freely available to other stakeholders, and shall be specifically distributed to immediate neighbours and concessionaires. Appointed staff have specific responsibilities and duties, but everyone is encouraged to assist with implementation and improvement of the Management Plan as a team effort. Encouraging joint implementation will ensure that the extraordinary integrity of the Namib Sand Sea will continue as an international flagship of effective desert conservation.

VALUES AND ATTRIBUTES OF THE NAMIB SAND SEA

The integrity of the particular values and attributes that the Namib Sand Sea Management Plan will endeavor to conserve are:

(i) Outstanding natural beauty

- Large open spaces without visible scars or signs of human development, intrusive activity, or constructs
- Extraordinary clear visibility due to the absence of aerial pollution from dust, smoke, or industry
- Human impact and development footprint concentrated at specific point locations rather than an unmanageable wider distribution all over the area
- Ready access for visitors to the visually most compelling and superlative sites
- Well-argued restrictions on activities that may detract from the visitor experience developed through adaptive management
- Continued application of the precautionary principle to limit activities with unknown consequences until adequate information on their impacts is available

(ii) Active geological processes of global significance

- Unimpeded natural processes of washing sand onto beaches to be transported and deposited by wind to the interior
- Uninterrupted flows of air and water along rivers from the interior (eastern) margin into the sand sea that sculpts the geomorphology
- Sculpted and dissected deposits of sandstone and sediment that reflect the geological history
- Visual evidence of the effects of past climatic changes such as dead trees, river and pan sediments, coastal salt pans and isolated inselbergs
- Archaeological and historical remains that illustrate past human endeavor in the geological and geomorphological context
- Human activity restricted to those areas that can be rehabilitated by natural processes, e.g. inside river beds, on loose sand
- Closing, removal or relocating roads, infrastructure and tourist activities when they start to intrude and scar the landscape

(iii) On-going natural ecological dynamics that drive the evolution and interaction between the Namib Sand Sea residents

- Extreme aridity and low net primary productivity punctuated by highly variable and unpredictable rainfall events recorded through regular monitoring
- Dominance of loose, unconsolidated sand with low clay and silt content
- Gradients of decreasing fog-induced moisture from west to east
- Persistent and reliable southwesterly coastal wind, punctuated by brief periods of variable strong winds from the east
- Contiguous open spaces without any barriers that allow natural expansion and contraction of populations and species ranges reacting to natural variability or human activity
- Secluded wildlife refuges for breeding not affected by human activity that allow repopulation of areas affected by people or natural disasters

- Periodic nutrient input through ephemeral rivers, wind or vegetation responding to unpredictable rainfall events
- Natural response systems of species to detect and exploit resource concentrations that are unpredictable in space and time
- Unimpeded integration of interactions between species complexes inhabiting different habitat types, defined by the kind of surfaces, that allows dynamic evolutionary processes and interaction between different communities
- Absence of any human activities that affect the large-scale population dynamics and interactions between typical species within the various habitats
- Reported local-scale changes in population sizes and behavior of larger animals and birds that need to be monitored better

(iv) Extraordinary diversity of endemic species of special significance to science and environmental understanding

- Unfragmented and pristine habitat availability along the whole range of climatic conditions that maintains the genetic diversity of species
- Absence of natural or human-induced influences on the breeding success, age and sex structure, and interactions between species
- Absence of alien species that can significantly change natural interactions between resident species
- Well documented results from ongoing scientific research and long-term monitoring to explain the biodiversity, ecological relationships and fluctuations in species presence and population changes
- Long history of conservation management interventions to inform future decisions from past attempts to maintain ecosystem processes undermined by human exploitation, e.g. fencing to enforce hunting restrictions on herbivores and predators, artificial water supply for a more even distribution of large game, re-introduction of extinct species and management of tourism effects. These include:
 - Effective and focused law enforcement that restrained unsustainable human impacts
 - Effective interventions to limit the extent of natural disasters and human error, e.g. outbreaks of fire and the past eradication of alien species within the property
 - Healthy populations of species habituated to human traffic and activities that contribute to the overall visitor experience has resulted from the past and present efforts of committed and hardworking staff

The success of the management plan will be measured against the current status of the natural environment of the Namib Sand Sea.

The Namib Sand Sea is characterized by:

- **Wholeness:**

Attributes that demonstrate the outstanding values deserving of world heritage status on all four natural criteria are encompassed and abundantly represented within the identified borders of the property, namely

- (i) superlative natural phenomena of outstanding beauty;
- (ii) unrestricted geological and geomorphological processes encompassing the full range of hyperarid aeolian desert formations;
- (iii) uninterrupted ecological processes of global significance in understanding the evolution and maintenance of desert ecosystems and the distinct component communities of specially adapted organisms;
- (iv) extraordinary and well conserved biodiversity of endemic species proven to be of outstanding scientific and conservation significance

- **Intactness:**

More than 90% of the identified area is undisturbed wilderness almost totally devoid of human impact, which sets the standard for monitoring the degree of current and future usage. Well regulated and controlled tourism is the primary development likely to take place in the Namib Sand Sea through maximum sustainable utilization of identified areas rather than distributing impact throughout the wilderness areas through exclusivity. Access to all parts of the area is only envisaged for the purpose of conservation and research.

- **Absence of threats:**

There are currently no threats that may impact on the integrity of the attributes used to explain the outstanding universal value of the Namib Sand Sea, though some emerging issues relate to the conservation status of subsidiary attributes of the area. All development, including tourism, may be expected to put some attributes under stress. The challenge is to ensure early identification of what kind of stress is applied to which attribute through continued development and use and then identifying appropriate management responses. The precautionary principle, based upon an ecosystem management approach and minimal intervention, will be used to test potential management solutions to likely impacts caused by human exploitation of the environment.

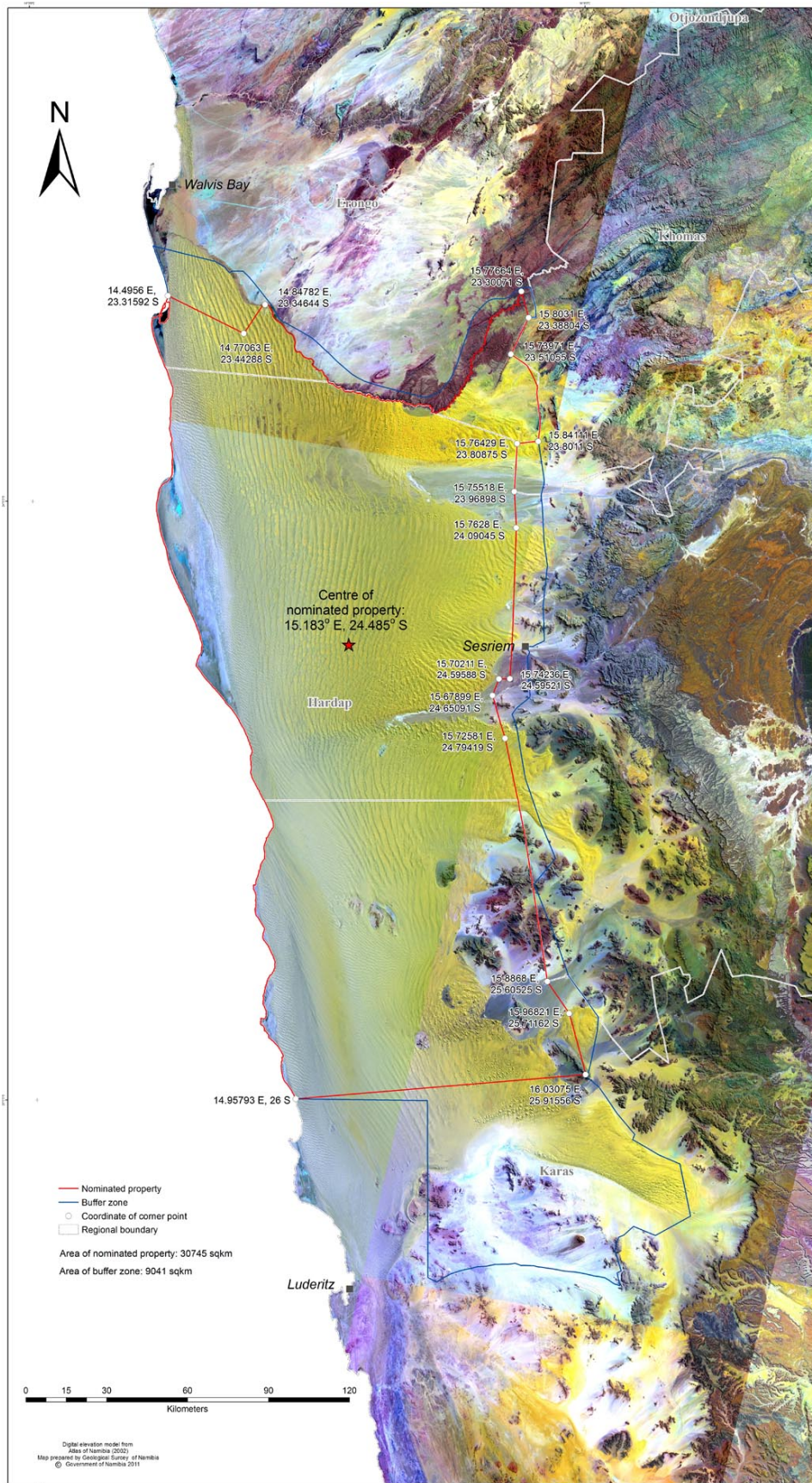
ENVIRONMENTAL OVERVIEW

The Namib Sand Sea was nominated as a World Heritage Site in February 2012 under all four natural criteria. The Namib Sand Sea will join the group of only 32 World Heritage sites around the world that meets all four criteria, including such internationally renowned sites as the Galapagos Islands (Ecuador), Grand Canyon (USA), Yellowstone (USA). It will be the first African site that meets all four natural criteria for World Heritage.

The Namib Sand Sea World Heritage site encompasses the core of the Namib-Naukluft Park.

The whole area receives on average less than 100 mm annual rainfall and over 70% of the area of the sand sea receives on average less than 50 mm rain per year. The extremely low annual rainfall is also hugely variable with an annual coefficient of variation ranging typically from 80% to over 100%, which implies that most of the area is unlikely to receive any rain for most of the time, but when it rains it will be very heavy rainfall with floods in the rivers. The evaporation along the inland part of the area is also very high. The high evaporation rates and low rainfall results in an average water deficit of about 2 m per year, which makes it one of the most extreme deserts in the world. When rain falls, it is mainly in January to April in the eastern and northern part, while records show that the southern part may receive rain during any month of the year.

Temperatures are generally moderate and fog is frequent along the coast (about 125 days per year on the coast dropping to about 40 days per year 80 km inland). Wind is a dominant feature. The dominant winds are mainly from the south and carry sand from the shore into the interior. At any time of the year when cold temperatures occur in the interior (e.g. Windhoek), but especially in winter, very strong, hot and dry winds can blow from the east. These strong winds are generally of fairly short duration, often blowing only for a few days. The general absence of moisture in the atmosphere means that the area cools off rapidly at night, and mornings are often cold, even during the middle of the summer. On rare occasions snow and frost have been reported on the dunes during winter.



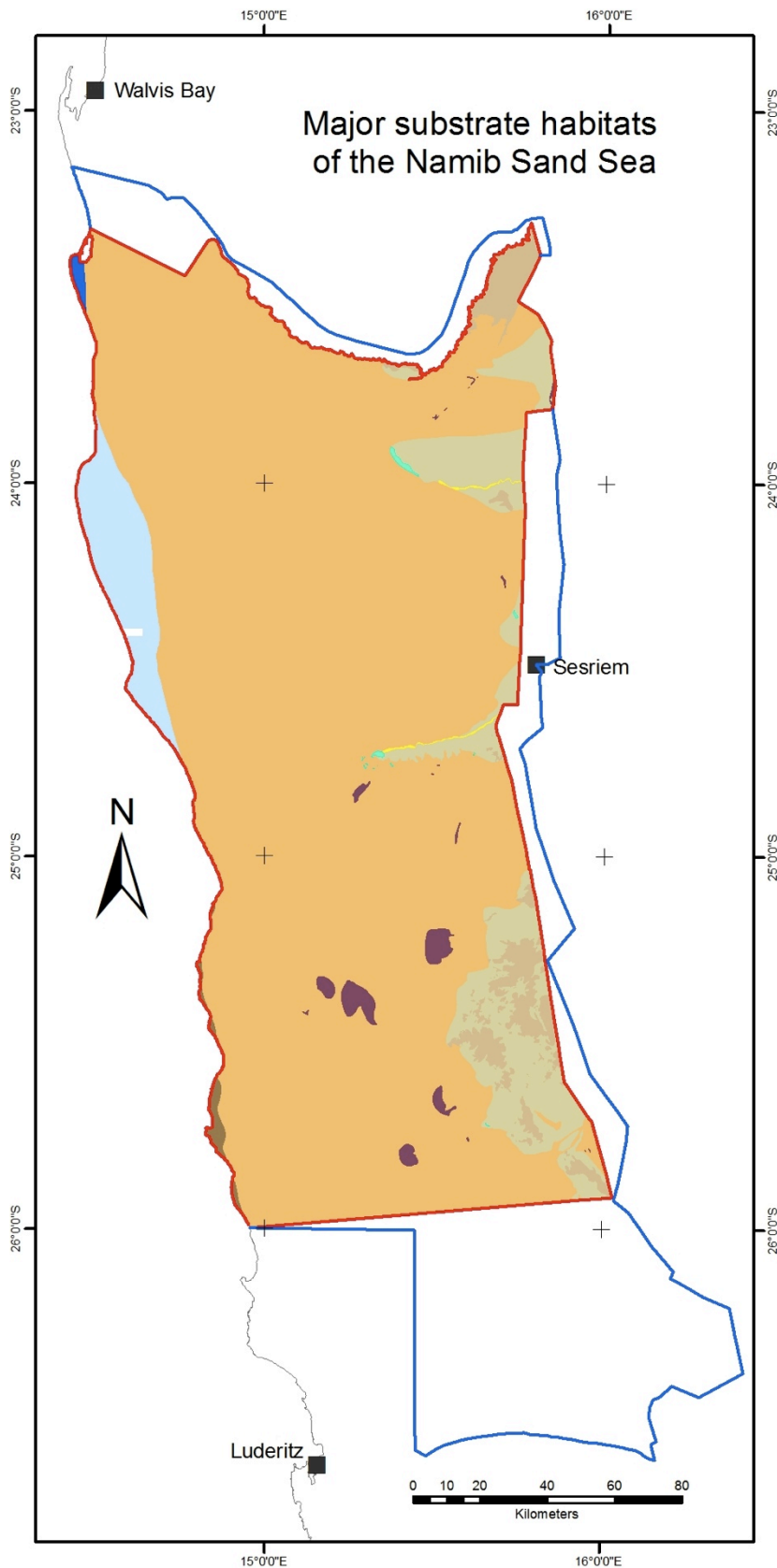
Map of the World Heritage Area and its Buffer Zone

It is important to understand why the Namib is a desert. First, the cold waters of the Benguela Current cool the air so much that little evaporation takes place over the South Atlantic Ocean close to Namibia. The evaporation that does take place does not rise up and develop into rain-bearing clouds but remains trapped in a layer from the sea to about 600 m above sea level. Moisture from the sea is therefore only seen as low clouds and fog. Second, moist tropical air from the Indian Ocean to the east or the tropical South Atlantic Ocean in the Congo basin to the north has usually shed most of its moisture before reaching the Namib coastal areas. Even when moist air with rain-bearing clouds does approach, it is usually blocked by the ocean winds from the south which blow inland for some distance, often to the escarpment. Any moist tropical air approaching the desert also descends over the escarpment, warming and drying out as it sinks down. These factors all combine to make rainfall an unusual event. Water flowing into the desert, which may disappear from local evaporation, is also rare as all Namibia's interior rivers, e.g. the Kuiseb and Koichab rivers to the north and south of the Namib Sand Sea, only flow during exceptionally wet years. The two main rivers that flow into and are stopped by the Namib Sand Sea, the Tsondab and Tsauchab, do not have large catchments and flow rarely. These rivers end at Tsondab Vlei and Sossus Vlei where they form pans bordering sand dunes.

The most spectacular feature is the Namib Sand Sea, an area of some 4 million ha of continuous sand dunes with rich geological, palaeontological, geomorphological, ecological, biodiversity, archaeological and historic values. The Namib Sand Sea is probably the major reason why tourists come to Namibia and not other African countries where they cannot experience such a spectacular sand sea. The Namib Sand Sea is therefore the main drawing card that sustains the tourist industry throughout Namibia.

The Namib Sand Sea harbors a considerable number of endemic species, though the ecological processes are relatively simple due to the sparse vegetation. Conservation should therefore focus on soil (or substrate) types that are easy to recognize as is listed below.

| Habitats based on soil or substrate type within the Namib Sand Sea | | |
|---|--|--|
| Category | Habitat | Notes |
| Coastal | Sandy shore | Sandy shores, on the southern side of bays where debris collects, support endemic species and are sensitive. Travel routes should be below the spring tide margin and avoid debris patches |
| | Rocky shore, coastal outcrops and bluffs | Rare and more sensitive than sandy shores with higher biodiversity. Vertical cliffs provide breeding habitat for cormorants and sometimes penguins. They often have shell middens and other sensitive cultural heritage. |
| | Salt pans / flats | Breeding grounds for Damara Terns and sensitive to scarring. Traffic should be strictly controlled |
| Terrestrial | Sand sea dunes | Shifting dunes that are relatively resilient. Support highly endemic wildlife. Extensive views of unscarred dunes are the main attraction for tourists. The excitement caused by fear is the main attraction for adventure tourism |
| | Sandy plains and interdune valleys | Sensitive to scarring and important habitat for wildlife. Traffic should be strictly controlled |
| | Gravel plains | Gravel plains surround inselbergs and are extensive on the eastern boundary. They are very sensitive to scarring and traffic should be strictly controlled. |
| | Ephemeral river courses | Ephemeral rivers support diverse plant and animal life that do not usually occur in the desert. They are important breeding and nesting areas. They are prone to alien invasives. |
| | Endorrheic pans and 'vleis' | End points of ephemeral rivers in the dunes, providing high scenic and biodiversity values. Sossus Vlei is the main tourist attraction. Tsondab Vlei is less scenic and spectacular and has important vulture breeding areas and archaeological sites. |
| | Inselbergs (Isolated Mountains) | Important relict (highly isolated) species and archaeological sites only occur there. Provide spectacular scenery from far away. Surrounding gravel plains easily scarred. |
| | Gramadulla areas and eastern rocky hills | Less sensitive than inselbergs but very important for biodiversity and as refugia and breeding areas for plants and animals |
| | | |



HABITAT

- Sand sea
- Eastern gravel plains
- Coastal flats
- Eastern rocky habitats
- Inselbergs
- Rocky coast
- Sandwich Harbour
- Pans
- Ephemeral water courses
- Nominated property
- Buffer zone

Centre of nominated property:
15.183 E, 24.485 S

Area of nominated property:
30745 sqkm

Area buffer zone:
9041 sqkm

Based on composite Landsat 7 image
Prepared by Geological Survey of Namibia
Data provided by
Gobabeb Training & Research Centre
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PART 1

MANAGEMENT FRAMEWORK

The Namib Sand Sea Management Plan is intended to ensure that all Namibians and visitors, regardless of economic status, origin, or personal circumstance, may continue to enjoy and experience the special qualities of the diversity of landscapes, sights and species resulting from the geology, ecology and biodiversity of the Namib Sand Sea.

2.1 VISION

Namibia will conserve the outstanding global values of the natural environment of the Namib Sand Sea in perpetuity for the enjoyment and edification of all people

The management plan clarifies how the Namibian government through the Ministry of Environment and Tourism will continue to conserve the outstanding values of the Namib Sand Sea. MET will do this by applying its tested systems of integrated management planning and operational implementation by testing conservation actions and outcomes against the qualities for which the Namib Sand Sea is renowned.

2.2 PURPOSE

- ❖ *Aesthetic wilderness* – To conserve the austere beauty and continuous expanses of majestic dunes of the Namib Sand Sea, together with their outstanding diversity of endemic species integrated into vibrant and resilient communities, within a setting virtually devoid of human constructs. It requires ensuring unimpeded vistas over and within the property with a low degree of modern visible human impact and careful evaluation of any proposed development to ensure that it does not affect these qualities.
- ❖ *Geomorphological variety and Ecological continuity* – To ensure the sense of place of the Namib Sand Sea, the diversity of landforms where natural forces continue to shape and renew the dune systems and the diversity of healthy ecosystems and their dynamic animal and plant populations are maintained. An area of sufficient size and continuity shall be conserved with adaptive management responses, informed by appropriate environmental monitoring, to mitigate the degree to which human activities and societal development initiatives may have an effect on the integrated geological and ecological networks and processes.
- ❖ *Appreciation and Understanding* – To promote and explain the dynamic processes that shape and maintain the dunes, and the adaptations that allow life to flourish in an environment of limited resources, through universal access, continuous research and monitoring and distribution of information at all levels of society. Specific strategies need to be continuously developed for access to identified parts of the property to meet national and community aspirations for development, economic prosperity and entrepreneurial opportunities while still conserving the integrity of the system and maintaining appropriate levels of research and education.
- ❖ *Human interaction* – To manage challenges in maintaining the integrity of the Namib Sand Sea within the context of dynamic cultural and economic changes in our society that

allows the Namibian people to learn and profit from its environment. Every component of the Namib Sand Sea has different challenges if the integrity and authenticity of aesthetic, ecological, prehistorical, historical and cultural traditions of all Namibians are to be maintained. Adaptation to their natural environments through innovation is a cultural achievement that is shared by most Namibian communities. Maintaining that tradition under the pressures of rapid globalization and new economic opportunities requires interactive management through continued consultation between stakeholders and the Ministry of Environment and Tourism.

Conservation of the essential qualities of the Namib Sand Sea is well established through a long history of practical conservation experience. That experience showed minimal intervention from 'hands-off' approaches to be very effective, as the remoteness and sheer scale of the natural processes of the Namib Sand Sea have defied the degree to which humans could affect those qualities. The management plan will continue to build on that experience in order to guide activities and to promote appreciation of the Namib Sand Sea, its natural processes, and the diversity of its species.

2.3 OBJECTIVES

- ❖ To conserve and manage the landscapes, ecosystems, habitats and biological diversity of the Namib Sand Sea.
- ❖ To manage wildlife populations and habitats to maintain healthy biological diversity and ecosystem stability under natural climatic variability and current and emerging development demands and practices.
- ❖ To promote and support appropriate land and natural resource uses that are compatible with the values and attributes of the Namib Sand Sea with emphasis on well managed tourism, flagship species, environmental awareness and promotion of the property.
- ❖ To promote development opportunities through the management of appropriate enterprises and other relevant mechanisms to foster job creation, social and economic upliftment and rural development in the Karas, Hardap and Erongo regions.
- ❖ To encourage and support strategic and innovative new economic enterprises without compromising on sound conservation principles and practices.
- ❖ To establish strong partnerships and appropriate institutional mechanisms for managing the landscape and ecological processes together with neighbours, local communities and other stakeholders within the context of development and mutual benefit for all partners.

Effective management of the Namib Sand Sea within the Namib-Naukluft Park has always required close cooperation between the mandated management authority (the Ministry of Environment and Tourism) and other related government organizations, decentralized local and regional governments, traditional societies, local residents, bodies engaged in tourism, researchers and NGOs (hereinafter referred to collectively as "stakeholders"). The Management Plan addresses issues such as conservation, research, monitoring, enforcement, education, traditional practices, and cultural heritage resources within the context of aspirations for national and regional development.

2.4 MANAGEMENT SYSTEM

The management approach to the Namib Sand Sea conforms to the policies and procedures of the Government of the Republic of Namibia as advised by the Office of the Prime Minister. It consists of an integrated system of strategic (long-term), operational (medium-term), and activity (annual) planning. The property is wholly on state land, thus is legally held in trust for the Namibian nation and subject to procedures for public asset management. As a legally proclaimed protected area on land, management of the area is entrusted to the Ministry of Environment and Tourism (MET) and is subject to specific regulations regarding use. Vast areas of the Namib Sand Sea have been legally protected and restricted areas for a long time, some of which have been protected since 1907. The inaccessibility of large areas for a long time, until off-road vehicle technology was sufficiently advanced to access almost the whole area in recent times, has added an additional layer of protection. Management approaches have evolved and adapted over this long period to ensure the best possible conservation outcomes despite a diversity of management challenges that appeared and disappeared again from emergent economic prospects, technological innovation, and socio-political imperatives. The nearly pristine condition of the nominated property is evidence of the success of past efforts to confront challenges that were often based on short-sighted and speculative economic opportunism. The Management Plan shall continue to evolve within the context of the management of surrounding public and private conservation areas, including participatory processes for the co-management of wilderness areas.

The principal conservation philosophy for the Namib Sand Sea is to follow an ecosystem approach of integrated management and sustainable use of resources. All the habitats in the Namib Sand Sea have specific geological and ecological processes that are fundamental to the plants and animals inhabiting those areas, as well as interactions between species within and between habitats. There are no uniform solutions that can be applied in all situations, even where the habitat is the same, thus the experience and good sense of the conservation staff on the ground is important.

An ecosystem approach requires that implementation of multiple activities have to be coordinated for:

- Ecosystem level planning;
- Defining cross-jurisdictional management goals;
- Developing and testing co-management approaches;
- Adaptive management;
- Ecosystem zoning;
- Long-term observations, monitoring and research.

This current management plan shall be implemented in an efficient and systematic way through annual cycles of preparing an *Annual Work Plan* and *Budget*. Those annual projections will be based on the Management Plan and incorporate the Strategic Plan, Medium-term Planning and Rolling Budgetary System of the Directorate of Regional Services and Parks Management and MET. These work plans will, as far as practical, implement the areas of work listed under Part 2 of this management plan. The work plan should cover:

- **Routine management issues** for conservation such as, for example, managing water points, law enforcement, extension work, in-service training, promotion and incident-book record keeping.
- **Development issues** to improve the capacity for conservation such as, for example, infrastructure developments, wildlife reintroductions and priority research.
- **Monitoring activities** to systematically and opportunistically collect, report and record information such as key biodiversity indicators, tourism activities and impacts for annual analysis and interpretation to inform adaptive management

- **Research support** to gather and report priority information and address knowledge gaps through, for example, implementing projects, monitoring and the research permit system.
- **Administration** including work plan and budget preparation, regular reporting and meetings.

Progress on the implementation of the annual work plan and expenditure reports against the approved budget should be presented quarterly to supervisors. At the end of each annual cycle, an internal **Annual Report** and **Financial Report** will be prepared to assist in drafting the work plan and budget for the following year. The Annual Report will use the format of the work plan, and include outcomes and outputs, achievements, challenges, and cumulative (time-series) information from the monitoring programme. The cumulative information, showing trends over time, will be used to assess ecological conditions. The Annual Work Plan and Budget shall be approved by the Director of Regional Services and Parks Management for implementation with oversight from the Permanent Secretary of the MET and ultimately the National Assembly and National Council of the Republic of Namibia.

Some immediate issues, e.g. from new exploration licenses, tourism concessions, innovative entrepreneurial activity to provide tourist services, or natural disasters can be expected to occur without advance notice. That would require an immediate response by staff on the ground as well as supervisors. The policy of Environmental Impact Assessments (EIA) and prior approval of Environmental Management Plans (EMP) needs to be strictly enforced. Where EIAs or EMPs have not been approved, the Permanent Secretary must be informed immediately in writing. The values and attributes for which the Namib Sand Sea will be nominated need to be specifically addressed during EIAs and factually proven. Broad statements based on a lack of information or absence of research shall not be acceptable as the contractors are required by law to provide factual information that can be used to make informed decisions. Innovative approaches to enhance the experience of visitors should be allowed to a limited extent so that the actual impact of such activities may be evaluated. Where feasible, such activities should be restricted to the buffer zone and by applying the precautionary principle to limit the potential impact.

2.5 GOVERNANCE

The Namib Sand Sea and all of its buffer zone are within a legally proclaimed protected conservation area on state land. The Ministry of Environment and Tourism is mandated to manage the property on behalf of the Namibian nation. The management system is therefore subject to public oversight and transparent reporting to democratically elected national representatives and open to public scrutiny and debate. Such transparency assists in developing approaches and policies to address identified problems and emerging issues, often extensively criticized in public. The known debates regarding unresolved claims to land and resources, as well as conflicts with other ministries jealously guarding their prerogatives and mandates, cannot be resolved at the operational level. For practical purposes the management system is designed to conform to the rules and regulations that ensure transparency and accountability, e.g. the Public Service Act, the State Finance Act, the National Planning Act, the Labour Act, and other relevant laws that govern how public officials manage state assets. The procedural components of the management system furthermore comply with legal instruments and policies designed specifically for environmental conservation, *inter alia* the Nature Conservation Ordinance, the Environmental Management Act, the Tourism Act, the Concessions Policy, and the Lands policy.

The buffer zone is also wholly under the management authority of the MET and will be managed as if part of the identified property. However, more leeway will be granted in that area for intrusive and experimental activities, with specific reference to accommodation facilities for

visitors and staff, visitor support infrastructure (e.g. waste disposal, access roads, health and educational facilities), service infrastructure (e.g. shops, filling stations), adventure and intrusive recreational activities, and other components to a well-rounded experience.

The direct management authority for the nominated property is the Directorate of Regional Services and Parks Management within the Ministry of Environment and Tourism, though other organic bodies within its parent body such as the Department of Tourism, the Directorate of Scientific Services and the Department of Environmental Affairs have subsidiary responsibilities that have direct and indirect effects on management procedures. In addition, the Ministry of Fisheries and Marine Resources and other national, regional and local government organizations have particular responsibilities within the context of national laws and their accompanying regulations.

| Authority | Area of Responsibility |
|--|--|
| Department of Agriculture, Ministry of Agriculture, Water & Forestry (MAWF) | Pesticide licensing & migrant pest control (locusts) |
| Department of Agriculture, MAWF | Livestock density enforcement and agronomic licensing |
| Department of Water Affairs and Forestry, MAWF | River Basin management, water extraction licensing and pipeline construction |
| Ministry of Defense (MoD) | Marine patrols and law enforcement |
| Department of Environmental Affairs, Ministry of Environment and Tourism (MET) | Development, environmental assessment and management |
| Directorate of Scientific Services, MET | Wildlife censuses, species relocations, research permit approval and reporting |
| Department of Tourism, MET | Tourism planning, licensing and infrastructure maintenance |
| Department of Tourism, MET | Promotion and awareness |
| Ministry of Finance (MoF) | Fiscal planning and economic prioritization |
| Ministry of Finance (MoF) | Public Funds expenditure and accounting procedures |
| Ministry of Fisheries and Marine Resources (MFMR) | Commercial and Recreational fishing licenses, coastal management enforcement |
| Ministry of Mines and Energy (MME) | All Exploration and Mining Licenses (also offshore) |
| Ministry of Mines and Energy (MME) | Powerline construction |
| Ministry of Mines and Energy (MME) | Petroleum exploration and transport |
| Ministry of Regional and Local Government, Housing and Rural Development (MRLGHRD) | Town and industrial development |
| Ministry of Regional and Local Government, Housing and Rural Development (MRLGHRD) | Coordination with Traditional Authorities & Regional Government |
| Ministry Trade and Industry | Industrial development planning & licensing |
| Ministry of Works and Transport (MWT) | Ship licensing and operational enforcement |
| Department Transport, MWT | Civil Aviation licensing and operational enforcement |
| Maintenance Division, Department of Works, MWT | Infrastructure maintenance |

| | |
|--|--|
| Roads Construction Company (reports to MWT) | Road maintenance and construction |
| National Planning Commission (NPC) | Development planning coordination |
| Regional Governments (Erongo, Hardap, Karas) | Regional development planning & infrastructure needs assessments |
| Town and Village Councils (Lüderitz, Walvis Bay) | Local development planning |

The management plan represents the policies and intentions of the Ministry of Environment and Tourism (MET) as the responsible authority for the law under which the Namib-Naukluft Park has been declared. The integrated mechanism through which all conservation areas and wildlife resources are managed in Namibia is intended to make optimal use of limited manpower and financial assets. It is not envisaged that the nominated property will be managed in isolation. Although the management system has some disadvantages, as the Namib Sand Sea will not be managed as a distinct entity, it does benefit from the flexibility of having access to a large potential resource base and being managed in accordance to a national system of a wider protected area network. All decisions, actions and activities in the Namib Sand Sea have to adhere to legal requirements and should endeavor to support the implementation of the Management Plan.

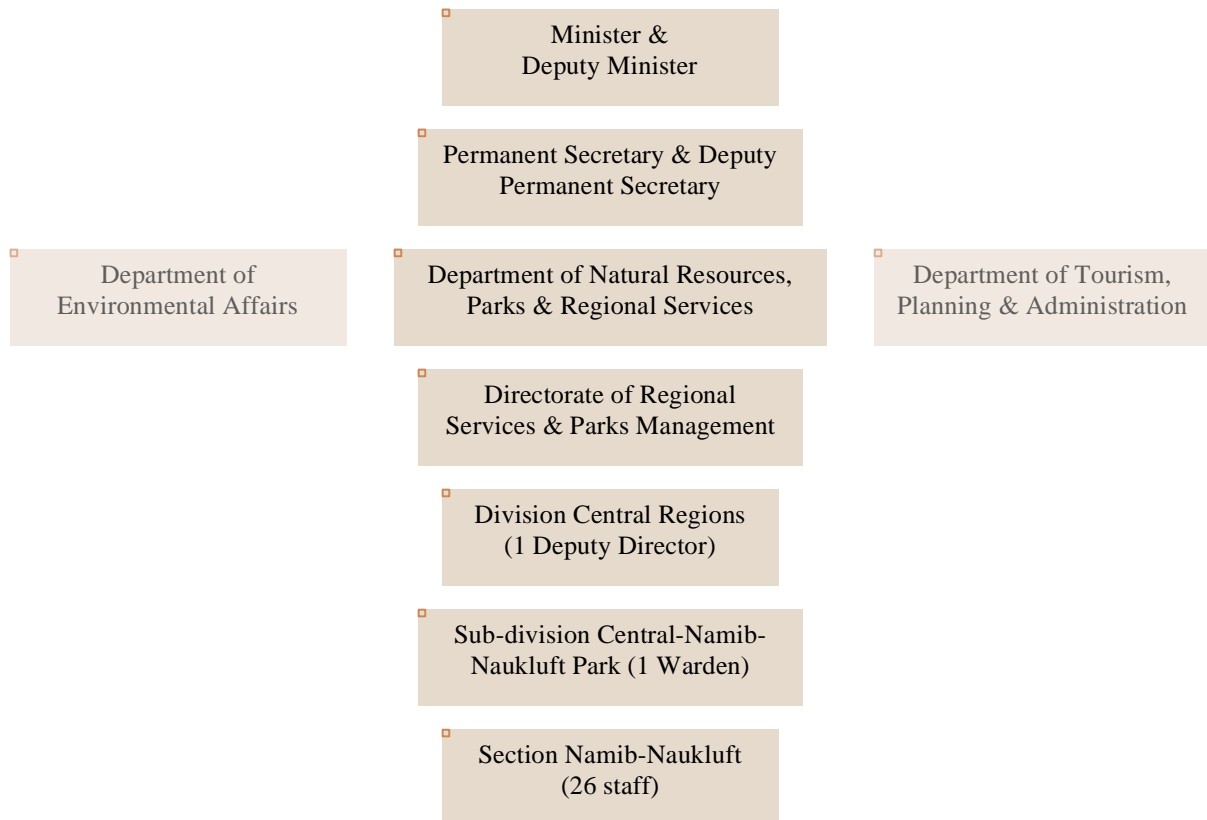
The Management Plan is a tool to implement legislation and regulations, as well as policies, research results, and with other relevant literature on the area. It was designed and structured to be priority focused and action orientated to facilitate implementation and the achievement of outputs and outcomes. The plan is linked to an annual cycle of management and oversight, involving the preparation of annual work plans, budgets and reporting based upon the outputs of activities from previous years. Annual work plans ensure pro-active precautionary planning to deal with emerging issues and identified problems, environmental concerns predicted through monitoring, and the results of new research and priorities that are set in consultation with stakeholders. The plan is therefore “principles” based in sections that allow easy reference and that essentially serve as mini policy statements. Not all eventualities can be planned for but, if the basic principles are established, decisions can be readily made against these principles to meet the objectives and purpose of effective conservation.

2.6 MANAGEMENT RESPONSIBILITIES

Senior staff appointed to run the park, i.e. the Chief Warden and Wardens, and their counterparts in the MFMR, are ultimately responsible for ensuring that the management plan is implemented in effective and efficient ways and that legal regulations and policies are enforced. They are also responsible for ensuring effective day-to-day management as well as for dynamic, responsive and pro-active annual planning and contributing to longer-term planning. The rangers and scouts, together with their support staff, are responsible for carrying out the activities that are scheduled in the annual plans and to provide regular feedback and suggestions that would allow pro-active planning and early identification of emergency interventions that may be required.

A network of ranger stations and access control points are in place and are staffed by personnel that have been specifically trained through formal education networks or in-service training modules. This training is primarily based upon local knowledge and expertise in Namibian institutions. The stations and staff are equipped to carry out specific tasks according to identified priorities to meet management goals. Funds to ensure implementation of activities related to the management system and the development and maintenance of adequate infrastructure are primarily sourced from public funds. The allocation of funds is guided by target sums set five years in advance (known locally as the Medium Term Expenditure Framework) to allow forward

planning towards strategic objectives with measurable outcomes. Reiterative annual budget takes place to implement planned activities within this overall framework. The funding system allows for additional public funding to be made available to meet unanticipated emergency priorities. The funding framework allows for forward planning and ongoing consultation to meet identified performance targets. In addition, supplementary funds may be sourced through other mechanisms, e.g. opportunities for donor investment through bi-decadal National Development Planning strategies; development projects and programmes supported by international mechanisms such as the Global Environmental Fund and Namibian Wildlife Trust, and interagency cooperation with other public and non-governmental partners within Namibia. It is the responsibility of staff at all levels to understand the financial system in order to timeously plan their expenditures in order to ensure that the work plans can be implemented and that future needs are identified well in time.



2.7 MANAGEMENT PLAN REVIEWS

The Management Plan will be thoroughly reviewed and, where necessary, revised, every five years. The next review is scheduled for 2016. Any changes that must be made in the interim will be recommended by the Chief Control Warden in consultation with the Chief Warden and approved by the Director and Permanent Secretary as signed and dated amendments to the Master Management Plan.

Copies of the master Management Plan and amendments shall be held at offices within the Namib-Naukluft Park (MET Ganab, MET Zais, MET Escourt and MET Sesriem) and adjacent areas (MET Walvis Bay, MET Swakopmund and MET Lüderitz) and at MET HQ offices (Chief Warden, Chief Control Warden, Deputy Director and Director of Regional Services and Parks Management, Directors Environmental Affairs, Scientific Services, Tourism, Office of the Permanent Secretary). Additional copies will be held by the Gobabeb Centre, CEO of NWR, CEO of NTB, MFMR (Swakopmund, Walvis Bay, Luderitz and HQ Windhoek), MME (Commissioner of Mines, Geological Survey), Regional Governments (Chief Regional Officers and Planning Officers of Erongo, Hardap and Karas Regions), National Planning Commission, National

Heritage Council, National Commission for UNESCO, World Heritage Centre, Municipality and Village Councils (CEOs Aus, Lüderitz, Walvis Bay) and ≠ Aonin Traditional Authority.

The iconic status of the Namib Sand Sea within the national context, the popularity of its well-known attractions to domestic and international tourists, and the uniqueness of its natural processes, also results in intense interest from other government agencies, public enterprises, non-governmental agencies, private enterprises, conservation focal groups, and neighbouring communities. These stakeholders contribute in varying degrees to the management system of the Namib Sand Sea, though the specific inputs of different stakeholders have never been systematically explained. Untangling and elucidating the relevancy of contributions from various stakeholders to the management of the Namib Sand Sea is one of the challenges that will be clarified and should be formally included in a future review of the management plan.

The Namib Sand Sea Management Plan must be viewed as a valuable and central document by all management and development staff and stakeholders that have activities or development initiatives related to the area. They should be familiar with its contents, and should make use of it to familiarize new staff with the vision, aims, objectives and policies relating to world heritage in general and the Namib Sand Sea in particular.

PART 2

MANAGEMENT ACTIVITIES

The management activities are intended to ensure that the values for which the Namib Sand Sea is nominated continue to be enjoyed and appreciated by the majority of people. All management staff should appreciate that change is an inevitable attribute of the Namib Sand Sea, whether it is natural in terms of the geomorphological, ecological and evolutionary processes of the area, or whether it is of human origin. Culture, technology, innovation and development are as dynamic as natural processes. Appreciating and understanding the dynamics of such changes are essential for adaptive property management and a prerequisite for effective long-term management. Where clear guidance and information are unavailable, the following perspectives should guide on-the-spot decisions:

- **Continuity** – past management efforts and a long history of active research provides a basis of experience that should not be disregarded. Applying a different aspect of the precautionary principle suggests “*If it is not broken, don’t try to fix it*”.
- **Reactive intervention** – it is inevitable that new issues and threats will emerge that require attention. Where possible EIAs and research should be used to regulate human activities and clarify how people may affect local diversity and the scenic beauty of the Namib Sand Sea
- **Evolutionary or reiterative protocols** – management decisions will be based on the knowledge, policies, attitudes, and legal instruments at the time. As these change they will allow new protocols to be adopted and implemented that may either be more permissive or more restrictive. Adaptive management is expected to generate controversy, though appropriate monitoring, transparency, consultation, and timely distribution of information to stakeholders may mitigate the degree of criticism.
- **Affordability** – it is a reality that resources will never be adequate for all desired actions and resources may vary over time. Prioritization and cumulative implementation of activities, based upon long-term objectives, may address the most pressing issues.
- **Implementation** – activities need to take into account the human and physical resources that are in place. Staff at all levels should be encouraged to be innovative and to use their own initiative to achieve specific outcomes and to experiment with potential solutions, within limits, as are prescribed in the action plan.
- **Knowledge base** – stakeholder expectations are high due to the iconic status of the Namib Sand Sea and the desire from entrepreneurs to benefit from it. Stakeholders do not like ‘NO’. However, management actions should be based upon available knowledge and within the means available for active intervention. As emerging issues often do not have clear solutions, it is envisaged that the precautionary principle will frequently be invoked until adequate knowledge and resources are available. Nevertheless, limited experimentation with new ideas is encouraged as part of the process of finding solutions.
- **Non-intervention** – the natural geological and ecological processes in the Namib Sand Sea will require little overt intervention, though the variable dominance of these processes in different parts of the property is still poorly understood. Regular monitoring and recording spot observations are valuable tools to clarify the different degrees of natural restoration processes in the system.

2.1 LANDSCAPE MANAGEMENT

Open, contiguous landscapes are essential to ecosystem functioning, unrestricted wildlife movement, and maintaining the essential value of outstanding natural beauty. Achieving the desired outcome largely relies on the effective implementation of existing policies and regulations achieved through consultation and communication between authorities with different areas of responsibility.

| Actions | Monitoring | Output |
|--|--|--|
| 1. Re-activate and ensure regular meetings of the Strategic Management Forum established for the NNP | Bi-annual meetings | National planning will include specific reference to the Property |
| 2. Identify and engage with additional strategic partners by disseminating information and holding targeted planning meetings | MET contributions to sectorial and local planning | Distinct sectorial and local development plans referring to the Property |
| 3. Develop and maintain a socio-economic development plan by establishing forums and communication channels to integrate landscape and biodiversity conservation | Documents and records of meetings that provide input from different stakeholders | Draft plan to be included within five years |
| 4. Develop an appropriate and flexible institutional mechanism for local implementation | Consultative meetings with stakeholders | Established forums for consultation, e.g. Concessionaire Forum |
| 5. Identify priorities and opportunities for new socio-economic initiatives | Mainly stakeholder driven | Suggestions and approval for new initiatives |
| 6. Where necessary, establish formal agreements to facilitate consultation and decision-making among stakeholders | Implementation of Consultative Forum for NNP | Records of Consultative Forum meetings |

2.2 CO-MANAGEMENT WITH NEIGHBOURS

The Ministry of Environment and Tourism, in its Strategic Plan (2007), has embraced the exploration of co-management approaches to landscapes and biodiversity conservation across different land tenure systems with different land owners or custodians. The envisaged outcomes include the establishment of co-management committees with neighbours to promote (a) conservation and sustainable natural resource management and (b) socio-economic development. Co-management approaches across contiguous landscapes will promote more effective landscape and biodiversity conservation across a diversity of land uses. This also will enhance sustainable land management to promote economic development, improve livelihoods and combat rural poverty in sustainable ways. A diversified approach to a shared vision that, by definition, is inclusive and partnership based, will support the Ministry of Environment and Tourism to implement integrated ecosystem conservation and priority actions and programmes. It shall also help to mitigate and prepare for the impacts of climate change by opening up systems, working collaboratively, and diversifying production systems through collaborative mechanisms. Implementation and testing effective means of co-management will be initiated through the GEF-funded NamPlace programme, of which the Sossus Vlei area of the Namib Sand Sea is one of the experimental test areas.

| Actions | Monitoring | Output |
|---|--|--|
| 1. Establish a local Co-management Committee in the Sossus Vlei area to evaluate mechanisms for functional management between state conservation areas and neighbours | NamPlace meeting records | Effective Co-management Committee by 2016 |
| 2. Develop best practices guidelines for expanding shared management to different areas | Suggestions and consultations on guidelines | Results of shared management approaches |
| 3. Establish collaborative agreements on shared responsibilities for priority management issues | NamPlace meeting records about potential shared responsibilities | Success rate of agreed upon management outputs |

2.3 ZONATION

Landscapes and ecosystems are optimally managed and used through zonation that accounts for the values and current uses of the area. A zonation map for the Namib Sand Sea has not yet been developed and will therefore be prioritized. Internationally recognized zonation categories will be applied where feasible (Table 2.3.1).

Table 2.3.1: Categories used for Zonation of the Namib Sand Sea (based upon IUCN classification of Protected Areas)

| Zones | | Activities |
|--------------|--|---|
| a) | Strict Nature Reserve (IUCN category 1a) | <ul style="list-style-type: none"> Highly sensitive and high value conservation areas Non-intrusive scientific monitoring only Minimal mechanized access No-fly Zone No permanent structures |
| b) | Wilderness Area (IUCN category 1b) | <ul style="list-style-type: none"> Sensitive habitats and sites High value “sense of place” Low impact usage No mechanized access No permanent structures |
| c) | Specially Protected (IUCN category 2) | <ul style="list-style-type: none"> Managed for conservation and controlled tourism Approved mechanized access Low-impact Burra Charter structures |
| d) | Natural Monument (IUCN category 3) | <ul style="list-style-type: none"> Specific outstanding features, including landscapes, geological features, fossil deposits, ecological refuges, archaeological sites, shipwrecks, historical settlements, areas of heritage value Controlled scientific access only |
| e) | Conservation Management Areas (IUCN category 4) | <ul style="list-style-type: none"> Habitat or species management areas under active management No-fly zoning may apply Sustainable delivery of benefits to the area No public access |
| f) | Protected Landscapes (IUCN category 5) | <ul style="list-style-type: none"> Relatively open access for public enjoyment Higher intensity and lower regulatory areas |

| | | |
|----|--|---|
| | | <ul style="list-style-type: none"> • Non-consumptive and non-intrusive usage • Controlled business ventures |
| g) | Resource Protected Areas (IUCN category 6) | <ul style="list-style-type: none"> • Sustainable use of natural resources, e.g. recreational fishing, consumptive harvesting and intrusive adventure tourism within regulated limits on consumption • Managed resources to ensure long-term protection of ecological processes and maintenance of biological diversity • Support development through a sustained flow of natural products and services • Consumptive commercial activities subject to Environmental Impact Assessment baselines and approved Environmental Management Plans |

Zonation is based upon the concept of sensitivity. Documented research knowledge, of the biodiversity, geological context, climate, and known ecological responses to various kinds of human intrusion or exploitation, is used to determine sensitivity. It is a mechanism to harmonize future partnerships that may unlock the economic potential of the area within the context of landscape and biodiversity conservation. An agreed zonation map will minimize potential conflicts between activities and partners.

| Actions | Monitoring | Output |
|---|---|---|
| 1. Prepare draft zonation map for discussion and proposed activities per zone | Zonation map drafts and inputs | Draft zonation map Dec 2012 |
| 2. Distribute proposed zonation map and associated regulations to all stakeholders for consultation | Distribution lists and proposed regulations | Zonation map approved by 2014 |
| 3. Distribute and implement approved zonation map | Maps at all relevant conservation offices, ranger stations, entry points, and tourist industry facilities | Zonation of activities |
| 4. Formalize legal instruments by drafting regulations for zonation | Draft regulations approved by cabinet | Legal regulations gazetted |
| 5. Inform visitors about zonation and rationale | Information, booklets, etc. widely available | Visitor survey on attitudes to zonation |

2.4 TOURISM MANAGEMENT AND DEVELOPMENT

Tourism management is a specialized activity that includes, *inter alia*, understanding of economic processes, information provision and customer uptake, marketing and promotional strategies, evaluation of visitor behaviour and desires, and coordination between different service providers at national and regional level. At the local level, uncontrolled tourism industry growth and the demand for exclusive access to undisturbed areas are potentially the biggest overall threats to the character, beauty, diversity and integrity of the Namib Sand Sea. Tourism growth has caused other popular world heritage sites to be put on the World Heritage in Danger List. In the Namib Sand Sea, the sheer size of popular destinations such as Sossus Vlei, combined with good planning, zonation, management and collaboration between the conservation and tourism sectors, may still allow visitors to have a high quality eco-friendly experience that includes a sense of place, isolation and wilderness despite large numbers of visitors. However, that will not be the case if the demands and guidance of tourist operators and entrepreneurs are blindly accepted. The

large number of visitors to popular destinations such as Sossus Vlei is already causing problems by the amount of waste that has to be disposed of, while the growth curve of visitors indicates that the number will continue to rise. Widely distributed tourism facilities exacerbate the problem with waste, while the rising cost of accommodation is effectively excluding Namibians from areas such as Sossus Vlei. Tourism management therefore requires active engagement by other specialist agencies of the MET that do not fall under the Directorate of Regional Services and Parks Management and that have a specific mandate to address issues related to the tourism sector. Tourism development planning would also promote benefit sharing, income generation and investment opportunities for all Namibians through mechanisms such as the MET's Concessions and Tourism policies. At the same time, greater focus on the values of the property may be achieved by introducing a joint branding scheme by various heritage and ecology authorities.

Practical activities by conservation personnel envisage managing those aspects that can be controlled by the wardens until a more comprehensive tourism development plan for the Namib Sand Sea has been developed. These activities will include: tourism impact monitoring in order to estimate carrying capacities, affordable access for Namibians, refurbishing an Information Centre at Sesriem, providing relevant information materials to improve visitor appreciation, improving waste disposal procedures, better regulation of aerial flying heights and introducing no-flying zones, and improved training and registration of guides.

| Actions | Monitoring | Output |
|---|---|---|
| 1. Initiate the development of a detailed Tourism Development Plan through the Directorate of Tourism and Namibia Tourism Board | TORs developed and responsible officer / consultant appointed | Draft Tourism Development Plan for discussion |
| 2. Ensure effective reporting of monthly and annual tourism numbers and comparison with national and Etosha National Park numbers | Monthly tourism entry reports | Improved analysis of Namib Sand Sea as a tourism destination |
| 3. Design and open Sesriem Information Centre and point location information boards | Operational information centres | Better knowledge about special qualities of the Namib Sand Sea |
| 4. Continue to monitor and replace or improve signage and visitor information | Ad hoc through incident book system | Quarterly and annual reports on condition of signage and information boards |
| 5. Monitor condition and tourism pressure at point locations through technology, e.g. monitoring cameras | Install and monitor trail cameras | Annual analysis of tourism impact and testing mitigation measures |
| 6. Test and implement waste disposal mechanisms that would allow for a doubling of current visitor numbers | Evaluation report of available systems and capital project recommendation | Improved management of visitor waste |
| 7. Promote the establishment of low-cost tourism accommodation to restrict the burgeoning traffic and waste disposal issues to specific point locations | Evaluation report and recommendation to cabinet | Improved accessibility to Namibians as well as improved waste management |
| 8. Establish aerial tourism guidelines in consultation with operators and Civil Aviation | Guidelines by Civil Aviation | Improved sense of place and reduced wildlife disturbance |
| 9. Develop and implement a Namib | Tourism Charter Drafts | Sharing of |

| | | |
|---|--|---|
| Tourism Charter to improve co-management between officials and operators | and workshop records | responsibilities and improved relationships in sector |
| 10. Introduce joint branding and advertising of appropriate activities by the NTB, NHC, WHC and <i>eco-awards Namibia</i> | Guidelines on procedures and requirements for joint awards | Value-sensitive tourism activities and development |
| 11. Develop Namib Sand Sea guide system and syllabus in consultation with NATH and the Gobabeb Centre | Syllabus by NATH and Gobabeb Centre | Training course and guide registration implemented |

2.5 PROSPECTING AND MINING

Prospecting and mining activities are the second most important consumptive economic activities challenging the conservation effort for the Namib Sand Sea. Despite a formal policy on Mining and Prospecting in Protected Areas and National Monuments (1999) and Minerals Policy of Namibia (2003) that recognize the need for restricting non-strategic minerals in protected areas, exclusive prospecting licenses that are the precursor to mining licences are still being granted. The Ministry of Mines and Energy has agreed to put a moratorium on the granting of exploration licenses within the Namib Sand Sea, but provision still has to be made to manage any potential activities in that context in line with the international World Heritage and Mining position paper. The most important practical tool is to ensure that timely and detailed feedback is provided to the Commissioner of Mines. This feedback should include a stipulation that before any prospecting license is granted the applicant should provide a detailed EIA that explains any potential impact, from either prospecting activities as well as potential mining activities, on the values and attributes for which the Namib Sand Sea is nominated. These EIAs should not be proforma documents as is the case with explanations for the geological context for applications, but should be carried out by recognized EIA specialists familiar with the Namib Sand Sea and the mineral exploration methodology that will be followed. Furthermore, any applicant should be formally advised via the Commissioner of Mines that a detailed EMP will have to be approved by the Environmental Commissioner before any entry permit is granted by the MET for prospecting purposes. The costs of monitoring compliance with the EMP provisions should be for the account of the prospector. A daily ‘park user fee’ mechanism as is applicable for the filming industry should be formally regulated for prospecting and mining in protected areas. Formal regulations in that respect need to be drafted and published under the relevant Nature Conservation Ordinance (1975), Minerals (Prospecting and Mining) Act (2003) and Environmental Management Act (2007).

| Actions | Monitoring | Output |
|---|---|---|
| 1. Establish a library of all the relevant EIA reports, EMPs and Records of Decision regarding EPLs and Mining Licences | Library catalogue or updates to be provided annually to all relevant warden offices | Improved information and understanding of EIA contents and EMP requirements |
| 2. Implement a “prospecting and mining monitoring sheet” that enables rapid EMP compliance monitoring. | All rangers and wardens trained in monitoring EMP compliance | Transparent monitoring of environmental awareness |
| 3. Develop recommendations on license applications in line with values, attributes and zonation of the Namib Sand Sea | Basic requirements available for rapid response to license application that can be | Improved communication with the Commissioner of Mines |

| | augmented by additional information | |
|--|---|---|
| 4. Develop address list for team of experts to provide input for responding to license applications | Informed factual response to license applications | Greater awareness of aspects that may be impacted by prospecting and mining |
| 5. Seek cabinet approval for park specific prospecting and mining user fees and requirements for park entry by prospectors | Cabinet submission on user fees | Gazetted user fee schedule |

2.6 TOPNAAR INDIGENOUS COMMUNITY

The indigenous Topnaar or \ne Aonin Nama community lives along the Kuiseb River in about 18 farming settlements from Rooibank to Homeb under their traditional leader Chief Seth Kooitjie. Most of the permanent residents are pensioners and young children with youth and working age community members attending school or working in the coastal towns. The number of homesteads and settlements and total population along the river vary according to opportunities for income, environmental conditions, and other socio-economic factors. The Topnaar community practice subsistence farming by raising livestock and limited garden horticulture along specific stretches of the Kuiseb River resulting in relatively intense use of vegetation and natural plant resources in the river and immediate adjacent areas. Livestock grazing is mainly restricted to the riverbed and riverbanks as the sand dunes to the south and the gravel plains to the north do not offer any significant amounts of fodder, though donkeys and horses may range several kilometres away from the river. The primary source of fodder for livestock is pods and leaves from trees such as *Faidherbia albida* (Ana tree), *Acacia erioloba* (Camel thorn) and *Euclea undulata* (False ebony) in the riverine forest along the Kuiseb. *Welwitschia mirabilis* on the plains is a particular target for horses during dry times. The Topnaar farmers experience problems when flood events wash away the pods and prevent animals from browsing in the river. Gardens are usually small except where approved development projects attempt more intensive production (e.g. at Homeb). The Topnaar also had a traditional cultural practice of seasonal harvesting of !nara melons (*Acanthosicyos horridus*) where specific !nara plants or fields were traditionally owned by individual families that ensured sustainable harvesting. This has recently transformed into an open access system where everyone is in competition for the !nara fruits following commercialization of the resource, a loss in traditional cultural values related to !nara and the wage and social benefit dependence of community members.

There are no reliable statistics on the numbers of livestock belonging to the Topnaar, with the most recent estimate suggesting around 200 cattle, 2,500 goats, 120 donkeys and 50 sheep. Livestock is primarily kept for cultural purposes rather than to maximize production for marketing, thus livestock is only sold when there is an immediate need for money. The small stock is of indigenous breeds and large stock is commonly a mix of European breeds and indigenous Sanga cattle. Donkeys are kept for transport purposes. Water for the livestock and settlements was traditionally obtained from hand dug wells in Kuiseb riverbed but more recently these were replaced by boreholes or taps on the pipeline. These are provided by government and water users are expected to pay for the cost of access to water where NamWater provides water from its pipelines, or to maintain boreholes, established by the Ministry of Agriculture, Water and Forestry, through local Water Point Committees.

Community relations along the Kuiseb are a sensitive issue that are continuously evolving to balance conservation requirements with community aspirations. They also require close co-operation with various Ministries responsible for different aspects related to the community including agriculture, environment, lands, education, health and local government. Various agreements have been negotiated between the Ministry of Environment and Tourism and the traditional authority. These include access to tourism opportunities through the allocation of concessions, an annual wildlife utilization quota, and accepting the need for the Topnaar community to continue their traditional subsistence and lifestyle practices within the context of national development. The Kuiseb Basin Management Committee (KBMC) plans to establish an Agricultural Working Group consisting of members with appropriate expertise that will identify which knowledge and strategies are needed to manage those issues. Formal mechanisms for collaboration with other ministries still need to be formulated to meet various aspects of development relating to the Topnaar community.

| Actions | Monitoring | Output |
|---|--|--|
| 1. Establish a livestock census and monitoring system in collaboration with the MAWF, KBMC and local Water Point Committees | Approved livestock census and monitoring system | Accurate annual livestock estimates per settlement |
| 2. Develop an inter-Ministerial Topnaar development forum through consultation with the traditional leadership | Consult Chief Kooitjie and MRLGHRD | Improved community development coordination |
| 3. Assist Topnaar Tourism Concession endeavour as appropriate | Concessions Unit reports | Opportunities for Topnaar to participate in tourism industry |
| 4. Facilitate annual wildlife utilization quota to Topnaar Traditional Authority for distribution of wildlife products to community members | MoF exemptions of wildlife assets and community records of game product distribution | Wildlife resource benefits to community |
| 5. Document and re-invigorate traditional resource and cultural landscape management systems in consultation with Traditional Authority and Directorate of National Heritage MYNSSC | Traditional Authority resource management system | Potential inclusion of cultural values in World Heritage extension |

2.7 LOCAL AND REGIONAL DEVELOPMENT

The large dunes and continuously shifting sands of the dune sea pose a major challenge to infrastructure and economic development. However, the municipal area of Walvis Bay with its port and an approximate population of 70,000 inhabitants is immediately to the north of the area, the much smaller Lüderitz port to the south, and a high growth tourism area along the eastern boundary. Walvis Bay is of specific significance as the age structure of its population suggests substantial migration into Walvis Bay responding to socioeconomic development drivers. It is Namibia's primary port and a major gateway for landlocked countries in Southern Africa such as Botswana, Zimbabwe and Zambia through the Walvis Bay Corridor. It is actively promoted as a Hub Port for Southern Africa as it is the only major harbour between Angola and South Africa and has excellent infrastructure in terms of tarred roads, railways, airports, communications and electricity. Strategic initiatives such as the Walvis Bay Export Processing Zone (EPZ), dry port

allocations to neighbouring countries and the deepening and expansion of the port facilities indicate the relative importance of Walvis Bay. Apart from its deep sea port, Walvis Bay is also the centre of Namibia's fishing industry, has a growing tourism industry, a growing manufacturing industry and a variety of relatively small-scale mining concerns such as salt mining, guano harvesting and dimension stone.

Revenue from fisheries is the second most important foreign exchange earner in Namibia after mining with annual fish catches averaging around 572,460 tonnes and employing around 13,400 people annually. Infrastructure for the fishing industry is shared between Lüderitz and Walvis Bay. Lüderitz primarily caters for rock lobster whereas Walvis Bay has on-shore fish processing factories. Furthermore, most of the future diamond mining industry of Namibia, which is the largest foreign exchange earner for the country, will be located offshore and serviced through Lüderitz. Most of the imports and exports of other mines in Namibia flows through Walvis Bay. Local salt and dimension stone mining areas at Walvis Bay are relatively small but major local industries. In addition, around 30 tourism establishments are located in Walvis Bay that are mainly focused on Walvis Bay lagoon, Sandwich Harbour, adventure tourism in the Kuiseb Delta dunes and Walvis Bay-Swakopmund dune corridor and other local attractions.

The overview shows that Walvis Bay will remain an important economic development area. Accelerated economic development will introduce a variety of environmental risks and an increased demand for water. The Walvis Bay municipality has an environmental officer and environmental management plan to guide development, though the effects of development may pose new challenges to conservation. For example, many of the cultural sites close to Walvis Bay are threatened by uncontrolled tourism and recreational use of the dune fields, while expansion of commercial activities may destroy specific sites. Though larger developments in Namibia are generally guided by questions regarding sustainability and the precautionary principle, the immediate and cumulative impacts of smaller local developments are often not taken into account.

Special attention should therefore be given to all kinds of development initiatives within the Namib Sand Sea and its buffer zone to ensure the integrity of the values and attributes of the World Heritage site is respected. Economic exploitation by entrepreneurs usually focuses on short-term economic returns at point locations. Nevertheless, concern for ecosystem and landscape conservation is often reflected in the EIAs their consultants may carry out. Clarity on the values, ecological processes, case studies of sustainable practices, improved public knowledge and stringent application of the precautionary principle may assist towards a more sustainable development culture. All development should be carried out in an environmentally sensitive manner according to best available practices as required by national law, international standards and sound environmental management principles and ethics. However, threats and impacts from inappropriate development often appear much faster than the ability of official regulatory mechanisms to respond. Thus oversight by management staff is critical to provide early information on perceived threats, on monitoring impacts through the event book system, and to ensure that environmental sensitivity principles are adhered to.

The active collaboration and involvement of developers (other ministries and parastatals, entrepreneurs, local communities, business operators and visitors) should be encouraged to facilitate innovation to create the lightest possible development "footprint" and to ensure ecosystem and landscape integrity (see *2.1 Landscape Management* above). That would require developing a list of priority issues related to development (e.g. road development, power line and pipeline routes, ICT, water, waste disposal, educational and health centres, tourism activities, disaster planning), identification of the essential stakeholders, proper representation of the MET on various planning committees and the systematic development of specific guidelines or policies that are communicated and implemented by stakeholders. Those issues should be incorporated into a more comprehensive development approach by evolving appropriate procedures for

environmental impact assessments (EIAs) and strategic assessments to support long-term development.

| Actions | Monitoring | Output |
|--|---|---|
| 1. Ensure all conservation staff are familiar with legal, best practice and oversight procedures on EIAs, EMPs and strategic assessments | Refresher EIA courses for management staff | Improved monitoring and compliance with EIA regulations |
| 2. Record of any construction or development activity, management interventions, and observed environmental impact | Incident books and quarterly reports | Annual analysis of local development issues |
| 3. Identify priority local development issues and develop specific guidelines and policies in consultation with stakeholders | Prioritised list of development issues | Best practice guidelines for small development issues |
| 4. Environmental Commissioner implement specific procedures for EIAs appropriate to World Heritage sites | Environmental Management Act regulations pertaining to World Heritage | EIA practitioner attention to World Heritage site values and attributes |

2.8 ECOSYSTEM CONSERVATION

The short and long-term variability common to hyper-arid deserts worldwide requires large areas with open landscapes to facilitate movement. The comprehensive diversity, of habitats, communities of plants and animals and keystone species, ensures ecosystem functioning and associated evolutionary processes. Management intervention should therefore be minimal with a largely hands-off approach to active intervention, especially as “patchiness” and variability in ecosystem productivity will result in variable carrying capacity over time that may be mistakenly considered to be the result of over use. Active management interventions should aim to ensure that specific components of the system such as areas close to water points are not over utilized, taking into account the ability of desert organisms to extend their ranges considerably in response to prevailing conditions. On-going monitoring of the ecology through estimates of the diversity and abundance of plants and animals through scheduled counts as well as the incident-book system is an essential component to inform annual planning. Sustained long-term monitoring of key indicators is also important as it reflects the effectiveness of the conservation effort and will guide reviews of management plans. Within the desert ecosystem, long-term monitoring is of additional significance as it also advises which short-term activities may be fruitless e.g. provision of emergency supplementary feed or re-introduction of species.

| Actions | Monitoring | Output |
|---|--|--|
| 1. Provide a baseline ecosystem map to all relevant conservation offices and ranger stations as well as tourist information centres | Use of ecosystem terminology in incident books and quarterly reports | Improved understanding of ecosystem processes and the Namib Sand Sea environment |
| 2. Progressively improve the ecosystem map through georeferencing key habitats, breeding areas and refuges, particularly in zones where utilization is allowed (conservation staff) | Annual review of state of the environment | Regular updates of the ecosystem map to reflect improved knowledge |

| | | |
|---|--|---|
| 3. Record natural disasters, management interventions, and environmental response | Incident books and quarterly reports | Site specific cumulative knowledge of the area |
| 4. Install notice boards at ranger stations that reflect monitoring results | Quarterly and annual reports on monitoring results | Readily available information indicating medium term environmental trends |
| 5. Compile, interpret and disseminate key monitoring data to inform adaptive management | Annual State of the Environment report | Understanding and appreciation of the purpose of monitoring |

2.9 SITES OF SPECIAL CONSERVATION AND SCIENTIFIC INTEREST

The large expanses of relatively homogenous habitats comprising the Namib Sand Sea ecosystems are punctuated by sites that are of special significance to the ecological processes and qualities of the Namib Sand Sea. Considerable information about some of these sites is available in the scientific literature and research reports, but has not yet been compiled into a readily accessible information system. Examples include:

- **Outstanding ecologically important sites** contribute significantly to the overall biodiversity and primary productivity in the area, consisting of distinct habitats such as concentrations of *Salvadora persica*, *!nara* copses, *Acacia erioloba* woodlands, natural springs, the reed beds at Sandwich Harbour, inselbergs, isolated rocky outcrops in the interior and along the coast, isolated *Acacia erioloba* trees and communal weaver nests.
- **Breeding sites or areas** that maintain colonies of specific species of exceptional conservation importance such as vulture and raptor breeding sites, regular stopovers of migratory birds, Damara tern nesting areas, cormorant and penguin nesting areas, regularly used hyena den areas.
- **Aesthetic sites** that are of exceptional beauty and embody the special attributes for which the Namib sand Sea is nominated such as specific viewpoints and their vistas, e.g. Dune 45, Dead Vlei, Sossus Vlei, inselbergs.
- **Exceptional outliers** that represents isolated patches of habitat which are unusual and rare in Namib Sand Sea and often inhabited by relict populations of species such as inselbergs surrounded by dunes, natural springs, isolated rocky outcrops near the coast, lichen fields.
- **Scientific Information sites** that allow reconstruction of the geological, ecological and cultural past of the area such as sediment remains from floods, pan edges, archaeological scatters and sites, fossil sites
- **Historical sites** that reflect past human endeavour where abandoned human infrastructure or constructs are found such as the Eduard Bohlen wreck, the Charlottenfelder, Fischersbrunn, Grillenberger and Holsatia abandoned mining and exploration camps as well as the industrial and transport debris scattered all over abandoned mining areas.
- **Generically protected occurrences** that are legally protected regardless of where they occur such as any fossils, meteorites, archaeological artefacts and deposits, shipwrecks and rock art.

All such sites are usually point locations that are easily disturbed or destroyed through ill-guided and inadvertent ‘tourism’ or overutilization as popular destinations. Adequate protection and management require exact locations that are not available at present and that would require considerable effort if developed through data mining. Such sites require better protection and focussed monitoring but first require proper recording of sites through georeferenced information and a photographic record. In general, most of these sites need to

be closely monitored and in many cases excluded from close approach by any tourists or other users, except by recognized scientists with appropriate permits and accompanying conservation staff.

| Actions | Monitoring | Output |
|--|--|---|
| 1. Progressively develop a georeferenced database of SSCSIs | Incident books and research reports, Gobabeb Centre database | Special maps showing categories of Sites of Special Conservation or Scientific Interest |
| 2. Prioritize the evaluation and monitoring of the most popular SSCSIs through baseline surveys | State of Conservation reports on most important sites | Focussed monitoring of tourism exploitation of sites |
| 3. Require research scientists to submit georeferenced site reports, including extracts from past research | Catalogues of sites georeferenced by scientists | Progressive data mining for SSCSIs |
| 4. Apply the Incident Book system with support from concession holders to improve and expand georeferenced SSCSI records | Incident books and concessionaire reports | Progressive data recording of SSCSIs |
| 5. Ensure that georeferenced site information and classification is readily available for inclusion into GIS systems | Availability of GIS shape files through NNF's Environmental Information System (EIS) | Greater awareness of concentrations and occurrences of sensitive sites |
| 6. Develop and distribute public information about each category of site | Public information products such as posters, pamphlets and information boards | Public awareness of importance and sensitivity of particular sites and areas |

2.10 WILDLIFE MANAGEMENT

The rich diversity of indigenous wildlife is a key attraction for visitors and enhances the beauty and starkness of the landscape, e.g. the iconic photographs of an oryx or gemsbok posing in front of a massive dune or zebra in the gramadulla landscapes. However, the variability of the environment from unpredictable rainfall has a considerable effect on the condition and numbers of wildlife. Game population numbers should be allowed to fluctuate naturally through migration and natural mortality adapting to appropriate biomass for particular species and for the total wildlife population under different rainfall and range conditions. Minor fluctuations in numbers and condition of species should be explained to visitors through information centres. Poor condition and mass mortalities of flagship species during drought conditions are natural phenomena, but undue criticism and concern by visitors about starving wildlife during droughts in high traffic areas such as the Sossus Vlei corridor may occasionally require management intervention to reduce population numbers. Mass mortalities during droughts may be ameliorated to some degree by establishing open systems, particularly for west-east migration. However, population numbers of a particular species will not be allowed to adversely affect the long-term population stability of other species. Active measures for consumptive utilization and to reduce population numbers, whether game capture or offtake to reduce populations or fulfil directives for community quotas, should be carried out in designated areas away from well-frequented tourist areas. Such management measures shall be informed through monitoring of population trends (age and sex structures and body condition) and distribution of populations related to rainfall and

grazing conditions. An adaptive management approach of minimum intervention, managing water availability, and sustainable use is already practiced and will continue. Where practically feasible, some species that were formerly resident in the area will be re-introduced but not species that were likely to be relicts, migrants or vagrants.

| Actions | Monitoring | Output |
|---|--|--|
| 1. Improve integration of monitoring of rainfall, veld condition and wildlife observations (numbers, age & sex classes and condition) into incident book system | Standardized monitoring record format | Annual wildlife status reports |
| 2. Require annual refresher training on Namib Sand Sea ecosystem functioning | Regular courses attended by NNP and senior management staff at Gobabeb Centre | Informed decision makers and conservation staff |
| 3. Update and improve policies and procedures on consumptive utilization and emergency offtake | NNP wildlife utilization policy | Transparent procedures for wildlife population management |
| 4. Develop checklist of actions and likely ecological consequences as a practical 'legacy' conservation decision-making tool | List of possible actions and likely consequences of management action | 'Legacy' management reference and decision-making tool |
| 5. Undertake focused monitoring of flagship species at point locations | Regular point location monitoring of wildlife | Point location monitoring data to compare to aerial census information |
| 6. Manage and interpret monitoring data and intervention results | Database on wildlife population numbers from aerial census, point location monitoring and incident books | Long-term wildlife population trend and fluctuation information |

2.11 ALIEN (EXOTIC) SPECIES

The absence of viable populations of alien species within the Namib Sand Sea is an indicator of the pristine condition of the ecological system. Non-invasive alien species are justifiable where no viable indigenous alternative are available for the physical, economic and spiritual well-being of residents and visitors to the property, but should not be introduced simply to satisfy the whims and expectations of uninformed entrepreneurs, tourism operators or visitors (e.g. palm trees, cactus, camels, exotic game are inappropriate). Clear, non-discriminatory guidelines on pets and domestic animals for resident staff should be distributed and applied to conservation management staff as well as those of SOE and private tourism establishments. Feral populations of alien species shall be monitored and eradicated where feasible before they become permanent populations or before they affect the integrity of the ecosystem or population dynamics of some species.

| Actions | Monitoring | Output |
|----------------|-------------------|---------------|
|----------------|-------------------|---------------|

| | | |
|---|--|---|
| 1. Maintain programme to monitor and opportunistically eradicate undesirable and feral populations of alien species | Incident books and activity reports | Preventative management of alien organisms |
| 2. Review and distribute guidelines on pets, garden plants, and domestic animal to staff, concessionaires, entrepreneurs and tourism operators | Clear guidelines on pets, garden plants and domestic animals at all residences | Clear understanding of reasons for restrictions |
| 3. Develop and distribute information products on the threats posed by alien invasives, including inadvertent 'hitchhikers', to inform visitors and staff | Awareness products on alien invasives in desert environments | Public cooperation in reducing risk |

2.12 FENCES

Fences are currently largely absent from the Namib Sand Sea. The management plan is based on open systems for the largest possible continuous landscapes, thus new fences shall not be approved except where they have strategic value (e.g. short-term holding areas or enclosures for research monitoring or wildlife management). The eastern boundary of the buffer zone is demarcated by a fence originally constructed to reduce friction with neighbours of the conservation area. It defined the boundary, prevented valuable free-ranging animals from straying and restricted potentially destructive wildlife to the park. The historic reasons for the fence was largely met and have since disappeared, thus the fence has become quite permeable. It recently became a contentious issue with some neighbours that would like to have the fence removed. It is, however, a valuable state asset and thus any intentional breaching or removal of the fence should follow procedures for the disposal of state assets. Existing fences shall not be maintained except where neighbouring land use is a threat or where secure fencing is essential for good neighbourliness.

| Actions | Monitoring | Output |
|--|--|---|
| 1. Develop clear guidelines on the requirements for approval of fences to guide planning by concessionaires, tourism operators and staff | Guidelines on fences in the Namib Sand Sea | Few fences and unrestricted wildlife movement |
| 2. Ensure signage for areas with frequent vehicle traffic on the potential risks posed by free-ranging wildlife | Traffic accident register, appropriate signage | Vehicle operator awareness |
| 3. Patrol and maintain fences required for wildlife management as needed | Staff activity reports | Appropriate fence maintenance |
| 4. Evaluate need for intentional breaching or removal of selected parts of the eastern boundary fence | Report on need and condition of boundary fence | Addressing neighbour concerns |
| 5. Where appropriate, initiate procedures for breaching or removal of fences in terms of state asset control procedures | Formal approvals for fence removal | Increased permeability at choke points |

2.13 WATER POINT MANAGEMENT

The Namib Sand Sea is virtually devoid of naturally occurring perennial water. The few springs in remote areas are either seasonal or not easily accessed. They are outside the range of most large mammals, are especially sensitive to disturbance and often surrounded by largely unresearched archaeological sites. Where temporary pools develop after floods or thunderstorms, open water is subject to high evaporation rates, high demand by wildlife and rapid deterioration of water quality. Any artificial water points are subjected to the same pressures as well as a range of long-term ecological effects at such locations. Inadvertent water point establishment, through ecotourism development with water points to attract game or poorly planned wastewater facilities, also needs to be taken into account. Ecological consequences when establishing water points or wastewater facilities may cover a range of aspects. The effect of trampling and habitat degradation in the vicinity of water points is well known. Water points are also renowned for their importance to predators, thus desert species are particularly sensitive to movement at water points. The ecological costs for an individual travelling to water in the desert are high, thus the effect of disturbance should not be underestimated. The physiological and behavioural adaptations that allow desert species to survive in the absence of free water may deteriorate through regular access to water, leading to smaller ranges and increased mortality during periods of drought. Water point development therefore needs to be planned for strategic management of wildlife populations. Planning should not only include aspects of management and maintenance but also the need to monitor its ecological consequences.

| Actions | Monitoring | Output |
|--|--|---|
| 1. Maintain a map and inventory of all natural and artificial water points with related attributes such as yield, depth and surface area (including lasting temporary ponds and sumps) | Water resource map and database at all ranger stations | Continued water resource management |
| 2. Continue maintenance and cleaning of water points, including monitoring of condition and quality of resources around water points | Activity reports, incident book system | Continued water resource management |
| 3. Develop guidelines on the selection, establishment and ecological monitoring of new water points and waste water disposal | Guidelines on water point establishment and waste water planning | Clear guidelines on water supply management |
| 4. Develop information materials on the adaptations of desert organisms to water scarcity and the effect of excess water | Information posters, visitor behaviour guidelines | Improved sensitivity to the importance of water |

2.14 COASTAL MANAGEMENT

The intertidal coastal zone, its biota and the species that transcend the marine/terrestrial interface are managed jointly by MET and MFMR staff under agreed co-management principles and protocols that promote synergy, efficiency and elevated conservation management, monitoring and protection of habitats, processes and species. This mutually supportive working environment is based on regular consultations between MET and MFMR management staff. This allows for the identification of key areas, issues and species that require joint monitoring and management. It also developed operational principles, procedures and protocols for monitoring, managing and

reporting on the areas and biota of mutual interest, as well as means of collaboration, communication and mutual support.

| Actions | Monitoring | Output |
|---|--|-----------------------------|
| 1. Continue liaison and discussions between MET and MFMR regional managers | Co-management agreements | Effective costal management |
| 2. Continue collaboration, communication and reporting for identified priority areas and species at the operational level | Activity reports, incident book system | Effective costal management |
| 3. Continue improvement of co-management approaches to ecosystem management and monitoring | Monitoring results | Effective costal management |

2.15 ROADS

The Namib Sand Sea itself has few roads and tracks though it is surrounded by a well-established road network. The most important road is the tarred road leading to Sossus Vlei. Maintaining the existing road and track network is an important aspect of effective tourism management. A number of well-established tracks used by management and research staff link important points within the area. Concession holders are restricted to defined tracks where feasible, and elsewhere to travel corridors where mobile dunes will rapidly cover tracks. This road and track network is essential for management (including monitoring and research) and tourism in such a large area. The track network is being monitored and closed when necessary to allow natural rehabilitation. New roads are rarely developed and only permitted to ease vehicle traffic and visitor pressures, in which case the roadway and likely borrow pits are subject to EIAs. No off-road driving is allowed except in areas clearly designated and zoned for this purpose, e.g. concession routes, or when essential for management purposes. Off-road driving along concession routes is under the supervision and guidance of tour guides experienced in desert driving, but that will benefit from improved knowledge of the ecosystem in which they operate. It is currently presumed that off-road driving on mobile sand dune belts has little long-term impact, though some reports indicate that especially scarring of dune crests may persist for long periods and may even result in blow-outs and a change in dune structure. More information is required on those aspects, including the most appropriate vehicle types and tyre sizes.

| Actions | Monitoring | Output |
|--|--|--|
| 1. Maintain an accurate GIS-based map of roads and tracks, including decommissioned and rehabilitated tracks | Each ranger/warden station and suitable park GPS should have track network map | Maintaining knowledge about suitable routes |
| 2. Subject any new roads and borrow pits to an EIA that will also consider the values for the world heritage nomination | Chief warden to maintain file of EIA recommendations | Maintaining world heritage values |
| 3. Carry out specific planning to consider refurbishing existing roads, especially to ameliorate persisting dust in the Sesriem area, in consultation with MWT and NPC | Road development plan and schedule with Chief Control Warden | Improving road access and ameliorating negative impact |
| 4. Develop a monitoring plan for tourist | Georeferenced incident | Monitoring report |

| | | |
|--|---|--|
| concession routes to determine the effect of off-road vehicles on dune morphology | book records, annual monitoring results | produced by 2017 |
| 5. Develop guidelines on road and track signage that will contribute and explain the attributes for world heritage nomination | Guidelines on appropriate sign technology, size and positioning | Improved visitor guidance and experience |
| 6. Develop training course, testing and registration system for professional off-road drivers and guides along concession routes | Development of driver guidelines and testing system, course registrations | All concession holders to have registered drivers by 2014. |

2.16 RESTORATION

One aspect of adaptive management is to ensure that landscapes and ecological conditions may return to their natural condition after disasters or inappropriate human activity. The natural processes in many parts of the desert environment are very slow, which may seem to advocate intervention. In some cases, e.g. relatively recent and limited point impacts, immediate action may be appropriate. In some other cases, e.g. perceived ‘unnecessary’ evidence of human occupation, abandoned roads, or large exploited areas, intentional rehabilitation may be inadvisable or even illegal. Some despoiled areas and human debris have become tourist attractions, while well-intentioned recent ‘restoration’ activities have destroyed important historical information through ignorance. Evidence at various places also indicates that natural restoration processes in the Namib varies from rapid to slow, depending primarily on differences in the stability and type of substrate, degree of geomorphological activity and weather conditions. Site or area rehabilitation is not an aspect that should be undertaken as a matter of course but needs to be carefully evaluated based on technical considerations, restoration ecology, manpower and time implications, cost and impact on the values of the property. Any rehabilitation project should also include a monitoring and evaluation component to ensure better understanding of restoration ecology in the Namib Sand Sea.

| Actions | Monitoring | Output |
|--|---|-------------------------------------|
| 1. Develop georeferenced database of rehabilitated sites, abandoned areas exposed to natural processes, and restoration techniques | Incident book records and activity reports | Record of rehabilitation activities |
| 2. Develop and implement guidelines for spot rehabilitation | Incident book records and activity reports | Record of rehabilitation activities |
| 3. Develop procedures for planning, consulting, evaluation and approval of site restoration projects (similar to EIA procedures) | Restoration protocols | Oversight on restoration proposals |
| 4. Identify priorities of man-made structures detracting from the integrity of the area that may require restoration | Classification and list of restoration priorities | Planned restoration |

2.17 LAW ENFORCEMENT

Unlawful activities, such as illegal use of wildlife and other natural resources as well as visitor transgressions of regulations intended to minimize impacts on the ecosystems, are currently rare. The safety and security of visitors and staff is a priority to tourism establishments in the area, which contributes to the low incidence of illegal activities. Effective law enforcement patrols and surveillance by conservation staff further contributes to maintaining a zero tolerance approach to illegal acts. The focus of a programme of law enforcement is to maintain compliance with regulations and laws, primarily through forward planning of activities, monitoring for early identification of emerging problems, information distribution, and effective collaboration with other law enforcement agencies such as MFMR staff, the Namibian Police and Ministry of Justice officials. The established radio network allows rapid response to any kind of crises by management staff, while the special training they receive in law enforcement procedures ensures effective prosecution of transgressors. Maintaining and improving the effectiveness of the current system allows staff to focus on other management priorities

| Actions | Monitoring | Output |
|---|--|--|
| 1. Maintain an effective communication system | Annual inspections and reports on communication system | Rapid communication |
| 2. Improve reporting system on law enforcement activities and observations to include nil results | Incident book system and transgression statistics | Focused law enforcement activities |
| 3. Exploit the “rumour mill” to escalate the severity and degree of law enforcement activities | Transgression statistics | Improved compliance with regulations |
| 4. Develop incentives to improve cooperation with other law enforcement agencies and other parks to increase law enforcement monitoring | Operational plan and number of exchange visits by peace officers | Improved compliance with regulations |
| 5. Undertake regular evaluation of law enforcement courses and licensing of honorary rangers as peace officers | Annual number of courses and attendance statistics | Improved enforcement and monitoring capacity |

2.18 HONORARY WARDENS

Current and future legislation makes provision for the appointment of Honorary Wardens to support existing staff. Sufficient staff numbers to carry out conservation-orientated work while also enforcing regulations over a large area, which is the primary purpose of appointing highly trained staff, will always be problematic. Honorary Wardens can complement execution of the management plan in a range of areas such as environmental monitoring, monitoring recreational and tourism activities, resource use, promotion and education, community business involvement and development guidance, and neighbour relations. Honorary Wardens will also allow improved collaboration between peace officers with different mandates. For example fisheries inspectors, forestry inspectors and heritage officers are peace officers with training and specific national mandates to enforce regulations in the area. Reciprocal honorary appointments after appropriate training are logical, e.g. suitably qualified MET personnel may be empowered to enforce fisheries legislation, and suitably qualified MFMR personnel to enforce environmental, park and conservation legislation. In addition, dedicated private individuals or officials with specialized skills may supplement the human resources that are available.

The criteria for the selection of Honorary Wardens should be transparent and they must receive appropriate training before they can be appointed. Training should include park regulations, law enforcement procedures, the incident book system, monitoring requirements and standards. They should be appointed for three years with specified areas of competence, renewable for further three-year terms depending on their performance and commitment. The powers and privileges of Honorary Wardens in different areas should also be clear as well as procedures for reporting and feedback. A specific conservation officer should be appointed as supervisor. It should be taken into account that volunteers and honorary staff have to be managed if they are to be used effectively:

| Actions | Monitoring | Output |
|---|--|--|
| 1. Develop fields of collaboration and terms of reference for reciprocal honorary appointments of peace officers with complementary legal mandates | Interministerial agreements | Improved law enforcement capacity |
| 2. Develop guidelines for the identification and selection of additional Honorary Wardens, a training syllabus, and reporting and oversight procedures. | Honorary Warden operational guidelines | Transparent Honorary Warden appointment system |
| 3. Select, train, and appoint Honorary Wardens | Honorary Warden register | Improved human resource base |

2.19 MONITORING

Monitoring of a limited number of carefully selected indicators will inform judicious adaptive management, allow continuous and timely assessment of emergent or actual threats, reflect the state of the environment and improve information products for visitors. On-going observations for long-term data sets are especially important in arid environments where short-term fluctuations in vegetation primary productivity and wildlife distribution and population sizes may be extreme under rare weather conditions. As management decisions need to be based on recurrent ecological baselines the long-term data sets provide information on the environmental 'norm'. The 'boom and bust' noise of inherent variability in arid ecology may be misleading and incur pointless expense and fruitless work if adaptive management attempts to address perceived natural disasters. Long-term data sets allow for the identification of real disasters and the evaluation of the potential success of possible interventions. These long-term indicators, as well as specific indicators discussed before, are listed in Table 2.18.1 below.

Table 2.19.1. Management, environmental and ecological indicators for regular monitoring.

| Indicator | Periodicity | Responsible | Location of records |
|--|--------------------|---------------------------|--|
| <i>Management indicators</i> | | | |
| Updated planning, management and monitoring framework | 5 year intervals | MET, Chief Control Warden | Office: Chief Control Warden, Gobabeb Centre |
| Updated detailed tourism plan | 5 year intervals | MET, Director of Tourism | Office: Director of Tourism; Chief Control Warden, Gobabeb |
| Strategic Forum annual meetings (MET, Gobabeb, neighbours) | Annual review | Chief Control Warden | Office: Chief Control Warden, Gobabeb |
| Consultative Forum of | Annual | Chief Control | Office: Chief Control |

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|--|---|--|---|
| interested parties for on-going operational assistance, guidance, support and feedback | review, quarterly meetings | Warden | Warden, Gobabeb |
| Honorary warden programme | Annual review | Chief Control Warden | Office: Chief Control Warden, Gobabeb |
| Community interest group activities, e.g. birds of prey | Annual review | Individual interest groups (MET review) | Office: Chief Control Warden, Gobabeb |
| <i>Human use indicators</i> | | | |
| Daily detailed tourism records (numbers, types of activities) | Monthly submission; annual review | Sesriem gate personnel, Chief Warden | Office: Chief Warden, Director of Tourism, Gobabeb, Sesriem |
| On-going records of concession allocations and use (numbers, types of activities) | Annual review | Chief Warden | Office: Chief Warden, Director of Tourism, Gobabeb |
| Water use and management (tourism & wildlife) | Annual review | Chief Warden | Office: Chief Warden, Gobabeb |
| Records of research activities and results | Annual review | Chief Warden; compiled by Gobabeb | Office: Chief Warden, Gobabeb |
| <i>Geography indicators</i> | | | |
| Salt pans/flats; Endorrheic pans (sensitivity 5 areas) | Annually | Chief Warden; Gobabeb | Office: Chief Warden, Gobabeb |
| Ephemeral rivers, inselbergs, gravel plains, rocky shore (sensitivity 4 areas) | Two year intervals | Chief Warden, Gobabeb | Office: Chief Warden, Gobabeb |
| Sand sea, Sandwich Harbour lagoon, eastern hills (sensitivity 3 areas) | Five year intervals | Chief Warden, Gobabeb | Office: Chief Warden, Gobabeb |
| Landscape aesthetics | Two year intervals | Chief Warden, Gobabeb | Office: Chief Warden, Gobabeb |
| Archaeological and paleontological sites | Two year intervals | Chief Warden, Gobabeb | Office: Chief Warden, Gobabeb |
| Daily weather and climate; Sesriem, Coast (MFMR), Gobabeb | Daily; monthly submissions; annual review | Recordings: Sesriem, MFMR, Gobabeb; Review: Chief Warden & Gobabeb | Sesriem, Gobabeb & Office Chief Warden |
| Hydrology and flooding as occur | Intermittent observations | Sesriem, Gobabeb; Review: Chief Warden & Gobabeb | Sesriem, Gobabeb & Office Chief Warden |
| <i>Ecology indicators</i> | | | |
| Annual and perennial vegetation population dynamics | Annually | Gobabeb with PoN for remote sensing | Gobabeb & Office Chief Warden |

| | | | |
|---|---------------------------|--------------------------------------|-------------------------------|
| Invertebrate population dynamics, on-going measurements | Annual review | Gobabeb | Gobabeb & Office Chief Warden |
| Breeding birds of prey/vultures | Annual review | Vulture Group; Chief Warden, Gobabeb | Gobabeb & Office Chief Warden |
| Coastal migratory birds | Annually | CETN, Chief Warden, Gobabeb | Gobabeb & Office Chief Warden |
| Large mammal populations | Annually/5 year intervals | Chief Warden, Gobabeb | Gobabeb & Office Chief Warden |
| Invasive aliens | Annually | Chief Warden, Gobabeb | Gobabeb & Office Chief Warden |

Reliable monitoring mechanisms rely on cost efficient and sustainable data collection carried out at appropriate intervals according to standardized procedures. Monitoring shall be based on existing systems that are already being used within the Park or proven elsewhere in Namibia, e.g. measuring the effectiveness of management through “Namibia’s Management Effectiveness Tracking Tool” (NAMETT). Techniques and monitoring intervals of established procedures shall only be improved or changed where it will not affect the validity and continued use of historical datasets. Some monitoring shall be outsourced to special interest groups and specialist stakeholders where special expertise is needed or where rapid recording of ‘census’ type information is required. The value of short-term data sets and information to provide context for long-term data sets is not underestimated, thus participatory monitoring and deposition of additional data sets into the archival system shall be encouraged. However, the procedures and tools to integrate, interpret and archive data at different levels (local, regional, national, global) are poor or non-existent and need to be developed. The Gobabeb Centre is a reputable and experienced research and monitoring institute specializing on the Namib and situated within the area, which makes it the logical host for collating, curating, analysing and disseminating data and information resulting from monitoring.

| Actions | Monitoring | Output |
|---|--|--|
| 1. Evaluate and judiciously improve the monitoring framework to be relevant, cost-effective and affordable | Training manual on monitoring framework | Improved monitoring |
| 2. Ensure on-going training and reinforcement of the purpose and procedures of the monitoring framework, e.g. using the incident book system and applicable techniques | Training course records and quality of incident book records | Sustainable and reliable monitoring results |
| 3. Develop procedures and terms of reference or a formal agreement with the Gobabeb Centre for collating, storing and interpreting of collected data together with distribution of information through reports and information products | Signed agreement in place by 2013 | Reliable data analysis and information dissemination |
| 4. Develop clear and unambiguous guidelines and advice on the purpose | Active Indicator Monitor board at each | Improved use and understanding of |

| | | |
|--|---|---|
| and information value of each indicator to allow rapid assessment and application of information for adaptive management | ranger station | monitoring for management |
| 5. Develop and distribute information products based on long-term data sets to ranger stations and tourist centres | Updated environmental variability information | Improved desert ecology understanding |
| 6. Develop incentives and mechanisms to encourage tourists and require concessionaires and researchers to contribute observations and data | Data input and range of data points | Community involvement and improved access to rare observations and data from remote locations |
| 7. Outsource monitoring tasks to specialist institutions based on formal agreements and Terms of Reference | Specialist monitoring data and reports | Reliable monitoring results |

2.20 RESEARCH

The evolution of the current management approach and the large number of visitors to the area are the result of the quality of information and understanding that was generated by research. Very little of that research or the available long-term monitoring data was carried out by conservators or conservation organizations even though conservation is the main beneficiary of that research. A supportive environment to encourage scientists shall continue to benefit conservation and is integral to implementing an ecosystem approach to managing the property. This includes applied research in direct support of priority information needs (e.g. EIAs) and baseline research to improve the quality and coverage of information about the interlocking geological, ecological and socio-economic systems. The degree to which research should be prioritized has been debated all over the world without any consensus. It is envisaged that direct support or commissioning of research are likely to take place as determined by resources and urgent priorities, while most baseline research will continue to be pursued by independent visiting researchers. The Gobabeb Centre facilitates all kinds of research, though important research may take place elsewhere. It is critical, however, that information about research questions and research results are available to inform management planning and to guide the formulation of subsequent research. Active engagement of researchers will improve the availability and interpretation of monitoring information, while involvement in research by management staff shall contribute to their personal motivation, knowledge and understanding of the area. An impartial approach to support and encourage qualified researchers based on the current permit system and joint venture agreement with the Gobabeb Centre will be continued.

| Actions | Monitoring | Output |
|--|---|---------------------------------|
| 1. Ensure that published and unpublished research results are accessible through the Gobabeb Centre Library (e.g. as an open and 'closed' file system) | Digital Library catalogues available to all wardens | Accessible research information |
| 2. Ensure the annual budget makes provision for applied research by staff and <i>ad hoc</i> support to visiting researchers | Staff research programme and specialist researcher database | Sustained research interest |
| 3. Ensure the annual budget makes | Information support | Accessible research |

| | | |
|--|---|--|
| provision to support the maintenance of the Gobabeb Centre Library and the organizing, capturing and cross-referencing of research results | agreement | information |
| 4. Commission priority applied or baseline research required for management planning | ToRs for priority research and research reports | Research support for adaptive management |
| 5. Promote MET research policy, permit procedures and research opportunities to attract additional research interest | Research permit applications and reports | Sustained research interest |
| 6. Identify exceptional research results for rapid visitor information product development | Public dissemination of high-quality research | Promotion of site values and attributes |

2.21 DATA MANAGEMENT

A key aspect of management planning and adaptive decision-making is access to reliable information captured through monitoring or recorded in incident books, reports, monitoring, research and other activities. That data needs to be stored, curated and interpreted to be effective. Much of the information shall be georeferenced, time-series data that is digitally stored and organized for rapid access through ICT, some as public domain information and some sensitive information only available to registered users (e.g. rare species numbers and locations). Formal establishment of a centre to ensure the maintenance and operation of the various databases, ranging from georeferenced inventories to address lists and catalogues (photos, publications, reports, assets, etc.), is central to the process. The responsibility should rest with a facility with the experience, specific interest, and infrastructure to maintain and update a data management system, e.g. most elements are already in place at the Gobabeb Centre. It is important to note that these databases can and should be housed at different institutions as ICT access allows rapid extraction over long distances, while distribution improves archival survival. Key storage and access points should be at MET Headquarters, MET Library, Ganab, Sesriem/Zais, Gobabeb, and the National Archives. Additional data storage may occur elsewhere. It should also be noted that storage and access does not necessarily require on-line servers as the same function may be achieved by regularly updated storage devices, e.g. external hard drives.

| Actions | Monitoring | Output |
|--|--|--|
| 1. Develop an accessible and user-friendly Information System and meta database to store and manage data and information | ToRs for Information System development and contractor appointed | Data readily available to authorized users |
| 2. Generate templates to produce annual and other periodic reports that impart key information, maps and figures | Decision on format for standardized reports | Improved access to current information |
| 3. Ensure data security through a distributed archival system and formal agreements regarding information access | Data storage and management agreements with reputable institutions | Archival data security |
| 4. Conclude data management agreement with the Gobabeb Centre or other experienced, dedicated stakeholder | ToRs for Information system management and contractual agreement | Sustainable data management |
| 5. Include provision for regular updates of | Regular reports on | Improved information |

| | | |
|---|--|-------------------------------|
| website, displays, stakeholder news briefs, and standardized reports in data management agreement | different aspects include current data | dissemination to stakeholders |
|---|--|-------------------------------|

2.22 AWARENESS AND PROMOTION

The Namib Desert is one of the best researched and most accessible arid areas globally. However, despite the number of popular and academic publications available to the public, information transmission is poor and mostly reliant on the efforts of visitors themselves. Visitor guides and tour operators are poorly trained and often ignorant in specific aspects relating to the Namib, while information centres at entry points and in close vicinity to popular destinations have been dismantled. Addressing the poor state of on-site information will be prioritized. Improving the quality of information to visitors shall not only add to the overall visitor experience and satisfaction, but will also assist in visitor management through self-policing by visitors. Reliable and regularly updated information shall also foster resistance to consumptive, invasive and unsustainable tourism products that will encourage tourism entrepreneurs to develop specialized ecotourism packages. Good quality information products such as displays, booklets, DVDs, websites, posters, brochures, maps, and signage can be rapidly produced to address the situation. A valuable management contribution from such products would be to engage visitors and their guides in on-going monitoring activities. It should be noted, however, that the public service system of competitive pricing often results in contracts awarded to service providers that simply regurgitate information from visitor guidebooks and dated popular publications. Part of the process should therefore be to ensure that current research results are translated into accessible information for the lay person. Improved training of tour guides at national and local levels is also required for which the engagements of training institutions such as the Gobabeb Centre, NATH and the Polytechnic of Namibia is required. Improved training of guides shall ensure that they create exceptional field experiences for tourists by sharing their knowledge in interesting and stimulating ways.

| Actions | Monitoring | Output |
|---|---|---|
| 1. Develop and open information centre at Sesriem with duplication of information products to other tourist information centres | TORs developed and contractor appointed to develop information products | Improved information on qualities of the Namib Sand Sea |
| 2. Develop information boards, concise tourist information (pamphlets, maps) and improved signage for key destinations | Roll-out plan for improved tourist information products | Information products more widely distributed |
| 3. Register and develop Namib Sand Sea web site with a web interface for SQL data input and access to public data | Web site established by 2013 and regularly updated | International access to information |
| 4. Develop registration process for tour guides with associated guidelines to encourage improved guide training | Specific training courses for tour guides | More knowledgeable tour guides and better information to visitors |
| 5. Identify kind and numbers of world heritage signage required for installation | Erection of signage at different entry points and main routes | Appropriate marketing of prospective World Heritage status |
| 6. Develop visitor survey tools to record visitor perceptions, understanding and appreciation of the Namib Sand Sea | On-going visitor survey | Assessment of visitor experience |
| 7. Develop an appropriate international | TORs developed and | Specific marketing of |

| | | |
|---|--|---|
| marketing strategy in consultation with the Namibia Tourism Board | contractor appointed to develop marketing and advertising strategy | the Namib Sand Sea as a prime tourist destination |
|---|--|---|

2.23 ENVIRONMENTAL EDUCATION

The wealth of available knowledge and ready access to distinct ecosystems offers unprecedented learning experiences to visitors, scholars and schools. Aspects of astronomy, geology, geomorphology, climatology, hydrology, zoology, botany, arid-zone ecology, adaptive evolution, palaeontology, archaeology, cultural and industrial development, conservation, sustainable resource exploitation and many other fields are remarkably clear in this environment. However, effective environmental education requires dedicated staff with experience and a proven approach. The Gobabeb Centre pioneered environmental education at a range of different levels that was followed by a number of other organizations to exploit opportunities in environmental education. Attempting to duplicate the extensive experience and established educational programme of the Gobabeb Centre or the other environmental education centres in different regions around the Namib Sand Sea is unnecessary as the various programmes that are in place shall continue. The focus should therefore be to ensure a supportive environment for environmental education centres that continue to benefit conservation, primarily by encouraging and commissioning the development of appropriate educational materials, ensuring that up to date information reaches institutions, and by encouraging staff to participate in environmental education through lecturing, escorting groups and facilitating entry to popular destinations.

| Actions | Monitoring | Output |
|--|--|--|
| 1. Disseminate information products developed for visitor information centres to local schools and environmental education centres | Distribution programme | Improved environmental education on the Namib Sand Sea |
| 2. Develop information booklet for schools and education centres on values and attributes of the property | TORs developed and contractor appointed to develop booklet | National appreciation of the values of Namib Sand Sea |
| 3. Gobabeb Centre to maintain an address list of environmental education and information centres for dissemination of information gleaned from monitoring and research | Regular distribution of information updates | Effective information dissemination |
| 4. Improve reduced entry fee permit process for approved environmental education and youth training programmes | Approved list of education institutions, MoF approved entry procedures | Greater accessibility for educational purposes |

2.24 TRAINING

Appropriate training of management personnel is an on-going operational requirement to ensure that knowledgeable staff is in place to account for the inevitable mobility of staff through promotions, retirement, resignation or other causes as well as to effectively execute new responsibilities or operational procedures. The primary training of staff is at appropriate institutions such as the Polytechnic of Namibia or University of Namibia, supplemented through in-service training modules at their stations or specific training courses. These shall continue through the established procedures of the MET. This training, however, does not necessarily

provide the specific information or address practical challenges that may be confronted. Plans to establish a staff training facility at the Escourt ranger station, where infrastructure is in place, should be expedited to host training courses. Syllabi need to be developed for practical aspects of conservation management such as fixing and maintenance of boreholes; constructing and installing site infrastructure such as tank stands, toilets, and route indicators; maintaining solar arrays and radio communication infrastructure; practical vehicle maintenance and off-road driving skills; fire fighting and other on-site disaster management techniques; techniques and procedures for carrying out monitoring and telemetry in the Namib; office procedures such as accounting and report writing; and law enforcement courses. That training centre may also serve the training needs of all other parks in Namibia and may thus require the appointment of a permanent training officer. In addition, induction courses on the Namib Sand Sea environment and ecological processes should be fast-tracked for new staff, including how to carry out regular data gathering for indicator monitoring. The Gobabeb Centre as the envisaged data management centre, with its vast experience in desert-specific training, is the most appropriate institution for focused induction training if suitable agreements can be reached. The development of Standard Operating Procedures that can be issued to all staff for rapid consultation should be a medium-term goal of staff training and operational experience.

| Actions | Monitoring | Output |
|---|---|--|
| 1. Operationalize the Escourt Staff Training Centre | Distribution programme | Improved environmental education on the Namib Sand Sea |
| 2. Develop syllabi and training manuals for practical in-service training on a range of topics. | Syllabi and training manuals | Improved in-service training mechanisms |
| 3. Conclude agreement for induction training on environmental processes in the Namib Sand Sea with an appropriate institution | All new appointments undergo induction training | Operational staff familiar with values and processes of the Namib Sand Sea |
| 4. Develop reference folder on Standard Operating Procedures that can be issued to all staff | Updatable Namib Sand Sea management manual in place | Rapid access to management procedures |

2.25 ANNUAL PLANNING AND MANAGEMENT PLAN REVIEW

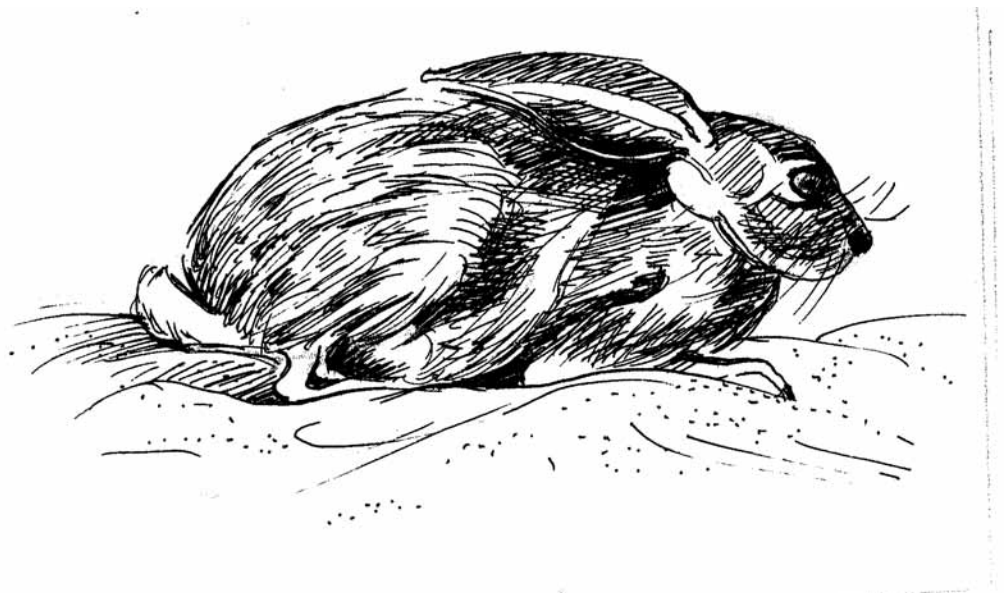
Effective implementation of the management plan requires annual cycles of planning for the preparation of annual work plans and budgets by operational staff. Annual work plans are the operational tools used by the staff to schedule their work, while the management plan is a medium-term planning document to ensure that the annual plans address strategic and long-term goals. This planning should be focused to exploit achievements and address limitations from the previous years, while also ensuring the scheduling of activities envisaged in the management plan and developing pro-active precautionary approaches to deal with emerging issues. Funds for implementing annual plans are released after approval of the national budget in April of each year, though the operational budget is usually known in January. Effective planning would therefore be best achieved during the first quarter of each year. Though rarely achieved, it is recommended that annual planning should be carried out in a workshop atmosphere that will allow staff to exchange ideas and recount achievements in a collegial atmosphere. The data management centre should also be represented to present the results of the monitoring process and any other important information, e.g. research and education outputs. The Chief Warden and Wardens are responsible to ensure that the management plan and annual plans are implemented and that legal requirements

regarding public finances, work scheduling and public administration are met. They should therefore jointly convene annual planning workshops and review the work of the past year. The Chief Warden, together with the higher management of the Directorate of Regional Services and Parks Management, is responsible for longer-term planning. The allocation of annual funds is guided by target sums set five years in advance through the Medium Term Expenditure Framework and annual projections of the availability of future revenue. Thus forward planning towards strategic objectives is essential as the base funding requires managers to meet identified performance targets. The Management Plan itself also needs to be thoroughly reviewed and, where necessary, revised, every five years. The next review is scheduled for 2016.

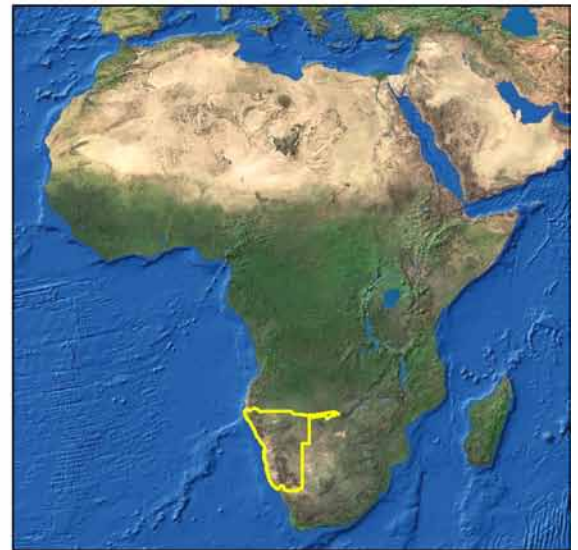
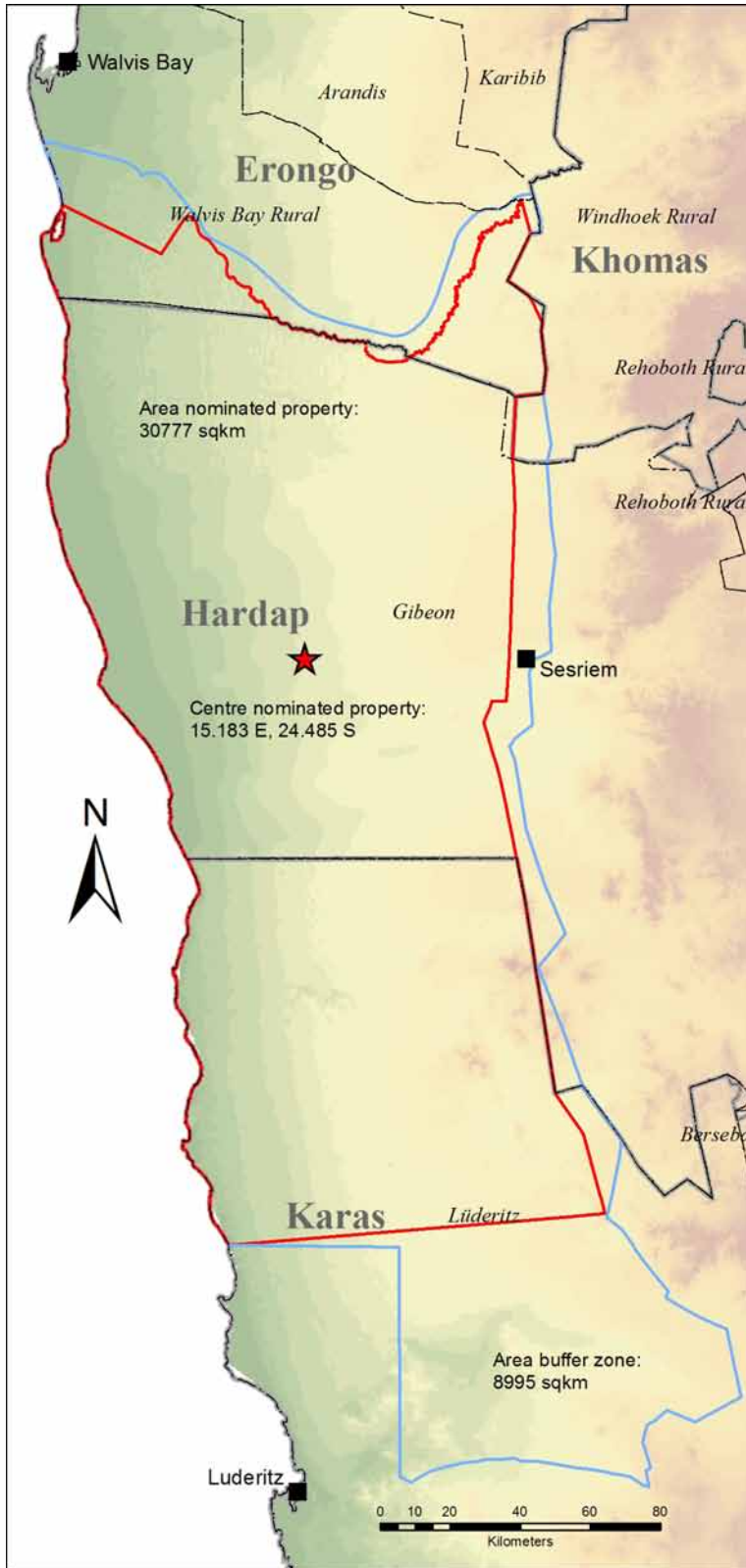
| Actions | Monitoring | Output |
|---|--|---|
| 1. Prepare annual reports by January regarding achievements, issues identified, and problems experienced during previous year | Annual reports, including analysis of monitoring data | Communication of management outcomes |
| 2. Schedule annual planning workshop for staff during first quarter | Annual plans from workshop | Improved joint planning and work scheduling |
| 3. Identify strategic issues to be addressed by management on on-going basis | Approved Addenda to management plan or improved guidelines or policies | Improved forward planning to address issues |
| 4. Hold management plan review workshops in 2016 in consultation with strategic stakeholders | Revised management plan available for approval in 2017 | Strategic management |

Annex 2

Maps

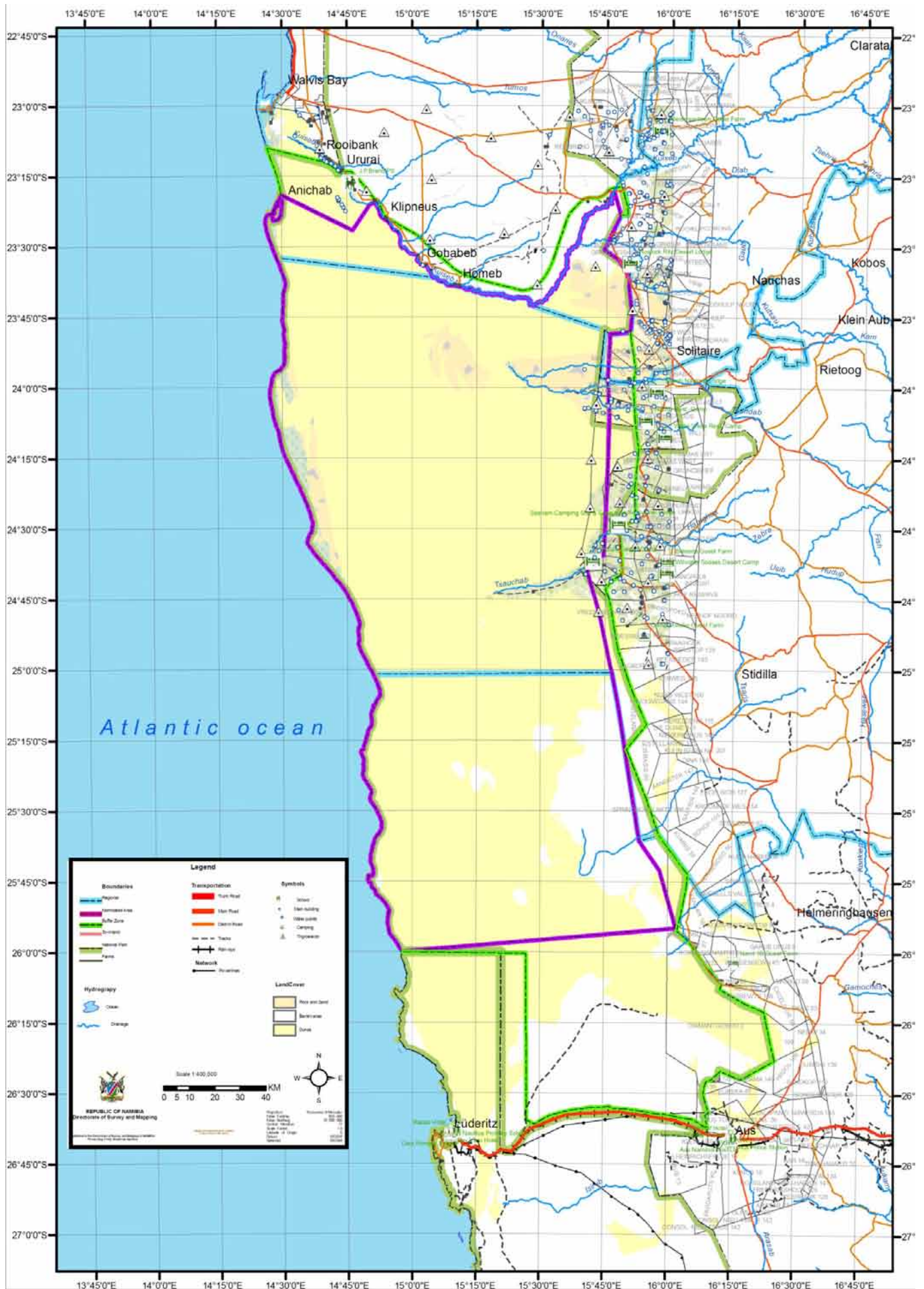


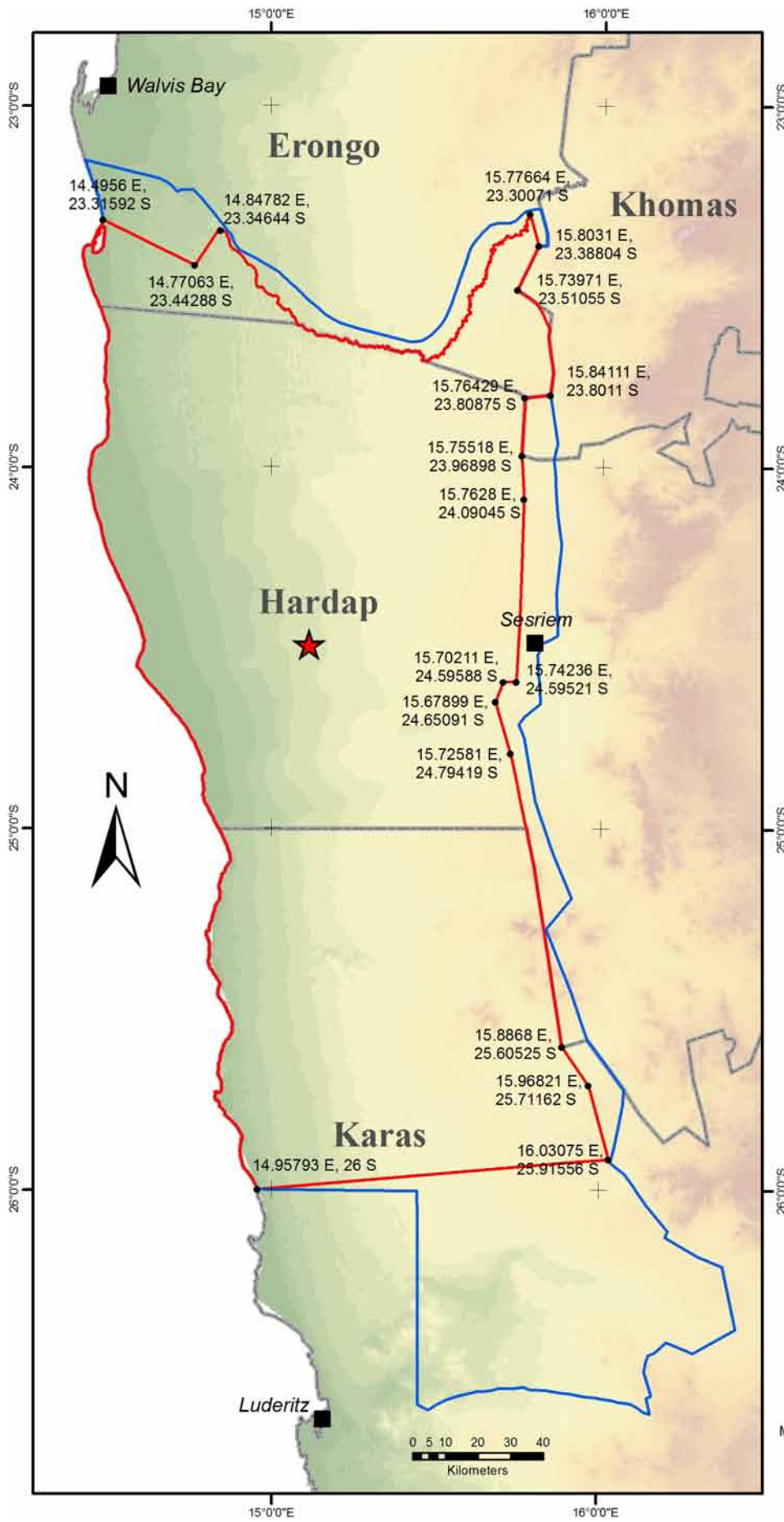
The nominated "Namib Sand Sea" within Africa and Namibia

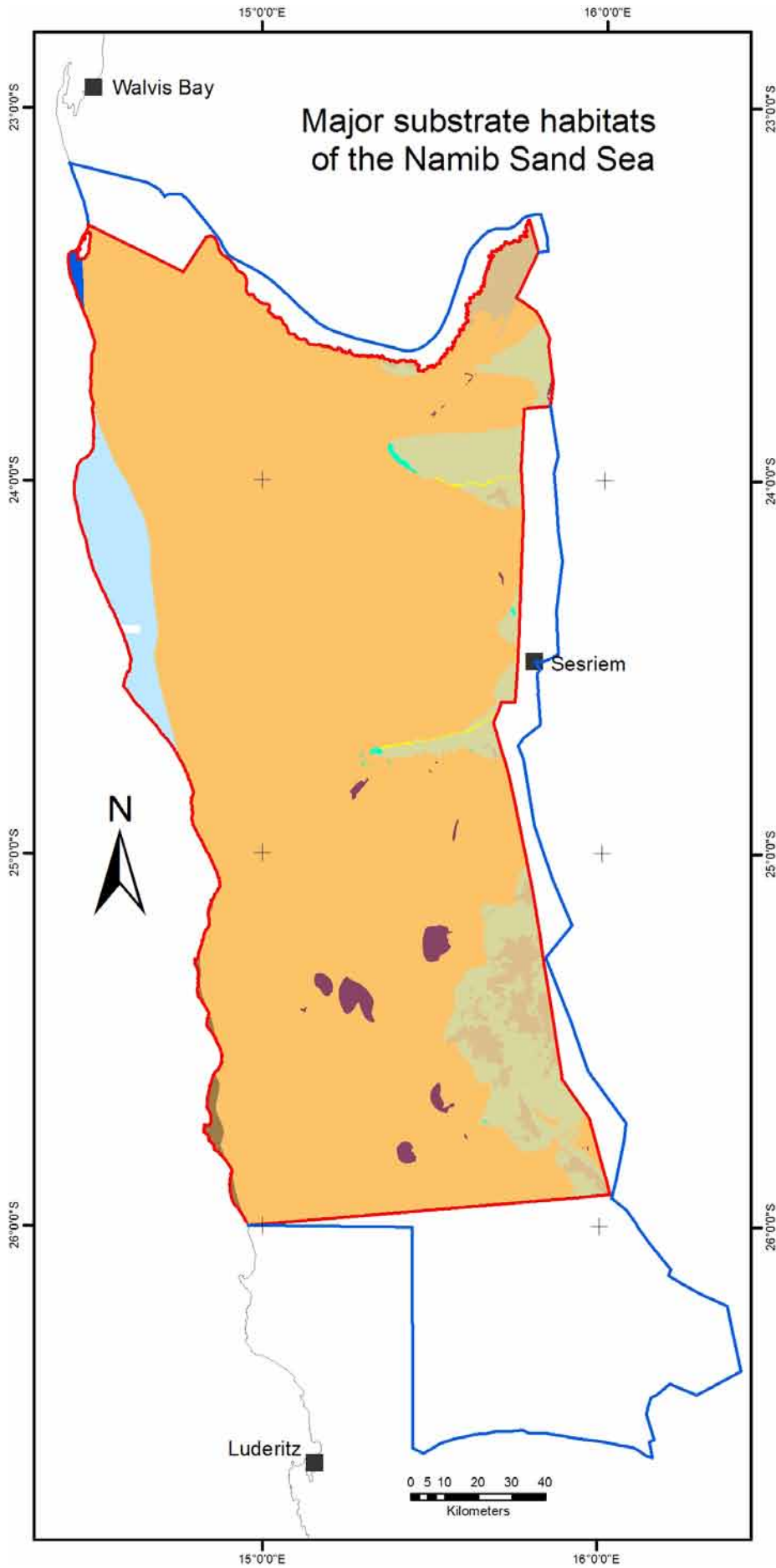


- Nominated property
- Buffer zone
- Karas** Regional boundary and name
- Gibeon* Constituency boundary and name

Digital elevation model: Atlas of Namibia (2002);
Satellite Imagery: ESRI Data & Maps (2004)
Map prepared by Geological Survey of Namibia
© Government of Namibia 2011







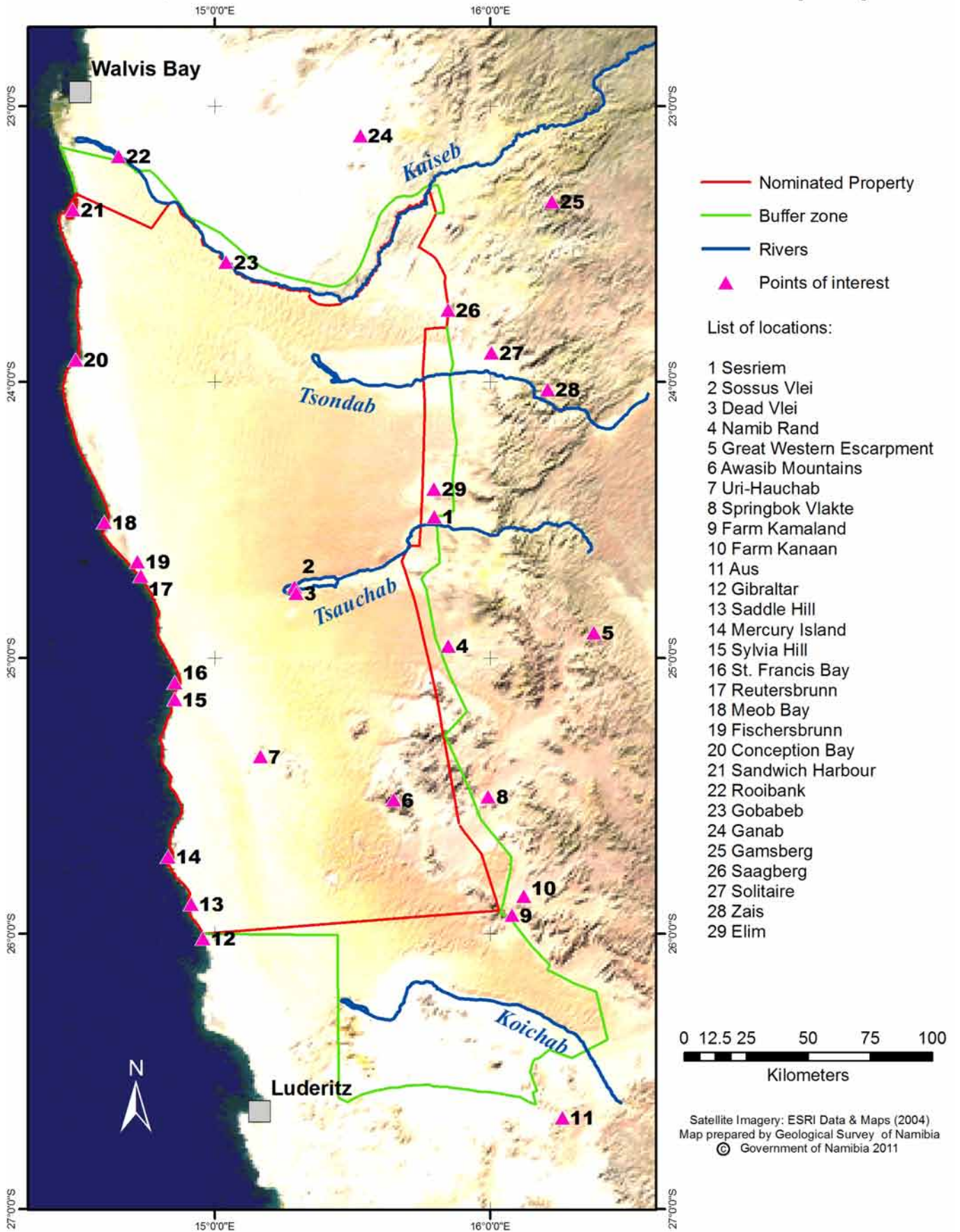
Centre of nominated property:
15.183 E, 24.485 S

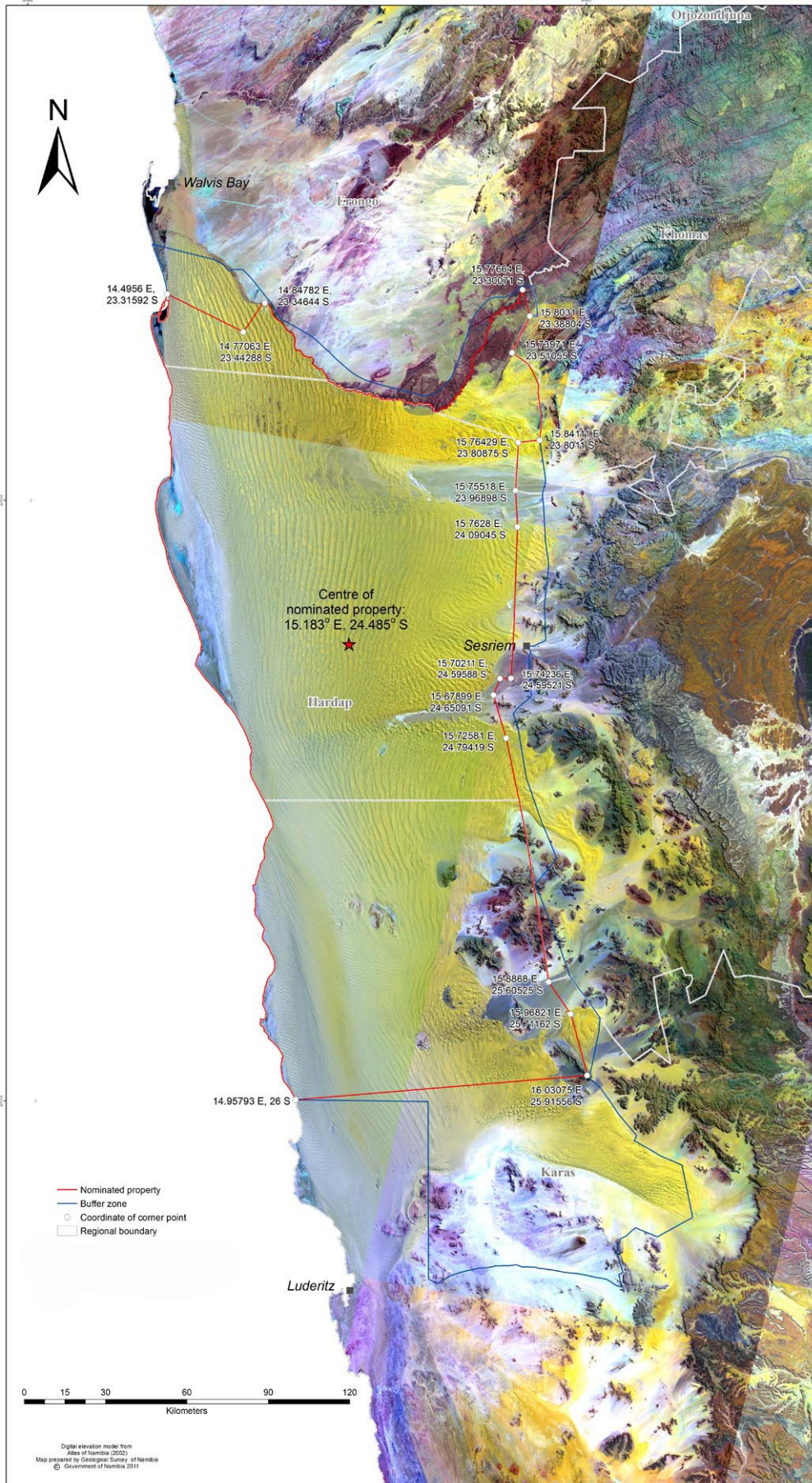
Area of nominated property:
30777 sqkm

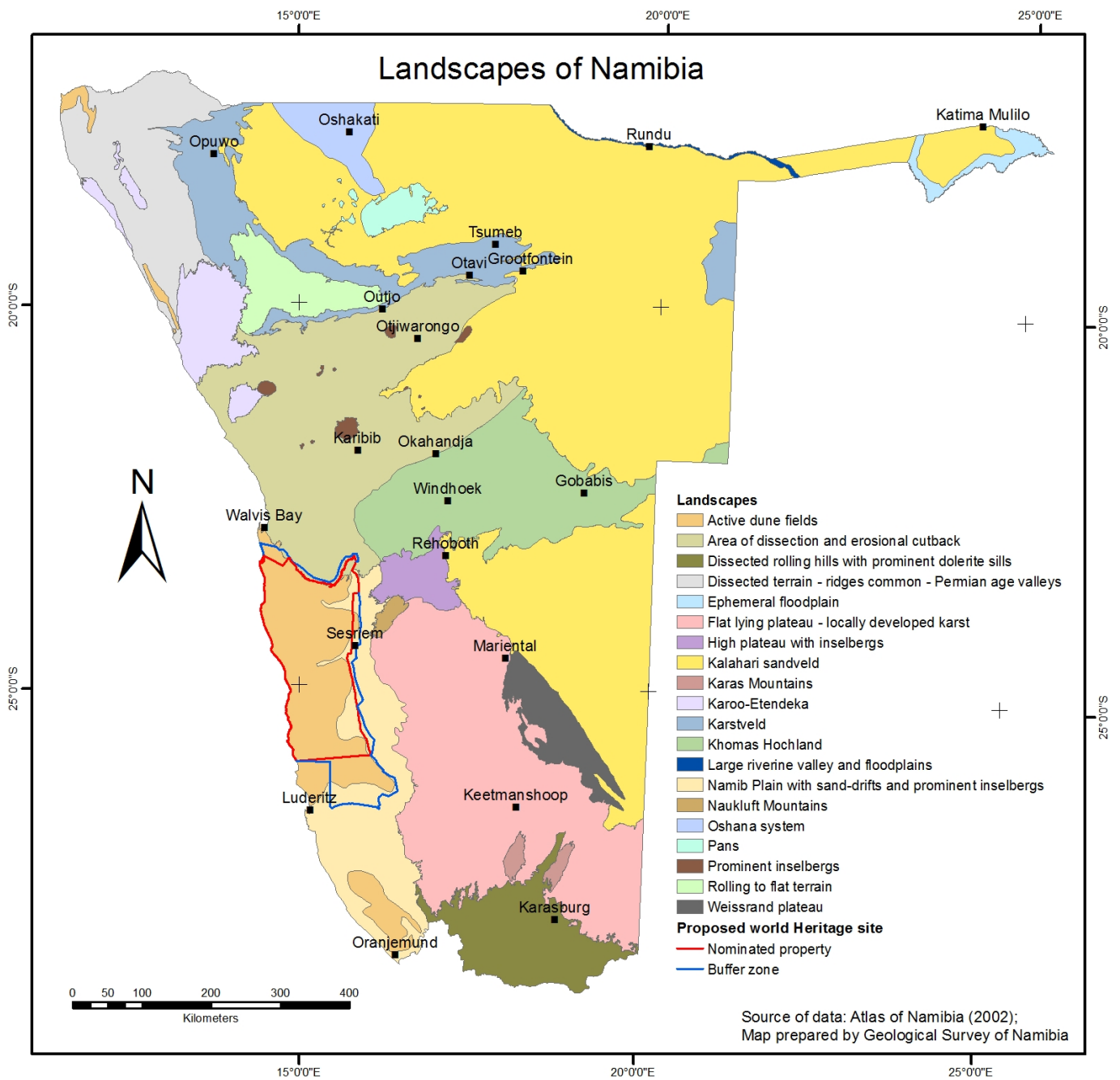
Area buffer zone:
8995 sqkm

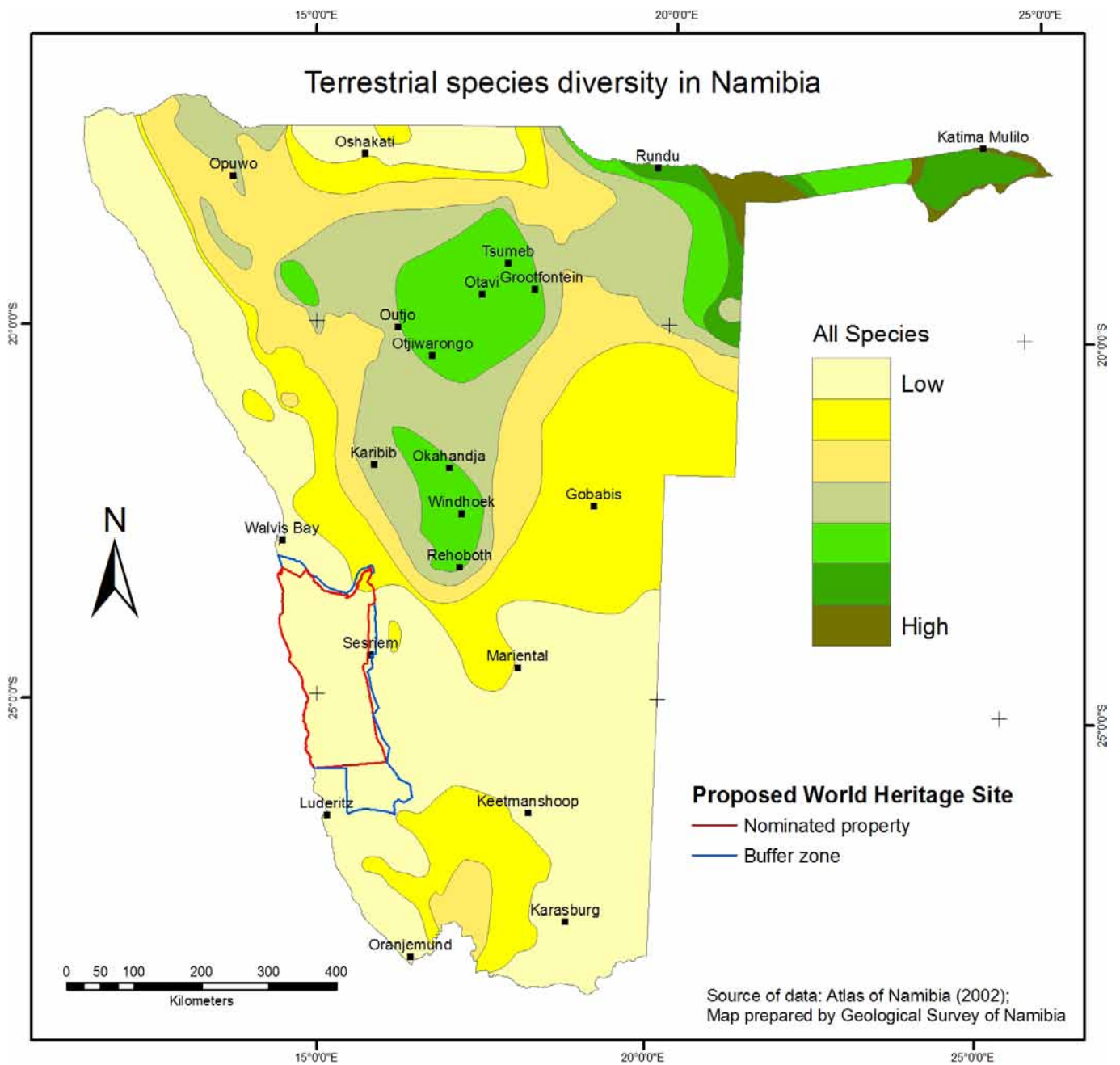
Based on composite Landsat 7 image
Prepared by Geological Surcey of Namibia
Data provided by
Gobabeb Training & Research Centre
© Government of Namibia 2011

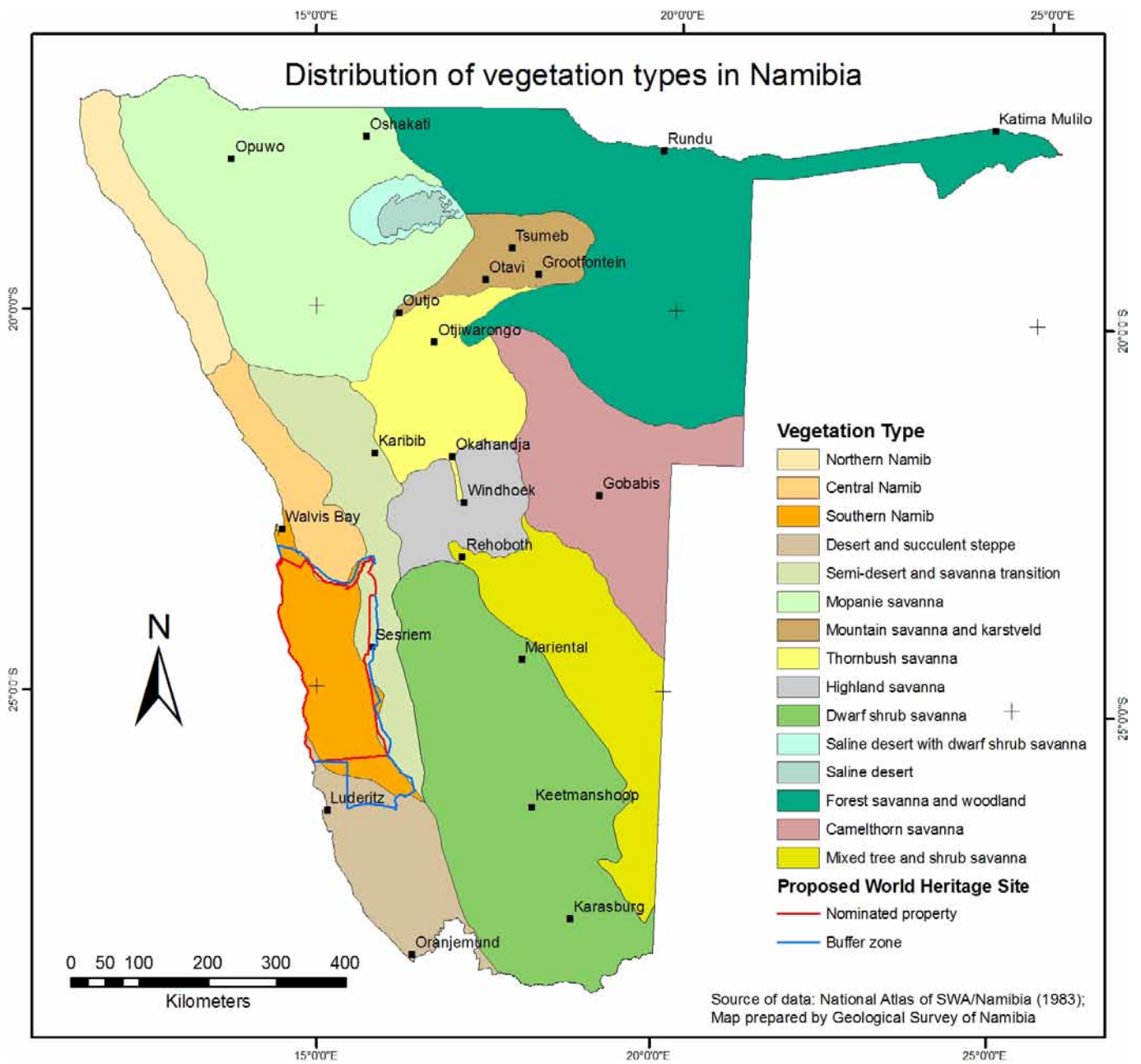
Places, rivers and areas within the Nominated Property

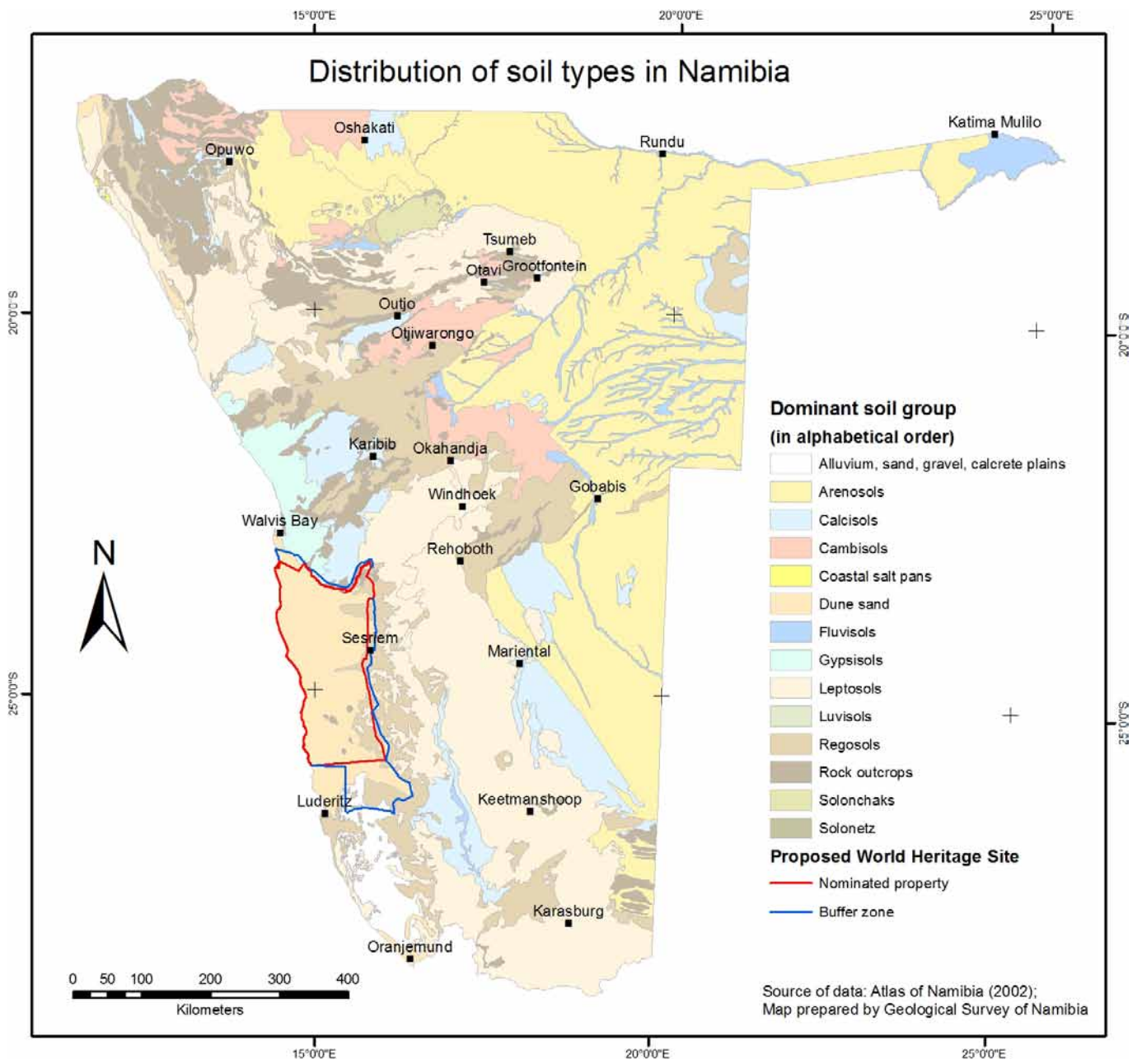


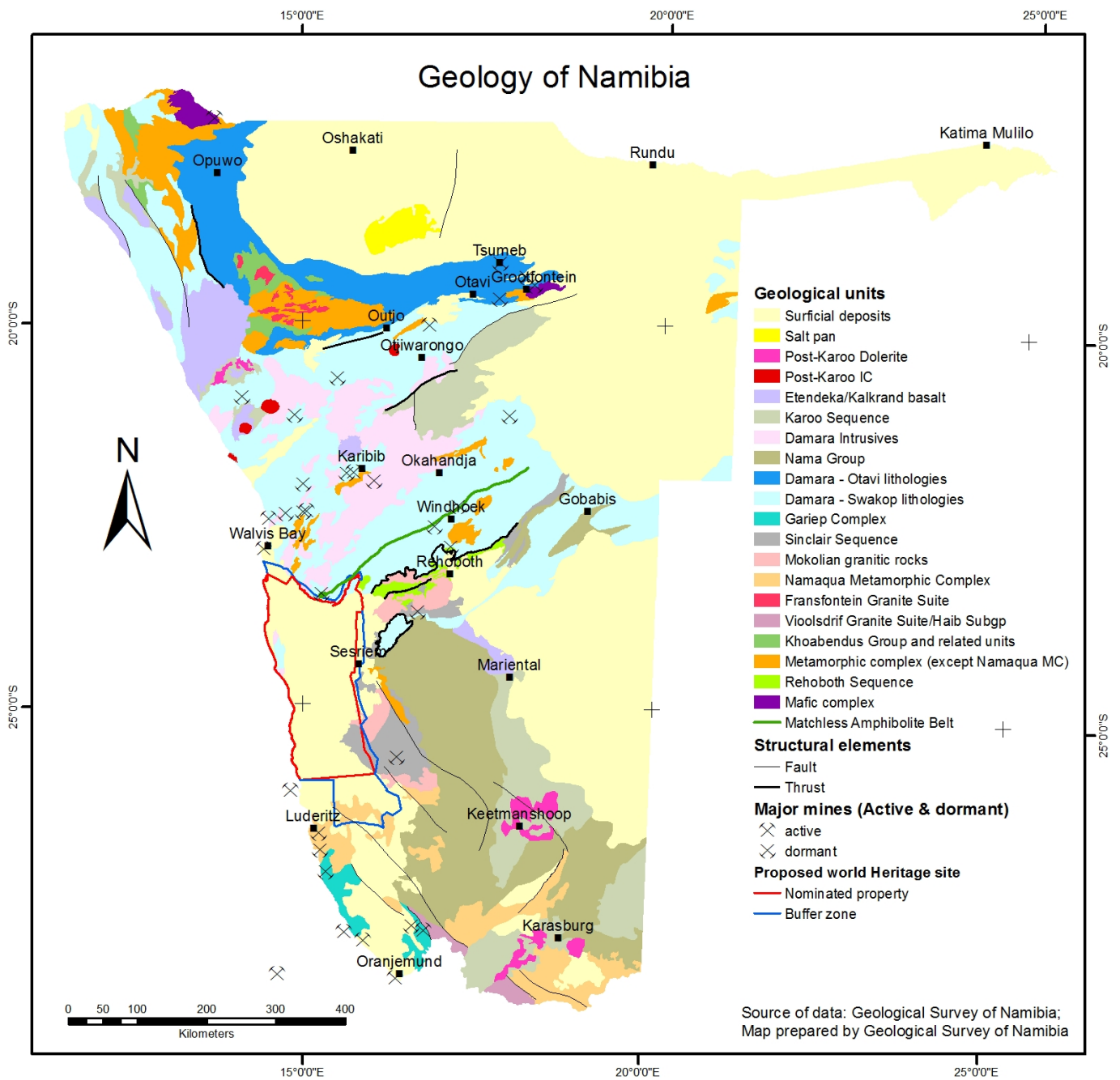


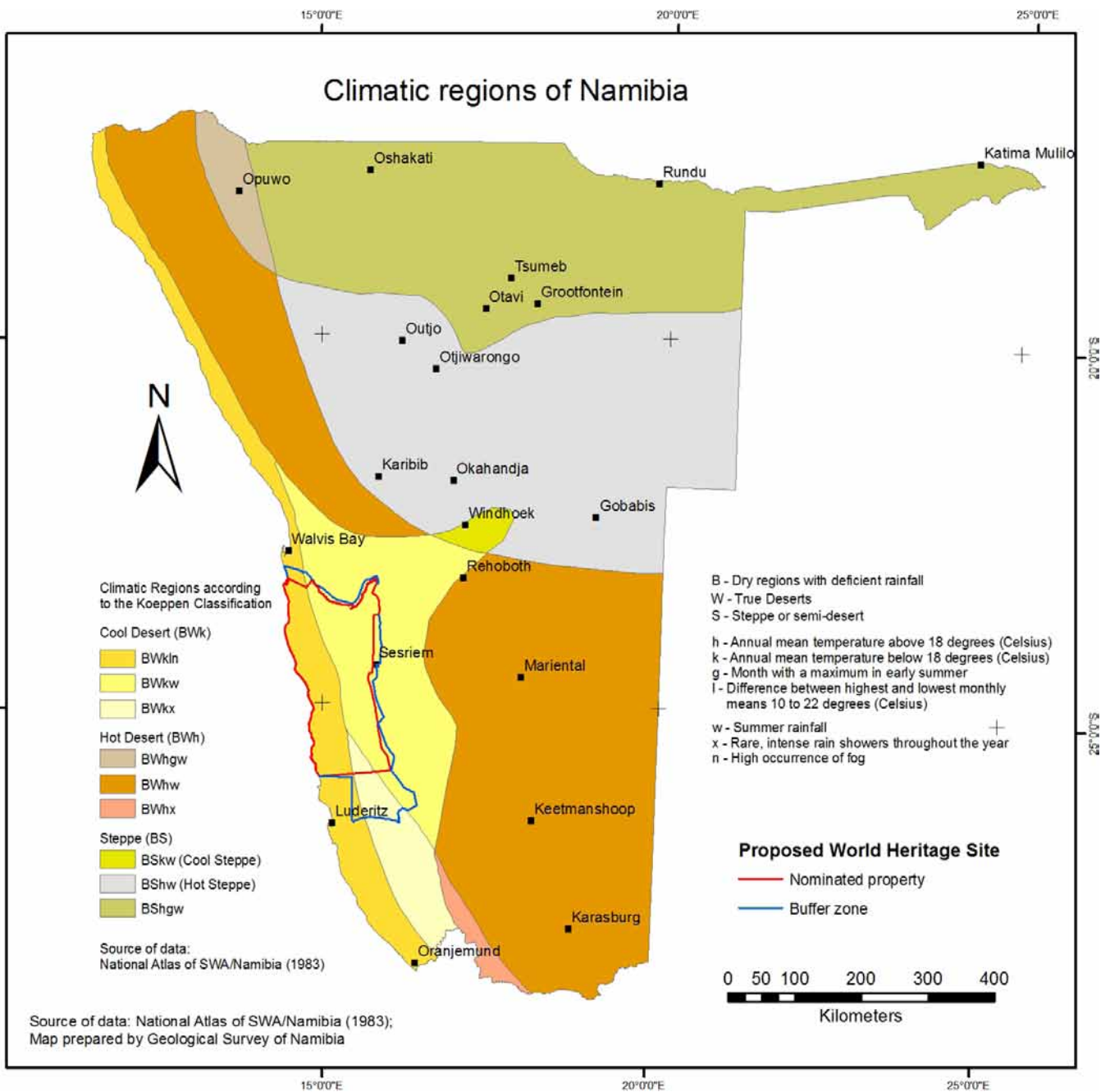


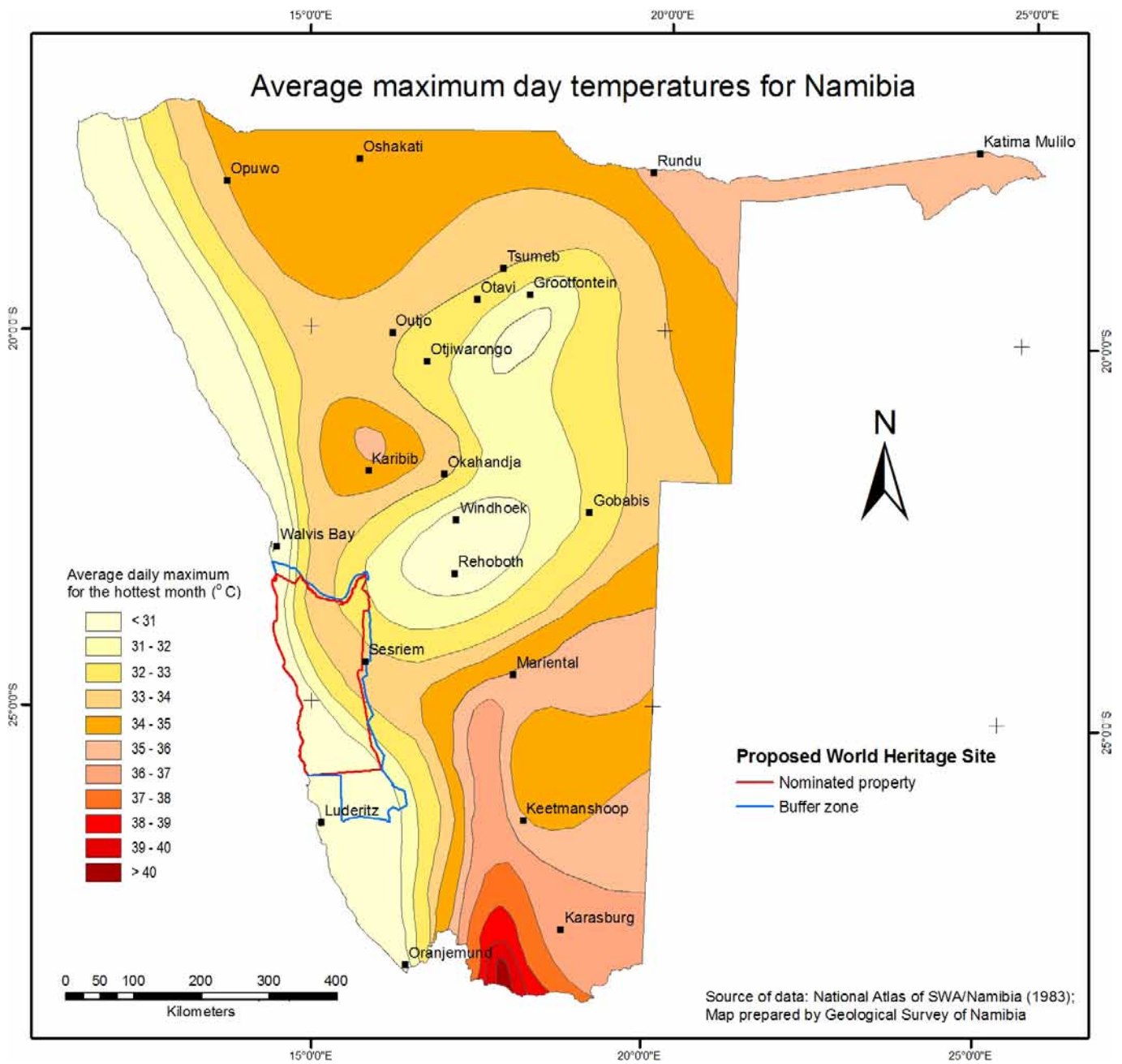


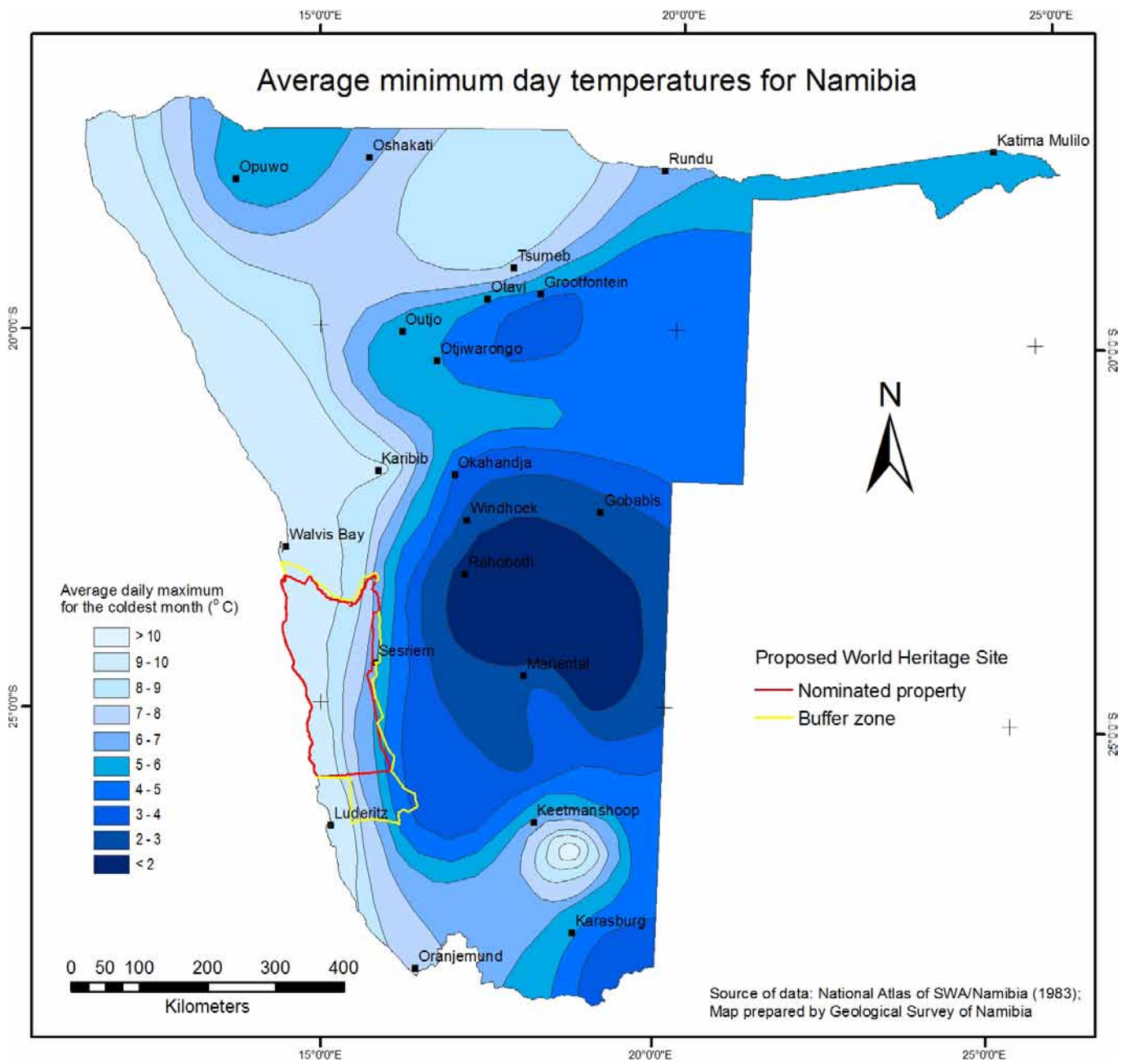


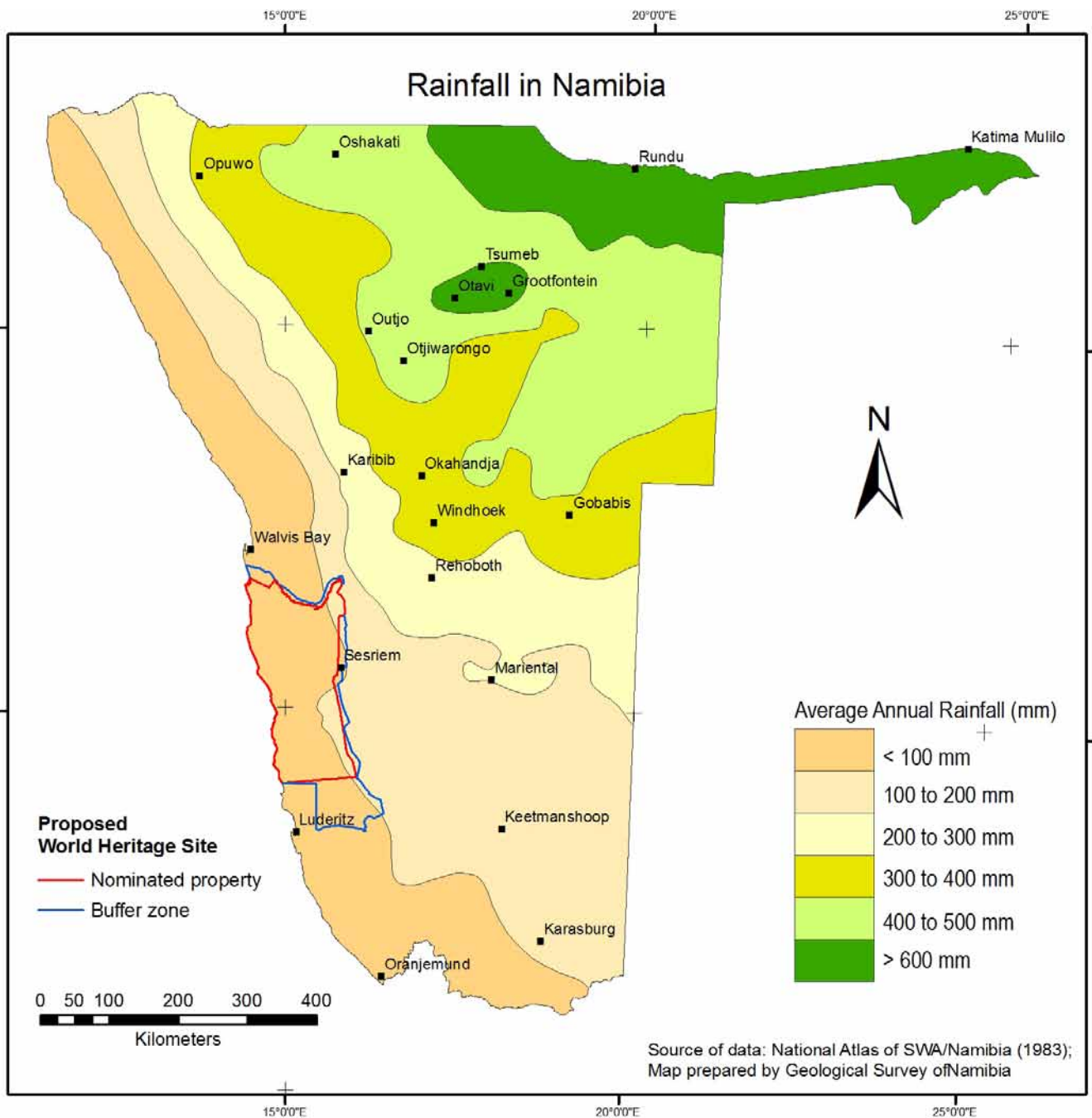




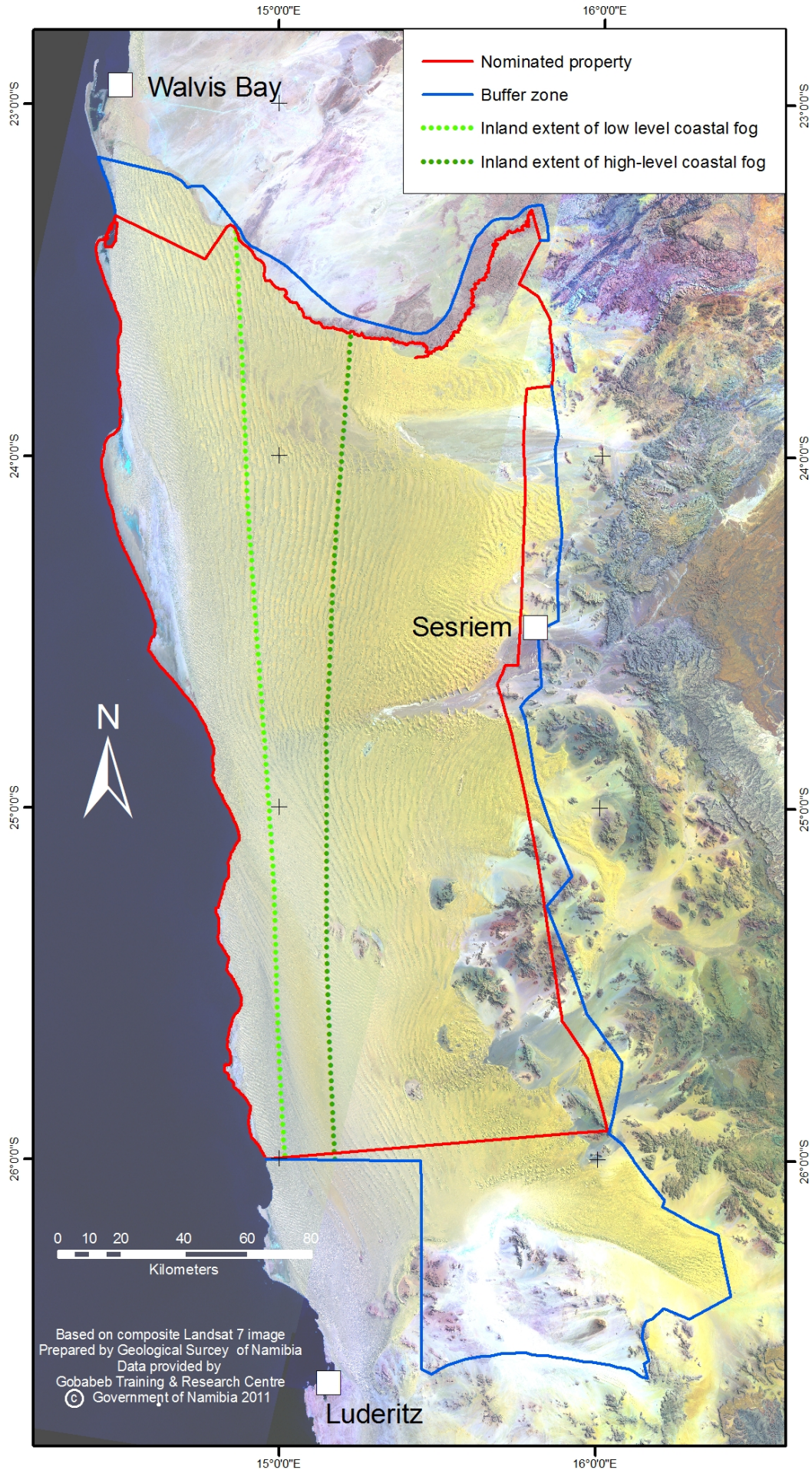






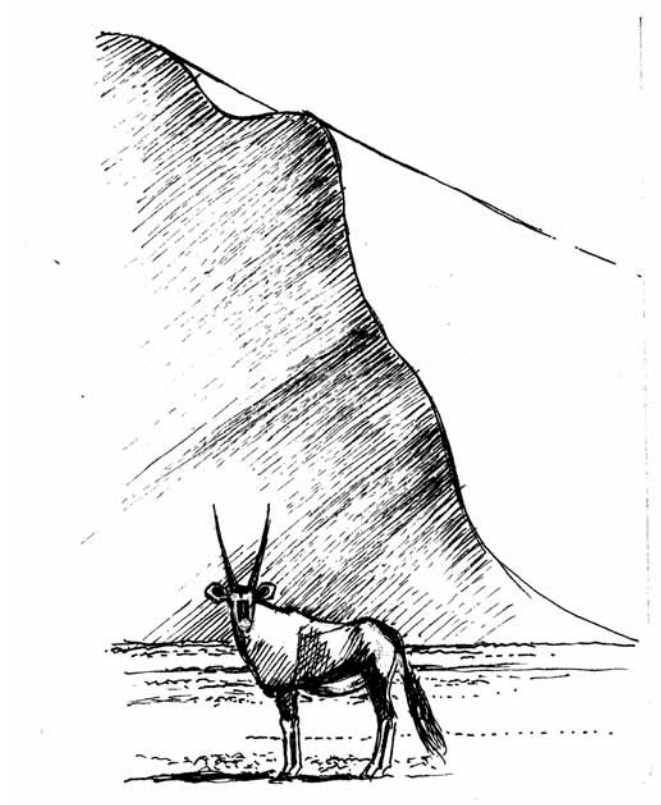


Generalised Limits of Coastal Fog over the Namib Sand Sea



Annex 3

Namib Sand Sea Comparison



THE NAMIB

Namib Sand Sea Comparison

Desert World Heritage Properties

World Heritage properties with earth science features of Outstanding Universal Value were listed by Dingwall et al. (2005). From these, Goudie and Seely (2011) identified eight **desert** World Heritage properties with earth science features of Outstanding Universal Value: Dinosaur Provincial Park (Canada), Grand Canyon National Park (USA), Ischigualasto/Talampaya Natural Parks (Argentina), Purnululu National Park (Australia), Tassili n'Ajjer (Algeria), Uluru-Kata Tjuta National Park (Australia), Wadi Al-Hitan (Egypt) and Willandra Lakes Region (Australia). The properties display a variety of geomorphological features ranging from fluvial features to sandstone and granite, mountains and plains. **Annex 1** lists these properties and their features (from Table 1, Dingwall et al. 2005).

A provisional assessment suggests that two properties can be identified as World Heritage properties with significant earth values, but which are inscribed on the World Heritage List for other reasons (Dingwall et al. 2005). Both properties, Air Ténéré (Niger) and Banc d'Arguin (Mauritania), are on the African continent and both were listed for their biodiversity values. Their geomorphological characteristics include plateaus, canyons, dunes and a volcanic massif as well as a coastal saline, mangrove swamp and salt marsh. **Annex 2** lists these properties and their features.

Three inscribed desert properties were not identified in the list of Dingwall et al. (2005). They lie in Africa (Lake Turkana, Kenya), Asia (Uvs Nuur Basin, Russia and Mongolia) and South America (Valdés Peninsula, Argentina) and their geomorphological features include: a rift valley lake, delta and active volcanoes, salt lakes and salt pans. **Annex 3** lists these properties and their features.

Five inscribed cultural properties with significant desert geomorphological values have been identified in South America, Asia and Africa: Humberstone and Santa Laura Saltpeter Works (Chile), Petra (Jordan), Rock-Art Sites of Tadrart Acacus (Libya), Tsodilo (Botswana) and Twyfelfontein (Namibia). Their geomorphological features include nitrate (caliche) deposits, weathering of sandstone, rock domes and ancient dunes. **Annex 4** lists these inscribed cultural properties and their outstanding features.

State Parties have filed Tentative Lists of potential World Heritage sites in their territories. Due to both changing information and lack of detail in some Tentative List entries, it is not possible to present a completely exhaustive review of all Tentative List sites relating to deserts that have been put forward by State Parties. However, seventeen desert landscape sites were identified by Goudie and Seely (2011) which have been included by State Parties on their Tentative Lists. Two are suggested in the Tentative Lists as possible mixed properties, two as cultural properties

and the remainder as natural properties. In terms of location, six are in Asia, eight in Africa and three in South America. The geomorphological characteristics cover a wide variety of forms. **Annex 4** lists these Tentative List sites. It should be noted that, due to the ever changing nature of notified Tentative Lists, this range of properties will vary over time, and is likely to have varied at least slightly since the above analysis was completed.

It is evident from this survey that there are very large gaps in the coverage of desert landscapes and geomorphological features in existing World Heritage properties. In particular it is clear that the most distinctive landforms and land forming processes of deserts - aeolian features - are not reflected in the World Heritage List. This is the case for dunes, yardangs, pans, dust sources and coastal sabkhas, and this is also true for weathering forms and various types of crust, rind and varnish and for desert karst features, tufas, various Quaternary phenomena (e.g. ancient river systems and pluvial lakes) and some highly important fluvial phenomena, including alluvial fans, pediments and debris flow phenomena.

The significance of the Namib

The proposed Namib Sand Sea property is therefore of great significance. It has benefitted from an extended period of detailed desert research based at the Gobabeb Training and Research Centre, which has made it one of the best known locations for the study of desert landforms. There is now a remarkable body of information available, much of which has now been incorporated into a digital data base (Livingstone et al., 2010)

The modern Namib Sand Sea is underlain by a fossil desert of Tertiary age, represented by the lithified Tsondab Sandstone. This is one of Earth's greatest spreads of aeolianite, and it preserves a very long history of aeolian sedimentation and of environmental information (as indicated by the organic remains preserved within it). The Tsondab Sandstone Formation is indeed a truly remarkable phenomenon. It is a red brown rock, up to 220 m thick, which underlies great tracts of the modern Namib Sand Sea and beyond (Ward, 1988). Large parts of the Tsondab Sandstone are dune materials (Kocurek et al. 1999), though there are also materials that must have been laid down in salt lakes and in ephemeral rivers. The aeolian deposits appear to have formed under a similar wind regime to that of the present. They also contain the fossilized tracks of termites and golden moles that live in the Namib today, together with lithified ostrich eggs. The cemented Tsondab Sandstone erg dates from at least the Lower Miocene, and overlies wind-sculptured Late Proterozoic rocks (Senut et al., 1994).

In addition, the Namib is one of the oldest deserts in the world, and there is sparse evidence of any very markedly wetter conditions since the early Cretaceous. This again means that it is a superb exemplar of landform evolution under aridity. The existence of arid conditions in the Namib must have been controlled to a considerable extent by seafloor spreading leading to the opening up of the seaways of the Southern Ocean as Africa and South America split apart in the late Jurassic and early Cretaceous around 130 million years ago. In addition, the movement of Antarctica to the South Pole, and the resulting initiation of the offshore, cold Benguela Current (Goudie and Eckardt, 1999) were important. The precise date of the birth of this aridity in the Namib has, however, been a matter of some controversy though its great antiquity in comparison with many of the world's deserts seems clear. Ward et al. (1983) said (p. 182) that "A review of the Late-

Mesozoic-Cenozoic geology leads us to conclude that the Namib tract, which dates back to the Cretaceous, has not experienced climates significantly more humid than semi-arid for any length of time during the last 80 million years". The Namib is not unique in terms of its aridity, and the Atacama, for example, has been dry since at least the Miocene.

The Namib also contains the full range of dune types (barchan, transverse ridge, shrub coppice, obstacle, linear and star) (Lancaster 1989), excellent examples of the ways in which river courses can be blocked by dunes (as at Sossus Vlei), clear illustrations of the interactions between dune occurrence and coastal lagoon and sabkha evolution (as at Sandwich Harbour), great spreads of calcretes, gypcretes (Watson, 1979; Watson 1985, Watson, 1988; Wilkinson et al., 1992; Eckardt and Spiro, 1999; Eckardt et al., 2001), massive spreads of tufa (Viles et al., 2007), and many examples of granite weathering and inselberg and pediment formation (Goudie, 1972).

Of particular importance is the role of the Namib for illustrating a large range of dune forms, their relationship to wind regimes, their sources of sediment, their antiquity, their relationship to river systems, and their changing colour from the coast to inland. The dunes in the area have also been seen as potential analogues for Mars (Bourke and Goudie, 2009).

At the coast crescentic dunes are dominant, including highly mobile barchans (Slattery, 1990; Barnes, 2001). Their horns point in the direction of movement, they have steep slopes (c 32 degrees) on their lee sides and gentler slopes (2-10 degrees) on their windward (stoss) sides, they have an ellipsoidal shape in plan-view, and have formed in response to the strong unidirectional (SSW) wind regimes that are prevalent in the coastal zone.

The heart of the sand sea is dominated by linear dunes that are associated with more bi-directional wind regimes (SSW-SW and NE-E). The former winds blow inland from the South Atlantic Ocean and the latter sweep down the Great Escarpment from the interior. The dominant annual sand movement appears to be from the south. The spacing of the linear dunes varies through the sand sea. It is greatest in the central regions at 1800-2500 m, whereas in the southern parts these dunes are generally spaced at 1500-2000 m. The dunes are mostly between 600 and 900 m wide and between 50 and 150 m high. They are the dominant dune form in the sand sea. These dunes are notable for having been the subject of detailed studies of their movement history since the 1980s (Livingstone, 1986, 1989, 2003), of the pattern of wind flow and sand movement over the dune surface (Livingstone, 1988) and for the recent examination of their internal structures using Ground Penetrating Radar (Bristow et al. 2007).

Star dunes, characterised by their pyramidal morphology and radiating sinuous arms, are associated with complex, multidirectional wind regimes (SW-WSW, NE-E and N) that occur along the sand sea's eastern margin, close to the Great Escarpment. The dunes are highest and most widely spaced in the central and some northern parts of the erg, with progressively lower and more closely spaced dunes towards the margins. Some of the star dunes, including those in proximity to the much visited Sossus Vlei, are well over 150 m high, and some may reach heights of 200-300 m, making them some of the largest dunes in the world, only exceeded perhaps by those of China's Badain Jaran Desert (Yang, 2001).

The colour of the dune sand of the Namib shows clear spatial trends. In coastal areas dominated by crescentic dunes the sand is yellowish brown to light yellowish brown, whereas in eastern areas it

becomes a very striking yellowish red, a shade that would not disgrace a ripe apricot. Similar trends have been noted elsewhere (as in the Rub Al Khali of the United Arab Emirates) but it is in the Namib that some of the most detailed studies of this phenomenon have been undertaken (Walden and White, 1997; Walden et al., 1996).

The Namib is also an excellent example of a coastal desert, marked by extensive fog precipitation, which plays an important role in rock weathering, especially by salt, which appears to be a very rapid cause of rock decay (Goudie and Parker, 1998; Goudie et al. 1997). Fog occurs on over 100 days in the year in the area around Swakopmund. This precipitates appreciable amounts of moisture (c 34 mm per year at Swakopmund) and rather more on some of the interior inselbergs. However, notwithstanding the fogs, it is also one of the world's driest deserts. Rainfall at the Namibian coastal resort of Swakopmund averages a mere 10-20 mm per annum, but increases towards the base of the Great Escarpment, where it may exceed 200 mm. Perhaps only the Atacama and the Libyan Desert are drier, and so it is a good exemplar of the geomorphological role of extreme aridity. It also shows a sharp temperature and precipitation gradient as one moves inland, and this too has significance for illustrating climatic controls on weathering processes and phenomena (Viles, 2005; Viles and Goudie, 2000, Viles and Goudie, 2007). This part of the Namib is also being used to study potential Martian weathering analogues (Bourke and Viles, 2007).

Conclusions

The existing World Heritage List has relatively few desert properties, and those that exist are not noted for the development of their dune forms. The proposed Namib property has been the subject of intensive research, and it is apparent that in global terms it is notable for:

- (1) Its fogginess, aridity and clear climatic gradient inland, which makes it an ideal location for testing the way in which weathering processes operate in deserts
- (2) Its antiquity, which though not unique, is substantial
- (3) The ancient aeolianite erg that underlies the modern erg
- (4) The presence of a comprehensive suite of well-developed dune forms that make it an ideal model to study dunes in the context of a whole erg
- (5) The relationships between dunes and rivers and dunes and coastal structures
- (6) The pattern of colouration across the erg
- (7) The size of some of its dunes, which are among the highest in the world
- (8) The utility of the Namib as a model for some of the aeolian and weathering forms on Mars
- (9) The long term data that are available on rates of dune crest migration

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Annex 1: World Heritage properties with earth science features of Outstanding Universal Value (from Table 1, Dingwall, Weighell, Badman, 2005)

| WHS Name | Country | Mean annual rainfall | Desert type | Desert Classification | Geomorphological features | Reason for listing | Cultural significance | Research and facilities | Biodiversity significance | Vegetation type | Vegetation richness | Degree of endemism | Fauna - vertebrate | Faunal richness | Degree of endemism | Fauna - invertebrate | Faunal richness | Degree of endemism |
|---------------------------------------|-----------|----------------------|-------------|-----------------------|---|--------------------------------|---|--|---|---|---|---|--|--|---|----------------------|-----------------|--------------------|
| Dinosaur Provincial Park | Canada | 406 | Semi-arid | Grassland | Badlands; fluvial erosion patterns | Fossil beds | Archaeological sites of native 'Plains Indian Culture' | Long-term palaeontological research; geomorphic process research in drainage basin | Fossil fauna deposits | Grassland; cottonwood riparian | Badlands provide habitat for number of ecologically specialised plant species | Cottonwood Riparian most endangered in semi-arid regions; 10 species threatened or at limit of ranges | Many dinosaur remains | 38 species of dinosaurs; 150 birds, 1 toad; critical winter range for native ungulates | 7 birds locally threatened or at their biogeographical limits | No comment | No comment | No comment |
| Grand Canyon National Park | USA | 210-440 | Semi-arid | Mountain desert | Canyon; Groundwater action; long-term slope evolution | Deeply Incised canyon | Prehistoric ruins attraction; outstanding private development in natural attraction | Major studies in geology, archaeology, fire management, sociology, ecological impacts and fauna and flora; resource study collection | Forest and game reserve originally | Five vegetation types; Desert cactus to spruce and pine | 1500+ including representatives of 5 of 7 life zones of North America | 11 threatened species in park; 15 species recommended for listing as threatened | No comment | 300+ birds; 76 mammals; 50 reptiles; 25 fish | 1 mammal and 1 reptile endemic to park; 3 rare or threatened birds; 2 threatened fish species | No comment | No comment | No comment |
| Ischigualasto/Talampaya Natural Parks | Argentina | <200 | Semi-arid | Temperate | Rivers and lakes; cliffs; badlands | Vertebrate fauna fossil site | Previously aborigines, Inca sites, rock art, no current inhabitants | Intensive research, recently by provincial universities where major displays exist; no facilities in the park | Fossil site, vertebrate fauna during Tertiary | Xeric shrubs and cactus, mesquite | 172 species; 6 with special value; 100 fossil plants | No statistics | No comment | 20 mammals, 36 birds, 20 reptiles and amphibians | No comment | No comment | No comment | |
| Purnululu National Park | Australia | 500-700 | Sub-humid | Hot | Sandstone tower karst | Natural site, aboriginal title | Aboriginal Australians; restricted pastoralism | Various geographical, social, botanical research visits and publications | Vegetation reflects transition location | Northern tropical savanna to inland arid desert | 17 vegetation communities; 653 species including 628 higher plants (597 native), 17 ferns, 8 lower plants | 2 regionally endemic grevilleas; centre of endemism for spinifex | Missing of tropical and desert species | 298 vertebrate species: 41 mammals, 149 birds, 81 reptiles, 12 amphibians, 15 fish | No comment | No comment | No comment | |

| | | | | | | | | | | | | | | | | | | |
|--------------------------------|-----------|-----|------------|-----|--|---|---|--|--|---|------------------------------|---------------------------|---|--|------------|---|-------------------------------------|------------|
| Tassili n'Ajjer | Algeria | 25 | Hyper-arid | Hot | Sandstone plateau, granite massif | Scenic and geological interest prehistoric cave art; floristic and faunal island of Sahelian life | 15,000 neolithic rock engravings and cave paintings; from 12,000 BC; sparsely inhabited by nomadic Tuareg | Experimental centre at archaeological site of Timenzouze; ongoing studies, natural resource inventories and conservation of rock art | Floristic and faunal island of Sahelian life in the middle of the desert; relict Mediterranean cypress | Sheltered Mediterranean and Sahelian flora; Sudanian riverine vegetation; endemic Saharan species | Species noted, no statistics | 28 plants rare in Algeria | Mediterranean and Saharan Palaeartic species; important for resting migratory birds | 4 fish species; 23 larger mammals (5 endangered) | No comment | Diverse invertebrate fauna with relict Afro-tropical and Palaeartic species | Large number of spiders and insects | No comment |
| Uluru-Kata Tjuta National Park | Australia | 310 | Semi-arid | Hot | Conglomerate mountains with sand plain | Aboriginal heritage, landscape, geology and arid desert eco-systems | Aboriginals; centre of local and religious significance; cave paintings | First expedition in 1894; many studies since 1930s: anthropology, climate, geology, hydrology, fauna and flora and major fauna survey in 1994 and 1995 | No comment | Hardy perennial grass, acacia, low trees in soil pockets; foothills with grasses and shrubs; fans and outwash alluviums support complex of open grassland, low trees and shrubs; Plains support dense groves with perennial grass understory; sand dunes with grass, eucalypts and acacias. | No statistics | No statistics | No comment | 22 native mammals; 150 bird species, 5 Australian reptile families represented; aestivating amphibians | No comment | Poorly known | No comment | No comment |

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|------------------------------|-----------|------|------------|-----|--------------------------------|--|--|--|------------------------------------|--|---------------|---------------|-------------|---|------------|------------|------------|------------|
| Wadi Al-Hitan (Whale Valley) | Egypt | 10.1 | Hyper-arid | Hot | Misc. | Fossil whales; Eocene fossil site; 25 genera of more than 14 families of vertebrates | Abandoned in historical times, Faiyum depression, continuous habitation from Neolithic | Various research visits and publications; regulated scientific exploration and specimen collection | Eocene fossil site, esp. whales | Barren; few shrubs | No statistics | No statistics | Very sparse | 19 reptiles, 36 breeding birds, few mammals | No comment | No comment | No comment | No comment |
| Willandra Lakes Region | Australia | 290 | Semi-arid | Hot | Pluvial lakes; dunes, lunettes | Dry lake basins | Human use sites for 30,000 years; currently 40 inhabitants | Considerable research; existing bibliography; benchmark study of changes in earth magnetism | Fossil remains of giant marsupials | Sparse scattered shrubs and woodlands interspersed with plains and dunes | No statistics | No statistics | No comment | 20 mammal species recorded | No comment | No comment | No comment | No comment |

Annex 2: World Heritage natural and mixed properties with significant earth science values, inscribed on the World Heritage List for other reasons (provisional assessment) (from Table 2 of Dingwall et al. 2005)

| WHS Name | Country | Mean annual rainfall | Desert type | Desert Classification | Geomorphological features | Reason for listing | Cultural significance | Research and facilities | Biodiversity significance | Vegetation type | Vegetation richness | Degree of endemism | Fauna – vertebrate | Faunal richness | Degree of endemism | Fauna – invertebrate | Faunal richness | Degree of endemism |
|---------------------------------|------------|----------------------|-------------|-----------------------|--|--|--|--|---|---|---------------------|--------------------|--|--|--------------------|---|-----------------|--------------------|
| Aïr and Ténéré Natural Reserves | Niger | 20-100 | Hyper-arid | Hot | Plateaus, canyons, dunes; volcanic massif | Sanctuary for Tuareg; 30,000 years of settlement; rock engravings and petroglyphs, pre-islamic tombs | Tuareg; 30,000 years of settlement; rock engravings and petroglyphs, pre-islamic tombs | Interest since 1850, mainly project visits; small, poorly-equipped laboratory at Iférouane | Outstanding variety of landscapes, plant species and wild animals | Sahelian floristic enclave within the Sahara; well wooded oases; relict Sudanese and Mediterranean species above 1000m; Saharan species | 350+ species | No Statistics | Diversity; 9 species on IUCN Red List for Niger; Aïr harbours threatened ungulates | 40 mammal species, 165 birds, 18 reptiles, 1 amphibian | No comment | Not inventoried | No comment | No comment |
| Banc d'Arguin National Park | Mauritania | 34-40 | Hyper-arid | Hot | Coastal saline; mangrove swamp; salt marsh | Wading birds; Ramsar Site | Traditional subsistence fishing; neolithic archaeological sites | Surveys and inventories since 1950s, field station at Cap Louik with outstation at Oued Chibka | Marine fauna and flora, esp. migratory coastal birds | Sea grass in shallow water; halophytic on coastline, mudflats and islands; mangrove swamps; terrestrial vegetation is Saharan | No statistics | No Statistics | World's largest concentration of wintering shore-birds (2 million +); mammals, marine mammals; fish spawning and nursery ground; 5 marine turtles species, 2 breeding. | 249 bird species; 15 nesting piscivores | No comment | High productivity of pelagic and benthic phytoplankton; crabs; cockles and gastropods | No comment | No comment |

Annex 3: Inscribed desert sites not identified on list of Dingwall et al. 2005

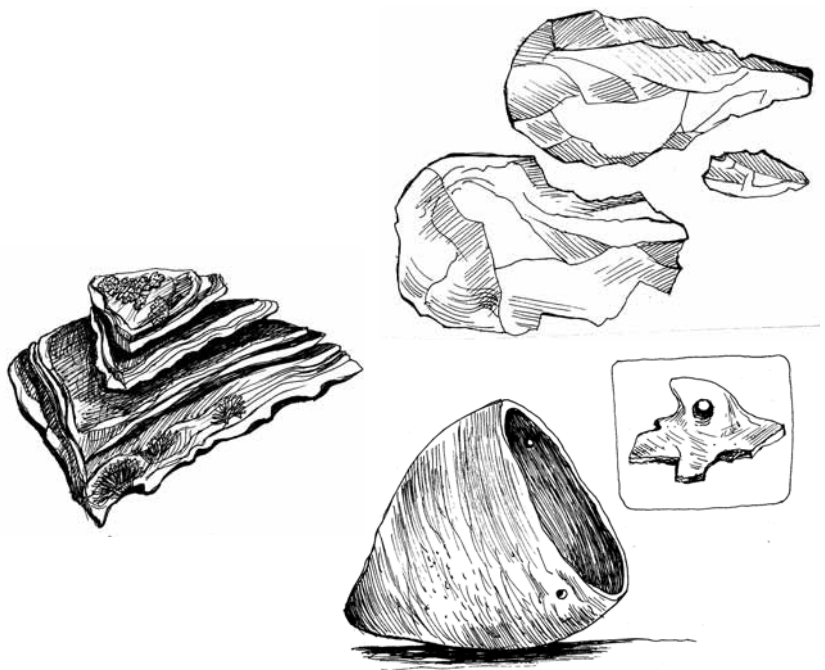
| WHS Name | Country | Mean annual rainfall | Desert type | Desert Classification | Geomorphological features | Reason for listing | Cultural significance | Research and facilities | Biodiversity significance | Vegetation type | Vegetation richness | Degree of endemism | Fauna - vertebrate | Faunal richness | Degree of endemism | Fauna - invertebrate | Faunal richness | Degree of endemism |
|-----------------------------|---------------------|----------------------|-------------|-----------------------|---|---|---|--|--|---|---|--|---|--|--|----------------------|-----------------|---|
| Lake Turkana National Parks | Kenya | <200 | Hot | Semi-arid, hot | Rift valley lake, delta; active volcanoes | Koobi Fora hominid sites; migrant water fowl; crocodiles and hippos | Pastoralists and fishermen; 100+ archaeological sites | Extensive archaeological research | Outstanding laboratory for study of plant and animal communities; major breeding grounds for Nile crocodile and hippopotamus | Grassy savannas; sparse gallery woodlands | No statistics | No statistics | High diversity of particularly breeding and migrant birds; low carrying capacity of the area | 350 aquatic and migrant bird species; 47 fish; large mammals | 7 species regionally threatened; 7 endemic fish | No comment | No comment | No comment |
| Uvs Nuur Basin | Russia and Mongolia | 150-200 | Cold | Cold steppe desert | Salt lakes | Salt lake has birds, snow leopard, argali sheep | Long history of nomadic herding | Diversity of biomes makes it a natural subject for biophysical and genetic research. Extensive research since 1984. Biosphere Reserve in 1997 as study area for global change. | All major biomes of east central Asia; rare animals such as snow leopard and argali sheep | Cold desert, sand dunes, semi-desert, desert steppe, shrub steppe, wetlands, salty marshes, floodplain forest, deciduous and boreal forests, taiga, alpine meadows and tundra | 552 species; 234 restricted to mountains; 52 relict species | 19 endemic to Mongolia and Tuva, 5 endemic to Uvs Nuur | Diverse reflecting diversity of habitats | 4 species of insectivora, 4 bats, 5 lagonomorphs, 32 rodents, 18 carnivores, 9 artiodactyla, 5 lizards, 3 snakes; 368 bird species | 22 locally rare mammals, 81 birds rare and endangered, 2 fish endemic to western Mongolia live in Uvs Nuur | No comment | No comment | 16 of 20 rarely met species of beetle are endemic on dune deserts |
| Valdés Peninsula | Argentina | 240 | Semi-arid | Cool | Salt pans | Marine sanctuary incl. whales and seals | Sheep farming | Focused on marine colonial mammals and birds | Important for several species of coastal and marine birds, which form breeding colonies on it | Desert steppe | 18 communities; 130 species from 41 families | 38 species endemic to Argentina | Numerous marine birds and mammals breed here; abundant terrestrial mammals; 181 bird species (66 migratory) | No statistics | No statistics | No comment | No comment | No comment |

Annex 4

| Annex 4 WHS Name | Country | Mean annual rainfall | Desert type | Desert Classification | Geomorphological features | Reason for listing | Cultural significance |
|---|----------|----------------------|-------------------------|-----------------------|--|---|--|
| Humberstone and Santa Laura Saltpeter Works | Chile | 0 | Hyper-arid | Coastal | Nitrate (caliche) | Historical, abandoned mining complex from 19th century; over 200 former works | Abandoned saltpeter factory |
| Petra | Jordan | 150 | Semi-arid | Warm | Weathering sandstone; gorges | Nabataean Caravan City | City, half built, half carved into rock |
| Rock-Art Sites of Tadrart Acacus | Libya | 25 | Hyper-arid | Hot | Sandstone weathering | Cave paintings | Thousands of rock paintings in very different styles |
| Tsodilo | Botswana | 500 | Sub-humid/ semi-arid | Hot interior savanna | Rock domes with ancient dunes | Over 4,500 rock paintings; 100,000 years chronological account of human activities and environmental change | San heritage |
| Twyfelfontein | Namibia | 100 | Hyper-arid | Warm | Sandstone rock domes with varnish and weathering rinds | Petroglyphs; largest concentration in Africa | San heritage last 2,000 years |

Annex 4

Geology & History



GEOLOGY AND HISTORY OF THE NAMIB SAND SEA

Assembled from materials prepared by R McG Miller, GIC Schneider, M Pickford and G von Schumann

The Outstanding Universal Value of the Central Namib Sand Sea - A Geological Perspective

The oldest written record that includes a reference to the Central Namib Sand Sea is can be found in the documents of the 16th century Portuguese seafarers. This waterless desert wasteland impinging on the coast for hundreds of kilometers and the terrifying coastal storms have always struck fear in the hearts of seafarers. This region forms a large and formidable part of the so-called Skeleton Coast of Namibia. The Central Namib Sand Sea consists of a wide dune belt which is an almost impenetrable barrier to the hinterland from the coast and from the interior to the coast.

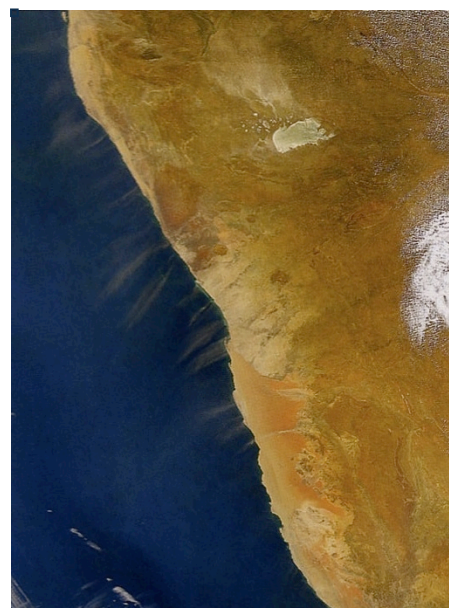
Yet, this environment is viewed with awe and fascination of its serene beauty and the ever-changing and curving flow lines of the dune crests and the various dune types.

Two dune systems are present. The older is semi-consolidated and as old as 21 million years. The younger is unconsolidated and has been active for about 5 million years. It covers the older system and is still accumulating. However, neither erg has been derived from the underlying hard rock basement. Although having accumulated in the arid to hyper arid central Namib, these sands that form the dunes originated in central South Africa in the catchment areas of the Orange River and its main tributary, the Vaal River. Three contrasting “conveyor belt systems,” acting in unison, namely, the Orange River, a coastal long-shore drift and the coastal onshore winds, finally deposited the sands in the central Namib. Thus, both Central Namib Sand Seas are displaced and aeolian derivatives of the huge inland Orange/Vaal River Basin.

But the Namib Sand Sea is not just made up of shifting, unconsolidated dunes or aeolian sheet sands. The bedrock to the two sand seas forms a gradually rising peneplain studded by occasional inselbergs. Westerly flowing rivers cut valleys into the Namib bedrock even before the first dunes sands were deposited. Subsequently, rivers flowing off the Great Escarpment in the east during summer rains deposited fluvial gravels from time to time within the accumulating aeolian succession. All these rivers still feed fresh rainwater into the old palaeo-valleys and extensively into the older semi-consolidated sand sea. This water is tapped to serve the harbour town of Lüderitz and supports shallow, fresh-water seeps at the coast. The water reaching the coast by this means is many thousands of years old.

The wind- and storm-generated long-shore drift has transported sand and marine gravels northwards along the coast. Past rises and falls in sea level have left diamond-bearing beach gravels inland of the present shoreline. Removal of fine sand by wind action over the millennia concentrated the diamonds into economical grades and old, derelict mining camps along the coast bear witness to the endeavours of hardy and determined fortune seekers in this harsh and unfriendly environment.

The peacefulness of a calm morning can be deceptive, because the dominantly southerly to southwesterly winds, which are responsible for slowly transporting the sand northwards, build up in the afternoon and keep blowing



well into the night. During storms, the flying sand is highly abrasive. However, by far the strongest winds are the katabatic east winds which are generated in winter when cold air from the sub-zero interior highlands flows westwards off the escarpment. The winds heat up and speed up as they cross the desert, stir up huge quantities of fine dust and reach temperatures of more than 30°C and speeds of up to 80 km/hr when they reach the coast. The resulting dust plumes extend as much as 200 km out to sea.

Apart from geology, the great fascination and importance to science of this harsh environment is the adaptation of nature to it. Fossils in the aeolianites reveal that conditions similar to the present prevailed as much as 21 million years ago. Vegetation, mammals, birds, reptiles and invertebrates all utilise the moisture from the regular coastal fogs generated by the cold Benguela Current as well as the occasional fresh-water seeps. Cape Fur Seals, tidal organisms and sea birds add to the variety along the coast. In the outer surf zone just south of Meob Bay, seepage of warm (fresh?) water up through the subtidal sands supports an isolated colony of the large warm-water shellfish *Panopia* that is a remnant of older warmer currents that hugged the coast in the past. The summer rains and flooding rivers that occasionally reach deep into the desert serve the same supportive purpose along the eastern edge of the central Namib. The depths of the unconsolidated dune sand is a cool refuge for invertebrates, reptiles and small mammals during the heat of the day when the sand surface can reach temperatures of 70°C.

The central Namib has been a haven for scientists studying the multitude adaptations and survival mechanisms of nature in the different climatic zones of the Namib. The region has become famous through numerous scientific publications but the wonders of the adaptability of life are also reaching the layman through visits by the public to the Desert Research Station at Gobabeb, through articles in newspapers and travel magazines and through the more accessible type of publications such as those of Louw and Seely (1982), "Ecology of Desert Organisms," and Kinahan (2001) "Pastoral Nomads of the Namib Desert."

A variety of tours through the dunes provide a once-in-a-lifetime experience for groups of adventurous tourists with extensive experience driving 4x4 vehicles. Such tours are lead by experienced, knowledgeable, environmentally conscious guides. Days of driving across one huge dune after another and down the slip faces, some as much as 40 m high, seeing the vehicle ahead as only a speck on the next dune, sleeping in relative shelter below slip faces and waking to the call of curious Pied Crows on a wind-still or wet, foggy morning leaves one with an unforgettable feeling of the magnitude, magnificence, beauty and the in-hospitable harshness of the desert, of the incredible survival mechanisms of its resident plants and creatures and with the privilege of having experienced all this.



Morphometry: Geography and Hydrography

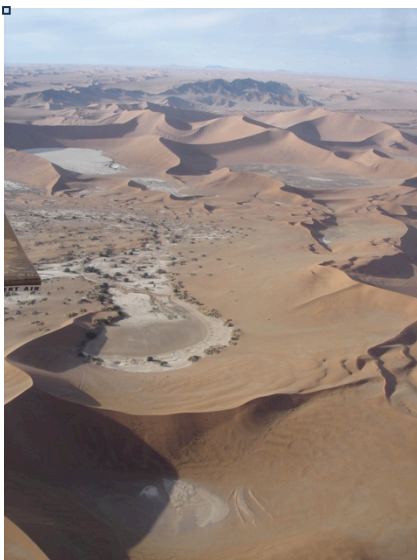
The Central Namib Sand Sea stretches from the northern border of the Sperrgebiet (Diamond Area 1) to the Kuiseb River and from the coast to the eastern boundary of the Namib-Naukluft Park but it excludes the Naukluft Mountains. This is the area nominated for inscription onto the World Heritage List. It already has special protection status and forms the bulk of the Namib-Naukluft Park, which is governed by Namibia's Nature Conservation Ordinance, No 4 of 1975. A modernised Parks and Wildlife Management Bill is currently in preparation.

The Central Namib Sand Sea covers 34 000 km² and is by far the largest area of almost continuous dunes in the whole of the Namib Desert. It has a maximum north-south length of 310 km and east-west width of 125 km. The dunes have been deposited on a bedrock bevel that rises gradually from sea level at the coast to between 800 – 1000 m inland. The accumulated sand is more than 200 m thick over large areas.

Precipitation of the coastal fog in the west can be double that provided by rainfall and is highest approximately 30-60 km inland from the coast. This supports a complex system of flora and dependent fauna (Louw and Seely, 1982). Occasionally, the eastern dunes are covered by an emerald-green coating of new grass after brief summer rains. But much more important are the westerly flowing rivers that flood after heavy rains on the escarpment and east thereof. The Tsauchab and Tsondab Rivers end in terminal pans deep within the dune belt. These hold



water for a short while after flooding. The water from all the westerly flowing rivers eventually disappears underground and feeds valley systems in the bedrock. This groundwater supports tourist lodges, guest farms and camp sites inside and just outside the border of the Namibia-Naukluft Park. The water in the deepest valleys ends up at the coast as fresh-water springs or shallow seeps at Anichab, Reutersbrunn, Fischersbrunn, Conception Bay and Sandwich Harbour. Fossil reed beds (*Phragmites australis*) at Reutersbrunn and Conception Bay indicate that this has also been the case in the past. At the southern edge of the sand sea and half way to the coast, fresh water for Lüderitz is pumped from one of these deep bedrock valleys in the Koichab Pan area. The Kuiseb River, with its source in the centre of Namibia, forms part of the northern border to the area nominated for inscription onto the World Heritage List. It floods almost annually and prevents the dunes from encroaching on the gravel plains to the north. Nevertheless, the Kuiseb River has only reached the sea twice in recent times, namely in 1934 and 2011.



Morphology: global and southern African perspectives

The sand sea system of the central Namib Desert is the largest area of continuous dunes in the world and is located in the west coast continental rain shadow. It is an outstanding and probably the most unique example of interlinked fluvial, marine and aeolian interaction. It has been active for at least

21 million years and is still accumulating dune sand. Transported initially to the west coast by the Orange River, north-directed longshore drift in the littoral and sublittoral zone and the high-energy and persistent southerly to south-westerly winds finally convey the sands into the central Namib. Although the dune environment of the central Namib is arid to hyper arid, fog from the cold coastal Benguela Current in the west and occasional summer rains and flooding rivers in the east have supported incredible and interlinked ecosystems of hardy, desert-adapted fauna and flora, from the tiniest microbes to large antelope and long-lived acacia trees.

Morphology and Geology: the unique details

Morphology



The Central Namib Desert consists of a bedrock peneplain that rises from sea level at the coast to an elevation of 800-1000 m at the eastern edge of the dunes. This bedrock is exposed periodically along the coast, in a large area between Conception Bay and Meob Bay, in inselbergs in the Uri-Hauchab, Hauchab and Awasib Mountains in the southern half of the dune field and along the eastern edge of the dunes. Such inselbergs are conspicuously absent in the northern half of the dune field.

Two readily distinguishable sand seas make up the Central Namib Sand Sea. These were deposited one on top of the other on the Namib bedrock peneplain. The older sand sea, the Tsondab Sandstone Formation, is deep red, semi-consolidated and underwent a process of partial cementation before the pale yellow to buff sands of the younger, still unconsolidated sand sea, the Sossus Sand Formation, were deposited on top. The Tsondab Sandstone crops out sporadically between the Sossus Formation sands, and also forms spectacular aeolianite cliffs on the farm Dieprivier 403. This formation is even more widespread than the overlying sands (Ward, 1987, 1988) but is largely obscured by the latter.



Cliffs of Tsondab Sandstone Formation aeolianite on the farm Dieprivier 403. Thick units are single cross-bedded dunes; thin units are roughly horizontally bedded interdune bounding surfaces (from Miller, 2008).

The unconsolidated dune sands of the Sossus Formation are responsible for the spectacular scenery of the Central Namib Desert. The dune types change from north to south and from east to west. Each dune type or dune pattern is fascinating and very attractive when viewed from above but the most spectacular are the stellate or star dunes in the west, the saw-tooth dunes bordering the lower Tsauchab River valley, and the pyramid dunes in the southeast.

The coast is rocky in places with small cliffs here and there, or exposures of pre-Tsondab basement rocks of varying width separating sandy beaches from the dunes. Stretches of salt pan also separate either coastal outcrops or sandy beaches from the dunes, as from south of Douglas Point to Hottentot's Bay, from Reutersbrunn to Conception Bay and just south of Sandwich Harbour. But the nature of the coast varies continuously. In places, aeolian sheet sands with small, superimposed barchan dunes or vegetated hummock dunes rise gradually from the shore to the first north-trending linear dune. In contrast, between Saddle Hill and Saddle Hill North, between North Point and Knoll Point, in the St. Francis Bay area and north thereof almost to Reutersbrunn, and between Conception Bay and the southern tip of the Sandwich Harbour salt pan, slip faces of high dunes occur on the shoreline, are eroded by the high-tide surf and can rise to an elevation of 50 m or more above sea level within 300 m of the shore.

The estimated combined thickness of the two superimposed sand seas reaches a maximum of 475 m, with average thicknesses varying between some 150 m and 290 m from south to north.

Educational and scientific value

The Tsondab and Sossus Sand Seas of the Central Namib Desert have been the subject of a number of geological, geomorphological and palaeontological studies, the latter still ongoing and continuing to add to our knowledge database with new discoveries. The westerly flowing rivers replenish subterranean reservoirs that are utilised for the water supply for the town of Lüderitz and for the increasing number of lodges and camp sites along the eastern edge of the Central Namib Desert. Archaeological surveys show that even deserts can be occupied for brief periods when rainfall is abnormally high. By far the greatest contribution to our understanding of the desert has come from the biological sciences in numerous studies of what lives in the desert and how it survives. These all help us to understand the evolution of and adaptation to some of the harsh environments of our planet. The desert is spectacular and tourism through the Sossus Sand Sea and along its eastern margins, much intentionally ecologically orientated, continues to gain momentum but in a controlled fashion so as to limit impact to an absolute minimum. Through this tourism, large numbers of people are learning about the desert and adaptation of organisms to this arid to hyper-arid environment.

Evolution of the southwestern coast of Africa and the Namib Desert Sand Sea

The understanding of geological processes that have led to the evolution of the present Namib Desert Sand Sea requires an understanding of plate tectonic processes that have shaped the past and present face of the Earth. The geological units underlying modern Namibia initially formed part of the older supercontinents Rodinia and Gondwana.

From supercontinent to the Namib bedrock bevel

The bedrock, upon which the dunes rest, records several major phases of crustal evolution relating to the amalgamation and breakup of the Rodinia and Gondwana Supercontinents (Miller, 2008). Outcrops occur sporadically along the coast, in a few inselbergs within the dunes and along the eastern border of the dune belt. The largest coastal outcrop area is the one between Conception Bay and Meob Bay.

The oldest rocks are the high-grade metasediments, metamorphosed volcanic rocks and ortho- and paragneisses of the NW-trending Namaqua Metamorphic Complex. These record one of the main stages in the accretion of Rodinia 1200 million years ago. They crop out on the southern edge of the dune field, and in the Uri-Hauchab and Hauchab Mountains in the centre of the dune field. Time equivalent to these deep-crustal rocks are supra-crustal, active continental margin volcanic and sedimentary rocks and associated sub-volcanic intrusive plutons of the Sinclair Supergroup with ages of between 1400 and 1100 million years and which occur all along the eastern margin of the dune belt. The Excelsior-Lord Hill Shear Zone forms the suture between the Namaqua and Sinclair sequences. It is the site of the former subduction zone that separated them and stands out exceptionally well on aeromagnetic maps, even below the cover of the dunes (Miller, 2008).

Intracontinental rifting along NE and N-S trends initiated break up of Rodinia and the start of deposition of the Neoproterozoic Damara Supergroup in this part of Namibia between 900 and 800 million years ago. Evolution from rifting to continental breakup and separation saw the development of a deep north-south trending ocean to the west joined to a northeast-trending ocean that extended across central Africa. Rift arkoses and shelf carbonates occur in the Saddle Hill area, and thinly bedded, continental rise turbidites are found in the Conception Bay area. In the area between Conception Bay and Meob Bay, a thick succession of deep-water, turbiditic greywackes with a few interbedded basalts was deposited. Reversal of plate motion saw the gradual closure of these oceans, continental collision and the formation of the next supercontinent, Gondwana. Intense NW over SE transposition of South America over Africa thrust the arkoses and carbonates in the Saddle Hill area onto the gneisses of the Namaqua Metamorphic Complex. In the area between Conception Bay and Meob Bay, granite intrusion and high-temperature metamorphism transformed the greywackes into a huge, partially molten migmatite complex which covers an area in excess of 300 km². Deformation of the migmatite remixed molten and un-molten (restite) components and enabled some of this remixed material full of restite fragments to intrude as small plugs (Miller, 2008; Miller et al., 1975). This huge area of remixed migmatite may be unique in the world. Further study of this gigantic migmatite mass will certainly advance our understanding of the way in which granite melts separate from their unmolten residue. Difficulty of access has been the major deterring factor to research on these rocks to date.

The next major geological event was the plume-driven volcanism of the early Cretaceous Paraná/Etendeka Large Igneous Province with its voluminous and rapidly erupted basalts and quartz latites. No basalts or quartz latites occur in the Conception Bay – Meob Bay area but there are dolerite dykes with Etendeka basalt chemistry. The Paraná/Etendeka volcanism occurred just prior to breakup of the South American/African part of Gondwana and the start of the formation of the present South Atlantic Ocean at about 128 million years ago.

Erosion by means of escarpment retreat under hot, humid conditions followed and lasted approximately 60 million years, almost to the end of the Cretaceous. This erosion produced a Namib-wide bedrock bevel or peneplain, which stretches the full north-south length of Namibia's west coast and extends from sea level in the west to an elevation of 800 – 1000 m at the eastern edge of the central Namib dunes. Inselbergs of Namaqua and Sinclair rocks, such as the Uri-Hauchab, Hauchab and Awasib Mountains, dot this bevel in the southern half of the dune field and along its eastern edge but are conspicuously absent in the northern half.



A sea-level fall of 120 m or more during the Oligocene (Dingle et al., 1983), accompanied by increased rainfall in western Namibia, changed the erosional base level inland significantly. Deep, V-shaped valleys were cut into the Namib bedrock bevel by westerly flowing rivers. At the same time huge areas of the offshore sediments were exposed to the southerly to southwesterly wind regime of the coast. As sea level rose again, the V-shaped valleys filled rapidly with river gravels, but the valleys themselves continued to serve and still serve as conduits for groundwater all the way to the coast (Miller, 2008). Fossils in fluvial-palustrine deposits in the northern Sperrgebiet and just south of the Central Namib Sand Sea suggest that this pre-sand-sea fluvial phase ended at about 21 million years ago (Mourer-Chauviré et al., 1996a, 1996b).

Accumulation of the two Namib ergs and the associated fluvial and marine deposits

The Orange River system has been in existence since the early Cretaceous transporting sediment westwards. It built out a huge delta in the widening South Atlantic Ocean throughout the Cretaceous and the Cenozoic (Dingle et al., 1983; Muntingh, 1993; Muntingh and Brown, 1993; Brown et al., 1995). The river mouth and the delta are located in an area where almost continuous and often powerful southerly winds of the South Atlantic Anticyclone drive a vigorous longshore drift that transports gravel, diamonds and sand for hundreds of kilometres northwards and back onto the beaches of the Namibian coast (Dingle et al., 1983; Jacob et al., 1999; Jacob, 2005; Bluck et al., 2007). The diamondiferous gravels of the Orange River and the Namibian raised beaches contain pebbles that can be traced to very specific formations deep in the South African interior (Stocken, 1962; Jacob, 2005). The same powerful southerly winds blew and still blow the sands back onshore, often along well defined sand-transport corridors, and have built up both sand seas over millions of years (Rogers, 1977; Corbett, 1989, 1993).



It was during the early Miocene about 21 million years ago that the first aeolian sands of the Central Namib Desert began to accumulate onshore (Pickford and Senut, 1999; Pickford et al., 1995). With the strengthening of the cold Benguela Current about 16 million years ago, these eventually covered the full length and breadth of the Namib Desert from the Orange River to the Kunene River and from the coast to the valleys in the foothills of the escarpment (Ward, 1987, 1988; Ward et al., 1983). These consolidated to form the first Namib erg, the Tsondab Sandstone Formation. Subsequent erosion has removed most of this aeolianite north of the Kuiseb River but it is still extensively preserved beneath the unconsolidated dune sands of the Sossus Sand Formation in the Central Namib. The Tsondab aeolian sands are interbedded with escarpment-sourced fluvial sands and gravels along the eastern edge of the sand sea (Ward, 1988). Periodic flooding of long-lived depressions in the Tsondab aeolian sands enabled laminated deposits of white limnic limestone to accumulate, the Khommabes Carbonate Member. Kasts of gypsum crystals in these carbonates point to desiccation that followed good rains (Ward, 1987, 1988).



The partial cementation of the Tsondab deposits was completed towards the end of the Miocene. During a prolonged period of higher summer rainfall that followed, flood waters of the main westerly flowing rivers cut broad but rather shallow river channels into, but not through the Tsondab Sandstone and deposited westward-fining river gravels in these valleys to within 25 km of the coast, the Karpfenkliff Formation of the palaeo-Kuiseb, -Tsondab and -Tsauchab Rivers (Ward, 1987; Hoffmann et al., 1994). The valley gravels and the underlying sandstone gradually became cemented by calcrete that precipitated from groundwater which continued to flow in these valleys long after gravel deposition had ceased (Miller, 2008). Some of the most spectacular outcrops of these late Miocene, calcrete-cemented gravels are in the Sesriem Canyon (Schneider and Marais, 2004).

The Karpfenkliff gravels of the palaeo-Kuiseb River crop out between regularly spaced transverse dunes but there are almost no dunes on the gravels of the other two rivers. The valley of the palaeo-Tsondab River is the best exposed and readily recognisable between the high valley flanks for 80 km from the eastern edge of its gravel plains where it is 25 km wide to 35 km northwest of Tsondabvlei where it is only 2 km wide. A narrow strip of dunes separates the Tsondabvlei from the exposed western 30 km of this palaeo-valley. The Karpfenkliff gravels of the Tsauchab River are exposed all the way down to Sossusvlei. This palaeo-valley is not at all obvious as the high flanks of this older valley are completely covered by dunes of the Sossus Formation, saw-tooth dunes down the valley flanks and onto the valley floor, and stellate dunes on top of the valley flanks.

The aeolian sands of the second Namib erg, the unconsolidated, Pliocene to present-day Sossus Sand Formation, were and are being fed but trains of fast-moving barchan dunes that arise at beaches with northwesterly orientations as far as 300 km south of the Central Namib Sand Sea. These trains define sand-transport corridors, traverse an intensely sand-abraded coastal deflation basin (Corbett, 1993) and, under the influence of winds with speeds at times exceeding 100 km per hour, feed into the southern end of the Central Namib Sand Sea just northeast of Lüderitz, from whence that sand is gradually transported northwards and northeastwards to form the whole Sossus Formation sand sea. The heavy mineral suites in both the Tsondab and Sossus Formations are identical to those of the Miocene and present-day fluvial sands of the Orange River (Rogers, 1977). Through aeolian abrasion, the Sossus Formation feeds off the Tsondab Sandstone to a limited extent, so much so that the younger aeolianites become a deeper red in colour towards the east.

The present Tsondab and Tsauchab Rivers have cut new channels into their old palaeovalleys and their end points are the Tsondabvlei and Sossusvlei, respectively. Several deposits of white, calcareous pan clays in the Sossusvlei area occur at elevations up to 2-3 m above the present level of the Sossusvlei clays and are underlain by unconsolidated aeolian sand. These show that the Tsauchab River has cut its channel gradually deeper with time and that the location of its end point has not always been exactly where the present vlei is. In contrast, the Kuiseb River cut its present channel through the Tsondab Sandstone and deep into the underlying bedrock. This difference in behaviour of these rivers is due entirely to the size of their catchment areas and to the amount of rainfall in these areas. The two southerly rivers, the Tsondab and Tsauchab, have relatively small catchments in the escarpment region, where rainfall is considerably less than in that of the much larger Kuiseb River catchment further to the northeast. Floods in the Tsondab and Tsauchab Rivers only reach



their respective end points occasionally, but the Kuiseb River floods reach far into the desert almost every year. These floods take any dune sand that has blown into the river bed with them and thus prevent the dunes from crossing the Kuiseb River and spreading out onto the gravel plains to the north.

Over time, oscillating sea levels, driven by alternating global glaciations and warm periods, in combination with long-shore drift, deposited marine and marginal marine sediments and diamondiferous littoral gravels on the Namib bedrock bevel up to 30 km inland of the present coastline. Eocene beach gravels were deposited up to 170 m above the present sea level (Siesser and Salmon, 1979; Miller, 2008). Similarly, sea-level falls of as much as -120 m or more during the Oligocene (Dingle et al., 1983) deposited diamondiferous littoral gravels well west of the present coast and exposed huge areas of the offshore Orange River delta and the continental shelf north thereof. Thus, large areas of the Cretaceous and Cenozoic fluvio-marine sediments in the delta and on the continental shelf were exposed to the strong southerly winds for long periods of time and were huge sources of sand for the two central Namib sand seas.

Such raised diamondiferous beaches were exposed in the central Namib only in the Saddle Hill area and between Conception Bay and Meob Bay.

Palaeontology

The strata in the Namib Desert contain a rich and diverse fossil record which has proved to be useful for determining the timing of events in the desert and aspects of its palaeoclimate and palaeoenvironment.

The Neogene aeolian strata in the Namib Sand Sea contain interbedded marine, fluvial, lacustrine, plaudal and pedogenic deposits. Near the coast there are interbeds of marine deposits up to 50 metres above present-day sea-level, and these strata often contain rich marine faunas (bivalves, gastropods). Fossils have been found at numerous points throughout the Namib, and these have permitted the age of the various deposits to be ascertained within reasonable limits, using biochronology (age determination of strata using fossil mammals). The fossils also allow aspects of the palaeoenvironment to be determined (Pickford and Senut, 1999).

During the Early Miocene, some 21-19 million years ago, the region was semi-arid with savannah and steppe vegetation. By 16 million years the Namib Desert had become hyper-arid, with extensive deposition of aeolianites. Desert conditions have prevailed ever since, although there is evidence that there were periods of slightly greater humidity during which rivers flowed, lakes formed and calcrete crusts developed far into the desert.

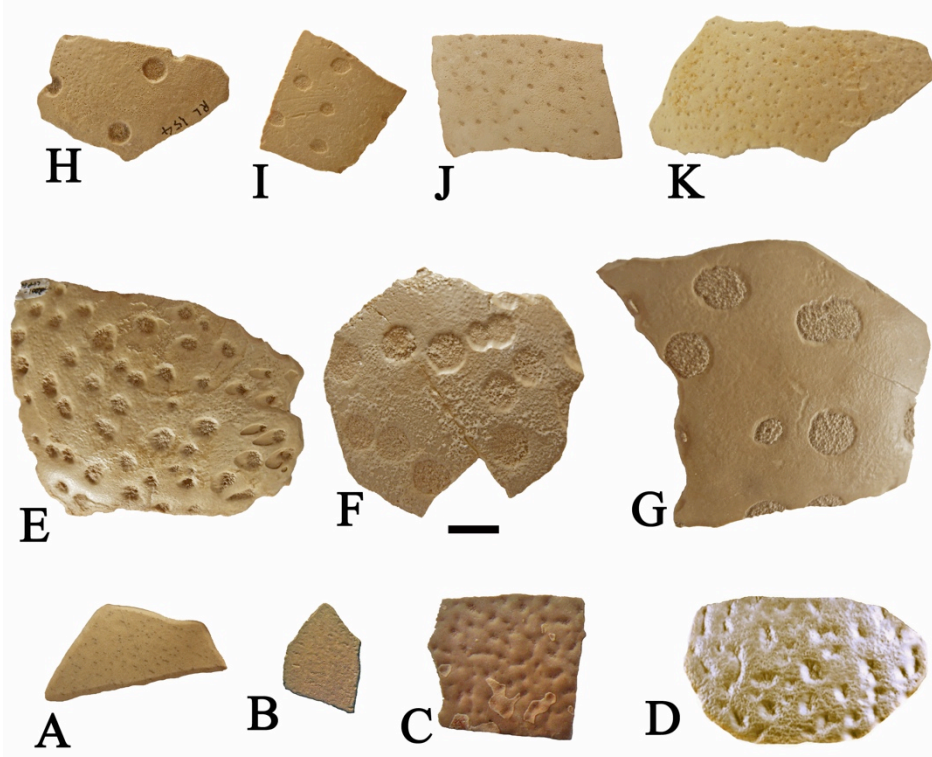
The Namib fossil record comprises three major classes of fossils – trace fossils (ichnofossils such as burrows and foot prints), bioconstructions (fossilised spider webs and termite hives for example) and body fossils (remains of invertebrate shells, vertebrate skeletons and eggshells).

Trace fossils are ubiquitous and abundant throughout the desert, particularly rich deposits being known near the coastal strip at Meob, where carnivore and ruminant foot prints are well preserved and common. Elsewhere traces of termite activity, coleopteran burrows, rhizoliths and other kinds of bioturbation are widespread and attest to the fact that the desert supported a rich and diverse fauna and flora throughout its existence. Well preserved trails of the Golden Mole *Eremitalpa* (largely an insectivore) and burrows of lizards and rodents are locally common in the aeolianites,

especially near Awasib. In places, narrow burrows made by termites and ants are preserved. Rhizoliths of various diameters reveal the former presence of grass and trees in the desert.

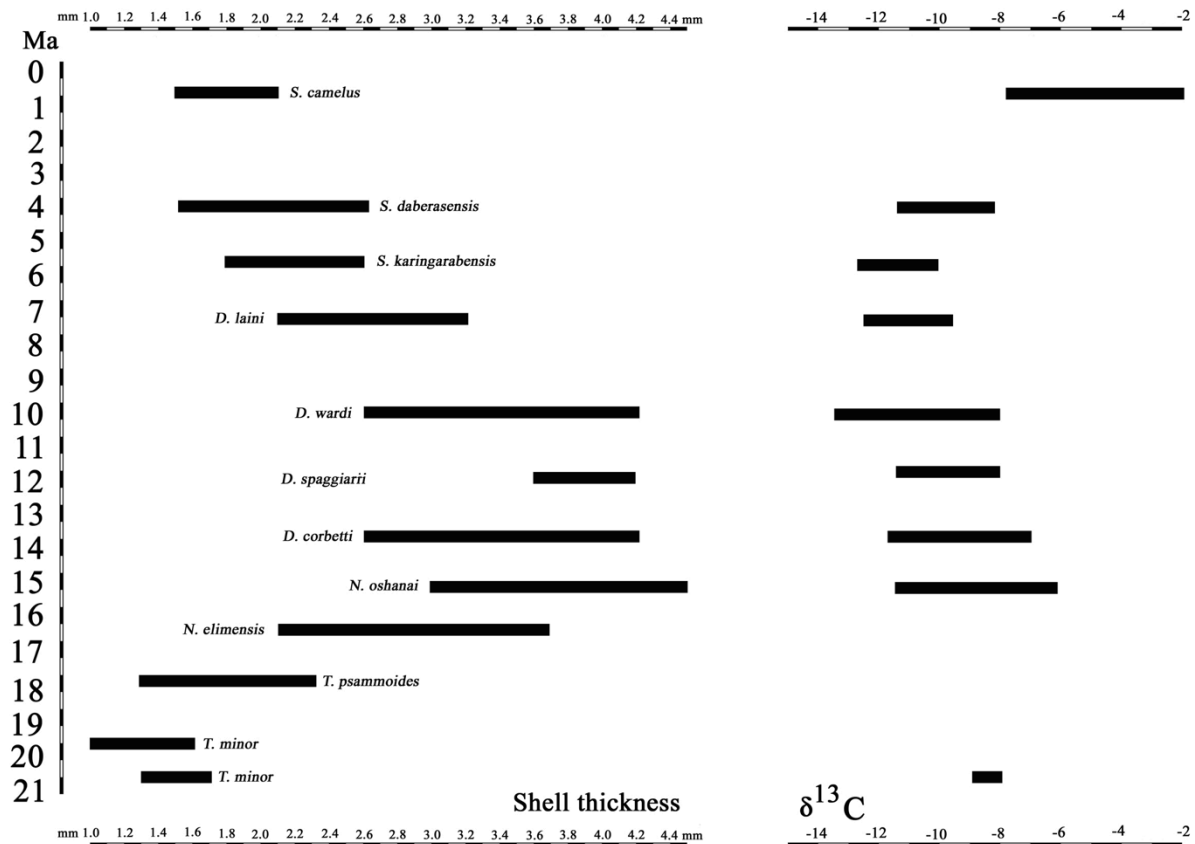
Bioconstructions are varied and widespread in the aeolianites of the Namib. The commonest kind of bioconstruction comprises latrines and hives of termites, notably the sand termite *Psammotermes*, and the harvester termite *Hodotermes*. The latter taxon denotes the installation of semi-arid climatic regimes in the Namib from time to time, as it requires summer rainfall in amounts greater than 250 mm per year. Perhaps the most unusual bioconstructions preserved in the Namib are roof webs of the « buck-spool spider » *Seothyra*, a genus that prepares a four-lobed trap door of thick web which has been found fossilised in various places in the desert, including Sossusvlei and the Tsondab Flats (Pickford, 2000, 2008).

Body fossils are of particular interest to the palaeontologist as they yield information concerning the ages and palaeoenvironments of the deposits. Fossil rodents and carnivores found at Sossusvlei, Awasib, Tree Pan, Meob and elsewhere form the basis for estimations of the age of the sediments in which they occur. Fossil struthious eggshells, which are abundant in the aeolianites, are notable for the variation in shell thickness and surface morphology that they demonstrate. Careful note of the stratigraphic context of the eggshells and their associated mammalian fossils has permitted the erection of a biostratigraphic scale based on eggshells (Pickford et al., 1995 ; Pickford, 2009 ; Senut and Pickford, 1995 ; Senut et al., 1995). Some of the types of eggshells that occur in the Namib have subsequently been reported from Malawi, Tanzania, Kenya and the United Arab Emirates and in every case, the estimated age of the strata deduced in Namibia has been confirmed. The fact that the eggshells span the period 21 million years to the present is particularly useful, as they cover the entire history of the Namib as a desert. Detailed mapping of the aeolianites is now possible using eggshells as a chronometric tool. Preliminary mapping reveals that the details of sedimentation are more complex than hitherto thought possible.



Succession of fossil eggshell types from the Namib Desert (A oldest to K youngest). A) *Tsondabornis minor*, B) *Tsondabornis psammoides*, C) *Namornis elimensis*, D) *Namornis oshanai*, E) *Diamantornis corbetti*, F) *Diamantornis spaggiarii*, G) *Diamantornis wardi*, H) *Diamantornis laini*, I) *Struthio karingarabensis*, J) *Struthio daberensis*, K) *Struthio camelus* (scale – 10 mm).

The fossil eggshells retain faithful copies of carbon and oxygen isotopes that they had when they were laid, and this permits aspects of palaeoclimate and palaeoecology to be determined.



Variation in eggshell thickness and $\delta^{13}\text{C}$ values of fossil eggshells from the Miocene of Namibia. There is an inverse correlation between the two trends, with thicker eggshells tending to have lower $\delta^{13}\text{C}$ values than thin eggs ($\delta^{13}\text{C}$ values from Ségalen et al., 2002).

Among the mammalian fossils found in the Namib, rodents predominate, in particular Pedetidae (Spring Hares) and Muroids (mice and rats). The Pedetidae underwent significant evolution during the past 21 million years, with increase in hypsodonty (increasing height of the cheek teeth), addition of cementum on the cheek teeth, and eventually the suppression of roots, meaning that the teeth grow throughout the life of the individual. The spring hares are thus useful for biochronology.

Rarer in the Namib are fossils of proboscideans (elephant relatives), aardvarks, bovids (ruminants), equids (zebras) and carnivores (hyaenas, meerkats) but each occurrence yields information about palaeoenvironments and age. Thus, the Kamberg Calcrete, which is widespread in the northern part of the Namib, can be dated to the Pleistocene on the basis of the equid and bovid fossils it contains, whilst they also indicate that there was an extended period of semi-aridity with over 250 mm of rainfall annually. The calcrete also contains stone tools, suggesting that humans were able to survive in the desert during these remote periods.

Recent slack-water deposits associated with the Kuiseb River contain abundant human and animal foot prints.

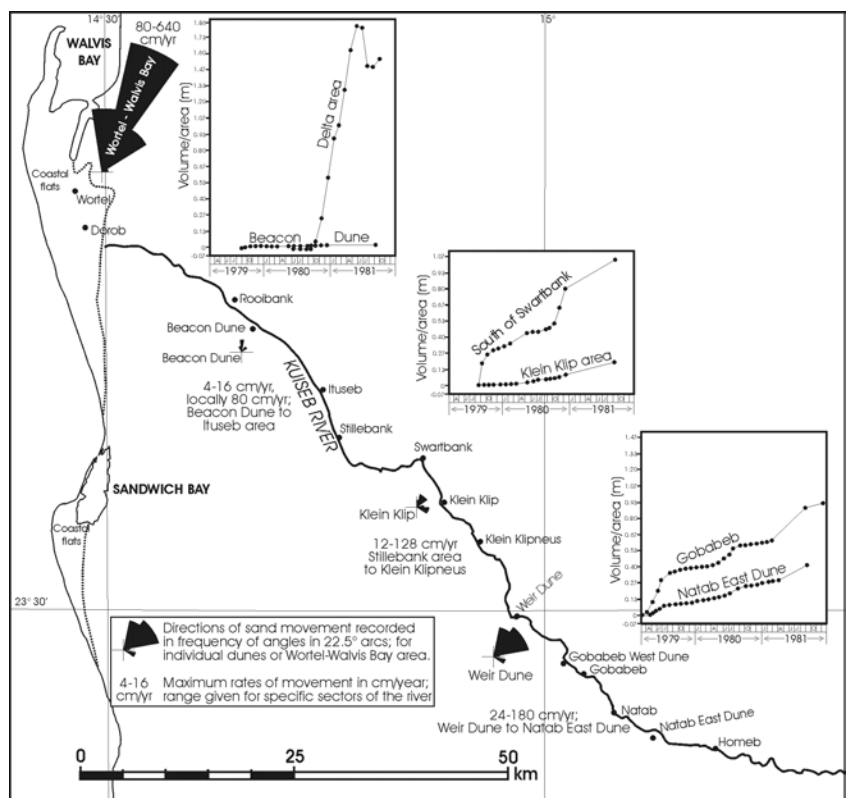
Thus far, little palaeontological research has been focussed on the Namib Desert. The main areas studied have been Sossusvlei, Tsondab Flats, Awasib and Meob, all of which are near the edges of the desert. Transects across the desert in the Uri-Hauchab area reveal that fossils probably occur throughout the desert, and it would be well worth spending more time and energy on a survey of the region because fossils hold the key for unravelling the detailed history of the Namib Desert (Ségalen et al., 2002; Senut et al., 2009).

The work done thus far reveals that the Namib Desert became hyper-arid about 16 million years ago at the same time that the Antarctic Ice Cap expanded to cover the entire Antarctic continent. A change in the fauna occurred about 8-7 million years ago, at the same time that aeolian cross-bedding shows evidence of the onset of east winds (berg winds) in addition to the prevailing south winds that have dominated Namib history throughout the Neogene. The onset of berg winds coincided with the growth of the Arctic Ice Cap in the Late Miocene. The installation of hyper-arid conditions at the base of the Middle Miocene and the subsequent modifications in climate of the Namib Desert were thus intimately connected to polar ice cap history. The Namib fossil record accords with this deduction, and the stable isotope studies on struthious eggshells complement the evidence from ocean cores.

Sand transport, sand thickness and dune types

The main wind directions are southerly along the coast and southwesterly further inland but there are occasional strong northwesterly and easterly winds. The overall movement of sand is consequently to the north or northeast. The greatest rate of movement is along the coast where the southerly wind blows rather strongly most afternoons and evenings. Longitudinal dunes prevail in this region. Changes in wind direction alter the facing direction of the dune crests. On the eastern edge of the Sossus Sand Sea, the wind direction is more variable from day to day. Consequently, this is the region where multi-crested stellate and pyramid dunes are developed.

The uniqueness of both sand seas lies in the fact that they are quite different from other large sand seas elsewhere in the world, as they have not been derived from the hard, underlying bedrock on which they lie. The sands originated deep in the wet interior of South Africa in the large catchment area of the Orange/Vaal Basin.



Rates and directions of movement of aeolian sands of the Sossus Sand Formation along various reaches of the Kuiseb River (from Miller, 2008, modified after Ward, 1984).

Both sand seas are, therefore, outstanding and unique examples of the interaction of a major river system draining into a highly dynamic coastal environment in which some of the most intense winds on earth drive a powerful littoral and sub-littoral long-shore drift system which transports the offshore fluvial sediments northwards and back onto beaches. The winds pick up the sands from the beaches and carry them northwards and northeastwards to form the dunes.

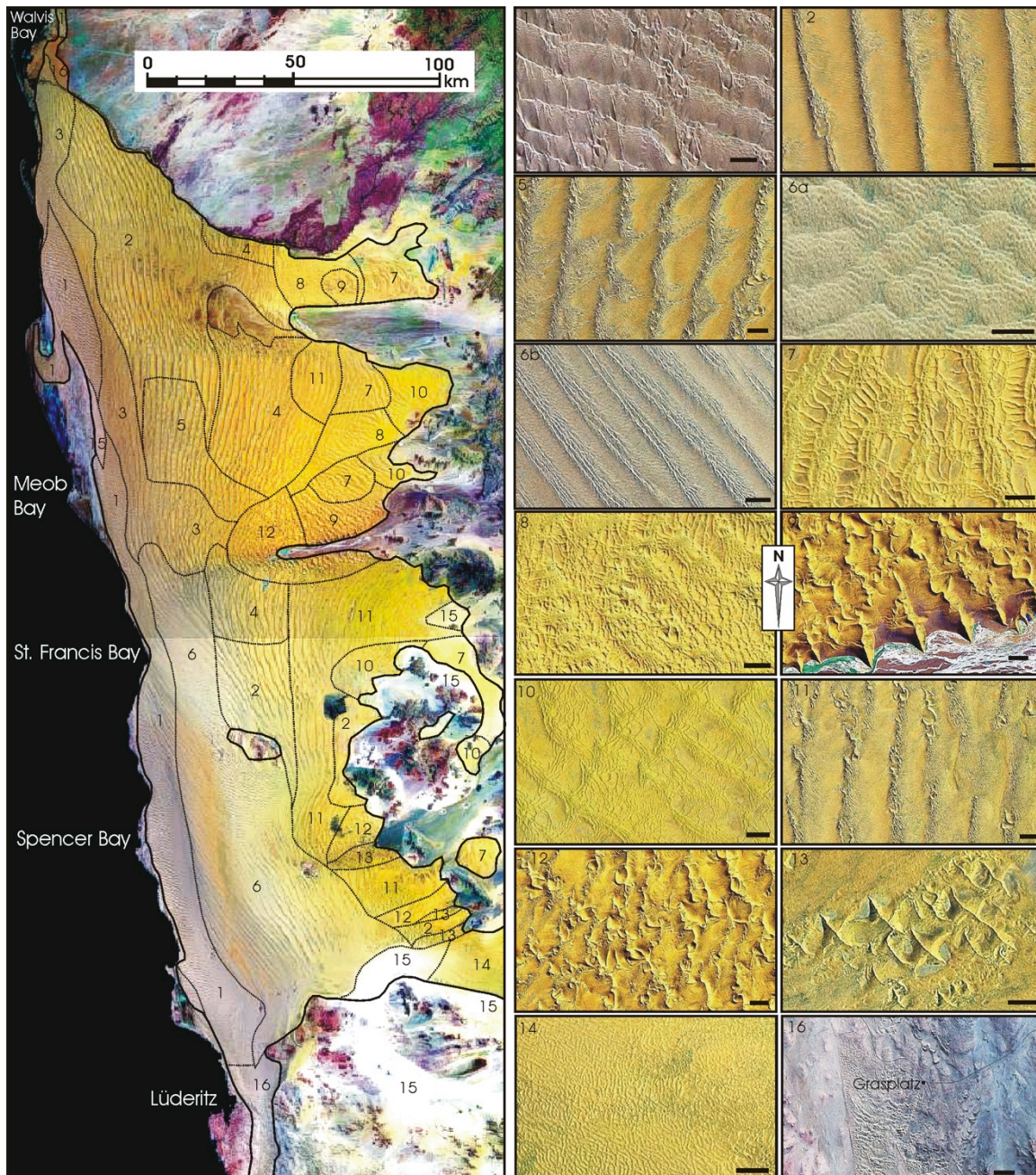
| Traverse location | Estimated average combined thickness; number of measured points along traverse where thickness >110 m; total number of measured points | Distance from coast over which average thickness was calculated for point thicknesses >110 m | Mid point of traverse over which average thickness was calculated; km from coast | Maximum individual thickness along traverse in m; distance from coast |
|-------------------|--|--|--|---|
| 23° 47'S | 147 m/9/9 | From 15 to 125 km | 70 km | 200m/119 km |
| 24° 10'S | 195 m/6/10 | From 59 to 134 km | 97 km | 250m/59km |
| 24° 30'S | 290 m/7/8 | From 41 to 107 km | 74 km | 475m/87km |
| 24° 53'S | 244 m/9/9 | From 12 to 104 km | 58 km | 300/45, 58 & 81km |
| 25°S | 150 m/6/9 | From 8 to 50 km | 29 km | 180m/25km |

Estimated combine thickness of the Tsondab Sandstone Formation and Sossus Sand Formations ergs from south to north

The table above shows the average combined thickness of the two ergs along five east-west traverses. The combined thickness increases northwards to 24° 30' S then decreases north of that. The maximum estimated thickness of 475 m is on this traverse. The mid point of the thickest group of measurements is located progressively further inland from 25°S to 24° 10'S but is not quite so far inland in the next traverse.

The main dune types are transverse dunes in a coastal strip, linear dunes in the centre of the sand sea and star dune systems in the east but many more dune types are also present. Superimposed on the false-colour Landsat image below are the areas in which Besler (1980) identified the different dune types. Bar scale on Landsat images of the various dune types is 2 km: 1 – transverse or compound crescentic dunes, 2 – longitudinal ridges or linear dunes, 3 – transition forms between transverse and linear dunes, 4 – branching longitudinal ridges or linear dunes, 5 - network complex within the linear dune system, 6a – zibar dunes, 6b - zibar-silk dune system, 7 – lace dunes, 8 – honeycomb structure, 9 - honeycomb structure with stellate dunes and saw-tooth dunes on the northern flank of the Tsauchab River valley, 10 – giant honeycomb structure, 11 – warty dune ridges with stellate dunes, 12 – high chaotic dunes, 13 – pyramid dunes, 14 – dune sand plain with craters, 15 – sand sheets with or without coarse-grained sand or granule sand waves; 16 - aeolian transport corridor with barchanoid dunes (Aus-Lüderitz road just SE of Lüderitz visible in the enlargement of the corridor).





Dune types of the Central Namib Sand Sea (after Miller, 2008; based on Besler, 1980)

Natural Resources

The conditions in the area are difficult beyond description. The south-westerly storms allow work only on a limited number of days, and then only between 5 and 10 am, or maybe 12 am, after that the wind is so sand-laden that living creatures cannot be exposed to it. One can only admire the tenacity and the amount of energy that these prospectors are prepared to put in, and I really found the stories told about this desolate terrain to be true. If one has not seen it with one's own eyes, the conditions are, in the true sense of the word, unbelievable.

Dr FW Voit, Government Geologist, 1910

The only minerals that have ever been mined in the area nominated for inscription onto the World Heritage List are diamonds. While the famous and rich Namibian diamond deposits occur to the south, the area of the Central Namib Sand Sea contained economically less important accumulations of smaller stones which supported small-scale operations in the past. However, extensive research into the formation of the Namibian diamond deposits has also resulted in the generation of knowledge about the age, formation and general geology of the Central Namib Sand Sea. Some of this research work might not have been undertaken, had it not been for the diamonds.



When diamonds were first found in 1908, their mode of occurrence in the desert was strange and hitherto unknown because diamonds had always been associated with kimberlites, and not with sediments.

Namibia's Diamond Coast extends from the Orange River to the Kunene River and includes the area where the Central Namib Sand Sea meets the Atlantic Ocean. The Namibian coastal diamonds have been sourced from deeply eroded kimberlites in the interior of southern Africa in the huge catchment areas of the Orange and Vaal Rivers.

After being separated from their kimberlite hosts, the diamonds were subjected to a process of intense abrasion, as the river sands, boulders and diamonds were reworked again and again during flooding on their more than 1000 km long journey to the Orange River delta on the Atlantic coast. The long-shore drift took over the northward transport of the deltaic sediments and diamonds, mainly during coastal storms. The diamonds were, thus, further pounded by the boulders and pebbles before being finally deposited in pebbly beach placers. Only the best gems, without



inclusions, flaws or other imperfections in their crystal lattice were able to survive this ordeal. For this reason, Namibian diamonds are the best and most highly priced gems in the World. A total of 95% of Namibia's diamonds are gem quality. By comparison, only 25-35% of the diamonds in an average kimberlite pipe are gem quality.

Over the last 3 million years, rises and falls in sea level associated with past glacial and interglacial periods resulted in the deposition of several linear diamondiferous beaches or small pocket

beaches in small embayments along the coast, some above and some below present sea level.

The diamonds occur within one of the highest energy aeolian systems on Earth. Linear valleys extending northwards from the south-facing embayments in the coastline trapped diamondiferous marine sediments when sea levels were higher than at present. These valleys have in the past and are still swept by winds with speeds exceeding 100 km per hour at times. The winds transport enormous amounts of sand and effectively separate fine-grained and light material which is blown away from a deflation lag of coarser granules, pebbles and heavy minerals which remains in the valleys. Such aeolian winnowing left a thin, much higher grade deposit of diamondiferous gravel on the bedrock. Heavy mineral particles, such as diamonds, preferentially concentrate in the wind

shadow of rocky obstacles. By a process of aeolian bedload creep, very coarse grains of sand gradually accumulate to form coarse-grained sand waves up to 0.5 m in height. The finer diamonds are moved by the same process and can end up in such sand waves.



A chaotic rush to the southern diamond fields followed the discovery of the first diamond east of Lüderitz in 1908. Soon afterwards, the secretary of the colonial administration – Namibia was a German colony by then – visited the colony as the German government was keen to secure a share in the lucrative diamond business. On 22 September 1908 he proclaimed the area between 26° south and the Orange River, and from the coast to a line 100 km inland off limits for diamond prospecting. The sole rights were given to the German Colonial Company for Southwest-Africa.



In the colony, the news was received with disbelief, dismay and anger. The outraged prospectors were now forced to look at the Central Namib Sand Sea north of Lüderitz, as the door to the southern diamond fields had been shut in their faces. Due to their perseverance, a mere three months after the proclamation, some prospectors negotiating the coastline in a cutter discovered the first diamonds at Spencer Bay. The first successful expedition from Lüderitz to Swakopmund

reported extensive diamond deposits along the coast, albeit only with 12 to 15 small stones to the carat. There soon was a constant stream of prospectors trekking northwards, and another diamond rush had set in. Against almost impossible odds, mining camps were established at Saddle Hill, Oyster Cliffs and on the Orloff fields. More diamonds were discovered between Meob Bay and Conception Bay in 1909. By 1910, virtually the entire area was pegged by prospectors. They formed small prospecting groups and worked northwards from Lüderitz and southwards from Swakopmund and Sandwich Harbour. By 1909, more than 5000 claims had been registered. But not everybody returned with diamonds, and an entire expedition vanished in 1909. Their bleached bones were found years later by other prospectors. Some of the adventures and misadventures of these prospectors are described by Schneider (2009) and Baericke (2007). The



first scientific expedition to the Central Namib Sand Sea started in August 1909, and succeeded in mapping the relationship of the desert terrain to the ephemeral rivers of the hinterland



It is difficult to imagine the hardship that both man and beast endured in the harsh desert conditions, with the cold, almost unending dunes, the ever howling southerly winds, the lack of shelter, and the shortage of water. One can only marvel at the pioneering spirit that must have prevailed.

Access to the “northern fields” – as the area became known – was by way of ox wagon, mules, horses and camels. The absolute lack of any human settlements in the area resulted in large quantities of fodder having to be distributed to various strategic points to feed the animals. The wheels of the ox wagons were fitted with wide iron bands to make transportation in sandy areas easier. Nevertheless, the oxen still had to endure incredibly harsh conditions. Today, old refuse dumps with their characteristic accumulations of horns bear witness to the thousands of oxen that were slaughtered over the years at the end of their faithful service.



Coming from the north, the prospectors met nothing but sand, salt pans and sea. The distance of 90 km started off with seven high dunes just south of Sandwich Harbour, including one which even at low tide required man, beast and carts to move through the sea. Next was the infamous “long wall”, where the slip faces of the dunes meet the sea, leaving only a narrow stretch of beach to negotiate. This stretch of beach is only accessible at low tide, and disappears completely during high tide. Failing to pass the entire stretch during low tide inevitably spelt disaster.

Transporting mining equipment and supplies was another logistical challenge. The cutter *Viking* and various other ships sailed from Swakopmund to service Conception Bay. They would unload their goods with the help of surf boats. The diggings further south had to rely on vessels from Lüderitz. Quite a few wrecks occurred, such as when the steamer *Eduard Bohlen* was beached and lost on 5 September 1909 at Conception Bay while intending to offload mining equipment. Lawlessness and claim “jumping” was a problem.



Prospecting and mining methods were primitive and without mechanisation. Sieving was done with primitive hand-held sieves or by trommel sieves. A number of hand-operated, moveable sieve jigs, including the famous Plietz jig, were used to concentrate the diamonds. Special wooden cases containing everything a one-man operation required, including sieves, a jig and a shovel, were shipped from Swakopmund.



A considerable amount of diamonds was produced. The average price received for the stones was 20 to 25 *Reichsmark* per carat. But the claims yielded fewer and smaller diamonds than those south of Lüderitz, only between 5 to 8 stones per carat, although the odd 0.5 carat stone was sometimes found. In the Meob and Conception Bay areas, the gravels were very patchy and on average the stones were even smaller, between 10 and 14 stones per carat. The tremendous logistical problems associated with

the northern fields and their inferior yields compared with the area south of Lüderitz made them much less attractive than was initially expected.

Notwithstanding this, by 1909, 16 companies operating on the northern fields were listed in the trade register and had a combined capital investment of 2.25 million *Reichsmark* and 583 claims. But the 33.5 % export tax imposed by the German imperial government meant that many prospectors faced bankruptcy. The situation eased somewhat in 1912 with the amendment of the taxation ordinance but cash flow remained a problem.



Systematic operations started in April 1913 after smaller operators had amalgamated into the “Diamantfelder Verwertungsgesellschaft Conceptionsbucht mbH” which then gave an option to the “Koloniale Bergbau-Gesellschaft” of August Stauch, the man who pegged the first diamond claims near Lüderitz and thereby initiated the first diamond rush. Prospecting trenches were excavated, and mules transported the sieved material in light cocopans to a washing plant. Some 108 loads of gravel were washed every day, yielding an average of 75 carats of diamonds. The total production for 1913 amounted to 15 167 carats. Removing the thick overburden of Aeolian sand was a problem in places.



Water and supplies delivered to Conception Bay by ship had to be transported by mules and camels to the individual fields. A narrow-gauge railway line for mule-drawn trolleys was therefore built. Potable water was found the east of Conception Bay and four wells were drilled and a windmill erected in 1913. This was piped 80 km through a 5-cm-diameter steel pipeline to Meob Bay. The pipeline consisted of 13 300 6-m lengths and had been imported from Germany. A telephone line was later laid parallel to the pipeline. But water still had to be transported to those fields that did not lie

adjacent to the pipeline. Large rolling vats, pulled by mules, were used for this.

Visitors to the mining areas remarked on their barrenness and dreadful isolation. Indeed, most prospectors and their workers were completely cut off from the World. They were accommodated in primitive wooden or corrugated iron huts or canvas tents. They also used the wreck of the “Eduard Bohlen” as accommodation. It is said that, at night, passing ships saw the eerie glow of fires gleaming from the portholes of the beached wreck.

In November 1914, following the outbreak of World War I, the northern diamond fields cease operations. Approximately 30 000 carats had been recovered by then. It was only in 1920 that the fields were re-opened again by Great Namaqua Diamonds (Pty) Ltd, which took over the rights of the “Diamantfelder Verwertungsgesellschaft Conceptionsbucht mbH” .



At Saddle Hill, South West Protectorate Diamonds Ltd started operating in 1922. Regularly spaced prospecting trenches were dug (these are still visible today) and systematic mining followed. The sediment was sieved in trommel sieves, and then washed in hand screens, before being hand sorted. On average, some 0.8 carats were recovered per cubic metre of gravel.



Supplies and mining equipment had once again to be shipped from Swakopmund to Conception Bay, a route that was usually served by the coaster “Ranza” which was cleared at Conception Bay with the aid of surf boats. Employees and some supplies were also transported from Walvis Bay to Conception Bay by mule- or horse-drawn carts. From 1923 onwards, motorcars were utilised on the fields. The first steam-driven Caterpillar arrived on the fields in 1930.

Over the years encampments with stores and workshop facilities were established at the “Grillenberger”, “Charlottenfelder”, “Holsatia” and “Fischersbrunn” fields. When water became scarce on the northern fields, the water pipeline was extended all the way to Fischersbrunn, where a natural source of fresh water, opened up by wells with winches, still exists today. There was enough water at Fischersbrunn to sustain an irrigation scheme which enabled the production of vegetables. Fig and peach trees were planted. Surplus produce was even shipped to Lüderitz and sold to hotels in Swakopmund. Some 6 ha were under irrigation. A bakery was later also installed.



Consolidated Diamond Mines (CDM) bought up many of the concessions but after a huge prospecting programme showed little result, it abandoned operations at the end of 1930. Namaqua Diamonds stopped operating in 1931, after having produced 135 461 carats of diamonds. At the same time the South West African Administration proclaimed the area as Diamond Area No 2 and closed it for prospecting and mining, as the authorities had experienced problems controlling this vast region. At that point total output from the northern fields amounted to some 579 734 carats



from the Conception Bay area and 14 763 carats from the Meob Bay area. A single diamond of 3.5 carats had been found and a few of 1 carat but the average stone size had remained small. Today, it is fascinating to walk through the dumps of deeply rusted machinery from these operations around Saddle Hill. The ruins of three mining camps can still be seen in the Conception Bay and Meob Bay areas. People left quickly and one can find cutlery, crockery, tools and other items of daily life at Grillenberger,

Charlottenfelder and Holsatia (Kohl and Schoeman, 2004).

In 1941, when diamond prices recovered, a new company, “Industrial Diamonds of South Africa” was floated. The Saddle Hill area quickly developed into a hive of mining activities, and large equipment was brought in along the beach and over the dunes. In the early 1950s, the production exceeded the quota that was given to the company by the Central Selling Organisation - the London monopoly that controlled all diamond sales worldwide at the time – and the surplus production was simply stored in glass jars at the mine! While production at Saddle Hill was expensive because of the remoteness of the area, the large demand for diamonds and the excellent prices paid after World War II enabled the company to make a healthy profit. However, the deposit was eventually mined out and mining ceased in 1963. In excess of 300 000 carats had been produced between 1941 and 1963.

Several prospecting campaigns were carried out in the area between 1951 and 1975 but without encouraging results. The area was de-proclaimed in the late 1980s and was included in the Namib-Naukluft National Park (Schneider, 2009).

Marine Archaeology

The coast of Namibia, including the coast of the Central Namib Sand Sea, is called the Skeleton Coast on account of the numerous shipwrecks that have occurred on this eastern Atlantic seaboard as well as because of numerous whale and occasional human skeletons that have been found on or just beneath the high-tide storm beaches. Since Portuguese pioneers embarked on their voyages of discovery along the African Coast to find a passage to India, sail ships were lost for various reasons.

Shipwrecks before 1800

It is known that Bartholomew Dias left Portugal with two caravels and one extra store-ship to enable his crew to extend their expedition far south along the African continent. Pedro Dias, a brother of Bartholomew was in charge of the store-ship with John de Santiago as pilot and John Alves as the Captain. The store-ship was left behind, probably at one of the bays called at between Walvis Bay and Lüderitz but old records and maps in Portugal do not specifically identify the exact bay in which although one might speculate that it would have been where fresh water was available. Only two ships are mentioned as being present on the historic occasion of the erection of the Padrão at Dias Point at Lüderitz (Axelson, 1973).



Nine months after leaving the store-ship behind, Dias was back with the proud record of having rounded the Cape of Good Hope, then known as the Cape of Storms. Only three of the supply ship’s crew of nine men, who were left behind as guards, had survived. One of the sailors, who was so weak from illness, died of joy at sighting his companions. The six other crew members, who tried to make contact with beachcombing natives on the main land, were brutally attacked and robbed of their possessions. The killing was observed from the store ship by the three remaining sailors. After removing the remaining food from the store-ship, Dias had it set alight and set sail to continue further north for home. This store-ship, from the year 1488, is thus the oldest recorded sailing ship wreck along the Namibian Atlantic Coast.

Documentation of shipwrecks along the Namibian Atlantic Coast before 1800 is virtually non-existent. Survivors perished along this inhospitable coast or were murdered by Strandlopers (local people living at places along the coast) who regarded them in all probability as intruders into their

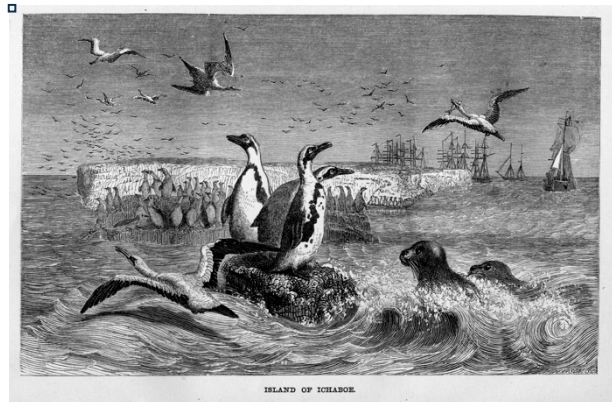
territory. The majority of old shipwreck planks and beams along the coast are presumably of Portuguese origin from earlier times, as they used to sail along the Namibian Coast from Luanda to Cape Town and back. However, one must also take into account the many American whalers seasonally visiting the coast as from 1788, and here in particular the coast of the Central Namib Sand Sea. Some wreck remains were positively identified as American whalers. American made porcelain cups and saucers were also found and were later displayed in the National Museum in Windhoek. The Danish *Princess Caroline* was lost in 1755 opposite Meob Bay. A British East India Company ship rescued the survivors.

The wreck of the Dutch East India Company (VOC) ship *Vlissingen* remained a mystery for centuries. Eventually the archives in The Hague revealed that she had been lost in 1748 at Meob. There were 180 persons of 15 different nationalities on board, all of whom probably perished. "Duiten" coins from that wreck, dated 1746, were found spread from the Walvis Bay lagoon right down to south of Sylvia Hill and also in the Awasib Mountains, approximately 80 km from the coast in the southern Namib.

From Spain it is known that in 1789 the first sea battle along the Namibian Coast was fought against a Portuguese caravel. The Spanish ship was sunk in that battle off Sandwich Harbour.

Shipwrecks since 1800

In 1804 the American whaler *Hope* was lost just south of Sandwich Harbour. Except for two survivors who were rescued in the Sandwich Harbour lagoon, all crew members were murdered by Strandlopers. During the guano rush various sail ships were lost at or near Ichabo Island. These were the *Ann Mondell*, *Daphne*, *Eliza*, *Guernsey Lilly*, *Kate*, *Lord Keane* and *Orion*, to mention but some of the casualties. Lloyds of London lists them. From diamond diving prospectors it is known that at least three anchors were spread around the island and one near Post Office Point on the mainland. Judging from the various vessels lost in the area, and the fact that no ship wreckage can today be found, it can be presumed that the island people collected all fire wood they could find along the coast during guano collecting times. The masts were probably used as upright pillars for the current jetty on Ichaboe, since it dates from before the year 1900.



An interesting historical site is the cemetery at Douglas Bay. Up until the early 1950s, the names on the graves were still legible. Amongst the people buried here were also the captains of two ships. One was a certain MacKinnon. At another one of the graves, presumably also that of a captain, an old cannon was used as a grave stone. One captain was murdered by opponents in 1844/45 during a brawl while they were loading their ship with guano. Another cannon was observed between two graves which might have moved from its original position on a grave. It needs to be mentioned that in the absence of stones or bricks, old discarded cast iron cannons were often used as ballast on sail ships. The cannons reported at Ichaboe could thus be from a shipwreck of which the wood disintegrated or was removed for other purposes. At the height of the guano trade at Ichabo over 440 ships were lying at anchor. What a spectacular sight it must have been to see all the masts at sunset.

Whaling activities, hunting, mining, guano trade, increasing missionary activities, Swedish traders coming to the country, the introduction of steam on ships and finally the occupation of Namibia by Germany in 1884 resulted in a steady increase of shipping along the Atlantic coast and thus an increase in shipwrecks. The occupation of Walvis Bay by Great Britain also resulted in a monthly coaster connection between that port and Cape Town. Furthermore, the fishing activities of Cape Companies at Hottentot's Bay and Sandwich Harbour since 1850 resulted in a steady increase in the number of ships belonging to de Pass, Spence and Company sailing along the Atlantic Coast. The *Nantucket* and *Salem* whalers were also very active and places like Hottentot's Bay, Spencer Bay, Conception Bay, Sandwich Harbour, Walvis Bay, Cape Cross and a few places further north were used as intermediate stations to boil blubber. Huge cast iron blubber pots from Hottentot's Bay and Spencer Bay were moved after the World War I to Simonstown. Some of these heavy cast iron pots were also lost whilst transporting from ship to shore or vice versa.

As seen from the preliminary listing of ship casualties along the Namibian Coast, losses during the past 100 years increased because of the increase in European activities in the Southern African region. Due to improved communication, losses were also recorded and dealt with more thoroughly. An iconic shipwreck is the *Eduard Bohlen*, which was lost in 1909 at Conception Bay while trying to offload mining equipment for the newly opened diamond fields. As a manifestation of the constantly changing shoreline, the wreck lies today hundreds of meters inland from the beach, and is a touristic attraction on any scenic flight into the area.



The following wrecks occurred along the coast of the Central Namib Sand Sea:

| | | |
|--------------------|------------|----------------------------------|
| Anne Mondell | 1840s | Ichaboe Island |
| Atlantic Harvester | 27/05/1967 | Mercury Island |
| Balgowan Castle | 08/1904 | Easter Cliffs |
| Brandaris | 05/08/1968 | 12 miles north of Conception Bay |
| Canute | 03/1861 | Ichaboe Island |
| Cawdor Castle | 30/07/1926 | south of Conception Bay |
| Consortium Omega | 09/07/1981 | Conception Bay |
| Daphne | 23/11/1845 | Ichaboe Island |
| Diaz | 08/02/1926 | Northcliff near Saddle Hill |
| Dolphin | 18/01/1960 | Conception Bay |
| Eliza | 1840s | Ichaboe Island |
| Eagle | 26/05/1861 | south of Sandwich Harbour |
| Eduard Bohlen | 05/09/1909 | south of Conception Bay |
| Guernsey Lilly | 1840s | Ichaboe Island |
| Heraclides | 26/10/1907 | Hottentot's Bay |
| Hondeklip | 07/1928 | Meob Bay |

| | | |
|-------------------|------------|-------------------------|
| Hoevled 1 | 23/11/1968 | north of Meob Bay |
| Hans die Skipper | 08/05/1970 | Conception Bay |
| Kent Bay | 05/07/1850 | Hottentot's |
| Lord Keane | 1840s | Ichaboe Island |
| Limpopo | 01/01/1930 | Sylvia Hill |
| Orion | 1840s | Ichaboe Island |
| Otavi | 14/07/1945 | Spencer Bay |
| Oceana Star | 26/02/1975 | Conception Bay |
| Princess Caroline | 1755 | Meob Bay |
| Solingen | 04/11/1904 | Hottentot's Bay |
| Shawnee | 16/02/1976 | north of Conception Bay |
| Tong Wa 107 | 17/04/1972 | north of Spencer Bay |
| United Trader | 16/12/1974 | north of Spencer Bay |
| Valkyrie | 18/10/1965 | south of Meob Bay |
| Vlissingen | 1748 | Meob Bay |



Destruction of old shipwrecks

Whalers along the Namibian Coast must be rated amongst the biggest culprits, because they destroyed many old shipwrecks. The scarcity of firewood left them with no alternative but to use ships planks and beams for fuel. Diamond prospectors also cleared the beaches for want of fire wood. Planks from a wreck at Meob were collected by diamond workers to build houses for protection against the harsh climate. It is also recorded that ship wreck planks were used to enforce the sides of the wells at Fischersbrunn to prevent the soft sand from the side filling up the wells.



South of Sandwich Harbour, the famous prospector Captain Louw once blasted part of an old wooden sail ship with dynamite to make provision for firewood for some workers at a prospecting camp. Besides some large copper nails and copper sheeting they did not find anything of value.

Workers of the company Industrial Diamonds of South Africa Ltd are said to have cleared the beaches north of Lüderitz after the World War II of all debris and old shipwreck planks to erect shelters and to use for firewood. The same happened at Conception Bay when the Namaqualand Diamond Mining Company operated there during the 1930's. Even smaller masts of the *Cawdor Castle* and *Eduard Bohlen* were chopped up for firewood. When workers were housed in the *Eduard Bohlen* they even broke down wooden panels in the ship and used them as fuel to prepare their

meals. Green (1933) writes that at night the port holes of the ship revealed the light of the burning fires and created the impression out at sea as if all lights were burning and the ship was sailing again.

Strandlopers also carried many usable artefacts along and discarded them whenever they no longer had any use for them. Pieces of broken bottles are evidence which were used either as a substitute for knives or scrapers. Some bottle necks were also found which were used as pipes. Copper nails found at fire places are an indication that ships' planks were used for cooking meals. Some of the Meob coins were found at a shell midden not far from Hottentot's Bay.

Spencer Bay

Whalers used to anchor in the bay during the whaling seasons for a period covering more than 100 years. It was known as "Death Beach" in earlier times, as the coast line was strewn with whalebone, vertebrae and bleached skeletons of Blue, Sei and Finn whales. Dolphin Head, the southern point of the Bay, rises almost sheer from the sea for 600 feet. Later, a German prospector erected a dwelling from recovered old ships planks near Spencer Bay. This he called "Hotel zur Trockenheit" (Hotel Drought) as fresh water was never found at Spencer Bay.

Saddle Hill

Shaped like a Mexican saddle, it is a fine landmark for navigators and a stop-over for any prospector who passed that way. There is a waterhole and a notice decorated with a skull and crossbones: Fill your water bottles. A very clear message from a prospecting pioneer of the past!

Hottentot's Bay



Here there are undoubtedly wrecks covered by moving dunes. According to oral records from around Gibeon, Strandlopers once witnessed how a ship called, how many heavy cases were transferred from the ship to the shore and buried, and how a couple of the people involved were shot and killed at the beach, whilst the rest returned to the ship and departed. The Strandlopers were afraid of ghosts and never visited that place where the white men had been digging (Green, 1933).

Ichabo Island

During February 1845 it was recorded that 451 ships were anchoring in the two-mile-wide channel between Ichabo Island and the mainland. Hundreds of sailors were clearing the guano deposits which Capt. Morrell had discovered on Monday 6 October 1828 when he visited Ichabo with his ship *Antarctic*. The guano sailors from Liverpool caused havoc on the Island with their mad carousals and bloodthirsty feuds. Two groups competed for



the guano, namely the agents of merchant houses and the private ship-owners and masters. Many graves on the Island and even more along the coast at Douglas Bay mark the last resting places of those unfortunate fortune seekers who lost their lives.

Many of the lost ships that came to load guano were driven ashore by the south-westerly gales. Fire wood for prospectors was available for many years. The island headman used to live in a chart house torn from the poop of a sailing ship, strengthened against the weather by timbers from other ships until the early 1930's. When the German ship *Solingen* stranded in November 1904 at Hottentot's Bay, Emilio, the Italian headman from Ichabo Island and some workers rowed over to replenish their supply of alcohol. During this unauthorised shopping expedition they discovered a piano in the dining saloon. On a subsequent excursion Emilio and some of his colleagues succeeded in hoisting the piano into their boat. It was a dangerous journey back but even more complicated to hoist the piano up the Ichabo jetty and transferring it into their dining hall. They eventually succeeded with many scratch marks, a few blue finger nails and one broken leg of the piano. Despite the damages, the piano provided the workers with many happy moments for many years.



Sylvia Hill

HMS *Sylvia* was built in 1866 in the Woolwich Dockyard. She was a surveying ship commissioned for foreign surveys. In 1880 she sailed from Cape Town, up the west coast to Walvis Bay and from there to St. Helena. During the survey this ship lent her name to this conspicuous double peaked hill which was surveyed by her Captain Aldrich for the first time (Kinahan, 1992).

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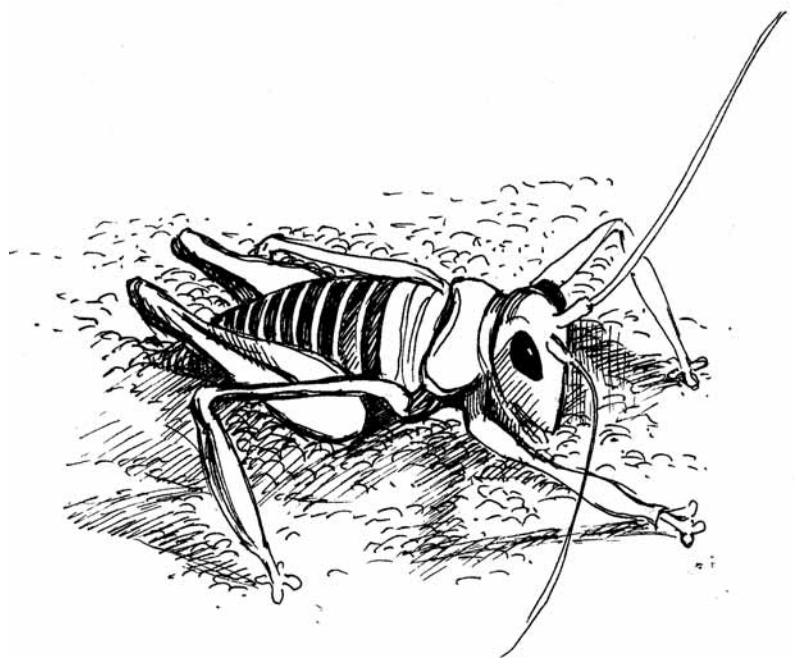
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Annex 5

Ecology & Evolutionary Processes



At the time of printing, the contribution to the Namib Sand Sea World Heritage Nomination dossier on 'Ecology and Evolutionary Processes' was not available due to technical problems. This report will be submitted as a late submission to the Annexes shortly.

Annex 6

Overview of Vegetation



Flora of the Namib Sand Sea

by Herta Kolberg, boscia@mweb.com.na

Five flowering plant species are endemic to the sand sea. They are *Hermannia minimifolia* Friedr.-Holzh. (Sterculiaceae), *Stipagrostis seelyae* De Winter, *Stipagrostis pellytronis* De Winter (Poaceae), *Sesamum abbreviatum* Merxm. (Pedaliaceae) and *Monsonia ignorata* Merxm. & A.Schreib. (Geraniaceae). A few other species also occur here as well as into sandy habitats further north e.g. *Trianthea hereroensis* Schinz. Others have disjunct distributions on other sandy habitats, e.g. some legumes, nara (*Acanthosicyos horridus* Welw. ex Hook. f.) and *Hexacyrtis dickiana* Dinter.

The sand sea area has been identified as one of the Namibian floristic groups (Craven 2009). The floristic area is delineated by the ranges of a small, but unique group of endemic species. It stretches from the sand dunes south of the Kuiseb River to the Koichab River (at about the latitude of Lüderitz), and includes Sossusvlei. The area is 100 to 150 km broad and has a maximum elevation of 900 m. The eastern border is a narrow section of Namib plains leading up to the southern escarpment. Features of the area that affect the plants are the linear dunes that run roughly south to north and dominate the inland areas, the very high reflectivity of the soil, and limited rain recorded as being during summer. The area is homogenous and there is therefore no subdivision of species composition.

The diversity of plant species is limited, but the populations may be large in good seasons. Only highly adapted species are able to persist in this environment as perennials, either herbaceous or as dwarf shrubs. Especially on the Namib plains within the sand sea, ephemeral annual plants and bulbs can appear in huge numbers after good rainfall. Only in exceptional years will there be new plant growth on the sand dunes themselves, as witnessed at Sossusvlei in 2006. The most representative family is the Poaceae (grasses) and single species of the Aizoaceae, Geraniaceae and Pedaliaceae also occur. While most floristic groups show relationships with other areas of the world, these narrow endemics do not. Only some species that are found in the south of the area can be found in the Northern Cape Province of South Africa.

The area identified floristically excludes a very narrow coastal strip because this is occupied by species from the Southern Namib Succulent Desert (Craven 2009). Similarly some of the species found on the few isolated mountains and hills that occur in the main Namib sand sea, for example the Hauchab and Uri-Hauchab, are associated with Highland Group further east in Namibia (Craven 2009), where the altitude increases and more habitats are available to the plants. This differs from Burke *et al.* (1998) in that endemics for that ecosystem were differentiated from the others found there because of other habitats within the sand sea. The Tsauchab and Tsondab Rivers extend a part of the Namib plains westwards into the sand sea. These rivers and the Tsaris River disappear under the sand and never reach the sea. A number of plant species are associated with these water courses, but are not limited to the sand sea.

Reasons why plants occur where they do and clues to their origins are sought by assessing all available phylogenies, palaeoclimate data and vegetation analyses. There is very little evidence for this area in the fragmentary fossil record for Namibia and no molecular studies have been carried out on the species here. This group of plants occurs between a floristic group in the north of considerable age with molecular evidence showing links to arid NE Africa, and a young floristic group in the south consisting mainly of succulent plants that also occur down to the

Orange River and marginally into the Northern Cape. Two of the families represented on the sea of sand also have the most endemic taxa in other sandy areas, like the Kalahari, but they are represented by different taxa that must have evolved separately to become adapted to the lower solar radiation levels, cloudiness, humidity, wind and lower altitudes. The importance of an area cannot be defined by numbers, but rather in the uniqueness of the taxa as explained above.

The actual number of species that occur in the Namib Sand Sea is not easy to calculate because most are associated with other habitat types like rocky outcrops, washes etc. within the sand sea and this is not always clearly indicated on the data available. A simple search on plant distributions will therefore not give the desired result. The Namib Sand Sea is also an under collected area from a botanical point of view. The few collections that have been made generally come from the rocky outcrops. Also because of the highly variable rainfall, many species may have been missed by collectors because they were not at the right place at the right time. In the past, plant collections were mapped (and databased) on a quarter-degree grid system. This is too coarse a system to distinguish between species that really occur on sand and those that occur in the small pockets of other habitats (washes, rocky outcrops) within the sand sea. The available data therefore are insufficient to provide a list of species from which other statistics could be derived (Kolberg & Craven, ongoing).

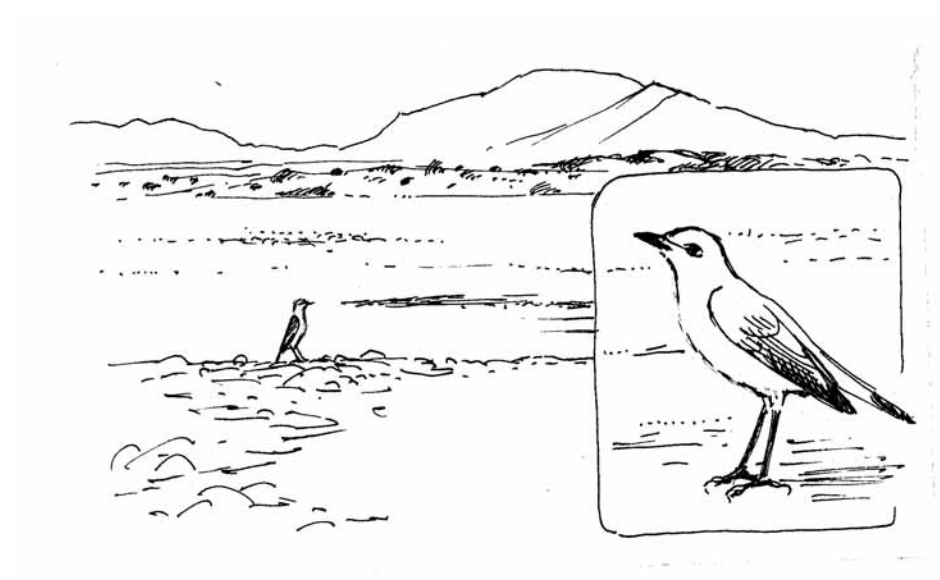
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Annex 7

Overview of Birds



Overview of Birds of the Namib Sand Sea

Peter Bridgeford and Mary Seely

The Namib Sand Sea taken in its entirety has been recorded to harbour approximately 300 species of birds - at least occasionally. The overwhelming majority of these birds are found on the edges of the Namib Sand Sea, on rocky outcrops and surrounding plains, along the coast and at Sandwich Harbour, as well as in the dunes. They are common along the Kuiseb River on the northern boundary and the other large ephemeral rivers such as the Tsondab and Tsauchab. The vast majority of these birds only enter the Namib Sand Sea occasionally and don't go very far into the dune interior, if at all.

Endemic species: The only endemic species in the Namib Sand Sea is the Dune Lark, *Calendulauda erythrochlamys*. It inhabits the dune sea wherever the perennials, *Trianthema hererosensis* and *Stipagrostis sabulicola*, provide suitable habitat and other resources. This bird has developed a set of special feeding habits using the insects and seeds offered by different parts of a dune slope over the course of a day and year. Yet another unusual aspect of the Dune Lark is its longevity; one female was recaptured over a ten-year period. This is apparently an important adaptation for spanning the frequent years of little or no rain. The *near Namib endemic*, Rüppell's Korhaan *Eupodotis ruepellii*, uses the ephemeral rivers and plains to penetrate far into the Sand Sea.

On the plains immediately north of the Namib Sand Sea within the delineated buffer zone of the Property, an arid-adapted, localised Namib endemic species, Grey's Lark, *Ammomanes grayi*, represents the second locally endemic species although not found in the Namib Sand Sea itself.

Nesting in the Namib Sand Sea: Three resident bird species are known to nest directly on the sand in the central dunes, although apparently rarely, and others may do so undetected to date. The known examples include the Ostrich, *Struthio camelus*, the Spotted Eagle Owl, *Bubo africanus* and Namaqua Sandgrouse *Pterocles namaqua*. A variety of raptors hunting in the vegetated dunes use !nara bushes growing on dune slopes for nesting. These common raptors include Greater Kestrels *Falco rupicoloides*, Rock Kestrels *Falco rupicolus* and Black-chested Snake-Eagles *Circaetus pectoralis*. They have also been recorded from the rocky coast at places like Sylvia Hill, the flats at Meob and Sandwich Harbour. The huge, *Endangered* Martial Eagle *Polemaetus bellicosus*, breeds in the Tsauchab and Tsondab Rivers and scattered trees found on the plains, far into the sand sea. Even Secretary Birds *Sagittarius serpentarius*, have been found nesting in trees on the dunes and feeding in the sand sea.

The Namib Sand Sea is an important breeding area for the largest carrion eater in Africa, the Lappet-faced Vulture *Aegypius tracheliotos*. They use camel thorn and other trees in the ephemeral rivers and scattered trees on the plains. However, they also breed in trees in the dunes.

In addition, a multiplicity of species, primarily inhabiting the coastal dunes and flats, rocky outcrops and Sandwich harbour, are considered as breeding

residents. One of these is the near-endemic Damara Tern *Sterna balaenarum*, breeding on the flats along the coast and between the dunes. North and south of the Sand Sea, mining and off-road driving has led to the loss of some breeding colonies of this *Near Threatened* species.

Feeding in the Namib Sand Sea: The Namib Sand Sea supports several raptors with their base in the bordering ephemeral rivers where camel thorn trees *Acacia erioloba* grow. Most common is the Pale Chanting Goshawk, *Melierax canorus*, a regular daytime predator on the nearby dunes. The Spotted Eagle Owl, *Bubo africanus*, and Barn Owl *Tyto alba* prey on birds, invertebrates and small mammals such as the golden mole and gerbils at night. Similarly, the Pied Crow, *Corvus albus*, and Black Crow, *Corvus capensis*, can be found chasing lizards and tenebrionid beetles throughout the sand sea. Although not breeding in the sand sea, White-backed Vultures *Gyps africanus* feed in this area.

A number of smaller bird species not resident in the Namib Sand Sea frequently enter the edges of the sand sea throughout the year to prey upon appropriate food items. These include the Rock Martin, *Hirundo fuligula*, Bradfield's Swift, *Apus bradfieldi* and migrant Barn Swallows *Hirundo rustica*, that soar along the dune slipfaces capturing flying insects attracted to this specialised habitat. Occasionally a Familiar Chat, *Cercomela familiaris*, will sit on the crest of the slipface surveying available insects. They are widespread in the sand sea and breed along the coast in long-abandoned mine buildings.

Other more mobile bird species occupy the Namib Sand Sea for extended periods particularly after good rains. The Greybacked Sparrowlark, *Eremopterix verticalis*, suddenly arrives in large flocks in the interdune valleys, where the annual grass *Stipagrostis gonatostachys* grows rapidly while profusely distributing its seeds, and then disappears just as suddenly. On a different scale, Ludwig's Bustard, *Neotis ludwiggii*, stalks the interdune and dune slopes consuming tenebrionid beetles as long as they remain abundant and easily picked off the surface. The Ludwig's Bustards are usually found in family groups of three or four birds together, but nests have not been located in the Namib Sand Sea.

In conclusion: Of the overall total, approximately 86 species are associated with water and primarily found at the Sandwich Harbour Ramsar Site on the north-western corner of the identified property. Other sites along the coast or temporary inland ponds or artificial dams can host a number of species. One of these, Sossus Vlei, attracts several species of water birds when the vlei is flooded even though this is an infrequent occurrence. Moreover, the Namib Sand Sea protects the only two mainland breeding colonies of African Penguins *Spheniscus demersus* in Namibia. Classed as *Vulnerable*, the small colony of African Penguins at Sylvania Hill and another 20 km further south at Easter Point are important sites for these Southern African breeding endemics.

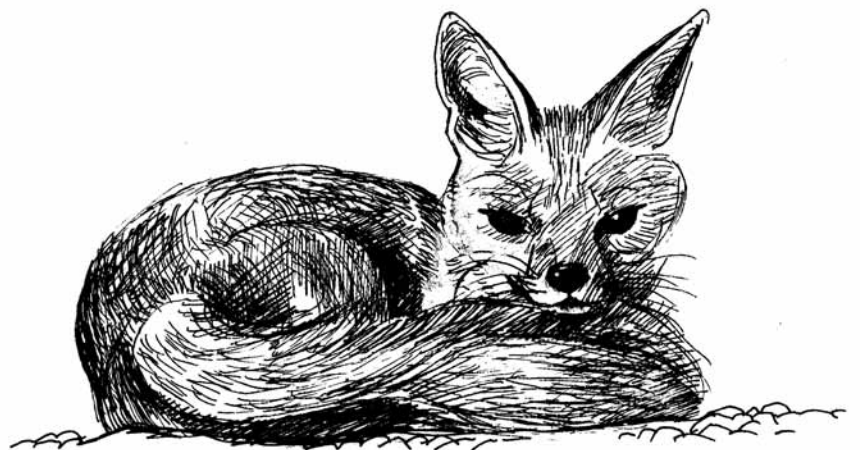
Another 72 species have been recorded on the northern boundary of the Namib Sand Sea at the Gobabeb Training and Research Centre. These represent a mixture of the single Namib Sand Sea endemic, numerous

species dependent on the Kuiseb riverine forest entering the sand sea only occasionally and some that are mainly found in the bordering plains in the buffer area but infrequently appear over the Namib Sand Sea.

The special birds of the Namib Sand Sea are mainly located at the Sandwich Harbour Ramsar Site on the north-western corner of the identified property and along the coast. The one true dune endemic inhabits the dune sea wherever the perennial *Trianthema hererosensis* and *Stipagrostis sabulicola* provide suitable habitat and other resources. Nevertheless, a number of birds resident on the borders of the Namib Sand Sea have the potential to give up their secrets concerning interactions with the dune environment upon closer and longer term observation.

Annex 8

Overview of Mammals



Overview of Mammals of the Namib Sand Sea

By Stephanie Fennessy

The Namib Sand Sea provides critical habitat for 57 different mammal species, including two, which are endemic to the area; namely the Grant's golden mole (*Eremitalpa granti namibensis*) and the Dune hairy-footed gerbil (*Gerbillurus tytonis*).

The majority of mammals in the Namib Sand Sea are not permanent residents, but migratory species, occasionally utilising this habitat or seasonally expanding their range. As an example, there is a regular east-west migration of antelopes such as gemsbok (*Oryx gazella*) and spingbok (*Antidorcas marsupialis*) across the nominated property, which is dependent on seasonal and spatial rainfall distribution. These antelope also seek the solitude and safety of the Namib-Naukluft National Park for calving and the period following. These migration patterns have most likely been occurring for a millennium or more, and are integral to the ranging behaviour of these and other mammals of the Namib Sand Sea.

Mammals vary in their use the different habitat types existing within the nominated property. Whilst very few (but a few important) mammals utilise the dune slopes, gravel plains, ephemeral riverbeds, rocky outcrops and inselbergs offer more attractive habitat primarily for forage and shelter. As examples, Rock hyrax (*Procavia capensis*) and Dassie rats (*Petromus typicus*) primarily use rocky outcrops and inselbergs, and gemsbok and springbok primarily use gravel plains and ephemeral riverbeds, while Grant's golden moles and Dune hairy-footed gerbils appear to be the only mammals who permanently reside in the dune fields.

Grant's golden mole and Dune hairy-footed gerbils are also the only two endemic mammals, whose range are totally restricted to the Namib Sand Sea. Other gerbil species frequent this habitat but are not confined to it. The golden mole is a small, blind, subterranean insectivore with a silky greyish-yellow coat with a silvery sheen. The claws on the front feet are broad and hollowed out and serve as modified shovels for digging through loose sand. Unlike other subterranean animals, the Grant's golden mole lacks an underground burrow system, but 'swims' through the sand and emerges onto the surface to forage for its prey. Its prey comprises largely of invertebrates such as termites and insect larvae, as well as crickets, moths, spiders and legless lizards. However, it will eat anything it can catch and overpower, with the web-footed gecko recorded as its largest prey species. The golden mole is solitary and moves randomly within their home range. Food sources are not only sparse in the Namib Sand Sea, but also patchily distributed, so moles must forage across considerable distances (up to 600m per night) in search of adequate prey. As the energy cost of sand-swimming is far lower than burrowing through solid ground (yet 80 times higher than that of running on the surface), it is unlikely that the Grant's golden moles could exist in areas with such low abundance of food, if the substrate were more compacted. When not active, the moles shelter beneath vegetation hummocks where they are afforded some protection from predators such as black-backed jackals (*Canis mesomelas*) and owls. They are physiologically unique in their

ability to abandon thermoregulation during their daily rest, allowing their body temperature to drop to ambient and depressing their metabolic rate, thus allowing slow breathing and lower rates of water loss. This makes the Grant's golden mole the only known 'reptile-like-mammal' and a unique mammal on the nominated property.

Historically, the nominated property and the buffer zone were abundant with wildlife. Black rhino used to roam the ephemeral riverbed of the Tsondab River, as did giraffe, lion, hartebeest and wild dog. However, all these large mammals are now locally extinct but many exist along its eastern border.

The harsh environment of the Namib Sand Sea poses an extreme challenge to carnivores. However, three large carnivores are acutely adapted to life in the desert: spotted hyaena (*Crocuta crocuta*), brown hyaena (*Parahyaena brunnea*) and black-backed jackal. While spotted hyaena mainly occur throughout the eastern parts of the nominated property, the other two carnivores make intensive use of the coastal area and are more abundant. All three species show adaptations towards living in such a harsh desert environment, including variations in home range, social interaction patterns, preferred forage sources and adapted diurnal/nocturnal activity peaks.

South African fur seals (*Arctocephalus pusillus*) are common along the Southern African west coast from South Africa to Angola. Large colonies are formed on the rocky promontory at Sylvia Hill and on sandy beaches at Meob and Conception Bays, and Ilheo Point, the spit of land protecting the lagoon at Sandwich Harbour. The seals pup in late November or early December, and become easy but valuable prey for brown hyaena and black-backed jackals.

Gemsbok are arguably the best adapted animal of the desert. Found in a wide range of arid habitats, it is the most common large mammal in the Namib Sand Sea. Gemsbok mainly feed on grass, but also browse and dig up tubers, roots and bulbs if necessary and find water by devouring melons and !Nara, which contain high water contents. Interestingly, gemsbok can concentrate their urine and absorb all possible moisture from faeces, to prevent unnecessary water loss. However, their most important adaptation to desert life, is their ability to allow their body temperature to rise to 40°C before beginning evaporative cooling by panting and sweating. While increasing their body temperature, the brain temperature is kept at lower levels. A sophisticated network of blood vessels beneath the brain, together with rapid panting helps to cool the blood in the nasal sinuses and allow for heat exchange between arteries and veins. As a result, blood from the heart to the brain is several degrees cooler than the rest of the body facilitating survival in this harsh arid environment.

The extensive gravel plains around Conception Bay and several inselbergs isolated within the Namib Sand Sea are home to some phylogenetic and ecological relict species, now limited to these areas with no viability to migrate elsewhere. For example, there used to be a population of springbok at Conception Bay who

probably moved there many years earlier when the Tsauchab River occasionally managed to break through to the ocean. These springbok have recently been shot and are unlikely to ever be replaced due to the restrictive nature of future immigration into this area.

From a conservation status perspective, two species in the Namib Sand Sea are listed as 'Vulnerable' on the IUCN Red List, namely Grant's golden mole and cheetah (*Acinonyx jubatus*). While cheetah predominantly utilise the nominated property at the extreme range of their habitat, the Grant's golden mole is endemic and restricted to the nominated property. Additionally, cheetah's conservation status is based on the low number of remaining animals in the wild, Grant's golden mole's status is based on its extent of occurrence and area of occupancy, both these factors directly relating to the habitat offered by the nominated property and stressing the mammals dependence on this area. One other mammal species occurring in the Namib Sand Sea is classified as Near Threatened, the Angolan hairy bat (*Cistugo seabrai*).

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Annex 9

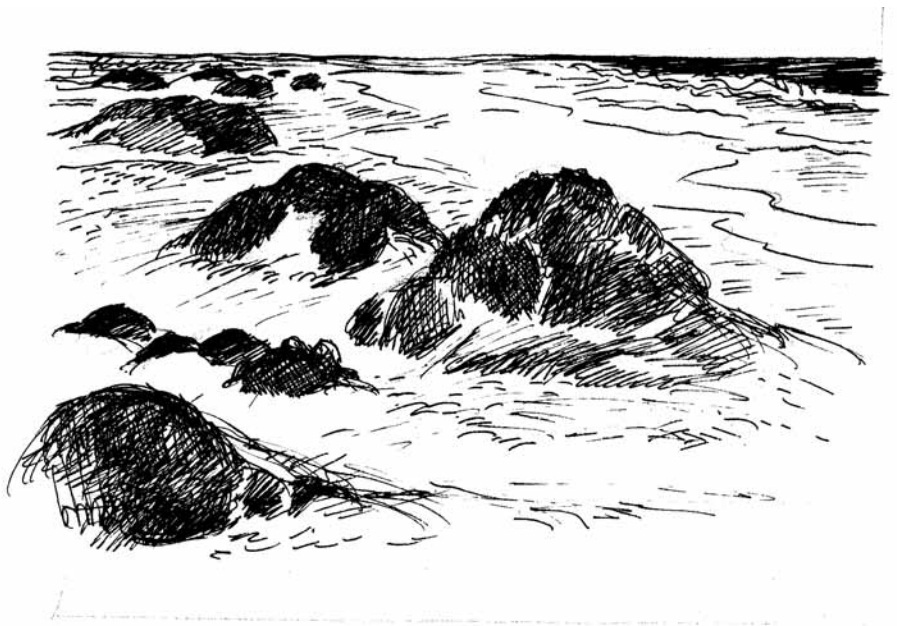
Table of Aliens



| Family | Genus | Species | Common Name | Occurrence within Namib Sand Sea |
|---------------|---------------------|----------------------|--------------------|---|
| Euphorbiaceae | <i>Ricinus</i> | <i>communis</i> | Castor Bean | Epemeral rivers |
| Fabaceae | <i>Prosopis</i> | <i>glandulosa</i> | Prosopis tree | Ephemeral rivers, mostly eradicated |
| Solanaceae | <i>Datura</i> | <i>ferox</i> | Thorn-apple | Epemeral rivers |
| Solanaceae | <i>Datura</i> | <i>innoxia</i> | Thorn-apple | Epemeral rivers |
| Solanaceae | <i>Datura</i> | <i>metel</i> | Thorn-apple | Epemeral rivers |
| Solanaceae | <i>Datura</i> | <i>stramonium</i> | Thorn-apple | Epemeral rivers |
| Solanaceae | <i>Nicotiana</i> | <i>glauca</i> | Wild tobacco | Epemeral rivers |
| Cyprinidae | <i>Cyprinus</i> | <i>carpio</i> | Common Carp | Rare Vagrant after floods |
| Columbidae | <i>Columba</i> | <i>livia</i> | Feral Pigeon | Human settlements (also abandoned) |
| Ploceidae | <i>Passer</i> | <i>domesticus</i> | House Sparrow | Human settlements (also abandoned) |
| Muridae | <i>Mus</i> | <i>musculus</i> | House Mouse | Human settlements (also abandoned) |
| Muridae | <i>Rattus</i> | <i>rattus</i> | Common House Rat | Eradicated |
| Pholcidae | <i>Pholcus</i> | <i>phalangioides</i> | Long-legged Spider | Human settlements (also abandoned) |
| Pholcidae | <i>Smeringopus</i> | <i>pallidus</i> | Long-legged Spider | Human settlements (also abandoned) |
| Theridiidae | <i>Latrodectus</i> | <i>geometricus</i> | Black-widow Spider | Sandwich Harbour and human settlements |
| Uloboridae | <i>Uloborus</i> | <i>plumipes</i> | Spider | Sandwich Harbour |
| Lepismatidae | <i>Ctenolepisma</i> | <i>longicaudata</i> | Silverfish | Human settlements (also abandoned) |
| Blatellidae | <i>Blatella</i> | <i>germanica</i> | Kitchen cockroach | Human settlements (also abandoned) |
| Cerambycidae | <i>Arhopalus</i> | <i>ferus</i> | Longhorn Beetle | Beach driftwood |
| Ptinidae | <i>Stethomezium</i> | <i>squamosum</i> | Ptinid Beetle | Coastal area |
| Gryllidae | <i>Acheta</i> | <i>domestica</i> | Cricket | Human settlements (also abandoned) |
| Gryllidae | <i>Gryllus</i> | <i>bimaculatus</i> | Cricket | Human settlements (also abandoned) |
| Pthiridae | <i>Pthirus</i> | <i>pubis</i> | Pubic Lice | Human ectoparasite |
| Pulicidae | <i>Pulex</i> | <i>irritans</i> | Common Flea | Human settlements (also abandoned) |

Annex 10

Table of Vegetation



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|-------------------------|---------------------------------|----------------------------|---------------------|------------------|----------------------|---------------------|
| Kingdom: Plantae | Phylum: Angiospermophyta | Class: Angiospermae | | | | |
| Asparagales | Hyacinthaceae | <i>Dipcadi</i> | <i>bakeranum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Hyacinthaceae | <i>Ornithogalum</i> | <i>candidum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Hyacinthaceae | <i>Ornithogalum</i> | <i>stapffii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Kingdom: Plantae | Phylum: Angiospermophyta | Class: Magnoliatae | | | | |
| Apocynales | Apocynaceae | <i>Ectadium</i> | <i>latifolium</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Ectadium</i> | <i>virgatum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Gomphocarpus</i> | <i>filiformis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Hoodia</i> | <i>gordonii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Hoodia</i> | <i>pedicellata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Larryleachia</i> | <i>marlothii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Nerium</i> | <i>oleander</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Orthanthera</i> | <i>albida</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Apocynales | Apocynaceae | <i>Pergularia</i> | <i>daemia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Laggera</i> | <i>decurrens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Chrysanthemoides</i> | <i>incana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Engleria</i> | <i>africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Epaltes</i> | <i>gariiepina</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Eriocephalus</i> | <i>pinnatus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Gazania</i> | <i>jurineifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Geigeria</i> | <i>alata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Geigeria</i> | <i>ornativa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Helichrysum</i> | <i>obtusum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Helichrysum</i> | <i>roseo-niveum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Hirpicium</i> | <i>gazanioides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Kleinia</i> | <i>longiflora</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Nidorella</i> | <i>resedifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Osteospermum</i> | <i>microcarpum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Osteospermum</i> | <i>muricatum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Othonna</i> | <i>furcata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Othonna</i> | <i>protecta</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Pechuel-Loeschea</i> | <i>leubnitziae</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Pentzia</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Pteronia</i> | <i>spinulosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|----------------|-----------------|----------------------|-------------------------|-------------------------|-----------------------------|---------------------|
| Asterales | Asteraceae | <i>Senecio</i> | <i>flavus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Tripteris</i> | <i>crassifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asterales | Asteraceae | <i>Xanthium</i> | <i>spinsum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Bignoniaceae | <i>Cataphractes</i> | <i>alexandri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Bignoniaceae | <i>Rhigozum</i> | <i>trichotomum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Boraginaceae | <i>Heliotropium</i> | <i>ovalifolium</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Boraginaceae | <i>Heliotropium</i> | <i>oliveranum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Boraginaceae | <i>Heliotropium</i> | <i>tubulosum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Boraginaceae | <i>Trichodesma</i> | <i>africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Heliotropiaceae | <i>Cordia</i> | <i>gharaf</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Heliotropiaceae | <i>Heliotropium</i> | <i>oliveranum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Hydrophyllaceae | <i>Codon</i> | <i>royenii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Boraginales | Hydrophyllaceae | <i>Codon</i> | <i>schenckii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Burserales | Burseraceae | <i>Commiphora</i> | <i>glaucescens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Burserales | Burseraceae | <i>Commiphora</i> | <i>saxicola</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Burserales | Burseraceae | <i>Commiphora</i> | <i>tenuipetiolata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Boscia</i> | <i>albitrunca</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Boscia</i> | <i>foetida</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Cadaba</i> | <i>aphylla</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Capparis</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Cleome</i> | <i>foliosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Maerua</i> | <i>parvifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Capparales | Capparaceae | <i>Maerua</i> | <i>schinzii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Aizoanthemum</i> | <i>dinteri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Aizoanthemum</i> | <i>galenioides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Brownanthus</i> | <i>kuntzei</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Brownanthus</i> | <i>marlothii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Brownanthus</i> | <i>namibensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Drosanthemum</i> | <i>luederitzii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Drosanthemum</i> | <i>luederitzii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Galenia</i> | <i>africanum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Hereroa</i> | <i>puttkamerana</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Caryophyllales | Aizoaceae | <i>Jensenobotrya</i> | <i>lossowiana</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Caryophyllales | Aizoaceae | <i>Lithops</i> | <i>gracilidelineata</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|----------------|----------------|-------------------------|-----------------------|-------------------------|-----------------------------|---------------------|
| Caryophyllales | Aizoaceae | <i>Lithops</i> | <i>ruschiorum</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Caryophyllales | Aizoaceae | <i>Mesembryanthemum</i> | <i>cryptanthum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Mesembryanthemum</i> | <i>guerichianum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Psilocalaon</i> | <i>salicornioides</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Sesuvium</i> | <i>sesuvioides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Tetragonia</i> | <i>decumbens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Aizoaceae | <i>Trianthema</i> | <i>hereroensis</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Caryophyllales | Aizoaceae | <i>Trianthema</i> | <i>triquetra</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Amaranthaceae | <i>Aerva</i> | <i>leucura</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Amaranthaceae | <i>Arthroerua</i> | <i>leubnitziae</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Caryophyllales | Amaranthaceae | <i>Calicorema</i> | <i>capitata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Amaryllidaceae | <i>Ammocharis</i> | <i>tinneana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Atriplex</i> | <i>vestita</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Salsola</i> | <i>aphylla</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Salsola</i> | <i>nollothensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Salsola</i> | <i>tuberculata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Sarcocornia</i> | <i>pillansii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Chenopodiaceae | <i>Sueda</i> | <i>plumosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Molluginaceae | <i>Gisekia</i> | <i>africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Molluginaceae | <i>Hypertelis</i> | <i>salsoloides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Molluginaceae | <i>Limeum</i> | <i>fenestratum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Nyctaginaceae | <i>Boerhavia</i> | <i>deserticola</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Nyctaginaceae | <i>Boerhavia</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Nyctaginaceae | <i>Commicarpus</i> | <i>squarrosus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Nyctaginaceae | <i>Phaeoptilum</i> | <i>spinosum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Portulacaceae | <i>Avonia</i> | <i>albissima</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Caryophyllales | Tetragoniaceae | <i>Tetragonia</i> | <i>schenckii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Caryophyllales | Tetragoniaceae | <i>Tribulocarpus</i> | <i>dimorphanthus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Celastrales | Celastraceae | <i>Gymnosporia</i> | <i>senegalensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Cucurbitales | Cucurbitaceae | <i>Acanthosicyos</i> | <i>horridus</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Cucurbitales | Cucurbitaceae | <i>Citrullus</i> | <i>ecirrhosus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Cucurbitales | Cucurbitaceae | <i>Cucumis</i> | <i>sagittatus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Croton</i> | <i>gratissimus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>glanduligera</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|----------------|---------------------|-----------------------|------------------|-------------------------|---------------------|
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>guerichiana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>lignosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>mauritanica</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>phylloclada</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Euphorbia</i> | <i>virosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Euphorbiales | Euphorbiaceae | <i>Ricinus</i> | <i>communis</i> | d. Bounding | iv. Generalist | 12. Alien |
| Fabales | Fabaceae | <i>Acacia</i> | <i>erioloba</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Acacia</i> | <i>hebeclada</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Acacia</i> | <i>reficiens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Acacia</i> | <i>tortilis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Adenolobus</i> | <i>garipensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Adenolobus</i> | <i>pechuelii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Caesalpinia</i> | <i>pearsonii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Crotalaria</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Faidherbia</i> | <i>albida</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Fabales | Fabaceae | <i>Indigofera</i> | <i>auricoma</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Lebeckia</i> | <i>multiflora</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Otoptera</i> | <i>burchellii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Parkinsonia</i> | <i>africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Prosopis</i> | <i>glandulosa</i> | d. Bounding | iv. Generalist | 12. Alien |
| Fabales | Fabaceae | <i>Cullen</i> | <i>obtusifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Sesbania</i> | <i>pachycarpa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Fabales | Fabaceae | <i>Tephrosia</i> | <i>dregeana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Gentianales | Asclepiadaceae | <i>Sarcostemma</i> | <i>viminale</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Gentianales | Asclepiadaceae | <i>Trichocaulon</i> | <i>clavatum</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Gentianales | Rubiaceae | <i>Kohautia</i> | <i>cynanchica</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Geraniales | Geraniaceae | <i>Monsonia</i> | <i>ignorata</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Geraniales | Geraniaceae | <i>Monsonia</i> | <i>senegalensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Geraniales | Geraniaceae | <i>Sarcocaulon</i> | <i>marlothii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Geraniales | Geraniaceae | <i>Sarcocaulon</i> | <i>mossamedense</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Geraniales | Geraniaceae | <i>Sarcocaulon</i> | <i>salmoniflorum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Gunnerales | Myrothamnaceae | <i>Myrothamnus</i> | <i>flabellifolius</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Barleria</i> | <i>lancifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Blepharis</i> | <i>grossa</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|------------------|-----------------------|--------------------------------|------------------|-------------------------|---------------------|
| Lamiales | Acanthaceae | <i>Blepharis</i> | <i>obmitrata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Monechma</i> | <i>arenicola</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Monechma</i> | <i>desertorum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Monechma</i> | <i>genistifolium</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Petalidium</i> | <i>setosum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Petalidium</i> | <i>variabile</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Acanthaceae | <i>Ryellia</i> | <i>diversifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Lamiaceae | <i>Salvia</i> | <i>garipensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Oleaceae | <i>Olea</i> | <i>europaea subsp.africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Pedaliaceae | <i>Harpagophytum</i> | <i>procumbens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Pedaliaceae | <i>Rogeria</i> | <i>longiflora</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Pedaliaceae | <i>Sesamum</i> | <i>abbreviatum</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Lamiales | Pedaliaceae | <i>Sesamum</i> | <i>capense</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Pedaliaceae | <i>Sesamum</i> | <i>marlothii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Pedaliaceae | <i>Sesamum</i> | <i>triphillum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Alectra</i> | <i>pseudobarleriae</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Anticharis</i> | <i>inflata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Aptosimum</i> | <i>spinescens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Jamesbrittenia</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Jamesbrittenia</i> | <i>maxii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Striga</i> | <i>gesnerioides</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Lamiales | Scrophulariaceae | <i>Veronica</i> | <i>anagallis-aquatica</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Selaginaceae | <i>Walafrida</i> | <i>nachtigalii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Lamiales | Verbenaceae | <i>Chascanum</i> | <i>garipense</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Loasales | Loasaceae | <i>Kissenia</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malpighiales | Passifloraceae | <i>Adenia</i> | <i>pechuelii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Malvaceae | <i>Gossypium</i> | <i>anomalum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Malvaceae | <i>Hibiscus</i> | <i>dinteri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Malvaceae | <i>Hibiscus</i> | <i>engleri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Malvaceae | <i>Radyera</i> | <i>urens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Neuradaceae | <i>Grelium</i> | <i>sinuatum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Sterculiaceae | <i>Dombeya</i> | <i>rotundifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Sterculiaceae | <i>Hermannia</i> | <i>amabilis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Sterculiaceae | <i>Hermannia</i> | <i>elliottiana</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------------|----------------|----------------------|-------------------------|-------------------------|-----------------------------|---------------------|
| Malvales | Sterculiaceae | <i>Hermannia</i> | <i>minimifolia</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Malvales | Sterculiaceae | <i>Sterculia</i> | <i>africana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Tiliaceae | <i>Grewia</i> | <i>bicolor</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Malvales | Tiliaceae | <i>Grewia</i> | <i>flavescens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Montinales | Montiniaceae | <i>Montinia</i> | <i>caryophyllacea</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Moringales | Moringaceae | <i>Moringa</i> | <i>ovalifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Oxalidales | Oxalidaceae | <i>Oxalis</i> | <i>purpurascens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Plumbaginales | Plumbaginaceae | <i>Dyerophytum</i> | <i>africanum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Plumbaginales | Plumbaginaceae | <i>Limonium</i> | <i>dyeri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Ranunculales | Papaveraceae | <i>Argemone</i> | <i>orchroleuca</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Rosales | Rhamnaceae | <i>Ziziphus</i> | <i>mucronata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Rosales | Urticaceae | <i>Forsskaolea</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Rosales | Urticaceae | <i>Forsskaolea</i> | <i>viridis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Salvadorales | Salvadoraceae | <i>Salvadora</i> | <i>persica</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Sapindales | Anacardiaceae | <i>Ozoroa</i> | <i>crassinervia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Sapindales | Anacardiaceae | <i>Searsia</i> | <i>marlothii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Sapindales | Sapindaceae | <i>Cardiospermum</i> | <i>pechuelii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Saxifragales | Crassulaceae | <i>Cotyledon</i> | <i>orbiculata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Saxifragales | Vahliaceae | <i>Vahlia</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Convolvulaceae | <i>Ipomoea</i> | <i>adenioides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Convolvulaceae | <i>Merremia</i> | <i>bipinnatipartita</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Solanaceae | <i>Datura</i> | <i>ferox</i> | d. Bounding | iv. Generalist | 12. Alien |
| Solanales | Solanaceae | <i>Datura</i> | <i>innoxia</i> | d. Bounding | iv. Generalist | 12. Alien |
| Solanales | Solanaceae | <i>Datura</i> | <i>metel</i> | d. Bounding | iv. Generalist | 12. Alien |
| Solanales | Solanaceae | <i>Datura</i> | <i>stramonium</i> | d. Bounding | iv. Generalist | 12. Alien |
| Solanales | Solanaceae | <i>Lycium</i> | <i>cinereum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Solanaceae | <i>Lycium</i> | <i>decumbens</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Solanaceae | <i>Lycium</i> | <i>oxycarpum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Solanaceae | <i>Lycium</i> | <i>tetrandrum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Solanales | Solanaceae | <i>Nicotiana</i> | <i>glauca</i> | d. Bounding | iv. Generalist | 12. Alien |
| Styracales | Ebenaceae | <i>Euclea</i> | <i>pseudebenus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Tamaricales | Tamaricaceae | <i>Tamarix</i> | <i>usneoides</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Urticales | Moraceae | <i>Ficus</i> | <i>cordata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Urticales | Moraceae | <i>Ficus</i> | <i>guerichiana</i> | d. Bounding | iv. Generalist | 04. Common Resident |

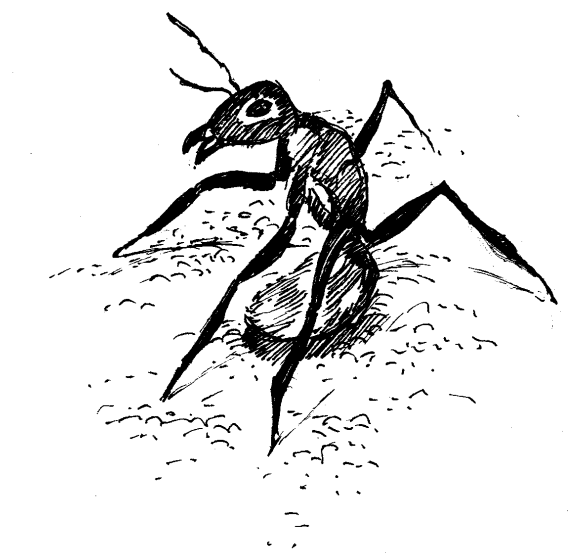
| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|-------------------------|---------------------------------|--------------------------|-----------------------|------------------|--------------------------|---------------------|
| Urticales | Moraceae | <i>Ficus</i> | <i>sycomorus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Vitales | Vitaceae | <i>Cyphostemma</i> | <i>currorii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Tribulus</i> | <i>terrestris</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Tribulus</i> | <i>zeyheri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Zygophyllum</i> | <i>clavatum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Zygophyllum</i> | <i>cylindrifolium</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Zygophyllum</i> | <i>simplex</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Zygophyllales | Zygophyllaceae | <i>Zygophyllum</i> | <i>stapffii</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Kingdom: Plantae | Phylum: Angiospermophyta | Class: Liliopsida | | | | |
| Alismatales | Aponogetonaceae | <i>Aponogeton</i> | <i>desertorum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Asparagaceae | <i>Asparagus</i> | <i>pearsonii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Asphodelaceae | <i>Aloe</i> | <i>asperifolia</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Asphodelaceae | <i>Aloe</i> | <i>hereroensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Asphodelaceae | <i>Aloe</i> | <i>namibensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Asparagales | Ruscaceae | <i>Eriospermum</i> | <i>tortuosum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Colchicales | Colchicaceae | <i>Hexacyrtis</i> | <i>dickiana</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Colchicales | Colchicaceae | <i>Ornithoglossum</i> | <i>dinteri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Colchicales | Colchicaceae | <i>Ornithoglossum</i> | <i>viride</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Cyperales | Cyperaceae | <i>Cyperus</i> | <i>laevigatus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Cyperales | Cyperaceae | <i>Cyperus</i> | <i>marginatus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Cyperales | Cyperaceae | <i>Cyperus</i> | <i>schinzii</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Cyperales | Cyperaceae | <i>Bulbostylis</i> | <i>hispidula</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Cyperales | Cyperaceae | <i>Scirpoides</i> | <i>dioecus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Poales | Poaceae | <i>Aristida</i> | <i>parvula</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Arundo</i> | <i>donax</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Brachiara</i> | <i>glomerata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Centropodia</i> | <i>glauca</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Chloris</i> | <i>virgata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Cladoraphis</i> | <i>cyperoides</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Cladoraphis</i> | <i>spinosa</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Cynodon</i> | <i>dactylon</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Enneapogon</i> | <i>brachystachyus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Eragrostis</i> | <i>annulata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Eragrostis</i> | <i>cylindriflora</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|---------------|---------------------|------------------------|-------------------------|-----------------------------|---------------------|
| Poales | Poaceae | <i>Cladoraphis</i> | <i>cyperoides</i> | e. Sandwich | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Eragrostis</i> | <i>porosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Odyssea</i> | <i>paucinervis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Phragmites</i> | <i>australis</i> | e. Sandwich | iii. Habitat specialist | 04. Common Resident |
| Poales | Poaceae | <i>Schmidtia</i> | <i>kalahariensis</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Setaria</i> | <i>verticillata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Sporobolus</i> | <i>nebulosus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Sporobolus</i> | <i>virginicus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>ciliata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>gonatostachys</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>hermannii</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>hirtigluma</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>hochstetteriana</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>lutescens</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>namaquensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>obtusata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>pellytronis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>sabulicola</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>seelyae</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>subacaulis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>uniplumis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Triraphis</i> | <i>pumilio</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Triraphis</i> | <i>purpurea</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Poales | Poaceae | <i>Triraphis</i> | <i>ramosissima</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Typhales | Typhaceae | <i>Typha</i> | <i>capensis</i> | e. Sandwich | iii. Habitat specialist | 04. Common Resident |

Note: status of common resident means common in its preferred habitat, not common throughout the area.

Annex 11

Table of Invertebrates & Protista



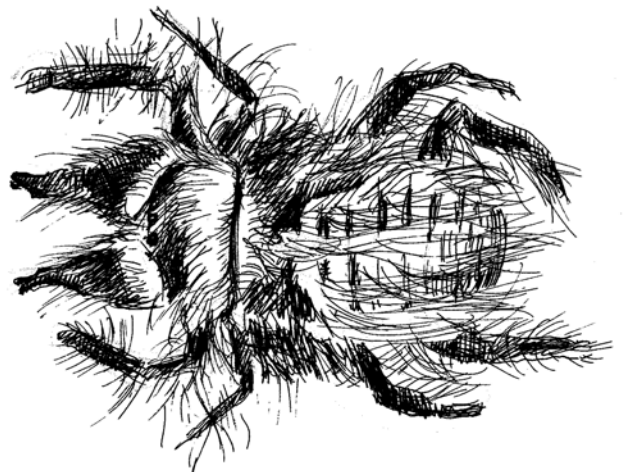
| Kingdom | Phylum | Class | Order | Family | Genus | Species |
|----------------|---------------|--------------|----------------|-------------------|-------------------------|----------------------|
| Animalia | Mollusca | Bivalvia | Myoida | Hiatellidae | <i>Panopea</i> | <i>glycymeris</i> |
| Animalia | Mollusca | Bivalvia | Veneroida | Petricolidae | <i>Petricola</i> | <i>bicolor</i> |
| Animalia | Mollusca | Gastropoda | Mesogastropoda | Naticidae | <i>Natica</i> | <i>vittata</i> |
| Animalia | Cnidaria | Hydrozoa | Hydroida | Plumulariidae | <i>Aglaophenia</i> | <i>pluma</i> |
| Animalia | Rotifera | Monogononta | Ploima | Proalidae | <i>Proales</i> | <i>similis</i> |
| Animalia | Nematoda | Adenophorea | Monhysterida | Monhysteridae | <i>Monhystrella</i> | <i>lepidura</i> |
| Animalia | Nematoda | Adenophorea | Monhysterida | Monhysteridae | <i>Monhystrella</i> | <i>paramacrura</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Acrobeles</i> | <i>ciliatus</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Acrobeles</i> | <i>seelyae</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Chiloplacus</i> | <i>longiuterus</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Chiloplacus</i> | <i>magnus</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Namibinema</i> | <i>scaphovulva</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Paracrobeles</i> | <i>laterellus</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Seleborca</i> | <i>complexa</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Seleborca</i> | <i>mariannae</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Seleborca</i> | <i>welwitschiae</i> |
| Animalia | Nematoda | Secernentea | Rhabditida | Cephalobidae | <i>Zeldia</i> | <i>punctata</i> |
| Animalia | Nematoda | Secernentea | Tylenchida | Telotylenchidae | <i>Tylenchorhynchus</i> | <i>brevilineatus</i> |
| Animalia | Nematoda | Secernentea | Tylenchida | Telotylenchidae | <i>Tylenchorhynchus</i> | <i>namibiensis</i> |
| Animalia | Annelida | Oligochaeta | Hirudinea | Glossiphoniidae | <i>Placobdelloides</i> | <i>multistriata</i> |
| Animalia | Annelida | Oligochaeta | Hirudinea | Hirudinidae | <i>Aliolimnatis</i> | <i>obscura</i> |
| Animalia | Annelida | Oligochaeta | Lumbriculida | Naididae | <i>Nais</i> | <i>pseudobtusa</i> |
| Animalia | Annelida | Oligochaeta | Lumbriculida | Tubificidae | <i>Limnodriloides</i> | <i>winckelmanni</i> |
| Animalia | Annelida | Polychaeta | Sedentaria | Sabellidae | <i>Desdemona</i> | <i>ornata</i> |
| Animalia | Arthropoda | Branchiopoda | Anostraca | Branchipodidae | <i>Branchipodopsis</i> | <i>tridens</i> |
| Animalia | Arthropoda | Branchiopoda | Anostraca | Branchipodidae | <i>Pumiliobranchnus</i> | <i>deserti</i> |
| Animalia | Arthropoda | Branchiopoda | Anostraca | Streptocephalidae | <i>Streptocephalus</i> | <i>namibiensis</i> |
| Animalia | Arthropoda | Branchiopoda | Conchostraca | Leptestheridae | <i>Leptestheriella</i> | <i>inermis</i> |

| Kingdom | Phylum | Class | Order | Family | Genus | Species |
|----------------|---------------|--------------|--------------|-----------------|------------------------|---------------------|
| Animalia | Arthropoda | Branchiopoda | Notostraca | Triopsidae | <i>Triops</i> | <i>cancriformis</i> |
| Animalia | Arthropoda | Malacostraca | Amphipoda | Ampeliscidae | <i>Ampelisca</i> | <i>brevicornis</i> |
| Animalia | Arthropoda | Malacostraca | Amphipoda | Ampeliscidae | <i>Ampelisca</i> | <i>palmata</i> |
| Animalia | Arthropoda | Malacostraca | Cumacea | Bodotriidae | <i>Upselaspis</i> | <i>caparti</i> |
| Animalia | Arthropoda | Malacostraca | Leptostraca | Phyllocaridae | <i>Nebalia</i> | <i>capensis</i> |
| Animalia | Arthropoda | Malacostraca | Leptostraca | Phyllocaridae | <i>Nebalia</i> | <i>ilheoensis</i> |
| Animalia | Arthropoda | Maxillopoda | Calanoida | Diaptomidae | <i>Metadiaptomus</i> | <i>meridianus</i> |
| Animalia | Arthropoda | Maxillopoda | Cladocera | Daphniidae | <i>Ctenodaphnia</i> | <i>dubia</i> |
| Animalia | Arthropoda | Maxillopoda | Cladocera | Moinidae | <i>Moina</i> | <i>belli</i> |
| Animalia | Arthropoda | Maxillopoda | Cladocera | Moinidae | <i>Moina</i> | <i>macrura</i> |
| Animalia | Arthropoda | Maxillopoda | Copepoda | Cyclopidae | <i>Eucyclops</i> | <i>gibsoni</i> |
| Animalia | Arthropoda | Maxillopoda | Copepoda | Cyclopidae | <i>Mesocyclops</i> | <i>oblongatus</i> |
| Animalia | Arthropoda | Maxillopoda | Ostracoda | Cypridae | <i>Apateleocypris</i> | <i>schultzei</i> |
| Animalia | Arthropoda | Maxillopoda | Ostracoda | Cypridae | <i>Heterocypris</i> | <i>congenera</i> |
| Animalia | Arthropoda | Maxillopoda | Ostracoda | Cypridae | <i>Sarscypridopsis</i> | <i>ochracea</i> |
| Animalia | Arthropoda | Maxillopoda | Ostracoda | Cypridae | <i>Sclerocypris</i> | <i>dayae</i> |
| Animalia | Arthropoda | Ellipura | Collembola | Hypogastruridae | <i>Willemia</i> | <i>namibiae</i> |
| Animalia | Arthropoda | Ellipura | Collembola | Isotomidae | <i>Folsomides</i> | <i>angularis</i> |
| Animalia | Arthropoda | Ellipura | Collembola | Isotomidae | <i>Folsomides</i> | <i>parvulus</i> |
| Animalia | Arthropoda | Ellipura | Collembola | Poduridae | <i>Anurida</i> | <i>maritima</i> |

| Kingdom | Phylum | Class | Order | Family | Genus | Species |
|----------------|---------------|----------------|--------------|---------------|-------------------|--------------------|
| Protista | Chlorophycota | Conjugophyceae | Zygnematales | Desmidiaceae | <i>Closterium</i> | <i>tumidulum</i> |
| Protista | Chlorophycota | Conjugophyceae | Zygnematales | Zygnemataceae | <i>Spirogyra</i> | <i>cylindrica</i> |
| Protista | Chlorophycota | Conjugophyceae | Zygnematales | Zygnemataceae | <i>Spirogyra</i> | <i>spreiana</i> |
| Protista | Chlorophycota | Conjugophyceae | Zygnematales | Zygnemataceae | <i>Spirogyra</i> | <i>welwitschii</i> |

Annex 12

Table of Arachnids



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|-------------------|---------|--------------------|-----------------------|------------------------|------------------|--------------------------|-----------------------------|
| Kingdom: Animalia | | Phylum: Arthropoda | | | | | |
| Chelicerata | Araneae | Ammoxenidae | <i>Ammoxenus</i> | <i>coccineus</i> | c. Widespread | iii. Habitat specialist | 04. Common Resident |
| Chelicerata | Araneae | Ammoxenidae | <i>Rastellus</i> | <i>sabulosus</i> | a. Sand Sea | iii. Habitat specialist | 02. Dune Endemic |
| Chelicerata | Araneae | Ammoxenidae | <i>Rastellus</i> | <i>narubis</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Ammoxenidae | <i>Rastellus</i> | <i>struthio</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Araneidae | <i>Argiope</i> | <i>nigrovittata</i> | d. Bounding | iv. Generalist | 09. Common migrant |
| Chelicerata | Araneae | Caponiidae | <i>Diploglena</i> | <i>capensis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Chelicerata | Araneae | Eresidae | <i>Gandanameno</i> | <i>echinatus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Eresidae | <i>Seothyra</i> | <i>henscheli</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Eresidae | <i>Seothyra</i> | <i>longipedata</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Chelicerata | Araneae | Eresidae | <i>Stegodyphus</i> | <i>bicolor</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Chelicerata | Araneae | Eresidae | <i>Stegodyphus</i> | <i>dumicola</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Chelicerata | Araneae | Gnaphosidae | <i>Asemesthes</i> | <i>lineatus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Gnaphosidae | <i>Camillina</i> | <i>namibensis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Chelicerata | Araneae | Gnaphosidae | <i>Xerophaeus</i> | <i>perversus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Lycosidae | <i>Lycorma</i> | <i>hereroana</i> | d. Bounding | ii. Arid area specialist | 05. Rare Resident |
| Chelicerata | Araneae | Lycosidae | <i>Lycorma</i> | <i>luderitzi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Chelicerata | Araneae | Lycosidae | <i>Lycosa</i> | <i>swakopmundensis</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Chelicerata | Araneae | Lycosidae | <i>Proevippa</i> | <i>albiventris</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Lycosidae | <i>Trochosippa</i> | <i>eberlanzi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Chelicerata | Araneae | Pisauridae | <i>Thalassius</i> | <i>margaritatus</i> | e. Sandwich | iii. Habitat specialist | 05. Rare Resident |
| Chelicerata | Araneae | Agelenidae | <i>Olorunia</i> | <i>ocellata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Nemesiidae | <i>Hermacha</i> | <i>lanata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Oecobiidae | <i>Uroctea</i> | <i>semilimbata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Oxyopidae | <i>Peucetia</i> | <i>viridis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Palpimanidae | <i>Diaphorocellus</i> | <i>biplagiata</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Palpimanidae | <i>Palpimanus</i> | <i>stridulator</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Palpimanidae | <i>Palpimanus</i> | <i>namaquensis</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Philodromidae | <i>Hirriusa</i> | <i>bidentatus</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Chelicerata | Araneae | Pholcidae | <i>Smeringopus</i> | <i>atomarius</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Pholcidae | <i>Smeringopus</i> | <i>pallidus</i> | d. Bounding | iv. Generalist | 12. Alien |
| Chelicerata | Araneae | Pholcidae | <i>Pholcus</i> | <i>phalangioides</i> | d. Bounding | iv. Generalist | 12. Alien |
| Chelicerata | Araneae | Prodidomidae | <i>Theuma</i> | <i>ababensis</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Prodidomidae | <i>Theuma</i> | <i>fusca</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|------------------|----------------|-----------------------|---------------------|-------------------------|-----------------------------|-----------------------|
| Chelicerata | Araneae | Salticidae | <i>Heliophanes</i> | <i>trepidus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Scytodidae | <i>Scytodes</i> | <i>arenacea</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Sicariidae | <i>Loxosceles</i> | <i>pilosa</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Sicariidae | <i>Sicarius</i> | <i>albospinosus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Chelicerata | Araneae | Sparassidae | <i>Carparachne</i> | <i>alba</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Carparachne</i> | <i>aureoflava</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Leucorchestris</i> | <i>arenicola</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Leucorchestris</i> | <i>sabulosa</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Microrchestris</i> | <i>scutatus</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Microrchestris</i> | <i>melanogaster</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Olios</i> | <i>correvoni</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Sparassidae | <i>Orchestrella</i> | <i>browni</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Orchestrella</i> | <i>caroli</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Sparassidae | <i>Orchestrella</i> | <i>longipes</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Araneae | Tetragnathidae | <i>Tetragnatha</i> | <i>andonea</i> | e. Sandwich | iii. Habitat specialist | 04. Common Resident |
| Chelicerata | Araneae | Theridiidae | <i>Latrodectus</i> | <i>indistinctus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Theridiidae | <i>Latrodectus</i> | <i>renivulvatus</i> | d. Bounding | iii. Habitat specialist | 02. Dune Endemic |
| Chelicerata | Araneae | Theridiidae | <i>Latrodectus</i> | <i>geometricus</i> | d. Bounding | iv. Generalist | 12. Alien |
| Chelicerata | Araneae | Theridiidae | <i>Latrodectus</i> | <i>cinctus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Theridiidae | <i>Steatoda</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Thomisidae | <i>Thomisus</i> | <i>schultzei</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Uloboridae | <i>Uloborus</i> | <i>plumipes</i> | d. Bounding | iv. Generalist | 12. Alien |
| Chelicerata | Araneae | Zodariidae | <i>Capheris</i> | <i>haematilis</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Chelicerata | Araneae | Zodariidae | <i>Cydrela</i> | <i>approximata</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Chelicerata | Araneae | Zodariidae | <i>Cyrioctea</i> | <i>namibensis</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Chelicerata | Araneae | Zodariidae | <i>Diores</i> | <i>namibia</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Chelicerata | Araneae | Zodariidae | <i>Heradida</i> | <i>griffinae</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Zodariidae | <i>Palfuria</i> | <i>panner</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Araneae | Zodariidae | <i>Diores</i> | <i>triangulifer</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Araneae | Zodariidae | <i>Psammoduon</i> | <i>deserticola</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Chelicerata | Parasitiformes | Argasidae | <i>Ornithodoros</i> | <i>savignyi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Parasitiformes | Ixodidae | <i>Hyalomma</i> | <i>marginatum</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Parasitiformes | Ixodidae | <i>Rhipicephalus</i> | <i>gertrudae</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Ammogarypus</i> | <i>kalaharicus</i> | | | |

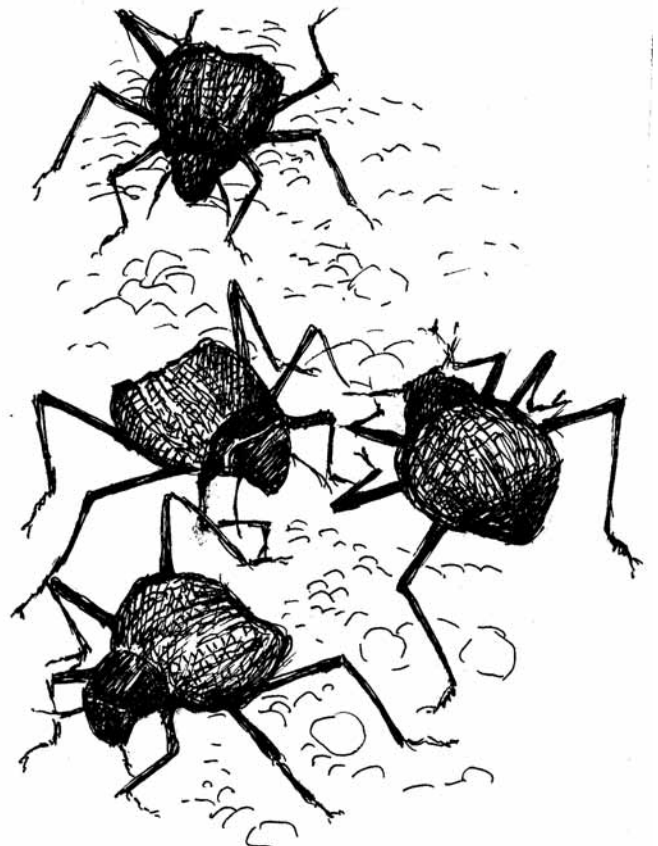
| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|-------------|------------------|----------------|-------------------------|------------------------|------------------|--------------------------|-----------------------------|
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Ammogarypus</i> | <i>lawrencei</i> | | | |
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Ammogarypus</i> | <i>minor</i> | | | |
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Eremogarypus</i> | <i>eximius</i> | | | |
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Eremogarypus</i> | <i>perfectus</i> | | | |
| Chelicerata | Pseudoscorpiones | Garypidae | <i>Meiogarypus</i> | <i>mirus</i> | | | |
| Chelicerata | Pseudoscorpiones | Hesperolpiidae | <i>Ectactolpium</i> | <i>astatum</i> | | | |
| Chelicerata | Pseudoscorpiones | Hesperolpiidae | <i>Ectactolpium</i> | <i>eximium</i> | | | |
| Chelicerata | Pseudoscorpiones | Olpiidae | <i>Pseudohorus</i> | <i>excavatus</i> | | | |
| Chelicerata | Pseudoscorpiones | Olpiidae | <i>Pseudohorus</i> | <i>gracilis</i> | | | |
| Chelicerata | Pseudoscorpiones | Olpiidae | <i>Pseudohorus</i> | <i>molliventer</i> | | | |
| Chelicerata | Pseudoscorpiones | Olpiidae | <i>Pseudohorus</i> | <i>strumosus</i> | | | |
| Chelicerata | Scorpiones | Buthidae | <i>Hottentota</i> | <i>conspersus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Hottentota</i> | <i>arenaceus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Karasbergia</i> | <i>muthueni</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>brevimanus</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>schlechteri</i> | d. Bounding | iii. Habitat specialist | 08. Marginal presence |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>granulatus</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>laevifrons</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>namibensis</i> | a. Sand Sea | iii. Habitat specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>stridulus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Parabuthus</i> | <i>villosus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Buthidae | <i>Uroplectes</i> | <i>otjimbinguensis</i> | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Chelicerata | Scorpiones | Buthidae | <i>Uroplectes</i> | <i>planimanus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Buthidae | <i>Uroplectes</i> | <i>carinatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>flavescens</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>holmi</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Chelicerata | Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>carinatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>wahlbergi</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>opinatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Scorpiones | Scorpionidae | <i>Hadogenes</i> | <i>tityrus</i> | b. Inselbergs | iii. Habitat specialist | 06. Relict |
| Chelicerata | Scorpiones | Scorpionidae | <i>Hadogenes</i> | <i>lawrencei</i> | b. Inselbergs | iii. Habitat specialist | 06. Relict |
| Chelicerata | Solifugae | Ceromidae | <i>Ceroma</i> | <i>inerme</i> | d. Bounding | iii. Habitat specialist | 02. Dune Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Biton</i> | <i>adamanteus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Biton</i> | <i>striatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|---------------------|-----------------------------|-------------------------|-----------------------------|-----------------------------|
| Chelicerata | Solifugae | Daesiidae | <i>Biton</i> | <i>hottentotta</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Daesiidae | <i>Biton</i> | <i>namaqua</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Daesiidae | <i>Blossia</i> | <i>falcifera namibensis</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Blossia</i> | <i>planicursor</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Blossia</i> | <i>purpurea</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Blossia</i> | <i>rooica</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Blossia</i> | <i>sabulosa</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Eberlanzia</i> | <i>flava trilineata</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Hemiblossia</i> | <i>robusta</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Daesiidae | <i>Namibesia</i> | <i>pallida</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Gylippidae | <i>Trichotoma</i> | <i>michaelseni</i> | d. Bounding | ii. Arid area specialist | 05. Rare Resident |
| Chelicerata | Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>infuscatus</i> | a. Sand Sea | iii. Habitat specialist | 02. Dune Endemic |
| Chelicerata | Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>nigroplagiatus</i> | a. Sand Sea | iii. Habitat specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>psammophilus</i> | a. Sand Sea | iii. Habitat specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>pusillus</i> | a. Sand Sea | iii. Habitat specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Hexisopodidae | <i>Mossamedessa</i> | <i>eberlanzi</i> | a. Sand Sea | iii. Habitat specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Hexisopodidae | <i>Siloana</i> | <i>eberlanzi</i> | a. Sand Sea | iii. Habitat specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Karschiidae | <i>Lipophaga</i> | <i>michaelseni</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>longitarsis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>minuta</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>solaris</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Melanoblossidae | <i>Unguiblossia</i> | <i>cauduliger</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Melanoblossidae | <i>Unguiblossia</i> | <i>eberlanzi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Melanoblossidae | <i>Microblossia</i> | <i>eberlanzi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Solpugidae | <i>Solpuga</i> | <i>venator</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Solpugidae | <i>Solpuga</i> | <i>lateralis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Chelicerata | Solifugae | Solpugidae | <i>Solpuga</i> | <i>monteiroi</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Solpugidae | <i>Metasolpuga</i> | <i>picta</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Solpugidae | <i>Prosolpuga</i> | <i>schultzei</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Solpugidae | <i>Solpugema</i> | <i>genucornis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Solpugidae | <i>Solpugiba</i> | <i>lineata</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Chelicerata | Solifugae | Solpugidae | <i>Solpugiba</i> | <i>brevipalpis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Chelicerata | Solifugae | Solpugidae | <i>Solpugista</i> | <i>bicolor</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Chelicerata | Solifugae | Solpugidae | <i>Solpugista</i> | <i>hastata</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|---------------|-------------------|----------------------------|---------------------|-------------------------|-----------------------------|-----------------------------|
| Chelicerata | Solifugae | Solpugidae | <i>Zeria</i> | <i>lawrencei</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Solpugidae | <i>Zeria</i> | <i>recta</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chelicerata | Solifugae | Solpugidae | <i>Zeria</i> | <i>umbonata</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Chilopoda | Geophilida | Oryidae | <i>Aspidopleres</i> | <i>intercalatus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Chilopoda | Geophilida | Oryidae | <i>Diphtherogaster</i> | <i>flavus</i> | d. Bounding | iii. Habitat specialist | 04. Common Resident |
| Chilopoda | Scolopendrida | Scolopendridae | <i>Cormocephalus</i> | <i>deventeri</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chilopoda | Scolopendrida | Scolopendridae | <i>Trachycormocephalus</i> | <i>occidentalis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Chilopoda | Scolopendrida | Scolopendridae | <i>Scolopendra</i> | <i>morsitans</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Diplopoda | Polydesmida | Paradoxosomatidae | <i>Cnemodesmus</i> | <i>riparius</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

Annex 13

Table of Insects



Namib Sand Sea Biogeography **Biogeography description**

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------------------|------------|---------------|---------------------------|-------------------------------|------------------|------------------------|--------------------|
| Kingdom: Animalia | | | Phylum: Arthropoda | | | | |
| Insecta | Coleoptera | Curculionidae | <i>Hyomora</i> | <i>falcipes</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Hyomora</i> | <i>subvirens</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>aureus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>fallax</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>speciosus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>sublineatus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>uniformis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>varius</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>waltoni</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Geotrupidae | <i>Namibiotrupes</i> | <i>penrithae</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Glaresidae | <i>Glaresis</i> | <i>namibensis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Histeridae | <i>Tribalus</i> | <i>namibiensis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Meloidae | <i>Paractenodia</i> | <i>freyi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Ochodaeidae | <i>Namibiotalpa</i> | <i>fossilis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Ochodaeidae | <i>Synochodaeus</i> | <i>cucullus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Hammondantus</i> | <i>psammophilus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Namakwanus</i> | <i>irishi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Psammodaphodius</i> | <i>kochi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>denticollis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>fitzimonsi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rodriguesi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rotundigena</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Archinamibia</i> | <i>peezi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Argenticrinis</i> | <i>lossowi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>delabati</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>kochi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>noctivagus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>pauliani</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>peezi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>penrithae</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>sp. nov. (undescribed)</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Namibomodes</i> | <i>maculicollis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Namibomodes</i> | <i>zarcoi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>laeviceps</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>rugatipennis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>unguicularis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|------------|------------------|-----------------------|----------------------------------|------------------|--------------------------|--------------------|
| Insecta | Coleoptera | Tenebrionidae | <i>Oxura</i> | <i>rufotibiata planipennata</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>albonotatus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>kuehneli</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Psammogaster</i> | <i>malani</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pterostichula</i> | <i>aridipaludis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Uniungulum</i> | <i>hoeschi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Vansonium</i> | <i>bushmanicum namibense</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>caecus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>damarensis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>eremita</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fairmairei fairmairei</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fairmairei luederitzensis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hamiltonuli</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hereroensis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>moralesi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>sexfrenorum</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Neuroptera | Myrmeleontidae | <i>Pamares</i> | <i>deru</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Orthoptera | Acrididae | <i>Brainia</i> | <i>hirsuta</i> | a. Sand Sea | ii. Arid area specialist | 01. Strict Endemic |
| Insecta | Orthoptera | Bradyporidae | <i>Acanthoproctus</i> | <i>diadematus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>carnalli</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>detritus</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>spinipes</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Mormisma</i> | <i>wygodzinskyi</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Namibmormisma</i> | <i>muricaudata</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Namibmormisma</i> | <i>setosa</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Nebkhalepisma</i> | <i>australis</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Ornatilepisma</i> | <i>horni</i> | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Meloidae | <i>Iselma</i> | <i>deserticola</i> | b. Inselbergs | ii. Arid area specialist | 01. Strict Endemic |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>mitifica</i> | a. Sand Sea | iii. Habitat specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Hyomora</i> | <i>manca</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Glaresidae | <i>Glaresis</i> | <i>koenigsbaueri</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>bennigseni</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rubripennis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Sparrmannia</i> | <i>boschimana</i> | a. Sand Sea | ii. Arid area specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Sparrmannia</i> | <i>similis</i> | a. Sand Sea | ii. Arid area specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Arthrochora</i> | <i>arenicola</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>debilis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|------------------|-----------------------|----------------------|-------------------------|-----------------------------|-------------------|
| Insecta | Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>insularis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>vaga</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>ephaltes</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>phaleroides</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Calognathus</i> | <i>chevrolati</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Cauricara</i> | <i>brunnipes</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Fossilochile</i> | <i>rufa</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>discoidalis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>kahani</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>porti</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Leubbertia</i> | <i>plana</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>boschimana</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>plana</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Oppenheimeria</i> | <i>bombophthalma</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pterostichula</i> | <i>fontanalis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Sulcipectus</i> | <i>levis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>gracilipes</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>orbicularis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>prona</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Hymenoptera | Bradynobaenidae | <i>Apterogyna</i> | <i>schultzei</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>schultzei</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Camponotus</i> | <i>detritus</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>mirabilis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>deserticolus</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>calcaris</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>arenicola</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>pauliani</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Gopsilepisma</i> | <i>verecunda</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Sabulepisma</i> | <i>multiformis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Swalepisma</i> | <i>mirabilis</i> | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>vansoni</i> | a. Sand Sea | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>arenarius</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Monachina</i> | <i>stilifera</i> | a. Sand Sea | i. Dune Sea specialist | 03. Near Endemic |
| Insecta | Coleoptera | Chrysomelidae | <i>Monolepta</i> | <i>desertorum</i> | c. Widespread | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Coccinellidae | <i>Pharoscymnus</i> | <i>kuisebensis</i> | c. Widespread | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Geotrupidae | <i>Prototrupes</i> | <i>kochi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Glaresidae | <i>Glaresis</i> | <i>holmi</i> | c. Widespread | iii. Habitat specialist | 03. Near Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|----------------|-------------------------|------------------------|-------------------------|-----------------------------|-------------------|
| Insecta | Coleoptera | Histeridae | <i>Pholioxenus</i> | <i>endroedyi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Histeridae | <i>Tribalus</i> | <i>kochi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Malachiidae | <i>Attalus</i> | <i>kochi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Malachiidae | <i>Dinometopus</i> | <i>narebisanus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Malachiidae | <i>Metaphilhedonus</i> | <i>penrithae</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Actenodia</i> | <i>mirabilis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Australytta</i> | <i>szekessyi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>brincki</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>deserticolus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>svakopinus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>tinctus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>karibibensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Prolytta</i> | <i>namibensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Attalus</i> | <i>oberprieleri</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Dinometopus</i> | <i>narebisanus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Metaphilhedonus</i> | <i>swakopmundensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Penhedybius</i> | <i>namibicus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Urodactylus</i> | <i>kuisepensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Ochodaeidae | <i>Synochodaeus</i> | <i>costatus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>ganabi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>gobabensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>psammophilus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>wardi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Asilidae | <i>Laphystia</i> | <i>kochi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Calliphoridae | <i>Isomyia</i> | <i>deserti</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Neuroptera | Myrmeleontidae | <i>Golafrus</i> | <i>oneili</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Neuroptera | Myrmeleontidae | <i>Pamares</i> | <i>damarus</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Orthoptera | Acrididae | <i>Acocksacris</i> | <i>carpi</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Orthoptera | Acrididae | <i>Acocksacris</i> | <i>namibensis</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Thysanura | Lepismatidae | <i>Thermobia</i> | <i>nebulosa</i> | c. Widespread | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>kochi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Cerambycidae | <i>Chemsakiellus</i> | <i>taurus</i> | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Cerambycidae | <i>Cornuchariesthes</i> | <i>albomaculata</i> | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Cerambycidae | <i>Ontochariesthes</i> | <i>erongoensis</i> | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>marginatus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>scitulus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Drilidae | <i>Selasia</i> | <i>oberprieleri</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|------------------------|--------------------------------|-------------------------|-----------------------------|-------------------|
| Insecta | Coleoptera | Dytiscidae | <i>Hydrovatus</i> | <i>deserticola</i> | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>kochi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Iselma</i> | <i>penrithae</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Namibiella</i> | <i>elegantula</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Coleoptera | Meloidae | <i>Nemognatha</i> | <i>vansoni</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Colotrema</i> | <i>kuisebensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Melyridae | <i>Mixis</i> | <i>kuisepensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Oedemeridae | <i>Probosca</i> | <i>maraisi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Anoplocheilus</i> | <i>namibicus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Chasme</i> | <i>kochi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Leucocelis</i> | <i>franki</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Pachnoda</i> | <i>picturata</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Psammodytes</i> | <i>substriatus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Scarabaeidae | <i>Rhabdotis</i> | <i>albonotata</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Staphylinidae | <i>Cordalia</i> | <i>namibicola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Cauricara</i> | <i>phalangium rufofemorata</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Ennychiatus</i> | <i>fitzsimonsi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Epiphysa</i> | <i>arenicola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Fitzsimonsium</i> | <i>cymbium</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Horatoma</i> | <i>deserticola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Horatoma</i> | <i>pronamibensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Horatoma</i> | <i>rupicola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Horatoma</i> | <i>scherzi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Metriopus</i> | <i>depressus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>albostratus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>comma</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>granaticollis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>machadoi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>rufus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>streyi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>strigicollis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Planostibes</i> | <i>dentipes</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Tenebrionidae | <i>Synhimba</i> | <i>melancholicum</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Thorictidae | <i>Thorictus</i> | <i>namibensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Acroceridae | <i>Astomella</i> | <i>deserticola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Mydidae | <i>Eremohaplomydas</i> | <i>desertorum</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Mydidae | <i>Namadytes</i> | <i>prozskyi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|--------------------------|---------------------|-------------------------|-----------------------------|-------------------|
| Insecta | Diptera | Mydidae | <i>Parectyphus</i> | <i>namibiensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Scenopinidae | <i>Propebrevitrichia</i> | <i>falcata</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Scenopinidae | <i>Propebrevitrichia</i> | <i>gobabebensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Scenopinidae | <i>Scenopinus</i> | <i>namibensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Therevidae | <i>Orthactia</i> | <i>deserticola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Therevidae | <i>Orthactia</i> | <i>gobabebensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Trioxscelididae | <i>Trioxscelis</i> | <i>namibensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Ulidiidae | <i>Namibotites</i> | <i>argentata</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Diptera | Vermileonidae | <i>Lampromyia</i> | <i>sericea</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Chrysididae | <i>Elampus</i> | <i>namibiensis</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Hymenoptera | Chrysididae | <i>Hedychridium</i> | <i>desertorum</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Hymenoptera | Chrysididae | <i>Hedychridium</i> | <i>namibianum</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>namibicus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Encyrtidae | <i>Cheiloneurus</i> | <i>kuisebi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Encyrtidae | <i>Mayridia</i> | <i>maryae</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Encyrtidae | <i>Paranusia</i> | <i>arenaria</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>damarense</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>marshi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>robustior</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Ocymyrmex</i> | <i>robustior</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Ocymyrmex</i> | <i>turneri</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Tetramorium</i> | <i>jordani</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Formicidae | <i>Triglyphothrix</i> | <i>desertorum</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Halictidae | <i>Halictus</i> | <i>arenicola</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Halictidae | <i>Nomioides</i> | <i>luderitzi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Masaridae | <i>Priscomasaris</i> | <i>namibiensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Mutillidae | <i>Dasylabris</i> | <i>schultzei</i> | d. Bounding | iv. Generalist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Bembix</i> | <i>namibensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>herero</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>turneri</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>fluviatilis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>sabulosus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Gelechiidae | <i>Metzneria</i> | <i>brandbergi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Hesperiidae | <i>Sarangesa</i> | <i>gaerdesi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Noctuidae | <i>Eublemma</i> | <i>deserti</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|----------------------|-----------------------------|-------------------------|-----------------------------|---------------------|
| Insecta | Lepidoptera | Nymphalidae | <i>Acraea</i> | <i>hypoleuca</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>doubledayi angolanus</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Saturniidae | <i>Heniocha</i> | <i>marnois</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Lepidoptera | Saturniidae | <i>Usta</i> | <i>wallengrenii</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Mantodea | Iridopterygidae | <i>Bolbena</i> | <i>maraisi</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Mantodea | Iridopterygidae | <i>Bolbena</i> | <i>minutissima</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Mantodea | Mantidae | <i>Ligaria</i> | <i>brevicollis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Mantodea | Mantidae | <i>Ligariella</i> | <i>damarae</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Mantodea | Mantidae | <i>Tarachodes</i> | <i>namibiensis</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Neuroptera | Nemopteridae | <i>Laurhervasia</i> | <i>namibica</i> | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Insecta | Coleoptera | Ptinidae | <i>Damarus</i> | <i>magnus</i> | a. Sand Sea | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Ptinidae | <i>Stethomezium</i> | <i>notiale</i> | a. Sand Sea | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>testudinaria</i> | a. Sand Sea | ii. Arid area specialist | 04. Common Resident |
| Insecta | Heteroptera | Cydnidae | <i>Cydnus</i> | <i>hirsutus</i> | a. Sand Sea | iii. Habitat specialist | 04. Common Resident |
| Insecta | Homoptera | Diaspididae | <i>Namibia</i> | <i>spinosa</i> | a. Sand Sea | iii. Habitat specialist | 04. Common Resident |
| Insecta | Homoptera | Psyllidae | <i>Colposcencia</i> | <i>australis</i> | a. Sand Sea | iii. Habitat specialist | 04. Common Resident |
| Insecta | Homoptera | Psyllidae | <i>Colposcencia</i> | <i>namibiensis</i> | a. Sand Sea | iii. Habitat specialist | 04. Common Resident |
| Insecta | Isoptera | Rhinotermitidae | <i>Psammotermes</i> | <i>allocerus</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Insecta | Orthoptera | Stenopelmatidae | <i>Maxentius</i> | <i>kuhlgatzi</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Insecta | Orthoptera | Stenopelmatidae | <i>Maxentius</i> | <i>pinguis</i> | a. Sand Sea | i. Dune Sea specialist | 04. Common Resident |
| Insecta | Blattodea | Blatellidae | <i>Namablatta</i> | <i>bitaeniata</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Blattodea | Euthyrrhaphidae | <i>Tivia</i> | <i>simulatrix</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Anthicidae | <i>Anthicus</i> | <i>crinitus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Anthicidae | <i>Anthicus</i> | <i>techowi</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Apionidae | <i>Corimalia</i> | <i>damarensis</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Carabidae | <i>Crepidogaster</i> | <i>kochi</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Cleridae | <i>Necrobia</i> | <i>rufipes</i> | c. Widespread | iii. Habitat specialist | 04. Common Resident |
| Insecta | Coleoptera | Coccinellidae | <i>Cheilomenes</i> | <i>lunata</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Coccinellidae | <i>Exochomus</i> | <i>flaviventris</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Histeridae | <i>Hister</i> | <i>namas</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>cupreus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>phalerata</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>zigzagus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>thoracicus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Mordellidae | <i>Mordella</i> | <i>turneri</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Nitidulidae | <i>Carpophilus</i> | <i>dimidiatus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Phalacridae | <i>Olibrus</i> | <i>evanescens</i> | c. Widespread | iv. Generalist | 04. Common Resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|-------------|----------------|-----------------------|------------------------------|------------------|--------------------------|---------------------|
| Insecta | Coleoptera | Staphylinidae | <i>Bledius</i> | <i>brincki</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Staphylinidae | <i>Philonthus</i> | <i>nigrinus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Trachynotidus</i> | <i>rufozonatus</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>cariniceps</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fortunata</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>giessi</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hypallaga</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>meridionalis</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>mniszewski</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>omnigena</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>parentalis</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>prevastitatis</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Heteroptera | Lygaeidae | <i>Dieuches</i> | <i>herero</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>scutellaris</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>sjostedti</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Heteroptera | Pentatomidae | <i>Antestia</i> | <i>variegata</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Homoptera | Cicadellidae | <i>Aconurella</i> | <i>minutissima</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Homoptera | Cicadellidae | <i>Circulifer</i> | <i>tenellus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Hymenoptera | Formicidae | <i>Camponotus</i> | <i>maculatus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Hymenoptera | Formicidae | <i>Camponotus</i> | <i>mystaceus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Hymenoptera | Mutillidae | <i>Strangulotilla</i> | <i>namibiana</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Isoptera | Hodotermitidae | <i>Hodotermes</i> | <i>mossambicus</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Lepidoptera | Noctuidae | <i>Cyligramma</i> | <i>latona</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Lepidoptera | Noctuidae | <i>Grammodes</i> | <i>stolida</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Lepidoptera | Sphingidae | <i>Celerio</i> | <i>lineata livornica</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Mantodea | Empusidae | <i>Empusa</i> | <i>guttula</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Neuroptera | Chrysopidae | <i>Italochrysa</i> | <i>turneri</i> | c. Widespread | iii. Habitat specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Acrotylus</i> | <i>gracilis</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Acrotylus</i> | <i>patruelis</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Brachyphymus</i> | <i>vylderi</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Lithidium</i> | <i>desertorum</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Schistocerca</i> | <i>gregaria flaviventris</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Sphingonotus</i> | <i>scabriculus</i> | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>intercursa</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>terebrans</i> | c. Widespread | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>holmi</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Anthicidae | <i>Stenidius</i> | <i>namibianus</i> | d. Bounding | iv. Generalist | 04. Common Resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|------------------|-----------------------|----------------------|-------------------------|-----------------------------|---------------------|
| Insecta | Coleoptera | Carabidae | <i>Cerapterus</i> | <i>hottentottus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Meloidae | <i>Cyaneolytta</i> | <i>granulipennis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Ochodaeidae | <i>Chaetocanthus</i> | <i>inseutus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Ochodaeidae | <i>Synochodaeus</i> | <i>modestus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onthophagus</i> | <i>vylderi</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Psammadius</i> | <i>evanidus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Temnorrhynchus</i> | <i>tridentatus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Staphylinidae | <i>Paederus</i> | <i>sabaesus</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stenus</i> | <i>arenicola</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Carchares</i> | <i>macer</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Cyphostethe</i> | <i>tau</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>planatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stenodesia</i> | <i>globulum</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Diptera | Calliphoridae | <i>Lucilia</i> | <i>cuprina</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Diptera | Sarcophagidae | <i>Wohlfahrtia</i> | <i>pachytyli</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Lepidoptera | Sphingidae | <i>Hippotion</i> | <i>celerio</i> | d. Bounding | iv. Generalist | 04. Common Resident |
| Insecta | Mantodea | Mantidae | <i>Galepsus</i> | <i>damaranus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Lithidiopsis</i> | <i>carinatus</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Acrididae | <i>Locustana</i> | <i>pardalina</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Pamphagidae | <i>Trachypetrella</i> | <i>anderssonii</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 04. Common Resident |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>garipeina</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>marmorea</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>vansonii</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Coleoptera | Buprestidae | <i>Lepidoclema</i> | <i>magna</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Coleoptera | Buprestidae | <i>Lepidoclema</i> | <i>parva</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Isoptera | Termitidae | <i>Baukaliotermes</i> | <i>hainesi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Hoplopleuridae | <i>Hoplopleura</i> | <i>patersoni</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Linognathidae | <i>Linognathus</i> | <i>antidorcitis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Linognathidae | <i>Linognathus</i> | <i>oryx</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Menoponidae | <i>Afrimenopon</i> | <i>waar</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Menoponidae | <i>Ardeiphilus</i> | <i>vittatus</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Menoponidae | <i>Austromenopon</i> | <i>himantopi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Austrogonoides</i> | <i>bifasciatus</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Austrogonoides</i> | <i>demersus</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Eidmanniella</i> | <i>pellucida</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|---------------|-------------------|-------------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Phthiraptera | Philopteridae | <i>Eidmanniella</i> | <i>pustulosa</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Pectinopygus</i> | <i>acutifrons</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Pectinopygus</i> | <i>bassani</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Pectinopygus</i> | <i>gyricornis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Philopteridae | <i>Quadriceps</i> | <i>sellatus</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Polyplacidae | <i>Neohaematopinus</i> | <i>faurei</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Polyplacidae | <i>Polyplax</i> | <i>hopkinsi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Polyplacidae | <i>Polyplax</i> | <i>jonesi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Polyplacidae | <i>Polyplax</i> | <i>roseinnesi</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Polyplacidae | <i>Scipio</i> | <i>tripedatus</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Trichodectidae | <i>Dasyonyx</i> | <i>ovalis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Phthiraptera | Trichodectidae | <i>Felicola (Protelicola)</i> | <i>hyaenae</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Siphonaptera | Chimaeropsyllidae | <i>Chiastopsylla</i> | <i>nama</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Siphonaptera | Pulicidae | <i>Ctenocephalides</i> | <i>canis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Siphonaptera | Pulicidae | <i>Ctenocephalides</i> | <i>felis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Siphonaptera | Pulicidae | <i>Echidnophaga</i> | <i>larina</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Siphonaptera | Pulicidae | <i>Procaviopsylla</i> | <i>angolensis</i> | d. Bounding | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>grandipalpis</i> | d. Bounding | iv. Generalist | 05. Rare Resident |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>pladica</i> | d. Bounding | ii. Arid area specialist | 05. Rare Resident |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>prompta</i> | d. Bounding | ii. Arid area specialist | 05. Rare Resident |
| Insecta | Orthoptera | Gryllotalpidae | <i>Gryllotalpa</i> | <i>africana</i> | e. Sandwich | iii. Habitat specialist | 05. Rare Resident |
| Insecta | Archaeognatha | Meinertellidae | <i>Machiloides</i> | <i>sp.</i> | b. Inselbergs | iv. Generalist | 06. Relict |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>liessnerae</i> | b. Inselbergs | iv. Generalist | 06. Relict |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>louwi</i> | b. Inselbergs | iv. Generalist | 06. Relict |
| Insecta | Coleoptera | Buprestidae | <i>Nothomorpha</i> | <i>irishi</i> | b. Inselbergs | iv. Generalist | 06. Relict |
| Insecta | Coleoptera | Tenebrionidae | <i>Stenocara</i> | <i>fitzsimonsi</i> | b. Inselbergs | ii. Arid area specialist | 06. Relict |
| Insecta | Orthoptera | Lathiceridae | <i>Crypsicerus</i> | <i>cubicus</i> | d. Bounding | ii. Arid area specialist | 06. Relict |
| Insecta | Homoptera | Acleridae | <i>Aclerda</i> | <i>namibensis</i> | a. Sand Sea | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Odonata | Coenagrionidae | <i>Ischnura</i> | <i>senegalensis</i> | b. Inselbergs | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Blattodea | Blattidae | <i>Pseudoderopeltis</i> | <i>areolata</i> | c. Widespread | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Blattodea | Derocalymnidae | <i>Derocalymma</i> | <i>kalahari</i> | c. Widespread | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Palparellus</i> | <i>ulrike</i> | c. Widespread | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tettigoniidae | <i>Phaneroptera</i> | <i>nana</i> | c. Widespread | iv. Generalist | 07. Interdigitated resident |
| Insecta | Blattodea | Blaberidae | <i>Calolampra</i> | <i>pardalina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Blattodea | Blatellidae | <i>Euandrobatta</i> | <i>ovambo</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Blattodea | Blattidae | <i>Deropeltis</i> | <i>erythrocephala</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Blattodea | Perisphaeridae | <i>Perisphaeria</i> | <i>scabrella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|------------------------|-------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Anobiidae | <i>Lasioderma</i> | <i>serricorne</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Anthicus</i> | <i>instygius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Anthicus</i> | <i>kochi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Anthicus</i> | <i>stygius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Endomia</i> | <i>crassicornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Formicomus</i> | <i>caerulus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Formicomus</i> | <i>gestroi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Formicomus</i> | <i>lacustris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Formicomus</i> | <i>simplicicruralis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Hirticomus</i> | <i>biplagiatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>amaculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>brutoni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>guttulatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>longitarsus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>roeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Notoxus</i> | <i>venulethi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Omonadus</i> | <i>floralis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Omonadus</i> | <i>robustithorax</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Pseudoleptaleus</i> | <i>unifasciatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Sapintus</i> | <i>bayoni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Sapintus</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Stricticomus</i> | <i>basiniger</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Anthicidae | <i>Tomoderus</i> | <i>fasciatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Calopertha</i> | <i>kalaharensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Enneadesmus</i> | <i>forficula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Lyctus</i> | <i>brunneus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Sinoxylon</i> | <i>transvaalense</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylion</i> | <i>adustus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylion</i> | <i>plurispinius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylion</i> | <i>plurispinius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylionulus</i> | <i>pussilus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylionulus</i> | <i>transvena</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bostrychidae | <i>Xylopertha</i> | <i>picea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Brentidae | <i>Orfilaia</i> | <i>vulsellata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Bruchidius</i> | <i>senegalensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Bruchidius</i> | <i>senegalensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Caryedon</i> | <i>multinotatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|-----------------------|----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Bruchidae | <i>Spermophagus</i> | <i>humilis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Spermophagus</i> | <i>marmoreus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Spermophagus</i> | <i>monardi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Bruchidae | <i>Spermophagus</i> | <i>niveoguttatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>excellens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>grata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Agrilus</i> | <i>sexguttatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Chalcogenia</i> | <i>sculptilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Chrysobothris</i> | <i>dorsata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>egho</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>humeralis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Buprestidae | <i>Polycestina</i> | <i>damarana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Anthia</i> | <i>circumscripta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Anthia</i> | <i>thoracica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Calosoma</i> | <i>imbricatum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Caminara</i> | <i>chlorostictum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Chlaeniostenus</i> | <i>sulcipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Chlaenius</i> | <i>ovampo</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Chlaenius</i> | <i>senegalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Clivina</i> | <i>lacustris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Ctenosta</i> | <i>senegalense</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Dyschiriodes</i> | <i>exaratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Dyschiriodes</i> | <i>schaumi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Dyschiriodes</i> | <i>zanzibaricus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Eurymorpha</i> | <i>cyanipes</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>amabilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>angustus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>circumcinctus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>cordiger</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>namanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Graphipterus</i> | <i>velox</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Habrodera</i> | <i>nilotica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Harpalus</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Lebia</i> | <i>umtalina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Lophyra</i> | <i>damara</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Microlestes</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|------------|---------------|-----------------------|-------------------------|------------------|-------------------------|-----------------------------|
| Insecta | Coleoptera | Carabidae | <i>Myriochile</i> | <i>melancholica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Omophron</i> | <i>picturatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Passalidius</i> | <i>fortipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Platychile</i> | <i>pallida</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Carabidae | <i>Thermophilum</i> | <i>homoplatum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Anthracoentrus</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Crossotus</i> | <i>plumicornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Crossotus</i> | <i>stypticus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Derolus</i> | <i>duffy</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Ecyroschema</i> | <i>favosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Eunidia</i> | <i>nebulosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Idactus</i> | <i>strandii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Macrotoma</i> | <i>palmata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Ossibia</i> | <i>fuscata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Prosopocera</i> | <i>inermis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Prosopocera</i> | <i>lactator</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Tetradia</i> | <i>lophoptera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cerambycidae | <i>Zoodes</i> | <i>liturifer</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Chrysomelidae | <i>Acolastus</i> | <i>ornatipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Chrysomelidae | <i>Altica</i> | <i>madagascariensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Chrysomelidae | <i>Trichaspis</i> | <i>pilosula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Cleridae | <i>Eunatalis</i> | <i>parva</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Afidenta</i> | <i>godarti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Cheilomenes</i> | <i>sulphurea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Exochomus</i> | <i>troberti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Hippodamia</i> | <i>variegata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Isora</i> | <i>circularis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Nephus</i> | <i>whiteheadi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Rodolia</i> | <i>argodi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Scymnus</i> | <i>derelictus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Scymnus</i> | <i>kibonotensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Scymnus</i> | <i>nubilus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Scymnus</i> | <i>pallidulus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Scymnus</i> | <i>pruinosis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Coccinellidae | <i>Xanthadalia</i> | <i>effusa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Brachycerus</i> | <i>apterus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Brachycerus</i> | <i>ornatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|------------|---------------|----------------------|------------------------|------------------|--------------------------|-----------------------------|
| Insecta | Coleoptera | Curculionidae | <i>Episus</i> | <i>contractus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Episus</i> | <i>impressicollis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Episus</i> | <i>inermicollis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Microlarinus</i> | <i>lypriformis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Rhynchaenus</i> | <i>minisculus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Sibinia</i> | <i>luteoviridis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Curculionidae | <i>Sibinia</i> | <i>micros</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dermestidae | <i>Attagenus</i> | <i>auronotatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dermestidae | <i>Attagenus</i> | <i>fasciatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dermestidae | <i>Attagenus</i> | <i>jucundus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dermestidae | <i>Dermestes</i> | <i>maculatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Drilidae | <i>Selasia</i> | <i>pulchra</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Bidessus</i> | <i>complicatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Bidessus</i> | <i>nero</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Bidessus</i> | <i>sharpi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Copelatus</i> | <i>kalaharii</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Cybister</i> | <i>tripunctatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydaticus</i> | <i>bivittatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydroglyphus</i> | <i>geminodes</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydroglyphus</i> | <i>kalaharii</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydroglyphus</i> | <i>zanzibarensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydrovatus</i> | <i>regimbarti</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Hydrovatus</i> | <i>simoni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Leiodytes</i> | <i>australis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Platydytes</i> | <i>coarctaticollis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Dytiscidae | <i>Yola</i> | <i>tuberculata</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Elateridae | <i>Anchastus</i> | <i>granulipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Erotylidae | <i>Amblyscelis</i> | <i>kelleni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Geotrupidae | <i>Namibiobolbus</i> | <i>iphicles</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Gyrinidae | <i>Dineutus</i> | <i>aereus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Heteroceridae | <i>Heterocerus</i> | <i>elongatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Heteroceridae | <i>Heterocerus</i> | <i>ornatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Heteroceridae | <i>Heterocerus</i> | <i>thebaicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Heteroceridae | <i>Heterocerus</i> | <i>vulpes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Chalcionellus</i> | <i>amoenus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Exosternus</i> | <i>amphibius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Hister</i> | <i>coprophilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|------------------------|----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Histeridae | <i>Hypocacculus</i> | <i>kalahari</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Hypocacculus</i> | <i>roeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Hypocacculus</i> | <i>veris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Macrolister</i> | <i>latipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Pachylister</i> | <i>nigrita</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>bicolor</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>cruciatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>pseudobicolor</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>pulcher</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Saprinus</i> | <i>splendens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Histeridae | <i>Tribalus</i> | <i>subdolos</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hybosoridae | <i>Hybosorus</i> | <i>illigeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Allocotocerus</i> | <i>subaeneus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Berosus</i> | <i>cuspidatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Berosus</i> | <i>kalahariensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Berosus</i> | <i>nigriceps</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Berosus</i> | <i>vitticollis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Berosus</i> | <i>wewalkai</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Cercyon</i> | <i>aphodioides</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Chasmogenus</i> | <i>africanus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Enochrus</i> | <i>natalensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Enochrus</i> | <i>rubidus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Helochaeres</i> | <i>pallens</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Laccobius</i> | <i>leucaspis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Paracymus</i> | <i>chalceus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Hydrophilidae | <i>Psalitrus</i> | <i>villiersi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Lathridiidae | <i>Corticaria</i> | <i>elongata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Latridiidae | <i>Melanophthalma</i> | <i>capicola</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Latridiidae | <i>Melanophthalma</i> | <i>ophthalmica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Lyctidae | <i>Lyctus</i> | <i>africanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Malachiidae | <i>Hapalochrus</i> | <i>sumtuosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Malachiidae | <i>Metaphilhedonus</i> | <i>hobohmi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Malachiidae | <i>Urodactylus</i> | <i>uncipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Actenodia</i> | <i>chrysomelina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Afrolytta</i> | <i>carneola</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>amphibia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>bohemanni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|----------------------|----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>braunsiana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>korana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>peringueyi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Ceroctis</i> | <i>trifasciata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Cyaneolytta</i> | <i>resplendens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>basibicinctus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>bifucatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>burmeisteri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>decoratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>dentatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>haemactus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>hybridus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>matabele</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>oculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>peringueyi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>pilosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>politus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Hycleus</i> | <i>scalaris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Iselma</i> | <i>hobohmi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>bisignatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>mimus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Mimesthes</i> | <i>maculicollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Paractenodia</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Paractenodia</i> | <i>glabra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Prionotolytta</i> | <i>binotata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Psalydolytta</i> | <i>lorigera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Meloidae | <i>Zonitomorpha</i> | <i>costata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Melyridae | <i>Attalus</i> | <i>robusticeps</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Melyridae | <i>Attalusinus</i> | <i>dentipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Melyridae | <i>Colotrema</i> | <i>pallidula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Monommiidae | <i>Monomma</i> | <i>rufipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Mordellidae | <i>Ctenidia</i> | <i>mordelloides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Amphicrossus</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Anister</i> | <i>raffrayi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Carpophilus</i> | <i>hemipterus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Lorditus</i> | <i>tibialis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Meligethes</i> | <i>aurimaculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|------------|--------------|-----------------------|-----------------------|------------------|----------------------|-----------------------------|
| Insecta | Coleoptera | Nitidulidae | <i>Meligethes</i> | <i>clyprogethus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Meligethes</i> | <i>serrator</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Nitidulidae | <i>Pria</i> | <i>angustula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Phalacridae | <i>Olibrus</i> | <i>rufoterminalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Phalacridae | <i>Stilbus</i> | <i>obliquus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Anachalcos</i> | <i>convexus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Anomala</i> | <i>distanti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>copulatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>dorsalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>flavus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>gnu</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>kalaharicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>lividus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>merula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>pseudolividus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>sublividus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>transvaalicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Caccobius</i> | <i>ferrugineus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Catharsius</i> | <i>calaharicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Catharsius</i> | <i>melancholicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Cheirolasia</i> | <i>burkei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Copris</i> | <i>elphenor</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Copris</i> | <i>fallax</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Dicronorrhina</i> | <i>derbyana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Diplognatha</i> | <i>gagates</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Dischista</i> | <i>cincta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Dischista</i> | <i>rufa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Gymnopleurus</i> | <i>virens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Hypselogenia</i> | <i>geotrupina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Leucocelis</i> | <i>amethystina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Leucocelis</i> | <i>vitticollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Mausoleopsis</i> | <i>amabilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Metacatharsius</i> | <i>exiguus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Omocnemus</i> | <i>kochi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onitis</i> | <i>alexis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onitis</i> | <i>mendax</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onitis</i> | <i>mniszehi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|-------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Scarabaeidae | <i>Onthophagus</i> | <i>gazella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onthophagus</i> | <i>plebejus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Onthophagus</i> | <i>vinctus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Oryctes</i> | <i>boas</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Pachnoda</i> | <i>sinuata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Pachnodella</i> | <i>impressa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Pedaria</i> | <i>picea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Peritrichia</i> | <i>ditissima</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Peritrichia</i> | <i>flavoornata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Phoxomeloides</i> | <i>bella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Plaesiorrhinella</i> | <i>trivittata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Pleurophorus</i> | <i>africanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Polybaphes</i> | <i>balteata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Proagoderus</i> | <i>rangifer</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Proagoderus</i> | <i>sapphirinus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Rhabdotis</i> | <i>semipunctata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Rhizoplatys</i> | <i>bituberculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Rhysemus</i> | <i>bechuanensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Rhysemus</i> | <i>mimus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Scapanoclypeus</i> | <i>aberrans</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Scapanoclypeus</i> | <i>aulacocoleatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>ambiguus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>hottentorum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Sparrmannia</i> | <i>flava</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Temnorrhynchus</i> | <i>coronatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Tephraea</i> | <i>leucomelona</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Tephraea</i> | <i>morosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scarabaeidae | <i>Xeloma</i> | <i>maura</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Scolytidae | <i>Hapalogenius</i> | <i>africanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Silvanidae | <i>Oryzaephilus</i> | <i>gibbosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Silvanidae | <i>Oryzaephilus</i> | <i>surinamensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Silvanidae | <i>Silvanus</i> | <i>recticollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Spercheidae | <i>Spercheus</i> | <i>senegalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Aleochara</i> | <i>bipustulata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Aleochara</i> | <i>bisolata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Aleochara</i> | <i>mahagi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|----------------------|------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Staphylinidae | <i>Aleochara</i> | <i>salsipotens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Aleochara</i> | <i>trivialis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Bledius</i> | <i>michaelseni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Bledius</i> | <i>subopacus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Bledius</i> | <i>tuberculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Cafius</i> | <i>xantholoma</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Leucoparyphus</i> | <i>silphoides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Myllaena</i> | <i>sebastiani</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Oxyteles</i> | <i>varipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Oxytelus</i> | <i>fulgidus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Oxytelus</i> | <i>varipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Paramyrmoecia</i> | <i>bipustulata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Philonthus</i> | <i>caffer</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Philonthus</i> | <i>quadripunctulus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Scopaeus</i> | <i>filiformis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Scopaeus</i> | <i>mendosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Scopaeus</i> | <i>punctatellus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stenus</i> | <i>furcifer</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stenus</i> | <i>mendicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stenus</i> | <i>prospector</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stichodonia</i> | <i>bisulcata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Stilicus</i> | <i>bimaculatum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Zyras</i> | <i>bipunctatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Zyras</i> | <i>invictus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Staphylinidae | <i>Zyras</i> | <i>modestus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Asphaltesthes</i> | <i>impressipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Decoriplus</i> | <i>hieroglyphicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Derosphaerius</i> | <i>humilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Diestecopus</i> | <i>histrion</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Epiphysa</i> | <i>flavicollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Epiphysa</i> | <i>latisterna</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Eustolopus</i> | <i>octoseriatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Gonopus</i> | <i>angusticostis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Gonopus</i> | <i>tibialis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Homebius</i> | <i>kaszabi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Horatoma</i> | <i>carinulata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Pachyphaleria</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|-----------------------|-------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Coleoptera | Tenebrionidae | <i>Parastizopus</i> | <i>armaticeps</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Phanerotomea</i> | <i>gibberosulum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Physadesmia</i> | <i>globosa</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Physosterna</i> | <i>cribripes</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Psammodes</i> | <i>vialis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Renatiella</i> | <i>scrobipennis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Rhammatodes</i> | <i>aequalipennis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Rhammatodes</i> | <i>longicornis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Rhammatodes</i> | <i>subcostatus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Rhammatodes</i> | <i>tagenesthoides</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>aeneus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>bohemani</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>strangulatus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>trachyderes</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Somaticus</i> | <i>wahlbergi</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stenocara</i> | <i>aenescens</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stenocara</i> | <i>gracilipes</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stips</i> | <i>dohrni</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stips</i> | <i>stali</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Tenebrionidae | <i>Stipsostoma</i> | <i>sculpta</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Coleoptera | Trogidae | <i>Trox</i> | <i>asperulatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Trogidae | <i>Trox</i> | <i>elevatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Trogidae | <i>Trox</i> | <i>foveolatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Trogidae | <i>Trox</i> | <i>rusticus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Coleoptera | Urodontidae | <i>Urodontus</i> | <i>inconstans</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Dermoptera | Forficulidae | <i>Forficula</i> | <i>senegalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Dermoptera | Labiduridae | <i>Labidura</i> | <i>riparia</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Anthomyiidae | <i>Fucellia</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Afromelittodes</i> | <i>mimos</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Afromochtherus</i> | <i>mendax</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Anasillomos</i> | <i>chrysopos</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Euscelidia</i> | <i>peteraxi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Laphystia</i> | <i>argenteofasciata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Laphystia</i> | <i>gigantella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Neolophonotus</i> | <i>amplus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Neolophonotus</i> | <i>brunales</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Neolophonotus</i> | <i>circus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|----------------------|----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Diptera | Asilidae | <i>Neolophonotus</i> | <i>kalahari</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Neolophonotus</i> | <i>stuckenbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Pegesimallus</i> | <i>pedunculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Stichopogon</i> | <i>caffer</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Stichopogon</i> | <i>engeli</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Stichopogon</i> | <i>hermanni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Asilidae | <i>Stichopogon</i> | <i>punctum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Anthrax</i> | <i>doliops</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Bombylisoma</i> | <i>kaokoense</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Eurycarenum</i> | <i>minus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Exoprosopa</i> | <i>cervina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Exoprosopa</i> | <i>hypargyra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Exoprosopa</i> | <i>luteicosta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Exoprosopa</i> | <i>punctulata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Geron</i> | <i>garipepinus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Geron</i> | <i>nomadicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Heteralonia</i> | <i>mira</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Hyperusia</i> | <i>muscoides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Spogostylum</i> | <i>incisurale</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Bombyliidae | <i>Villa</i> | <i>lasia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Chrysomya</i> | <i>chloropyga</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Cordylobia</i> | <i>anthropophaga</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Isomyia</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Lucilia</i> | <i>sericata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Rhinia</i> | <i>apicalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Calliphoridae | <i>Rhyncomyia</i> | <i>interclusa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Camillidae | <i>Katamilla</i> | <i>procavia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Canacidae | <i>Canace</i> | <i>rossii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Canacidae | <i>Dynomiella</i> | <i>stuckenbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Ceratopogonidae | <i>Culicoides</i> | <i>schultzei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Ceratopogonidae | <i>Leptoconops</i> | <i>interruptus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Chloropidae | <i>Eutropha</i> | <i>lindneri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Culicidae | <i>Aedes</i> | <i>aegypti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Culicidae | <i>Culex</i> | <i>ethiopicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Curtonotidae | <i>Curtonotum</i> | <i>cuthbertsoni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Dolichopodidae | <i>Hydrophorus</i> | <i>praecox</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Ephydriidae | <i>Ephydra</i> | <i>stuckenbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|----------------|--------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Diptera | Hippoboscidae | <i>Hippobosca</i> | <i>rufipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Hippoboscidae | <i>Hippobosca</i> | <i>struthionis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Milichiidae | <i>Desmometopa</i> | <i>m-nigrum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Muscidae | <i>Musca</i> | <i>conducens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Muscidae | <i>Musca</i> | <i>sorbens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Mythicomyiidae | <i>Doliopteryx</i> | <i>ecphata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Mythicomyiidae | <i>Doliopteryx</i> | <i>welwitschia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Pipunculidae | <i>Clistoabdominalis</i> | <i>lomholdti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Psychodidae | <i>Sergentomyia</i> | <i>rima</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Sarcophagidae | <i>Chauliooestrus</i> | <i>leza</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Sarcophagidae | <i>Khowaba</i> | <i>atrox</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Scenopinidae | <i>Scenopinus</i> | <i>fenestralis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Sepsidae | <i>Sepsis</i> | <i>niveipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Sepsidae | <i>Toxopoda</i> | <i>nitida</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Simuliidae | <i>Prosimulium</i> | <i>damarense</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Ceroides</i> | <i>caffra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Eristalinus</i> | <i>tabanoides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Eumerus</i> | <i>obliquus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Eumerus</i> | <i>triangularis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Ischiodon</i> | <i>aegyptus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Syrphidae | <i>Syritta</i> | <i>flaviventris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Tabanidae | <i>Limata</i> | <i>kuehnelti</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Ceratitis</i> | <i>quinaria</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Coelotrypes</i> | <i>vittatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Dacus</i> | <i>bistrigulatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Dacus</i> | <i>ciliatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Dacus</i> | <i>ciliatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Desmella</i> | <i>clarinetta</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Dioxyna</i> | <i>sororcula</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Euryphalara</i> | <i>barnardi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Euryphalara</i> | <i>extensa</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Euryphalara</i> | <i>mecistocephala</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Goniurellia</i> | <i>munroi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Hyaloctoides</i> | <i>semiater</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Hyaloctoides</i> | <i>superhyalinus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Hyalotephritis</i> | <i>australis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Leucothrix</i> | <i>barbata</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|----------------------|----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Diptera | Tephritidae | <i>Metasphenisca</i> | <i>rubida</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Platomma</i> | <i>luniferum</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Trupanea</i> | <i>subsetosa</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tephritidae | <i>Trupanea</i> | <i>xanthochaeta</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Diptera | Tethinidae | <i>Afrotethina</i> | <i>stuckenbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Therevidae | <i>Phycus</i> | <i>niger</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Therevidae | <i>Rueppellia</i> | <i>basalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Therevidae | <i>Stenogephyra</i> | <i>torrida</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Trioxscelididae | <i>Trioxscelis</i> | <i>lindneri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Diptera | Ulidiidae | <i>Melieria</i> | <i>nigritarsis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Alydidae | <i>Euthetus</i> | <i>leucostictus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Alydidae | <i>Nemausus</i> | <i>sordidatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Belostomatidae | <i>Lethocerus</i> | <i>cordofanus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Cimicidae | <i>Aphrania</i> | <i>barys</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Coreidae | <i>Anoplocnemis</i> | <i>curvipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Coreidae | <i>Leptocoris</i> | <i>cinnamonensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Coreidae | <i>Leptoglossus</i> | <i>membranaceus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Corixidae | <i>Corixa</i> | <i>hieroglyphica</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Corixidae | <i>Micronecta</i> | <i>browni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Corixidae | <i>Sigara</i> | <i>wahlbergi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Gerridae | <i>Gerris</i> | <i>swakopensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Corizus</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Corizus</i> | <i>scutellaris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Dieuches</i> | <i>abundans</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Engistus</i> | <i>hottentotti</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Eranchiellus</i> | <i>slateri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>megacephalus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>pallidipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Hyalochilus</i> | <i>scudderi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Leptodemus</i> | <i>irroratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Melanostethus</i> | <i>marginatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Microspilus</i> | <i>kafferensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Nysius</i> | <i>binotatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Nysius</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Paromius</i> | <i>gracilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Remundiareana</i> | <i>horvathi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Lygaeidae | <i>Spilostethus</i> | <i>pandurus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|-----------------------|-------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Heteroptera | Nabidae | <i>Nabis</i> | <i>capsiformis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Naucoridae | <i>Laccocoris</i> | <i>limigenus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Nepidae | <i>Laccotrephes</i> | <i>fabricii</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Notonectidae | <i>Anisops</i> | <i>hancocki</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Notonectidae | <i>Anisops</i> | <i>sardea</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Notonectidae | <i>Anisops</i> | <i>varia</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Notonectidae | <i>Enithares</i> | <i>sobria</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Heteroptera | Pentatomidae | <i>Bagrada</i> | <i>hilaris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Pentatomidae | <i>Nezara</i> | <i>viridula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Pyrrhocoridae | <i>Probergrothius</i> | <i>sexpunctatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Scutelleridae | <i>Callidea</i> | <i>duodecimpunctata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Tingidae | <i>Galeatus</i> | <i>scrophicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Heteroptera | Tingidae | <i>Habrochila</i> | <i>kalahariana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Aphididae | <i>Hyalopterus</i> | <i>pruni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Aconurella</i> | <i>compta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Austroagallia</i> | <i>cuneata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Balclutha</i> | <i>hebe</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Coloborrhis</i> | <i>corticina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Empoasca</i> | <i>ethiopica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Exitianus</i> | <i>nanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Paradorydium</i> | <i>spatulum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadellidae | <i>Penthimia</i> | <i>vinula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadidae | <i>Munza</i> | <i>laticlavata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadidae | <i>Platypleura</i> | <i>divisa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Cicadidae | <i>Platypleura</i> | <i>fenestrata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Homoptera | Flatidae | <i>Cyrtus</i> | <i>truncata</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Flatidae | <i>Ulundia</i> | <i>decisa</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Issidae | <i>Hilda</i> | <i>patruelis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Membracidae | <i>Oxyrachis</i> | <i>latipes</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Psyllidae | <i>Crastina</i> | <i>swakopensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Psyllidae | <i>Pauropsylla</i> | <i>longipes</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Homoptera | Trioziidae | <i>Trioza</i> | <i>capensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Agaonidae | <i>Apocrypta</i> | <i>longitarsus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Agaonidae | <i>Ceratosolen</i> | <i>arabicus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Agaonidae | <i>Eukoebelea</i> | <i>sycamori</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Agaonidae | <i>Koebelea</i> | <i>gigas</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Agaonidae | <i>Sycophaga</i> | <i>sycomori</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|-------------|---------------|-----------------------|------------------------------|------------------|-------------------------|-----------------------------|
| Insecta | Hymenoptera | Anthophoridae | <i>Amegilla</i> | <i>niveata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Amegilla</i> | <i>nivescens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Braunaspis</i> | <i>albipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Tetraloniella</i> | <i>minuta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Xylocopa</i> | <i>caffra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Xylocopa</i> | <i>hottentotta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Anthophoridae | <i>Xylocopa</i> | <i>lugubris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Aphelinidae | <i>Azotus</i> | <i>capensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Aphelinidae | <i>Marietta</i> | <i>connecta</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Aphelinidae | <i>Marietta</i> | <i>javensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Aphelinidae | <i>Marietta</i> | <i>leopardina</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Apidae | <i>Apis</i> | <i>mellifera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Chalcididae | <i>Hockeria</i> | <i>gallicola</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Chrysididae | <i>Chrysis</i> | <i>delicatula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Chrysididae | <i>Chrysis</i> | <i>stilboides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Chrysididae | <i>Hedychridium</i> | <i>fulgidum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Chrysididae | <i>Stilbum</i> | <i>cyanurum amethystinum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>genalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>microdontus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>ruficollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Colletidae | <i>Colletes</i> | <i>testaceipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Dryinidae | <i>Bocchus</i> | <i>bini</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Dryinidae | <i>Gonatopus</i> | <i>johnsi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Dryinidae | <i>Tridryinus</i> | <i>ampuliciformis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Adelencyrtus</i> | <i>inglisiae</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Anagyrus</i> | <i>amnicus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Discodes</i> | <i>melas</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Homalotylus</i> | <i>africanus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Homalotylus</i> | <i>flaminius</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Mayridia</i> | <i>arida</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Metaphycus</i> | <i>mineus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Prochiloneurus</i> | <i>aegyptiacus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Psyllaephagus</i> | <i>io</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Encyrtidae | <i>Psyllaephagus</i> | <i>vastus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eumenidae | <i>Eumenes</i> | <i>lepelltieri</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eumenidae | <i>Eumenes</i> | <i>maxillosus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eumenidae | <i>Odynerus</i> | <i>gestroi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|------------------|-----------------------|--------------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Hymenoptera | Eumenidae | <i>Odynerus</i> | <i>meyeri</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eumenidae | <i>Rhynchium</i> | <i>marginellum</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eumenidae | <i>Synagris</i> | <i>analis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Eupelmidae | <i>Metapelma</i> | <i>riparia</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Fideliidae | <i>Fideliopsis</i> | <i>ornata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Fideliidae | <i>Parafidelia</i> | <i>pallidula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Anoplolepis</i> | <i>steingroeveri</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Camponotus</i> | <i>fulvopilosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Cremastogaster</i> | <i>castanea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Messor</i> | <i>capensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Messor</i> | <i>denticornis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>alarum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>drapenum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>mantazenum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>nirvanum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>rufulum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>vatranum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Monomorium</i> | <i>viator</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Ocymyrmex</i> | <i>barbiger</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Ocymyrmex</i> | <i>velox</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Pheidole</i> | <i>tenuinodis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Tetramorium</i> | <i>rufescens</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Tetramorium</i> | <i>sericeiventre</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Tetramorium</i> | <i>setuliferum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Formicidae | <i>Tetraponera</i> | <i>ambigua</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Gasteruptionidae | <i>Gasteruption</i> | <i>ornatipes</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Halictidae | <i>Halictus</i> | <i>namaensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Halictidae | <i>Halictus</i> | <i>nitidiusculus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Megachilidae | <i>Anthidium</i> | <i>severini</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Megachilidae | <i>Chalicodoma</i> | <i>felina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Megachilidae | <i>Megachile</i> | <i>wahlbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Mutillidae | <i>Dasylabris</i> | <i>terpsichore</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Mutillidae | <i>Dasylabroides</i> | <i>latona</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Mutillidae | <i>Dolichomutilla</i> | <i>sycorax</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Mutillidae | <i>Stenomutilla</i> | <i>eurydice</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Mutillidae | <i>Strangulotilla</i> | <i>thoracosulcata damarana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Platygasteridae | <i>Synopeas</i> | <i>bicolor</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|-----------------------|--------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Hymenoptera | Platygasteridae | <i>Synopeas</i> | <i>nigerrimus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Agenioideus</i> | <i>brevis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Agenioideus</i> | <i>decipiens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Agenioideus</i> | <i>gibber</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Agenioideus</i> | <i>tripartitus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Agenioideus</i> | <i>varians</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Aporinellus</i> | <i>trifasciatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Arachnotheutus</i> | <i>botswanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Auplopus</i> | <i>ferrugineus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>africana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>cribrata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>karooensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>kriechbaumeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>punctulata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Ceropales</i> | <i>waltoni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Clavelia</i> | <i>decipiens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Dicyrtomellus</i> | <i>rufofemoratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Elaphrosyrus</i> | <i>insidiosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Eoferreola</i> | <i>melanostoma</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Evagetes</i> | <i>argenteodecoratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Hemipepsis</i> | <i>glabrata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Homonotus</i> | <i>dispersus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Paracyphononyx</i> | <i>tichriocephalus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Parapompilus</i> | <i>namana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Pseudagenia</i> | <i>vaga</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Pseudoclavelia</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Pseudoclavelia</i> | <i>nitidula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Schistonyx</i> | <i>atterimus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Schistonyx</i> | <i>sinuatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pompilidae | <i>Teinotrachelus</i> | <i>damarensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Pteromalidae | <i>Catolaccus</i> | <i>crassiceps</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Scelionidae | <i>Breviscelio</i> | <i>crenatus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Scelionidae | <i>Gryon</i> | <i>gnidus</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Scelionidae | <i>Gryon</i> | <i>saxatilis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Scoliidae | <i>Scolia</i> | <i>betremi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Ammophila</i> | <i>ferrugineipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Ampulex</i> | <i>denticollis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|--------------------------|--------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Hymenoptera | Sphecidae | <i>Bembix</i> | <i>kriechbaumeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Bembix</i> | <i>liturata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Cerceris</i> | <i>albigena</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Cerceris</i> | <i>discrepans</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Cerceris</i> | <i>trichionota</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Cerceris</i> | <i>vulpecula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>chalcithorax</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>karooensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>nama</i> | d. Bounding | i. Dune Sea specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>neavei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>pulchellus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>tuberculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>waltlii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>xanthophilus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Holotachysphex</i> | <i>turneri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Karossia</i> | <i>hessei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>karooensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>oraniensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Namiscophus</i> | <i>namaquensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Odontosphex</i> | <i>damara</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Oxybelus</i> | <i>hessei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Palarus</i> | <i>handlirschi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Parapsammophila</i> | <i>herero</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Saliostethus</i> | <i>flavomaculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Saliostethus</i> | <i>fuscifrons</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Saliostethus</i> | <i>ungulatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Saliostethus</i> | <i>xanthomaculatus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Solierella</i> | <i>rhodesiana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Solierella</i> | <i>scrobiculata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Tachysphex</i> | <i>aethiopicus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Tachysphex</i> | <i>kalaharicus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Tachysphex</i> | <i>prosopigastroides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Sphecidae | <i>Tachytella</i> | <i>nama</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Vespidae | <i>Belonogaster</i> | <i>lateritius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Vespidae | <i>Delta</i> | <i>lepeleterii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Vespidae | <i>Polistes</i> | <i>smithii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Hymenoptera | Vespidae | <i>Tricarindonynerus</i> | <i>guerinii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|-------------|-----------------|------------------------|----------------------|------------------|----------------------|-----------------------------|
| Insecta | Lepidoptera | Arctiidae | <i>Cymaroa</i> | <i>grisea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Arctiidae | <i>Micralarctia</i> | <i>australis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Arctiidae | <i>Paramaenas</i> | <i>strigosus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Arctiidae | <i>Utetheisa</i> | <i>pulchella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Choreutidae | <i>Choreutis</i> | <i>aegyptica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Choreutidae | <i>Tebenna</i> | <i>micalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Chrysopeleidae | <i>Ascalenia</i> | <i>melanogastra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Chrysopeleidae | <i>Giselia</i> | <i>stagnans</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Coleophoridae | <i>Coleophora</i> | <i>kruegeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Coleophoridae | <i>Coleophora</i> | <i>namibiae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Copromorphidae | <i>Rhynchophorella</i> | <i>syncentra</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Cosmopterygidae | <i>Cosmopterix</i> | <i>attenuatella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Cosmopterygidae | <i>Macrobathra</i> | <i>fasciata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Cossidae | <i>Arctiocossus</i> | <i>gaerdesi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Cossidae | <i>Arctiocossus</i> | <i>poliopterus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Cossidae | <i>Brachylia</i> | <i>eutelia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Achyra</i> | <i>coelatalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Achyra</i> | <i>nudalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Antigastra</i> | <i>catalaunalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Euchromius</i> | <i>discopis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Euchromius</i> | <i>ocelleus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Loxostege</i> | <i>frustalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Maruca</i> | <i>vitrata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Nomophila</i> | <i>noctuella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Noordia</i> | <i>blitealis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Pediasia</i> | <i>ematheudelia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Pseudonoorda</i> | <i>rubricostalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Spoladea</i> | <i>recurvalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Tegostoma</i> | <i>comparalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Tegostoma</i> | <i>subterminalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Crambidae | <i>Uresiphita</i> | <i>polygonalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Ethmiidae | <i>Ethmia</i> | <i>oculigera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Galactiidae | <i>Homodaula</i> | <i>albida</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Acutitornus</i> | <i>munda</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Anarsia</i> | <i>agricola</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Anarsia</i> | <i>nimbosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Argophara</i> | <i>epaxia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|----------------|-----------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Lepidoptera | Gelechiidae | <i>Aspades</i> | <i>hutchinsonella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Ergasiola</i> | <i>ergasima</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Grandipalpa</i> | <i>robusta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Hedma</i> | <i>microcasis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Hypotima</i> | <i>austerodes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Lacistodes</i> | <i>tauropis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Microcraspedus</i> | <i>synecta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Neotelphusa</i> | <i>ochlerodes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Ochrodia</i> | <i>pentamaculata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Octonodula</i> | <i>binotella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Ornativulva</i> | <i>kalahariensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Paratelfhusa</i> | <i>reducta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Paratheetis</i> | <i>sordidula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Polyhymno</i> | <i>chionarcha</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Polyhymno</i> | <i>hostilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Polyhymno</i> | <i>pausimacha</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Scrobipalpa</i> | <i>diversa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Scrobipalpa</i> | <i>vicaria</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Streyella</i> | <i>pallidigrisea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Syncopacma</i> | <i>oxispila</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gelechiidae | <i>Syncopacma</i> | <i>polychromella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Chiasmia</i> | <i>multistrigata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Chiasmia</i> | <i>tecnium</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Conchyloides</i> | <i>distelitis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Drepanogynis</i> | <i>incondita</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Holoterpna</i> | <i>errata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Idaea</i> | <i>fumilinea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Isturgia</i> | <i>deeraria</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Mictoschema</i> | <i>tuckeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Neromia</i> | <i>strigulosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Rhodometra</i> | <i>sacraria</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Geometridae | <i>Scopula</i> | <i>palleuca</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Callicercops</i> | <i>tricerops</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Caloptilia</i> | <i>isotoma</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Caloptilia</i> | <i>pentaplaca</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Conopobathra</i> | <i>carbunculata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Conopobathra</i> | <i>plethorhabda</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|----------------|-----------------------|-----------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Lepidoptera | Gracillariidae | <i>Cuphodes</i> | <i>melanostola</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Phyllonorycter</i> | <i>chionopa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Stomphastis</i> | <i>cardamitis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Gracillariidae | <i>Stomphastis</i> | <i>crotonis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Hesperiidae | <i>Gomalia</i> | <i>elma</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Hesperiidae | <i>Spialia</i> | <i>colotes transvaaliae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lasiocampidae | <i>Gonometa</i> | <i>postica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lasiocampidae | <i>Schausinna</i> | <i>regia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lasiocampidae | <i>Sena</i> | <i>parva</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lasiocampidae | <i>Sena</i> | <i>prompta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lecithoceridae | <i>Dragmatucha</i> | <i>proaula</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Limacodidae | <i>Coenobasis</i> | <i>argentina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Limacodidae | <i>Isozinara</i> | <i>pallidifascia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Limacodidae | <i>Taeda</i> | <i>aetitis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Anthene</i> | <i>amarah</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Azanus</i> | <i>jesous</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Azanus</i> | <i>natalensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Brephidium</i> | <i>metophis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Deudorix</i> | <i>antalus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Freyeria</i> | <i>trochylus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Iolais</i> | <i>subinfuscata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Lampides</i> | <i>boeticus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Myrina</i> | <i>silenus suzannae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Tarucus</i> | <i>sybaris linearis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Tylopaedia</i> | <i>sardonix</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lycaenidae | <i>Zintha</i> | <i>hintza</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lymantriidae | <i>Crorema</i> | <i>nigropunctata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lymantriidae | <i>Laelia</i> | <i>actuosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lymantriidae | <i>Laelioproctis</i> | <i>leucosphena</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Lymantriidae | <i>Tearosoma</i> | <i>aspersum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nepticulidae | <i>Ectoedemia</i> | <i>fuscata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nepticulidae | <i>Ectoedemia</i> | <i>vannifera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nepticulidae | <i>Stigmella</i> | <i>irrorata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Acantholipes</i> | <i>trimeni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Achaea</i> | <i>catella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Acontia</i> | <i>antica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Acontia</i> | <i>conifrons</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|--------------------|------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Lepidoptera | Noctuidae | <i>Acontia</i> | <i>guttifera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Acontia</i> | <i>trimaculata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Adisuro</i> | <i>aerugo</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Agrotis</i> | <i>ipilon</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Agrotis</i> | <i>segetum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Amyna</i> | <i>punctum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Annua</i> | <i>umbrillinea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Anomis</i> | <i>sabulifera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Asplenla</i> | <i>melanodonta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Audea</i> | <i>melanoplaga</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Bananiana</i> | <i>culminifera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Cardepa</i> | <i>definiens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ctenusa</i> | <i>pallida</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Cucullia</i> | <i>inequalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Cucullia</i> | <i>terrensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Diaphone</i> | <i>eumela</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ectochele</i> | <i>nigrilineata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Eublemma</i> | <i>admota</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Eublemma</i> | <i>griseofimbriata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Eublemma</i> | <i>odonthophora</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Eutelia</i> | <i>polychorda</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Helicoverpa</i> | <i>armigera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Heliothis</i> | <i>gallatheae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Heliothis</i> | <i>scutuligera</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Hypocala</i> | <i>rostrata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>lamba</i> | <i>inferalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>lamboides</i> | <i>incerta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Leucania</i> | <i>pseudoloreyi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ozarba</i> | <i>bicoloria</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ozarba</i> | <i>heliasthes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ozarba</i> | <i>hypoxantha</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ozarba</i> | <i>sinua</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Pandesma</i> | <i>robusta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Pericyma</i> | <i>atrifusa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Prodotis</i> | <i>stolida</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Pseudozarba</i> | <i>orthozona</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Rhaguva</i> | <i>stigmatia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|----------------------|---------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Lepidoptera | Noctuidae | <i>Rhesala</i> | <i>moestalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Sphingomorpha</i> | <i>chlorea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Spodoptera</i> | <i>exigua</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Trichoplusia</i> | <i>exquisita</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Ulotrichopus</i> | <i>tinctipennis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Noctuidae | <i>Xanthodes</i> | <i>brunnescens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Acraea</i> | <i>neobule</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Byblia</i> | <i>ilithyia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Charaxes</i> | <i>jasius saturnus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Cynthia</i> | <i>cardui</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Danaus</i> | <i>chrysippus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Hamanumida</i> | <i>daedalus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Hypolimnas</i> | <i>missippus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Physcaeneura</i> | <i>panda</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Precis</i> | <i>hierta cebrene</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Stygionympha</i> | <i>irrorata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Stygionympha</i> | <i>robertsoni</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Nymphalidae | <i>Ypthima</i> | <i>asterope hereroica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Papilionidae | <i>Papilio</i> | <i>demodocus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Belenois</i> | <i>aurota</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Belenois</i> | <i>creona severina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Catopsilia</i> | <i>florella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>agoye bowkeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>amata williami</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>antevippe gavis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>celimene pholoe</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>danae walkeri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>evagore antigone</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>evenina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>lais</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Colotis</i> | <i>regina</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Eurema</i> | <i>brigitta</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Nepheronia</i> | <i>buquetii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Pinacopteryx</i> | <i>eriphia</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pieridae | <i>Pontia</i> | <i>helice</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Plutellidae | <i>Plutella</i> | <i>xylostella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Psychidae | <i>Kotochalia</i> | <i>junodi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-------------------|-----------------------|------------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Lepidoptera | Pterophoridae | <i>Agdistis</i> | <i>clara</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pterophoridae | <i>Agdistis</i> | <i>spinosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Abachausia</i> | <i>grisea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Acrobasis</i> | <i>africanella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Aglossa</i> | <i>rhodalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Anacylosis</i> | <i>interjectella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Anacylosis</i> | <i>namibiella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Arsissa</i> | <i>transvaalica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Cadra</i> | <i>figulilella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Canthelea</i> | <i>nigrinella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Ceutilopha</i> | <i>isidis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Etiella</i> | <i>zinckenella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Hypargyria</i> | <i>metalliferella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Pyralidae | <i>Hypotia</i> | <i>dinteri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Saturniidae | <i>Goodia</i> | <i>kuntzei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Saturniidae | <i>Gyanisa</i> | <i>maja</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Saturniidae | <i>Heniocha</i> | <i>dyops</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Saturniidae | <i>Ludia</i> | <i>delegorguei</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Scythridae | <i>Scythris</i> | <i>inota</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Acherontia</i> | <i>atropos</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Agrius</i> | <i>convolvuli</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Cephonodes</i> | <i>hylas virescens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Deilephila</i> | <i>nerii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Hippotion</i> | <i>rosae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Hoplistopus</i> | <i>penricae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Nephele</i> | <i>comma</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Polypitchoides</i> | <i>grayi assimilis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Sphingidae | <i>Rufoclanis</i> | <i>numosae</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Tischeriidae | <i>Coptotriche</i> | <i>africana</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Tischeriidae | <i>Tischeria</i> | <i>antilope</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Lepidoptera | Yponomeutidae | <i>Yponomeuta</i> | <i>subplumbella</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Amorphoscelididae | <i>Amorphoscelis</i> | <i>austrogermanica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Empusidae | <i>Hemiempusa</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Iridopterygidae | <i>Tarachina</i> | <i>australis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Mantodea | Iridopterygidae | <i>Tarachina</i> | <i>raphidioides</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Galepsus</i> | <i>aberrans</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Galepsus</i> | <i>ulricae</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|-----------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Mantodea | Mantidae | <i>Geothespis</i> | <i>australis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Ligariella</i> | <i>australis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Ligentella</i> | <i>beieri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Mantis</i> | <i>religiosa</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Pseudodystacta</i> | <i>braueri</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Sphodromantis</i> | <i>gastrica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Sphodromantis</i> | <i>occidentalis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Mantodea | Mantidae | <i>Tarachodes</i> | <i>lucubrans</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Brinckochrysa</i> | <i>michaelseni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Brinckochrysa</i> | <i>turkanensis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Chrysemosa</i> | <i>jeanneli</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Chrysoperla</i> | <i>zastrowi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Dichochrysa</i> | <i>tacta</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Chrysopidae | <i>Italochrysa</i> | <i>vansoni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Coniopterygidae | <i>Coniopteryx</i> | <i>stuckenbergi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Coniopterygidae | <i>Hemisemidalis</i> | <i>barnardi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Coniopterygidae | <i>Hemisemidalis</i> | <i>longipennis</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Coniopterygidae | <i>Semidalis</i> | <i>fuelleborni</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Centroclisis</i> | <i>brachygaster</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Creoleon</i> | <i>africanus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Myrmeleon</i> | <i>alcestris</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Myrmeleon</i> | <i>obscurus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Myrmeleon</i> | <i>pallescens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Palparellus</i> | <i>damariensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Palparellus</i> | <i>flavofasciatus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Palpares</i> | <i>immensus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Myrmeleontidae | <i>Palparidius</i> | <i>capicola</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Nemopteridae | <i>Thysanocroce</i> | <i>damarae</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Neuroptera | Psychopsidae | <i>Silveira</i> | <i>jordani</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Odonata | Libellulidae | <i>Crocothemis</i> | <i>erythraea</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Odonata | Libellulidae | <i>Sympetrum</i> | <i>fonscolombeii</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Odonata | Libellulidae | <i>Trithemis</i> | <i>kirbyi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Anabiba</i> | <i>thoracica</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Anacridium</i> | <i>moestum</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Brownacris</i> | <i>haackei</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Cataloipus</i> | <i>ambiguus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Catantops</i> | <i>melanostictus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |

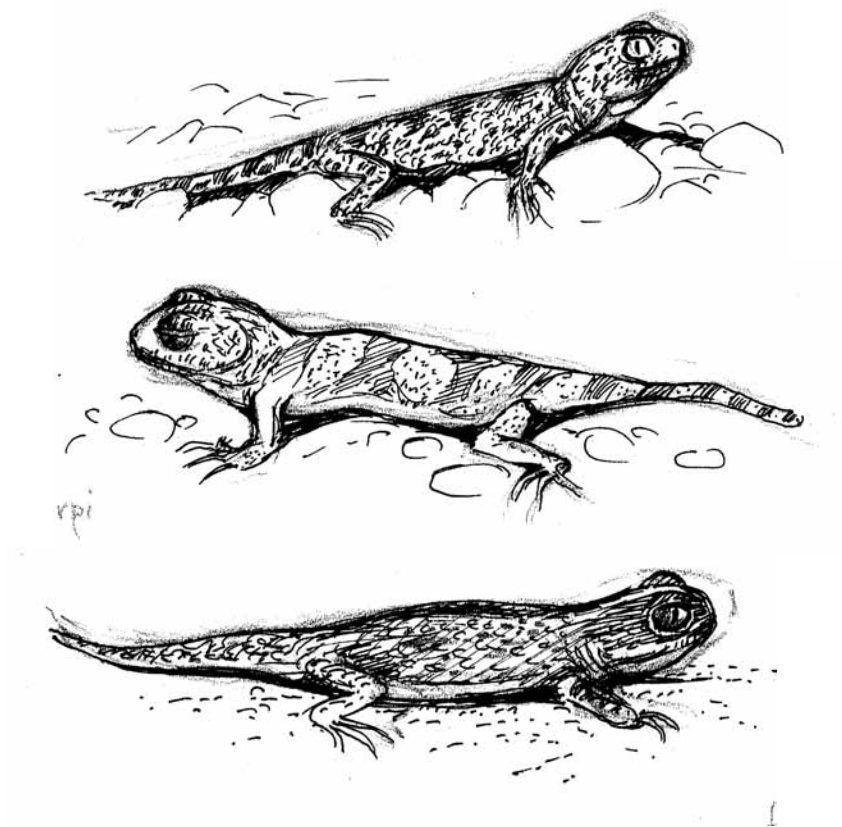
| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|-----------------|------------------------|-----------------------|-------------------------|-----------------------------|-----------------------------|
| Insecta | Orthoptera | Acrididae | <i>Cyrtacanthacris</i> | <i>tatarica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Damacris</i> | <i>rupestris</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Euryphemus</i> | <i>eremobioides</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Humbe</i> | <i>tenuicornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Lithidium</i> | <i>buschmanicum</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Oedaleus</i> | <i>flavus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Ornithacris</i> | <i>ruficornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Plegmapterus</i> | <i>splendens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Scintharista</i> | <i>magnifica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Truxaloides</i> | <i>serratus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Acrididae | <i>Xenocymochtha</i> | <i>barkeri</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Bradyporidae | <i>Acanthoplus</i> | <i>longipes</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Bradyporidae | <i>Acanthoproctus</i> | <i>cervinus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Charilaidae | <i>Hemicharilaus</i> | <i>monomorphus</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Euschmidtidae | <i>Lophothericles</i> | <i>flavifrons</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Gryllidae | <i>Gryllus</i> | <i>zaisi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Lentulidae | <i>Devylideria</i> | <i>coryphistoides</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pamphagidae | <i>Echinotropis</i> | <i>karasensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pamphagidae | <i>Hoplolopha</i> | <i>karasensis</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pamphagidae | <i>Lamarkiana</i> | <i>arenosa</i> | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pamphagidae | <i>Lamarkiana</i> | <i>sparrmani</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pyrgomorphidae | <i>Phymateus</i> | <i>viridipes</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pyrgomorphidae | <i>Pyrgomorpha</i> | <i>conica</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Pyrgomorphidae | <i>Zonocerus</i> | <i>elegans</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tettigoniidae | <i>Clonia</i> | <i>wahlbergi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tettigoniidae | <i>Plangia</i> | <i>graminea</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tettigoniidae | <i>Pseudosaga</i> | <i>maculata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tettigoniidae | <i>Ruspolia</i> | <i>differens</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tridactylidae | <i>Xya</i> | <i>maraisi</i> | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Insecta | Phasmatodea | Phasmidae | <i>Bactrododema</i> | <i>brevicornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Phasmatodea | Phasmidae | <i>Bactrododema</i> | <i>tiarata</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Thysanoptera | Phlaeothripidae | <i>Dolicholepta</i> | <i>karneyi</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Thysanoptera | Phlaeothripidae | <i>Haplothrips</i> | <i>nigricornis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Thysanoptera | Phlaeothripidae | <i>Haplothrips</i> | <i>tardus</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Thysanoptera | Thripidae | <i>Agerothrips</i> | <i>bodius</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Trichoptera | Dipseudopsidae | <i>Dipseudopsis</i> | <i>capensis</i> | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Insecta | Orthoptera | Tridactylidae | <i>Afrotridactylus</i> | <i>meridianus</i> | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|---------|------------|---------------|---------------------|----------------------|------------------|--------------------------|-----------------------|
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>albovillosa</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>deplanata</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>lugubrina</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>signifera</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>bennigseni</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>desertica</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Neojulodis</i> | <i>vittipennis</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Buprestidae | <i>Sternocera</i> | <i>orissa</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Coelodon</i> | <i>servum</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Docohammus</i> | <i>bennigseni</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Eugoides</i> | <i>kolbei</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Exocentrus</i> | <i>echinulus</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Frea</i> | <i>circumscripta</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Oberea</i> | <i>trigonalis</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Parhecyra</i> | <i>costata</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Phyllocnema</i> | <i>mirifica</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Prospilus</i> | <i>vansonii</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Cerambycidae | <i>Titocerus</i> | <i>jaspideus</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Passalidae | <i>Hectarthrum</i> | <i>simplex</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Ptinidae | <i>Stethomezium</i> | <i>nooitgedag</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Cauricara</i> | <i>velox</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Cryptochile</i> | <i>consita</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Epiphysa</i> | <i>punctatissima</i> | d. Bounding | iv. Generalist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Physadesmia</i> | <i>bullata</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>amabilis</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>amita</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>balti</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>castelnaudi</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>cerea</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>damarina</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>devexa</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>dorsata</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fulgens</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>infanda</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>kochi</i> | d. Bounding | ii. Arid area specialist | 08. Marginal presence |
| Insecta | Odonata | Lestidae | <i>Lestes</i> | <i>pallidus</i> | a. Sand Sea | i. Dune Sea specialist | 09. Common migrant |
| Insecta | Odonata | Gomphidae | <i>Paragomphus</i> | <i>genei</i> | c. Widespread | iii. Habitat specialist | 09. Common migrant |

| Class | Order | Family | Genus | Species | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|--------------|---------------|---------------------|----------------------|-------------------------|-----------------------------|--------------------------|
| Insecta | Coleoptera | Buprestidae | <i>Julodis</i> | <i>anthobia</i> | d. Bounding | iv. Generalist | 09. Common migrant |
| Insecta | Odonata | Aeschnidae | <i>Anax</i> | <i>imperator</i> | d. Bounding | iii. Habitat specialist | 09. Common migrant |
| Insecta | Odonata | Libellulidae | <i>Crocothemis</i> | <i>sanguinolenta</i> | d. Bounding | iii. Habitat specialist | 09. Common migrant |
| Insecta | Odonata | Libellulidae | <i>Diplacodes</i> | <i>lefebvrei</i> | d. Bounding | iii. Habitat specialist | 09. Common migrant |
| Insecta | Odonata | Libellulidae | <i>Orthetrum</i> | <i>chrysostigma</i> | d. Bounding | iii. Habitat specialist | 09. Common migrant |
| Insecta | Odonata | Libellulidae | <i>Orthetrum</i> | <i>trinacria</i> | d. Bounding | iii. Habitat specialist | 09. Common migrant |
| Insecta | Odonata | Libellulidae | <i>Pantala</i> | <i>flavescens</i> | d. Bounding | iv. Generalist | 09. Common migrant |
| Insecta | Orthoptera | Gryllidae | <i>Brachytrupes</i> | <i>membranaceus</i> | d. Bounding | iv. Generalist | 09. Common migrant |
| Insecta | Odonata | Aeschnidae | <i>Anax</i> | <i>ephippiger</i> | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor |
| Insecta | Odonata | Libellulidae | <i>Diplacodes</i> | <i>luminans</i> | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor |
| Insecta | Odonata | Libellulidae | <i>Tholymis</i> | <i>tillarga</i> | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor |
| Insecta | Odonata | Libellulidae | <i>Trithemis</i> | <i>arteriosa</i> | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor |
| Insecta | Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>longicaudata</i> | c. Widespread | iv. Generalist | 12. Alien |
| Insecta | Blattodea | Blatellidae | <i>Blatella</i> | <i>germanica</i> | d. Bounding | iv. Generalist | 12. Alien |
| Insecta | Coleoptera | Cerambycidae | <i>Arhopalus</i> | <i>ferus</i> | d. Bounding | iv. Generalist | 12. Alien |
| Insecta | Coleoptera | Ptinidae | <i>Stethomezium</i> | <i>squamosum</i> | d. Bounding | iv. Generalist | 12. Alien |
| Insecta | Orthoptera | Gryllidae | <i>Acheta</i> | <i>domestica</i> | d. Bounding | iv. Generalist | 12. Alien |
| Insecta | Orthoptera | Gryllidae | <i>Gryllus</i> | <i>bimaculatus</i> | d. Bounding | iv. Generalist | 12. Alien |
| Insecta | Phthiraptera | Pthiridae | <i>Pthirus</i> | <i>pubis</i> | d. Bounding | iii. Habitat specialist | 12. Alien |
| Insecta | Siphonaptera | Pulicidae | <i>Pulex</i> | <i>irritans</i> | d. Bounding | iii. Habitat specialist | 12. Alien |

Annex 14

Table of Fish, Amphibians & Reptiles



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Distribution Status | Habitat within property |
|--------------------------|----------------------|-------------------------|-----------------------------|------------------------|--------------------------|-----------------------------|--------------------------------------|
| Kingdom: Animalia | | Phylum: Chordata | Class: Reptilia | | | | |
| Dermochelyidae | <i>Dermochelys</i> | <i>coriacea</i> | Leatherback Turtle | d. Bounding | iii. Habitat specialist | 11. Vagrant | Marine littoral |
| Cheloniidae | <i>Chelonia</i> | <i>mydas</i> | Green Turtle | d. Bounding | iii. Habitat specialist | 11. Vagrant | Marine littoral |
| Pelomedusidae | <i>Pelomedusa</i> | <i>subrufa</i> | Helmeted terrapin | d. Bounding | iv. Generalist | 11. Vagrant | Water filled pans after floods |
| Testudinidae | <i>Geochelone</i> | <i>pardalis</i> | Leopard tortoise | d. Bounding | iv. Generalist | 07. Interdigitated resident | Absent from dunes and fog zone |
| Testudinidae | <i>Psammobates</i> | <i>tentorius</i> | Tent tortoise | d. Bounding | iv. Generalist | 08. Marginal presence | Succulents on southeastern outcrops |
| Kingdom: Animalia | | Phylum: Chordata | Class: Reptilia | Order: Squamata | | | |
| Chamaeleonidae | <i>Chamaeleo</i> | <i>namaquensis</i> | Namaqua Chameleon | c. Widespread | ii. Arid area specialist | 04. Common Resident | Throughout property |
| Amphisbaenidae | <i>Zygaspis</i> | <i>quadrifrons</i> | Kalahari Worm Lizard | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Sandy plains |
| Typhlopidae | <i>Rhinotyphlops</i> | <i>schinzi</i> | Schinz's Beaked Blind Snake | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Sandy plains |
| Leptotyphlopidae | <i>Leptotyphlops</i> | <i>occidentalis</i> | Western Thread Snake | d. Bounding | i. Dune Sea specialist | 03. Near Endemic | Absent from fog zone |
| Leptotyphlopidae | <i>Leptotyphlops</i> | <i>scutifrons</i> | Peter's Thread Snake | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Sandy plains |
| Boidae | <i>Python</i> | <i>anchietae</i> | Anchieta's Dwarf Python | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Northeastern outcrop areas |
| Viperidae | <i>Bitis</i> | <i>arietans</i> | Puffadder | d. Bounding | iv. Generalist | 07. Interdigitated resident | Near bushy vegetation |
| Viperidae | <i>Bitis</i> | <i>caudalis</i> | Horned Adder | d. Bounding | ii. Arid area specialist | 04. Common Resident | Absent from dunes and fog zone |
| Viperidae | <i>Bitis</i> | <i>cornuta</i> | Multihorned Adder | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Southeastern rock outcrops |
| Viperidae | <i>Bitis</i> | <i>peringueyi</i> | Sidewinder Adder | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic | Unconsolidated dunes |
| Colubridae | <i>Dasyplectis</i> | <i>scabra</i> | Rhombic Egg Eater | d. Bounding | iv. Generalist | 05. Rare Resident | Absent from dunes and fog zone |
| Colubridae | <i>Dipsina</i> | <i>multimaculata</i> | Dwarf Beaked Snake | c. Widespread | ii. Arid area specialist | 04. Common Resident | Absent from dunes and fog zone |
| Colubridae | <i>Lamprophis</i> | <i>fuliginosis</i> | Brown House Snake | d. Bounding | iv. Generalist | 05. Rare Resident | Absent from dunes |
| Colubridae | <i>Philothamnus</i> | <i>semivariiegatus</i> | Spotted Bush Snake | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor | Lush Ephemeral River vegetation |
| Colubridae | <i>Prosymna</i> | <i>frontalis</i> | Southwestern Shovel-snout | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Outcrops, inselbergs & gravel plains |

| Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Distribution Status | Habitat within property |
|----------------|----------------------|-----------------------------|-----------------------------|------------------|--------------------------|-----------------------------|--------------------------------------|
| Colubridae | <i>Psammophis</i> | <i>leightoni namibensis</i> | Namib Sand Snake | c. Widespread | ii. Arid area specialist | 03. Near Endemic | Absent from dunes and fog zone |
| Colubridae | <i>Psammophis</i> | <i>notostictus</i> | Karoo Sand Snake | d. Bounding | ii. Arid area specialist | 04. Common Resident | Sandy plains |
| Colubridae | <i>Psammophis</i> | <i>trigrammus</i> | Western Sand Snake | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Sandy plains |
| Colubridae | <i>Pseudaspis</i> | <i>cana</i> | Mole Snake | d. Bounding | iv. Generalist | 05. Rare Resident | Absent from dunes |
| Colubridae | <i>Pythonodipsas</i> | <i>carinata</i> | Western keeled snake | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Outcrops, inselbergs & gravel plains |
| Colubridae | <i>Telescopus</i> | <i>beetzi</i> | Beetz's Tiger Snake | d. Bounding | iv. Generalist | 08. Marginal presence | Outcrop areas |
| Colubridae | <i>Telescopus</i> | <i>semiannulatus</i> | Eastern Tiger Snake | d. Bounding | iv. Generalist | 08. Marginal presence | Mainly along ephemeral rivers |
| Elapidae | <i>Aspidelaps</i> | <i>lubricus infuscatus</i> | Coral snake | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Absent from dunes and fog zone |
| Elapidae | <i>Dendroaspis</i> | <i>polylepis</i> | Black Mamba | d. Bounding | iv. Generalist | 08. Marginal presence | Outcrop areas and rivers |
| Elapidae | <i>Naja</i> | <i>nigricollis woodi</i> | Black Spitting Cobra | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Outcrop areas and inselbergs |
| Elapidae | <i>Naja</i> | <i>nivea</i> | Cape Cobra | d. Bounding | ii. Arid area specialist | 05. Rare Resident | Outcrop areas, inselbergs and trees |
| Atractaspidae | <i>Atractaspis</i> | <i>bibronii</i> | Southern burrowing asp | d. Bounding | iv. Generalist | 07. Interdigitated resident | Sandy plains |
| Gerrhosauridae | <i>Cordylus</i> | <i>subtessellatus</i> | Dwarf Plated Lizard | b. Inselbergs | iii. Habitat specialist | 06. Relict | Outcrop areas and inselbergs |
| Cordylidae | <i>Cordylus</i> | <i>campbelli</i> | Campbell's Girdled Lizard | d. Bounding | iii. Habitat specialist | 03. Near Endemic | Southeastern rock outcrops |
| Agamidae | <i>Agama</i> | <i>aculeata</i> | Ground Agama | d. Bounding | ii. Arid area specialist | 04. Common Resident | Plains |
| Agamidae | <i>Agama</i> | <i>anchietae</i> | Anchieta's Agama | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Outcrop areas |
| Lacertidae | <i>Heliobolus</i> | <i>lugubris</i> | Bushveld Lizard | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Plains |
| Lacertidae | <i>Meroles</i> | <i>anchietae</i> | Shovel-snouted Lizard | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic | Unconsolidated dunes |
| Lacertidae | <i>Meroles</i> | <i>cuneirostris</i> | Wedge-snouted Desert lizard | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic | Fog Dune Sea and dune bases |
| Lacertidae | <i>Meroles</i> | <i>micropholidotus</i> | Small-scaled Desert Lizard | a. Sand Sea | iii. Habitat specialist | 01. Strict Endemic | Fogbound Dune Sea only |
| Lacertidae | <i>Meroles</i> | <i>reticulatus</i> | Reticulated Desert Lizard | d. Bounding | i. Dune Sea specialist | 03. Near Endemic | Northwestern Coastal hummocks |
| Lacertidae | <i>Meroles</i> | <i>suborbitalis</i> | Spotted Desert Lizard | c. Widespread | ii. Arid area specialist | 04. Common Resident | Absent from dunes and fog zone |

| Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Distribution Status | Habitat within property |
|------------|------------------------|-----------------------------|----------------------------------|------------------|--------------------------|-----------------------------|------------------------------------|
| Lacertidae | <i>Nucras</i> | <i>tessellata</i> | Western Sandveld Lizard | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Southeastern rock outcrops |
| Lacertidae | <i>Pedioplanis</i> | <i>inornata</i> | Plain Sand Lizard | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Outcrop areas and inselbergs |
| Lacertidae | <i>Pedioplanis</i> | <i>lineocellata</i> | Spotted Sand Lizard | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Gravel plains and outcrop areas |
| Lacertidae | <i>Pedioplanis</i> | <i>namaquensis</i> | Namaqua Sand Lizard | c. Widespread | ii. Arid area specialist | 04. Common Resident | Absent from dunes |
| Scincidae | <i>Mabuya</i> | <i>acutilabris</i> | Wedge-snouted Skink | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Sandy plains |
| Scincidae | <i>Mabuya</i> | <i>capensis</i> | Cape Skink | d. Bounding | iv. Generalist | 07. Interdigitated resident | Plains and along river beds |
| Scincidae | <i>Mabuya</i> | <i>occidentalis</i> | Western Three-striped Skink | d. Bounding | ii. Arid area specialist | 04. Common Resident | Absent from dunes and fog zone |
| Scincidae | <i>Mabuya</i> | <i>spilogaster</i> | Kalahari Tree Skink | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Common on <i>A. erioloba</i> trees |
| Scincidae | <i>Mabuya</i> | <i>striata</i> | Striped Skink | d. Bounding | iv. Generalist | 04. Common Resident | Plains and historical ruins |
| Scincidae | <i>Mabuya</i> | <i>sulcata</i> | Western Rock Skink | d. Bounding | ii. Arid area specialist | 05. Rare Resident | Outcrop areas |
| Scincidae | <i>Mabuya</i> | <i>variegata</i> | Variiegated Skink | c. Widespread | iv. Generalist | 04. Common Resident | Absent from dunes |
| Scincidae | <i>Scelotes</i> | <i>capensis</i> | Western Dwarf Burrowing Skink | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Plains |
| Scincidae | <i>Typhlacontias</i> | <i>brevipes</i> | Fitzsimons' Burrowing Skink | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic | Fogbound Dunes |
| Scincidae | <i>Typhlosaurus</i> | <i>braini</i> | Brain's Blind Legless Skink | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic | Fog Dune Sea and dune bases |
| Gekkonidae | <i>Chondrodactylus</i> | <i>angulifer angulifer</i> | Giant Ground Gecko | d. Bounding | ii. Arid area specialist | 04. Common Resident | Plains |
| Gekkonidae | <i>Chondrodactylus</i> | <i>angulifer namibensis</i> | Namib Ground Gecko | d. Bounding | ii. Arid area specialist | 04. Common Resident | Plains |
| Gekkonidae | <i>Lygodactylus</i> | <i>bradfieldi</i> | Bradfield's Dwarf Gecko | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Plains |
| Gekkonidae | <i>Narudasia</i> | <i>festiva</i> | Festive Gecko | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Outcrop areas |
| Gekkonidae | <i>Pachydactylus</i> | <i>bicolor</i> | Velvety Thick-toed Gecko | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Northeastern outcrop areas |
| Gekkonidae | <i>Pachydactylus</i> | <i>punctatus</i> | Speckled Thick-toed Gecko | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Absent from dunes and fog zone |
| Gekkonidae | <i>Pachydactylus</i> | <i>rugosus</i> | Rough Thick-toed Gecko | d. Bounding | iv. Generalist | 04. Common Resident | Areas with vegetation and rock |
| Gekkonidae | <i>Pachydactylus</i> | <i>serval</i> | Western Spotted Thick-toed Gecko | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Outcrop areas and inselbergs |

| Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Distribution Status | Habitat within property |
|--------------------------|----------------------|-------------------------|------------------------------|-----------------------------|-----------------------------|--------------------------------|-------------------------------------|
| Gekkonidae | <i>Pachydactylus</i> | <i>turneri</i> | Turner's Thick-toed Gecko | d. Bounding | iii. Habitat specialist | 05. Rare Resident | Outcrop areas, inselbergs and trees |
| Gekkonidae | <i>Pachydactylus</i> | <i>weberi</i> | Weber's Thick-toed Gecko | d. Bounding | iv. Generalist | 04. Common Resident | Outcrop areas |
| Gekkonidae | <i>Palmatogecko</i> | <i>rangei</i> | Web-footed gecko | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic | Unconsolidated dunes |
| Gekkonidae | <i>Ptenopus</i> | <i>carpi</i> | Carp's Barking Gecko | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Along northern interdune valleys |
| Gekkonidae | <i>Ptenopus</i> | <i>garrulus</i> | Common Barking gecko | c. Widespread | ii. Arid area specialist | 04. Common Resident | Sandy plains |
| Gekkonidae | <i>Ptenopus</i> | <i>kochi</i> | Koch's Barking Gecko | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic | Interdune valleys and river margins |
| Varanidae | <i>Varanus</i> | <i>albigularis</i> | Rock Monitor | d. Bounding | iv. Generalist | 05. Rare Resident | Outcrop areas and trees |
| Kingdom: Animalia | | Phylum: Chordata | Class: Amphibia | Order: Anura | | | |
| Bufonidae | <i>Bufo</i> | <i>hoeschi</i> | Toad | d. Bounding | iii. Habitat specialist | 03. Near Endemic | Rocky areas |
| Bufonidae | <i>Bufo</i> | <i>poweri</i> | Toad | d. Bounding | iv. Generalist | 10. Intermittent visitor | Ephemeral rivers after floods |
| Microhylidae | <i>Phrynomantis</i> | <i>annectens</i> | Marbled Rubber Frog | d. Bounding | iii. Habitat specialist | 03. Near Endemic | Rocky areas |
| Pipidae | <i>Xenopus</i> | <i>laevis</i> | Clawed frog | d. Bounding | iv. Generalist | 05. Rare Resident | Pools and springs |
| Ranidae | <i>Tomopterna</i> | <i>cryptotis</i> | Tremolo Sand Frog | d. Bounding | iv. Generalist | 10. Intermittent visitor | Temporary pools |
| Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Distribution Status | Habitat within property |
| Kingdom: Animalia | | Phylum: Chordata | Class: Actinopterygii | Order: Cypriniformes | | | |
| Cyprinidae | <i>Cyprinus</i> | <i>carpio</i> | Common Carp | d. Bounding | iv. Generalist | 12. Alien | Ephemeral rivers after floods |
| Kingdom: Animalia | | Phylum: Chordata | Class: Actinopterygii | Order: Siluriformes | | | |
| Clariidae | <i>Clarias</i> | <i>gariepinus</i> | Sharptooth Catfish | d. Bounding | iv. Generalist | 11. Vagrant | Ephemeral rivers after floods |

Annex 15

Table of Mammals



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

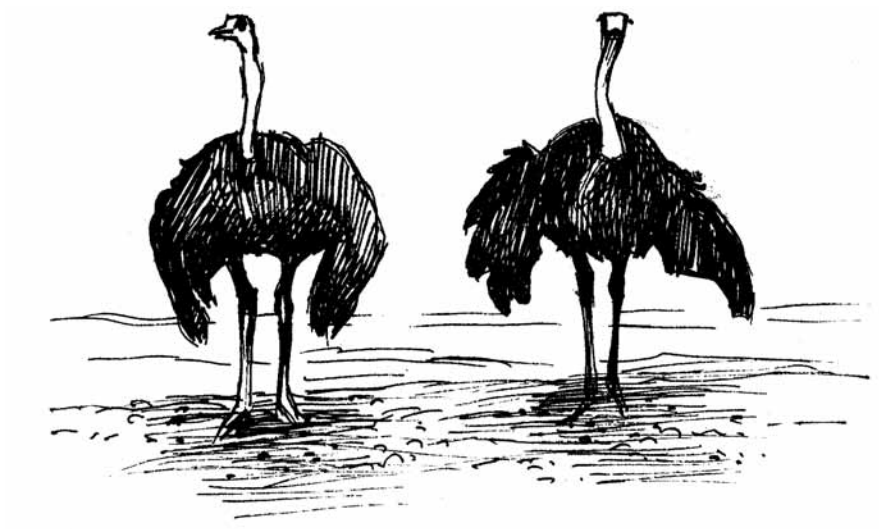
| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status |
|-------------------|------------------|----------------------|--------------------------|----------------------------------|------------------|--------------------------|-----------------------------|
| Kingdom: Animalia | | Phylum: Chordata | | Class: Mammalia | | | |
| Afrosoricida | Chrysochloridae | <i>Eremitalpa</i> | <i>granti namibensis</i> | Grant's Golden Mole | a. Sand Sea | i. Dune Sea specialist | 02. Dune Endemic |
| Macroscelidea | Macroscelididae | <i>Macroscelides</i> | <i>proboscideus</i> | Round-eared Elephant-shrew | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Macroscelidea | Macroscelididae | <i>Elephantulus</i> | <i>rupestris</i> | Western rock Elephant-shrew | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Macroscelidea | Macroscelididae | <i>Elephantulus</i> | <i>intufi</i> | Bushveld Elephant-shrew | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Tubulidentata | Orycteropodidae | <i>Orycteropus</i> | <i>afer</i> | Aardvark | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Paenungulata | Procaviidae | <i>Procavia</i> | <i>capensis</i> | Rock Hyrax | d. Bounding | iii. Habitat specialist | 08. Marginal presence |
| Lagomorpha | Leporidae | <i>Lepus</i> | <i>capensis</i> | Cape Hare | c. Widespread | ii. Arid area specialist | 04. Common Resident |
| Lagomorpha | Leporidae | <i>Lepus</i> | <i>saxatilis</i> | Scrub Hare | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Lagomorpha | Leporidae | <i>Pronolagus</i> | <i>randensis</i> | Jameson's Rock Rabbit | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Rodentia | Hystriidae | <i>Hystrix</i> | <i>africae australis</i> | Cape Porcupine | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Petromuridae | <i>Petromus</i> | <i>typicus</i> | Dassie Rat | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Rodentia | Pedetidae | <i>Pedetes</i> | <i>capensis</i> | Springhare | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Sciuridae | <i>Xerus</i> | <i>inaurus</i> | South African Ground Squirrel | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Sciuridae | <i>Xerus</i> | <i>princeps</i> | Damaras Ground Squirrel | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Rhabdomys</i> | <i>pumilio</i> | Four-striped Grass Mouse | c. Widespread | iv. Generalist | 04. Common Resident |
| Rodentia | Muridae | <i>Thallomys</i> | <i>nigricauda</i> | Black-tailed Tree Rat | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Aethomys</i> | <i>chrysophilus</i> | Red Veld Rat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Micaelamys</i> | <i>namapuensis</i> | Namaqua Rock Mouse | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Parotomys</i> | <i>littledalei</i> | Littledale's Whistling Rat | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Desmodillus</i> | <i>auricularis</i> | Cape Short-tailed Gerbil | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Gerbillurus</i> | <i>paeba</i> | Hairy-footed Gerbil | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Gerbillurus</i> | <i>tytonis</i> | Dune Hairy-footed Gerbil | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic |
| Rodentia | Muridae | <i>Gerbillurus</i> | <i>vallinus</i> | Brush-tailed Hairy-footed Gerbil | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Gerbillurus</i> | <i>setzeri</i> | Setzer's Hairy-footed Gerbil | d. Bounding | ii. Arid area specialist | 03. Near Endemic |
| Rodentia | Muridae | <i>Malacothrix</i> | <i>typica</i> | Gerbil Mouse | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Petromyscus</i> | <i>collinus</i> | Pygmy Rock Mouse | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Rodentia | Muridae | <i>Mus</i> | <i>musculus</i> | House Mouse | d. Bounding | iv. Generalist | 12. Alien |
| Rodentia | Muridae | <i>Rattus</i> | <i>rattus</i> | Common House Rat | d. Bounding | iv. Generalist | 12. Extinct Alien |
| Primates | Cercopithecidae | <i>Papio</i> | <i>hamadryas</i> | Chacma Baboon | d. Bounding | iv. Generalist | 08. Marginal presence |
| Eulipotyphla | Soricidae | <i>Crociduna</i> | <i>cyanea</i> | Reddish-grey Musk Shrew | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Chiroptera | Pteropodidae | <i>Eidolon</i> | <i>helvum</i> | Straw-coloured Fruit Bat | d. Bounding | iii. Habitat specialist | 11. Vagrant |
| Chiroptera | Molossidae | <i>Tadarida</i> | <i>aegyptiaca</i> | Egyptian Free-tailed Bat | c. Widespread | iv. Generalist | 07. Interdigitated resident |
| Chiroptera | Vespertilionidae | <i>Neoromicia</i> | <i>capensis</i> | Cape Serotine Bat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Chiroptera | Vespertilionidae | <i>Cistugo</i> | <i>seabrai</i> | Angolan Hairy Bat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Chiroptera | Vespertilionidae | <i>Laephotis</i> | <i>namibensis</i> | Namib Long-eared Bat | d. Bounding | iii. Habitat specialist | 03. Near Endemic |
| Chiroptera | Vespertilionidae | <i>Eptesicus</i> | <i>hottentotus</i> | Long-tailed Serotine Bat | d. Bounding | iv. Generalist | 07. Interdigitated resident |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status |
|----------------|----------------|----------------------|-------------------------|--------------------------|------------------|-------------------------|----------------------------------|
| Chiroptera | Nycteridae | <i>Nycteris</i> | <i>thebaica</i> | Egyptian Slit-faced Bat | c. Widespread | iv. Generalist | 07. Interdigitated resident |
| Chiroptera | Rhinolophidae | <i>Rhinolophus</i> | <i>clivus</i> | Geoffroy's Horseshoe Bat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Pholidota | Manidae | <i>Manis</i> | <i>temminckii</i> | Cape Pangolin | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor |
| Carnivora | Hyaenidae | <i>Proteles</i> | <i>cristatus</i> | Aardwolf | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Carnivora | Hyaenidae | <i>Parahyaena</i> | <i>brunnea</i> | Brown Hyaena | c. Widespread | iv. Generalist | 04. Common Resident |
| Carnivora | Hyaenidae | <i>Crocuta</i> | <i>crocuta</i> | Spotted Hyaena | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Felidae | <i>Acinonyx</i> | <i>jubatus</i> | Cheetah | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Felidae | <i>Panthera</i> | <i>pardus</i> | Leopard | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Felidae | <i>Caracal</i> | <i>caracal</i> | Caracal | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Felidae | <i>Felis</i> | <i>silvestris</i> | African Wild Cat | c. Widespread | iv. Generalist | 05. Rare Resident |
| Carnivora | Felidae | <i>Felis</i> | <i>catus</i> | Domestic Cat | d. Bounding | iv. Generalist | 13. Domesticated |
| Carnivora | Felidae | <i>Panthera</i> | <i>leo</i> | Lion | d. Bounding | iv. Generalist | 10. Intermittent visitor |
| Carnivora | Viverridae | <i>Genetta</i> | <i>genetta</i> | Small-spotted Genet | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Herpestidae | <i>Suricata</i> | <i>suricatta</i> | Suricate / Meerkat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Herpestidae | <i>Cynictis</i> | <i>penicillata</i> | Yellow Mongoose | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Canidae | <i>Otocyon</i> | <i>megalotis</i> | Bat-eared Fox | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Canidae | <i>Vulpes</i> | <i>chama</i> | Cape Fox | c. Widespread | iv. Generalist | 04. Common Resident |
| Carnivora | Canidae | <i>Canis</i> | <i>mesomelas</i> | Black-backed Jackal | c. Widespread | iv. Generalist | 04. Common Resident |
| Carnivora | Canidae | <i>Canis</i> | <i>lupus</i> | Domestic Dog | d. Bounding | iv. Generalist | 13. Domesticated |
| Carnivora | Canidae | <i>Lycaon</i> | <i>pictus</i> | Cape Hunting Dog | d. Bounding | iv. Generalist | 14. Extinct intermittent visitor |
| Carnivora | Mustelidae | <i>Mellivora</i> | <i>capensis</i> | Honey Badger | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Mustelidae | <i>Ictonyx</i> | <i>striatus</i> | Striped Polecat | d. Bounding | iv. Generalist | 07. Interdigitated resident |
| Carnivora | Otariidae | <i>Arctocephalus</i> | <i>pusillus</i> | South African Fur Seal | d. Bounding | iii. Habitat specialist | 08. Marginal presence |
| Carnivora | Phocidae | <i>Mirounga</i> | <i>leonina</i> | Southern Elephant Seal | d. Bounding | iii. Habitat specialist | 11. Vagrant |
| Perissodactyla | Rhinocerotidae | <i>Diceros</i> | <i>bicornis</i> | Black Rhinoceros | d. Bounding | iv. Generalist | 14. Extinct marginal resident |
| Perissodactyla | Equidae | <i>Equus</i> | <i>asinus</i> | Donkey | d. Bounding | iv. Generalist | 13. Domesticated |
| Perissodactyla | Equidae | <i>Equus</i> | <i>caballus</i> | Horse | d. Bounding | iv. Generalist | 13. Domesticated |
| Perissodactyla | Equidae | <i>Equus</i> | <i>zebra hartmannae</i> | Mountain Zebra | d. Bounding | iv. Generalist | 03. Near Endemic |
| Suiformes | Suidae | <i>Phacochoerus</i> | <i>africanus</i> | Common Warthog | d. Bounding | iv. Generalist | 08. Marginal presence |
| Ruminantia | Giraffidae | <i>Giraffa</i> | <i>camelopardalis</i> | Giraffe | d. Bounding | iv. Generalist | 14. Extinct marginal resident |
| Ruminantia | Bovidae | <i>Tragelaphus</i> | <i>strepsiceros</i> | Greater kudu | d. Bounding | iv. Generalist | 08. Marginal presence |
| Ruminantia | Bovidae | <i>Oryx</i> | <i>gazella</i> | Gemsbok | c. Widespread | iv. Generalist | 04. Common Resident |
| Ruminantia | Bovidae | <i>Sylvicapra</i> | <i>grimmia</i> | Common Duiker | d. Bounding | iv. Generalist | 08. Marginal presence |
| Ruminantia | Bovidae | <i>Antidorcas</i> | <i>marsupialis</i> | Springbok | d. Bounding | iv. Generalist | 04. Common Resident |
| Ruminantia | Bovidae | <i>Raphicerus</i> | <i>campestris</i> | Steenbok | c. Widespread | iv. Generalist | 04. Common Resident |
| Ruminantia | Bovidae | <i>Oreotragus</i> | <i>oreotragus</i> | Klipspringer | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident |
| Ruminantia | Bovidae | <i>Bos</i> | <i>indicus</i> | Domestic Cow | d. Bounding | | 13. Domesticated |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status |
|--------------|---------------|--------------|------------------------|--------------------|-------------------------|-----------------------------|-------------------|
| Ruminantia | Bovidae | <i>Capra</i> | <i>aegagrus hircus</i> | Domestic Goat | d. Bounding | | 13. Domesticated |
| Ruminantia | Bovidae | <i>Ovis</i> | <i>aries</i> | Domestic Sheep | d. Bounding | | 13. Domesticated |

Annex 16

Table of Birds



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Bounding Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outer Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|-------------------|-------------------|----------------------|----------------------|-------------------------|------------------|-------------------------|-----------------------------|---|
| Kingdom: Animalia | | Phylum: Chordata | | Class: Aves | | | | |
| Struthioniformes | Struthionidae | <i>Struthio</i> | <i>camelus</i> | Ostrich | c. Widespread | iv. Generalist | 04. Common Resident | Throughout area |
| Sphenisciformes | Spheniscidae | <i>Spheniscus</i> | <i>demersus</i> | African Penguin | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast, breeds at Sylvia Hill and offshore islands |
| Podicipediformes | Podicipedidae | <i>Podiceps</i> | <i>cristatus</i> | Great Crested Grebe | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Podicipediformes | Podicipedidae | <i>Tachybaptus</i> | <i>ruficollis</i> | Dabchick | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site, visitor at pans with water |
| Podicipediformes | Podicipedidae | <i>Podiceps</i> | <i>nigricollis</i> | Blacknecked grebe | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Pelecaniformes | Pelecanidae | <i>Pelicanus</i> | <i>onocrotalus</i> | White Pelican | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Pelecaniformes | Pelecanidae | <i>Pelecanus</i> | <i>rufescens</i> | Pinkbacked Pelican | e. Sandwich | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Pelecaniformes | Sulidae | <i>Morus</i> | <i>capensis</i> | Cape Gannet | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Coast, breeds on offshore islands |
| Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax</i> | <i>carbo</i> | Whitebreasted Cormorant | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Coast, breeds on offshore islands |
| Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax</i> | <i>capensis</i> | Cape Cormorant | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Coast, breeds on offshore islands |
| Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax</i> | <i>neglectus</i> | Bank Cormorant | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Coast, breeds on offshore islands |
| Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax</i> | <i>africanus</i> | Reed Cormorant | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Pelecaniformes | Phalacrocoracidae | <i>Phalacrocorax</i> | <i>coronatus</i> | Crowned Cormorant | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast, breeds on offshore islands |
| Pelecaniformes | Anhingidae | <i>Anhinga</i> | <i>melanogaster</i> | Darter | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Ciconiiformes | Ardeidae | <i>Ardea</i> | <i>cinerea</i> | Grey Heron | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Ciconiiformes | Ardeidae | <i>Ardea</i> | <i>melanocephala</i> | Blackheaded Heron | d. Bounding | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site and pans after good rain |
| Ciconiiformes | Ardeidae | <i>Ardea</i> | <i>purpurea</i> | Purple Heron | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Ciconiiformes | Ardeidae | <i>Casmerodius</i> | <i>albus</i> | Great White Heron | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------------|------------------|-----------------------|---------------------|--------------------------|------------------|-------------------------|-----------------------------|------------------------------------|
| Ciconiiformes | Ardeidae | <i>Egretta</i> | <i>garzetta</i> | Little Egret | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Ciconiiformes | Ardeidae | <i>Egretta</i> | <i>intermedia</i> | Yellowbilled Egret | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Ciconiiformes | Ardeidae | <i>Bubulcus</i> | <i>ibis</i> | Cattle Egret | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor | Eastern boundary, migrant |
| Ciconiiformes | Ardeidae | <i>Ardeola</i> | <i>ralloides</i> | Squacco Heron | d. Bounding | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Ciconiiformes | Ardeidae | <i>Nycticorax</i> | <i>nycticorax</i> | Blackcrowned Night Heron | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Ciconiiformes | Ardeidae | <i>Ixobrychys</i> | <i>sturmii</i> | Dwarf Bittern | d. Bounding | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Ciconiiformes | Ardeidae | <i>Ixobrychys</i> | <i>minutus</i> | Little Bittern | d. Bounding | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Ciconiiformes | Scopidae | <i>Scopus</i> | <i>umbretta</i> | Hamerkop | d. Bounding | iii. Habitat specialist | 11. Vagrant | Eastern boundary, ephemeral rivers |
| Ciconiiformes | Ciconiidae | <i>Ciconia</i> | <i>ciconia</i> | White Stork | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Ciconiiformes | Ciconiidae | <i>Ciconia</i> | <i>nigra</i> | Black Stork | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Ciconiiformes | Ciconiidae | <i>Ciconia</i> | <i>abdimii</i> | Abdim's Stork | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Ciconiiformes | Ciconiidae | <i>Leptoptilos</i> | <i>crumeniferus</i> | Marabou Stork | e. Sandwich | iv. Generalist | 11. Vagrant | Sandwich Ramsar site |
| Ciconiiformes | Plataleidae | <i>Platalea</i> | <i>alba</i> | African Spoonbill | e. Sandwich | iv. Generalist | 11. Vagrant | Sandwich Ramsar site |
| Phoenicopteriformes | Phoenicopteridae | <i>Phoenicopterus</i> | <i>ruber</i> | Greater Flamingo | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Phoenicopteriformes | Phoenicopteridae | <i>Phoenicopterus</i> | <i>minor</i> | Lesser Flamingo | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Dendrocynna</i> | <i>viduata</i> | Whitefaced Duck | d. Bounding | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Thalassornis</i> | <i>leuconotus</i> | Whitebacked Duck | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Tadorna</i> | <i>cana</i> | South African Shelduck | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Anas</i> | <i>undulata</i> | Yellowbilled Duck | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Anseriformes | Anatidae | <i>Anas</i> | <i>hottentota</i> | Hottentot Teal | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Plectropterus</i> | <i>gambensis</i> | Spurwinged Goose | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|---------------|--------------------|------------------------|---------------------------|------------------|-------------------------|-----------------------------|--------------------------------|
| Anseriformes | Anatidae | <i>Alopochen</i> | <i>aegytiacus</i> | Egyptian Goose | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Anseriformes | Anatidae | <i>Anas</i> | <i>capensis</i> | Cape Teal | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Anas</i> | <i>erythrorhyncha</i> | Redbilled Teal | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Anseriformes | Anatidae | <i>Anas</i> | <i>smithii</i> | Cape Shoveller | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Anseriformes | Anatidae | <i>Netta</i> | <i>erythrophthalma</i> | Southern Pochard | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Anseriformes | Anatidae | <i>Oxyura</i> | <i>maccoa</i> | Maccoa Duck | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Falconiformes | Sagittariidae | <i>Sagittarius</i> | <i>serpentarius</i> | Secretarybird | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Falconiformes | Accipitridae | <i>Gyps</i> | <i>coprotheres</i> | Cape Vulture | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Central eastern boundary |
| Falconiformes | Accipitridae | <i>Gyps</i> | <i>africanus</i> | Whitebacked Vulture | d. Bounding | iv. Generalist | 08. Marginal presence | Trees at rivers & pans |
| Falconiformes | Accipitridae | <i>Aegyptius</i> | <i>tracheliotus</i> | Lappetfaced Vulture | d. Bounding | iv. Generalist | 07. Interdigitated resident | Trees at rivers & pans |
| Falconiformes | Accipitridae | <i>Milvus</i> | <i>migrans</i> | Yellowbilled/Black Kite | d. Bounding | iv. Generalist | 09. Common migrant | Northeastern boundary |
| Falconiformes | Accipitridae | <i>Elanus</i> | <i>caeruleus</i> | Blackshouldered Kite | d. Bounding | iv. Generalist | 05. Rare Resident | Northeastern boundary |
| Falconiformes | Accipitridae | <i>Aquila</i> | <i>verrauxii</i> | Black Eagle | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Falconiformes | Accipitridae | <i>Aquila</i> | <i>rapax</i> | Tawny Eagle | d. Bounding | iv. Generalist | 11. Vagrant | Eastern boundary |
| Falconiformes | Accipitridae | <i>Aquila</i> | <i>nipalensis</i> | Steppe Eagle | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northeastern boundary, migrant |
| Falconiformes | Accipitridae | <i>Hieraaetus</i> | <i>pennatus</i> | Booted Eagle | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Falconiformes | Accipitridae | <i>Hieraaetus</i> | <i>spilogaster</i> | African Hawk Eagle | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Falconiformes | Accipitridae | <i>Polemaetus</i> | <i>bellicosus</i> | Martial Eagle | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Falconiformes | Accipitridae | <i>Circaetus</i> | <i>pectoralis</i> | Blackbreasted Snake Eagle | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Falconiformes | Accipitridae | <i>Buteo</i> | <i>buteo</i> | Steppe Buzzard | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|--------------|--------------------|----------------------|---------------------------|------------------|--------------------------|-----------------------------|--|
| Falconiformes | Accipitridae | <i>Buteo</i> | <i>rufofuscus</i> | Jackal Buzzard | d. Bounding | iv. Generalist | 08. Marginal presence | Northern boundary and Sandwich Ramsar site |
| Falconiformes | Accipitridae | <i>Buteo</i> | <i>augur</i> | Augur Buzzard | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Falconiformes | Accipitridae | <i>Micronisus</i> | <i>gabar</i> | Gabar Goshawk | d. Bounding | iv. Generalist | 08. Marginal presence | Northeastern boundary |
| Falconiformes | Accipitridae | <i>Melierax</i> | <i>canorus</i> | Pale Chanting Goshawk | c. Widespread | ii. Arid area specialist | 04. Common Resident | Eastern boundary |
| Falconiformes | Accipitridae | <i>Circus</i> | <i>ranivorus</i> | African Marsh Harrier | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Isolated at Sandwich Ramsar site |
| Falconiformes | Accipitridae | <i>Circus</i> | <i>maurus</i> | Black Harrier | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northern & eastern boundary |
| Falconiformes | Pandionidae | <i>Pandion</i> | <i>haliaetus</i> | Osprey | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Falconiformes | Falconidae | <i>Falco</i> | <i>peregrinus</i> | Peregrine Falcon | d. Bounding | iv. Generalist | 08. Marginal presence | Central eastern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>biarmicus</i> | Lanner Falcon | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>subbuteo</i> | Hobby Falcon | d. Bounding | iv. Generalist | 11. Vagrant | Northern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>chicquera</i> | Rednecked Falcon | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>verspertinus</i> | Western Redfooted Kestrel | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northern boundary, migrant |
| Falconiformes | Falconidae | <i>Falco</i> | <i>rupicolus</i> | Rock Kestrel | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>rupicoloides</i> | Greater Kestrel | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Falconiformes | Falconidae | <i>Falco</i> | <i>naumanni</i> | Lesser Kestrel | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Falconiformes | Falconidae | <i>Polyhierax</i> | <i>semitorquatus</i> | Pygmy Falcon | d. Bounding | ii. Arid area specialist | 05. Rare Resident | Shares sociable weaver nest |
| Galliformes | Phasianidae | <i>Francolinus</i> | <i>adpersus</i> | Redbilled Francolin | d. Bounding | iv. Generalist | 08. Marginal presence | Northeastern boundary |
| Galliformes | Phasianidae | <i>Coturnix</i> | <i>coturnix</i> | Common Quail | d. Bounding | iv. Generalist | 09. Common migrant | Eastern boundary |
| Galliformes | Phasianidae | <i>Gallus</i> | <i>gallus</i> | Domestic chicken | d. Bounding | iv. Generalist | 13. Domesticated | |
| Galliformes | Numididae | <i>Numida</i> | <i>meleagris</i> | Helmeted Guinea fowl | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northeastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|-----------------|----------------|----------------------|----------------------|---------------------------|------------------|--------------------------|--------------------------------|---------------------------------------|
| Gruiformes | Turnicidae | <i>Turnix</i> | <i>sylvatica</i> | Kurrichane Buttonquail | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Gruiformes | Rallidae | <i>Amaurornis</i> | <i>flavirostris</i> | Black Crake | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Gruiformes | Rallidae | <i>Porphyrio</i> | <i>porphyrio</i> | Purple Gallinule | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Gruiformes | Rallidae | <i>Gallinula</i> | <i>chloropus</i> | Moorhen | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Gruiformes | Rallidae | <i>Fulica</i> | <i>cristata</i> | Redknobbed Coot | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Gruiformes | Otididae | <i>Ardeotis</i> | <i>kori</i> | Kori Bustard | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Gruiformes | Otididae | <i>Neotis</i> | <i>ludwiggii</i> | Ludwig's Bustard | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Dunes, northern & eastern boundary |
| Gruiformes | Otididae | <i>Eupodotis</i> | <i>vigorsii</i> | Karoo Korhaan | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Southern and eastern boundary |
| Gruiformes | Otididae | <i>Eupodotis</i> | <i>rueppellii</i> | Rueppell's Korhaan | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Northern and eastern boundary |
| Gruiformes | Otididae | <i>Eupodotis</i> | <i>afra</i> | Black Korhaan | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Charadriiformes | Jacaniidae | <i>Actophilornis</i> | <i>africanus</i> | African Jacana | d. Bounding | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Charadriiformes | Haematopodidae | <i>Haematopus</i> | <i>moquini</i> | Black Oystercatcher | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>hiaticula</i> | Ringed Plover | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>marginatus</i> | Whitefronted Plover | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>pallidus</i> | Chestnutbanded Plover | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>pecuarius</i> | Kittlitz's Plover | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Coast |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>tricoloris</i> | Threebanded Plover | d. Bounding | iii. Habitat specialist | 10. Intermittent visitor | Pans with water |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>leschenaultii</i> | Sand Plover | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Charadriidae | <i>Charadrius</i> | <i>asiaticus</i> | Caspian Plover | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Charadriidae | <i>Pluvialis</i> | <i>squatarola</i> | Grey Plover | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Charadriidae | <i>Vanellus</i> | <i>coronatus</i> | Crowned Plover | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Eastern boundary |
| Charadriiformes | Charadriidae | <i>Vanellus</i> | <i>armatus</i> | Blacksmith Plover | d. Bounding | iii. Habitat specialist | 08. Marginal presence | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|-----------------|------------------|----------------------|--------------------|-----------------------|------------------|-------------------------|-----------------------------|-------------------------------|
| Charadriiformes | Scolopacidae | <i>Arenaria</i> | <i>interpres</i> | Turnstone | d. Boundinging | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Scolopacidae | <i>Xenus</i> | <i>cinereus</i> | Terek Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Tringa</i> | <i>hypoleucos</i> | Common Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Tringa</i> | <i>glareola</i> | Wood Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Tringa</i> | <i>totanus</i> | Redshank | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Tringa</i> | <i>stagnatilis</i> | Marsh Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Tringa</i> | <i>nebularia</i> | Greenshank | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>canatus</i> | Knot | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>ferruginea</i> | Curlew Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>minuta</i> | Little Stint | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>bairdii</i> | Baird's Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>melanotos</i> | Pectoral Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Calidris</i> | <i>alba</i> | Sanderling | d. Boundinging | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Scolopacidae | <i>Limicola</i> | <i>falcinellus</i> | Broadbilled Sandpiper | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Philomachus</i> | <i>pugnax</i> | Ruff | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Limosa</i> | <i>lapponica</i> | Bartailed Godwit | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Numenius</i> | <i>arquata</i> | Curlew | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Scolopacidae | <i>Numenius</i> | <i>phaeopus</i> | Whimbrel | d. Boundinging | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Scolopacidae | <i>Phalaropus</i> | <i>fulicarius</i> | Grey Phalarope | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Scolopacidae | <i>Phalaropus</i> | <i>lobatus</i> | Rednecked Phalarope | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Scolopacidae | <i>Phalaropus</i> | <i>tricolor</i> | Wilson's Phalarope | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Recurvirostridae | <i>Recurvirostra</i> | <i>avosetta</i> | Avocet | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Charadriiformes | Recurvirostridae | <i>Himantopus</i> | <i>himantopus</i> | Blackwinged Stilt | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Sandwich Ramsar site |
| Charadriiformes | Burhinidae | <i>Burhinus</i> | <i>capensis</i> | Spotted Dikkop | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|-----------------|---------------|---------------------|----------------------|-------------------------|------------------|--------------------------|-----------------------------|-------------------------------|
| Charadriiformes | Glareolidae | <i>Cursorius</i> | <i>rufus</i> | Burchell's Courser | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Charadriiformes | Glareolidae | <i>Cursorius</i> | <i>temminckii</i> | Temminck's Courser | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northeastern boundary |
| Charadriiformes | Glareolidae | <i>Rhinoptilus</i> | <i>africanus</i> | Doublebanded Courser | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Charadriiformes | Laridae | <i>Stercorarius</i> | <i>parasiticus</i> | Arctic Skua | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Laridae | <i>Stercorarius</i> | <i>pomarinus</i> | Pomarine Skua | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Charadriiformes | Laridae | <i>Catharacta</i> | <i>antarctica</i> | Subantarctic Skua | d. Bounding | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Laridae | <i>Larus</i> | <i>dominicanus</i> | Kelp Gull | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Laridae | <i>Larus</i> | <i>cirrocephalus</i> | Greyheaded Gull | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Laridae | <i>Larus</i> | <i>hartlaubi</i> | Hartlaub's Gull | d. Bounding | iii. Habitat specialist | 03. Near Endemic | Coast |
| Charadriiformes | Laridae | <i>Larus</i> | <i>ridibundus</i> | Blackheaded Gull | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Laridae | <i>Hydroprogne</i> | <i>caspia</i> | Caspian Tern | d. Bounding | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>maxima</i> | Royal Tern | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>bergii</i> | Swift Tern | d. Bounding | iii. Habitat specialist | 07. Interdigitated resident | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>sandvicensis</i> | Sandwich Tern | d. Bounding | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>hirundo</i> | Common Tern | d. Bounding | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>paradisaea</i> | Arctic Tern | d. Bounding | iii. Habitat specialist | 09. Common migrant | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>dougallii</i> | Roseate Tern | d. Bounding | iii. Habitat specialist | 11. Vagrant | Coast |
| Charadriiformes | Laridae | <i>Sterna</i> | <i>balaenarum</i> | Damara Tern | d. Bounding | iii. Habitat specialist | 03. Near Endemic | Coast |
| Charadriiformes | Laridae | <i>Chlidonias</i> | <i>niger</i> | Black Tern | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site, migrant |
| Charadriiformes | Laridae | <i>Chlidonias</i> | <i>hybridus</i> | Whiskered Tern | e. Sandwich | iii. Habitat specialist | 11. Vagrant | Sandwich Ramsar site |
| Charadriiformes | Laridae | <i>Chlidonias</i> | <i>leucopterus</i> | Whitewinged Tern | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Pterocliiformes | Pteroclididae | <i>Pterocles</i> | <i>namaqua</i> | Namaqua Sandgrouse | c. Widespread | ii. Arid area specialist | 04. Common Resident | Absent from coast |
| Pterocliiformes | Pteroclididae | <i>Pterocles</i> | <i>bicinctus</i> | Doublebanded Sandgrouse | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northeastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|------------------|---------------|-----------------------|---------------------|----------------------|------------------|-------------------------|-----------------------------|--|
| Columbiformes | Columbidae | <i>Columba</i> | <i>livia</i> | Feral Pigeon | d. Boundinging | iv. Generalist | 12. Alien | Sandwich Ramsar site, Kuiseb, Old mining towns |
| Columbiformes | Columbidae | <i>Columba</i> | <i>guinea</i> | Rock Pigeon | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Inselbergs & eastern boundary |
| Columbiformes | Columbidae | <i>Streptopelia</i> | <i>capicola</i> | Cape Turtle Dove | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Columbiformes | Columbidae | <i>Streptopelia</i> | <i>senegalensis</i> | Laughing Dove | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Coastal Springs & eastern boundary |
| Columbiformes | Columbidae | <i>Oena</i> | <i>capensis</i> | Namaqua Dove | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Coastal Springs & eastern boundary |
| Psittaciformes | Psittacidae | <i>Agapornis</i> | <i>roseicollis</i> | Rosy faced Lovebird | d. Boundinging | iii. Habitat specialist | 07. Interdigitated resident | Vertical cliffs and ephemeral rivers |
| Musophagiformes | Musophagidae | <i>Corythaixoides</i> | <i>concolor</i> | Grey Lourie | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Northern & northeastern boundary |
| Cuculiformes | Cuculidae | <i>Cuculus</i> | <i>clamosus</i> | Black Cuckoo | d. Boundinging | iii. Habitat specialist | 10. Intermittent visitor | Central eastern boundary |
| Cuculiformes | Cuculidae | <i>Clamator</i> | <i>glandarius</i> | Great Spotted Cuckoo | d. Boundinging | iii. Habitat specialist | 10. Intermittent visitor | Central eastern boundary |
| Cuculiformes | Cuculidae | <i>Chrysococcyx</i> | <i>caprius</i> | Diederik Cuckoo | d. Boundinging | iii. Habitat specialist | 09. Common migrant | Northeastern boundary |
| Cuculiformes | Cuculidae | <i>Chrysococcyx</i> | <i>klaas</i> | Klaas's Cuckoo | d. Boundinging | iii. Habitat specialist | 10. Intermittent visitor | Central eastern boundary |
| Strigiformes | Tytonidae | <i>Tyto</i> | <i>alba</i> | Barn Owl | c. Widespread | iv. Generalist | 07. Interdigitated resident | Inselbergs, ephemeral rivers, buildings |
| Strigiformes | Strigidae | <i>Asio</i> | <i>capensis</i> | Marsh Owl | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Strigiformes | Strigidae | <i>Otus</i> | <i>senegalensis</i> | Scops Owl | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Strigiformes | Strigidae | <i>Otus</i> | <i>leucotis</i> | Whitefaced Owl | c. Widespread | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Strigiformes | Strigidae | <i>Glaucidium</i> | <i>perlatum</i> | Pearlspotted Owl | c. Widespread | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Strigiformes | Strigidae | <i>Bubo</i> | <i>africanus</i> | Spotted Eagle Owl | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Strigiformes | Strigidae | <i>Bubo</i> | <i>lacteus</i> | Giant Eagle Owl | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Northern & eastern boundary |
| Caprimulgiformes | Caprimulgidae | <i>Caprimulgus</i> | <i>europaeus</i> | European Nightjar | d. Boundinging | iv. Generalist | 09. Common migrant | Northeastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|------------------|---------------|--------------------|------------------------|--------------------------------|------------------|--------------------------|-----------------------------|------------------------------|
| Caprimulgiformes | Caprimulgidae | <i>Caprimulgus</i> | <i>pectoralis</i> | Fierynecked Nightjar | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northeastern boundary |
| Caprimulgiformes | Caprimulgidae | <i>Caprimulgus</i> | <i>rufigena</i> | Rufouscheeked Nightjar | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northeastern boundary |
| Caprimulgiformes | Caprimulgidae | <i>Caprimulgus</i> | <i>tristigma</i> | Freckled Nightjar | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northeastern boundary |
| Apodiformes | Apodidae | <i>Apus</i> | <i>apus</i> | European Swift | d. Bounding | iv. Generalist | 09. Common migrant | Eastern boundary |
| Apodiformes | Apodidae | <i>Apus</i> | <i>bradfieldi</i> | Bradfield's Swift | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Northern & eastern boundary |
| Apodiformes | Apodidae | <i>Apus</i> | <i>caffer</i> | Whiterumped Swift | d. Bounding | iv. Generalist | 09. Common migrant | Northern & eastern boundary |
| Apodiformes | Apodidae | <i>Apus</i> | <i>affinis</i> | Little Swift | d. Bounding | iv. Generalist | 10. Intermittent visitor | Northern & eastern boundary |
| Apodiformes | Apodidae | <i>Apus</i> | <i>melba</i> | Alpine Swift | d. Bounding | iv. Generalist | 07. Interdigitated resident | Along all boundaries & coast |
| Coliiformes | Coliidae | <i>Colius</i> | <i>colius</i> | Whitebacked Mousebird | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Coliiformes | Coliidae | <i>Urocolius</i> | <i>indicus</i> | Redfaced Mousebird | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northeastern boundary |
| Alcediniformes | Meropidae | <i>Merops</i> | <i>apiaster</i> | European Bee-eater | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Alcediniformes | Meropidae | <i>Merops</i> | <i>hirundineus</i> | Swallowtailed Bee-eater | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Coraciiformes | Coraciidae | <i>Coracias</i> | <i>naevia</i> | Purple Roller | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Coraciiformes | Upupidae | <i>Upupa</i> | <i>epops</i> | Hoopoe | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Coraciiformes | Phoeniculidae | <i>Phoeniculus</i> | <i>cyanomelas</i> | Scimitar-billed Woodhoopoe | d. Bounding | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Coraciiformes | Bucerotidae | <i>Tockus</i> | <i>nasatus</i> | Grey Hornbill | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Coraciiformes | Bucerotidae | <i>Tockus</i> | <i>erythrorhynchus</i> | Redbilled Hornbill | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Coraciiformes | Bucerotidae | <i>Tockus</i> | <i>leucomelas</i> | Southern Yellowbilled Hornbill | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Coraciiformes | Bucerotidae | <i>Tockus</i> | <i>monteiri</i> | Monteiro's Hornbill | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|---------------|---------------------|-----------------------|-------------------------|------------------|--------------------------|-----------------------------|-----------------------------|
| Piciformes | Indicatoridae | <i>Indicator</i> | <i>minor</i> | Lesser Honeyguide | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Piciformes | Capitonidae | <i>Lybius</i> | <i>leucomelas</i> | Pied Barbet | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Piciformes | Picidae | <i>Campethera</i> | <i>abingoni</i> | Goldentailed Woodpecker | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Piciformes | Picidae | <i>Dendropicos</i> | <i>fuscescens</i> | Cardinal Woodpecker | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Alaudidae | <i>Mirafra</i> | <i>passerina</i> | Monotonous Lark | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Alaudidae | <i>Mirafra</i> | <i>apiata</i> | Clapper Lark | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Alaudidae | <i>Mirafra</i> | <i>africanoides</i> | Fawncoloured Lark | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Alaudidae | <i>Mirafra</i> | <i>sabota</i> | Sabota Lark | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Alaudidae | <i>Mirafra</i> | <i>curvirostris</i> | Longbilled Lark | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Alaudidae | <i>Calendulauda</i> | <i>erythrochlamys</i> | Dune Lark | a. Sand Sea | i. Dune Sea specialist | 01. Strict Endemic | Dunes |
| Passeriformes | Alaudidae | <i>Chersomanes</i> | <i>albofasciata</i> | Spikeheeled Lark | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Alaudidae | <i>Calandrella</i> | <i>cinerea</i> | Redcapped Lark | d. Boundinging | iv. Generalist | 06. Relict | Coastal salt flats |
| Passeriformes | Alaudidae | <i>Alauda</i> | <i>starki</i> | Stark's Lark | d. Boundinging | ii. Arid area specialist | 07. Interdigitated resident | Northern & eastern boundary |
| Passeriformes | Alaudidae | <i>Ammomanes</i> | <i>grayi</i> | Gray's Lark | c. Widespread | ii. Arid area specialist | 03. Near Endemic | Northern boundary |
| Passeriformes | Alaudidae | <i>Eremopterix</i> | <i>verticalis</i> | Greybacked Sparrowlark | c. Widespread | iv. Generalist | 04. Common Resident | Throughout area |
| Passeriformes | Alaudidae | <i>Eremopterix</i> | <i>australis</i> | Blackeared Sparrowlark | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Southeast after good rain |
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>rustica</i> | Barn Swallow | c. Widespread | iv. Generalist | 09. Common migrant | Throughout area |
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>albigularis</i> | Whitethroated Swallow | c. Widespread | iv. Generalist | 10. Intermittent visitor | Migrant |
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>dimidiata</i> | Pearlbreasted Swallow | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>cucullata</i> | Greater Striped Swallow | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Migrant |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|--------------|--------------------|---------------------|-----------------------------|------------------|----------------------|-----------------------------|-------------------------------|
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>spilodera</i> | South African Cliff Swallow | c. Widespread | iv. Generalist | 10. Intermittent visitor | Migrant |
| Passeriformes | Hirundinidae | <i>Hirundo</i> | <i>fuligula</i> | Rock Martin | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Hirundinidae | <i>Delichon</i> | <i>urbica</i> | House Martin | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Migrant |
| Passeriformes | Hirundinidae | <i>Riparia</i> | <i>paludicola</i> | Brownthroated Martin | e. Sandwich | iv. Generalist | 07. Interdigitated resident | Sandwich Ramsar site |
| Passeriformes | Hirundinidae | <i>Riparia</i> | <i>riparia</i> | Sand Martin | c. Widespread | iv. Generalist | 09. Common migrant | Northern & eastern boundary |
| Passeriformes | Hirundinidae | <i>Riparia</i> | <i>cincta</i> | Banded Martin | e. Sandwich | iv. Generalist | 09. Common migrant | Sandwich Ramsar site |
| Passeriformes | Dicruridae | <i>Dicrurus</i> | <i>adsimilis</i> | Forktailed Drongo | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Oriolidae | <i>Oriolus</i> | <i>oriolus</i> | European Golden Oriole | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Ephemeral rivers, migrant |
| Passeriformes | Corvidae | <i>Corvus</i> | <i>capensis</i> | Black Crow | c. Widespread | iv. Generalist | 04. Common Resident | Throughout area |
| Passeriformes | Corvidae | <i>Corvus</i> | <i>albus</i> | Pied Crow | c. Widespread | iv. Generalist | 04. Common Resident | Throughout area |
| Passeriformes | Paridae | <i>Parus</i> | <i>cinerascens</i> | Ashy Tit | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Ephemeral rivers |
| Passeriformes | Paridae | <i>Parus</i> | <i>carpi</i> | Carp's Black Tit | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Remizidae | <i>Anthoscopus</i> | <i>minutus</i> | Cape Penduline Tit | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Pycnonotidae | <i>Pycnonotus</i> | <i>nigricans</i> | Redeyed Bulbul | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Timaliidae | <i>Turdoides</i> | <i>bicolor</i> | Pied Babbler | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Northeastern boundary |
| Passeriformes | Turdidae | <i>Turdus</i> | <i>litsitsirupa</i> | Groundscraper Thrush | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Northeastern boundary |
| Passeriformes | Turdidae | <i>Monticola</i> | <i>breviceps</i> | Short-toed Rock Thrush | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Turdidae | <i>Oenanthe</i> | <i>monticola</i> | Mountain Chat | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Turdidae | <i>Oenanthe</i> | <i>pileata</i> | Capped Wheatear | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Inselbergs & Eastern boundary |
| Passeriformes | Turdidae | <i>Cercomela</i> | <i>familiaris</i> | Familiar Chat | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Inselbergs & Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|-----------|----------------------|-----------------------|--------------------------|------------------|--------------------------|-----------------------------|---------------------------|
| Passeriformes | Turdidae | <i>Cercomela</i> | <i>tractrac</i> | Tractrac Chat | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Turdidae | <i>Cercomela</i> | <i>schlegelii</i> | Karoo Chat | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Turdidae | <i>Myrmecocichla</i> | <i>formicivora</i> | Anteating Chat | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Turdidae | <i>Erythropygia</i> | <i>coryphaeus</i> | Karoo Robin | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Turdidae | <i>Erythropygia</i> | <i>paena</i> | Kalahari Robin | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Turdidae | <i>Namibornis</i> | <i>herero</i> | Herero Chat | d. Bounding | ii. Arid area specialist | 03. Near Endemic | Northeastern boundary |
| Passeriformes | Sylviidae | <i>Parisoma</i> | <i>subcaeruleum</i> | Titbabbler | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Sylviidae | <i>Parisoma</i> | <i>layardi</i> | Layards's Titbabbler | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Sylviidae | <i>Sylvia</i> | <i>borin</i> | Garden Warbler | d. Bounding | iv. Generalist | 10. Intermittent visitor | Migrant |
| Passeriformes | Sylviidae | <i>Hippolais</i> | <i>icterina</i> | Icterine Warbler | d. Bounding | iv. Generalist | 09. Common migrant | Eastern boundary |
| Passeriformes | Sylviidae | <i>Acrocephalus</i> | <i>baeticatus</i> | African Marsh Warbler | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Passeriformes | Sylviidae | <i>Acrocephalus</i> | <i>schoenobaenus</i> | European Sedge Warbler | e. Sandwich | iii. Habitat specialist | 09. Common migrant | Sandwich Ramsar site |
| Passeriformes | Sylviidae | <i>Acrocephalus</i> | <i>gracilirostris</i> | Cape Reed warbler | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Passeriformes | Sylviidae | <i>Phylloscopus</i> | <i>trochilus</i> | Willow Warbler | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Passeriformes | Sylviidae | <i>Sylvietta</i> | <i>rufescens</i> | Longbilled Crombec | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Sylviidae | <i>Eremomela</i> | <i>icteropygialis</i> | Yellowbellied Eremomela | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Sylviidae | <i>Eremomela</i> | <i>gregalis</i> | Karoo Eremomela | d. Bounding | ii. Arid area specialist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Sylviidae | <i>Euryptila</i> | <i>subcinnamomea</i> | Cinnamonbreasted Warbler | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Sylviidae | <i>Achaetops</i> | <i>pycnopygius</i> | Rockrunner | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Sylviidae | <i>Cisticola</i> | <i>juncidis</i> | Fantailed Cisticola | e. Sandwich | iii. Habitat specialist | 08. Marginal presence | Sandwich Ramsar site |
| Passeriformes | Sylviidae | <i>Cisticola</i> | <i>aridula</i> | Desert Cisticola | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|---------------|--------------------|-----------------------|------------------------|------------------|--------------------------|-----------------------------|---|
| Passeriformes | Sylviidae | <i>Cisticola</i> | <i>subruficapilla</i> | Greybacked Cisticola | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Sylviidae | <i>Prinia</i> | <i>flavicans</i> | Blackchested Prinia | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Sylviidae | <i>Prinia</i> | <i>maculosa</i> | Spotted Prinia | d. Bounding | iv. Generalist | 08. Marginal presence | southeasternmost rocky hills |
| Passeriformes | Sylviidae | <i>Malcorus</i> | <i>pectoralis</i> | Rufouseared Warbler | d. Bounding | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Muscicapidae | <i>Muscicapa</i> | <i>striata</i> | Spotted Flycatcher | d. Bounding | iv. Generalist | 09. Common migrant | Eastern boundary & Sandwich Ramsar site |
| Passeriformes | Muscicapidae | <i>Melaenornis</i> | <i>mariquensis</i> | Marico Flycatcher | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Muscicapidae | <i>Melaenornis</i> | <i>infuscatus</i> | Chat Flycatcher | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Muscicapidae | <i>Batis</i> | <i>pririt</i> | Pririt Batis | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Motacillidae | <i>Motacilla</i> | <i>capensis</i> | Cape Wagtail | e. Sandwich | iii. Habitat specialist | 07. Interdigitated resident | Coast and Eastern boundary |
| Passeriformes | Motacillidae | <i>Motacilla</i> | <i>aguimp</i> | African Pied Wagtail | e. Sandwich | iii. Habitat specialist | 10. Intermittent visitor | Sandwich Ramsar site |
| Passeriformes | Motacillidae | <i>Motacilla</i> | <i>flava</i> | Yellow Wagtail | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Motacillidae | <i>Anthus</i> | <i>cinnamomeus</i> | Grassveld Pipit | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Motacillidae | <i>Anthus</i> | <i>trivialis</i> | Tree Pipit | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary, migrant |
| Passeriformes | Motacillidae | <i>Anthus</i> | <i>similis</i> | Longbilled Pipit | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Motacillidae | <i>Anthus</i> | <i>vaalensis</i> | Buffy Pipit | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Laniidae | <i>Lanius</i> | <i>minor</i> | Lesser Grey Shrike | d. Bounding | iv. Generalist | 09. Common migrant | Eastern boundary, migrant |
| Passeriformes | Laniidae | <i>Lanius</i> | <i>collaris</i> | Fiscal Shrike | c. Widespread | iv. Generalist | 07. Interdigitated resident | Northern & eastern boundary |
| Passeriformes | Malaconotidae | <i>Laniarius</i> | <i>atrococcineus</i> | Crimsonbreasted Shrike | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Malaconotidae | <i>Nilaus</i> | <i>afer</i> | Brubru | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|---------------|-----------------------|---------------------|----------------------------|------------------|--------------------------|-----------------------------|---|
| Passeriformes | Malaconotidae | <i>Tchagra</i> | <i>australis</i> | Three-streaked Tchagra | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Malaconotidae | <i>Telophorus</i> | <i>zeylonus</i> | Bokmakierie | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Malaconotidae | <i>Lanioturdus</i> | <i>torquatus</i> | Whitetailed Shrike | d. Boundinging | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Sturnidae | <i>Creatophora</i> | <i>cinerea</i> | Wattled Starling | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary & Sandwich Ramsar site |
| Passeriformes | Sturnidae | <i>Cinnyricinclus</i> | <i>leucogaster</i> | Plumcoloured Starling | d. Boundinging | iv. Generalist | 10. Intermittent visitor | Migrant |
| Passeriformes | Sturnidae | <i>Lamprotornis</i> | <i>nitens</i> | Glossy Starling | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Sturnidae | <i>Onychognathus</i> | <i>nabouroup</i> | Palewinged Starling | d. Boundinging | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Nectariniidae | <i>Nectarinia</i> | <i>mariquensis</i> | Marico Sunbird | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Nectariniidae | <i>Nectarinia</i> | <i>fusca</i> | Dusky Sunbird | d. Boundinging | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Nectariniidae | <i>Nectarinia</i> | <i>senegalensis</i> | Scarletched Sunbird | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Zosteropidae | <i>Zosterops</i> | <i>pallidus</i> | Cape White-eye | d. Boundinging | iv. Generalist | 08. Marginal presence | Northeastern boundary |
| Passeriformes | Ploceidae | <i>Plocepasser</i> | <i>mahali</i> | Whitebrowed Sparrow Weaver | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Ploceidae | <i>Philetairus</i> | <i>socius</i> | Sociable Weaver | d. Boundinging | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Ploceidae | <i>Passer</i> | <i>domesticus</i> | House Sparrow | d. Boundinging | iv. Generalist | 12. Alien | Eastern boundary |
| Passeriformes | Ploceidae | <i>Passer</i> | <i>motitensis</i> | Great Sparrow | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Ploceidae | <i>Passer</i> | <i>melanurus</i> | Cape Sparrow | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Ploceidae | <i>Passer</i> | <i>diffusus</i> | Greyheaded Sparrow | d. Boundinging | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Ploceidae | <i>Sporopipes</i> | <i>squamifrons</i> | Scalyfeathered Finch | c. Widespread | iv. Generalist | 07. Interdigitated resident | Absent from dunes and coast |
| Passeriformes | Ploceidae | <i>Ploceus</i> | <i>rubiginosus</i> | Chestnut Weaver | d. Boundinging | ii. Arid area specialist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Ploceidae | <i>Ploceus</i> | <i>velatus</i> | Masked Weaver | d. Boundinging | iv. Generalist | 07. Interdigitated resident | Eastern boundary |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range | NSS Status | Habitat within Property |
|---------------|--------------|--------------------|-----------------------|----------------------|------------------|--------------------------|-----------------------------|--|
| Passeriformes | Ploceidae | <i>Quelea</i> | <i>quelea</i> | Redbilled Quelea | d. Bounding | iv. Generalist | 08. Marginal presence | Sandwich Ramsar site, throughout grassland in good years |
| Passeriformes | Estrildidae | <i>Pytilia</i> | <i>melba</i> | Melba Finch | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Estrildidae | <i>Uraeginthus</i> | <i>granatinus</i> | Violeteared Waxbill | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Estrildidae | <i>Estrilda</i> | <i>astrild</i> | Common Waxbill | d. Bounding | iv. Generalist | 10. Intermittent visitor | Eastern boundary |
| Passeriformes | Estrildidae | <i>Estrilda</i> | <i>erythronotos</i> | Blackcheeked Waxbill | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Estrildidae | <i>Amadina</i> | <i>erythrocephala</i> | Redheaded Finch | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Viduidae | <i>Vidua</i> | <i>regia</i> | Shafttailed Whydah | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Viduidae | <i>Vidua</i> | <i>macroura</i> | Pintailed Whydah | d. Bounding | iv. Generalist | 08. Marginal presence | Central Eastern boundary |
| Passeriformes | Fringillidae | <i>Serinus</i> | <i>atrogularis</i> | Blackthroated Canary | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Fringillidae | <i>Serinus</i> | <i>alario</i> | Blackheaded Canary | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Fringillidae | <i>Serinus</i> | <i>flaviventris</i> | Yellow Canary | d. Bounding | iv. Generalist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Fringillidae | <i>Serinus</i> | <i>albugularis</i> | Whitethroated Canary | d. Bounding | ii. Arid area specialist | 07. Interdigitated resident | Eastern boundary |
| Passeriformes | Fringillidae | <i>Emberiza</i> | <i>capensis</i> | Cape Bunting | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Fringillidae | <i>Emberiza</i> | <i>tahapisi</i> | Rock Bunting | d. Bounding | iv. Generalist | 08. Marginal presence | Eastern boundary |
| Passeriformes | Fringillidae | <i>Emberiza</i> | <i>impetuani</i> | Larklike Bunting | c. Widespread | ii. Arid area specialist | 07. Interdigitated resident | Northern & eastern boundary |

Annex 17

Table of Birds at Sandwich Harbour Ramsar Site



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

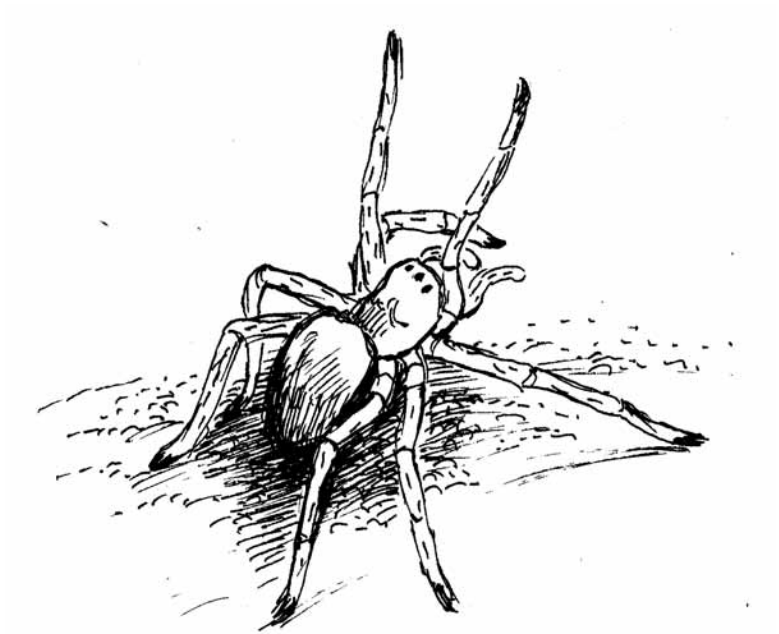
| Family | Genus | Species | Common Name | Habitat within property |
|-------------------|-----------------------|------------------------|--------------------------|--------------------------------|
| Podicipedidae | <i>Podiceps</i> | <i>cristatus</i> | Great Crested Grebe | Sandwich |
| Podicipedidae | <i>Tachybaptus</i> | <i>ruficollis</i> | Dabchick | Sandwich, pans with water |
| Podicipedidae | <i>Podiceps</i> | <i>nigricollis</i> | Blacknecked grebe | Sandwich |
| Pelecanidae | <i>Pelicanus</i> | <i>onocrotalus</i> | White Pelican | Sandwich |
| Pelecanidae | <i>Pelecanus</i> | <i>rufescens</i> | Pinkbacked Pelican | Sandwich |
| Phalacrocoracidae | <i>Phalacrocorax</i> | <i>africanus</i> | Reed Cormorant | Sandwich, migrant |
| Anhingidae | <i>Anhinga</i> | <i>melanogaster</i> | Darter | Sandwich, migrant |
| Ardeidae | <i>Ardea</i> | <i>cinerea</i> | Grey Heron | Sandwich |
| Ardeidae | <i>Ardea</i> | <i>melanocephala</i> | Blackheaded Heron | Sandwich, pans with water |
| Ardeidae | <i>Ardea</i> | <i>purpurea</i> | Purple Heron | Sandwich, migrant |
| Ardeidae | <i>Casmerodius</i> | <i>albus</i> | Great White Heron | Sandwich, migrant |
| Ardeidae | <i>Egretta</i> | <i>garzetta</i> | Little Egret | Sandwich |
| Ardeidae | <i>Egretta</i> | <i>intermedia</i> | Yellowbilled Egret | Sandwich, migrant |
| Ardeidae | <i>Ardeola</i> | <i>ralloides</i> | Squacco Heron | Vagrant |
| Ardeidae | <i>Nycticorax</i> | <i>nycticorax</i> | Blackcrowned Night Heron | Sandwich |
| Ardeidae | <i>Ixobrychys</i> | <i>sturmii</i> | Dwarf Bittern | Migrant |
| Ardeidae | <i>Ixobrychys</i> | <i>minutus</i> | Little Bittern | Migrant |
| Ciconiidae | <i>Ciconia</i> | <i>abdimii</i> | Abdim's Stork | Migrant |
| Ciconiidae | <i>Leptoptilos</i> | <i>crumeniferus</i> | Marabou Stork | Sandwich |
| Plataleidae | <i>Platalea</i> | <i>alba</i> | African Spoonbill | Sandwich |
| Phoenicopteridae | <i>Phoenicopterus</i> | <i>ruber</i> | Greater Flamingo | Sandwich |
| Phoenicopteridae | <i>Phoenicopterus</i> | <i>minor</i> | Lesser Flamingo | Sandwich |
| Anatidae | <i>Dendrocoryna</i> | <i>viduata</i> | Whitefaced Duck | Sandwich |
| Anatidae | <i>Thalassornis</i> | <i>leuconotus</i> | Whitebacked Duck | Sandwich |
| Anatidae | <i>Tadorna</i> | <i>cana</i> | South African Shelduck | Sandwich |
| Anatidae | <i>Anas</i> | <i>undulata</i> | Yellowbilled Duck | Sandwich, migrant |
| Anatidae | <i>Anas</i> | <i>hottentota</i> | Hottentot Teal | Rare migrant |
| Anatidae | <i>Plectropterus</i> | <i>gambensis</i> | Spurwinged Goose | Migrant |
| Anatidae | <i>Alopochen</i> | <i>aegytiacus</i> | Egyptian Goose | Sandwich, migrant |
| Anatidae | <i>Anas</i> | <i>capensis</i> | Cape Teal | Sandwich |
| Anatidae | <i>Anas</i> | <i>erythrorhyncha</i> | Redbilled Teal | Sandwich, migrant |
| Anatidae | <i>Anas</i> | <i>smithii</i> | Cape Shoveller | Sandwich, migrant |
| Anatidae | <i>Netta</i> | <i>erythrophthalma</i> | Southern Pochard | Sandwich |
| Anatidae | <i>Oxyura</i> | <i>maccoa</i> | Maccoa Duck | Sandwich |
| Accipitridae | <i>Buteo</i> | <i>rufofuscus</i> | Jackal Buzzard | Sandwich, Kuiseb treeline |
| Accipitridae | <i>Circus</i> | <i>ranivorus</i> | African Marsh Harrier | Isolated at Sandwich |
| Accipitridae | <i>Circus</i> | <i>maurus</i> | Black Harrier | Sandwich, migrant |
| Pandionidae | <i>Pandion</i> | <i>haliaetus</i> | Osprey | Sandwich, migrant |
| Rallidae | <i>Amaurornis</i> | <i>flavirostris</i> | Black Crake | Sandwich |
| Rallidae | <i>Porphyrio</i> | <i>porphyrio</i> | Purple Gallinule | Sandwich |
| Rallidae | <i>Gallinula</i> | <i>chloropus</i> | Moorhen | Sandwich |
| Rallidae | <i>Fulica</i> | <i>cristata</i> | Redknobbed Coot | Sandwich |
| Jacanidae | <i>Actophilornis</i> | <i>africanus</i> | African Jacana | Vagrant |
| Haematopodidae | <i>Haematopus</i> | <i>moquini</i> | Black Oystercatcher | Coast |
| Charadriidae | <i>Charadrius</i> | <i>hiaticula</i> | Ringed Plover | Sandwich |
| Charadriidae | <i>Charadrius</i> | <i>marginatus</i> | Whitefronted Plover | Coast |
| Charadriidae | <i>Charadrius</i> | <i>pallidus</i> | Chestnutbanded Plover | Sandwich |
| Charadriidae | <i>Charadrius</i> | <i>pecuarius</i> | Kittlitz's Plover | Coast |
| Charadriidae | <i>Charadrius</i> | <i>tricoloris</i> | Threebanded Plover | Sandwich, pans with water |
| Charadriidae | <i>Charadrius</i> | <i>leschenaultii</i> | Sand Plover | Sandwich |
| Charadriidae | <i>Charadrius</i> | <i>asiaticus</i> | Caspian Plover | Sandwich |
| Charadriidae | <i>Pluvialis</i> | <i>squatarola</i> | Grey Plover | Coast |
| Charadriidae | <i>Vanellus</i> | <i>coronatus</i> | Crowned Plover | Sandwich, pans with water |
| Charadriidae | <i>Vanellus</i> | <i>armatus</i> | Blacksmith Plover | Sandwich, pans with water |

| Family | Genus | Species | Common Name | Habitat within property |
|------------------|----------------------|----------------------|-------------------------|--------------------------------|
| Scolopacidae | <i>Arenaria</i> | <i>interpres</i> | Turnstone | Coast |
| Scolopacidae | <i>Xenus</i> | <i>cinereus</i> | Terek Sandpiper | Sandwich |
| Scolopacidae | <i>Tringa</i> | <i>hypoleucos</i> | Common Sandpiper | Sandwich |
| Scolopacidae | <i>Tringa</i> | <i>glareola</i> | Wood Sandpiper | Sandwich |
| Scolopacidae | <i>Tringa</i> | <i>totanus</i> | Redshank | Sandwich |
| Scolopacidae | <i>Tringa</i> | <i>stagnatilis</i> | Marsh Sandpiper | Sandwich |
| Scolopacidae | <i>Tringa</i> | <i>nebularia</i> | Greenshank | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>canatus</i> | Knot | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>ferruginea</i> | Curlew Sandpiper | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>minuta</i> | Little Stint | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>bairdii</i> | Baird's Sandpiper | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>melanotos</i> | Pectoral Sandpiper | Sandwich |
| Scolopacidae | <i>Calidris</i> | <i>alba</i> | Sanderling | Coast |
| Scolopacidae | <i>Limicola</i> | <i>falcinellus</i> | Broadbilled Sandpiper | Sandwich |
| Scolopacidae | <i>Philomachus</i> | <i>pugnax</i> | Ruff | Sandwich |
| Scolopacidae | <i>Limosa</i> | <i>lapponica</i> | Bartailed Godwit | Sandwich |
| Scolopacidae | <i>Numenius</i> | <i>arquata</i> | Curlew | Sandwich |
| Scolopacidae | <i>Numenius</i> | <i>phaeopus</i> | Whimbrel | Coast |
| Scolopacidae | <i>Phalaropus</i> | <i>fulicarius</i> | Grey Phalarope | Sandwich, migrant |
| Scolopacidae | <i>Phalaropus</i> | <i>lobatus</i> | Rednecked Phalarope | Sandwich, migrant |
| Scolopacidae | <i>Phalaropus</i> | <i>tricolor</i> | Wilson's Phalarope | Sandwich, migrant |
| Recurvirostridae | <i>Recurvirostra</i> | <i>avosetta</i> | Avocet | Sandwich |
| Recurvirostridae | <i>Himantopus</i> | <i>himantopus</i> | Blackwinged Stilt | Sandwich |
| Laridae | <i>Stercorarius</i> | <i>parasiticus</i> | Arctic Skua | Sandwich |
| Laridae | <i>Stercorarius</i> | <i>pomarinus</i> | Pomarine Skua | Sandwich |
| Laridae | <i>Catharacta</i> | <i>antarctica</i> | Subantarctic Skua | Coast |
| Laridae | <i>Larus</i> | <i>dominicanus</i> | Kelp Gull | Coast |
| Laridae | <i>Larus</i> | <i>cirrocephalus</i> | Greyheaded Gull | Coast |
| Laridae | <i>Larus</i> | <i>hartlaubi</i> | Hartlaub's Gull | Coast |
| Laridae | <i>Larus</i> | <i>ridibundus</i> | Blackheaded Gull | Sandwich, migrant |
| Laridae | <i>Hydroprogne</i> | <i>caspia</i> | Caspian Tern | Coast |
| Laridae | <i>Sterna</i> | <i>maxima</i> | Royal Tern | Sandwich, migrant |
| Laridae | <i>Sterna</i> | <i>bergii</i> | Swift Tern | Coast |
| Laridae | <i>Sterna</i> | <i>sandvicensis</i> | Sandwich Tern | Coast |
| Laridae | <i>Sterna</i> | <i>hirundo</i> | Common Tern | Coast |
| Laridae | <i>Sterna</i> | <i>paradisaea</i> | Arctic Tern | Coast |
| Laridae | <i>Sterna</i> | <i>dougallii</i> | Roseate Tern | Coast |
| Laridae | <i>Sterna</i> | <i>balaenarum</i> | Damara Tern | Coast |
| Laridae | <i>Chlidonias</i> | <i>niger</i> | Black Tern | Sandwich, migrant |
| Laridae | <i>Chlidonias</i> | <i>hybridus</i> | Whiskered Tern | Sandwich |
| Laridae | <i>Chlidonias</i> | <i>leucopterus</i> | Whitewinged Tern | Sandwich |
| Strigidae | <i>Asio</i> | <i>capensis</i> | Marsh Owl | Sandwich |
| Strigidae | <i>Otus</i> | <i>senegalensis</i> | Scops Owl | Widespread |
| Apodidae | <i>Apus</i> | <i>melba</i> | Alpine Swift | Migrant |
| Hirundinidae | <i>Hirundo</i> | <i>rustica</i> | European Swallow | Migrant |
| Hirundinidae | <i>Hirundo</i> | <i>albigularis</i> | Whitethroated Swallow | Migrant |
| Hirundinidae | <i>Hirundo</i> | <i>dimidiata</i> | Pearlbreasted Swallow | Sandwich |
| Hirundinidae | <i>Hirundo</i> | <i>cucullata</i> | Greater Striped Swallow | Migrant |
| Hirundinidae | <i>Riparia</i> | <i>paludicola</i> | Brownthroated Martin | Sandwich |
| Hirundinidae | <i>Riparia</i> | <i>riparia</i> | Sand Martin | Migrant |
| Hirundinidae | <i>Riparia</i> | <i>cincta</i> | Banded Martin | Sandwich |
| Sylviidae | <i>Sylvia</i> | <i>borin</i> | Garden Warbler | Migrant |
| Sylviidae | <i>Hippolais</i> | <i>icterina</i> | Icterine Warbler | Eastern boundary |
| Sylviidae | <i>Acrocephalus</i> | <i>baeticatus</i> | African Marsh Warbler | Sandwich |

| Family | Genus | Species | Common Name | Habitat within property |
|---------------|---------------------|-----------------------|------------------------|--------------------------------|
| Sylviidae | <i>Acrocephalus</i> | <i>schoenobaenus</i> | European Sedge Warbler | Sandwich |
| Sylviidae | <i>Acrocephalus</i> | <i>gracilirostris</i> | Cape Reed warbler | Sandwich |
| Sylviidae | <i>Phylloscopus</i> | <i>trochilus</i> | Willow Warbler | Migrant |
| Sylviidae | <i>Cisticola</i> | <i>juncidis</i> | Fantailed Cisticola | Sandwich |
| Muscicapidae | <i>Muscicapa</i> | <i>striata</i> | Spotted Flycatcher | Sandwich, treelines |
| Motacillidae | <i>Motacilla</i> | <i>capensis</i> | Cape Wagtail | Coast and Eastern boundary |
| Motacillidae | <i>Motacilla</i> | <i>aguimp</i> | African Pied Wagtail | Sandwich |
| Sturnidae | <i>Creatophora</i> | <i>cinerea</i> | Wattled Starling | Sandwich, treelines |
| Ploceidae | <i>Quelea</i> | <i>quelea</i> | Redbilled Quelea | Sandwich, pans with water |

Annex 18

Table of Sand Sea Inhabitants & Endemics



Namib Sand Sea Biogeography Biogeography description

- a. Sand Sea Sand Sea inhabitants rarely ranging outside dune habitats
- b. Inselbergs Petrophilous inselberg inhabitants occurring as isolated populations within the Sand Sea
- c. Widespread May inhabit any part of the property due to vagility and catholic ecological choice
- d. Boundinging Mostly found adjacent to the Sand Sea and contributing to biodiversity and ecology through suitable habitat inside the property, marginally intruding or absent from dunes
- e. Sandwich Ramsar Specific Sandwich Harbour Ramsar site inhabitants

Ecological range

- i. Dune Sea specialist
- ii. Arid area specialist
- iii. Habitat specialist
- iv. Generalist

Ecological range description

- Psammophilous species restricted to Namib Biome sand dunes
- Euryaceous species restricted to arid biome habitats
- Stenotypic species, habitat, host or prey specific
- Not habitat specific with wide ecological choice

Status

- 01. Strict Endemic
- 02. Dune Endemic
- 03. Near Endemic
- 04. Common Resident
- 05. Rare Resident
- 06. Relict
- 07. Interdigitated resident
- 08. Marginal presence
- 09. Common migrant
- 10. Intermittent visitor
- 11. Vagrant
- 12. Alien
- 13. Domesticated

Status Description

- Psammophilous species only found in Namib Sand Sea
- Psammophilous species in Namib Sand Sea, range extend to outhur Namib Biome dune areas
- Restricted to Namib Biomes
- Common throughout Namib Sand Sea property
- Rarely recorded from Namib Sand Sea property, not unexpected
- Isolated healthy populations in Namib Sand Sea far from core species range
- Readily found inside the property at suitable habitat intruding into the Sand Sea
- Incidental presence within the property from range overspill
- Present whenever conditions are suitable
- Rarely occur only when conditions are suitable
- Unusual and isolated records
- Feral populations of extralimital species
- Introduced alien species that is managed, occasionally vagrant

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|--------------------------|------------------------------|---------------------------|--------------------------|--------------------------|--------------------------|-----------------------------|
| Kingdom: Plantae | Phylum: Magnoliophyta | Class: Magnoliatae | | DICOTYLEDONS | | |
| Geraniales | Geraniaceae | <i>Monsonia</i> | <i>ignorata</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Lamiales | Pedaliaceae | <i>Sesamum</i> | <i>abbreviatum</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Malvales | Sterculiaceae | <i>Hermannia</i> | <i>minimifolia</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Caryophyllales | Aizoaceae | <i>Trianthema</i> | <i>hereroensis</i> | | i. Dune Sea specialist | 03. Near Endemic |
| Cucurbitales | Cucurbitaceae | <i>Acanthosicyos</i> | <i>horridus</i> | Inara | i. Dune Sea specialist | 03. Near Endemic |
| Fabales | Fabaceae | <i>Acacia</i> | <i>erioloba</i> | Camelthorn Tree | c. Widespread | 04. Common Resident |
| Kingdom: Plantae | Phylum: Magnoliophyta | Class: Liliopsida | | MONOCOTS | | |
| Colchicales | Colchicaceae | <i>Hexacyrtis</i> | <i>dickiana</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>pellytronis</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>seelyae</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>gonatostachys</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>sabulicola</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Poales | Poaceae | <i>Centropodia</i> | <i>glauca</i> | | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Cladoraphis</i> | <i>spinosa</i> | | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Stipagrostis</i> | <i>lutescens</i> | | i. Dune Sea specialist | 04. Common Resident |
| Poales | Poaceae | <i>Schmidtia</i> | <i>kalahariensis</i> | | c. Widespread | 04. Common Resident |
| Kingdom: Animalia | Phylum: Chordata | Class: Mammalia | | MAMMALS | | |
| Rodentia | Muridae | <i>Gerbillurus</i> | <i>tytonis</i> | Dune Hairy-footed Gerbil | i. Dune Sea specialist | 01. Strict Endemic |
| Afrosoricida | Chrysochloridae | <i>Eremitalpa</i> | <i>granti namibensis</i> | Grant's Golden Mole | i. Dune Sea specialist | 02. Dune Endemic |
| Carnivora | Canidae | <i>Canis</i> | <i>mesomelas</i> | Black-backed Jackal | c. Widespread | 04. Common Resident |
| Carnivora | Canidae | <i>Vulpes</i> | <i>chama</i> | Cape Fox | c. Widespread | 04. Common Resident |
| Carnivora | Hyaenidae | <i>Crocuta</i> | <i>crocuta</i> | Spotted Hyaena | c. Widespread | 04. Common Resident |
| Carnivora | Hyaenidae | <i>Parahyaena</i> | <i>brunnea</i> | Brown Hyaena | c. Widespread | 04. Common Resident |
| Lagomorpha | Leporidae | <i>Lepus</i> | <i>capensis</i> | Cape Hare | c. Widespread | 04. Common Resident |
| Rodentia | Muridae | <i>Rhabdomys</i> | <i>pumilio</i> | Four-striped Grass Mouse | c. Widespread | 04. Common Resident |
| Ruminantia | Bovidae | <i>Antidorcas</i> | <i>marsupialis</i> | Springbok | c. Widespread | 04. Common Resident |
| Ruminantia | Bovidae | <i>Oryx</i> | <i>gazella</i> | Gemsbok | c. Widespread | 04. Common Resident |
| Carnivora | Felidae | <i>Felis</i> | <i>silvestris</i> | African Wild Cat | c. Widespread | 05. Rare Resident |
| Chiroptera | Molossidae | <i>Tadarida</i> | <i>aegyptiaca</i> | Egyptian Free-tailed Bat | c. Widespread | 07. Interdigitated resident |
| Chiroptera | Nycteridae | <i>Nycteris</i> | <i>thebaica</i> | Egyptian Slit-faced Bat | c. Widespread | 07. Interdigitated resident |
| Kingdom: Animalia | Phylum: Chordata | Class: Aves | | BIRDS | | |
| Passeriformes | Alaudidae | <i>Certhilauda</i> | <i>erythrochlamys</i> | Dune Lark | i. Dune Sea specialist | 01. Strict Endemic |
| Passeriformes | Alaudidae | <i>Ammomanes</i> | <i>grayi</i> | Gray's Lark | ii. Arid area specialist | 03. Near Endemic |
| Falconiformes | Accipitridae | <i>Melierax</i> | <i>canorus</i> | Pale Chanting Goshawk | ii. Arid area specialist | 04. Common Resident |
| Passeriformes | Alaudidae | <i>Eremopterix</i> | <i>verticalis</i> | Greybacked Sparrowlark | c. Widespread | 04. Common Resident |
| Passeriformes | Corvidae | <i>Corvus</i> | <i>albus</i> | Pied Crow | c. Widespread | 04. Common Resident 18 - 1 |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|--------------------------|---------------------------|----------------------------|-----------------------------|-------------------------------|--------------------------|----------------------|
| Passeriformes | Corvidae | <i>Corvus</i> | <i>capensis</i> | Black Crow | c. Widespread | 04. Common Resident |
| Pterocloriformes | Pteroclididae | <i>Pterocles</i> | <i>namaqua</i> | Namaqua Sandgrouse | ii. Arid area specialist | 04. Common Resident |
| Struthioniformes | Struthionidae | <i>Struthio</i> | <i>camelus</i> | Ostrich | c. Widespread | 04. Common Resident |
| Passeriformes | Alaudidae | <i>Calandrella</i> | <i>cinerea</i> | Redcapped Lark | Coastal salt flats | 06. Relict |
| Kingdom: Animalia | Phylum: Chordata | Class: Reptilia | | REPTILES | | |
| Squamata | Gekkonidae | <i>Ptenopus</i> | <i>kochi</i> | Koch's Barking Gecko | Interdune river silts | 01. Strict Endemic |
| Squamata | Lacertidae | <i>Meroles</i> | <i>micropholidotus</i> | Small-scaled Desert Lizard | Fogbound Dune Sea | 01. Strict Endemic |
| Squamata | Scincidae | <i>Typhlosaurus</i> | <i>braini</i> | Brain's Blind Legless Skink | i. Dune Sea specialist | 01. Strict Endemic |
| Squamata | Gekkonidae | <i>Palmatogecko</i> | <i>rangei</i> | Web-footed gecko | i. Dune Sea specialist | 02. Dune Endemic |
| Squamata | Gerrhosauridae | <i>Cordylosaurus</i> | <i>subtessellatus</i> | Dwarf Plated Lizard | b. Inselbergs | 03. Endemic relict |
| Squamata | Lacertidae | <i>Meroles</i> | <i>anchietae</i> | Shovel-snouted Lizard | i. Dune Sea specialist | 02. Dune Endemic |
| Squamata | Lacertidae | <i>Meroles</i> | <i>cuneirostris</i> | Wedge-snouted Desert lizard | i. Dune Sea specialist | 02. Dune Endemic |
| Squamata | Scincidae | <i>Typhlacontias</i> | <i>brevipes</i> | Fitzsimons' Burrowing Skink | Fogbound Dunes | 02. Dune Endemic |
| Squamata | Viperidae | <i>Bitis</i> | <i>peringueyi</i> | Sidewinder Adder | i. Dune Sea specialist | 02. Dune Endemic |
| Squamata | Colubridae | <i>Psammophis</i> | <i>leightoni namibensis</i> | Namib Sand Snake | c. Widespread | 03. Near Endemic |
| Squamata | Elapidae | <i>Aspidelaps</i> | <i>lubricus infuscatus</i> | Coral snake | ii. Arid area specialist | 03. Near Endemic |
| Squamata | Lacertidae | <i>Meroles</i> | <i>reticulatus</i> | Reticulated Desert Lizard | Northwestern Coastal hu | 03. Near Endemic |
| Squamata | Leptotyphlopidae | <i>Leptotyphlops</i> | <i>occidentalis</i> | Western Thread Snake | i. Dune Sea specialist | 03. Near Endemic |
| Squamata | Chamaeleonidae | <i>Chamaeleo</i> | <i>namaquensis</i> | Namaqua Chameleon | c. Widespread | 04. Common Resident |
| Squamata | Colubridae | <i>Dipsina</i> | <i>multimaculata</i> | Dwarf Beaked Snake | c. Widespread | 04. Common Resident |
| Squamata | Lacertidae | <i>Meroles</i> | <i>suborbitalis</i> | Spotted Desert Lizard | c. Widespread | 04. Common Resident |
| Squamata | Lacertidae | <i>Pedioplanis</i> | <i>namaquensis</i> | Namaqua Sand Lizard | c. Widespread | 04. Common Resident |
| Squamata | Scincidae | <i>Mabuya</i> | <i>variegata</i> | Variegated Skink | c. Widespread | 04. Common Resident |
| Kingdom: Animalia | Phylum: Arthropoda | Class: Chilopoda | | CENTIPEDES | | |
| Geophilida | Oryidae | <i>Aspidopleres</i> | <i>intercalatus</i> | | iii. Habitat specialist | 04. Common Resident |
| Geophilida | Oryidae | <i>Diphtherogaster</i> | <i>flavus</i> | | iii. Habitat specialist | 04. Common Resident |
| Scolopendrida | Scolopendridae | <i>Cormocephalus</i> | <i>deventeri</i> | | c. Widespread | 04. Common Resident |
| Scolopendrida | Scolopendridae | <i>Trachycormocephalus</i> | <i>occidentalis</i> | | c. Widespread | 04. Common Resident |
| Scolopendrida | Scolopendridae | <i>Scolopendra</i> | <i>morsitans</i> | | c. Widespread | 04. Common Resident |
| Kingdom: Animalia | Phylum: Arthropoda | Class: Chelicerata | | SPIDERS, SCORPIONS, SOLIFUGES | | |
| Araneae | Eresidae | <i>Seothyra</i> | <i>henscheli</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Palpimanidae | <i>Palpimanus</i> | <i>stridulator</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Carparachne</i> | <i>alba</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Carparachne</i> | <i>aureoflava</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Leucorchestris</i> | <i>arenicola</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Micrororchestris</i> | <i>melanogaster</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Orchestrella</i> | <i>browni</i> | | i. Dune Sea specialist | 01. Strict Endemic |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|------------|-----------------|-------------------------|-----------------------------|-------------|---------------------------|----------------------|
| Araneae | Sparassidae | <i>Orchestrella</i> | <i>caroli</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Sparassidae | <i>Orchestrella</i> | <i>longipes</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>flavescens</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Daesiidae | <i>Blossia</i> | <i>falcifera namibensis</i> | | ii. Arid area specialist | 01. Strict Endemic |
| Solifugae | Daesiidae | <i>Blossia</i> | <i>rooica</i> | | ii. Arid area specialist | 01. Strict Endemic |
| Solifugae | Daesiidae | <i>Blossia</i> | <i>sabulosa</i> | | ii. Arid area specialist | 01. Strict Endemic |
| Solifugae | Daesiidae | <i>Eberlanzia</i> | <i>flava trilineata</i> | | ii. Arid area specialist | 01. Strict Endemic |
| Solifugae | Daesiidae | <i>Namibesia</i> | <i>pallida</i> | | ii. Arid area specialist | 01. Strict Endemic |
| Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>nigroplagiatus</i> | | iii. Habitat specialist | 01. Strict Endemic |
| Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>psammophilus</i> | | iii. Habitat specialist | 01. Strict Endemic |
| Solifugae | Hexisopodidae | <i>Mossamedessa</i> | <i>eberlanzi</i> | | iii. Habitat specialist | 01. Strict Endemic |
| Solifugae | Hexisopodidae | <i>Siloana</i> | <i>eberlanzi</i> | | iii. Habitat specialist | 01. Strict Endemic |
| Solifugae | Karschiidae | <i>Lipophaga</i> | <i>michaelseni</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>longitarsis</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>minuta</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Melanoblossidae | <i>Lawrencega</i> | <i>solaris</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Melanoblossidae | <i>Microblossia</i> | <i>eberlanzi</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Melanoblossidae | <i>Unguiblossia</i> | <i>eberlanzi</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Solifugae | Solpugidae | <i>Solpuga</i> | <i>lateralis</i> | | i. Dune Sea specialist | 01. Strict Endemic |
| Araneae | Ammoxenidae | <i>Rastellus</i> | <i>sabulosus</i> | | iii. Habitat specialist | 02. Dune Endemic |
| Araneae | Gnaphosidae | <i>Camillina</i> | <i>namibensis</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Araneae | Sparassidae | <i>Leucorchestris</i> | <i>sabulosa</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Araneae | Sparassidae | <i>Microrchestris</i> | <i>scutatus</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Araneae | Zodariidae | <i>Psammoduon</i> | <i>deserticola</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>holmi</i> | | i. Dune Sea specialist | 02. Dune Endemic |
| Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>infuscatus</i> | | iii. Habitat specialist | 02. Dune Endemic |
| Araneae | Theridiidae | <i>Latrodectus</i> | <i>renivulvatus</i> | | Coastal areas | 02. Dune Endemic |
| Solifugae | Ceromidae | <i>Ceroma</i> | <i>inerme</i> | | Coastal littoral | 02. Dune Endemic |
| Scorpiones | Buthidae | <i>Parabuthus</i> | <i>namibensis</i> | | From Conception bay north | 03. Near Endemic |
| Solifugae | Hexisopodidae | <i>Hexisopus</i> | <i>pusillus</i> | | iii. Habitat specialist | 03. Near Endemic |
| Araneae | Ammoxenidae | <i>Ammoxenus</i> | <i>coccineus</i> | | c. Widespread | 04. Common Resident |
| Araneae | Pholcidae | <i>Smeringopus</i> | <i>atomarius</i> | | c. Widespread | 04. Common Resident |
| Scorpiones | Buthidae | <i>Parabuthus</i> | <i>brevimanus</i> | | c. Widespread | 04. Common Resident |
| Scorpiones | Buthidae | <i>Parabuthus</i> | <i>granulatus</i> | | c. Widespread | 04. Common Resident |
| Scorpiones | Scorpionidae | <i>Opisthophthalmus</i> | <i>wahlbergi</i> | | c. Widespread | 04. Common Resident |
| Solifugae | Melanoblossidae | <i>Unguiblossia</i> | <i>cauduliger</i> | | c. Widespread | 04. Common Resident |
| Solifugae | Solpugidae | <i>Solpuga</i> | <i>venator</i> | | c. Widespread | 04. Common Resident |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|--------------------------|---------------------------|-----------------------|------------------------------|-------------|------------------|--------------------------|
| Kingdom: Animalia | Phylum: Arthropoda | Class: Insecta | | INSECTS | | |
| Archaeognatha | Meinertellidae | <i>Machiloides</i> | <i>sp.</i> | | b. Inselbergs | iv. Generalist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>detritus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>spinipes</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Mormisma</i> | <i>wygodzinskyi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Namibmormisma</i> | <i>muricaudata</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Namibmormisma</i> | <i>setosa</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Nebkhalepisma</i> | <i>australis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Ornatilepisma</i> | <i>horni</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>arenicola</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>pauliani</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Gopsilepisma</i> | <i>verecunda</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Sabulepisma</i> | <i>multiformis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Swalepisma</i> | <i>mirabilis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Monachina</i> | <i>stilifera</i> | | a. Sand Sea | i. Dune Sea specialist |
| Thysanura | Lepismatidae | <i>Thermobia</i> | <i>nebulosa</i> | | c. Widespread | ii. Arid area specialist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>intercursa</i> | | c. Widespread | iv. Generalist |
| Thysanura | Lepismatidae | <i>Ctenolepisma</i> | <i>terebrans</i> | | c. Widespread | iv. Generalist |
| Blattodea | Blatellidae | <i>Namablatta</i> | <i>bitaeniata</i> | | c. Widespread | ii. Arid area specialist |
| Blattodea | Euthyrrhaphidae | <i>Tivia</i> | <i>simulatrix</i> | | c. Widespread | ii. Arid area specialist |
| Isoptera | Rhinotermitidae | <i>Psammotermes</i> | <i>allocerus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Isoptera | Hodotermitidae | <i>Hodotermes</i> | <i>mossambicus</i> | | c. Widespread | iv. Generalist |
| Mantodea | Empusidae | <i>Empusa</i> | <i>guttula</i> | | c. Widespread | iv. Generalist |
| Orthoptera | Acrididae | <i>Acocksacris</i> | <i>carpi</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Acocksacris</i> | <i>namibensis</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Brainia</i> | <i>hirsuta</i> | | a. Sand Sea | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Acrotylus</i> | <i>gracilis</i> | | c. Widespread | iv. Generalist |
| Orthoptera | Acrididae | <i>Acrotylus</i> | <i>patruelis</i> | | c. Widespread | iv. Generalist |
| Orthoptera | Acrididae | <i>Brachyphymus</i> | <i>vylderi</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Lithidium</i> | <i>desertorum</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Schistocerca</i> | <i>gregaria flaviventris</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Acrididae | <i>Sphingonotus</i> | <i>scabriculus</i> | | c. Widespread | ii. Arid area specialist |
| Orthoptera | Bradyporidae | <i>Acanthoproctus</i> | <i>diadematus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>carnalli</i> | | a. Sand Sea | i. Dune Sea specialist |
| Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>calcaris</i> | | a. Sand Sea | i. Dune Sea specialist |
| Orthoptera | Schizodactylidae | <i>Comicus</i> | <i>arenarius</i> | | a. Sand Sea | i. Dune Sea specialist |
| Orthoptera | Stenopelmatidae | <i>Maxentius</i> | <i>kuhlgatzi</i> | | a. Sand Sea | i. Dune Sea specialist |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|-------------|-----------------|------------------------|---------------------|-------------|------------------|--------------------------|
| Orthoptera | Stenopelmatidae | <i>Maxentius</i> | <i>pinguis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Heteroptera | Cydnidae | <i>Cydnus</i> | <i>hirsutus</i> | | a. Sand Sea | iii. Habitat specialist |
| Heteroptera | Lygaeidae | <i>Dieuches</i> | <i>herero</i> | | c. Widespread | iv. Generalist |
| Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>scutellaris</i> | | c. Widespread | iv. Generalist |
| Heteroptera | Lygaeidae | <i>Geocoris</i> | <i>sjostedti</i> | | c. Widespread | iv. Generalist |
| Heteroptera | Pentatomidae | <i>Antestia</i> | <i>variegata</i> | | c. Widespread | iv. Generalist |
| Homoptera | Diaspididae | <i>Namibia</i> | <i>spinosa</i> | | a. Sand Sea | iii. Habitat specialist |
| Homoptera | Psyllidae | <i>Colposcenia</i> | <i>australis</i> | | a. Sand Sea | iii. Habitat specialist |
| Homoptera | Psyllidae | <i>Colposcenia</i> | <i>namibiensis</i> | | a. Sand Sea | iii. Habitat specialist |
| Homoptera | Cicadellidae | <i>Aconurella</i> | <i>minutissima</i> | | c. Widespread | iv. Generalist |
| Homoptera | Cicadellidae | <i>Circulifer</i> | <i>tenellus</i> | | c. Widespread | iv. Generalist |
| Neuroptera | Myrmeleontidae | <i>Pamares</i> | <i>deru</i> | | a. Sand Sea | i. Dune Sea specialist |
| Neuroptera | Myrmeleontidae | <i>Golafrus</i> | <i>oneili</i> | | c. Widespread | ii. Arid area specialist |
| Neuroptera | Myrmeleontidae | <i>Pamares</i> | <i>damarus</i> | | c. Widespread | ii. Arid area specialist |
| Neuroptera | Chrysopidae | <i>Italochrysa</i> | <i>turneri</i> | | c. Widespread | iii. Habitat specialist |
| Coleoptera | Anthicidae | <i>Anthicus</i> | <i>crinitus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Anthicidae | <i>Anthicus</i> | <i>techowi</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Apionidae | <i>Corimalia</i> | <i>damarensis</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>liessnerae</i> | | b. Inselbergs | iv. Generalist |
| Coleoptera | Buprestidae | <i>Acmaeodera</i> | <i>louwi</i> | | b. Inselbergs | iv. Generalist |
| Coleoptera | Buprestidae | <i>Julodis</i> | <i>mitifica</i> | | a. Sand Sea | iii. Habitat specialist |
| Coleoptera | Buprestidae | <i>Nothomorphoides</i> | <i>irishi</i> | | b. Inselbergs | iv. Generalist |
| Coleoptera | Carabidae | <i>Crepidogaster</i> | <i>kochi</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Chrysomelidae | <i>Monolepta</i> | <i>desertorum</i> | | c. Widespread | iii. Habitat specialist |
| Coleoptera | Cleridae | <i>Necrobia</i> | <i>rufipes</i> | | c. Widespread | iii. Habitat specialist |
| Coleoptera | Coccinellidae | <i>Cheilomenes</i> | <i>lunata</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Coccinellidae | <i>Exochomus</i> | <i>flaviventris</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Coccinellidae | <i>Pharoscymnus</i> | <i>kuisebensis</i> | | c. Widespread | iii. Habitat specialist |
| Coleoptera | Curculionidae | <i>Hyomora</i> | <i>falcipes</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Hyomora</i> | <i>subvirens</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Hyomora</i> | <i>manca</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>aureus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>fallax</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>speciosus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>sublineatus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>uniformis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>varius</i> | | a. Sand Sea | i. Dune Sea specialist |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|------------|---------------|------------------------|------------------------|-------------|------------------|--------------------------|
| Coleoptera | Curculionidae | <i>Leptostethus</i> | <i>waltoni</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Geotrupidae | <i>Namibiotrupes</i> | <i>penrithae</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Geotrupidae | <i>Prototrupes</i> | <i>kochi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Glaresidae | <i>Glaresis</i> | <i>namibensis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Glaresidae | <i>Glaresis</i> | <i>koenigsbaueri</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Glaresidae | <i>Glaresis</i> | <i>holmi</i> | | c. Widespread | iii. Habitat specialist |
| Coleoptera | Histeridae | <i>Hister</i> | <i>namas</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Histeridae | <i>Pholioxenus</i> | <i>endroedyi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Histeridae | <i>Saprinus</i> | <i>cupreus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Histeridae | <i>Tribalus</i> | <i>namibiensis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Histeridae | <i>Tribalus</i> | <i>kochi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Malachiidae | <i>Attalus</i> | <i>kochi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Malachiidae | <i>Dinometopus</i> | <i>narebisanus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Malachiidae | <i>Metaphilhedonus</i> | <i>penrithae</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Actenodia</i> | <i>mirabilis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Australytta</i> | <i>szekessyi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Ceroctis</i> | <i>phalerata</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Meloidae | <i>Hycleus</i> | <i>brincki</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Hycleus</i> | <i>deserticolus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Hycleus</i> | <i>svakopinus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Hycleus</i> | <i>tinctus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Hycleus</i> | <i>zigzagus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Meloidae | <i>Iselma</i> | <i>deserticola</i> | | b. Inselbergs | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>karibibensis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Meloidae | <i>Lydomorphus</i> | <i>thoracicus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Meloidae | <i>Paractenodia</i> | <i>freyi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Meloidae | <i>Prolytta</i> | <i>namibensis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Melyridae | <i>Attalus</i> | <i>oberprieleri</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Melyridae | <i>Dinometopus</i> | <i>narebisanus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Melyridae | <i>Metaphilhedonus</i> | <i>swakopmundensis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Melyridae | <i>Penhedybius</i> | <i>namibicus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Melyridae | <i>Urodactylus</i> | <i>kuisepensis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Mordellidae | <i>Mordella</i> | <i>turneri</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Nitidulidae | <i>Carpophilus</i> | <i>dimidiatus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Ochodaeidae | <i>Namibiotarpa</i> | <i>fossilis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Ochodaeidae | <i>Synochodaeus</i> | <i>cucullus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Ochodaeidae | <i>Synochodaeus</i> | <i>costatus</i> | | c. Widespread | ii. Arid area specialist |

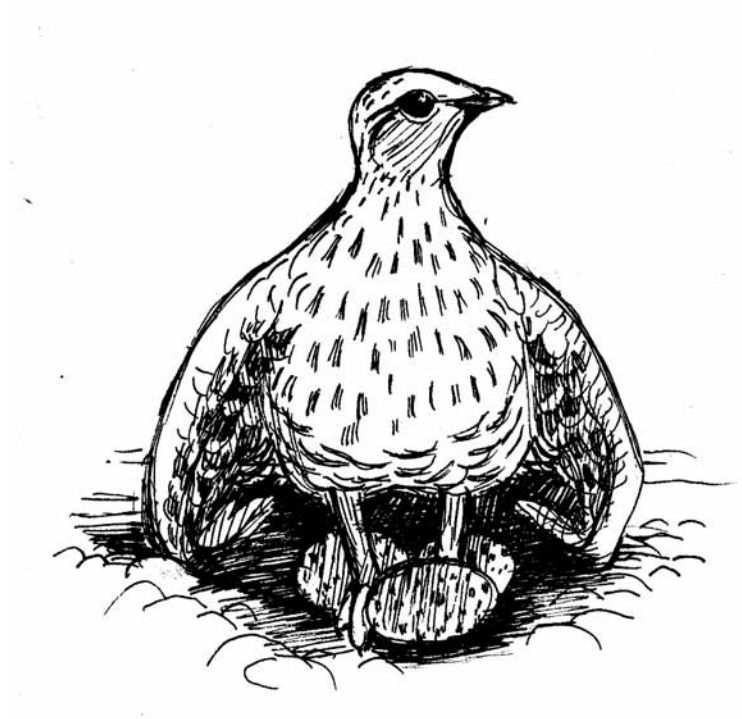
| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|------------|---------------|------------------------|---------------------|-------------|------------------|--------------------------|
| Coleoptera | Phalacridae | <i>Olibrus</i> | <i>evanescens</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Ptinidae | <i>Damarus</i> | <i>magnus</i> | | a. Sand Sea | iv. Generalist |
| Coleoptera | Ptinidae | <i>Stethomezium</i> | <i>notiale</i> | | a. Sand Sea | iv. Generalist |
| Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>ganabi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>gobabensis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>psammophilus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Aphodius</i> | <i>wardi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Hammondantus</i> | <i>psammophilus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Namakwanus</i> | <i>irishi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Psammodaphodius</i> | <i>kochi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>denticollis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>fitzimonsi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rodriguesi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rotundigena</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>bennigseni</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>rubripennis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Scarabaeidae | <i>Scarabaeus</i> | <i>vansoni</i> | | a. Sand Sea | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Sparrmannia</i> | <i>boschimana</i> | | a. Sand Sea | ii. Arid area specialist |
| Coleoptera | Scarabaeidae | <i>Sparrmannia</i> | <i>similis</i> | | a. Sand Sea | ii. Arid area specialist |
| Coleoptera | Staphylinidae | <i>Bledius</i> | <i>brincki</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Staphylinidae | <i>Philonthus</i> | <i>nigrinus</i> | | c. Widespread | iv. Generalist |
| Coleoptera | Tenebrionidae | <i>Archinamibia</i> | <i>peezi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Argentocrinis</i> | <i>lossowi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Arthrochora</i> | <i>arenicola</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>debilis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>insularis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Brinckia</i> | <i>vaga</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>delabati</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>kochi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>noctivagus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>pauliani</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>peezi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>penrithae</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>ephialtes</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Caenocrypticus</i> | <i>phaleroides</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Calognathus</i> | <i>chevrolati</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Cauricara</i> | <i>brunnipes</i> | | a. Sand Sea | i. Dune Sea specialist |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|------------|---------------|----------------------|----------------------------------|-------------|------------------|--------------------------|
| Coleoptera | Tenebrionidae | <i>Fossilochile</i> | <i>rufa</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>sp. nov. (undescribed)</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>discoidalis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>kahani</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Lepidochora</i> | <i>porti</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Leubbertia</i> | <i>plana</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Namibomodes</i> | <i>maculicollis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Namibomodes</i> | <i>zarcoi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>laeviceps</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>rugatipennis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>unguicularis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>boschimana</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Onymacris</i> | <i>plana</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Oppenheimeria</i> | <i>bombophthalma</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Oxura</i> | <i>rufotibiata planipennata</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>albonotatus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Pachynotelus</i> | <i>kuehnelti</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Psammogaster</i> | <i>malani</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Pterostichula</i> | <i>aridipaludis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Pterostichula</i> | <i>fontanalis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Stenocara</i> | <i>fitzsimonsi</i> | | b. Inselbergs | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Sulcipectus</i> | <i>levis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Trachynotidus</i> | <i>rufozonatus</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Uniungulum</i> | <i>hoeschi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Vansonium</i> | <i>bushmanicum namibense</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>caecus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>damarensis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>eremita</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fairmairei fairmairei</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fairmairei luederitzensis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hamiltonuli</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hereroensis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>moralesi</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>sexfrenorum</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>gracilipes</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>orbicularis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>prona</i> | | a. Sand Sea | i. Dune Sea specialist |

| Order | Family | Genus | Species | Common Name | NSS Biogeography | NSS Ecological range |
|-------------|-----------------|-----------------------|--------------------------|-------------|------------------|--------------------------|
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>testudinaria</i> | | a. Sand Sea | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>cariniceps</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>fortunata</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>giessi</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>hypallaga</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>meridionalis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>mniszечи</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>omnigena</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>parentalis</i> | | c. Widespread | ii. Arid area specialist |
| Coleoptera | Tenebrionidae | <i>Zophosis</i> | <i>prevastitatis</i> | | c. Widespread | ii. Arid area specialist |
| Diptera | Asilidae | <i>Laphystia</i> | <i>kochi</i> | | c. Widespread | ii. Arid area specialist |
| Diptera | Calliphoridae | <i>Isomyia</i> | <i>deserti</i> | | c. Widespread | ii. Arid area specialist |
| Lepidoptera | Noctuidae | <i>Cyligramma</i> | <i>latona</i> | | c. Widespread | iv. Generalist |
| Lepidoptera | Noctuidae | <i>Grammodes</i> | <i>stolida</i> | | c. Widespread | iv. Generalist |
| Lepidoptera | Sphingidae | <i>Celerio</i> | <i>lineata livornica</i> | | c. Widespread | iv. Generalist |
| Hymenoptera | Formicidae | <i>Camponotus</i> | <i>detritus</i> | | a. Sand Sea | i. Dune Sea specialist |
| Hymenoptera | Formicidae | <i>Camponotus</i> | <i>maculatus</i> | | c. Widespread | iv. Generalist |
| Hymenoptera | Formicidae | <i>Camponotus</i> | <i>mystaceus</i> | | c. Widespread | iv. Generalist |
| Hymenoptera | Mutillidae | <i>Strangulotilla</i> | <i>namibiana</i> | | c. Widespread | iv. Generalist |
| Hymenoptera | Bradynobaenidae | <i>Apterogyna</i> | <i>schultzei</i> | | a. Sand Sea | i. Dune Sea specialist |
| Hymenoptera | Colletidae | <i>Colletes</i> | <i>schultzei</i> | | a. Sand Sea | i. Dune Sea specialist |
| Hymenoptera | Sphecidae | <i>Gastrosericus</i> | <i>mirabilis</i> | | a. Sand Sea | i. Dune Sea specialist |
| Hymenoptera | Sphecidae | <i>Miscophus</i> | <i>deserticolus</i> | | a. Sand Sea | i. Dune Sea specialist |

Annex 19

Protective Designation



No. 118

1 August 1979

WITHDRAWAL OF DECLARATION OF GAME
PARKS: NAMIB DESERT PARK AND NAU-
KLUFT MOUNTAIN ZEBRA PARK; AND
DECLARATION OF GAME PARK: NAMIB-
NAUKLUFT PARK

The Executive Committee has —

(a) under and by virtue of the provisions of section 16 of the Nature Conservation Ordinance, 1975 (Ordinance 4 of 1975) withdrawn the declaration of game parks of the areas known as the Namib Desert Park and the Naukluft Mountain Zebra Park and described in paragraphs 7 and 8 of the Schedule to Proclamation 19 of 1968, amended the said Proclamation accordingly by deleting paragraphs 7 and 8; and

(b) under and by virtue of the provisions of section 14 of the Nature Conservation Ordinance, 1975 (Ordinance 4 of 1975) declared the area described in the Schedule hereto as a game park.

SCHEDULE

NAMIB-NAUKLUFT PARK

The area defined as follows:—

Beginning at the point where the eastern boundary of the Territory of Walvis Bay intersects the left bank of

No. 118

1 Augustus 1979

INTREKKING VAN VERKLARING TOT WILD-
TUINE: NAMIB-WOESTYNPARK EN
BERGSEBRAPARK NAUKLUFT: EN VER-
KLARING TOT WILDTUIN: NAMIB-
NAUKLUFT-PARK

Die Uitvoerende Komitee het —

(a) kragtens en ingevolge die bepalings van artikel 16 van die Ordonnansie op Natuurbewaring, 1975 (Ordonnansie 4 van 1975) die verklaring tot wildtuine van die gebiede wat bekend staan as die Namibwoestynpark en die Bergsebrapark Naukluft en omskryf word in paragrawe 7 en 8 van die Bylae by Proklamasie 19 van 1968, ingetrek, en genoemde proklamasie dienooreenkomstig gewysig deur genoemde paragrawe 7 en 8 te skrap; en

(b) kragtens en ingevolge die bepalings van artikel 14 van die Ordonnansie op Natuurbewaring, 1975 (Ordonnansie 4 van 1975) die gebied in die Bylae hierby omskryf tot wildduin verklaar.

BYLAE

NAMIB-NAUKLUFT-PARK

Die gebied soos volg omgrens:—

Begin by die punt waar die oostelike grens van die Gebied Walvisbaai die linkerouer van die Swakop-

the Swakop River; thence eastwards along the left bank of the Swakop River to the confluence of the Swakop and Khan Rivers; thence north-eastwards along the left bank of the Khan River to a point due north-west of the southernmost corner beacon of the farm Marmor Pforte 37; thence in a straight line to the southernmost corner beacon of Marmor Pforte 37; thence north-eastwards along the boundaries of the following properties so as to exclude them from this area, viz. Marmor Pforte 37, Farm No. 116, Modderfontein 131, Jakkalswater 13, Vredelus 112, Portion 1 of Vredelus 112 and Horebis Nord 61 to the point where the southern boundary of Horebis Nord 61 intersects the right bank of the Swakop River; thence in a straight line across the Swakop River to the point where the southern boundary of Horebis Süd 103 intersects the left bank of the Swakop River; thence south-eastwards along the boundaries of the following properties so as to exclude them from this area, viz. Horebis Süd 108, Rooikuseb 109, Wilsonfontein 110, Portion 1 (Donkerhuk West) of Donkerhuk 91, Onanis 121, Portion 1 (Harmonie) of Onanis 121, Onanis 121, Portion 3 (Haukubib) of Emeritus 123, Portion 2 (Hoogland) of Ruimte 125, Portion 1 (Rembrand-Pan) of Ruimte 125, Ruimte 125, Kraaipoot 124 and Schlesien 126, to the point where the south-western boundary of Schlesien 126 intersects the right bank of the Kuiseb River; thence in a straight line across the Kuiseb River to the point where the western boundary of Schlesien 483 intersects the left bank of the Kuiseb River; thence southwards along the boundaries of the following properties so as to exclude them from this area, viz. Schlesien 483, Portion 1 of Rostock 393, Portion 1 (Oase) of Greylingshof 107, Greylingshof 107, Rostock South 414, Portion 1 (Chasé) of Kromhoek 416, Portion 1 (Tinkie) of Farm No. 399, Samara 400, Reingeluk 791, Portion 1 (Vito) of Farm No. 401, Morewag 524, Toevlug 117, Kasupi 135, Escourt 402, Dieprivier 403, Weltevrede 404, Portion 1 (Dieprivier Oos) of Dieprivier 403, Abendruhe 411, Abbabis 3, Portion 1 of Consolidated Remhoogte 227, Consolidated Remhoogte 227, Blässkranz 7, Büllsport 172, Berghoek 506, Neu Onis 10, Onis 8, Portion 1 (Neuras Nord) of Neuras 6, Urikos 4, Urikos West 123, Portion 1 (Purperwinde) of Goede Hoop 135, Portion 2 of Goede Hoop 135, Goede Hoop 135, Oorwinning 134, Sesriem 137, Eensaam 157, Farm No. 103, Farm No. 101, Geluk 138 and Vreemdelingspoort 141 to southernmost corner beacon of Vreemdelingspoort 141; thence westwards to the point where the lines drawn due west from the southernmost corner beacon of Vreemdelingspoort 141 and due south from the waterhole Natab, north of the Kuiseb Rivier, intersect; thence due north to the left bank of the Kuiseb River; thence westwards in a straight line to a point on the coastline of the Atlantic Ocean approximately 22 kilometres south of the waterhole Anichab at Sandwich Harbour where the southern end of the Salt Pan and the northern end of the "Black Wall" or "Lange Wand", being a ridge of sand dunes running along the coast, meet; thence further westwards along the mentioned straight

rivier kruis; daarvandaan ooswaarts langs die linker-oewer van die Swakoprivier tot by die samevloeiing van die Swakop- en Khanrivier; daarvandaan noordooswaarts langs die linkeroewer van die Khanrivier tot by 'n punt reg noordwes vanaf die suidelikste hoekbaken van die plaas Marmor Pforte 37; daarvandaan in 'n reguit lyn tot by die suidelikste hoekbaken van Marmor Pforte 37; daarvandaan noordooswaarts langs die grense van die volgende eiendomme om hulle uit hierdie gebied uit te sluit naamlik Marmor Pforte 37, Plaas Nr. 116, Modderfontein 131, Jakkalswater 13, Vredelus 112, Gedeelte 1 van Vredelus 112 en Horebis Nord 61 tot by die punt waar die suidelike grens van Horebis Nord 61 die regteroewer van die Swakoprivier kruis; daarvandaan in 'n reguit lyn oor die Swakoprivier tot by die punt waar die suidelike grens van Horebis Süd 108 die linkeroewer van die Swakoprivier kruis; daarvandaan suidooswaarts langs die grense van die volgende eiendomme om hulle uit hierdie gebied uit te sluit, naamlik Horebis Süd 108, Rooikuseb 109, Wilsonfontein 110, Gedeelte 1 (Donkerhuk West) van Donkerhuk 91, Onanis 121, Gedeelte 1 (Harmonie) van Onanis 121, Onanis 121, Gedeelte 3 (Haukubib) van Emeritus 123, Gedeelte 2 (Hoogland) van Ruimte 125, Gedeelte 1 (Rembrand-Pan) van Ruimte 125, Ruimte 125, Kraaipoot 124 en Schlesien 126 tot by die punt waar die suidwestelike grens van Schlesien 126 die regteroewer van die Kuisebrivier kruis; daarvandaan in 'n reguit lyn oor die Kuisebrivier tot by die punt waar die westelike grens van Schlesien 483 die linkeroewer van die Kuisebrivier kruis; daarvandaan suidwaarts langs die grense van die volgende eiendomme om hulle uit hierdie gebied uit te sluit, naamlik Schlesien 483, Gedeelte 1 van Rostock 393, Gedeelte 1 (Oase) van Greylingshof 107, Greylingshof 107, Rostock South 414, Gedeelte 1 (Chasé) van Kromhoek 416, Gedeelte 1 (Tinkie) van Plaas Nr. 399, Samara 400, Reingeluk 791, Gedeelte 1 (Vito) van Plaas Nr. 401, Morewag 524, Toevlug 117, Kasupi 135, Escourt 402, Dieprivier 403, Weltevrede 404, Gedeelte 1 (Dieprivier Oos) van Dieprivier 403, Abendruhe 411, Abbabis 3, Gedeelte 1 van Gekonsolideerde Remhoogte 227, Gekonsolideerde Remhoogte 227, Blässkranz 7, Büllsport 172, Berghoek 506, Neu Onis 10, Onis 8, Gedeelte 1 (Neuras Nord) van Neuras 6, Urikos 4, Urikos West 123, Gedeelte 1 (Purperwinde) van Goede Hoop 135, Gedeelte 2 van Goede Hoop 135, Goede Hoop 135, Oorwinning 134, Sesriem 137, Eensaam 157, Plaas Nr. 103, Plaas Nr. 101, Geluk 138 en Vreemdelingspoort 141 tot by die suidelikste hoekbaken van Vreemdelingspoort 141; daarvandaan weswaarts tot by die punt waar die lyne getrek reg wes vanaf die suidelikste hoekbaken van Vreemdelingspoort 141 en reg suid vanaf die watergat Natab, noord van die Kuisebrivier, mekaar kruis; daarvandaan reg noord tot by die linkeroewer van die Kuisebrivier; daarvandaan weswaarts in 'n reguit lyn tot by 'n punt aan die kuslyn van die Atlantiese Oseaan ongeveer 22 kilometer suid van die watergat Anichab by Sandwich Harbour waar die suidelike punt van die Soutpan en die noordelike punt van die "Black Wall" of "Lange Wand", 'n rif sandduine wat langs die kus loop.

line to a point in the sea 1,609 kilometres measured from the low-water mark of the Atlantic Ocean; thence northwards along a line 1,609 kilometres from and parallel to the low-water mark of the Atlantic Ocean to the point where it intersects the extension of the southern boundary of the Territory of Walvis Bay; thence eastwards along the mentioned extension and the boundaries of the Territory of Walvis Bay so as to exclude it from this area to the point where the eastern boundary of the Territory of Walvis Bay intersects the left bank of the Swakop River, the point of beginning, but excluding the following properties viz. Three Sisters 96, Nadine 101, Weitzenberg 26 and all its portions, Goanikontes 28 and all its portions, Haigamkab 29 and all its portions, Hildenhof 58, Arcadia 80, Sunnyside 81, Nabas 141, Riet 30, Dieptal 25 and all its portions, Gaub 101 and Salem 102.

bymekaarkom; daarvandaan verder weswaarts die see in met genoemde reguit lyn tot by 'n punt 1,609 kilometer vanaf die laagwatermerk van die Atlantiese Oseaan; daarvandaan noordwaarts met 'n lyn 1,609 kilometer van en parallel met die laagwatermerk van die Atlantiese Oseaan tot by die punt waar dit die verlenging van die suidelike grens van die Gebied Walvisbaai ontmoet; daarvandaan ooswaarts langs genoemde verlenging en die grense van die Gebied Walvisbaai om dit uit hierdie gebied uit te sluit tot by die punt waar die oostelike grens van die Gebied Walvisbaai die linkeroewer van die Swakoprivier kruis, die beginpunt, maar uitsluitende die volgende eiendomme, naamlik Three Sisters 96, Nadine 101, Weitzenberg 26 en al sy gedeeltes, Goanikontes 28 en al sy gedeeltes, Haigamkab 29 en al sy gedeeltes, Hildenhof 58, Arcadia 80, Sunnyside 81, Nabas 141, Riet 30, Dieptal 25 en al sy gedeeltes, Gaub 101 en Salem 102.

No. 119

1 August 1979

NOTIFICATION OF A REQUEST THAT
DISTRICT ROAD 204 BE DEVIATED: DISTRICT
OF KARASBURG

No. 119

1 Augustus 1979

BEKENDMAKING VAN 'N VERSOEK DAT
DISTRICKSPAD 204 VERLÊ WORD: DISTRIK
KARASBURG

Goewermentskennisgewings

Government Notices

DEPARTEMENT VAN LANDBOU EN
NATUURBEWARING

No. 180

1986

WYSIGING VAN DIE GRENSE VAN DIE
NAMIB-NAUKLUFT-PARK

Ingevolge artikel 15 van die Ordonnansie op Natuurbewaring, 1975 (Ordonnansie 4 van 1975), word hierby bekend gemaak dat die Kabinet die grense van die Namib-Naukluft-Park, wat tot wildduin verklaar is by Goewermentskennisgewing 118 van 1979, gewysig het deur die gebied in die Bylae omskryf daarby in te sluit.

BYLAE

Die gebied soos volg omgrens:

Begin by die punt op die hoogwatermerk aan die kuslyn van die Atlantiese Oseaan ongeveer 22 km suid van die watergat Anichab by Sandwich Harbour, waar die denkbeeldige lyn getrek reg wes vanaf die punt waar die suidelike punt van die Soutpan en die noordelike punt van die "Black Wall" of "Lange Wand", 'n rif sandduine wat langs die kus loop, bymekaarkom, die hoogwatermerk kruis; daarvandaan langs die denkbeeldige lyn getrek deur die bedoelde punt waar die suidelike punt van die Soutpan en die noordelike punt van die genoemde "Black Wall" of "Lange Wand", bymekaarkom, ooswaarts tot by die punt op die suidelike oewer van die Kuisebrivier waar sodanige denkbeeldige lyn en die denkbeeldige lyn getrek reg suid vanaf die watergat Natab, noord van die Kuisebrivier, kruis; daarvandaan langs laasgenoemde denkbeeldige lyn suidwaarts tot by die punt waar sodanige lyn die denkbeeldige lyn getrek reg wes vanaf die suidelikste hoekbaken van die plaas Vreemdelingspoort 141 kruis; daarvandaan langs laasgenoemde denkbeeldige lyn ooswaarts tot by die suidelikste hoekbaken van die plaas Vreemdelingspoort 141; daarvandaan suidwaarts langs die grense van die volgende eiendomme om hulle uit hierdie gebied uit te sluit, naamlik Kwessiegat 173, Jagkop 156, Wol-

DEPARTMENT OF AGRICULTURE AND
NATURE CONSERVATION

No. 180

1986

AMENDMENT OF THE BOUNDARIES
OF THE NAMIB-NAUKLUFT-PARK

In terms of section 15 of the Nature Conservation Ordinance, 1975 (Ordinance 4 of 1975), it is hereby made known that the Cabinet has amended the boundaries of the Namib-Naukluft-Park, which was declared to be a game park by Government Notice 118 of 1979, by including the area described in the Schedule.

SCHEDULE

The area defined as follows:

Beginning at the point on the high-water mark on the coastline of the Atlantic Ocean, approximately 22 kilometres south of the waterhole Anichab at Sandwich Harbour, where the imaginary line drawn due west from the point where the southern end of the Salt Pan and the northern end of the "Black Wall" or "Lange Wand", being a ridge of sand dunes running along the coast, meet, intersects the highwater mark; thence along the imaginary line drawn through the point referred to where the southern end of the Salt Pan and the northern end of the said "Black Wall" or "Lange Wand" meet, eastwards to the point on the southern bank of the Kuiseb River where such imaginary line and the imaginary line drawn due south from the waterhole Natab, north of the Kuiseb River, intersect; thence along the last-mentioned imaginary line southwards to the point where such line intersects the imaginary line drawn due west from the southernmost corner beacon of the farm Vreemdelingspoort 141; thence along the last-mentioned imaginary line eastwards to the southernmost corner beacon of the farm Vreemdelingspoort 141; thence southwards along the boundaries of the following properties so as to exclude them from this area, viz Kwessiegat 173, Jagkop 156, Wolwedans 144,

wedans 144, Gorrasis 99, Springbokvlakte 166, Kumbis 55, Kanaän 104, Kamaland 129, Plaas No. 97, Plaas No. 123, Numis 89, Gunsbewys 139, Plaas No. 108, Alabama 140, Plaas No. 137, Plaas No. 136, Eureka 49, Plaas No. 112 en Ausweiche 46 tot by die punt waar die noordelike grens van die padreserwe van hoofpad 4, seksie 2, tussen Aus en Lüderitz, die noordwestelike grens van laasgenoemde plaas kruis; daarvandaan weswaarts langs die noordelike grens van die genoemde padreserwe tot by die punt waar daardie padreserwegrens die denkbeeldige lyn getrek reg suid vanaf die trigonometriese baken Klammerberg 12 op die Kowisberge, kruis; daarvandaan noordwaarts langs laasgenoemde lyn deur die genoemde baken Klammerberg 12 tot by die punt waar genoemde lyn die ses-en-twintigste breedtegraad kruis; daarvandaan langs genoemde breedtegraad die hoogwatermerk van die Atlantiese Oseaan kruis; daarvandaan algemeen noordwaarts langs genoemde hoogwatermerk tot by die punt op die hoogwatermerk aan die kuslyn van die Atlantiese Oseaan ongeveer 22 kilometer suid van die watergat Anichab by Sandwich Harbour waar die denkbeeldige lyn getrek reg wes vanaf die punt waar die suidelike punt van die Soutpan en die noordelike punt van die "Black Wall" of "Lange Wand", bymekaarkom, die hoogwatermerk kruis, die beginpunt.

Gorrasis 99, Springbokvlakte 166, Kumbis 55, Kanaän 104, Kamaland 129, Farm No. 97, Farm No. 123, Numis 89, Gunsbewys 139, Farm No. 108, Alabama 140, Farm No. 137, Farm No. 136, Eureka 49, Farm No. 112 and Ausweiche 46, to the point where the northern boundary of the road reserve of trunk road 4, section 2, between Aus and Lüderitz, intersects the north-western boundary of the last-mentioned farm; thence westwards along the northern boundary of the said road reserve to the point where the boundary of that road reserve intersects the imaginary line drawn due south from the trigonometrical beacon Klammerberg 12 on the Kowis mountains; thence northwards along the last-mentioned line through the beacon Klammerberg 12 to the point where the said line intersects the twenty-sixth degree of latitude; thence along the said degree of latitude westwards to the point where the said degree of latitude intersects the high-water mark of the Atlantic Ocean; thence generally northwards along the said high-water mark to the point on the high-water mark on the coastline of the Atlantic Ocean, approximately 22 kilometres south of the waterhole Anichab at Sandwich Harbour, where the imaginary line drawn due west from the point where the southern end of the Salt Pan and the northern end of the "Black Wall" or "Lange Wand", meet, intersects the high-water mark, the point of beginning.

 DEPARTEMENT VAN EKONOMIESE SAKE

No. 181

1986

 HANDELSWAREMERKE-WET, 1941
 (WET 17 VAN 1941): VOORGENOME
 VERBOD OP DIE GEBRUIK VAN
 'N SEKERE EMBLEEM

Ingevolge artikel 13 van die Handelwaremerke-wet, 1941 (Wet 17 van 1941), maak die Kabinet hierby bekend dat hy deur die eienaar van Eagle Motors (Hentiesbaai) versoek is om kragtens artikel 15(1) van genoemde Wet die gebruik, deur enigiemand anders as genoemde eienaar, van onderstaande embleem, in verband met die motorhandel, -besigheid, -beroep of -bedryf, te verbied:

 DEPARTMENT OF ECONOMIC AFFAIRS

No. 181

1986

 MERCHANDISE MARKS ACT, 1941
 (ACT 17 OF 1941): PROPOSED
 PROHIBITION OF THE USE OF A
 CERTAIN EMBLEM

In terms of section 13 of the Merchandise Marks Act, 1941 (Act 17 of 1941), the Cabinet hereby gives notice that it has been requested by the owner of Eagle Motors (Henties Bay) to prohibit, under section 15(1) of the said Act, the use of any person other than the said owner, of the emblem shown below, in connection with the motor trade, business, profession or occupation:

CHAPTER II
REGULATIONS RELATING TO GAME PARKS
GENERAL REGULATIONS APPLICABLE TO ALL GAME PARKS

9. Without the written approval of the Executive Committee no person except an officer of the Nature Conservation and Tourism Division of the Administration, acting directly in the execution of his duties or in the exercising of his powers, shall in a game park -
- (a) drive a vehicle at any place other than a road which is indicated by a road sign;
 - (b) drive a vehicle on a road in respect of which, in any manner whatsoever, it is indicated that it is closed;
 - (c) drive a vehicle faster than 60 kilometres per hour on any road outside any camping site or rest camp: (., Provided that the provisions of this paragraph shall not be applicable to any proclaimed thoroughfare in the Namib Desert Park or the Skeleton Coast Park;
 - (d) drive a vehicle faster than 20 kilometres per hour within the terrain of any officially designated camping site or rest camp;
 - (e) drive or park a vehicle in such a way that it causes inconvenience to any other person;
 - (f) throw away a burning or smouldering object or put or leave it at a place where it may possibly ignite another object or cause such object to be ignited;
 - (g) roll or throw a stone from any mountain or height or allow it to be thus rolled or thrown;
 - (h) relieve himself anywhere except in the sanitary conveniences provided therefor;
 - (i) make any fire at any place other than at the officially designated fire-places provided for that purpose;
 - (j) make an exceptionally large fire at the officially designated fire-places;
 - (k) throw away, put or leave refuse or rubbish at any place other than in the containers provided therefor;
 - (l) contaminate drinking water in any manner whatsoever;
 - (m) tamper with any water installation;
 - (n) wash clothes or any other object in the water of any lagoon, dam, river or any other water-course;

- (o) use soap or any other washing agent for any purpose whatsoever in the water of a lagoon, dam, river or any other water-course;
 - (p) throw stones, rubbish, bottles, tins, refuse, oil or any other offensive or dangerous object material or liquid into the water of a lagoon, dam, river or other water-course or allow it to land therein;
 - (q) present public entertainment or collect money from the public;
 - (r) trade or distribute any pamphlet, book, handbill or any other written or printed document;
 - (s) organise, hold or address any meeting or assembly;
 - (t) at any time make in the opinion of the officer in charge, unnecessary or undue noise or cause or allow such noise to be made, which may disturb any other person or the game;
 - (u) do or allow anything which may constitute a nuisance or hindrance to the public;
 - (v) take an unsealed fire-arm or air gun in; and
 - (w) draw a caravan at places or on roads where it is prohibited as indicated by notice boards.
10. No person shall, without the permission of the Executive Committee, subject to such conditions as it may deem fit -
- (a) take photos or films for commercial purposes in a game park;
 - (b) make use of blinds or hides in a game park.
11. Any person entering a game park shall, if it is practically possible, report immediately to the nearest officer attached to the management of that game park.
12. Any person who enters a game park shall comply with the Conditions on which leave to enter that game park and reside therein was granted to him and shall obey any legal order given to him by an officer.
13. No person aged 16 years or younger shall be admitted to a game park, unless he is accompanied by an adult who shall be held responsible for him/her.
14. (1) Any person who makes use of or occupies Administration property in a game park shall, to the satisfaction of the officer under whose control such property is, take reasonable and proper care when using or occupying such property and shall leave or return it in the same condition in which he received it.
- (2) If any such property is damaged it shall be reported immediately to the officer under whose control it is, and the compensation determined by him shall be paid immediately.

15. No person shall remove anything whatsoever from any accommodation referred to in regulation 14.
16. Tickets or receipts issued as proof of payment for accommodation or camping sites, any service rendered or any article which has been supplied by an officer in a game park shall be retained by the person to whom it was issued until he leaves the game park and shall be produced to an officer on request.
17. No person shall occupy a camping site or accommodation unless such camping site or accommodation has been allocated to him by an officer.
18. Accommodation and camping sites in game parks shall be vacated before 10h00 on the day following the last day for which it was reserved.
19. No person shall give any tip or intoxicating liquor to a camp servant.
20. No person shall leave a defect vehicle or the wreck of a vehicle in a game park for a period of longer than 7 days after the vehicle became defect or was involved in an accident: Provided that the Administration may remove such defect vehicle or wreck after the expiration of such period and recover the cost involved from the owner thereof.
21. No person shall enter that part of a game park where the residence of an officer or employee of the Administration is situated or camp or stay there without the permission of the officer in charge of the nearest rest camp or another officer authorised by him to grant such permission.
22. (1) An officer in a game park who bears the rank of nature conservator or tourist officer or higher rank may order any person who, in his opinion, commits or has committed an offence in that game park or has, in the opinion of such officer, given offence to another person, to leave that game park and such person shall leave that game park immediately thereafter.
(2) Any person who has been ordered in terms of subregulation (1) to leave a game park, may not enter a game park within a period of six months thereafter except under and by virtue of the special authorisation of the Executive Committee which shall only be granted after consideration of a complete report on the order which was given in terms of subregulation (1) and the incident which led to it.
23. (1) Any person entering a game park does so wholly at his own risk.
(2) The Administration shall not be liable for any damage suffered on account of injuries to persons, whether fatal or not, which occurred in any manner whatsoever in a game park.
(3) The Administration shall not be liable for any loss of or damage to property suffered in a game park or caused on account of fire, theft, the neglect or design of any person or through the action of any animal in a game park.

B. NAMIB DESERT PARK

28. Without the written permission of the Executive Committee, no person except an officer acting directly in the execution of his duties or the exercise of his powers shall -
- (a) drive a vehicle between 21h00 and 05h00 on any road in the Namib Desert Park which is not a proclaimed thoroughfare;
 - (b)
 - (i) visit Sandvis or be or stay there at any time between 20h00 and 05h00;
 - (ii) visit Sandvis overland or in a vehicle which is not four-wheel-driven, or which is not specially equipped for travel in heavy sand or with a carrying capacity of more than 1400 kilogram or go further south with a vehicle than the point indicated by means of notice boards;
 - (c) gather Firewood in the Namib Desert Park;
 - (d) throw away or place or get rid of fish, any part of a fish, fish bait, refuse or rubbish at any other place or by any other means than by placing it in the holders or refuse bins provided therefor unless by putting it on a vehicle and removing it from the game park;
 - (e) break a bottle at any place in the Namib Desert Park or cause or allow it to break and leave the pieces there;
 - (f) place, leave or throw out books or lines with bait at any place in the Namib Desert Park for any purpose other than that of angling;
 - (g) from the beach at Sandvis -
 - (i) catch fish with any kind of net or for commercial purposes;
 - (ii) catch Fish except by means of a fishing rod and reel;
 - (iii) use more than one fishing rod per angler or more than two hooks per line;
 - (iv) angle in the lagoon;
 - (v) catch and keep, give away, present, sell, display for sale or be in possession of any fish of the kinds which are mentioned hereunder, which is smaller than the size mentioned for that kind of fish and if fish smaller than the size referred to is caught, it shall be placed back into the sea without delay and without causing any further injuries:

Dassie, Black tail or Kolstert (*Diplodus sargus*) : 15 cm

Shad or Chad (*Pomatomus saltator*) : 30 cm Galjoen (*Coracinus capensis*) :

20 cm Geelbek or Cape Salmon, (*Atractoscion aequidens*) : 40 cm

Hottentot (*Pachymetopon blochii*) : 22 cm Kabeljou, Cob or Kob or Salmon-Bass (*Argirosinus hololepidotus*) : 40 cm Mullett (*Mugil spp.*) : 15 cm
Snoek (*Thyrsites atun*) : 60 cm
Sole (Super) (*Austroglossus micro lepis*) : 30 cm
Stockfish (*Merluccius capensis*) : 50 cm
White Steenbras (*Lithognathus aureti*) : 30 cm
White Stumpnose (*Rhabdosargus spp.*) : 20 cm
Garrick (*Lichia amia*) : 38 cm

- (h) (i) collect or remove any mussels or "polychaete" worms or blood worms from Sandvis;
- (ii) use a boat or raft on the lagoon at Sandvis.
29. No person except an officer acting directly in the execution of his duties or the exercise of his powers shall visit the research station at Gobabeb without the written permission of the Executive Committee.
30. A document indicating that a person has the permission referred to in section 18(1) of the Ordinance to visit Sandvis shall at all times be in his possession while he visits Sandvis and shall, on request, be shown to an officer.

C. ETOSHA NATIONAL PARK

31. (1) The portion of the Etosha National Park lying to the east of an imaginary north-south line running through the centre of the water hole known as Sringbokfontein shall, subject to the provisions of these regulations, be open to visitors throughout the year.
- (2) The tourist season during which the remaining portion of the Etosha National Park may be visited shall begin on the second Friday of March and shall end on the 31st day of October of each year: Provided that the Cabinet may, if it is in its opinion expedient, allow any person able to visit the portion of the Etosha National Park contemplated in this subregulation during the closed season, subject to the conditions he may impose.
32. Without the written permission of the Executive Committee no person except an officer acting directly in the execution of his duties or the exercise of his powers, shall -
- (a) stay overnight at any other place in the game park except a rest camp: Provided that if a person must on account of unavoidable circumstances stay overnight at any place in the game park other than a rest camp, it shall be reported at the first possible occasion to an officer;
- (b) enter or travel in the Etosha National Park during the period between sunset and sunrise,

NATURE CONSERVATION ORDINANCE, 1975

ORDINANCE

To consolidate and amend the laws relating to the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.

BE IT ORDAINED by the Legislative Assembly for the Territory of South West Africa, with the consent of the State President, in so far as such consent is necessary, previously obtained and communicated to the Assembly by message from the Administrator, as follows:-

ARRANGEMENT OF SECTIONS.

Section.

PRELIMINARY.

1. Definitions.
2. Nature Conservation and Tourism Division.

CHAPTER I.

NATURE CONSERVATION BOARD.

3. Continued existence of Nature Conservation Board.
4. Constitution of board.
5. Qualifications and disqualifications of members.
6. Period of office.
7. Vacation of office.
8. Termination of membership.
9. Filling of vacancies.
10. Meetings of the board.
11. Functions, powers and duties of the board.
12. Remuneration, allowances and fees.

CHAPTER II.

GAME PARKS AND NATURE RESERVES.

13. Etosha National Park.
14. Establishment and objects of game parks and nature reserves.
15. Amendment of boundaries of game parks and nature reserves.
16. Withdrawal of declaration as a game park or nature reserve.
17. Powers of Executive Committee in relation to game parks and nature reserves.
18. Restriction of right to enter game parks and nature reserves and prohibition of certain acts therein.
19. Purposes for which permission to enter game parks and nature reserves may be granted.
20. Prohibition of hunting in game parks and nature reserves.
21. Killing of animals trespassing in game parks or nature reserves.
22. Establishment of private game parks and private nature reserves.
23. Prohibition of hunting in private game parks.

24. Prohibition of picking of indigenous plants in private nature reserves.

CHAPTER III.

WILD ANIMALS.

25. Powers of Executive Committee in relation to hunting seasons and classification of game.

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PRELIMINARY.

Definitions.

1. In this Ordinance, unless the context otherwise indicates -

(i) "**adequate fence**" in relation to a farm means -

(a) a boundary fence which along the whole length thereof is at least 1,22 metres high and has been erected -

(i) with training post planted in at most 500 metres from each other

(ii) with middle post of iron or hardwood which -

(aa) in the case of iron post, have a mass of at least four kilograms each; or

(bb) in the case of hardwood posts, are at least 100 millimetres in diameter at the thin end; and

(cc) are planted in to a depth of at least 600 millimetres and at most 20 metres from the nearest straining post and from each other;

(iii) with iron droppers, or droppers of hardwood which are at least 35 millimetres in diameter at the thin end;

(iv) with at least five galvanised steel wire strands or, three galvanised steel wire strands and jackal-proof fencing; and

(v) with gates which are at least of the same height as the boundary fence and are of such a nature that they do not in any manner impair the efficacy of the boundary fence, but does not include such a boundary fence in which a game-trap has been constructed or of which any portion has been removed, damaged, cut, flattened or raised or is in such a bad state of repair that the efficacy of such boundary fence is impaired;

(b) in the case of devising line between two farms along which, in the opinion of the Cabinet, it is impracticable or inexpedient to erect a fence, any indication of the boundary line between the said farms in respect of which the Director has, after agreement by the owners of the farms concerned, with the approval of the Cabinet certified that it indicates the boundary lines in all respects; (Act27/'86/1(a)

(ii) "**big game**", in relation to huntable game, means the following species of such game, namely buffalo, eland, onyx and kudu; and (A6/88/1 (b)

(iii) "**angle**" in relation to fish means the use of a line and fish - hook, whether a rod is used or not; and includes the use of a landing or keepnet to land or keep fish caught by means of a line and fish-hook; (xiv)

(iv) "**artificial lure or spoon**", for the purposes of Chapter V, means any device which by its simulation of life or by its colour or appearance is designed to delude or entice a fish into seizing such device; (xxiii)

(v) "**board**" means the Nature Conservation Board referred to in section 3; (xxxiv)

- (vi) “**catch**” and capture include the use of any means or method to catch, capture, injure or immobilise fish, game or any other wild animal; (xxiii)
- (vii) “**certificate of competency**” means a certificate of competency issued in terms of section 57(3); (vi)
- (viii) “**children**” means the natural children, step-children and lawfully adopted children of a person, and includes the husband or wife of any such child; (xxii)
- (ix) “**communal land**” means land which, in terms the constitution of the representative authority of a population group, or any other law, is communal land of population group concerned, but does not include any surveyed piece of such land if the ownership of such piece of land has at any time been transferred to any person by or under the authority of the executive authority of such representative authority, or under any ordinance of that representative authority or any other law administered by or under the control of that executive authority, by means of the registration of a title deed in any deeds office, whether the period which, in terms of the constitution or an ordinance of that representative authority, is to elapse after the date of such registration before such piece of land ceases to be communal land, has transpired or not;(A27/86/1(c)
- (x) “**coyote getter**” means the device known as “coyote getter” or a similar device; (xiii)
- (xi) “**Director**” means the Director of Nature Conservation and Tourism referred to in section 2; (vii) (A27/861(d)
- (xii) “**Directorate**” means the directorate of Nature Conservation and Recreation Resorts referred to in section 2; (A27/86/1(e)
- (xiii) “**Executive Committee**” means the Administrator - in - Executive Committee referred to in section 6 of the South West Africa Constitution Act, 19689 (Act 39 of 1968); (xxvi).
- (xiv) “**exotic game**” means any vertebrate (including any bird, fish or reptile) whether kept or bred in captivity or elsewhere, belonging to non-domestic species the habitat of which is not in the Republic of South Africa or the Territory; (xli)
- (xv) “**fish**” includes aquatic fauna in general (excluding mammals and birds) whether indigenous or exotic, as well as the eggs, brood or spawn thereof; (xlvi)
- (xvi) “**fisheries**” includes all waters and all fish therein; (xlviii)
- (xvii) “**fishing tackle**” means any fishing tackle, apparatus or device, or any part thereof, commonly used for the catching of fish; (xlvii)
- (xviii) “**game**” means specially protected game, protected game, huntable game, huntable game birds and exotic game; (liii)
- (xix) “**game meat**” means the meat of any game, whether fresh, salted, smoked or dried, or in the process of being smoked or dried; includes the bones in, or attached to, such meat; and also comprises the whole carcass of any game which is dead; (lv)
- (xx) “**game park**” means the Etosha National Park referred to in section 13(1), and any area declared a game park in terms of section 14(1); (lvi)
- (xxi) “**game-proof fence**” in relation to any species of game means a fence which complies with the standard prescribed for a game-proof fence in relation to that species of game but does not include any such fence in which a game-trap has been constructed or of which any portion has been removed, damaged, cut, flattened or raised or is in such a bad state of repair that the efficacy of such fence is impaired; (A27/86/1(f) 1)
- (xxii) “**game-trap**” means any corridor-shaped passage in a fence along which any game or other wild animals can pass spontaneously through such a fence or can be lured to pass through such a fence, but not any such passage approved by the Director (A27/86/1(g)
- (xxiii) “**honorary nature conservator**” means any person appointed as an honorary nature conservator in terms of section 79(2) and includes any person who is an honorary nature conservator in terms of section 79(3); (ix)
- (xxiv) “**hunt**” -
- (a) for the purposes of any provision of this Ordinance, excluding a provision of Chapter IV, means by any means whatsoever to kill or attempt to kill, or to shoot or attempt to shoot at, or to pursue, to search for, to lie in wait for or to drive with intent to kill or to shoot at, or wilfully to disturb;

(b) for the purposes of any provision of Chapter IV, means to -

(i) search for, trace, lie in wait for or pursue problem animals;

(ii) set a trap, spring-trap, net, drug, poison or any other means or device approved by the Director to capture or kill problem animals

(iii) shoot at, or with dogs to hunt for, problem animals;

(iv) kill or capture problem animals in any other manner whatsoever approved by the Director; (xviii)

(xxv) "**hunnable game**" means every species of game mentioned in Schedule 5, or either sex thereof; (xix)

(xxvi) "**hunnable game birds**" means every species of game birds mentioned in Schedule 6 or either sex thereof; (xx)

(xxvii) "**hunting season**" in relation to hunnable game or hunnable game birds means the period determined in terms of section 25 as the hunting season during which such hunnable game or hunnable game birds may be hunted in terms of section 30 or section 32, as the case may be; (xxi)

(xxviii) "**indigenous plant**" means a species of plant, shrub or tree which is indigenous to the Territory, irrespective of whether it is or has been cultivated and whether it is no longer growing in a wild state or has for some period not been growing in a wild state and includes the flower, seed, fruit, bulb, tuber, stem or root or any other part of such plant, shrub or tree, but not any plant declared under any law to be a weed; (xvii)

(xxix) "**keep**" means to have game or wild animals in possession or custody, to supervise such game or wild animals and to be in full control thereof; (i)

(xxx) "**lessee**" in relation to a farm or land or land on which waters are situated, means the person leasing such farm or land under a written contract with the owner thereof, and who actually resides on such farm or land, but does not include the lessee of a piece of land forming part of communal land, unless such piece of land is a surveyed piece of land which is represented on a diagram approved by the surveyor-general in terms of the Land Survey Act, 1927 (Act 9 of 1927); (A27/86/1 (h)

(xxxi) "**licensed game dealer**" means any person licensed as a game dealer in terms of section 41; (xi)

(xxxii) "**local authority**" means a municipality or village management board or the Peri-Urban Development Board established under section 2 of the Peri-Urban Development Board Ordinance, 1970 (Ordinance 19 of 1970); (xxviii)

(xxxiii) "**nature conservator**" means -

(a) a nature conservator appointed in terms of section 79(1); and

(b) any member of the security forces; (xxv) (A 27 / 86/ 1(i) (b)

(xxxiv) "**nursery**" means sufficiently enclosed premises on which protected plants are cultivated for commercial purposes: Provided that such premises shall not be less than 45 square metres in extent; (xxiv)

(xxxv) "**officer**" means any person in the service of the Administration; (iii) (A 27/86/1 (g)

(xxxvi) "**owner**" in relation to a farm; land or land on which waters are situated, means

(a) the person who is registered in a deeds registry as the owner of such farm or land, and includes every director of a company registered in a deeds registry as the owner of such farm or land; or (sec. 1/ Ord 4/77)

(b) the lawful heir of the owner referred to in paragraph (a) at the death of such owner; or

(c) where such farm or land is subject to a usufruct, the usufructuary thereof; or

(d) where such farm or land, except a farm or land forming part of communal land is owned by the Government; or (A 27/86/1 (k)

(dA) where such farm or land forms part of the communal land of a population group, or is owned by the representative authority of a population group but is not communal land of the population group concerned, the executive authority of that population group; or; (A27/86/1(l)(dA)

(e) where such farm or land is owned by a local authority, the town clerk or the secretary of such local authority; (vii)

- (xxxvii) “**parents**” means the parents of whom a person is the natural child, stepchild or lawfully adopted child, and includes the husband or wife of any such parent; (xxvi)
- (xxxviii) “**pick**” includes to cut off, chop off, pick off, take, gather, uproot, damage or destroy; (xxix)
- (xxxix) “**population group**” means a population mentioned in section 3 of the Representative Authorities Proclamation, 1980 (Proclamation AG 8 of 1980) (A 27/86/1(m))
- (xl) “**prescribed**” means prescribed by regulation; (1)
- (xli) “**private game park**” means any area declared a private game park in terms of section 22; (xxxix)
- (xlii) “**private nature reserve**” means any area declared a private nature reserve in terms of section 22; (xxx)
- (xliii) “**problem animal**” means any animal declared a problem animal in terms of section 53: (xxxii)
- (xliv) “**proclaimed road**” means a proclaimed road as defined in the Roads Ordinance, 1972 (Ordinance 17 of 1972); (xii)
- (xlv) “**protected game**” means every species of game mentioned in Schedule 4, or either sex thereof; (v)
- (xlvi) “**protected plant**” means every species of plant mentioned in Schedule 9; (iv)
- (xlvii) “**public road**” means a public road as defined in the Road Traffic Ordinance, 1967 (Ordinance 30 of 1967); (xxxiii)
- (xlviii) “**raw**” in relation to a skin means a skin which has not been prepared or tanned till it is soft; (xxvii)
- (xlix) “**regulation**” means a regulation made and in force under Ordinance; (xxv)
- (l) “representative authority” means a representative authority established as such by law for a population group and consisting of the legislative authority and executive authority of that population group; (A27/86/1(n))
- (li) “**road reserve**” in relation to a proclaimed road means the road reserve of such road as defined in the Roads Ordinance, 1972 (Ordinance 17 of 1972); (xxvii)
- (lii) “**Secretary**” means the Secretary of Agriculture and Nature Conservation (xxxviii) (Act 27/’86 sec.1(o))
- (liii) “**security forces**” means the South West African Police or the South African Defence Force; (A 27/86/1/ (p))
- (liv) “**sell**” means to sell, barter, offer or expose for sale or offer as valuable consideration; (xlv)
- (lv) “**set line**” means a line and fish-hook which, when used for catching fish, is not under the immediate supervision of a person but is attached to something, but shall not include a line and fish-hook attached to a reel and rod lying loose on the ground; (xxxix)
- (lvi) “**skin**” includes any Portion of a skin; (xliv)
- (lvii) “**small game**” in relation to huntable game, means the following species of such game, namely, bushpig, springbok and warthog; (A 6/88/1 (b))
- (lviii) “**specially protected game**” means every Species of game mentioned in Schedule 3, or either sex thereof; (xxxvii)
- (lix) “**Territory**” means the Territory of South West Africa; (x)
- (lx) “**this Ordinance**” includes any proclamation and any regulation made and in force thereunder; (xv)
- (lxi) “**Trophy**” means the skin, shell, feet or head, or any part thereof; of game or any other wild animal, but shall not include any such skin, shell, feet or head, or any part thereof; which has lost its original identity as a result of a *bona fide* manufacturing process; (xl)
- (lxii) “**waters**” includes waters in rivers, streams, creeks, lakes, lagoons, pans, vleis, dams, reservoirs, furrows and ponds; (lii)
- (lxiii) “**weapon**” means any fire-arm, Spear, assegai, bow -and - arrow, axe, bushknife, knife or similar object and includes any narcotic rifle, pistol or bow; (li)
- (lxiv) “**wild animal**”-

(a) for the purposes of any provision of this Ordinance, excluding a provision of Chapter IV, means any Vertebrate (including any bird, fish and reptile), Whether kept or bred in captivity or elsewhere, belonging to a non-domestic species and the habitat of which is in the Republic of South Africa or the Territory;

(b) for the purposes of any provision of Chapter IV, means any vertebrate (including any bird, fish and reptile) belonging to a nondomestic species (liv)

Nature Conservation and Tourism Division.

2. A division of the Department of Agriculture and Nature Conservation, to be known as the Directorate of Nature Conservation and Recreation Resorts, shall be responsible for the regulation, execution and administration of matters concerning the conservation of nature and tourism recreation resorts, and the head of such division shall be an officer having the official title of Director of Nature Conservation and Recreation Resorts appointed by the Cabinet subject to the provisions of the Government Service Act, 1980 (Act 2 of 1980). (A 27/86/2)

CHAPTER I.

NATURE CONSERVATION BOARD.

Continued existence of Nature Conservation Board.

3. The Nature Conservation Board established in terms of section 58 of the Nature Conservation Ordinance, 1967 (Ordinance 31 of 1967), shall, notwithstanding the repeal of that Ordinance by this Ordinance, continue to exist.

Constitution of board

4. (1) The board shall consist of at least five and not more than ten members appointed by the Cabinet; and (A 27/86/3(a))

(2) One of the members of the board shall be designated by the Executive Committee as chairman and one as vice-chairman of the board.

(3) Any person who immediately prior to the commencement of this Ordinance is the chairman or another member of the board, shall be deemed to have been designated or appointed in terms of the provisions of this Ordinance as chairman or member of the board, as the case may be, as from the date on which he became. the chairman or a member thereof.

(4) The Secretary may, subject to the provisions of the Government Service Act, 1980 (Act 2 of 1980), instruct an officer in the Directorate to act as secretary of the board. (A 27/86/3(b))

Qualifications and disqualification, of members.

5. No person shall be appointed or hold office as a member of the board, if he-

(a) has at any time been convicted of any offence for which he has been sentenced to imprisonment without the option of a fine, unless he has received a free pardon, or unless the period of imprisonment expired at least three years before the date of his appointment; or

(b) is of unsound mind and has been so declared by a competent court; or

(c) is an unrehabilitated insolvent; or

(d) is under the age of 21 years.

Period of office

6. (1) A member of the board shall be appointed for a period of three years.

(2) Any person whose period of office as a member of the board has expired, shall be eligible for reappointment.

Vacation of office

7. A member of the board shall vacate his office -

(a) if he ceases to possess the qualifications mentioned in section 5, or becomes subject to the disqualification mentioned therein;

(b) if he is removed from his office in terms of section 8;

(c) if he resigns as a member.

Termination of membership.

8. The Executive Committee may at any time remove any member of the board from his office if such member of the board -

(a) has in the opinion of the Executive Committee-

(i) been guilty of improper conduct; or

(ii) regularly neglected his duties as a member of the board; or

(iii) become, or becomes incompetent for the execution or performance of his duties as a member of the board; or

(b) has, without the permission of the chairman of the board, which consent shall not be granted for any period exceeding six consecutive months, been absent from four consecutive meetings of the board.

Filling of vacancies.

9. When any member of the board for any reason ceases to hold office, the Executive Committee may, with due observance of the provisions of sections 4(1) and 5 appoint a person to fill the vacancy on the board.

Meetings of the board.

10. (1) All ordinary meetings of the board shall be held at the times and places determined by the board: Provided that, if the board has not determined the time and place for its next ordinary meeting at the end of a meeting, the chairman of the board shall determine such time and place.

(2) The chairman of the board shall, when directed by the Executive Committee to do so, and may, when he deems it necessary or expedient, call a special meeting of the board to be held at a time and place determined by the Executive Committee, or by the chairman, as the case may be.

(3) The majority of all the members of the board shall be a quorum for a meeting of the board.

(4) At all meetings of the board the chairman, or if he is absent, the vice-chairman, shall preside and if both the chairman and vice-chairman are absent from a meeting of the board the members present shall from among themselves elect a person to preside at that meeting.

(5) (a) Subject to the provisions of paragraph (b) a decision of the majority of the members of the board present at any meeting of the board, shall constitute a decision of the board, and such a decision of the board shall be final and conclusive.

(b) In the event of an equality of votes in regard to any matter the person presiding at the meeting concerned shall have a casting vote in addition to his deliberative vote.

(6) Minutes shall be kept of all meetings of the board.

(7) No decision taken by the board or act performed under the authority or on the recommendation of the board shall be invalid by reason only of an interim vacancy on the board or of the fact that a person who is disqualified from being a member of the board sat or acted as a member of the board when the decision was taken or the act was performed or authorised or recommended, if the decision was taken or the act was performed or authorised or recommended by the requisite majority of the members of the board who were present at the time and were entitled to sit and to act as members.

Function, powers and duties of the board.

11. (1) The functions, powers and duties of the board shall be -

(a) to advise the Executive Committee in relation to the control, management and maintenance, with due observance of the objects mentioned in sections 13(1) and 14(1), of the Etosha National Park and other game parks;

(b) to investigate and report on all matters relating to nature conservation referred to the board by the Executive Committee;

(c) to make such recommendations to the Executive Committee as it may deem fit on any matter relating to the conservation of nature and the amendment of the laws of the Territory relating to the conservation of nature;

(d) at least once in every year to make recommendations to the Executive Committee in respect of applications for game dealers' licences and the prescribing of the levies referred to in section 83(2);

(e) to exercise and perform the functions, powers and duties prescribed by regulation;

(f) to fulfil those other tasks which fall within the objects of this Ordinance and are entrusted to the board by the Executive Committee.

(2) Any person who hinders, obstructs, resists or disturbs the board as such or any member of the board in the performance of its or his duties, or the exercise of its or his functions or powers, shall be guilty of an offence.

Remuneration. allowances and fees,

12. A member of the board shall receive no remuneration, but to those members of the board who are not officers in, or employees of the government service, shall be paid such allowances and fees as may be determined by the Cabinet from time to time. (A 27/86/4)

CHAPTER II.

GAME PARKS AND NATURE RESERVES.

Etosha National Park.

13. (1) The area defined in Schedule 2 and known as the Etosha National Park shall be a game park for the propagation, protection, study and preservation therein of wild animal life, wild plant life and objects of geological, ethnological, archaeological, historical and other scientific interest and for the benefit and enjoyment of the inhabitants of the Territory and other persons.

(2) The boundaries of the Etosha National Park shall be amended by ordinance only.

(3) No emergency grazing shall be allowed in the Etosha National Park.

Establishment and objects of game parks and nature reserves.

14. (1) The Executive Committee may declare any area a game park or a nature reserve for the propagation, protection, study and preservation therein of the wild animal life, fisheries, wild plant life and objects of geological, ethnological, archaeological, historical and other scientific interest and for the benefit and enjoyment of the inhabitants of the Territory and other persons.

(2) Any such declaration of an area as a game park or a nature reserve shall be made known by notice in the *Official Gazette*.

Amendment of boundaries of game parks and nature reserves.

15. (1) The Executive Committee may from time to time amend the boundaries of any game park (except those of the Etosha National Park) or any nature reserve.

(2) Any such amendment of the boundaries of a game park or nature reserve shall be made known by notice in the *Official Gazette*.

Withdrawal of declaration as a game park or nature reserve.

16. (1) The Executive Committee may at any time withdraw the declaration of an area as a game park or a nature reserve.

(2) Any such withdrawal of the declaration of any *area as* a game park or a nature reserve shall be made known by notice in the *Official Gazette*.

Powers of executive Committee in relation to game parks and nature reserves.

17. (1) The Executive Committee shall control, manage and maintain game parks and nature reserves.

(2) The Executive Committee may within a game park or a nature reserve -

(a) lay out and construct such roads, bridges, buildings, water installations, fences, breakwaters, seawalls, boathouses, landing stages, mooring places and swimming pools and carry out such other works as it may consider necessary for the control, management or maintenance of the game park or nature reserve;

(b) take such steps as will ensure the safety of the animal and plant life and fisheries in the game park or nature reserve and the conservation of the game park or nature reserve and the animals, vegetation and fish therein in a natural state;

(c) reserve areas as breeding places for animals or fish or nurseries for trees, shrubs, plant's and flowers and set aside zones for such purposes as it may deem necessary or desirable;

(d) provide accommodation for visitors to the game park or nature reserve and facilities in connection therewith;

(e) provide meals and refreshments to visitors to the game park or nature reserve against payment of the fees determined by the Executive Committee from time to time, tariffs of which shall be displayed at a prominent place at the restaurant or other place where such meals and refreshments are Provided: Provided that the Executive Committee may so determine different tariffs for different game parks and nature reserves;

(f) carry on any business or trade for the convenience of visitors to the game park or nature reserve;

(g) supply any other service for the convenience of visitors to the game park or nature reserve;

(h) establish, erect, equip and maintain any building, structure, depot or premises required in connection with any matter referred to in paragraph (a), (e), (f) or (g), or let any premises required for such a purpose;

(i) make such charges in connection with any such matter as it may determine;

(j) authorise any person to carry on, subject to such conditions and the payment of such charges as it may deem fit, any activities which may be carried on by the Executive Committee in terms of paragraph (e), (f) or (g)

Restriction of right to enter game parks and nature reserves and prohibition, of certain acts therein.

18. (1) Notwithstanding anything to the contrary in this Ordinance contained, but subject to the provisions of subsection (2) and sections 19 and 21, no person shall without the written permission of the Executive Committee -

(a) enter or reside in a game park or a nature reserve;

(b) convey into a game park or a nature reserve or, within the confines thereof be in possession of, any weapon, explosive, trap or poison;

(c) within a game park or a nature reserve wilfully or negligently injure, capture or disturb any animal or remove or destroy any egg or nest of any bird;

(d) wilfully or negligently cause any veld fire or any damage to any object of geological, ethnological, archaeological, historical or other scientific interest within a game park or a nature reserve;

(e) introduce any animal into or permit any live-stock or domestic animal to enter a game park or a nature reserve;

(f) remove from a game park or a nature reserve any animal, whether dead or alive, or any part of an animal, other than an animal lawfully introduced into such game park or nature reserve;

(g) pick any indigenous plant in a game park or a nature reserve;

(h) chop, cut or destroy any tree in a game park or a nature reserve:

Provided that -

(i) a member of the security forces acting officially and whose action is directly connected with the exercise of his official duties shall be exempted from the provisions of paragraphs (a), (b) and (e), except those provisions of paragraph (b) relating to the conveyance into or possession in a game park or nature reserve of any trap or poison; and

(ii) an officer of the Directorate, or a member of the board acting officially and whose action is directly connected with the exercise of his official duties or with the execution of the powers vested in him in terms of this Ordinance shall be exempted from all the provisions of this subsection. (A 27/86/5]

(2) Notwithstanding the provisions of subsections (1) but subject to the conditions, requirements and restrictions prescribed or imposed by or in terms of this Ordinance, any person may-

(a) travel in a vehicle along a prescribed route through a prescribed game park or nature reserve;

(b) convey an animal or an object mentioned in subsection (1)(b) in a vehicle along a prescribed route through a prescribed game park or a nature reserve.

(3) Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of any permission granted thereunder shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Purposes for which permission to enter game parks and nature reserves may be granted.

19. The permission to enter and reside in a game park or a nature reserve mentioned in section 18(1) (a) may be granted only for the purposes of -

(a) health, study, recreation or other incidental matters;

(b) travel or transport along the routes prescribed by regulation; or

(c) transacting any lawful business.

Prohibition, of hunting in game parks and nature reserves.

20. (1) Notwithstanding anything to the contrary in this Ordinance contained, no person shall, without the written permission of the Executive Committee, hunt any animal in any game park or any nature reserve: Provided that a dangerous animal may be killed in defence of a human life or to prevent a human being from being injured.

(2) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition requirement or restriction of any permission granted thereunder, shall be guilty of an offence and liable on conviction -(Act 31/90/1)

(a) to a fine not exceeding R 200 000 or to imprisonment for a period of not exceeding twenty years or to both such fine and such imprisonment if such offence relates to the hunting of any elephant or rhinoceros; or (A 27/86/6)

(b) to a fine not exceeding R20 000 or to imprisonment for a period of not exceeding five years to both such fine and such imprisonment if such offence relates to the hunting of any other specially protected game.

Killing of animals trespassing in game parks or nature reserves.

21. A nature conservator may at any time-

(a) kill any dog found in a game park or a nature reserve, other than any such dog which is in the lawful possession or under the lawful charge of an officer or a member of the security forces or which is being conveyed through such game park or nature reserve in accordance with the provisions of section 18.

(b) kill any donkey, horse or other riding or pack-animal found in a game park or a nature reserve, other than any such donkey, horse or other riding or pack-animal which is in the lawful possession or under the lawful charge of an officer or a member of the security forces or which is being conveyed through such game park or nature reserve in accordance with the provisions of section 18, and may seize the saddles and bridles thereof, if any;

(c) with the consent of the Cabinet, kill any live-stock or domestic animal found in a game park or a nature reserve, other than any such live-stock or domestic animal which is in the lawful possession or under the lawful charge of an officer or which is being conveyed through such game park or nature reserve in accordance with the provisions of section 18. (A27/86/7)

Establishment of private game parks and private such conditions as it may deem necessary nature reserves.

22. (1) (a) Subject to the provisions of subsections (2), (3), (4) and (5) the Executive Committee may at any time and subject to expedient declare any area a private game park or private nature reserve for the period determined by it or until the declaration of the area concerned as a private game park or private nature reserve is withdrawn.

(b) Any such declaration of an area as a private game park or a private nature reserve shall be made known by notice in the *Official Gazette*.

(2) An area shall only be declared a private game park or a private nature reserve on the written application of the owner of the land concerned.

(3) (a) No area shall be declared a private game park or a private nature reserve unless a notice of the application to do so has at least three months previously at the cost of the applicant been published in the *Official Gazette* and in two newspapers circulating in the Territory.

(b) The notice referred to in Paragraph (a) shall request any person who wishes to object to the declaration of the area concerned as a private game park or a private nature reserve to lodge his objections with the person or officer mentioned in the notice within a period mentioned in the notice, which objection shall be submitted to and considered by the Executive Committee together with the application concerned.

(4) (a) The Executive Committee may at any time withdraw the declaration of an area as a Private game park or a private nature reserve.

(b) Any such withdrawal of the declaration of an area as a private game park or a private nature reserve shall be made known by notice in the *Official Gazette*.

(5) The declaration of an area as a private game park or a private nature reserve shall in no way derogate from the provisions of Chapter IV and shall apply subject to the provisions of the said Chapter IV.

Prohibition of hunting in private game parks.

23. (1) Notwithstanding anything to the contrary in this Ordinance contained, but subject to the provisions of Chapter IV, no person shall without the written approval of the Executive Committee hunt any game or any other wild animal or bird in a private game park: Provided that the owner of the land concerned may at any time hunt any game or any other wild animal Or bird on such land, except specially Protected and Protected game.

(2) The Executive Committee shall not grant any approval in terms of subsection (1) unless the Owner of the land concerned has granted his permission thereto.

(3) The approval referred to in subsection (1) shall be granted subject to the conditions, requirements and restrictions imposed by the Executive Committee with due allowance for the permission of the owner of the land concerned.

(4) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, requirement or restriction of any approval granted in terms of this section *shall* be guilty of an offence and liable on conviction-

(a) to a fine not less than One thousand one hundred and fifty rand and not exceeding two thousand five hundred rand or to imprisonment for a period of not less than two years and not exceeding six years or to both such fine and such imprisonment if such relates to the hunting of specially offence protected game;

(b) to a fine not less than seven hundred and fifty rand and not exceeding one thousand five hundred rand or to imprisonment for a period of not less than twelve months and not exceeding three years or to both such fine and such imprisonment if such offence relates to the hunting of any other game or wild animal.

Prohibition of picking of indigenous plant, in private nature reserves.

24.(1) No person shall without the written approval of the Executive Committee pick any indigenous plant, or any Portion of an indigenous plant, in a private nature reserve: Provided that the owner of the land concerned may at any time pick any indigenous plant, other than a protected plant, on such land.

(2) The Executive Committee shall not grant any approval in terms of subsection (1) unless the owner of the land concerned has granted his permission thereto.

(3) The approval referred to in subsection (1) shall be granted subject to the conditions, requirements and restrictions imposed by the Executive Committee with due allowance for the permission of the owner of the land concerned.

(4) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, requirement or restriction of any approval granted in terms of this section, shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

CHAPTER III. WILD ANIMALS.

Power, of Executive Committee in relation to hunting seasons, and classification of game.

25. (1) The Executive Committee may from time to time-

(a) in any year determine hunting seasons during which game mentioned in Schedule 5 or 6 or Schedules 5 and 6 or any species or sex thereof may be hunted in terms of the provisions of section 30 or 32 or sections 30 and 32, as the case may be, but subject to the other provisions of this Ordinance;

(b) restrict the number of any species or sex of game *which* may be hunted during a hunting season;

(c) amend Schedules 3, 4, 5 and 6 by deleting the name of any species or sex of game or by transferring such name from any such schedule to another or by adding to any such schedule the name of any species or sex of wild animal which is not included in any of the said schedules.

(2) Any determination of a hunting season, restriction of a species or sex of game which may be hunted during a hunting season or amendment of Schedule 3, 4, 5 or 6 in terms of subsection (1) shall be made known *by* notice in the Official Gazette.

(3) Any hunting season or amendment of any such schedule may, subject to the provisions of subsection (4), be made applicable to the entire Territory or to any part or parts of the Territory defined in such notice. (GN 90/88)

(4) No amendment of such schedules whereby the name of any species or sex of game is transferred from Schedule 5 or Schedule 6 to Schedule 3 or Schedule 4 or whereby the name of any species or sex of wild animal is added to Schedule 3 or Schedule 4 shall be applicable in respect of -

(a) any farm; or

(b) any piece of land

which is not less than one thousand hectares in extent and is enclosed with a game-proof fence.

Hurting of specially Protected game.

26. (1) No person other than the lawful holder of a permit granted by the Executive Committee shall at any time hunt any specially protected game.

(2) A permit granted in terms of this section authorises the lawful holder thereof subject to the conditions, requirements and restrictions imposed by or under this Ordinance to hunt the number and species of specially protected game mentioned therein at the time and place mentioned therein.

(3) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, requirement or restriction of a permit granted in terms this section shall be guilty of an offence and liable on conviction to a fine not exceeding R 6000 or to imprisonment for a period not exceeding six years or to both such fine and such imprisonment. (A 27/86/8 (a); Act 31/90/2)

(4) (a) No provision contained in this section shall prohibit the owner or lessee of land or occupier of communal land from killing specially protected game on such land in defence of a human life or to prevent a human being from being injured or to protect the life of any livestock, poultry or domestic animal of such owner, lessee or occupier whilst the life of such livestock, poultry or domestic animal is actually being threatened. (A27/86/8(b))

(b) Any person who kills specially Protected game in terms of the provisions of this subsection shall report it in writing to the nearest nature conservator or at the nearest police office within ten days thereafter.

(c) Any person who fails or neglects to comply with the provisions of Paragraph (b) shall be guilty of an offence.((5) (6) and (7) added A 27/86/8(c))

(5) Any person who hunts specially protected game under a permit granted in terms of this section, shall at all times have such permit in his possession while he is so hunting.

(6) Any person who has hunted any specially protected game under a permit granted in terms of this section, shall endorse -

(a) the species of specially protected game and the number of each of such species which he has hunted under such permit;

(b) the date on which he has so hunted it; and

(c) the name of the farm or a description of the land on which he has so hunted it, on such permit in ink or indelible pencil and shall sign it before he leaves the farm or land on which he has hunted such specially protected game.

(7) Any person who contravenes or fails to comply with any provision of subsection (5) or (6), shall be guilty of an offence.

Hunting of protected game.

27. (1) No person other than the lawful holder of a permit granted by the Executive Committee shall at any time hunt any protected game.

(2) A permit granted in terms of this section authorises the lawful holder thereof subject to the conditions, requirements and restrictions imposed by or under this Ordinance to hunt the number and species of Protected game mentioned therein at the time and place mentioned therein.

(3) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, or restriction of a permit granted in terms this section, shall be guilty of an offence, and liable on conviction to a fine not exceeding R 4 000 or to imprisonment for a period not exceeding four years or to both such fine and such imprisonment (A27/86/9(a))

(4) Notwithstanding anything to the contrary in this Ordinance contained, the owner or lessee of a farm or piece of land which is not less than one thousand hectares in extent may, if such farm or piece of land is enclosed with jackal- proof fencing, at any time and by any means whatsoever kill any ant bear or honey badger found on such farm or piece of land and any steenbok which is lawfully on such farm or piece of land shall be deemed to be huntable game to which such owner or lessee shall have the right of ownership: Provided that -

(a) for the purposes of the provisions of this subsection “owner” shall not include a town clerk or the secretary of a local authority;

(b) for the purposes of the provisions of this subsection relating to steenbok, “lessee” shall not include the lessee of a farm or land, who is not the owner of the huntable game, huntable game birds and exotic game on such farm or land.

(5) (a) No provision contained in this section shall prohibit the owner or lessee or of land or occupier of communal land from killing protected game on such land in defence of a human life or to prevent a human being from being injured or to protect the life of the livestock, Poultry or domestic animal of such owner, lessee or occupier whilst the life of such livestock, poultry or domestic animal is actually being threatened. (A27/86/9 (b))

(b) Any person who kills protected game in terms of the provisions of this subsection shall report it in writing to the near

(c) Any person who fails or neglects to comply with the provisions of paragraph (b) shall be guilty of an offence.

(6) Any person who hunts protected game under a permit granted in terms of this section, shall at all times have such permit in his possession while he is so hunting.

(7) Any person who has hunted any protected game under a permit granted in terms of this section, shall endorse -

(a) the species of protected game and the number of each of such species which he has hunted under such permit;

(b) the date on which he has so hunted it; and

(c) the name of the farm or a description of the land on which he has so hunted it, on such permit in ink or indelible pencil and shall sign it before he leaves the farm or land on which he has hunted such protected game.

(8) Any person who contravenes or fails to comply with any provision of subsection (6) or (7), shall be guilty of an offence. (A.27/86/9(c) (6) (7) and (8) added)

Hunting on Administration property.

28. (1) (a) Subject to the provisions of Chapter IV no person shall, without the written permission of the Cabinet, hunt any huntable game, huntable game bird or exotic game or any other wild animal on any land, including communal land, owned by the Government of the Territory or a representative authority.

(b) For the purposes of paragraph (a) land leased by the Government of the Territory or a representative authority shall, unless an intention to the contrary appears from lease, and unless, in the case of communal land, the land leased is an unsurveyed piece of land, be deemed not to be land owned by the Government of the Territory.

(c) Any person who contravenes or fails to comply with any provision of paragraph (a) or any condition, requirement or restriction of any written permission granted thereunder, shall be guilty of an offence and liable on conviction to a fine not exceeding R 4 000 or to imprisonment for a period not exceeding four years, or to both such fine and such imprisonment.

(2) (a) Any person who hunts any huntable game, bird or exotic game or any other wild animal under the written permission of the Cabinet granted in terms of this section, on land, including communal land, owned by the Government of the Territory or a representative authority, shall at all times have such written permission in his possession while he is so hunting.

(b) Any person who contravenes or fails to comply with any provision of paragraph (a) shall be guilty of an offence. (A27/86/10)

Right of ownership to huntable game, huntable game birds, and exotic game.

29. (1) The owner of -

(a) a farm which is enclosed with a game-proof fence or an adequate fence;

(b) any piece of land which is not less than one thousand hectares in extent and enclosed with a game-proof fence,

shall, subject to the provisions of this Ordinance, be the owner of all huntable game, huntable game birds and exotic game on such farm or piece of land as long as such huntable game, huntable game birds and exotic game are lawfully on such farm or piece of land and as long as such farm or piece of land remains to be enclosed in that manner.

(2) The lessee of

(a) a farm which is enclosed with a game-proof fence or an adequate fence;

(b) any piece of land which is not less than one thousand hectares in extent and enclosed with a game-proof fence,

shall, subject to the provisions of this Ordinance, and unless the contract under which he leases such farm or piece of land specifically provides otherwise, be the owner of all huntable game huntable game birds and exotic game on such farm or piece of land as long as such huntable game, huntable game birds and exotic game are lawfully on such farm or piece of land and as long as such farm or piece of land remains to be enclosed in that manner.

Hunting of huntable game.

30. (1) (a) Save as is otherwise provided in this Ordinance, no person other than the lawful holder of a permit granted by the Cabinet shall hunt any huntable game

(aA) Subject to the provisions of this ordinance, a permit for the hunting of huntable game shall be granted -

(i) only if the person who applies for a permit produces a written authority granted to him in accordance with the provisions of paragraph (b); and

(ii) only in respect of the hunting of such huntable game, and the number of each such species, mentioned in the written authority referred to in paragraph (b), but in no case in respect of huntable game exceeding the one or the other of the following number:

- (aa) three head of big game; or
- (bb) two head of big game and four head of small game; or
- (cc) one head of big game and eight head of small game; or
- (dd) twelve head of small game:

Provided that the limitations mentioned in sub-paragraph (ii) (aa), (bb), (cc) and (dd) shall not apply in the case in the case where a permit is granted for the hunted of huntable game on a farm which is enclosed with a game - proof fence. (A6/88(a))

(b) The written authority referred to in paragraph (aA) - (A6/88/2(b), A6/88/2(c))

(i) shall be granted only by the owner or lessee of a farm which is enclosed with a game-proof fence or an adequate fence or by the owner or lessee of a piece of land which is not less than one thousand hectares in extent and enclosed with a game-proof fence;

(ii) shall be granted by such owner or lessee only in respect of the hunting of huntable game which is on such farm or piece of land and of which he is the owner in terms of this Ordinance: Provided that such Owner shall not grant any such authority in respect of the hunting of any such huntable game of which he is the owner but has leased the right to hunt it;

(iiA) shall be granted by such owner or lessee only in respect of the hunting of huntable game not exceeding the one or the other of the following numbers of such game, namely:

- (aa) three head of big game; or
- (bb) two head of big game and four head of small game; or
- (cc) one head of big game and eight head of small game; or
- (dd) twelve head of small game:

Provided that the provisions of this subparagraph shall not apply to the owner or lessee of a farm which is enclosed with a gameproof fence.

(iii) shall be in ink or indelible pencil and shall contain -

- (aa) the name and full residential address of the person by whom such authority is granted;
- (bb) the name and full residential address of the person to whom such authority is granted;
- (A6/88/2(d), A6/88/2(e))

(cc) the date or dates within the hunting season on which hunting under such authority is authorised;

(dd) subject to the provisions of paragraph (iiA), the species of huntable game, and the number of each such species, which may be hunted under such authority; and

(ee) the name of the farm or a description of the piece of land on which may be hunted under such authority,

and shall be signed by the person granting such authority. (A6/88/2(d), A6/88/2(e))

(bA) The permit referred to in paragraph (a) shall authorise the person to whom it is granted subject to the conditions, requirements and restrictions prescribed or imposed by or under this Ordinance, to hunt on the date or dates within the hunting season mentioned therein, the species of huntable game, and the number of each such species mentioned therein, on the farm or farms mentioned therein or the piece of land described therein. (A6/88/2(f))

(c) Any person who contravenes or fails to comply with any provision of paragraph (a) or (bA) or any condition, requirement or restriction of any permit granted in terms of this subsection, shall be guilty of an offence and liable on conviction to a fine not less than five hundred rand and not exceeding seven hundred

and fifty rand or to imprisonment for a period of not less than six months and not exceeding twelve months or to both such fine and such imprisonment. (A 27/86/11, A 6/88/2(g))

(2) Any person who hunts huntable game under any permit granted in terms of this section shall at all times have such permit in his possession while he is so hunting. (A 6/88/2(h))

(3) Any person who has hunted any huntable game under a permit granted in terms of this section, shall endorse -

(a) the species of huntable game, and the number of each such species, which he has hunted under such permit;

(b) the date on which he has so hunted it; and

(c) the name of the farm or a description of the land on which he has so hunted it,

on such permit in ink or indelible pencil and shall sign it before he leaves the farm or the piece of land on which he has hunted such huntable game. (A 6/88/2(i))

(4) Any person who contravenes or fails to comply with any provision of subsection (2) or (3), shall be guilty of an offence.

(5) Notwithstanding the provisions of section 47, any person who grants a written authority in terms of this section, may claim and recover the amount (if any) agreed upon with the person to whom such written authority was granted, from such person in respect of any huntable game hunted under such written authority.

(6) Subject to the provisions of the proviso to subparagraph (aA) of subsection (1), no permit or permits shall be granted to any person in terms of that subsection which would result in such person being authorised to hunt in any given hunting season in total more than one or other of the following numbers of huntable game, namely:

(a) three head of big game; or

(b) two head of big game and four head of small game; or

(c) one head of big game and eight head of small game; or

(d) twelve head of small game. (A6/88/2(j)(6))

Hunting of huntable game by Owner or lessee of land.

31. (1) Notwithstanding anything to the contrary in this Ordinance contained, the owner or lessee of a farm which is enclosed with a game proof fence or an adequate fence or of a piece of land which is not less than one thousand hectares in extent and enclosed with a game-proof fence may hunt any huntable game on such farm or piece of land throughout the year without a permit referred to in section 30 (i)(a). (A6/88/3(a))

(2) The owner or lessee of a farm or piece of land referred to in subsection (1) may exercise the rights granted to him by the said subsection personally and also through his wife or one or more of his children and his parents as well as through any employee permanently employed by him and resident on such farm or piece of land, provided such white employee has his written permission: Provided that if such owner or lessee is by reason of physical disability unable to exercise such rights and neither his wife, nor his children, parents or white employees as mentioned above are available to do so, the Cabinet may, on application by such owner or lessee, authorise any officer or other person whom it considers competent in writing to exercise such rights for and on behalf of such owner or lessee.

(2A) (a) The owner or lessee of a farm or piece of land referred to in subsection (1), shall not later than the last day of November of every year provide the Director with a return stating the species of huntable game, and the number of each such species, which have been hunted by him personally, or for and on his behalf, on such farm or piece of land during the preceding period of twelve months in terms of the provisions of this section.

(b) Any person who fails or neglects to comply with the provisions of paragraph (a) shall be guilty of an offence. (A27/86/12(a),A6/88/3(b))

(3) For the purposes of this section -

(a) “owner” shall not include the town clerk or the secretary of a local authority or the executive authority of a representative authority or any member of such a representative authority; (A 27/86/12 (b))

(b) “lessee” shall not include the lessee of a farm or land, who is not the owner of the huntable game on such farm or land.

Hunting of huntable game birds under owner’s authority.

32. (1) (a) Save as is otherwise provided in this Ordinance, no person other than the lawful holder of a written authority granted in accordance with the provisions of this section, shall hunt any huntable game birds.

(b) The written authority referred to in paragraph (a)-

(i) shall be granted only by the owner or lessee of a farm which is enclosed with a game proof fence or an adequate fence or by the owner or lessee of a piece of land which is not less than one thousand hectares in extent and enclosed with a game-proof fence;

(ii) shall be granted by such owner or lessee only in respect of the hunting of huntable game birds which is on such farm or piece of land and of which he is the Owner in terms of this Ordinance: Provided that such owner shall not grant any such authority in respect of the hunting of any such huntable game birds of which he is the owner but has leased the right to hunt it;

(iii) shall be in ink or indelible pencil and shall contain

(aa) the name and full residential address of the person by whom such authority is granted;

(bb) the name and full residential address of the Person to whom such authority is granted;

(cc) the date or dates on which hunting under such authority is authorised;

(dd) the species of huntable game birds, and the number of each such species which may be hunted under such authority; and

(ee) the name of the farm or a description of the piece of land on which may be hunted under such authority,

and shall be signed by the person granting such authority before it is handed by him to the person to whom it is granted.

(iv) shall authorise the person to whom it is granted subject to the conditions, requirements and restrictions imposed by or under this Ordinance, to hunt on the date or dates mentioned therein (which date or dates shall not be outside the hunting season) the species of huntable game, and the number of each such species mentioned therein, on the farm or farms mentioned therein or the piece of land described therein.

(2) Any person who hunts huntable game under any written authority granted in terms of this section shall at all times have such written authority in his possession while he is so hunting: Provided that any person who is so hunting need not at all times have such written authority in his possession while he is so hunting if the person who has granted him such written authority accompanies him at all times while he is so hunting.

(3) Any person who has hunted any huntable game birds under a written authority granted in terms of this section, shall endorse

(a) the species of huntable game birds, and the number of each such species, which he has hunted under such authority;

(b) the date on which he has so hunted it; and

(c) the name of the farm or a description of the land on which he has so hunted it, on such authority in ink or indelible pencil and shall sign it before he leaves the farm or the piece of land on which he has hunted such huntable game birds.

(4) Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of any written authority granted in terms of this section, shall be guilty of an offence.

(5) Notwithstanding the Provisions of section 47, any person who grants a written authority in terms of this section, may claim and recover the amount (if any) agreed upon with the person to whom such written authority was granted, from Such person in respect of any huntable game birds hunted under such written authority.

Hunting of huntable game birds by owner or lessee of land.

33. (1) Notwithstanding anything to the contrary in this Ordinance contained, the owner or lessee of any land may -

(a) if such land is enclosed in such a manner that the boundaries thereof are clearly indicated, throughout the year hunt any huntable game birds on any part of such land;

(b) if such land is not enclosed in such a manner that the boundaries thereof are clearly indicated, throughout the year on any cultivated lands and in any gardens on such land hunt any huntable game birds which destroy or damage crops or plants on such cultivated lands or in such gardens.

(2) The owner or lessee of land referred to in subsection (1) may exercise the rights granted to him by the said subsection personally and also through his wife or one or more of his children or his parents as well as through any employee permanently employed by him and resident on such land provided such employee has his written permission: Provided that, if such owner or lessee is by reason of physical disability unable to exercise such right and neither his wife, nor his children, parents or employees as mentioned above are available to do so, the Cabinet may on application by such owner or lessee authorise any officer or other person whom it considers competent in writing to exercise such rights for and on behalf of such owner or lessee. (A27/86/13(a))

(3) For the purposes of this section -

(a) "owner" shall not include the town clerk or the secretary of a local authority or the executive authority of a representative authority or any member of such an executive authority;(A27/86/13(b))

(b) "lessee" shall not include the lessee of a farm or land, who is not the owner of the huntable game birds on such farm or land.

Hunting of exotic game and other wild animals.

34. (1) Save as is otherwise provided in this Ordinance, no person shall hunt any exotic game, unless he is the lawful owner thereof or has the written permission of the lawful owner thereof, or is the owner of the land on which such game trespasses.

(2) Save as is otherwise provided in this Ordinance, no person shall hunt any wild animal which is not game as defined in section 1 on any land, unless he has the written permission of the owner or lessee of such land.

(3) Any person who hunts any exotic game or any wild animal referred to in subsection (2) under a written permission granted in terms of subsection (1) or (2). shall at all times have such written permission in his possession while he is so hunting: Provided that any person who is so hunting need not at all times have such written authority in his possession while he is so hunting if the person who has granted him such written authority accompanies him at all times while he is so hunting.

(4) Any person who contravenes or fails to comply with any provision of subsection (1) or (2) shall be guilty of an offence and liable on conviction to a fine not less than seven hundred an fifty rand and not exceeding one thousand five hundred rand or to imprisonment for a period of not less than twelve months and not exceeding three years or to both such fine and such imprisonment.

Lease of hunting rights.

35. (1) The owner of a farm or land, who, in terms of this Ordinance, has the right to hunt huntable game, huntable game birds and exotic game on such farm or land may lease that right to any other person, in which case no other person than the lessee of such right shall have the right to hunt huntable game, huntable game birds or exotic game on such farm or land.

(2) Any contract in terms of which the right to hunt huntable game huntable game birds or exotic game is leased, shall-

(a) be a written contract;

(b) be entered into for a period of at least six months; and

(c) indicate explicitly whether such right refers to huntable game, huntable game birds, exotic game, or two or more thereof. (suspended by section 1 Ordinance 16/ 80)

(3) Any lease in terms of subsection (1) of the right to hunt huntable game, huntable game birds or exotic game on a farm or land, shall lapse on the sale of the farm or land in respect of which it was leased.

Hunting for the sake of trophies, and possession and export of trophies.

36. (1) (a) Notwithstanding anything to the contrary in this Ordinance contained, the Executive Committee may allow any person from any country or territory under a permit granted by the Executive Committee to hunt the species of game, and the number (but not exceeding two) of each such species determined by the Executive Committee and mentioned in such permit, in the Territory for the sake of trophies.

(b) For the purposes of paragraph (a) any game that has been shot at by virtue of a permit granted under that paragraph, and that was wounded when thus being shot at, shall in all respects be regarded as having been hunted by virtue of such permit. (suspended by section 2 (a) Ordinance 16/ 80)

(2) Subject to the provisions of section 49 no person shall without the written permission of the Executive Committee import any trophies into the Territory or export any trophies from the Territory.

(2A) (a) No person shall manufacture any articles either wholly or partially from a trophy or trophies for the purposes of sale unless he is licensed under this section as a manufacturer of articles from trophies.

(b) No person shall sell, offer for sale or display for the purposes of sale any trophies or adapted trophies unless he is licensed under this section as a seller of trophies and adapted trophies.

(c) The licences contemplated in paragraph (a) and (b) shall be issued by the executive committee in the prescribed fees.

(d) The licences required under this subsection shall not in lieu of but supplementary to any other permit, licence, registration, approval, permission or exemption required by law.((2A-suspended by sec.2 (b) Ord.16/ 80))

(3) No person, other than the lawful holder of a permit granted by the Executive Committee, shall be in possession of any elephant tusk or rhinoceros horn or any portion of an elephant tusk or rhinoceros horn: Provided that the provisions of this subsection shall not prohibit any person from being in possession of-

(a) the tusk of any elephant or the horn of any rhinoceros which he has lawfully hunted or imported into the Territory in accordance with the provisions of this Ordinance;

(b) any portion of an elephant tusk or rhinoceros horn which has lost its original identity as a result of a bona fide manufacturing process.

(4) Any elephant tusk or rhinoceros horn found in the Territory as *res nullius* shall be the property of the state and shall be disposed of as the Cabinet may determine from time to time.(A 27/ 86/ 14 (b))

(5) Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of a permit, licence or permission granted in terms of this section, shall be guilty of an offence. (suspended by section 2 (c) Ordinance 16/80)

Hunting of game to protect grazing, cultivated lands and gardens.

37. (1) (a) Notwithstanding anything to the contrary in this Ordinance contained-

(i) the owner or lessee of land or any employee in the permanent service of such owner or lessee, may hunt any game, excluding elephant, hippopotami and rhinoceros, destroying or damaging crops or plants on any cultivated land on such land: Provided that no game shall be hunted in accordance with the provisions of this subparagraph during the period from half an hour after sunset on any day to half an hour before sun rise on the following day, unless such cultivated land is not fence less than one hundred hectares in extent and enclosed with a game- proof prescribed in respect of kudu; (A 27/ 86/ 15)

(ii) any occupier of communal land may hunt any game, excluding elephant, hippopotami and rhinoceros, destroying or damaging crops or plants on any cultivated land on such communal land which has been laid out and is being cultivated by such occupier, provided such cultivated land is enclosed with a fence approved by the Director.

(b) Any person who kills any game in terms of the Provisions of this subsection shall report it in writing to the nearest nature conservator or at the nearest police office within ten days thereafter.

(c) Any person who fails or neglects to comply with the Provisions of Paragraph (b) shall be guilty of an offence.

(2) (a) Whenever the Executive Committee is convinced that it is necessary to protect grazing on a farm or any other land it may grant a permit to the owner or lessee of such farm or land authorising him, notwithstanding anything to the contrary in this Ordinance contained but subject to the conditions, requirements and restrictions which is imposed when such permit is granted, within the period mentioned in such permit to hunt on such land the species of game, and the number thereof, mentioned in such permit: Provided that-

(i) if a company is the owner or lessee of such farm or land, such permit shall be issued to a director of such company or any other person nominated by such company;

(ii) if a local authority is the owner or lessee of such farm or land, such permit shall be issued to a person nominated by the council or board of such local authority;

(iii) if the lessee of such farm or land applies for permission to hunt huntable game, huntable game birds or exotic game in terms of such permit, the Executive Committee shall grant such permit only after consultation with the owner of such huntable game, huntable game birds or exotic game.

(b) Any person to whom a permit referred to in paragraph (a) was granted, who contravenes or fails to comply with any condition, requirement or restriction of such permit, shall be guilty of an offence.

(3) If at the trial of a person on a charge for the contravention of section 30 or section 32, it appears from the evidence that the game, the subject of the charge, was lawfully killed in terms of the provisions of subsection (1), but that the accused failed or neglected to report the killing thereof in accordance with the said subsection (1) such Person may be convicted of a contravention of the said subsection (1).

(4) Any game killed lawfully in terms of this section, shall be the lawful property of the Person who so killed it.

Hunting at night.

38. (1) Subject to the provisions of section 37 and Chapter IV, no person shall without the permission of the Executive Committee hunt any game or other wild animal, other than a problem animal-

(a) with the aid of artificial light;

(b) during the period from half an hour after sunset on any day to half an hour before sunrise on the following day.

(2) Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of any permission granted in terms of this section, shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Powers of land owners in regard to persons found hunting and dogs.

39. (1) Whenever-

(a) the owner or lessee of land; or

(b) the lessee of the right to hunt huntable game, huntable game birds and exotic game on a farm or land; or

(c) any other person authorised thereto in writing by any owner or lessee referred to in paragraph (a) or (b),

comes across a person who is engaged in hunting game on such farm or land he may request the person who is so engaged in hunting immediately to produce his permit, authority or permission to hunt such game on such farm or land, and if the person who is so engaged in hunting refuses or fails immediately to produce such permit, authority or permission, he may be ordered by the first-mentioned person to furnish his true name and address and immediately to leave the farm or land, and any person who refuses or fails to obey such order. may be arrested by the person who gave the order.

(2) Whenever-

(a) the occupier of land owned by the Government of the Territory; or (A27/86/16(a))

(b) any other person authorised thereto in writing by the Executive Committee,

comes across any person who is engaged in hunting game or any other wild animal (other than a problem animal) on such land, he may request the person who is so engaged in hunting such game or wild animal immediately to produce his permit or permission to hunt such game or wild animal on such land, and if the person so engaged in hunting such game or wild animal refuses or fails immediately to produce such permit or permission, he may be ordered by the first-mentioned person to furnish his true name and address and immediately to leave the land concerned. and any person who refuses or fails to obey such order may be arrested by the person who gave the order.

(3) The occupier of land owned by the Government of the Territory and the owner or lessee of any other land may immediately destroy any dog chasing game or any other wild animal on such land (except a dog chasing such game or wild animal in accordance with the Provisions of Chapter IV) as well as any dog which is found on such farm or land and which is not under the proper control of an adult or cause any such dog to be destroyed. (A27/86/16(b))

(4) Any person who-

(a) contravenes or fails to comply with any provision of this section;

(b) refuses or fails immediately to produce any permit, authority or permission when requested in terms of subsection (1) or (2) to do so;

(c) refuses or fails to furnish his true name and address, or furnishes a name or address which is not his true name or address when ordered in terms of subsection (1) or (2) to furnish his true name and address;

(d) refuses or fails immediately to leave the farm or land concerned when ordered in terms of subsection (1) or (2) to do so,

shall be guilty of an offence.

Catching, capturing and killing of game and wild animals.

40. (1) (a) Subject to the provisions of this Ordinance, no person shall without a permit granted by the Executive Committee intentionally-

(i) kill game or any other wild animal by any means other than by shooting with a firearm;

(ii) capture game or any other wild animal by means of a snare, pitfall, trap, springtrap, net, birdlime, drug or any other device or means whatsoever or by any method whatsoever;

(iii) keep game or any other wild animal..

(b) The provisions of this subsection shall by no means prohibit the owner or lessee of land from killing or capturing wild animals not being game as defined in section 1, on such land for any purpose whatsoever.

(c) The provisions of this subsection shall not apply to the killing and capturing of reptiles and rodents not being game as defined in section 1: Provided that no person other than a licensed game dealer shall capture any such reptiles or rodents for commercial or scientific purposes without, the written permission of the Executive Committee.

(d) The Cabinet may, in its discretion grant exemption from any or all the provisions of this subsection to the owner or lessee of a farm which is enclosed with a game-proof fence or of a piece of land which is not less than one thousand hectares in extent and which is enclosed with a game-proof fence, or to a licensed game dealer or to any member or the the members of any particular population group residing on the communal land of the population group concerned. (A27/86/17(a))

(e) (i) The Executive Committee may, in its discretion, exclude any species of exotic game from the provisions of this subsection relating to the keeping of game.

(ii) The name of any species of exotic game which is so excluded from the provisions of this subsection, shall be made known by notice in the *Official Gazette*.

(2) Notwithstanding anything to the contrary contained in subsection (1) and section 41, but otherwise subject to all the provisions of this Ordinance and any other law in force in the Territory relating to the care for and the keeping, transport, sale and export of game, the owner or lessee of a farm or any piece of land not being less than one thousand hectares in extent may with the aid of helpers under his personal

supervision, for any purpose whatsoever capture and keep game on such farm or piece of land, provided such farm is enclosed with a game-proof fence and the Director has previously in writing approved the method whereby and the equipment with which such owner or lessee intends to capture such game: Provided that-

(i) the Cabinet may at any time in its discretion direct that any such owner or lessee shall only capture such game under the supervision of an officer of the Directorate;

(ii) such owner or lessee may engage any person approved by the Cabinet (whether in general or for that specific case) to capture such game in such manner. (A27/86/17(b))

(3) (a) The Executive Committee may in its discretion and in respect of such game, wild animals, birds and reptiles as it may determine, grant exemption from any or all of the provisions of this section to a person who is the holder of a licence authorising him to sell pets.

(b) An application for the exemption referred to in paragraph (a) shall be made in a form approved by the Secretary and shall be submitted to the Director.

(4) Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of any permit, approval, permission or exemption granted or any instruction given in terms of this section, shall be guilty of an offence.

(5) For the purposes of the provisions of this section excluding the provisions of subsection (1) (b), "lessee" shall not include the lessee of a farm or land, who is not the owner of the huntable game, huntable game birds and exotic game on such farm or land. (A6/88/4,)

40A. Any person who, whether personally or through any other person-

(a) without the consent of the owner or lessee of a farm or piece of land, drives or in any other manner forces or lures any game or other wild animals to trek from such farm or piece of land to any other farm or piece of land;

(b) removes, damages, cuts, flattens or raises any game-proof fence or adequate fence or constructs a game-trap in such a fence or allows a game trap to exist therein with intent to drive or lures any game or other wild animals from any farm or piece of land, without the consent of the owner or lessee of such farm or piece of land, to any other farm or piece of land or to allow game animals to pass or escape from such first-mentioned farm or piece of land to such other farm or piece of land,

shall be guilty of an offence and liable on conviction to a fine not exceeding R 4 000 or to imprisonment for a period not exceeding four years or to both such fine and such imprisonment. (A 27/ 86/ 18)

Capturing, transport and keeping of game for commercial purposes.

41. (1) Subject to the provisions of sections 40(1) (b) and 40(2) no person shall capture, transport or keep game or any other wild animal for commercial purposes unless he is licensed as a game dealer: Provided that the provisions of this subsection shall by no means prohibit any person who has captured or is keeping game or any other wild animal for commercial purposes in terms of the provisions of section 40(1) (b) or 40(2), from transporting such game for commercial purposes.

(2) Application for a game dealer's licence shall be made in the form set out in Schedule 7.

(3) A game dealer's licence shall be granted by the Executive Committee, and shall be issued in the form set out in Schedule 8.

(4) A game dealer's licence-

(a) shall be valid for the period from the first day of April in any year or, if it is issued after that day, from the day of issue, up to and including the thirty-first day of March following that day: Provided that a game dealer's licence which was issued for the calendar year 1975 in terms of an ordinance repealed by section 90, shall remain valid up to and including the thirty-first day of March, 1976;

(b) may be renewed annually; and

(c) shall not be transferable.

(5) An amount of one hundred rand shall be payable at the issue of every new game dealer's licence and at any renewal of a game dealer's licence.

(6) Every licensed game dealer shall keep a register in the form and in the manner prescribed by regulation, of all game and other wild animals which he captures, buys, sells, breeds, exchanges or barter and disposes of, and which dies..

(7) (a) The Executive Committee may in its discretion grant exemption from any or all of the provisions of this section to any person who is the holder of a licence authorising him to sell pets, in regard to such game and other wild animals as it may determine and which shall be mentioned in such exemption.

(b) An application for the exemption referred to in paragraph (a) shall be made in a form approved by the Secretary and shall be submitted to the Director.

(8) Any person who contravenes or fails to comply with any provision of this section, or any Provision, restriction or condition of a licence or an exemption granted in terms of this section, shall be guilty of an offence.

Restrictions in regard to fire-arms and capturing apparatus.

42. (1) No person shall use a revolver, pistol or automatic fire-arm when hunting game or use a fire-arm of which the bullet has an energy at the muzzle of the barrel which is lower than the following when hunting the species of game indicated thereunder:

(a) 5400 joules:
Buffalo.

(b) 2700 joules:
Eland
Kudu
Oryx
Wildebeest
Hartebeest
All species of exotic game.

(c) 1350 joules:
Springbok
Duiker:

Provided that the Executive Committee may for the purposes of this subsection by regulation differentiate between the calibre of different fire-arms in respect of different Species of game.

(2) No person shall when hunting the Species of game mentioned in subsection (1) (b) or (c) use cartridges with bullets commonly known as "solid".

(3) No person shall convey any fire-arm otherwise than in a securely fastened case or cover along any public road in the Territory' unless such person is the owner or lessee of the land upon which such road is situated or has the right to hunt game or any other wild animal on such land.

(4) Subject to the Provisions of Chapter IV no person shall-

(a) bring or cause to be brought, or be in possession of, any snare, trap, springtrap, net, birdlime or any other device or means whatsoever, intended or suitable for the capture of any game or other wild animal or, subject to the Provisions of subsection (3), a fire-arm;

(b) make any pitfall,

onto, or on, any land on which any game or other wild animals may presumably be found, unless such person is the owner or lessee of such land or unless such owner or lessee has previously given permission in writing to the person concerned to bring the article concerned onto such land or to make a pitfall on such land, and the said owner or lessee may destroy or render harmless any such article as aforementioned, which may have been brought onto such land without his permission: Provided that the provisions of paragraph (a) shall not apply to any stocks held by a licensed game dealer.

(5) Any person who contravenes or fails to comply with any provision of this section, shall be guilty of an offence.

Use of vehicles and air-craft when hunting and capturing game.

43. (1) Any person who, during a hunting expedition shoots at game out of or from a moving motor vehicle or an aircraft, or who, for any Purpose whatsoever, including that of filming or photography, wilfully drives game by means of a motor vehicle or an aircraft, shall be guilty of an offence: Provided that the Executive Committee may grant exemption from the Provisions of this section prohibiting him from using motor vehicles and aircraft so to capture, to drive away or to shoot at game, to-

- (a) the owner or lessee of a farm or land-
 - (i) desiring to drive away or shoot at game in accordance with the provisions of section 37 (1);
 - (ii) desiring to capture game on such farm or land in accordance with the provisions of section 40 (1) or (2);
- (b) a licensed game dealer desiring to capture game in accordance with the provisions of this Ordinance.

(2) Any exemption referred to in subsection (1) may be granted in general or to a specific person or in respect of a specific occasion.

Eggs of game birds.

44. (1) No person other than the lawful holder of a permit granted by the Executive Committee shall at any time remove, disturb, destroy, sell, hawk or purchase the eggs of huntable game birds or those protected birds mentioned in Schedule 4 (ii): Provided that if an owner or lessee of land may hunt such birds without a permit, he may remove the eggs of such birds without a permit for his own use.

(2) A permit issued in terms of this section shall state the kind of egg and the number thereof which may be removed, disturbed, destroyed, sold, or purchased thereunder.

(3) Any person who contravenes or fails to comply with any provision of this section, or any condition, requirement or restriction of a permit issued in terms of this section, shall be guilty of an offence.

Game for scientific purposes.

45. (1) Whenever the Executive Committee is satisfied that any species of game or wild animal is required by a public museum, zoological garden or scientific institution, or that any species of game or wild animal is required for scientific purposes or for domestication or acclimatisation, it may grant a permit to any person authorising him to hunt, kill, capture or keep such game or wild animal at the time, place or locality mentioned in such permit, notwithstanding anything to the contrary contained in this Ordinance, but subject to the conditions, requirements and restrictions mentioned in such permit.

(2) On granting any permit referred to in subsection (1) the Executive Committee may also determine the method by means of which such game or wild animal or any product derived from such game or wild animal, may or shall be disposed of.

(3) Any person who contravenes or fails to comply with any condition, requirement or restriction of any permit granted in terms of this section, shall be guilty of an offence and liable on conviction -

(a) in the case of a permit concerning specially protected or protected game, to a fine not less than two hundred and fifty rand and not exceeding one thousand five hundred rand or to imprisonment for a period of not less than three months and not exceeding three years or to both such fine and such imprisonment;

(b) in the case of a permit concerning huntable game or any other game or wild animal except huntable game birds, to a fine not less than one hundred rand and not exceeding five hundred rand or to imprisonment for a period of not less than one month and not exceeding six months or to both such fine and such imprisonment;

(c) in the case of a permit concerning huntable game birds, to the penalties prescribed by section 87.

Donation of game and game meat.

46. (1) (a) No person shall donate any game or game meat to any other person: Provided that-

(i) the owner or lessee of a farm or a piece of land or any other person who has lawfully captured or who is lawfully keeping game in accordance with the provisions of this Ordinance may at any time donate any game which he has so captured or which he is so keeping in accordance, with the provision

of this Ordinance to any other person who is the owner or lessee of a farm or land in the Territory or to whom a permit or licence has been granted in terms of this Ordinance authorising him to keep such game or to export it from the Territory;

(ii) the owner or lessee of a farm which is enclosed with a game-proof fence, or a piece of land which is not less than one thousand hectares in extent and which is enclosed with a game-proof fence may at any time donate the game meat of any game which he has lawfully hunted in accordance with the provisions of this Ordinance on such farm or piece of land, to a single person above the age of eighteen years or to the head of a family (irrespective of the size of the family) or to any church denomination, association, institution, organisation, society or body approved by the Executive Committee;

(iii) the owner or lessee of any other farm or land may, during the hunting season only donate the game meat of any game which he has lawfully hunted in accordance with the provisions of this Ordinance on such farm or land, to a single person above the age of eighteen years or to the head of a family (irrespective of the size of the family), or to a church denomination, association, institution, Organisation, society or body approved by the Executive Committee;

(iv) any person who has lawfully acquired game meat from someone else in accordance with the provisions of this Ordinance may, in the hunting season only, donate such game meat to a single person above the age of eighteen years or to the head of a family (irrespective of the size of the family), or to a church denomination, association, institution, organisation, society or body approved by the Executive Committee.

(b) Not more game meat than the meat of-

- (i) one eland, oryx, kudu or buffalo; or
- (ii) four springbok, warthogs or bush-pigs; or
- (iii) twelve huntable game birds

in any period of thirty days, shall be donated in terms of the provisions of paragraph (iii) or (iv) of the proviso to paragraph (a), by any person to any other person to whom he may so donate it.

(c) Any person who contravenes or fails to comply with any provision of paragraph (a) or (b), shall be guilty of an offence.

(2) (a) No person shall receive any game or game meat as a gift from any person other than a person who may donate it to him in terms of this -Ordinance.

(b) Any person who contravenes or fails to comply with any provision of paragraph (a), shall be guilty of an offence.

(3) (a) Any person who donates any game or game meat to any other person or to a church denomination, association, institution, organisation, society or body, shall at the time of delivering or handing over such game or game meat, hand to the person to whom it is so delivered or handed over, a document in which -

- (i) the name and the residential address of the donor;
 - (ii) the date on which and the place at which such game or game meat is delivered or handed over;
 - (iii) a description of the game or game meat so donated;
 - (iv) the name of the person, church denomination, association, institution, organisation, society or body to whom or to which such game or game meat is so donated;
 - (v) the name and the residential address of the person to whom such game or game meat is being delivered or handed over; and
 - (vi) the signature of the donor,
- is indicated fully in ink or indelible pencil.

(b) Any person who contravenes or fails to comply with any provision of paragraph (a), shall be guilty of an offence.

(4) Any person who is in possession of game or game meat as a result of a donation without being in possession of a document referred to in subsection (3), shall be guilty of an offence.

(5) The provisions of subsections (1) up to and including (4) shall not apply in respect of-

- (i) a gift of game or game meat made to his parents or children by the owner or lessee of a farm or land;
- (ii) to a gift of game meat, other than the meat of huntable game birds, of less than ten kilograms.

(6) Any person who furnishes false information in respect of any provision of this section, or who makes a false entry in a document referred to in subsection (3), shall be guilty of an offence.

(7) For the purposes of this section “lessee” shall not include the lessee of a farm or land, who is not the owner of the huntable game, huntable game birds and exotic game on such farm or land.

Sale of game, game meat and skins of game.

47. (1) No person shall sell-

- (a) any game or game meat; or
- (b) the skins of any game which is obviously under the age of one year:

Provided that -

(i) the owner or lessee of a farm which is enclosed with a game-proof fence or a piece of land which is at least one thousand hectares in extent and which is enclosed with a game-proof fence, may sell any game or game meat or any such skins originating from that farm or that piece of land;

(ii) the owner or lessee of a farm which is enclosed with an adequate fence may sell any game or game meat or any such skins originating from that farm with the written permission of the Executive Committee, which permission may be granted subject to the conditions determined by the Executive Committee, including in the case where such game is to be hunted for commercial purposes, a condition indicating the person or persons by whom such game shall be hunted;

(iii) any licensed butcher may, with the written permission of the Cabinet, sell any game meat which he has acquired from the owner or lessee of a farm or land in terms of the provisions of paragraph (i) or (ii) of this proviso; (A 27/86/19)

(iv) any licensed game dealer may sell any game which he has in his possession in accordance with the provisions of this Ordinance;

(v) any church denomination, association, institution, organisation, society or body approved by the Executive Committee may, with the written permission of the Executive Committee, sell any game or game meat which such church denomination, association, institution, organisation, society or body has obtained in terms of the provisions of this Ordinance, at a public function.

(2) No person shall purchase-

- (a) game or game meat; or
- (b) the skins of game obviously under the age of one year,

knowing it to be game or game meat or such skins: Provided that nothing in this subsection contained shall prohibit any person from purchasing-

(i) from the owner or lessee of a farm or a piece of land any game or game meat or skins; or

(ii) from a licensed butcher any game meat; or

(iii) from a licensed game dealer any game; or

(iv) from any church denomination, association, institution, organisation, society or body any game or game meat

which such owner or lessee of a farm or piece of land, licensed butcher, licensed game dealer, church denomination, association, institution, organisation, society or body may sell to him in terms of this Ordinance.

(3) (a) Any person who sells any game, game meat or the skin of game obviously under the age of one year to any other person or to a church denomination, association, institution, organisation, society or body shall, at the time of delivering or handing over such game, game meat or skin, hand to the person to whom it is so delivered or handed over, a document in which-

(i) the name and the residential address of the seller;

(ii) the date on which and the place at which such game, game meat or skin is delivered or handed over,

(iii) a description of the game, game meat or skin so sold:

(iv) the name and the residential address of the purchaser;

(v) the name and the residential address of the person to whom such game, game meat or skin is being delivered or handed over; and

(vi) the signature of the seller

is indicated fully in ink or indelible pencil

(b) Any person who contravenes or fails to comply with any provision of paragraph (a), shall be guilty of an offence.

(c) Any person who, as a result of the purchase thereof is in possession of game, game meat or the skin of game obviously under the age of one year without being in possession of a document referred to in paragraph (a), shall be guilty of an offence.

(4) No person shall, in any newspaper or otherwise, advertise the sale of

(a) any game or game meat; or

(b) the skins of game obviously under the age of one year:

Provided that nothing in this subsection contained shall prohibit-

(i) the owner or lessee of a farm or a piece of land from advertising the sale of any game, game meat or such skins;

(ii) any licensed butcher from advertising the sale of any game meat;

(iii) any licensed game dealer from advertising the sale of any game;

(iv) any church denomination, association, institution, organisation, society or body from advertising the sale of any game or game meat

which such owner or lessee of a farm or piece of land, licensed butcher, licensed game dealer, church denomination, association, institution, organisation, society or body may sell in terms of this Ordinance.

(5) For the purposes of this section-

(a) "lessee" shall not include the lessee of a farm or a piece of land, who is not, in terms of this Ordinance, the owner of the game on such farm or piece of land;

(b) "game" shall not include exotic game.

(6) Any person who contravenes or fails to comply with any provision of subsection (1), (2) or (4) or any condition, requirement or restriction of any permission granted thereunder shall be guilty of an offence and liable on conviction to a fine not less than one hundred rand and not exceeding one thousand five hundred rand or to imprisonment for a period of not less than one month and not exceeding three years or to both such fine and such imprisonment.

(7) Any person who contravenes, or fails to comply with, the provisions of subsection (3) or who furnishes false information in respect of any provision of this section, or who makes a false entry in a document referred to in subsection (3), shall be guilty of an offence.

48. (1) No person shall transport game or game meat unless he-

(a) is the holder of a permit, written authority or written permission granted and issued in terms of this Ordinance, authorising him to hunt, capture, or keep such game, or to import such game into the Territory or to export such game from the Territory, and has such permit, written authority or written permission on his person at the time of such transport;

(b) is the holder of a game dealer's licence issued in terms of this Ordinance;

(c) is the holder of a document handed to him in accordance with the provisions of section 46 or 47 and has such document on his person at the time of such transport;

(d) has been commanded in writing by the owner or lessee of a farm or land who may lawfully donate game or game meat in terms of this Ordinance, to transport game or game meat which is so donated to another person for such other person and deliver it to him and has such command as well as the document referred to in paragraph (c) on his person at the time of such transport.

(2) The provisions of subsection (1) shall not apply to-

(a) the owner or lessee of a farm or land, who transports any game or the game meat of any game lawfully hunted or captured on such farm or land in accordance with the provisions of this Ordinance;

(b) the parent or child of any owner or lessee of a farm or land who transport the game meat of any game which such parent or child has lawfully hunted on such farm or land in accordance with the provisions of this Ordinance;

(c) the employee of any owner or lessee of a farm or land who transports the game meat of any game which such employee has lawfully hunted on such farm or land in accordance with the provisions of this Ordinance, provided such employee shall have the written permission referred to in section 31 (2) on his person at the time of such transport if he transports it on any place other than the farm or land of his employer; (A 27/86/20)

(d) any person who transports game meat other than the meat of huntable game birds, of less than ten kilograms donated to him.

(3) Any person who contravenes or fails to comply with any provision of this section, shall be guilty of an offence.

Import and export of game and wild animals and their skins.

49. (1) No person shall import into the Territory or export from the Territory any game or wild animal or the raw skin or raw meat of any game or wild animal except under a permit granted by the Cabinet: Provided that the provisions of this subsection shall not apply in respect of-

(a) the raw skin of any game or wild animal imported into the Territory from the Republic of South Africa;

b) the raw skin on any game carcass which is imported into the Territory or exported from the Territory under a permit granted in terms of this subsection or in accordance with the provisions of paragraph (c);

(c) the raw meat of any game or wild animal imported into the Territory by the person for his own consumption or which has in accordance with the provisions of this Ordinance been lawfully hunted or purchased by or donated to the person so exporting it for his own consumption; (A 27/86/21 (a))

(2) (a) The Executive Committee may at any time in its discretion, place a prohibition on the import into the Territory or the export from the Territory of the prepared or tanned skin, or any product manufactured therefrom, of any species of game or wild animal, or impose the conditions which it may in its discretion determine respect of the import into the Territory or the export from the Territory of any such skin or product.

(b) Any prohibition or condition imposed under paragraph (a) shall be made known by notice in the *Official Gazette*.

(3) A permit referred to in subsection (1) shall be granted upon payment of the fees (if any) determined by the Cabinet: Provided that the Cabinet may, if it is satisfied that the game, wild animal raw skin or raw meat to which such permit has a bearing, is destined for or required by a public museum, zoological garden or scientific institution, or for scientific purposes and that no profit will be derived therefrom, in its discretion, reduce such fees or exempt the person to whom the permit is granted from the payment of such fees. (A27/86/21(b).A17/88)

(4) Any person who contravenes or fails to comply with any provision of this section, or any condition, requirement or restriction of any permit granted thereunder or a prohibition or condition imposed under this section, shall be guilty of an offence.

Prohibition of the removal of game found dead.

50. (1) Subject to the provisions of subsection (2) no person other than the owner or lessee of land on which any game is found dead shall remove such game or any part thereof from the place where it is found dead, unless it was killed in accordance with the provisions of this Ordinance by the person removing it.

(2) Any game found dead or any part thereof may-

(a) if it is found-

(i) on a proclaimed road,

(ii) within the boundaries of the road reserve of a proclaimed road and constitutes a danger to traffic on such proclaimed road,
be removed by any person from the place where it is so found to the boundary of the said road reserve which is nearest to the place where it is so found;

(b) if it obstructs any route other than a proclaimed road, be removed by any person as far as is necessary to open the route which is so obstructed.

(3) Any person who, in accordance with the provisions of subsection (1) or (2), removes any specially protected game or protected game which is found dead, from the place where it is found dead, shall report such removal to the Director in writing within ten days thereafter.

(4) Any person who contravenes or fails to comply with any provision of this section, shall be guilty of an offence.

50A. No Person shall be in possession of any raw skin of specially protected or protected game unless he is the lawful holder of-

(a) a permit granted by the Executive Committee under section 26, 27 or 36 authorising him to hunt such specially protected or protected game; or

(b) a permit granted by the Executive Committee authorising him to be in possession of such skin.
(section 2 Ord 4/77)

Inability to give satisfactory account of possession.

51. Any person found in possession of any game or wild animal or any game meat or the egg of any game or a wild animal in respect of which a reasonable suspicion exists that it has been hunted or obtained or is possessed contrary to the provision of this Ordinance, and who is unable to prove that he has hunted or acquired or possesses such game or wild animal or game meat or egg lawfully in accordance with the provisions of this Ordinance, shall be guilty of an offence.

CHAPTER IV.

PROBLEM ANIMALS.

Application of Chapter.

52. No provision of this Chapter shall be applicable within a game park: Provided that the Executive Committee may in its discretion declare that any one or more of the provisions of this Chapter shall be applicable within any game park, or any part of a game park, designated by it.

Declaration as problem animal.

53. (1) The Executive Committee may declare any wild animal a problem animal throughout the Territory or within such part or parts of the Territory as it may in its discretion determine.

(2) Whenever the Executive Committee declares any wild animal a problem animal in terms of the provisions of subsection (1), the name of such wild animal and a definition of the part or parts of the Territory within which such wild animal is declared a problem animal shall be made known by notice in the Official Gazette.

Hunting of problem animals.

54. (1) Notwithstanding anything to the contrary in this Ordinance contained but subject to the provisions of this Chapter, the owner or lessee of land may-

(a) at any time hunt any problem animal found on such land;

(b) engage or request any other person at any time to hunt, or assist in the hunting of, any problem animal found on such land as long as such problem animal is on such land.

(2) Notwithstanding anything to the contrary in this Ordinance contained, any nature conservator, or any other person authorised or instructed thereto by the Executive Committee, may at any time hunt any problem animal and for that purpose such nature conservator or other person may enter upon any land

without the consent of the owner or lessee thereof: Provided that whenever possible notice of such person's presence on such land shall be given to the occupier thereof or any other person apparently in charge thereof.

Compulsory control of black-backed jackal.

55. (1) (a) Whenever black-backed jackal are found in such large numbers on any land situated in the small stock area that, in the opinion of the Executive Committee, they constitute a nuisance or may possibly cause damage on any adjoining land which is also situated in the small stock area, the Executive Committee may, in writing, order the owner or lessee of the land on which the said black-backed jackal are so found, to exterminate the said black-backed jackal on such land, or to reduce their numbers to the satisfaction of the Executive Committee within a period specified by the Executive Committee.

(b) For the purposes of paragraph (a) "small stock area" means the whole of the Territory excluding that part of the Territory which is situated to the north of the twenty-third degree of latitude and to the east of the sixteenth degree of longitude.

(2) An order referred to in subsection (1) shall be deemed to have been served on the owner or lessee of any land -

(a) if delivered to him;

(b) if left in the care of an adult person who apparently inhabits or occupies his last-known dwelling place or such land, or who is employed there;

(c) if sent to his last-known postal address by registered post.

(3) If any owner or lessee of land on whom an order referred to in subsection (1) has been served, fails to exterminate the black-backed jackal occurring on such land, or to reduce their numbers to the satisfaction of the Executive Committee, within the period stipulated by the Executive Committee, or any extension of such period which the Executive Committee may in its discretion allow, the Executive Committee may cause the said black-backed jackal to be hunted by any nature conservator or any other person authorised or instructed thereto by the Executive Committee, and for that purpose such nature conservator Or other person may enter upon such land without the consent of the owner or lessee thereof: Provided that whenever possible, notice of such person's presence on such land shall be given to the occupier thereof or any other person apparently in charge thereof.

(4) The owner or lessee of any land on which black-backed jackal are killed in terms of the provisions of subsection (3) shall-

(a) if the land on which the black-backed jack are so killed is situated within an area in respect of which contributions towards the cost of jackal-proof fencing have been declared obligatory in terms of the Fencing Proclamation Amendment Ordinance 1957 (Ordinance 6 of 1957), pay an amount of two hundred rand; or

(b) if the land on which the black-backed jackal are so killed is not situated within an area in respect of which contributions towards the cost of jackal-proof fencing have been declared obligatory in terms of the Fencing Proclamation Amendment Ordinance 195 (Ordinance 6 of 1957), pay an amount fifty rand, to the State in respect of every black-backed jackal killed on such land in terms of the provisions of subsection (3). (A27/86/22(a))

(5) An amount payable to the State in terms of subsection (4) shall be deemed to be a debt due to the State and may be recovered from the person by whom it has to be paid in terms of the said subsection in any competent court. (A27/86/22(b))

Provision of aids.

56. The Executive Committee may on the conditions and at the prices determined by it provide any person, authorised by or in terms of this Chapter to hunt problem animals, with any apparatus and aids (including poison) which can be applied for or in connection with the hunting of problem animals.

Training of hunters.

57. (1) The Executive Committee may train nature conservators and other persons or cause them to be trained to hunt problem animals and to use any apparatus or aid which can be applied for or in connection

with the hunting of problem animals and may for that purpose present any courses or cause any courses to be presented, on such conditions (including the payment of fees) as it may determine.

(2) Notwithstanding the provisions of section 59 the Executive Committee may supply any apparatus and aids needed at the presentation of any course referred to in subsection (1).

(3) The Director shall issue every person who has Completed a course in the use, placing and setting of the coyote getter, jackal cannon or gun trap and who is, to his satisfaction, competent to use, to place and to set a coyote getter, jackal cannon or gun trap, with a certificate of competency authorising him to use, to place and to set a coyote getter, jackal cannon or gun trap subject to the conditions mentioned in such certificate: Provided that the Director may issue any person who has not completed a course in the use, placing and setting of the jackal cannon or gun trap with a certificate of competency authorising him to use, to place and to set a jackal cannon or gun trap subject to the conditions mentioned in such certificate if such person proves to the satisfaction of the Director that he is competent to use, to place and to set a jackal cannon or gun trap.

Trade in coyote getters.

58. (1) No person shall, without the written permission of the Executive Committee, import into the Territory, manufacture, sell or offer or possess for sale any coyote getter or cartridges therefor.

(2). Any person to whom permission has been granted in terms of subsection (1) to import into the Territory, manufacture, sell or offer or possess for sale coyote getters or cartridges therefor, shall keep the register prescribed by regulation.

(3). Any person who contravenes or fails to comply with any provision of this section or any condition, requirement or restriction of any permission referred to in subsection (1), shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Prohibition of the supply of coyote getters to incompetent persons.

59. (1) Subject to the provisions of section 57, no person shall sell, donate or in any other manner whatsoever supply a coyote getter or cartridges therefor to any other person unless such other person-

(a) is the holder of a certificate of competency; and

(b) produces such certificate of competency to him at the time of such sale, donation or supply.

(2). Any person who sells, donates or supplies a coyote getter or cartridges therefor to any other person contrary to the provisions of subsection (1) shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Prohibition of the obtaining of coyote getter by incompetent persons.

60. (1) Subject to the provisions of section 58, no person shall-

(a) purchase, receive or in any other manner whatsoever acquire or obtain a coyote getter or cartridges therefor;

(b) have a coyote getter or cartridges therefor in his possession unless he is the holder of a certificate of competency.

(2) Any person who purchases, receives, acquires, obtains or possesses a coyote getter or cartridges therefor contrary to the provisions of subsection (1) shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment.

Use of poison and coyote getters.

61. (1) Subject to any provisions to the contrary in any law contained, no person shall set or lay any poison other than poison approved by the Executive Committee on any land.

(2) No person shall-

(a) use, set or place a coyote getter, jackal cannon or gun trap-

(i) except under the authority of and in accordance with the conditions of a certificate of competency issued to him; and

(ii) unless warning sign boards of a design and with the wording approved by the Director have previously been erected at all entrances to the land on which such coyote getter, jackal cannon or gun trap is set or placed or is to be set or placed;

(b) set or place a coyote getter jackal cannon or gun trap-

(i) between any fence erected nearer than two hundred metres to the centre line of a proclaimed road, and such road;

(ii) at any place nearer than two hundred metres to the centre line of a proclaimed road, unless there is a fence between the place where the said coyote getter, jackal cannon or gun trap has been set or placed, and such road;

(c) use any poison which has not been approved by the Executive Committee in a coyote getter.

(3) Any person who contravenes or fails to comply with any provision of subsection (i) or (2) shall be guilty of an offence and liable on conviction to a fine not exceeding five hundred rand or to imprisonment for a period of not exceeding six months or to both such fine and such imprisonment.

Research in regard to problem animals.

62. (1) The Executive Committee may instruct any nature conservator or other officer and authorise any other person to do research in connection with the control of problem animals subject to the conditions determined by it.

(2) Any person instructed or authorised in terms of subsection (1) to do research in connection with the control of problem animals may, notwithstanding anything to the contrary in this Ordinance contained, but subject to the provisions of this Chapter and the conditions imposed by the Executive Committee, hunt any problem animals or capture or kill any problem animals by any chemical, mechanical and biological means.

(3) In the exercise of the powers or the performance of the functions or duties granted to or imposed on him by or in terms of this section, any person may, subject to the conditions determined by the Executive Committee, enter upon any land without the consent of the owner or lessee thereof: Provided that whenever possible notice of such person's presence on such land shall be given to the occupier thereof or any other person apparently in charge thereof..

Obstruction of persons in the performance of their duties.

63. Any person who-

(a) hinders, impedes or obstructs a nature conservator or the owner or lessee of land or any other officer or person in the exercise of the powers or the performance of the functions or duties granted to or imposed on him by or in terms of this Chapter;

(b) injures or kills a dog, horse or any other animal lawfully used in the course of or in connection with the hunting of problem animals in terms of this Chapter;

(c) damages, destroys or disfigures any apparatus, device or other property used in the course of or in connection with the hunting of problem animals in terms of this Chapter;

(d) is the owner or lessee of land and fails to render any reasonable assistance requested from him by a nature conservator or other officer acting in the exercise of any power or the performance of any function or duty in accordance with or in terms of the provisions of this Chapter,

shall be guilty of an offence.

Limitations in relation to damages.

64. If any person sustains damages as a result of the exercise or performance by a nature conservator or any other person of any power, function or duty granted to or imposed on such nature conservator or other person by or in terms of this Chapter, no person shall be compelled to compensate the damages concerned unless the person claiming the damages proves that the damages concerned was wantonly or negligently caused by such nature conservator or other person.

**CHAPTER V.
FISH IN INLAND WATERS.**

Definition of boundaries of lagoons.

65. (1) The Executive Committee may from time to time define the boundaries of any lagoon with reference to physical characteristics, whether natural or artificial.

(2) Any definition of the boundaries of a lagoon in terms of the provisions of subsection (1) shall be made known by notice in the *Official Gazette*.

Keeping of fish.

66. No person shall, without the written permission of the Executive Committee, place or release any fish in inland waters (excluding aquariums, and ornamental dams).
Angling under permit

67. (1) No person other than the holder of a permit granted by the Cabinet shall angle in any inland waters: Provided that-

(a) the owner or lessee of land, or the parents or children of such owner or lessee, or any person permanently employed by him and resident on such land, may angle in waters situated on such land; and

(b) any member of a particular population group may angle in waters situated on the communal land of the population group concerned,

without such permit.

(2) Any person who angles in inland waters under any permit granted in terms of this section shall at all times have such permit in his possession while he is so angling. (A27/86/23)

Manner of angling permissible.

68. (1) Subject to the provisions of subsections (3) and (4), no person shall, without the written permission of the Cabinet, catch fish in inland waters in any other manner than with a line and fish-hook: Provided that a set line shall for the purposes of this section be deemed not to be a line. (A 27/86/24)

(2) No person shall use more than two lines at the same time when angling in inland waters.

(3) No person shall-

(a) use an other fish-hook than a single fishhook when angling in inland waters;

(b) use more than two single fish-hooks on any line when angling in inland waters:

Provided that one artificial spoon, artificial fly or other artificial lure approved by the Cabinet be used instead of one single fish-hook.

(4) The provisions of this section shall not apply to any member of a particular population group who catches fish in inland waters situated on the communal land of the population group concerned. (A27/86/24)

Executive Committees may prohibit or restrict angling.

69. (1) The Executive Committee may at any time prohibit or restrict the angling of fish in general or the angling of any species of fish determined by it in any inland waters or in those inland waters determined by it on the conditions and for the period which it may deem necessary.

(2) Any prohibition or restriction imposed by the Executive Committee in terms of this section shall be made known by notice in the *Official Gazette*.

(3) Any person who contravenes or fails to comply with any provision or condition of any prohibition or restriction imposed in terms of this section shall be guilty of an offence.

Prohibition in regard to certain materials.

70. No person shall place in, or cause or allow to be dropped into, any inland waters in which fish are or might presumably be present any explosive, poisonous or intoxicating materials.

Offences.

71. Any person who contravenes or fails to comply with any provision of this Chapter, or any condition, requirement or restriction of any permit or permission granted thereunder, shall be guilty of an offence.

**CHAPTER VI.
INDIGENOUS PLANTS.**

Powers of Executive Committee in regard to indigenous plants.

72. (1) (a) The Executive Committee may from time to time amend Schedule 9 by deleting therefrom or adding thereto the name of any species of indigenous plant.

(b) Any such amendment of Schedule 9 shall be made known by notice in the *Official Gazette*.

(2) (a) The Executive Committee may from time to time exempt any species of indigenous plant in any area determined by it, from any or all of the provisions of this Ordinance.

(b) Whenever the Executive Committee has in terms of paragraph (a) exempted any species of indigenous plant from any provision or provisions of this Ordinance, the name of that species of indigenous plant, the provision or provisions of this Ordinance from which it has been so exempted, and a definition of the area in which it has been so exempted shall be made known by notice in the *Official Gazette*.

Picking and transport of protected plants.

73. (1) No person other than the lawful holder of a permit granted by the Executive Committee shall at any time pick or transport any protected plant: Provided that -

(a) the owner a nursery licensed under section 75 may without such permit pick and transport any protected plant cultivated on the premises of such nursery and cause such protected plant to be picked and transported;

(b) the owner or lessee of land may on that land without such permit pick the flower of a protected plant for use as a decoration in his home;

(c) the owner or lessee of land may without such permit pick a protected plant on that portion of such land-

(i) which he needs for cultivated lands, the erection of a building, the construction of a road or airfield or any other development which necessitates the removal of vegetation; or

(ii) on which such protected plant has been specially cultivated.

(2) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, requirement or restriction of a permit granted thereunder shall be guilty of an offence and liable on conviction to a fine not less than one hundred rand and not exceeding seven hundred and fifty rand or to imprisonment for a period of not less than one month and not exceeding twelve months or to both such fine and such imprisonment.

Sale, donation, export and removal of protected plants.

74. (1) No person other than the lawful holder of a permit granted by the Executive Committee shall sell, donate or export or remove from the Territory, any protected plant: Provided that the owner of a nursery licensed under section 75 may without such permit sell or donate and export and remove from the Territory and protected plant cultivated on the premises of such nursery

(2) Any person who contravenes or fails to comply with any provision of subsection (1) or any condition, requirement or restriction of a permit granted thereunder shall be guilty of an offence.
Exemption to owner of nursery

75. (1) Any person desiring to obtain a nursery licence shall apply therefor in writing to the Executive Committee.

(2) A nursery licence -

(a) shall be valid for the period from the first day of April of any year or, if it is issued after that day, from the day of issue, up to and including the thirty- first day of March following that day;

(b) he may be renewed annually by applying to the Director in writing for such renewal not less than six months before the expiry of the period of validity of the licence concerned; and

(c) shall not be transferable.

(3) An amount of fifty rand shall be payable at the issue and at the renewal of a nursery licence. Receipt of protected plants.

76. (1) Subject to any provisions to the contrary in this Ordinance contained, no person shall purchase a protected plant, or in any manner whatsoever come into possession thereof, or offer to purchase it or to come into possession thereof, except from a person who may lawfully sell it in terms of this Ordinance.

(2) Any person who contravenes or fails to comply with the provisions of subsection (1), shall be guilty of an offence.

Picking and transport of indigenous plants.

77. (1) Subject to any provisions to the contrary in this Ordinance contained, no person shall pick any indigenous plant on land of which he is not the owner or lessee, unless he has the written permission thereto from the owner or lessee of the land.

(2) Any person who picks any indigenous plant under a written permission granted in terms of this section, shall at all times have such written permission in his possession while he is engaged in picking or transporting such indigenous plant.

(3) The provisions of this section shall not apply to the parent, spouse or child of or white employee permanently employed by the owner or lessee of land on which indigenous plants are being picked.

(4) Any person who contravenes or fails to comply with any provision of this section, shall be guilty of an offence.

CHAPTER VII.

GENERAL.

General powers of Executive Committee.

78. The Executive Committee may -

(a) provide for the acquisition or lease of movable or immovable property, servitudes or other rights thereon, for -

(i) the establishment, erection, extension or improvement of game parks, fisheries and nurseries;

(ii) the preservation of nature or any part of nature;

(b) take the measures which it may deem necessary or desirable in connection with the propagation and preservation of wild animals, exotic game, fish and plants;

(c) take the measures which it may deem necessary or desirable for the destruction, decrease or elimination, whether in general or in any particular area, of any problem animal or any other species of wild animal, exotic game, fish or plant, which may be harmful or detrimental to the existence of any other species of wild animal, fish or indigenous plant or which, in its opinion, may present a threat from the point of view of farming or stock diseases;

(d) take the measures which it may deem necessary or desirable for the import or transfer from one area to another of wild animals, exotic game, fish and plants and the acclimatisation of such wild animals, exotic game, fish and plants in the area to which they have so been imported or transferred;

(e) take the measures which it may deem necessary or desirable for the capture of wild animals or exotic game, the catching of fish or the collection of plants;

(f) take the measures which it may deem necessary or desirable for the purchase and sale of wild animals, exotic game, fish and plants, whether alive or dead;

(g) take any measures whatsoever which it may deem necessary or desirable for research in connection with wild animals, exotic game, fisheries and plants;

(h) take the measures which it may deem necessary or desirable for the making of surveys and the conduction of investigation in connecting with wild animals, exotic game, fish and plants;

(i) take the measures which it may deem necessary or desirable for the collection and publication of statistics and information in connection with nature conservation;

(j) take the measures which it may deem necessary or desirable for the control of aquatic vegetation in waters;

(k) render any assistance, whether financial or otherwise, to anybody, society or person which or who in its opinion promotes the preservation of wild animals, fish, indigenous plants or nature in general;

(kA) take the measures which it may deem necessary or desirable for the payment of monetary rewards to persons furnishing information in connection with contraventions of the provisions of this Ordinance. (A 27/86/25)

(l) take the measures which it may deem necessary or desirable for the better carrying out of the provisions or purposes of this Ordinance in general without limitation of the generality thereof by matters mentioned specifically in this section.

Appointment of nature conservators and honorary nature conservators.

79. (1) The Cabinet may, subject to the provisions of the Government Service Act, 1980 (Act 2 of 1980), appoint the persons whom it may deem necessary and suitable, as nature conservators for the whole of the Territory, or for a part of the Territory or for magisterial district. (A 27/86/26 (a))

(2) (a) The Executive Committee may appoint one or more persons whom it may deem suitable as honorary nature conservators for the whole of the Territory or for a part of the Territory or for a magisterial district for a period not exceeding three years at a time: Provided that the Executive Committee may in its discretion appoint any person as honorary nature conservator for life.

(b) The Executive Committee may at any time withdraw the appointment of a person as an honorary nature conservator and appoint any other person whom it may deem suitable as honorary nature conservator in the place of such person.

(3) Any person who is a member of the board shall be an honorary nature conservator for as long as he holds such office.(4) Deleted A 27/86/26 (b)

Certificate of appointment.

80. Every nature conservator, except a member of the security forces, and every honorary nature conservator shall be furnished by the Director with a certificate of appointment and a badge and shall when exercising any power or performing any function or duty in terms of this Ordinance, produce such certificate for inspection if requested to do so.(A 27/86/27)

Powers, functions and duties of nature conservators and honorary nature conservators.

81. (1) A nature conservator may exercise and perform and all those powers, duties and functions granted to or imposed on him by or in terms of this Ordinance and may, in addition thereto -

(a) at any time conduct any investigation which he deems necessary in order to determine whether the provisions of this Ordinance are being complied with;

(b) at any time without warrant and without permission enter upon any land, premises, waters, building, tent, camping or other place, vehicle, vessel, boat, raft, aircraft or other means of conveyance and there conduct the investigation and inspection (including an investigation and inspection of any container or other thing found thereon or therein) which he deems necessary in order to determine whether the provisions of this Ordinance are being complied with;

(c) at any time without warrant and without permission enter upon any land, premises, waters, building, tent, camping or other place, vehicle, vessel, boat, raft, aircraft or other means of conveyance or container of whatever description, and there conduct a search if he reasonably suspects that there is anything thereon or therein which -

- (i) is being used or has been used for the purpose of or in or in connection with;
- (ii) in his opinion forms or has formed an element in;
- (iii) in his opinion will, or may furnish proof of
the commission of an offence in terms of this Ordinance;

(d) at any time in the course of any investigation or inspection which he conducts or intends conducting in terms of this Ordinance, without warrant and without permission demand that any vehicle, vessel, boat, raft, aircraft or other means of conveyance be brought to a standstill and remain stationary until he has completed his investigation or inspection and has given permission that it may depart or continue its journey;

(e) at any time without warrant seize anything

- (i) in respect of which he reasonably suspects that it is being used or has been used for the purpose of or in or in connection with;
- (ii) in his opinion forms or has formed an element in;
- (iii) in his opinion will or may furnish proof of
the commission of an offence in terms of this Ordinance;

(f) at any time question any person who in his opinion may possibly be able to furnish any information which he requires in connection with the enforcement of any provision of this Ordinance, and for that purpose, without warrant and without permission demand that any vehicle, vessel, boat, raft, aircraft or other means of conveyance be brought to a standstill and remain stationary until he has completed his questioning and has given permission that it may depart or continue its journey;

(g) at any time order any person who in his opinion may possible have information which is material in connection with a contravention of this Ordinance, to furnish him with such information as such person may be able to give;

(h) demand the name and address of any person -

- (i) who has committed an offence in terms of this Ordinance, or who is reasonably suspected of having committed such an offence;
- (ii) who is reasonably considered to be able to give evidence in connection with an offence committed in terms of this Ordinance, or is reasonably suspected of having been so committed;

(i) remove any snare, trap, springtrap, pitfall, holding pen, trap-cage, net, birdlime, fishtrap, set line, fishing tackle, gun trap, jackal cannon or coyote getter or cartridges therefor, poison or any other like article, means or contrivance which is being used or which is suspected of being used unlawfully to hunt or catch game or any wild animal or fish, from the place where it is found, or if such removal is impossible or dangerous or difficult, destroy or render it harmless;

(j) at any time demand from any person who performs or has performed an act, or in respect of whom it is reasonably suspected that he is performing or has performed an act, for which a licence, permit, exemption, written authority or permission or any other document is necessary in terms of this Ordinance, that he shall produce, such licence, permit, exemption, written authority or permission or other document;

(k) at any time demand from any person who is required in terms of this Ordinance to keep a register, to produce such register, and inspect such register;

(l) without warrant seize and confiscate any game, wild animal, fish or plant which is found in possession of, or held in captivity by any person if -

- (i) such person fails, at the demand of such nature conservator, to produce a permit, licence, exemption, written authority or permission or any other document authorising such possession or captivity;
- (ii) such game, wild animal, fish or plant is in possession of or is being kept in captivity by such person contrary to any condition specified in a permit, licence, exemption, written authority or permission or any other document produced by such person authorising such possession or keeping;

(m) having been instructed thereto by the Executive Committee, and with or without the permission of the owner or lessee of the land on which it is found, capture and transport to a game park any game or other wild animal which, owing to its scarcity, runs the risk of being exterminated;

(n) having been instructed thereto by the Executive Committee, and with the permission of the owner or lessee of the land concerned, capture or destroy on such land any game or wild animal -

(i) destroying or damaging crops or plants on cultivated lands, or cultivated trees on such land;

(ii) found in such numbers on such land that, in the opinion of the Executive Committee, they will damage or may probably damage the grazing on such land;

(iii) which is or may possibly be a danger to human beings;

(o) whenever it is necessary for the proper exercise of his powers, or for the proper performance of his functions or duties, and whether for scientific or any other purposes.

(i) hunt, capture or keep any game or other wild animal;

(ii) catch any fish irrespective of the species or size thereof;

(iii) pick any indigenous or protected plant

on any land or in an inland waters owned by the Government of the Territory or a representative authority and, with the permission of the owner or lessee thereof, also on land not owned by the Government of the Territory or a representative authority: Provided that, for the purposes of this paragraph, "lessee" shall not include the lessee of land who is not the owner of the huntable game, huntable game birds and exotic game on such land; (A27/86/28(a))

(p) if it is necessary for the exercise of his powers or the performance of his functions or duties, or if he deems it necessary therefor carry a fire-arm on his person even if he is on land which is not owned by the Government of the Territory or a representative authority; (A27/86/28)

(q) for the better exercise of any power or the better performance of any function or duty, take with him an interpreter or an assistant who shall be an officer, and such interpreter or assistant shall, while acting under the lawful command and supervision of: such nature conservator, have the same powers, duties and functions as such nature conservator.

(2) In so far as offences in terms of this Ordinance are concerned, every nature conservator shall have all the powers of a peace officer to arrest any person without warrant which peace officers have under section 22 of the Criminal Procedure Ordinance. 1963 (Ordinance 34 of 1963).

(3) When a nature conservator who has under subsection (2) been authorised to arrest any person who has contravened any provision of Chapter II or who, on reasonable grounds is suspected of the contravention thereof, attempts to arrest such person and that person flees or offers resistance and can not be arrested and prevented from escaping in any other manner than by killing the person so fleeing or offering resistance, such homicide shall legally be held to held justifiable homicide.

(4) An honorary nature conservator shall have the power granted to a nature conservator by subsection (1) (a), and shall in addition thereto -(A27/86/28(c))

(a) at the request of the Director, in the manner and at the times determined by the Director, or at any time of his own accord, report to the Director in relation to malconditions, malpractices, abuses and other matters in connection with the protection of game, other wild animals, fish and indigenous and protected plants in the area for which he has been appointed; (A27/86/28(d))

(b) as soon as possible after it has come to his notice report or cause to be reported, to the nearest nature conservator any offence in terms of this Ordinance or any other law relating to the conservation of game, wild animals or nature in force in the area for which has has been appointed;

(c) at least once per year, at the time and place and in the manner determined by the Director, report to the Director in connection with the game, wild animals, fish and: indigenous and protected plants in his area and in such report provide information in relation to -(A27/86/28(e))

(i) any noticeable decrease or increase in the numbers of any particular species of game or wild animal, and the possible or probable reasons for such decrease or increase;

(ii) prominent movements of game or wild animals such as migration from one farm or area to another, and the possible or probable reasons therefor;

(iii) epidemics or diseases occurring amongst game, wild animals, fish or indigenous or protected plants:

(iv) particular difficulties caused by game or wild animals;

- (v) comments on the hunting, capturing and keeping of game, the catching of fish and the picking of indigenous and protected plants in his area or any part thereof;
- (vi) proposals in connection with the hunting regulations for the next hunting season;
- (vii) proposals in connection with the amendment of this Ordinance or any regulations made and in force thereunder or any other law containing provisions relating to nature or game conservation and which is in force in his area;
- (viii) comments on the control and development of game parks;
- (ix) comments on any matter relating to nature conservation.

(5) Any person who assaults or resists or hinders or impedes a nature conservator, an honorary nature conservator or the assistant or interpreter of a nature conservator in the exercise of his powers or the performance of his functions or duties, or wilfully interferes with such nature conservator, honorary nature conservator, assistant or interpreter, shall be guilty of an offence and liable on conviction to a fine not exceeding R 4000 or to imprisonment for a period not exceeding four years, or to both such fine and such imprisonment. (A27/86/28(f))

(6) A person who -

(a) falsely pretends to be a nature conservator or the assistant or interpreter of a nature conservator or an honorary nature conservator.

(b) refuses or fails to comply forthwith with any order, direction, requirement or request given or put to him by a nature conservator, an honorary nature conservator or the assistant or interpreter of a nature conservator in the exercise of any power or the performance of any function or duty in terms of this Ordinance, or who furnishes untrue or misleading information when complying with such order, direction, requirement or request,

shall be guilty of an offence.

81.A (1) A nature conservator who seizes anything (hereinafter referred to as an article) under this Ordinance -

(a) may, if the article is a perishable, with due regard to the interests of the persons concerned, dispose of the article in such manner as the circumstances may require;

(b) shall, if the article is not disposed of in terms of the provisions of paragraph (a), give it a distinctive identification mark and deliver it to a policeman, who shall retain it in police custody or make such other arrangements with regard to the custody thereof as the circumstances may, whereupon the provisions of sections 50D, 50E, 50F and 50G of the Criminal Procedure Ordinance, 1963 (Ordinance 34 of 1963), shall apply mutatis mutandis with reference to any such article and such article shall for the purposes of the said sections be deemed to be an article referred to in section 50C (c) of the said Ordinance: Provided that any such article which may be forfeited in terms of any of the said sections, shall be forfeited for the State.

(2) Any article so forfeited may be disposed to the State may be disposed of by the Cabinet and the proceeds obtained therefrom shall be paid into the Central Revenue Fund. (A27/86/29,)[Ord 4/77]

Exemptions.

82. The Executive Committee may, if it is of the opinion that it is or will be in the interests of nature conservation, exempt any person from any or all of the provisions of this Ordinance.

Conditions in relation to permits, licences, registrations, approvals, permission and exemptions.

83. (1) No person shall be entitled to claim that he has a right to obtain any permit, licence, registration, approval, permission or exemption which is required or may be issued or granted in terms of this Ordinance and the Executive Committee shall not be obliged to furnish any reasons for the refusal by it to grant or issue any such permit, licence, registration, approval, permission or exemption.

(2) (a) Every permit, licence, registration, approval, permission or exemption granted by the Cabinet in terms of this Ordinance shall be issued against payment of the fees, if any prescribed for such permit, licence, registration, approval, permission or exemption by this Ordinance or a, subject to the provisions of paragraph (b), by regulation: Provided that the Cabinet may, subject to the provisions of this

Ordinance, decrease such fees or grant exemption from the payment of such fees if it is of the opinion that good and sufficient reason therefor exists. ([A27/86/30(a)])

(b) Fees prescribed by regulation under paragraph (a) for a permit or permission in relation to the hunting of game or other wild animals on communal land of a particular population group or on land owned by a representative authority, shall be so prescribed only with the concurrence of the executive authority of the population group concerned and no decrease of such fees or exemption from the payment thereof shall be allowed or granted by the Cabinet under paragraph (a) unless the executive authority concerned has concurred to such decrease or exemption.

(3) (a) Every permit, licence, registration, approval, permission or exemption granted by the Cabinet in terms of this Ordinance shall be subject to the conditions, requirements and restrictions prescribed, subject to the provisions of paragraph (b) by regulation, whether in general or for the particular permit, licence, registration, approval, permission or exemption and, in addition thereto, to the conditions, requirements and restrictions which the Cabinet may, subject to the provisions of paragraph (b), in every particular case deem necessary or expedient to impose. (A27/86/30(b))

(b) Any conditions, requirements and restrictions which are prescribed or imposed under paragraph (a) for a permit or permission in relation to the hunting of game or other wild animals on communal land of a particular population group or on land owned by a representative authority shall be so prescribed or imposed only with the concurrence of the executive authority of the population group concerned. (A.27/86/30(b))

(4) Every permit, licence, registration, approval, permission or exemption granted by the Executive Committee in terms of this Ordinance shall, subject to the provisions of this Ordinance, be valid for the period determined by the Executive Committee.

(5) (a) The Cabinet may subject to the provisions of paragraph (e), at any time, without furnishing any reasons therefore-(A27/86/30(c))

(i) withdraw any permit, licence, registration, approval, permission or exemption granted by it in terms of this Ordinance;

(ii) amend, change or withdraw the conditions, requirements and restrictions to which a permit, licence, registration, approval, permission or exemption so granted by it is subject;

(iii) add any further conditions, requirements and restrictions to the conditions, requirement and restrictions to which such permit, licence, registration, approval, permission or exemption is subject.

(b) Whenever the Executive Committee exercises any of the powers granted to it by paragraph (a), it shall inform the holder of the permit, licence, registration, approval, permission or exemption concerned thereof and such holder shall forthwith return such permit, licence, registration, approval, permission or exemption to the Director.

(c) Any person who refuses or fails so to return such permit, licence, registration, approval, permission or exemption shall be guilty of an offence.

(d) If any person suffers damages as a result of the exercise by the Cabinet of any of the powers granted to it by this subsection, the State shall not be obliged to pay any compensation to such person for any damages which he suffered as a result of the exercise of the power concerned.

(e) No condition, requirement or restriction to which a permit or permission for the hunting of game or other wild animals on communal land of a particular population group or on land owned by a representative authority is subject, shall be amended, changed or withdrawn by the Cabinet and no further condition, requirement or restriction shall be added by the Cabinet to the conditions, requirements or restrictions to which such a permit or permission is subject, unless the executive authority of the population group concerned has concurred to such amendment, change, withdrawal or addition. (A27/86/30(d)) (A.27/86/30(e))

(6) (a) Any permit, licence, registration, approval, permission or exemption issued or granted contrary to the provisions of this Ordinance shall be invalid, and the holder of any such permit, licence, registration, approval, permission or exemption or any other person who is in possession thereof shall, at the request of the Executive Committee, forthwith return such permit, licence, registration, approval, permission or exemption to the Director.

(b) Any person who contravenes or refuses or fails to comply with the provisions of paragraph (a) shall be guilty of an offence.

(7) All moneys collected and received in respect of permits or permissions issued in terms of this Ordinance for the hunting of game or other wild animals on communal land of a particular population group or on land owned by a representative authority, shall be paid to the revenue fund of the representative authority concerned. (A.27/86/30(f))

84. (1) The Executive Committee may make regulations in relation to -

(a) any matter which is required or permitted to be prescribed in terms of this Ordinance;

(b) (i) the conditions on which permission to enter a game park or a nature reserve or to reside therein may be granted and the periods or times during which a game park or nature reserve or any part thereof shall be open to the public;

(ii) the conditions on which any person entering, passing through or sojourning within a game park or nature reserve may obtain the services or attendance of officers and the fees to be paid for such services or attendance:

(iii) the fees, if any, to be paid for permission to enter or reside in a game park or a nature reserve, the admission of motor vehicles, aircraft, vessels or other vehicles to and the taking of photographs in a game park or a nature reserve or for any other matter connected with the use and enjoyment of a game park or a nature reserve;

(iv) the protection and preservation of a game park or a nature reserve and of the animals, fish, birds, vegetation or any other object or property therein;

(v) the regulation of traffic and the carriage of passengers in a game park or a nature reserve, the places at which persons may enter and the routes by which they may pass through a game park or a nature reserve;

(vi) generally for the efficient control and management of a game park or a nature reserve;

(c) the administration and control of private game parks and private nature reserves, the protection of wild animal life and wild vegetation therein and the requirements to be complied with before any area may be declared a private game park or a private nature reserve or before the declaration of any area as a private game park or a private nature reserve shall be withdrawn;

(d) the circumstances under which any permit, licence, registration, approval, permission or exemption shall be granted by the Executive Committee in terms of this Ordinance and the form in which any such permit, licence, registration, approval, permission or exemption shall be issued;

(e) the keeping of registers relating to the obtaining, processing, sale or export of the skins of game or wild animals by licensed game dealers, dealers dealing in skins of game or wild animals, tanneries and other persons or bodies interested in the obtaining, processing, sale or export of the skins of game or wild animals;

(f) the removal, disturbance or destruction of the eggs of any species of bird which is a wild animal or of any product or offal derived or obtained from any species of bird which is a wild animal and the levying of any royalties and moneys in connection therewith; (Ord 4/77)

(g) the keeping in captivity, transport or removal from one place to another of any game or wild animal;

(h) the requirements to be complied with by any person when he has wounded any game or wild animal;

(i) the immobilisation of game or wild animals;

(j) research in connection with problem animals and other animals which may possibly be declared problem animals;

(k) the registers to be kept by any person who imports or sells or offers for sale or is, for the purpose of selling it, in possession of coyote getters and cartridges therefor;

(l) the regulation, control and prohibition of the throwing or laying of poison;

(m) the payment of a reward for the destruction or extermination of problem animals, whether in general or in any specific area, the conditions on which such reward shall be paid and the proof to be submitted in connection with the payment of such reward;

(n) the supervision and control and the development and protection of fisheries;

(o) the dimensions, mass or size of fish which may be caught and kept and the definition and determination of measuring methods;

(p) the nature, dimensions, form and construction of fishing tackle which may be used, whether in general or in regard to any particular species of fish;

(q) the sale of cultivated indigenous plants;

(r) the control and regulation of the possession of any protected plant;

(s) the regulation of the import, cultivation and control of any plant, whether it is an indigenous plant or not, which, in the opinion of the Executive Committee, may be detrimental to, or create less favourable conditions for, any wild animal, fish or indigenous plant;

(t) the recognition and registration of succulent associations, including the requirements which shall be satisfied by a succulent association in order to be registered, the restrictions and conditions to which such registration shall be subject, the privileges to which such registration shall entitle a succulent association and the cancellation of such registration;

(u) the recognition and registration of cage-bird associations, including the requirements which shall be satisfied by a cage-bird association in order to be registered, the restrictions and conditions to which such registration shall be subject, the privileges to which such registration shall entitle a cage-bird association and the cancellation of such registration;

(v) the recognition and registration of any other association which has the protection or conservation of nature or any aspect thereof, or of any game, wild animals, fisheries or plants as its object, including the requirements which shall be satisfied by such association in order to be registered, the restrictions and conditions to which such registration shall be subject, the privileges to which such registration shall entitle such association and the cancellation of such registration;

(w) (i) control over the hunting of game for the sake of trophies;

(ii) control over advertising in relating to the hunting of game for the sake of trophies;

(iii) the periods during which and the places where game may or may not be hunted for the sake of trophies;

(iv) the registration of hunting farms, including the requirements which shall be satisfied by a farm in order to be registered as a hunting farm, the conditions and restrictions to which such registration shall be subject, the fees to be paid at such registration and the withdrawal of any such registration;

(v) control over hunting farms and the running thereof as well as control over the services rendered and facilities provided by or on hunting farms;

(vi) the registration of professional hunters, including the requirements which shall be satisfied by any person in order to be registered as a professional hunter, the conditions and restrictions to which such registration shall be subject, the fees to be paid at such registration and the withdrawal of any such registration;

(viA) the registration of master hunting guides, including the requirements which shall be satisfied by any person in order to be registered as a master hunting guide, the conditions and restrictions to which such registration shall be subject, the fees to be paid at such registration and the withdrawal of any such registration; (A.6/88/5(a),)

(vii) the registration of hunting guides including the requirements which shall be satisfied by any person in order to be registered as a hunting guide, the conditions and restrictions to which such registration shall be subject, the fees to be paid at such registration and the withdrawal of any such registration;

(viii) the training of persons as professional hunters, master hunting guides and hunting guides; (A.6/88/5(b))

(ix) the testing of any person in order to determine whether he satisfies the requirements for registration as a professional hunter master hunting guide or hunting guide;(A.6/88/5(c))

(x) the preservation of game, wild animals, fish and indigenous plants in general or any species of game, wild animal, fish or Indigenous plant;

(y) generally any matter which the Executive Committee may deem necessary or desirable to prescribe in order to achieve the aims and objects of this Ordinance and to ensure the effective execution of the provisions thereof.

(2) Different regulations may be made in terms of subsection (1) (b) in relation to different game parks or nature reserves.

(3) The power to make regulations in relation to any matter mentioned in subsection (1) shall include the power to prohibit anything, either absolutely or conditionally, in connection with that matter.

(4) All regulations made in terms of this section shall, subject to the provisions of this Ordinance be applicable in general and throughout the Territory: Provided that the Executive Committee may determine that any regulations so made shall be applicable only to that game, wild animal, fish or indigenous plant or exotic plant or to that part of the Territory which it determines and which is made known by notice in the *Official Gazette*.

(5) Any person who contravenes or fails to comply with the provisions of any regulation made in terms of this section shall be guilty of an offence.

Presumptions.

85. (1) Whenever in any prosecution against any person upon a charge alleging that he committed upon any particular piece of land an offence in terms of the provisions of this Ordinance, it is proved that any act, forming part of such offence, was committed in or near the locality wherein such piece of land is situated, such act shall be deemed to have been committed on such piece of land, unless it is proved-

(a) that it was committed on another piece of land; and

(b) that the person who committed such act had the right to commit it on such other piece of land.

(2) Whenever any person performs an act and he would commit or have committed an offence by performing that act if he had not been the holder of a licence, registration, permit, exemption, document, written per-mission or written or other authority or power (hereinafter in this section called the necessary authority) to perform such act, he shall, if charged with the commission of such offence, be deemed not to have been the holder of the necessary authority, unless the contrary is proved.

(3) In any prosecution for an offence in terms of the provisions of this Ordinance in connection with the unlawful keeping in captivity of any live wild animal or exotic game, any person against whom it is proved that he possesses or has possessed a live animal or exotic game, shall be deemed to keep in captivity or to have kept in captivity such wild animal or exotic game, unless the contrary is proved.(A27.86/31.)

(3A) Whenever in any prosecution for an offence in terms of the provisions of section 40A it is proved that a person has removed, damaged, cut, flattened or raised any game-proof fence or adequate fence between any farm or piece of land and other farm or piece of land of which he is not the owner or lessee or that he has constructed a game-trap in such a fence or allow a game-trap to exist therein it shall be deemed, unless the contrary is proved, that such person has removed, damaged, cut, flattened or raised such game proof fence or adequate fence or that he has constructed or retained the said game-trap therein with intent to drive or lure game or other wild animals from such other farm or piece of land onto the first- mentioned farm or piece of land or to allow game or other wild animals to pass or escape from such other farm or piece of land to such- first mentioned farm or piece land.(A6/88/6)

(4) In any prosecution for a contravention of the provisions of section 40(1) or the provisions of section 42(4) any person caught in the act of removing any game or other wild animal from any snare, pitfall, trap, springtrap, net, bird lime or other device or in the act of capturing such game or other wild animal by any means whatsoever shall, unless the contrary is proved, be deemed to have brought or to have made such article, device or means on the land on which he was so caught and to have caught such game or other wild animal by means of such article, device or means.

(5) In any prosecution for an offence in terms of the provisions of section 42, any person in whose possession a weapon or ammunition mentioned in that section is found under circumstances indicating that game has been or is being hunted or presumably was or is being hunted with such weapon or

ammunition, shall be deemed to have used such weapon or ammunition contrary to the provisions of the said section, unless the contrary is proved.

(6) Every person found in possession of the game meat or trophy obviously not older than seven days, of any specially protected game, protected game, huntable game or huntable game birds shall be deemed to have hunted such specially protected game, protected game huntable game or huntable game birds unless the contrary is proved.

(7) Whenever the game meat or the trophy of any specially protected game, protected game, huntable game or huntable game birds is found on a vehicle, vessel, boat, raft or aircraft or other means of conveyance, or at a camping or other place or in a house, every person on or at such vehicle, vessel, boat, raft, aircraft or other means of conveyance or at such camping or other place or house shall be deemed to be in possession of such game meat or trophy, unless the contrary is proved.

(8) Whenever in any prosecution for an offence in terms of this Ordinance it is alleged that an offence was committed in connection with or in respect of any species of game, wild animal, fish or indigenous or protected plant or either sex or particular class thereof, such species, sex or class shall be deemed to be correct until the contrary is proved.

(9) If any person found in possession of game meat in respect of which it is reasonably suspected that it is the meat of game hunted contrary to the provisions of this Ordinance, alleges that he has received such meat as a gift, the game referred to shall -

(a) if the person in whose possession the game meat concerned has been found or the person who he alleges has given it to him refuses or fails at the request of a nature conservator forthwith to point out the place where the game referred to has been killed to such nature conservator; or

(b) if the place where the game referred to has allegedly been killed, is so pointed out to a nature conservator but no clear evidence that game has been killed there is being found at that place, in any prosecution for an offence in terms of this Ordinance, unless the contrary is proved, be deemed to have been hunted at a place other than the place where the person in whose possession the game meat has been found or the person who he alleges has given it to him, alleges it was hunted.

General offence.

86. Any person who contravenes or fails to comply with any provision of this Ordinance or an instruction given thereunder or a requirement put thereunder or any condition, requirement or restriction of a permit, licence, registration, approval, permission or exemption issued or granted thereunder shall be guilty of an offence.

General penalty.

87. Any person who is convicted of an offence in terms of this Ordinance for which no penalty is expressly provided shall be liable on conviction -

(a) to a fine not exceeding two hundred and fifty rand or to imprisonment for a period not exceeding three months or to both such fine and such imprisonment if such person has not previously been convicted of such offence or, in the opinion of the court, a similar offence in terms of the provisions of a repealed ordinance or the law of any province of the Republic of South Africa;

(b) to a fine not exceeding five hundred rand or to imprisonment for a period not exceeding six months or to both such fine and such imprisonment. if such person has previously been convicted of an offence referred to in paragraph (a).

Continuous offences.

88. Any person convicted of an offence in terms of this Ordinance who after such conviction persists in the conduct or omission constituting such offence shall be guilty of a continuous offence and liable on conviction to a fine not exceeding ten rand in respect of every day he so persists.

Forfeiture and other orders.

89. (1) Whenever any person is convicted of an offence in terms of this Ordinance -

(a) the court convicting such person shall, subject to the provisions of this Ordinance, declare any game or wild animal or game meat or the skin, horn, tooth or tusk, egg, shell, ears, feet or head of any game

or wild animal or any fish or indigenous plant which is found in the possession of such person and which was used for the purpose of or in connection with the commission of such offence or in respect of which such offence has been committed, to be forfeited to the State; (A. 27/86/32(a))

(b) the Court convicting such person shall issue an order directing any licence or permit issued in terms of this Ordinance to the person so convicted to be withdrawn and cancelled;

(c) the court convicting such person may, subject to the provisions of this Ordinance, declare any weapon or ammunition, lamp, battery, fishing tackle, device or article referred to in section 42, animal or any other article or object which was used for the purpose of or in connection with the commission of such offence to be forfeited to the State; (A 27/86/32(b))

(d) the court convicting such person may, subject to the provisions of this Ordinance, declare any vehicle, vessel, raft, or aircraft used for the purpose of or in connection with the commission of such offence or for the purpose of conveying or removing any game or wild animal hunted or captured contrary to the provisions of this Ordinance, to be forfeited to the State. (A 27/86/32(c))

(2) Any forfeiture in terms of the provisions of subsection (1) (c) or (d) shall, notwithstanding anything to the contrary contained in any law, be ordered by the court irrespective of any rights which any person other than the convicted person has in respect of the forfeited weapon, ammunition, lamp, battery, fishing tackle, device or article referred to in section 42, animal or any other article or object, vehicle, vessel, raft or aircraft.

(3) A forfeiture or an order in terms of the provisions of subsection (I) shall be made or given in addition to any penalty, forfeiture or order that shall or may be imposed, made or given by the court in terms of this Ordinance.

(4) Anything forfeited in terms of the provisions of this section may be disposed of by the Executive Committee and the proceeds obtained therefrom shall be paid into the Territory Revenue Fund.

Jurisdiction of magistrates' courts in respect of punishments.

89A Notwithstanding anything to the contrary contained in any other law, a magistrate's court shall have jurisdiction to impose any punishment prescribed by this Ordinance. (A 27/86/32(d))

Repeal of laws

90. (1) Subject to the provisions of subsections (2) and (3) the laws mentioned in Schedule 1 are hereby repealed to the extent set out in the third column thereof.

(2) Any proclamation, regulation, notice, order, prohibition, authority, permit, licence, registration, approval, permission, exemption or document promulgated, issued, made, ordered, published, imposed, given or granted and any other act performed in terms of the provisions of any law repealed by subsection (1) shall, if not inconsistent with the provisions of this Ordinance, be deemed to have been promulgated, issued, made, ordered, published, imposed, given, granted or performed in terms of the corresponding provisions of this Ordinance.

(3) Any person appointed in terms of the provisions of an ordinance repealed by subsection (1) or a proclamation or regulation promulgated thereunder to perform duties similar to those duties required of a person appointed in terms of this Ordinance shall be deemed to have been appointed in terms of the provisions of this Ordinance.

Short title.

91. This Ordinance shall be called the Nature Conservation Ordinance, 1975.

SCHEDULE 1 LAWS REPEALED.

| Number and Year of Law | Short title | Extent to which repealed |
|------------------------|--|--------------------------|
| Ordinance 6 of 1935. | Extermination of Vermin Ordinance, 1935. | The whole. |
| Ordinance 10 of 1949 | Extermination of Wild Dogs Amendment Ordinance, 1949 | The whole. |

| | | | |
|-------------------------------|--|-----------|------------|
| Proclamation 43 of 1949. | Vermin Extermination Proclamation, 1949 | Amendment | The whole. |
| Ordinance 11 of 1958. | Extermination of Vermin Amendment Ordinance, 1958. | | The whole. |
| Ordinance 23 of 1965. | Extermination of Vermin Amendment Ordinance, 1965. | | The whole. |
| Ordinance 31 of 1967. | Nature Conservation Ordinance, 1967. | | The whole. |
| Ordinance 3 of 1968. | Nature Conservation Ordinance, 1968. | Amendment | The whole |
| Ordinance 12 of 1969. | Nature Conservation Ordinance, 1969. | Amendment | The whole. |
| Ordinance 29 of 1969. | Nature Conservation Further Amendment Ordinance, 1969. | | The whole. |
| Ordinance 21 of 1970. | Nature Conservation Ordinance, 1970. | Amendment | The whole. |
| Ordinance 21 of 1971. | Nature Conservation Ordinance, 1971. | Amendment | The whole. |
| Ordinance 6 of 1972. | Nature Conservation Ordinance, 1972. | Amendment | The whole. |
| Ordinance 8 of 1973. | Nature Conservation Ordinance, 1973. | Amendment | The whole. |
| Government Notice 74 of 1972. | | | The whole. |

Application of Ordinance 4 of 1975.

34. The Ordinance and all amendments thereof as well as all regulations made thereunder, shall, with effect from the date of commencement of this Act, apply also in those territories in which the laws repealed by section 33 were in force immediately before the date of commencement of this Act.

Short title.

35. This Act shall be called the Nature Conservation Amendment Act, 1986.

SCHEDULE LAWS REPEALED

| No. and year | Short title | Extent to which repealed |
|--|--|---|
| Ordinance 5 of 1927 | Game Preservation Ordinance 1927 | The whole in so far as it is still in force in Eastern Caprivi |
| Ordinance 19 of 1937 | Fauna and Flora Protection Ordinance, 1937. | The whole in so far as it is still in force in Eastern Caprivi. |
| Proclamation R. 1023 of 1973 | Owambo Nature Conservation Enactment, 1973. | The whole. |
| Act 4 of 1974 Kavango Legislative Council | Kavango Nature Conservation Act, 1974. | The whole. |
| Proclamation R. 188 of 1976 | Nature Conservation in Certain Native Areas in South West Africa Proclamation, 1976. | The whole. |

SCHEDULE 2.

DEFINITION OF THE BOUNDARIES OF THE ETOSHA NATIONAL PARK.

From a point where the southern boundary of the magisterial district of Owambo intersects the western road reserve boundary of trunk road 1, section 10, south-eastwards along the said road reserve boundary, but excluding the adjoining airfield, to a point where the said road reserve boundary intersects the northern boundary of the farm Cordonia 1067, situated in Registration Division "B"; thence westwards along the northern boundaries of the farms Cordonia 1067 and Onguma 314 to the north-western corner beacon of the last-mentioned farm; thence generally southwards along the boundaries of but excluding the following farms in succession, all situated in Registration Division "B", namely Onguma 314, Vergenoeg 942, Kleinbegin 941, Leeudrink 940, Farm 858, Nadubib 1083, Heliodor 857, Obab 856, Mara 840, Lynplaas 436, Vrede 435, Olifantslaagte 433, Nooitgedag 418 and Hestria 417 to the north-western corner beacon of the last-mentioned farm; thence generally westwards along the boundaries of, but excluding the following farms in succession, all situated in Registration Division "A", namely Renex 494, Grensplaas 473, Tsabis 470, Werda 469, Nuchas 468, Elandsfontein 463, Mooiplaas 462, Koppies 457, Oberland 455, Montebello 456, Leeupoort 441, Margo 438, Tiervlei 436, Sonop 434, Burgershof 432, Avond-vrede 439, Stillerus 429, Willina 427, Volouiga 424, Moesamoeroep 421, Safari 663, Leeurante 660, Seringetti 659, Farm 656, Grenswag 655, Vlakwater 652, Helaas 649, Pionier 648, Robyn 647 and Ermo 646 to the north-western corner beacon of the last-mentioned farm; thence southwards along the western boundary of the said farm Ermo 646 to the southwestern corner beacon, thereof; thence eastwards along the northern boundaries of the following properties in succession namely Portion 4 of the farm Kaross 237 and Portion 2 of the farm Kaross 237 to the northeastern corner beacon of the last-mentioned property; thence southwards along the boundary of the said property, Portion 2 of the farm Kaross 237, to the south-eastern corner beacon thereof; thence westwards along the boundaries of the following properties in succession namely Portion 2 of the farm Kaross 237, Portion 4 of the farm Kaross 237, Portion 3 of the farm Kaross 237 and the farm Swartskamp 640 to a point on the southern boundary of the last-mentioned farm where the said boundary intersects the eastern road reserve boundary of main road 67; thence northwards along the eastern boundary of the said road reserve to a point where it intersects the northern boundary of the farm Kowares 276; thence north-eastwards in a straight line to a point 5 kilometres due east of the waterhole Onaiso; thence north-westward in a straight line to the southeastern corner beacon of Quarantine Station 740; thence generally northwards along the boundary of but excluding the said Quarantine Station 740 to the southwestern corner beacon of Quarantine Station 742; thence eastwards along the southern boundary of the last-mentioned Quarantine Station to the south-eastern corner beacon thereof; thence generally eastwards to a point south-east of Otjivalunda East Salt Pan; thence generally north-eastwards in a straight line, but excluding the said pan, to a point where the said straight line meets the southern boundary of the magisterial district of Owambo; thence eastwards along the southern boundary of the said magisterial district to a point where the said boundary intersects the western road reserve boundary of trunk road 1, section 10, being the point of beginning.

SCHEDULE 3.

SPECIALLY PROTECTED GAME.

Mountain Zebra (*Equus zebra hartmannae*)
 Giraffe (*Giraffa camelopardalis*)
 Klipspringer (*Oreotragus oreotragus*)
 Elephant (*Loxodonta africana*)
 Rhinoceros (*Diceros bicornis*)
 Impala (*Aepyceros melampus*)
 Hippopotamus (*Hippopotamus amphibius*)
 Black-faced Impala (*Aepyceros petersi*)
 White Rhinoceros (*Ceratotherium simum*)
 Zebra (*Equus burchelli* species)
 (Subst. Act 31/90/3)
 (GN 75/87 Zebra (*Equus burchelli* species))

SCHEDULE 4.
PROTECTED GAME.

(i) *Animals.*

Aardwolf (*Proteles cristatus*)
 Bat-eared Fox (*Otocyon megalotis*)
 Roan Antelope (*Hippotragus equinus*)
 Tsesseby (*Damaliscus lunatus*)
 Dikdik (*Madoqua kirki damarensis*)
 Blue Wildebeest (*Connochaetes taurinus*)
 Bushbuck (*Tragelaphus scriptus*)
 Duiker (*Sylvicapra grimmia*)
 Antbear (*Orycteropus afer*)
 Clawless Otter (*Aonyx capensis*)
 Scaly Anteater (*Manis tem mincki*)
 Cheetah (*Acinonyx jubatus*)
 Spotted-necked Otter (*Lutra maculicollis*)
 Hedgehog (*Erinaceus frontalis*)
 Monitor (*Veranus niloticus*; *Veranus niloticus*; *V albigularis*)
 Leopard (*Panthera pardus*)
 Pythons (*Python sebae*, *Python anchietac*)
 Bush Baby (*Galago Senegalensis*)
 Oribi (*Ourebia ourebi*)
 Honey Badger (*Mellivora capensis*)
 Reedbuck (*Redunca arundinum*)
 Red Hartebeest (*Alcelaphus buselaphus*)
 Silver Jackal (*Vulpes chama*)
 Tortoises (*Testudinidae*)
 Steenbok (*Rhaphicercus campestris*)
 Sable Antelope (*Hippotragus niger*)
 Waterbuck (*Kobus ellipsiprymanus*)
 Sitatunga (*Tragelaphus spekei*) {GN 75/87 names added}
 Eland (*Taurotragus oryx*)
 Lechwe (*Kobus leche*)
 Crocodile (*Crocodylus niloticus*)
 Puku (*Kobus vardoni*)
 Sharp's grysbok (*Rhaphicercus sharpei*)
 (GN 90/88;GN 75/87 names added)

(ii) *Birds.*

All species of birds except the huntable game birds mentioned in Schedule 6 and the following birds:
 Weavers (All *Ploceus* spp.)
 Sparrows (All *Passer* spp.)
 Mousebirds (*Colius colius*; *Urocolius indicus*)
 Redheaded Quelea (*Quelea quelea*)
 Bulbul (*Pycnonotus nigricans*; *P. barbatus*)
 Pied Crow (*Corvus albus*).

SCHEDULE 5.
HUNTABLE GAME.

Bushpig (*Potamochoerus porcus*)
 Buffalo (*Syncerus caffer*)
 Eland (*Taurotragus oryx*)
 Oryx (*Oryx gazella*)
 Kudu (*Tragelaphus Strepsiceros*)
 Springbok (*Antidorcas marsupialis*)

Warthog (Phacochoerus aethiopicus).

**SCHEDULE 6.
HUNTABLE GAME BIRDS.**

- Guinea Fowl (Numida meleagris)
- Namaqua Sandgrouse (Pterocles namaqua).
- Kurrichane buttonquail (Turnix sylvatica)
- Common quail (Cortunix cortunix)
- Harlequin quail (Cortunix delagorguei)
- Crested francolin (Francolinus sephaena)
- Redbilled francolin (Francolinus adspersis)
- Swainson's francolin (Francolinus swainsonii)
- Orange River francolin (Francolinus levaillantoides)
- White faced duck (Dendrocygna ciduata)
- Egyptian goose (Alopochen aegyptiacus)
- Cape teal (Anas capensis)
- Hottentot teal (Anas hottentota)
- Turtle dove (Streptopelia capicola)
- Laughing dove (Streptopelia senegalensis)
- Rock pigeon (Columba guinea)
- Burchell's sandgrouse (Pterocles burchelli)
- and
- Doublebanded sandgrouse (Pterocles bicinctus)

SCHEDULE 7

ADMINISTRASIE - S.W.A. - ADMINISTRATION

AANSOEK OM'N WILDHANDELAARSLISENSIE/APPLICATION FOR A GAME DEALER'S LICENCE (Ordonnansie op Natuurbewaring, 1975/Nature Conservation Ordinance, 1975)

Jaar eindigende.....Year ending
 Naam van applikant.....Name
 of applicant
 Adres.....Address
 Ligging van grond waar (.....(Situation of land on
 - wild of wilde diere aanwild).....(which game or
 gehou sal word).....(animals will be kept
 Besonderhede van lisensie).....(Particulars of
 lisensie
 verlang).....(required
 Vorige ondervindingPrevious
 experience

.....
HANDTEKENING/SIGNATURE
DATUM.....DATE.

SCHEDULE 8

ADMINISTRASIE - S.W.A. - ADMINISTRATION

WILDHANDELAARSLISENSIE/GAME DEALER'S LICENCE

(Ordonnansie op Natuurbewaring, 1975 /Nature Conservation Ordinance, 1975)

VERVALDATUM.....DATE OF EXPIRY

Uitgereik aan:

Issued to:

LisensiehouerLicence Holder

AdresAddress

Lisensiegeld betaal, ontvangs Licence fee paid, receipt of
waarvan hierby erken word: which is hereby acknowledged:

RAND.....RAND

SENT.....CENT

R

Besonderhede van lisensie Particulars of
licence

.....

Ligging van grond waar).....(Situation of land on
wild of wilde diere aan-).....(which game or wild
gehou sal word).....(animals will be kept

.....
LISENSIEBEAMPTE/LICENCING OFFICER**SCHEDULE 9****PROTECTED PLANTS.**

Common name. Scientific name.

AIZOACEAE.

Vygies

Aridaria noctiflora Astridia

all species Cephalophyllum

all Species

Chasmatophyllum -

musculinum Cheiridopsis

all species Conophytum all

species Dinteranthus all

Species

Ebracteola all Species

Fenestraria aurantiaca

Fenestraria rhopalophylla

Hereroa all species

Jensenobotrya lossowiana

Juttadinteria all species

Lapidaria margaretae

Lithops all Species

Nananthus abides

Ophthalmophyllum

all species

Psammophora all Species

Ruschia all Species

Schwantesia all

species Stoeberia all

species

Titanopsis all species

Mountain Vygie

Window plant, yellow

Window Plant, white

Herero Vygie

Jensenobotrya

Juttadinteria

Vygie

Plains Vygie Vygie

Rusch's Vygies Vygie

Kalk Vygie Vygie

APOCYNACEAE.

Bottle tree

Elephant's trunk

ASCLEPIADACEAE

Carrion-flower species

Ghaap species

CRASSULACEAE.

LILIACEAE.

Small Aloe

Variegated Aloe

Gloriosa

Small Haworthia

MORINGACEAE.

Moringa

ORCHIDACEAE.

Orchids

PEDALEACEAE

Grapple plant

(GN 247/77)

PORTULACACEAE.

Small Elephant's Foot

VITACEAE.

Butter Tree species

Stem Succulent species

WELWITSCHIACEAE.

Welwitschia

Pachypodium lealii

Pachypodium namaquanum

Caralluma all Species

Ceropegia all Species

Decabelone barklyi

Duvalia all species

Hoodia all species

Huernia all species

Huerniopsis all species

Piaranthus all species

Stapelia all species

Tavaresia: sec Derabelone
species

Trichocaulon all species

Adromischus all species

Crassula all species

Aloe all species

Chortolirion bergerianum

Gasteria (ernesti-ruschii)
pillansii

Gloriosa virescens

Haworthia tessellata var.
engleri

Moringa ovalifolia

Orchidaceae all genera and
species

Hepagophytum

procumbens

Anacampseros all species

Portulacaria pygmaea

Cyphostemma (Cissus)

Welwitschia mirabilis.



GOVERNMENT GAZETTE

OF THE

REPUBLIC OF NAMIBIA

N\$6.40

WINDHOEK - 27 December 2007

No. 3966

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Government Notice

OFFICE OF THE PRIME MINISTER

No. 232

2007

PROMULGATION OF ACT OF PARLIAMENT

The following Act which has been passed by the Parliament and signed by the President in terms of the Namibian Constitution is hereby published in terms of Article 56 of that Constitution.

No. 7 of 2007: Environmental Management Act, 2007.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**ACT**

To promote the sustainable management of the environment and the use of natural resources by establishing principles for decision making on matters affecting the environment; to establish the Sustainable Development Advisory Council; to provide for the appointment of the Environmental Commissioner and environmental officers; to provide for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters.

(Signed by the President on 21 December 2007)

BE IT ENACTED by the Parliament of the Republic of Namibia, as follows:

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2. Object of Act

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3. Principles of environmental management

PART III**GENERAL FUNCTIONS AND POWERS OF MINISTER**

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PART I
DEFINITIONS AND OBJECT OF ACT

Definitions

1. In this Act, unless the context indicates otherwise -

"activity" means a physical work that a proponent proposes to construct, operate, modify, decommission or abandon or an activity that a proponent proposes to undertake;

"Advisory Council" means the Sustainable Development Advisory Council established by section 6;

"assessment" means the process of identifying, predicting and evaluating -

- (a) the significant effects of activities on the environment;
- (b) the risks and consequences of activities and their alternatives and options for mitigation with a view to minimise the effects of activities on the environment and to maximise the benefits and to promote compliance with the principles set out in section 3;

"assessment report" means a report that presents the procedures and findings of an assessment;

"authorisation" means an approval, licence, permit or other authorisation by a competent authority in respect of a listed activity;

"biological diversity" means the variability among living organisms from all sources, including amongst others, terrestrial and aquatic ecosystems and the ecological complexes of which they are part, and this includes diversity within species, between species and of ecosystems;

"competent authority" means -

- (a) an organ of state which is responsible, under any law, for granting or refusing an authorisation; or
- (b) the competent authority identified in terms of section 30;

"Criminal Procedure Act" means the Criminal Procedure Act, 1977 (Act No. 51 of 1977);

"environment" means the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the quality of life, including -

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- (a) the natural environment that is the land, water and air, all organic and inorganic material and all living organisms; and
- (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values;

"environmental clearance certificate" means an environmental clearance certificate issued in terms of section 34 or 37, authorising a listed activity to be undertaken;

"Environmental Commissioner" means the Environmental Commissioner appointed in terms of section 16;

"environmental officer" means an environmental officer appointed in terms of section 18;

"environmental plan" means an environmental plan referred to in section 24;

"Fund" means the Environmental Investment Fund of Namibia established by section 2 of the Environmental Investment Fund of Namibia Act, 2001 (Act No. 13 of 2001);

"listed activity" means an activity listed in terms of section 27(1) or 29;

"Minister" means the Minister responsible for environment;

"Ministry" means the Ministry responsible for the administration of matters relating to the environment;

"organ of state" means -

- (a) any office, ministry or agency of State or administration in the local or regional sphere of government; or
- (b) any other functionary or institution -
 - (i) exercising a power or performing a function in terms of the Namibian Constitution; or
 - (ii) exercising a public power or performing a public function in terms of any law,

but does not include a court or a judicial officer;

"Permanent Secretary" means the Permanent Secretary of the Ministry;

"person" includes an organ of state;

"premises" includes land and any building, structure, vehicle, ship, vessel, aircraft or container;

"prescribe" or "prescribed" means prescribe or prescribed by regulation;

"proponent" means a person who proposes to undertake a listed activity;

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“regulation” means a regulation made under this Act;

“review” when used in Part VIII, means the process of determining whether an assessment has been carried out correctly or whether the resulting information is adequate in order to make a decision;

“significant effect” means having, or likely to have, a consequential qualitative or quantitative impact on the environment, including changes in ecological, aesthetic, cultural, historic, economic and social factors, whether directly or indirectly, individually or collectively;

“staff member” means a staff member as defined in section (1) of the Public Service Act, 1995 (Act No. 13 of 1995);

“sustainable development” means human use of a natural resource, whether renewable or non-renewable, or the environment, in such a manner that it may equitably yield the greatest benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations including the maintenance and improvement of the capacity of the environment to produce renewable resources and the natural capacity for regeneration of such resources; and

“this Act”, includes any notice or regulation issued or made under this Act.

Object of Act

2. The object of this Act is to prevent and mitigate, on the basis of the principles set out in section 3, the significant effects of activities on the environment by -

- (a) ensuring that the significant effects of activities on the environment are considered in time and carefully;
- (b) ensuring that there are opportunities for timeous participation of interested and affected parties throughout the assessment process; and
- (c) ensuring that the findings of an assessment are taken into account before any decision is made in respect of activities.

PART II**PRINCIPLES OF ENVIRONMENTAL MANAGEMENT****Principles of environmental management**

3. (1) The principles set out in subsection (2) -
 - (a) guide the implementation of this Act and any other law relating to the protection of the environment;
 - (b) serve as the general framework within which environmental plans must be formulated; and
 - (c) serve as guidelines for any organ of state when making any decision in terms of this Act or any other law relating to the protection of the environment.

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- (2) The following are the principles of environmental management: -
- (a) renewable resources must be used on a sustainable basis for the benefit of present and future generations;
 - (b) community involvement in natural resources management and the sharing of benefits arising from the use of the resources, must be promoted and facilitated;
 - (c) the participation of all interested and affected parties must be promoted and decisions must take into account the interest, needs and values of interested and affected parties;
 - (d) equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be taken into account to ensure the sustainability of the systems and to prevent harmful effects;
 - (e) assessments must be undertaken for activities which may have a significant effects on the environment or the use of natural resources;
 - (f) sustainable development must be promoted in all aspects relating to the environment;
 - (g) Namibia's cultural and natural heritage including, its biological diversity, must be protected and respected for the benefit of present and future generations;
 - (h) the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term must be adopted to reduce the generation of waste and polluting substances at source;
 - (i) the reduction, re-use and recycling of waste must be promoted;
 - (j) a person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by pollution, including costs for measures as are reasonably required to be implemented to prevent further environmental damage;
 - (k) where there is sufficient evidence which establishes that there are threats of serious or irreversible damage to the environment, lack of full scientific certainty may not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and
 - (l) damage to the environment must be prevented and activities which cause such damage must be reduced, limited or controlled.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**PART III
GENERAL FUNCTIONS AND POWERS OF MINISTER****Functions of Minister**

4. The Minister's functions are to -
- (a) determine policies for the management, protection and use of the environment;
 - (b) prepare and publish policies, strategies, objectives and standards for the management and protection of the environment;
 - (c) co-ordinate environmental management at national level; and
 - (d) monitor and ensure compliance with this Act.

Powers of Minister in respect of waste

5. (1) In this section -
- (a) "disposal site" means a site used for the accumulation of waste with the purpose of disposing or treatment of such waste; and
 - (b) "waste" means any matter, whether gaseous, liquid or solid or any combination thereof, which is from time to time listed by the Minister by notice in the *Gazette* or by regulation as an undesirable or superfluous by-product, emission, residue or remainder of any process or activity.
- (2) The Minister, after following the consultative process referred to in section 44 may, by notice in the *Gazette* or by regulation, declare a site to be a waste disposal site.
- (3) Where a waste disposal site already exists in terms of any law, the Minister may approve that site as a waste disposal site for the purpose of this section.
- (4) A person may not discard or cause to be discarded waste or dispose of it in any other manner, except -
- (a) at a disposal site declared or approved by the Minister in terms of this section; or
 - (b) in a manner or by means of a facility or method and subject to such conditions as the Minister may prescribe.
- (5) Any person who contravenes subsection (4) commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**PART IV
SUSTAINABLE DEVELOPMENT ADVISORY COUNCIL****Establishment of Advisory Council**

6. There is established an advisory council to be known as the Sustainable Development Advisory Council.

Functions of Advisory Council

7. The functions of the Advisory Council are to -
- (a) promote co-operation and co-ordination between organs of state, non-governmental organisations, community based organisations, the private sector and funding agencies, on environmental issues relating to sustainable development;
 - (b) advise the Minister -
 - (i) on the development of a policy and strategy for the management, protection and use of the environment;
 - (ii) on the conservation of biological diversity, access to genetic resources in Namibia and the use of components of the environment in a way and at a rate that does not lead to the long-term decline of the environment, thereby maintaining its potential to meet the needs and aspirations of present and future generations;
 - (iii) on appropriate methods of monitoring compliance with the principles set out in section 3;
 - (iv) on the need for, and initiation or amendment of legislation, on matters relating to the environment; and
 - (c) perform other functions assigned to it by the Minister.

Composition of Advisory Council

8. (1) The Advisory Council consists of the following members appointed by the Minister -

- (a) four persons who represent the interests of the State; and
- (b) four persons whom the Minister reasonably believes represent the interests of organisations, associations or institutions concerned with environmental matters.

(2) The Environmental Commissioner is an *ex officio* member of the Advisory Council, but may not vote at its meetings.

(3) Persons appointed as members of the Advisory Council must have the necessary knowledge of, or experience in, matters relating to the functions of the Advisory Council.

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(4) When any nomination in terms of subsection (1)(a) becomes necessary, the Minister must invite the State to nominate persons within a period of 30 days from the date of the invitation.

(5) When any nomination in terms of subsection (1)(b) becomes necessary, the Minister must invite the public, organisations, associations or institutions by notice in the *Gazette* and in any other appropriate manner, to nominate persons within a period of 30 days from the date of the notice.

(6) If, after the Minister has invited nominations in terms of subsections (4) or (5), the Minister receives no or insufficient nominations within the period specified in the notice, the Minister may appoint the required number of persons who qualify for appointment in terms of this section.

(7) The Minister must designate one of the members of the Advisory Council as chairperson.

(8) The Minister must, as soon as possible after appointing the members of the Advisory Council, make known in the *Gazette* -

- (a) the name of every person appointed as a member;
- (b) the period for which the appointment is made; and
- (c) the date from which the appointment takes effect.

(9) The Advisory Council may with the approval of the Minister co-opt any person to assist it in its functions, but the person co-opted may not vote at meetings of the Advisory Council.

(10) The Advisory Council may establish one or more committees consisting of members only or consisting of members and non-members to perform, subject to the Advisory Council's directions, functions the Advisory Council may assign to such committee.

Term of office of members of Advisory Council

9. Subject to section 10, a member of the Advisory Council holds office for a term of three years and may be reappointed at the end of that term.

Vacation of office and filling of vacancies

10. (1) The office of a member of the Advisory Council becomes vacant if the member -

- (a) is absent from three consecutive meetings of the Advisory Council without the permission of the Advisory Council;
- (b) through a written notice addressed to the Minister, resigns from office;
- (c) ceases to represent the State, organisation, association or institution for which the member has been appointed; or

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(d) is for any other reasonable cause removed from office by the Minister.

(2) Before removing a member from office in terms of subsection (1)(d), the Minister must -

- (a) in writing notify the member concerned of the grounds on which the member is to be removed from office;
- (b) give the member an opportunity to make oral or written representations on the matter to the Minister or to any person designated by the Minister; and
- (c) consider any representations made in terms of paragraph (b).

(3) If a member of the Advisory Council dies or vacates office before the expiry of his or her term of office the Minister must, in accordance with section 8, appoint a person to fill the vacancy for the unexpired portion of the term for which that member was appointed.

Meetings of Advisory Council

11. (1) The Advisory Council must meet at least two times a year.

(2) The first meeting of the Advisory Council must be held at a place, date and time determined by the Minister and thereafter any meeting of the Advisory Council must be held at a place, date and time determined by the chairperson of the Advisory Council.

(3) The chairperson may at any time call a special meeting of the Advisory Council, at the request of the Minister or of a majority of the members.

(4) At the first meeting of the Advisory Council the members must elect from among their number a deputy chairperson.

(5) The chairperson of the Advisory Council, or in the absence of the chairperson, the deputy chairperson, presides at meetings of the Advisory Council, or if both the chairperson and deputy chairperson are absent from the meeting, or are unable to preside at the meeting, the members must elect a member to preside at the meeting.

(6) At any meeting of the Advisory Council -

- (a) a majority of the members of the Advisory Council forms a quorum;
- (b) a decision of a majority of members of Advisory Council present at a meeting is the decision of the Advisory Council; and
- (c) if, there is an equality of votes, the person presiding at the meeting has a casting vote in addition to that person's ordinary vote.

(7) The Advisory Council determines the procedures to be followed at its meetings.

(8) As soon as possible after a meeting of the Advisory Council has taken place, the chairperson must cause a copy of the minutes to be submitted to the Minister.

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12. (1) The Permanent Secretary must -

- (a) make staff members in the Ministry available to perform the clerical work for the Advisory Council in the performance of its functions; and
- (b) designate a staff member of the Ministry as secretary of the Advisory Council.

(2) The expenditure resulting from the performance of the duties and functions of the Advisory Council in terms of subsection (1) must be paid from the State Revenue Fund from moneys appropriated for that purpose by Parliament.

Allowances of members of Advisory Council and committees

13. Members of the Advisory Council and of a committee of the Advisory Council who are not in the full time employment of the State are entitled to such allowances as the Minister, with the concurrence of the Minister responsible for finance, may determine.

Disclosure of interest

14. (1) If a member of the Advisory Council or of a committee of the Advisory Council has a direct or indirect financial or other interest in a matter being dealt with or about to be dealt with by the Advisory Council or a committee of the Advisory Council, the member must as soon as is possible after the relevant facts come to the member's knowledge, disclose the nature of the interest to the chairperson of the Advisory Council.

(2) Any disclosure made under this section must be noted in the minutes of the relevant meeting of the Advisory Council.

(3) A member of the Advisory Council or of a committee of the Advisory Council who contravenes subsection (1) commits an offence and is on conviction liable to a fine not exceeding N\$10 000 or to imprisonment for a period not exceeding two years or to both such fine and such imprisonment.

Annual report

15. (1) As soon as possible after the end of each financial year as defined in the State Finance Act, 1991 (Act No. 31 of 1991), the Advisory Council must prepare an annual report in accordance with subsection (2).

(2) The annual report must include -

- (a) a report on the activities of the Advisory Council; and
- (b) any other matter the Minister may consider necessary to be included in the report.

(3) As soon as possible after the annual report has been prepared, the chairperson of the Advisory Council must cause a copy of the report to be submitted to the Minister.

(4) The Minister must lay a copy of the Advisory Council's annual report before

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the National Assembly within 30 days of receipt thereof, if the National Assembly is then in ordinary session, or if the National Assembly is not then in ordinary session, within 30 days after the commencement of the next ordinary session.

PART V**ENVIRONMENTAL COMMISSIONER AND ENVIRONMENTAL OFFICERS****Appointment of Environmental Commissioner**

16. (1) The Minister must, subject to the laws governing the public service, appoint a person who is suitably qualified and experienced in environmental matters -

- (a) to be the Environmental Commissioner; and
- (b) to be the Deputy Environmental Commissioner, who must perform the duties and functions of the Environmental Commissioner when there is no Environmental Commissioner or when the Environmental Commissioner is absent or is for any other reason unable to perform his or her functions.

(2) The Environmental Commissioner may perform any duty or function or exercise any power of an environmental officer.

(3) The Permanent Secretary must make staff members of the Ministry available to assist the Environmental Commissioner in the performance of any duty or function or the exercise of any power in terms of this Act.

Functions of Environmental Commissioner

17. (1) The Environmental Commissioner must perform the functions set out in subsection (2), subject to the general or specific policy directives of the Minister.

- (2) The functions of the Environmental Commissioner are to -
- (a) advise organs of state on the preparation of environmental plans;
 - (b) receive and record applications for environmental clearance certificates;
 - (c) determine whether a listed activity requires an assessment;
 - (d) determine the scope, procedure and methods of an assessment;
 - (e) review the assessment report in accordance with this Act;
 - (f) issue environmental clearance certificates in terms of this Act;
 - (g) maintain a register of environmental assessments undertaken in terms of this Act;
 - (h) maintain a register of environmental clearance certificates issued and environmental plans approved in terms of this Act;
 - (i) conduct inspections for monitoring compliance with this Act; and
 - (j) perform any other duty or function which the Minister may assign or prescribe.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**Appointment of environmental officers**

18. (1) Subject to the laws governing the public service, the Minister may appoint environmental officers, as he or she may consider necessary for carrying out the provisions of this Act.

(2) If the Minister considers it necessary, and subject to such conditions as the Minister may from time to time and in consultation with the Minister responsible for finance determine, the Minister may appoint any person who is not in the full-time employment of the State as an environmental officer in any particular case or may so appoint such person to assist an environmental officer appointed in terms of subsection (1).

(3) Before appointing persons employed in any other organ of state, as environmental officers, the Minister must obtain the consent of the relevant employer.

(4) The Minister may withdraw the appointment of an environmental officer.

(5) Each environmental officer appointed in terms of subsection (1) or (2) must be furnished with a certificate of appointment in the form determined by the Permanent Secretary and stating that he or she has been appointed as an environmental officer, but if his or her appointment as environmental officer is limited to any particular function or functions his or her certificate must state such limitation.

(6) When performing any function or duty or exercising any power in terms of this Act, an environmental officer must on demand by any person in relation to whom the function, duty or power is performed or exercised, produce the certificate of appointment.

Entry and inspection

19. (1) In this section "member of the police" means a member of the Namibian Police Force as defined in section 1 of the Police Act, 1990 (Act No. 19 of 1990).

(2) To the extent that this section authorises the interference with the privacy of persons homes, correspondence or communications as contemplated in Article 13(1) of the Namibian Constitution, this section is enacted on the authority of Sub-Article (2) of that Article.

(3) An environmental officer may, on the authority of a warrant issued in terms of subsection (5) -

(a) in order to obtain evidence, enter premises where he or she has reason to believe that any provision of this Act has been or is being contravened;

(b) direct the person in control of or employed at the premises -

(i) to deliver any book, record or other document that relates to the investigation and which is in the possession or under the control of that person;

(ii) to furnish such information as he or she has with regard to that matter; and

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- (iii) to render such assistance as the environmental officer requires in order to enable him or her to perform his or her duties or functions under this Act;
 - (c) inspect any book, record or other document and make copies of it or excerpts from it;
 - (d) seize any material, substance, book, record or other document which is or may be relevant to a prosecution under this Act and keep it in his or her custody, but the person from whose possession or control any book, record or document has been taken, may, at his or her own expense and under supervision of the environmental officer concerned, make copies of it or excerpts from it; and
 - (e) take samples of any material or substance seized in terms of paragraph (d), for analysis.
- (4) An environmental officer conducting a search under subsection (3) and (10) may -
- (a) request a member of the police to assist in the exercise of the powers referred to in this section; and
 - (b) request any person to assist as an interpreter or otherwise in the exercise of the powers referred to in this section.
- (5) A warrant referred to in subsection (3) must be issued by a judge of the High Court or by a magistrate who has jurisdiction in the area where the premises in question are situated, and may only be issued if it appears from information on oath that there are reasonable grounds for believing that any material, substance or other things contemplated in subsection (3) is on or in such premises, and must specify which of the acts mentioned in that subsection may be performed in terms of the warrant by the person to whom it is issued.
- (6) Any environmental officer executing a warrant in terms of this section must immediately before commencing the execution -
- (a) identify himself or herself to the person in control of the premises, if such person is present, and hand to such person a copy of the warrant or, if such person is not present, affix such copy in a prominent place on the premises; and
 - (b) supply such person at the request of such person, with particulars regarding his or her authority to execute such a warrant.
- (7) A person may not enter or search any premises unless he has audibly demanded admission to the premises and has notified the purpose of his or her entry, unless such person is, on reasonable grounds, of the opinion that any material, substance or other things contemplated in subsection (3) may be destroyed if such admission is first demanded and such purpose is first notified.
- (8) Any entry and search in terms of this section must be executed by day, unless the execution of it by night is justifiable and necessary.

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(9) A warrant contemplated in this section may be issued on any day and is effective until -

- (a) it is executed;
- (b) it is cancelled by the person who issued it or, if such person is not available, by any person with similar authority;
- (c) one month from the date of its issue; or
- (d) the purpose for which the warrant was issued, no longer exists, whichever occurs first.

(10) An environmental officer may without a warrant enter on any premises and search for, seize and remove anything referred to in subsection (3), if -

- (a) the person who is competent to do so consents to such entry, search, seizure and removal; or
- (b) there are reasonable grounds to believe that -
 - (i) a warrant would be issued to the environmental officer if he applied for such warrant; and
 - (ii) the delay in obtaining such warrant would defeat the purpose of the search.

(11) A material or substance seized in terms of this section must be dealt with as contemplated in Chapter 2 of the Criminal Procedure Act.

Compliance orders

20. (1) For the purpose of this section "exceptional circumstances" includes circumstances in which the delay necessary to issue a written order that meets the requirements of subsection (2) would result in danger to human life or the environment.

(2) An environmental officer may issue a compliance order to a person whom the environmental officer has reason to believe -

- (a) has contravened this Act; or
- (b) has contravened a condition of an environmental clearance certificate.

(3) A compliance order must set out -

- (a) the name of the person to whom the order applies;
- (b) the provision or condition which has been contravened;
- (c) details of the nature and extent of the contravention;
- (d) any steps that are required to be taken and the period within which those steps must be taken; and

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- (e) any penalty that may be imposed in terms of this Act if those steps are not taken;
- (f) the procedure to be followed in lodging an objection to the compliance order with the Minister; and
- (g) any other prescribed matter.

(4) In exceptional circumstances a compliance order may be given orally, but within a period of seven days after such order is given, a written order must be issued in accordance with subsection (3).

(5) A person who receives a compliance order must comply with that order within the time period stated in the order unless the Minister has agreed to suspend the operation of the compliance order under section 21.

(6) Where a person fails to take any measures specified in the compliance order without raising an objection an environmental officer may take the measures or cause them to be taken.

(7) Any costs incurred by the environmental officer in connection with any action taken under subsection (6) may be recovered from the person referred to in that subsection as a debt owing to the State.

(8) Any person who, without good reason, fails or refuses to comply with a compliance order commits an offence and is liable on conviction to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.

Objections to compliance order

21. (1) Any person issued with an order in terms of section 20, may apply to the Minister in the prescribed form and manner for the review of the order within -

- (a) 14 days after receiving that order; or
- (b) such longer period as may be allowed by the Minister on good cause shown.

(2) After considering the application made in terms of subsection (1), and any other relevant information, the Minister may confirm, modify or cancel all or part of the order.

(3) If the Minister confirms or modifies all or part of a compliance order, the applicant must comply with that order as confirmed or modified, within the time period specified in it.

(4) The Environmental Commissioner must in the prescribed form and manner notify the person referred to in subsection (1), of the decision made in terms of subsection (2) and the reasons for the decision.

Offences in relation to environmental officers

22. (1) A person commits an offence if the person -

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- (a) hinders or obstructs an environmental officer in the performance of the environmental officer's duties and functions or the exercise of the environmental officer's powers;
- (b) without lawful excuse, refuses or fails to answer any question put by an environmental officer;
- (c) intentionally furnishes false and misleading information to an environmental officer; or
- (d) falsely claims to be an environmental officer.

(2) A person convicted of an offence contemplated in subsection (1) is liable to a fine not exceeding N\$20 000 or to imprisonment for a period not exceeding two years or to both such fine and such imprisonment.

PART VI
ENVIRONMENTAL PLANS

Objects of environmental plans

23. The objects of environmental plans are to -
- (a) co-ordinate and harmonise the environmental policies, plans, programmes and decisions of the various organs of state that exercise functions that may affect the environment or are entrusted with powers and duties aimed at the achievement, promotion, and protection of a sustainable environment, in order to -
 - (i) minimise the duplication of procedures and functions; and
 - (ii) promote consistency in the exercise of functions that may affect the environment; and
 - (b) enable the Minister to monitor the achievement, promotion and protection of a sustainable environment.

Environmental plans

24. (1) For the purpose of this Part, the Minister may identify and list by notice in the *Gazette* or by regulation organs of state which are exercising functions that may affect the environment.

(2) Every organ of state identified and listed in terms of subsection (1), must prepare an environmental plan in the prescribed form and manner.

(3) Every organ of state contemplated in subsection (1), must in the preparation of an environmental plan take into consideration every other environmental plan already adopted with a view to achieving consistency among such plans.

(4) The Environmental Commissioner may, at the request of an organ of state assist with the preparation of an environmental plan.

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(5) The Minister may issue guidelines to assist organs of state in the preparation of environmental plans.

Approval of environmental plans

25. (1) Every organ of state required to submit an environmental plan must submit the plan to the Environmental Commissioner within the prescribed period.

(2) The Environmental Commissioner must scrutinise every environmental plan and -

- (a) recommend the approval of the plan to the Minister;
- (b) report to the Minister as well as to every other identified organ of state on the extent to which the environmental plan concerned fails to comply with-
 - (i) the principles set out in section 3;
 - (ii) the objects of environmental plans specified in section 23; or
 - (iii) any relevant environmental plan,

and set out the changes needed in the environmental plan concerned.

(3) Where the environmental plan is approved by the Minister, the relevant organ of state must adopt and publish its plan in the *Gazette* within 90 days of the approval and the plan becomes effective from the date of publication.

(4) The exercise of functions by organs of state may not be delayed or postponed on account of -

- (a) the failure of any organ of state to submit an environmental plan;
- (b) the scrutiny of any environmental plan by the Environmental Commissioner;
- (c) the amendment of any environmental plan following scrutiny of the plan by the Environmental Commissioner; or
- (d) the failure of any organ of state to adopt and publish its environmental plan.

Compliance with environmental plans

26. (1) Every organ of state must exercise every function it may have, or that has been assigned or delegated to it, by or under any law, and that may significantly affect the protection of the environment, substantially in accordance with the environmental plan prepared and approved in accordance with this Part, but any substantial deviation from an environmental plan must be reported to the Environmental Commissioner.

(2) Every organ of state identified and listed in terms of section 24(1) must report annually to the Minister on the implementation of its adopted environmental plan.

(3) The Environmental Commissioner monitors compliance with environmental plans and may -

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- (a) take any steps or make any inquiries the Commissioner considers necessary in order to determine if environmental implementation plans are being complied with by organs of state; and
 - (b) if, as a result of any steps taken or inquiry made under paragraph (a), the Commissioner is satisfied that an environmental implementation plan is not substantially being complied with, serve a written notice on the organ of state concerned, calling on it to take such specified steps as the Commissioner considers necessary to remedy the non-compliance.
- (4) A copy of every environmental plan must be made available for public inspection, without charge, at the office of the Environmental Commissionr during office hours.

PART VII
ENVIRONMENTAL ASSESSMENT

Listing of activities and prohibition in respect of listed activities

27. (1) The Minister, after following the consultative process referred to in section 44, may list, by notice in the *Gazette*, activities which may not be undertaken without an environmental clearance certificate.

(2) Activities listed, under subsection (1), may include activities in respect of any of the following areas -

- (a) land use and transformation;
- (b) water use and disposal;
- (c) resource removal, including natural living resources;
- (d) resource renewal;
- (e) agricultural processes;
- (f) industrial processes;
- (g) transportation;
- (h) energy generation and distribution;
- (i) waste and sewage disposal; chemical treatment;
- (j) recreation; and
- (k) any other area which the Minister considers necessary for the purpose of listing.

(3) Despite any other law to the contrary, a person may not undertake a listed activity, unless the person is a holder of an environmental clearance certificate in relation to that activity.

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(4) Any person who contravenes subsection (3) commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.

Exemption

28. The Minister may in a notice under section 27 make provision for the granting of an exemption in respect of an activity.

Provisions relating to listing of activities

29. (1) The Minister may amend the list referred to in section 27(1), by -

- (a) adding an activity to the list;
- (b) removing an activity from the list; or
- (c) making other changes to the particulars on the list;

(2) The Minister must comply with section 27(1) before amending the list referred to in that section.

(3) Any person may make representations to the Minister on the desirability of having an activity listed in terms of section 27(1) or delisted in terms of this section.

(4) The Minister is not bound by a representation made under subsection (3).

Procedure for identifying competent authorities

30. (1) Where no person or authority is, in terms of any other law, charged with the responsibility of granting authorisation in respect of a listed activity the Minister must in the notice under section 27(1) identify a person or authority who is responsible for granting authorisation in respect of that activity.

(2) The Minister or any other organ of state may under subsection (1) be identified as the competent authority.

(3) The Minister may agree with an organ of state that applications for environmental clearance certificates in respect of which the Minister is identified as the competent authority be dealt with by that organ of state.

Effect of authorisations under other laws

31. (1) Despite any other law to the contrary, a competent authority may not issue an authorisation unless the proponent has obtained an environmental clearance certificate in terms of this Act.

(2) An authorisation issued contrary to subsection (1) is invalid.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**PART VIII
ENVIRONMENTAL ASSESSMENT PROCESS****Application for environmental clearance certificate**

32. (1) A person who is required to obtain an environmental clearance certificate must, in the prescribed form and manner and on payment of the prescribed fee, apply to the relevant competent authority for an environmental clearance certificate in respect of the listed activity to be undertaken.

(2) The competent authority must in the prescribed manner forward the application referred to in subsection (1) to the Environmental Commissioner, if the proponent complies, in respect of the proposed activity, with any requirements prescribed by law in respect of that activity.

Registration of application and determining whether assessment is required

33. (1) When an application is made for an environmental clearance certificate, the Environmental Commissioner must -

- (a) register the application in the prescribed assessment register, and
- (b) within the prescribed time, decide whether the proposed activity requires an assessment.

(2) In making a decision in terms of subsection (1)(b), the Environmental Commissioner must -

- (a) follow the consultative process referred to in section 44; and
- (b) take into account -
 - (i) any comment received in terms of the consultative process;
 - (ii) the significant effect of the proposed activity on the environment;
 - (iii) the nature and extend of the proposed activity;
 - (iv) the principles set out in section 3; and
 - (v) any other matter that may be prescribed.

(3) A decision under subsection (1) does not exempt the proponent from complying with other requirements prescribed in respect of the proposed activity under any other law.

Procedure where assessment is not required

34. (1) Where the Environmental Commissioner has under section 33, decided that the proposed activity does not require an assessment the Environmental Commissioner may -

- (a) grant the application and, on payment of the prescribed fee, issue an environmental clearance certificate to the proponent; or

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(b) refuse the application and provide the proponent with reasons for the refusal.

(2) The Environmental Commissioner must within the prescribed time and in the prescribed form and manner -

(a) notify the proponent of the decision made in terms of subsection (1); and

(b) provide the proponent with the environmental clearance certificate, if issued.

(3) Any person who fails to comply with any condition attached to the environmental clearance certificate in terms of subsection (1) commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 25 years or to both such fine and such imprisonment.

Procedure where assessment is required

35. (1) Where the Environmental Commissioner has under section 33 decided that the proposed activity requires an assessment the Environmental Commissioner must -

(a) determine -

(i) the scope of the assessment; and

(ii) the procedures and methods for conducting the assessment;

(b) in the prescribed manner -

(i) notify the proponent that an assessment of the proposed activity is required to be carried out and prepared by the proponent, at the proponent's own expense, in accordance with the scope, procedures and methods determined under paragraph (a); and

(ii) state a reasonable period within which the assessment report must be submitted to the Environmental Commissioner.

(2) An assessment report must consist of the matters as prescribed.

(3) When determining the scope, procedures and methods of an assessment the Environmental Commissioner must follow the consultative process referred to in section 44.

(4) The Environmental Commissioner may vary the scope, procedures and methods determined under subsection (1)(a) -

(a) in accordance with modifications proposed by the proponent; or

(b) if the Environment Commissioner considers it necessary to complete an effective and timely assessment of the proposed activity.

(5) The Environmental Commissioner may, on application of the proponent and on good cause shown extend the period stipulated under subsection (1)(b)(ii) for the submission of the assessment report.

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(6) If, upon submission of the assessment report by the proponent, it appears to the Environmental Commissioner that the prescribed requirements in respect of the contents of the assessment report have been complied with the Environmental Commissioner must -

- (a) at the cost of the proponent, notify the application in the prescribed manner; or
- (b) direct the proponent to notify the application in the prescribed manner.

(7) A notification of an application under subsection (6) must -

- (a) contain the prescribed particulars in relation to the application;
- (b) state that the application and assessment report are available for inspection at the office of the Environmental Commissioner;
- (c) invite written submissions in relation to the application and assessment to be lodged with the Environmental Commissioner; and
- (d) specify the closing date for submissions.

(8) Where the proponent is directed under subsection (6)(b) to notify the application the proponent must furnish proof of the notification to the Environmental Commissioner as soon as is possible after the date of the publication of the notification.

Review

36. (1) Within a reasonable time after the closing date referred to in section 35(7)(c), the Environmental Commissioner must review the application and may take any action the Environmental Commissioner considers appropriate for the review of the application, including -

- (a) consulting any person, institution, or authority on any matter concerning the application, the assessment or any submission received in relation to the application;
- (b) carrying out, or appointing a person or a committee of persons to carry out, an investigation, including a process of public consultation, in relation to any matter concerning the application, the assessment or any submission; or
- (c) holding a public hearing.

(2) At least 14 days before the date fixed for the holding of a public hearing in accordance with subsection (1)(c), the Environmental Commissioner must give notice of the public hearing -

- (a) in the prescribed manner to the proponent;
- (b) in writing to every person from whom a submission in relation to the application has been received; and

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- (c) by publication of the notice in the prescribed manner.
- (3) The notice in terms of subsection (2) must -
 - (a) specify the date, time and place of the public hearing; and
 - (b) contain a brief description of the nature of the application.

Environmental Commissioner's decision

37. (1) After reviewing the assessment report in terms of section 36, the Environmental Commissioner may -

- (a) grant the application, and on payment of the prescribed fee, issue an environmental clearance certificate to the proponent; or
 - (b) refuse the application and provide the proponent with reasons for the refusal.
- (2) The Environmental Commissioner must within the prescribed time and in the prescribed form and manner -
- (c) notify the proponent of the decision made in terms of subsection (1); and
 - (d) provide the proponent with the environmental clearance certificate, if issued.

(3) Any person who fails to comply with any condition attached to an environmental clearance certificate in terms of subsection (1) commits an offence and is on conviction liable to a fine not exceeding N\$500 000 or to imprisonment for a period not exceeding 20 years or to both such fine and such imprisonment.

Record of decisions

38. (1) The Environmental Commissioner must, in accordance with subsection (2), keep a record of decisions made under sections 33, 34 and 37.

(2) The record of decisions must be kept in the prescribed form and must consist of information that may be prescribed.

(3) A copy of the record must be made available for public inspection at the office of the Environmental Commissioner during office hours.

Amending conditions of environmental clearance certificate

39. (1) The Environmental Commissioner may amend a condition of an environmental clearance certificate -

- (a) if the certificate holder consents to or requests for the amendment; or
- (b) at the initiative of the Environmental Commissioner, by giving written notice to the holder of the certificate.

(2) The Environmental Commissioner may require the holder of the environmental clearance certificate to make an application in the prescribed form and manner to the Environment Commissioner for the proposed amendment.

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(3) In considering an application to amend an environmental clearance certificate the Environmental Commissioner must have regard to the same matters which he or she was required to consider when deciding the initial application for that environmental clearance certificate.

(4) The Environmental Commissioner may only amend a condition of the environmental clearance certificate under this section if he or she is satisfied that the -

- (a) amendment will not have a significant effect on the environment; and
- (b) interests of any other person are not adversely affected.

(5) In amending an environmental clearance certificate the Environmental Commissioner must follow the consultative process referred to in section 44.

Duration of environmental clearance certificate

40. (1) An environmental clearance certificate becomes effective and operates from the date endorsed on the certificate.

(2) An environmental clearance certificate remains effective for a period not exceeding three years, subject to cancellation or suspension under section 42.

Prohibition on transfer of environmental clearance certificate

41. (1) A person may not transfer an environmental clearance certificate except with the permission of the Environmental Commissioner.

(2) An application for the transfer of an environmental clearance certificate must be made in the prescribed form and manner.

Suspension or cancellation of environmental clearance certificate

42. (1) Subject to subsection (3), the Environmental Commissioner may, by notice to the holder of the environmental clearance certificate suspend or cancel an environmental clearance certificate if the holder of the certificate -

- (a) has contravened any condition of the certificate;
- (b) has contravened this Act; or
- (c) is convicted of an offence in terms of this Act.

(2) An environmental clearance certificate may be suspended under subsection (1) -

- (a) for the period specified in the notice of suspension; or
- (b) until the Environmental Commissioner is satisfied that the person concerned has rectified the failure which led to the suspension.

(3) Except in a situation that the Minister considers to be an emergency that warrants action without notice to the holder of the environmental clearance certificate, the Minister may not suspend or cancel an environmental clearance certificate without first giving the holder an opportunity to be heard.

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(4) The Environmental Commissioner may, for good reason shown, reinstate an environmental clearance certificate cancelled or suspended under subsection (1).

(5) In suspending, canceling or reinstating an environmental clearance certificate in terms of this section, the Environmental Commissioner must follow the consultative process referred to in section 44.

Offences relating to this Part

43. (1) A person commits an offence, if the person -
- (a) alters or forges an environmental clearance certificate or any notice, order or document issued under this Part;
 - (b) knowingly gives false information in any application for an environmental clearance certificate made under this Part;
 - (c) without lawful excuse, fails or refuses to give data or information, or gives false or misleading data or information when required to give information in terms of this Part; or
 - (d) makes any false entry or declaration in any register, record or document required to be kept in terms of this Part.
- (2) A person convicted of an offence -
- (a) contemplated in subsection (1) is liable to a fine not exceeding N\$100 000 or imprisonment for a period not exceeding ten years or to both such fine and such imprisonment; and
 - (b) who after such conviction continues in the course of conduct which constituted such offence, commits a continuing offence and is liable to a fine not exceeding N\$10 000 or to imprisonment for a period not exceeding one year or to both such fine and such imprisonment in respect of every day on which he continues with the conduct.

PART IX**SPECIAL PROVISIONS RELATING TO ENVIRONMENTAL ASSESSMENTS****Consultation**

44. (1) When in terms of this Act the Minister or the Environmental Commissioner is required to consult, the Minister or the Environmental Commissioner, as the case may be -

- (a) must consult the organ of state whose area of responsibility may be affected by the performance of the function or duty or the exercise of the power; and
- (b) may, where appropriate, consult any other interested or affected person.

(2) When in terms of this Act the Minister or the Environmental Commissioner is required to consult any person or organ of state, such consultation is regarded as having been satisfied if a written notification of intention to act has been made to that person or organ of state and no response has been received within a reasonable time.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**Appointment of external specialist**

45. The Environmental Commissioner may with the approval of the Minister appoint an external specialist reviewer and may recover costs from the proponent in instances where -

- (a) the technical knowledge required to review any aspect of an assessment is not readily available within the Ministry; or
- (b) a high level of objectivity is required which is not apparent in the documents submitted, in order to ascertain whether the information contained in such documents is adequate for decision-making.

Assessment costs may be recovered

46. The Environmental Commissioner may order the proponent to pay prescribed fees or charges for all or part of the costs that are incurred by or on behalf of the Ministry, as the case may be, in carrying out an assessment under this Act.

Access to environmental information

47. Organs of state are entitled to have access to prescribed environmental information held by any person where that information is necessary to enable such organs of state to perform their duties in terms of this Act or any other law concerned with the protection of the environment or the use of natural resources.

International environmental agreements

48. The Minister may introduce legislation in Parliament or make such regulations as may be necessary for giving effect to an international environmental agreement to which Namibia is a party, and such legislation and regulations may deal with the following -

- (a) the co-ordination of the implementation of the agreement;
- (b) the allocation of responsibilities in terms of the agreement, including those of other organs of state;
- (c) the gathering of information, including for the purposes of compiling and updating reports required in terms of the agreement and for submission to Parliament;
- (d) the dissemination of information related to the agreement and reports from international meetings;
- (e) initiatives and steps regarding research, education, training, awareness raising and capacity building;
- (f) ensuring public participation;
- (g) implementation of and compliance with the provisions of the agreement, including the creation of offences and the prescription of penalties where applicable; and

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007

- (h) any other matter necessary to give effect to the agreement.

PART X
GENERAL PROVISIONS

Delegation

49. (1) The Environmental Commissioner may delegate the exercise of any of his or her powers, and the performance of any of his or her duties or functions, to -

- (a) the holder of an office in the Ministry, who has the qualifications set out in section 16(1); or

- (b) an organ of state.

(2) A delegation referred to in subsection (1) -

- (a) must be in writing;

- (b) may be subject to conditions; and

- (c) does not prevent the exercise of the power or the performance of the duty by the Environmental Commissioner.

(3) The Environmental Commissioner may withdraw any delegation made in terms of subsection (1).

Appeals to Minister

50. (1) Any person aggrieved by a decision of the Environmental Commissioner in the exercise of any power in terms of this Act may appeal to the Minister against that decision.

(2) An appeal made under subsection (1), must be noted and must be dealt with in the prescribed form and manner.

(3) The Minister may consider and determine the appeal or may appoint an appeal panel consisting of persons who have knowledge of, and are experienced, in environmental matters to advise the Minister on the appeal.

(4) The Minister must consider the appeal made under subsection (1), and may confirm, set aside or vary the order or the decision or make any other appropriate order including an order that the prescribed fee paid by the appellant, or any part thereof, be refunded.

(5) Any expenditure resulting from the performance of duties by the appeal panel in terms of subsection (3) must be paid from the State Revenue Fund from moneys appropriated by Parliament for that purpose.

(6) An appeal made under subsection (1) does not suspend the operation or execution of the decision pending the decision of the Minister, unless the Minister, on the application of a party, directs otherwise.

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007**Appeal to High Court against Minister's decision**

51. (1) Any person aggrieved by a decision of the Minister made in terms of section 50(4) or a decision under section 21 may appeal, on points of law only, against that decision to the High Court within the prescribed time and in the prescribed manner.

(2) The appeal must be proceeded with as if it were an appeal from a Magistrate's Court to a High Court.

Limitation of liability

52. The State or any other person is not liable for any damage or loss caused by -

- (a) the exercise of any power or the performance of any duty under this Act; or
- (b) the failure to exercise any power, or perform any function or duty under this Act,

unless the exercise of or failure to exercise the power, or performance or failure to perform the duty was unlawful, negligent or in bad faith.

Offence by a body corporate and jurisdiction

53. (1) If an offence under this Act which has been committed by a body corporate is proven to have been committed with the consent or connivance or, or to be attributable to any neglect on the part of -

- (a) any director, member, trustee, manager or other similar officer of the body corporate; or
- (b) any person who was purporting to act in the capacity of a director, member, trustee, manager or similar officer,

that person as well as the body corporate is deemed to have committed the offence and is liable to be proceeded against and punished accordingly.

(2) Despite any other law to the contrary, a magistrate's court has jurisdiction to impose any penalty provided for in terms of this Act.

Forfeiture and payment into Fund

54. (1) A court convicting a person of an offence under this Act may, in addition to any penalty imposed in respect of that offence -

- (a) order that the any equipment, record, register, document or any other material object that was used for the purpose of or in connection with the commission of the offence be forfeited to the State; and
- (b) summarily enquire into and assess the monetary value of any advantage gained or likely to be gained by that person in consequence of that offence and impose on that person a fine to a maximum equal to the monetary value so assessed or, in default of payment of the fine, to imprisonment for a period not exceeding one year.

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(2) Section 35 of the Criminal Procedure Act applies with necessary changes to a forfeiture under subsection (1).

(3) Money received as payment of a penalty following a conviction in terms of this Act, or the proceeds from the sale of anything declared forfeited in terms of section 35 of the Criminal Procedure Act following a conviction in terms of this Act, or any fee or charge payable in terms of this Act, must be paid into the Fund.

Act to bind State

55. This Act binds the State.

Regulations

56. (1) The Minister may make regulations relating to -
- (a) the disposal of certain types of waste;
 - (b) the granting of exemption from any provision of this Act and the conditions subject to which such exemption may be granted;
 - (c) the requirements for listing or delisting of activities in terms of section 27 or 29;
 - (d) what constitutes an activity for purposes of listing or delisting in terms of section 27 or 29, and for that purpose the Minister may -
 - (i) categorise activities according to size, production or storage capacity, timing, geographical location, potential for significant effects, type of industry to which the activities are related, type of proponent or on any other basis that the Minister considers appropriate, and
 - (ii) provide differently for the different categories of activities;
 - (e) the form and content of an application, for an environmental clearance certificate, the transfer, amendment or renewal of the certificate;
 - (f) the form and content of a register, record or any other document required to be kept under this Act;
 - (g) fees payable for any application made in terms of this Act and the manner of payment of fees;
 - (h) fees payable for request for records and other information kept in terms of this Act;
 - (i) the assessment process;
 - (j) the content of an assessment report;
 - (k) the procedure and time limits within which organs of state must do anything required to be done in terms of this Act;

Act No. 7, 2007 ENVIRONMENTAL MANAGEMENT ACT, 2007

- (l) time limits not otherwise provided for under this Act for things required or permitted to be done under this Act, which time limits may differ for different categories of projects, events or circumstances;
- (m) the manner and form for delivering or a document or for giving notice under this Act;
- (n) any matter which in terms of this Act is required or permitted to be prescribed; and
- (o) generally any other matter in respect of which it is necessary or expedient to make regulations in order to achieve the object of this Act.

(2) A regulation made under subsection (1) may prescribe a penalty for any contravention of, or failure to comply with any provision thereof, not exceeding a fine of N\$100 000 or imprisonment for a period not exceeding 10 years or to both such fine and such imprisonment.

Existing authorisation

57. (1) A person who, on the date of commencement of this Act, undertakes a listed activity under an authorisation may continue to undertake such activity for a period not exceeding one year, or such longer period as the Minister may on application approve.

(2) A person who wishes to continue with a listed activity in terms of an authorisation contemplated in subsection (1) after its expiry in terms of that subsection must apply for an environmental clearance certificate, in terms of this Act before its expiry.

(3) If a person has lodged an application in terms of subsection (2) the relevant authorisation in respect of which the application has been lodged remains valid until such time as the application has been dealt with in terms of this Act.

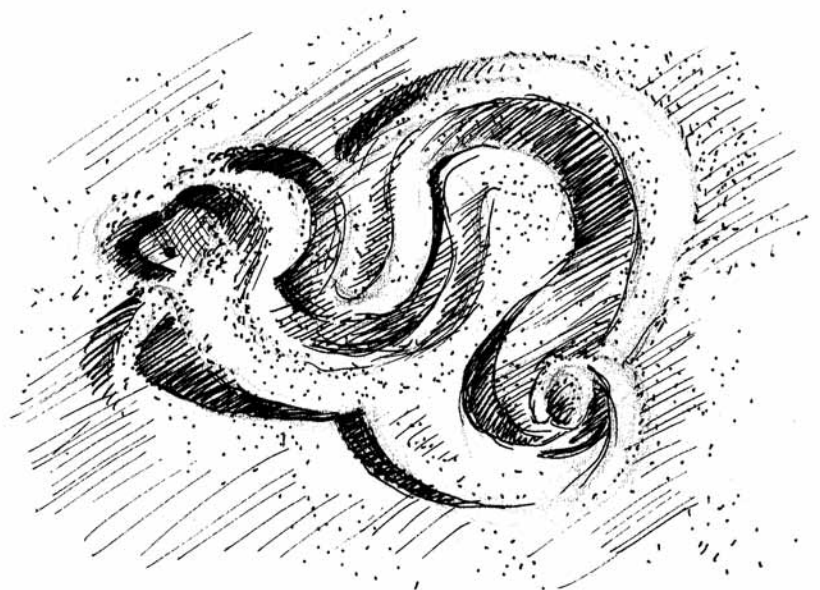
Short title and commencement

58. (1) This Act is called the Environmental Management Act, 2007, and commences on a date determined by the Minister by notice in the *Gazette*.

(2) Different dates may be determined under subsection (1) in respect of different provisions of this Act.

Annex 20

Management Plan for Namib-Naukluft Park





Draft

(for discussion only - not to be quoted)

**Management & Development
Plan for the
*Namib-Naukluft Area of the
Namib-Skeleton Coast National
Park***

For the Period of 2009-2013

First draft: 8 January 2009

Second draft: February 2009

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Abbreviations

BCLME - Benguela Current Large Marine Ecosystem
CA - Central Area
CEO - Chief Executive Officer
CF - Consultative Forum
DEA - Directorate of Environmental Affairs (in MET)
EIA - Environmental Impact Assessment
EMP - Environmental Management Plan
HQ - Headquarters
HW - Honorary warden
IBA - Important Bird Area
IPA - Important Plant Area
IUCN - World Conservation Union
KBA - Key Biodiversity Area
LA - Local Authority
MDP - Management and Development Plan
MET - Ministry of Environment and Tourism
MFMR - Ministry of Fisheries and Marine Resources
NAMPORT - Namibian Port Authority
NAMPOL - Namibian Police
NGO - Non Governmental Organisation
NNA - Namib-Naukluft Area
NSCNP - Namib Skeleton Coast National Park
ORV - Offroad Vehicle
TORs - Terms of Reference
SA - Sperrgebiet Area
SEA - Strategic Environmental Assessment
SF - Strategic Forum

Overview of the Namib Skeleton Coast National Park

The Namib-Skeleton Coast National Park (hereafter NSCNP) stretches along the entire Namibian coastline, a distance of about 1,570 km, from the Orange River in the south to the Kunene River in the north (Figure 1). It comprises four main Management Areas, the "Sperrgebiet" (name under review) in the south, the Namib-Naukluft, the Central Area and the Skeleton Coast. At its narrowest point in the Skeleton Coast, the Park extends about 25 km inland, while at its widest in the Naukluft area it extends inland about 180 km to the top of the escarpment. Namibia is the only continental country in the world that has its entire coastline protected as a national park.

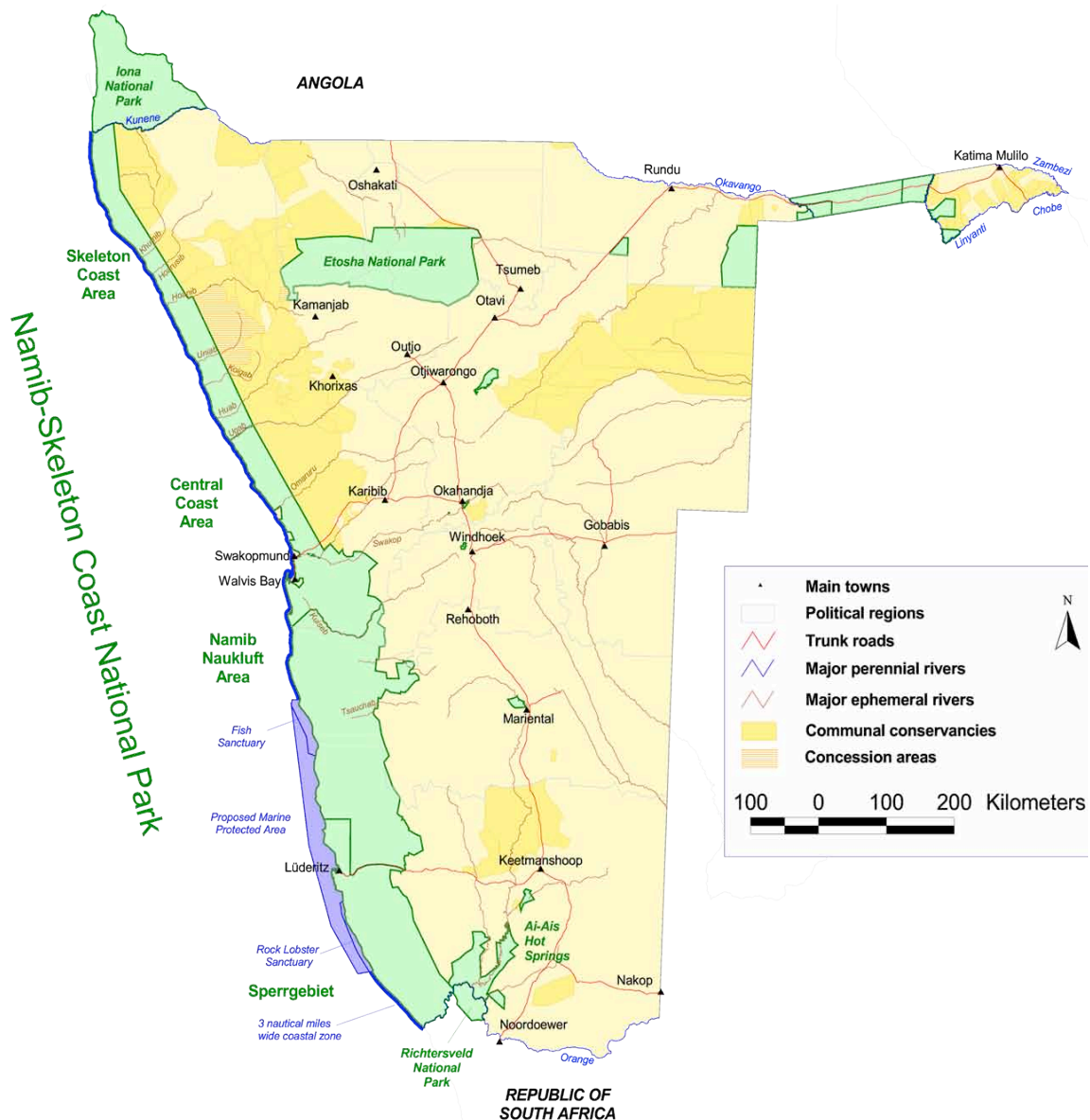


Figure 1: The Namib-Skeleton Coast National Park showing the four Management Areas, the proposed Marine Protected Area and the contiguous areas of land under different forms of conservation (e.g. National Parks in Angola, Namibia and South Africa, communal Conservancies and wildlife & tourism Concessions).

The NSCNP is the 8th largest protected area in the world, the 6th largest terrestrial protected area globally and the largest park in Africa (see Table 1), covering an area of 10.754 million hectares, or 107,540 km².

Table 1: The 10 largest protected areas in the world.

| No. | Name | Ecosystem | Country | Size (ha) |
|----------|---|---|--------------------------|-------------------|
| 1 | Greenland's National Park | Terrestrial and coastal; Arctic island | Greenland | 97,200,000 |
| 2 | Ar-Rub'al-Khali Wildlife Management Area | Terrestrial; Desert | Saudi Arabia | 64,000,000 |
| 3 | Great Barrier Reef Marine Park | Marine & coastal | Australia | 34,500,000 |
| 4 | Northwestern Hawaiian Islands' Coral Reef Ecosystem Reserve | Marine & coastal | United States of America | 34,000,000 |
| 5 | Amazonia Forest Reserve | Terrestrial; Tropical rain forest | Colombia | 32,000,000 |
| 6 | Qiang Tang Nature Reserve | Terrestrial; Alpine Tibetan plateau grasslands | China | 25,000,000 |
| 7 | Cape Churchill Wildlife Management Area | Terrestrial; intertidal & marine | Canada | 14,000,000 |
| 8 | Namib-Skeleton Coast National Park | Terrestrial & coastal; Desert ecosystems | Namibia | 10,754,000 |
| 9 | Northern Wildlife Management Zone | Terrestrial; Desert | Saudi Arabia | 10,000,000 |
| 10 | Alto Orinoco-Casiquiare Biosphere Reserve | Terrestrial; tropical rain forest | Venezuela and Bolivia | 8,000,000 |

However, the NSCNP does not exist in isolation. In the south across the Orange River it borders on the Richtersveld in South Africa, which comprises a protected area of about 160,000 ha within a multiple use buffer zone of about 398,425 ha. This whole area forms the Ai-Ais/Richtersveld Transfrontier Conservation Area (TFCA) under a formal cooperative Agreement between the Governments of Namibia and South Africa.

To the north across the Kunene River it joins the Iona National Park in Angola, which covers about 585,000 ha. The Governments of Namibia and Angola have signed an Agreement to promote transfrontier cooperation between these parks.

In Namibia the NSCNP is contiguous with a large number of protected areas, concessions, conservancies and private land managed for conservation. These are shown in Table 2. Most notable amongst these are the following:

- Coastal and Marine Protected Area off the Sperrgebiet and Namib-Naukluft areas, running for 400 km up the coast and about 30 km wide, covering an area of 1.2 million ha and containing all of Namibia's islands;
- Ai-Ais/Fish River Canyon National Park which in turn borders on private protected areas;
- Contiguous with 20 communal conservancies and three wildlife and tourism concession areas, and via them linked to the Etosha National Park (2.29 million ha) and thence to further communal and private conservation areas;
- Borders on at least 2 million ha of freehold conservancies and private protected areas.

Table 2: Contiguous conservation areas with the NSCNP

| Country | Name / Tenure | Area (ha) |
|--------------|--|-------------------|
| South Africa | Richtersveld and buffer area / communal (RSA Parks) | 558,425 |
| Angola | Iona National Park / state | 585,000 |
| Namibia | Communal conservancies | 6,235,500 |
| | Wildlife & tourism Concessions | 800,000 |
| | Freehold conservancies and private protected areas | 2,050,000 |
| | State Parks (Ministry of Environment & Tourism) | 2,651,200 |
| | Marine Protected Area (Ministry of Fisheries & Marine Resources) | 1,200,000 |
| TOTAL | | 14,080,125 |

(Note that the extent of land under conservation, particularly private land, is constantly changing (increasing) and that, because there is no registration mechanism for private protected areas and game farms, this figure represents an absolute minimum area.)

In total the NSCNP borders onto over 14 million ha of land and sea that is managed primarily for wildlife, biodiversity, conservation and tourism. Together with the NSCNP, this represents a contiguous area of almost 25 million ha. One of the greatest challenges with potentially the greatest rewards is to develop effective, constructive and efficient co-management mechanisms across these land- and seascapes to optimize both the environmental (including biodiversity) and socio-economic values, while at the same time using these open systems to (a) allow the historic movement and migration patterns of wildlife in response to the highly variable climatic conditions to become reestablished, (b) mitigate and buffer the impacts of climate change and thereby make the area more resilient to change, and (c) create incentives for neighbouring land owners and custodians to become part of this conservation landscape, thereby further strengthening the area's contributions to socio-economic development and environmental conservation.

The proclamation of this protected area represents one of Namibia's greatest conservation achievements since gaining Independence in 1990, and one of the most exciting developments in the history of conservation in this country.

The NSCNP occupies the most arid lands in Africa south of the Sahara. Apart from the eastern edge of the Naukluft, the whole park falls below the 100 mm median annual rainfall isohyet and over 60% of the land area of the park falling below the 50 mm isohyet. In addition to the extremely low annual rainfall it is also hugely variable with an annual coefficient of variation ranging typically from 80% to over 100%. With its high evaporation rates and low rainfall, the NSCNP experiences an average water deficit of about 2 m per year. In the north and central areas rain falls mainly in January to March, while in the Sperrgebiet rainfall is about equally unlikely in all months of the year. The fact that some rain falls in the winter months, derived from frontal weather passing the Cape, results in the succulent vegetation of this area.

The climate of the NSCNP is influenced mainly by the cold Benguela Current and the South Atlantic Anticyclone. Temperatures are generally moderate (average minimum and maximum temperatures during the coldest and hottest months respectively reflecting a range of about 7-32°C), fog is frequent (about 125 days per year on the coast dropping to about 40 days per year 80 km inland) and wind is a dominant feature. The southern part of the coast is a particularly high wind energy area, especially in the summer months with average daily speeds of over 40 km/h. These winds are mainly from the south and drive the Benguela Current northwards, carry sand from the shore into the adjacent land, particularly into the southern dune fields, and cause upwellings along the coast which bring nutrient-rich water to the surfaces.

It is important to understand why the Namib is a desert. First, the cold waters of the Benguela Current cool the air so much that it cannot rise up and develop into large rain-bearing clouds. The sea air remains trapped in a layer from the sea to about 600 m above sea level. Moisture from the sea is seen only as low clouds and fog. Second, moist tropical air from the east and north has usually shed its moisture before reaching the Namib coastal areas. And even when rain-bearing clouds do approach, they are usually blocked by breezes from the sea which blow inland for some distance, often to the escarpment. And finally, any moist tropical air blowing towards the desert descends over the escarpment, warming and drying out as it sinks down. These factors all combine to make rainfall an unusual event in the NSCNP.

The NSCNP covers the coastal biome and three terrestrial biomes, namely the hyper-arid Namib Desert, the Nama Karoo and the Succulent Karoo. The amount of each of these terrestrial biomes protected by the Park is shown in Table 3. These biomes contain a number of different vegetation types and an even greater number of habitats.

The geology of the NSCNP ranges from the oldest rocks known, the Vioolsdrift Granite Suite and the Haib Group (2,600 - 1,650 million years ago) in the south of the Sperrgebiet, to the youngest geology comprising the Namib Sands (70 million years old to present) which dominate the central Namib sand sea and large parts of the Sperrgebiet.

Table 3: Percentage of each biome contained within the NSP and within immediately contiguous conservation areas.

| Biome | Percentage (%) of biome | | | | | Total |
|-----------------|-------------------------|------------------------|-------------|---------------|-------------------|-------|
| | NSCNP | Communal Conservancies | Concessions | Freehold land | Other State Parks | |
| Namib Desert | 76 | 14 | 3 | 2 | 0 | 95 |
| Nama Karoo | 3 | 13 | 1 | 4 | 2 | 23 |
| Succulent Karoo | 85 | 0 | 0 | 1 | 5 | 91 |
| Coastal | 99 | 0 | 0 | 0 | 0 | 99 |

The NSCNP contains a large number of globally significant features. The following are perhaps the most notable:

- A global biodiversity hotspot comprising the Sperrgebiet, the most diverse desert in the world. Nearly 25% of Namibia's plant species (over 1,050 species) occur here, on less than 3% of its land surface, many of them endemic to the area and highly range restricted.
- Three Ramsar sites, being Walvis Bay, Sandwich Harbour and the Orange River Mouth, this last being a joint site between Namibia and South Africa.
- Eight Important Bird Areas (IBA), being Cunene River Mouth, Cape Cross Lagoon, Namib-Naukluft Park, Mile 4 Saltworks, 30 km Beach (Walvis Bay to Swakopmund), Walvis Bay, Sandwich Harbour and the Sperrgebiet. In addition, there are four IBAs covering islands immediately off the Namib-Naukluft and Sperrgebiet Areas and within the Marine protected area, namely Mercury Island, Ichaboe Island, Lüderitz Bay Islands and Possession Island.
- Two Important Plant Areas (IPA), being the Lichen fields in the Central Coastal Area and the Sperrgebiet. Additional IPAs occur immediately to the east of the Sperrgebiet and contiguous with it, and linking it to the Ai-Ais / Huns Mountains / Fish River Canyon complex, and to the east of the Skeleton Coast Area and northern parts of the Central Coastal Area, incorporating the entire northern escarpment zone and linking to the Etosha National Park.
- All the IPAs and IBAs also qualify as Key Biodiversity Areas, sites of global significance for biodiversity conservation, and using globally standard criteria and thresholds.
- The only two perennial rivers crossing the Namib form the northern (Kunene River) and southern (Orange-Gariep-Senqu River) borders of the

NSCNP respectively. In addition, 12 significant ephemeral river systems drain westwards across the Park. Of these, the flows of two rivers are stopped by the Namib Sand Sea where they form pans surrounded by sand dunes (Tsondabvlei and Sossusvlei).

- The NSCNP contains a huge diversity of desert landscapes and scenery, habitats, biodiversity and, despite its fragility, a large number of economic opportunities if carefully planned and managed. The Northern Namib comprises large mountainous areas with incised river systems that support some of Africa's most charismatic megafauna such as desert-adapted elephants, rhino, giraffe, lion, leopard and cheetah, made all the more remarkable by their presence in this hyper-arid zone and desert scenery. The Central Namib contains huge vistas over mainly gravel plains with insulbergs, that support the plains game such as oryx, springbok and ostrich. The Southern Namib contains Namibia's sand sea, an area of some 4 million ha of sand dunes and ridges, giving way to the escarpment in the east and some of the most dramatic scenery at Sossusvlei and in the Naukluft. And finally, the Sperrgebiet, with its 100 year history of diamond mining and exclusion, with rich archaeological, paleontological, historic and biodiversity values and a dramatic coastline. This diversity offers huge potential for tourism routes from the south to the north, within Namibia's desert biomes, both within and adjacent to the NSCNP.
- Contiguous with the south-eastern point of the Sperrgebiet is the Ai-Ais National Park which contains the Fish River Canyon, the second largest Canyon in the world after the Grand Canyon in the USA.
- The western border of the NSCNP is on the coast, 25% of which is designated as Namibia's first coastal and marine Park. This enigmatic and poignant coast - the Coast of Skeletons - contains many shipwrecks, the bones of early mariners as well as those of whales and seals.
- The Park's northern border is shared with the Iona National Park in Angola, while areas on its southern border in South Africa are being developed under conservancy type approaches. The western border of the Park is shared with communal lands (about 54%), freehold lands (about 45%) and the Ai-Ais National Park (<1%). Almost 100% of the Park's border with communal lands comprises conservancies and wildlife and tourism concessions. At least 60% of the freehold bordering land comprises private parks and land managed for wildlife and tourism. This means that over 80% of the NSCNP's western border is shared with neighbours practicing land uses that are both friendly and compatible to that of the Park. This offers huge opportunities for partnership and co-management.

With these and many other attributes of the NSCNP and its adjacent areas, serious consideration should be given to seeking World Heritage Site status for the entire region (the NSCNP and selected areas adjacent to the Park). This

would hugely increase its marketability and also assist with its management, without forfeiting any of the options that are currently, or may n future, become available.

Authority of the Management & Development Plan

This Management & Development Plan (MDP) for the Namib-Naukluft Area (NNA) of the Namib-Skeleton Coast National Park (NSCNP) sets out the vision, objectives and guidelines for the management and development of this Area of the Park. As such, it represents the policies and intentions of the Ministry of Environment and Tourism (MET), the Ministry of Fisheries and Marine Resources (MFMR) and their partners. The MDP and its accompanying regulations are accepted as the ultimate authority for the Park. All involved with the Park, including MET and MFMR decision-makers and management staff, personnel of other Ministries and Parastatals, private sector companies and individuals, all contractors, partners, neighbours, tourists and any entity and individual dealing in any way with the park, must ensure that all actions and decisions relating to the park are in strict accordance with these documents.

Senior staff appointed to run the park, i.e. the Area Warden and his/her MFMR counterpart(s), are ultimately responsible for ensuring that the MDP is implemented in effective and efficient ways, and that the regulations are enforced. S/he is also responsible for ensuring effective day-to-day management, dynamic, responsive and pro-active rolling planning as well as contributing to longer-term planning.

This MDP (2009-2014) will be thoroughly reviewed and, where necessary, revised, every five years. The next review should be done in 2013/14 for implementation in 2014. Any changes that must be made in the interim to Parts 1-4 and 7 must be recommended by the NNA's Consultative Forum (CF) and approved by the Strategic Forum (SF), and be reflected in the respective minutes by means of a signed and dated amendment. These approved changes must be appended to the master copies of the MDP, four held within the NNA (MET Ganab, MET Zais, MET Escourt and MET Sesriem), copies held in adjacent Park Areas (CA Walvis Bay, Swakopmund and Gobabeb, SA Luderitz and Aus), another held at the Office of the Chief Executive Officer of the Namib-Skeleton Coast National Park, three held in MET Head Office in Windhoek (Deputy Director and Director of Parks & Wildlife and the Office of the Permanent Secretary), copies held by MFMR Swakopmund, Walvis Bay and Luderitz, and by the Director of Fisheries in Windhoek. Changes may be made to Parts 5 & 6, with the joint approval of the Park CEO, the Directors of Parks & Wildlife and Fisheries respectively, as new information becomes available.

The MDP must be viewed as a valuable and central document by all management- and policy-level staff and stakeholders involved with the NNA. They should be familiar with its contents, and should make use of it to familiarize new staff with the vision, aims, objectives and policies of the Area and Park.

It is part of every MET and MFMR staff member's job and stakeholder's responsibility to help implement this MDP. It is also every staff member's and stakeholder's responsibility to propose improvements to the plan, as well as improvements in how the plan may be implemented. Park management is a team effort that cuts across all sectors. The future well-being and development of the NNA and the Namib-Skeleton Coast National Park depends on this team approach.

.....
Director: Parks & Wildlife, MET

Windhoek, date:.....

.....
Permanent Secretary, MET

Windhoek, date:.....

.....
Minister: MET

Windhoek, date:.....

.....
Director: Fisheries, MFMR

Windhoek, date:.....

.....
Permanent Secretary, MFMR

Windhoek, date:.....

.....
Minister: MFMR

Windhoek, date:.....

Philosophy of approach

The plan for this Park has been designed and structured to be priority focused and action orientated, to facilitate implementation and the achievement of outputs and outcomes. The plan is linked to an annual cycle of management and oversight, involving the preparation of annual work plans, budgets, reporting and two levels of Area oversight - a Strategic Forum and a Consultative Forum.

The plan is "principles" based. These principles serve essentially as mini policy statements. Not all eventualities can be planned for, but if the basic principles are established, decisions can be readily made against these principles and thus be in line with Area and Park policy.

The plan is designed around a uniform structure for easy reference and use, and the language (apart from some basic technical terms used in the conservation sector) is kept simple for broad accessibility.

The plan should be used in conjunction with Area and Park legislation and regulations, as well as with other relevant literature on the area. No superfluous or duplicate information is provided in the plan. A reference list of the more significant publications and reports on the area is contained in Part 6.

The Plan was developed in a highly participatory, bottom-up way. The following steps were followed:

- An initial brainstorming meeting was held with MET Parks & Wildlife Director, MFMR officials and the Chief Wardens of the coastal Parks to identify key issues.
- A recent previous Namib-Naukluft Park Management Plan had been developed, after extensive consultations with MET field and head office staff and other key stakeholders. This work was used as a basis for the present MDP.
- Follow-up consultations were held with MET staff to clarify details.
- A two day public workshop was held in Swakopmund for all stakeholders to (a) explain and discuss the process and (b) identify key issues.
- Two public meetings were held to discuss the outcomes of the workshop and receive further inputs, in Swakopmund and Windhoek.
- A 1st draft of the MDP was prepared. This was distributed to all stakeholders involved in the workshop and meetings, and placed on a public website. Information on this website was published in the media and distributed by e-mail. All interested and affected parties were invited to

review the draft MDP and provide comments - a review period of 4 weeks was provided.

- Based on some minor suggestions, a 2nd draft of the MDP was prepared and placed on the website. This was presented to a technical meeting of senior MET and MFMR staff in Windhoek.
- Regulations have been written and distributed for comment
- A second MET and MFMR meeting for senior management, chaired by the Permanent Secretary, was held to review the 3rd draft. A number of minor comments were made, which have been incorporated into this final draft. The following key next steps emerged:
 - Develop as a separate companion document, the ideal staffing arrangements for the whole Namib-Skeleton Coast National Park which addresses the needs of each Management Area, including *inter alia* posts, categories, task descriptions, location - all personalized to the specific requirements of the Areas and Park and for the implementation of the Area MDPs that make up Park management. Adopt a fresh approach to support Information, Extension and Environmental Education, Monitoring, Citizen liaison, inter-sectoral collaboration - and adopt an efficient business-outputs staffing approach with a Park CEO and sufficiently senior staffing at Area level;
 - Develop as separate companion documents, a detailed Tourism Development Plan (see appendix A for initial ideas) and a Park Business Plan, each designed to be operational at Area level as well as at Park and greater landscape levels.
- Circulate this 3rd draft of the MDP formally to key line ministries for comment (MFMR, MRLGHRD, MLR, MME, MWT), to the Erongo Regional Council, the town Councils of Walvis Bay and Swakopmund, the Topnaar Community, the local Chamber of Commerce & Industry, FENATA, the Fishing industry, Salt Mining Company, TransNamib, NamPower, etc.
- Comments received will be considered and a final draft of the Management & Development Plan will be prepared and formally adopted and signed off by MET and MFMR.
- The approved Management & Development Plan for the NNA of the Namib-Skeleton Coast National Park will be distributed as a public document and made widely available to all relevant stakeholders, partners and interested and affected parties. It was also provided to the EIA Unit of the DEA/MET.

Management system

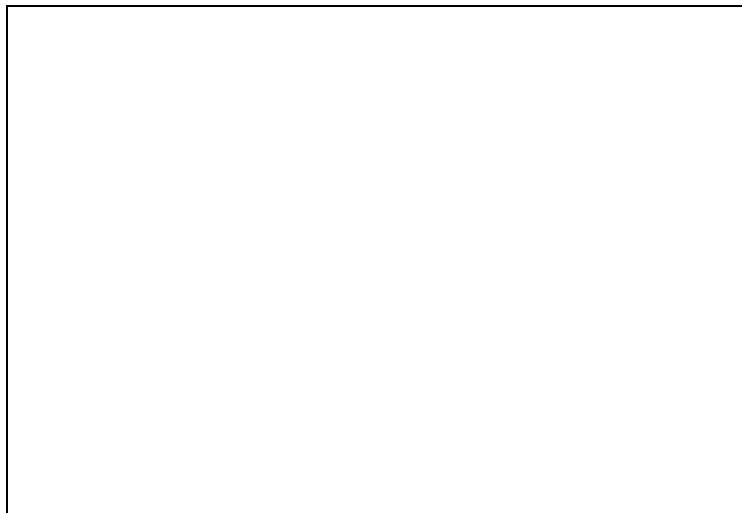
The MDP must be implemented in an efficient and systematic way. For each annual cycle, an *Annual Work plan* and a *Budget* will be prepared. This work plan will, as far as practical, follow the sequence of topics listed under parts 3 & 4 in the Plan.

The work plan should cover:

- **Routine management issues**, such as managing water points, law enforcement, extension work, etc.
- **Development issues**, such as tourism developments, wildlife reintroductions, etc.
- **Monitoring activities**, to systematically and opportunistically collect information, store, enter into database, analyse and interpret information for adaptive management, covering such things as key biodiversity indicators, tourism and industrial impacts, etc.
- **Research needs**, based on the identification of priority information and knowledge gaps, with appropriate ways of implementing such research.
- **Administration**, including work plan & budget preparation, reporting and meetings.

Progress on the implementation of the annual work plan and a financial report against the approved budget should be presented at each **Consultative Forum** meeting. These will be standing agenda items, and the reporting format should follow the sequence of issues and timing of the work plan.

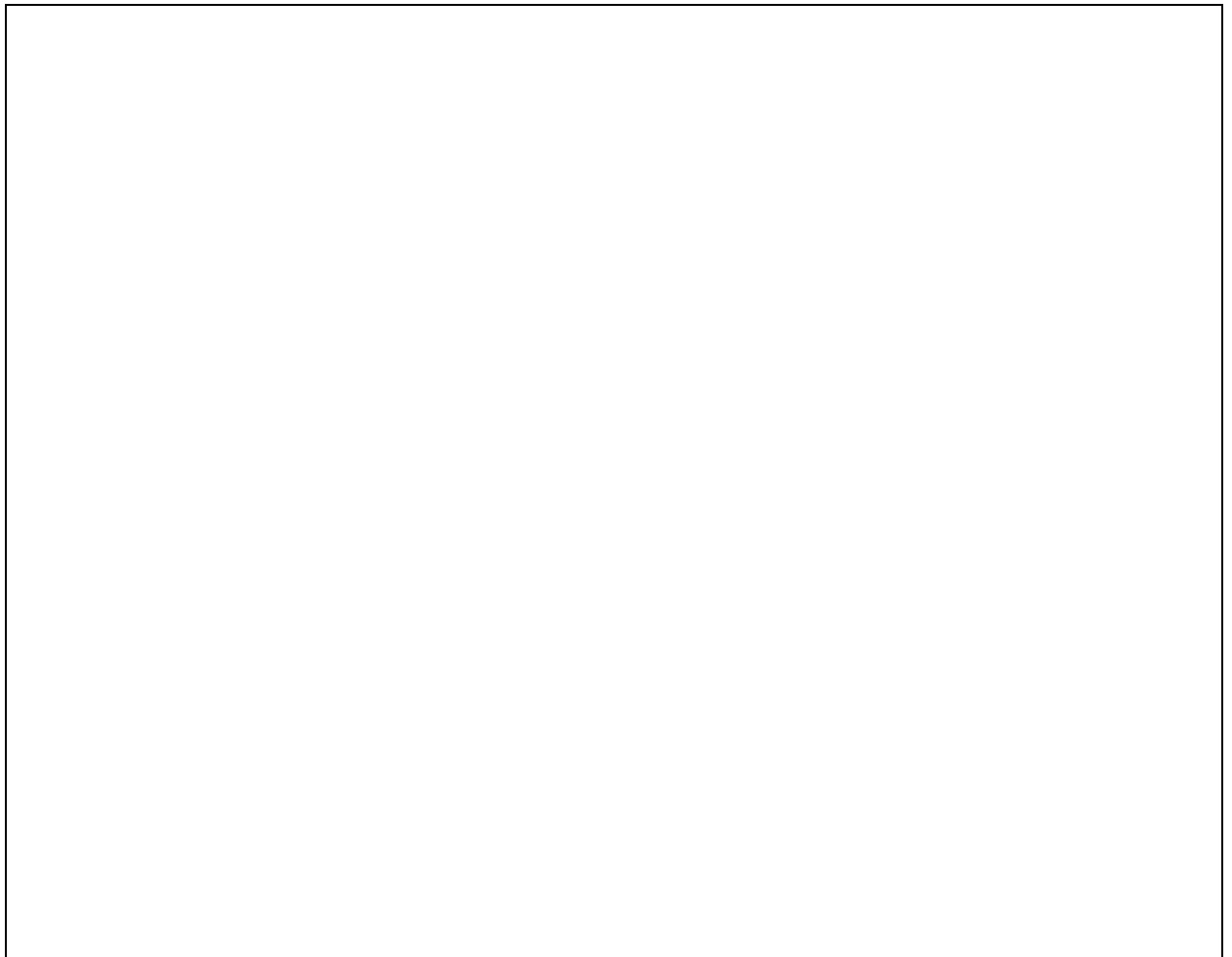
At the end of each annual cycle, an *Annual Report* and *Financial Report* will be prepared, plus a draft work plan and budget for the following year. The Annual Report will use the format of the work plan, and include cumulative (time-series) information from the monitoring programme. The cumulative information, showing trends over time, will be used to adaptively manage the Area. This information will also be used, together with the direction provided by the MDP, to prepare the next Annual Work Plan and Budget, both of which, together with the past years technical and financial reports, will be tabled for review and adoption by the **Strategic Forum**.



Institutional arrangements

Because the Park consists of marine and terrestrial components, the intertidal coastal zone, its biota and the species that transcend the marine / terrestrial interface are managed jointly by the MET and MFMR under agreed co-management principles and protocols that promote synergy, efficiency and elevated conservation management, monitoring and protection of habitats, processes and species. The intertidal co-management approach is a model of collaboration with clear benefits to the ecosystem and responsible institutions. Moreover, the two ministries shall jointly appoint Honorary Wardens who will assist with monitoring, surveillance, information dissemination, stakeholder engagement and law enforcement.

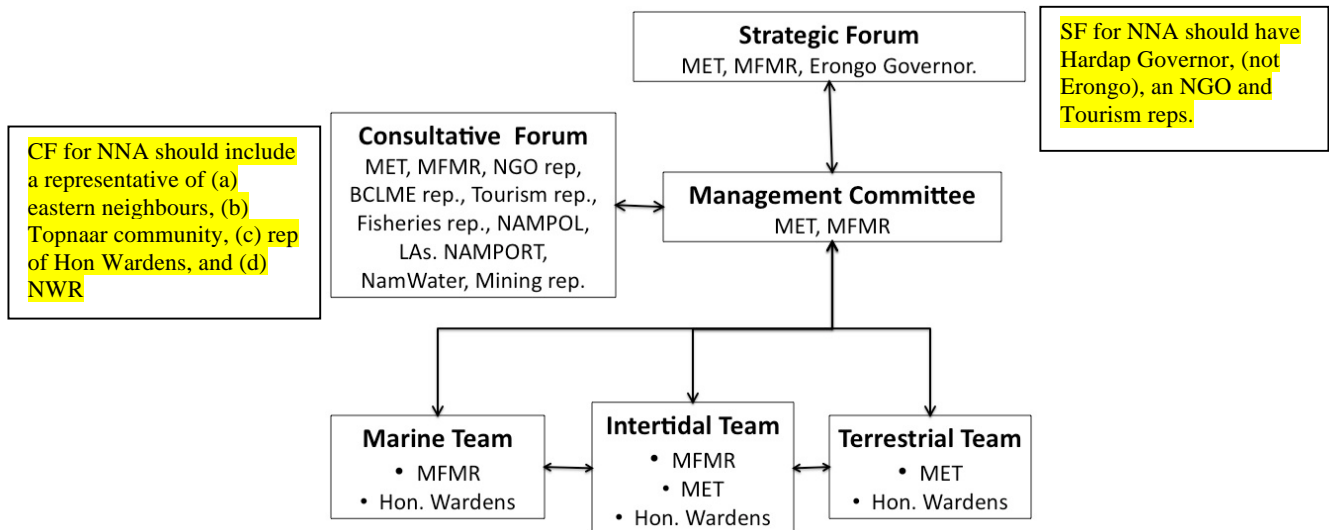
The proposed MET staff structure for the SCNP appears below.



The proposed MFMR staff structure for the SCNP appears below.

To follow

The management and decision making structure for the NNA is as follows:



CF for NNA should include a representative of (a) eastern neighbours, (b) Topnaar community, (c) rep of Hon Wardens, and (d) NWR

SF for NNA should have Hardap Governor, (not Erongo), an NGO and Tourism reps.

The **Strategic Forum** shall meet once a year, with the three institutions represented by Minister and Permanent Secretary level, and the Hardap Region represented by the Governor and appropriate Councilors. The NGO sector shall select a person familiar with ecosystems, biodiversity, conservation and socio-economic issues of the NNA, while FENATA shall select an appropriate representative for tourism issues.

The SF will review and accept/reject/require changes to the Area's Annual Report and next years Work Plan, Budget and proposed amendments to the Management and Development Plan, all of which shall be delivered by the Management Committee. The Management Committee shall also serve as the secretariat of the SF, produce the agenda a month before the meeting and the minutes within one month of the meeting having taken place.

The **Consultative Forum** will play an advisory role, and should meet at least four times each year. Its membership is suggested in the organogram above, but this can be an inclusive structure that welcomes newcomers who may have insights and something to offer to this Area of the Park in terms of ideas and support. This CF is the Area's formal mechanism for consulting with key stakeholders and building an all-inclusive team approach towards park management and development. It

also promotes a broad-based feeling of ownership about the Area and Park. The main purpose of CF meetings is to track progress towards meeting set objectives (e.g. annual work plan), solving problems, mobilizing skills and energy from stakeholders and partners to help manage and develop the NNA, and capitalizing on opportunities that may arise.

At the CF meetings, the representatives will work through the key objectives and activities of the Annual Work Plan, brief each other on their activities and plans, and exchange views on how best their respective sector interests might be accommodated in the Area and Park, and how they may contribute to its management and development. The Management Committee should 'bounce ideas' off the CF and their advice should be carefully considered. The Management Committee shall serve as the secretariat of the CF, produce the agenda a month before the meeting and the minutes within one month of the meeting having taken place. Minutes of all CF meetings must be copied to the SF for their information.

The Management Committee is responsible for operational decision-making, and it shall consist of senior staff from MET and MFMR. Both ministries should include law enforcement, resource management and scientific services personnel on their teams. This committee must meet monthly so that the co-management institutions are regularly in contact with each other, and it must strive to achieve integrated management, avoiding wherever possible sectoral conflicts and unnecessary 'turf wars' - their responsibility is **co-management**. The chairperson of the meetings shall rotate every year, with the institution chairing providing the secretariat. Minutes of all MC meetings must be copied to the CF and SF for their information.

Given the specific national mandates for MET and MFMR, it is logical that the former will handle management on land (above high water mark) while the latter will manage the ocean component (below low water mark). The intertidal zone will require shared management on a roughly equal basis, depending on availability of personnel and other resources. It is important that there is complimentary between these institutions, NOT duplication and NOT competition. Suitably qualified MET personnel shall be empowered to enforce fisheries legislation, and suitably qualified MFMR personnel shall be empowered to enforce environmental, park and conservation legislation.

The **Honorary Wardens** (HWs) are an important component of the team, and the target should be 40 for the NNA, covering conservation, recreation and tourism, resource use, business and development components and neighbours . The HWs should be present/active in various locations in and neighbouring the NNA.

The HWs must receive appropriate training and be appointed for three years, renewable for further 3-years terms depending on their performance and commitment. The criteria for their selection include:

- Commitment to the conservation and management of the Park, and to assist the authorities in the implementation of this Management and Development Plan.
- Knowledge of the coastal, desert, escarpment and/or marine environments.
- Knowledge of the law and successful completion of the required training.
- Integrity and good standing in society (law abiding and no criminal record).
- Presence in or adjacent to the area (regular traveler through the area, along its boundary, etc).
- Own transport (car, quad-bike, boat, aircraft, bicycle), communication means (e.g. cell phone), positioning equipment (e.g. GPS), digital camera and willingness to use them for the good of the Area and Park.
- Ability to deal with people firmly but fairly, including law-breakers.
- Team player.

The Honorary Wardens shall have the following powers:

- To provide information on the MDP, zonation and regulations of the NNA and on the Namib-Skeleton Coast National Park.
- To inform people who break the law that they are in contravention of the above, and request them to immediately comply.
- To stop a person and search a vehicle, boat or aircraft, providing there is a reasonable suspicion that the person has been involved in an illegal activity.
- To demand a persons name (as above).

- To inspect a suspects luggage (in search of any illegal items, such as fish, shellfish, bait, venison, live animals, plants, etc.).
- To count and/or measure fish or shellfish to determine if they comply with legal requirements.
- To confiscate any items found to be illegal - and to then issue a confiscation receipt to the offender and to store the confiscated items in a safe place.
- To issue an offender with an official warning.
- To report an offender to the authorized law enforcement agencies, whose task it is to perform an arrest/fine as the case may be.

| Actions | Timing | Record of progress |
|---|----------|--------------------|
| 1. Establish the Strategic Forum and agree on their TORs | Mid 2009 | |
| 2. Establish the Management Committee and agree on their TORs | mid 2009 | |
| 3. Establish the Consultative Form and agree on their TORs | mid 2009 | |
| 4. Prioritise areas, issues, species requiring co-management approaches, and agree on areas, issue, species that should rather be managed sectorally | End 2009 | |
| 5. Establish practical and efficient operating procedures for collaboration, communication and reporting. | mid 2009 | |
| 6. Through the offices of the PS of the two ministries, appoint Honorary Park Wardens, provide them with TORs and relevant training and issue them with IDs, operating procedures and warning and confiscation books. | End 2009 | |

Notes:

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Part 1: Vision, Goal and Objectives

1.1 Vision

To develop the NNA, as a world class Protected Desert Landscape and Tourism destination that capitalizes on its sand sea, remote coastline, escarpment, wilderness and scenery, and its pro-conservation neighbours, to enhance both biodiversity conservation and sustainable socio-economic development for the region and country, within a larger co-managed tri-nation transboundary landscape of global renown working to become a World Heritage Site.

1.2 Goal

To wisely manage, protect and strategically develop the land and natural resources of the NNA within a "world class Protected Desert Landscape and Tourism destination" of globally significant biodiversity, scenery and wilderness under the brand "Desert Discovery", and to achieving a balance between protection and tourism that maintains a complete "sense of place", remoteness and wilderness while significantly increasing the NNA's contributions to Namibia's regional and national economic development objectives.

1.3 Objectives

- ❖ To conserve and wisely manage the landscapes, ecosystems and biological diversity of the NNA with particular attention to areas of high biodiversity, scenic and wilderness values, fragility and tourism pressure and, where necessary, to restore and rehabilitate degraded systems to their natural and productive states.
- ❖ To manage biodiversity and ecosystems as may be necessary and appropriate to maintain optimal biological diversity, ecosystem stability and resilience under highly variable and globally changing climatic conditions, to manage for open co-managed landscapes and to reintroduce and rebuild populations of plants and animals indigenous to the area within historic times, as appropriate under current and changing conditions.
- ❖ To promote and support appropriate land and natural resource uses that are compatible with the above objectives, including

appropriate levels of protection, tourism development and activities, consumptive and non-consumptive utilisation, research, environmental education, awareness and outreach initiatives, and to strive to instill in residents and visitors to the area its high environmental values and unique character which should be harnessed in sustainable ways to ensure its financial viability without compromising on sound conservation principles and practices.

- ❖ To significantly increase the contributions of the NNA to Namibia's social and economic development objectives at local, regional and national levels, through appropriate uses of the area that are in harmony with its ecological objectives.
- ❖ To build coalitions, establish partnerships and co-management approaches with citizens, neighbours, NGOs, businesses and other government institutions for focal and landscape level conservation, law enforcement, socio-economic development, marketing, awareness creation and education, monitoring and research and strategic planning and development, to enhance the diversity, viability and competitiveness of the NNA within the context of the Namib-Skeleton Coast National Park, Namibia and Southern African.
- ❖ To demonstrate the ecological, social and economic viability, sustainability and competitiveness of integrated and carefully zoned land uses and management, with an emphasis on conservation and tourism-based enterprises where relatively high human pressures occur in hyper-arid coastal areas.
- ❖ To seamlessly link the NNA with the other Areas of the Namib-Skeleton Coast National Park, and to emerging and future Coastal & Marine Protected Areas, under a management and marketing umbrella that expands to an ecosystems and landscape co-management approach with compatible neighbours and works towards creating a World Heritage Site between the Orange and Kunene Rivers (and beyond).

Part 2: Management units and zonation

2.1 Area background

The Namib-Naukluft Area of the Namib-Skeleton Coast National Park extends from the Hardap-Erongo regional boundary in the north (and bordering onto the Central Coastal Area) to the northern border of the Sperrgebiet in the south, formed by the main road to Luderitz but 20 km short of Luderitz extending due north for about 80 km and then due west to reach the coast at Gibraltar. To the west it borders on the Atlantic Ocean and to the east on freehold farmlands (Figure 2).

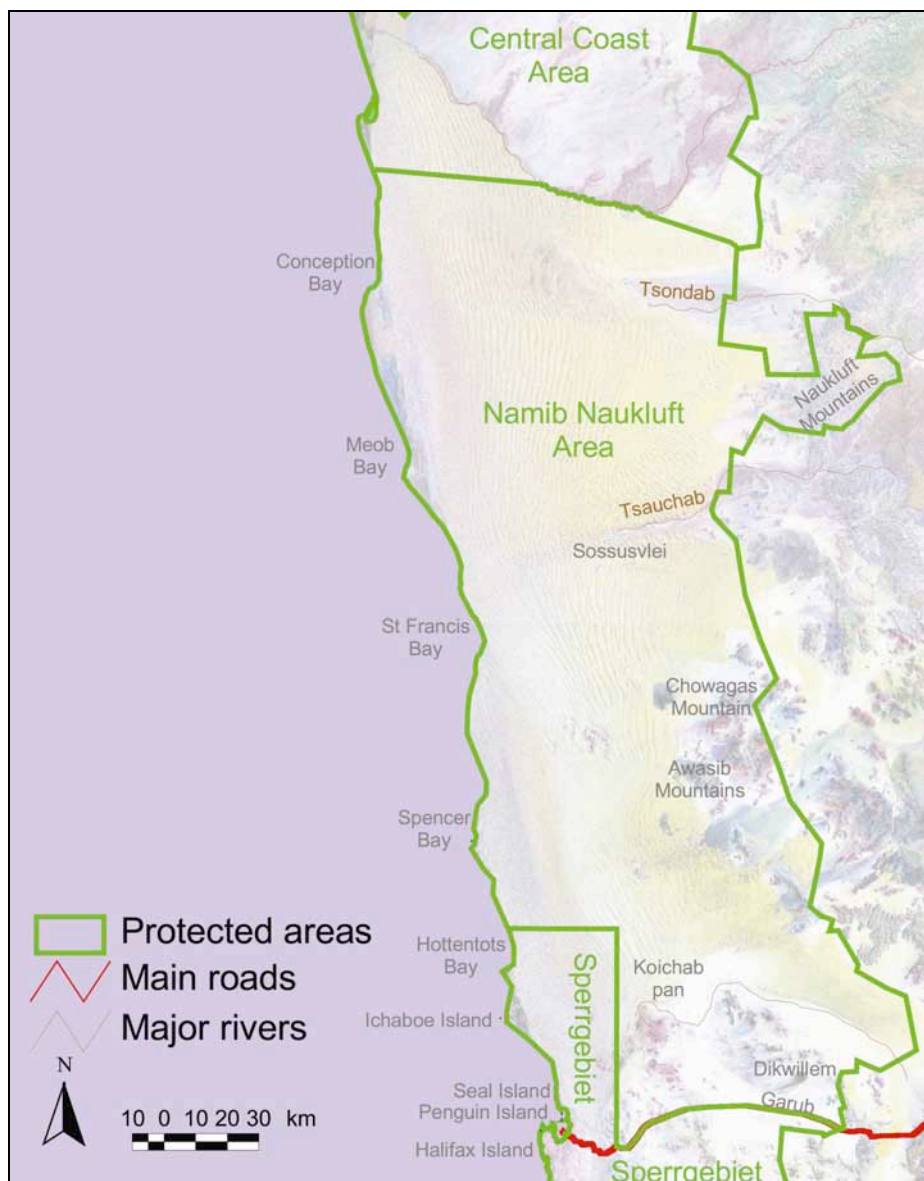


Figure 2: The Namib-Naukluft Area of the Namib-Skeleton Coast National Park

The NNA falls within the Southern Namib hyper-arid Desert and Coastal Biomes with the Naukluft extending to above the escarpment into the Desert-Dwarf Shrub Transition of the Nama Karoo Biome.

This Area incorporates:

- About 280 km of coastline, mainly sandy shores, with a number of bays often associated with rocky outcrops or bluffs, and coastal salt flats, with Damara Terns favouring the last mentioned as breeding sites.
- A continuous sand sea of dunes and sandy plains covering some 4 million ha, almost the entire area.
- Three ephemeral endorhetic river systems that end in pans amongst the dunes - Tsondabvlei in the north, Sossusvlei near the centre and Koichab Pan in the south.
- The Naukluft Mountains which rise from the desert plains at 400-500 m amsl to almost 2,000 m, forming near vertical escarpments and deeply incised valleys.
- The Area has a vast array of dramatic landscapes and scenery, and a huge sense of wilderness, novel to most visitors and highly accessible compared to most extreme desert ecosystems.
- The Area also contains a suite of uniquely adapted organisms to desert conditions, including endemic plants birds, reptiles and invertebrates.)
- The entire Area is designated an Important Bird Area (IBA), and it also qualifies as a Key Biodiversity Area (KBA).
- Two Important Plant Areas (IPAs) occur in the NNA, the Naukluft and the south eastern corner incorporating the Dikwillem range, which support a rich succulent plant community.
- The southern part of the NNA borders on a Cabinet-approved Marine Protected Area that includes the near inshore Mercury Island, a designated IBA.

The entire inter-tidal zone is co-managed by the MET and the Ministry of Fisheries & Marine Resources (MFMR). The MFMR are exploring the options of a second Marine Protected Area extending north along the NNA coast and into the CA.

2.2 Habitat units

Despite covering a relatively large area within the vast Namib-Skeleton Coast National Park (over 40%), the NNA has fewer habitats than the other Areas. For the purpose of this management plan, the

NNA is divided into Coastal and Terrestrial categories. The first contains three habitats, the second fifteen habitats, in total 28 different habitats (see Table 4 below). A sensitivity rating is provided, ranging from ☀ = low sensitivity to ☀☀☀☀☀☀☀☀ = highly sensitive and / or of high environmental value.

| Category | Habitat | Sensitivity | Notes |
|------------------|--|---|---|
| Coastal | Sandy shore | ☀☀☀ | Generally moderately sensitive, especially in bays |
| | Rocky shore, coastal outcrops and bluffs | ☀☀☀☀☀ | Generally slightly more sensitive than above because of high biodiversity. |
| | Salt pans / flats | ☀☀☀☀☀☀☀ | Sensitive areas to scaring, and also breeding grounds for Damarar Terns |
| Terrestrial | Sand sea, including dunes and sandy plains | ☀☀☀☀ | Namib sand sea - shifting dunes that are relatively resilient, but support arid adapted and endemic wildlife |
| | Gravel plains | ☀☀☀☀☀☀ | These gravel plains are generally on the eastern edge of the NNA and are less sensitive than the gypsum plains near the coast that are strongly influenced by fog occurrence. |
| | Ephemeral river courses | ☀☀☀☀☀☀ | Lifeblood of the Namib, these systems support diverse plant and animal life, and are linear oases across the hyper-arid zone |
| | Endorhetic pans and "vleis" | ☀☀☀☀☀☀☀☀ | End points of ephemeral rivers in the dunes, providing high scenic and biodiversity values. Sossusvlei has been subject to large tourism development and pressure, while Koichab Pan is an important source of water to Luderitz. Tsondabvlei is designated Strict Nature Reserve category and must be carefully protected. |
| | Inselbergs | ☀☀☀☀☀☀ | Important from archeological, biodiversity and aesthetic perspectives. |
| | Inland rocky hills | ☀☀☀☀ | Less sensitive than inselbergs, but nonetheless important for biodiversity and refugia for plants and animals, particularly during dry periods |
| | Naukluft escarpment | ☀☀☀☀ | Scenic value and important for cliff-nesting birds and cliff-loving plants |
| | Naukluft incised valleys and wetlands | ☀☀☀☀☀☀ | Rich and highly unusual ecosystems, often containing pools of water throughout the year and providing this essential resource to plants, birds, mammals and insects. |
| Naukluft Plateau | ☀☀☀☀ | The only part of the Namibia escarpment that is in a State protected area, and therefore requiring high levels of protection. | |

| 2.2.1 Actions | Timing | Record of progress |
|--|-------------|--------------------|
| 1. Review and fine tune habitat categories | By end 2009 | |
| 2. Prepare poster for staff, residents and visitors on the habitats (land forms and vegetation types) of the NNA, with photographs and sensitivity ratings | By mid 2010 | |

2.3 Zonation

2.3.1 Principle: The matrix of landscapes and habitats are optimally managed and sustainably used within the NNA, based on their sensitivity, conservation importance and business opportunity, in that order. This will be achieved by means of a Zonation Plan. This plan must also take into account the role that the NNA plays within the Namib-Skeleton Coast National Park, the greater Namib co-management Complex and the country. It must also remain dynamic and responsive to the potential for future opportunities, partnerships, linkages and corridors, and to developing the economic potential of the greater area within the context of biodiversity and landscape conservation, and sustainable development.

2.3.2 Vision: To zone the NNA for enhanced conservation management and appropriate utilization, to minimize potential conflicts between activities and to facilitate potential "bigger picture" conservation and development goals for the area.

2.3.3 Zones:

Zonation is based on best available information on environmental sensitivity, biodiversity status and conservation priorities. Around this are built the management and tourism activities and opportunities, and infrastructure development.

2.3.3.1 Environmental sensitivity

The areas of conservation priority and environmental sensitivity in the NNA are shown in Figure 3, based on their IUCN zonation categories (Table 5). The key areas are:

- The Tsondabvlei and river system
- The Kuiseb river and valley system
- The Sossusvlei and Tsauchab river
- The Koichab Pan and river
- The coastal salt pans and salt flats, which are also Damara Tern breeding sites. All Damara Tern sites (which may change over time) become automatically sites of conservation priority with appropriate management responses
- Coastal bluffs, headlands and bays
- All Inselbergs, with particular importance given to those with especially high biodiversity values such as Dikwillem in the south-east
- Mountain ranges on the eastern border of the NNA
- Gravel Plains
- The Naukluft, with its associated incised river courses and wetlands.

The following zones have been identified, based upon environmental sensitivity and appropriate land uses (Figure 4), and using IUCN categories for Protected Areas:

- Strict Nature Reserve (IUCN category 1a)
- Wilderness Area (IUCN category 1b)
- National Park (IUCN category 2)
- Monument (IUCN category 3)
- Habitat / species management areas (IUCN category 4)
- Protected landscapes / seascapes (IUCN category 5)
- Managed Resource Protected Areas (IUCN category 6).

| Zones | Activities | Specific application in the NNA |
|--|---|--|
| <p>Strict Nature Reserve</p> <p>IUCN Category 1a</p> | <ul style="list-style-type: none"> • Highly sensitive and high value conservation / biodiversity areas set aside for sensitive and low non-intrusive scientific study • No or minimal mechanized access • No permanent | <p>Areas of high environmental value and sensitivity:</p> <ul style="list-style-type: none"> • Tsondabvlei and river system, and adjacent dune and plain areas to the west • Coastal salt pans / flats • All Damara Tern breeding areas |

| | | |
|--|---|--|
| | <p>structures</p> <ul style="list-style-type: none"> • No overnighting | <ul style="list-style-type: none"> • Inselbergs such as Dikwillem and Uri-Hauchab |
| <p>Wilderness Area</p> <p>IUCN Category 1b</p> | <ul style="list-style-type: none"> • Sensitive ecosystems • High value "sense of place" • Low impact usage • No or minimal mechanization • No permanent structures | <ul style="list-style-type: none"> • Bushman Hills, Chowagasberg, Awasibberge and Haiber Flats area • Part of the Naukluft mountain • Dikwillem area • The entire coastal strip |
| <p>National Park</p> <p>IUCN Category 2</p> | <ul style="list-style-type: none"> • Managed for conservation and controlled tourism • Mechanised access permitted • Overnighting only at designated sites | <p>The whole NNA, but excluding the demarcated municipal areas, is proclaimed under this category. The other categories are managed as land-use zones within the overall National Park. Where no other zone is provided, the zone is taken to be "National Park"</p> |
| <p>Monument</p> <p>IUCN Category 3</p> | <ul style="list-style-type: none"> • Conservation of specific outstanding features, including landscapes, geology, paleontology, archaeology, history, cultural and heritage | <ul style="list-style-type: none"> • Conception Bay to just south of Meob Bay |
| <p>Habitat / Species Management Areas</p> <p>IUCN Category 4</p> | <ul style="list-style-type: none"> • Protected areas managed mainly for conservation through active management intervention • To deliver benefits to people within the scope of sustainable practices | <ul style="list-style-type: none"> • Part of the Naukluft? (hunting area check) |
| <p>Protected Landscapes / Seascapes</p> <p>IUCN</p> | <ul style="list-style-type: none"> • Relatively open access for public enjoyment • Generally higher intensity and lower regulatory areas | <ul style="list-style-type: none"> • Kuiseb River, used by Topnaar community members and their livestock • Sossusvlei area, for high intensity tourism |

| | | |
|---|---|---|
| category 5 | <ul style="list-style-type: none"> • Add to welfare of local communities | |
| Managed Resource Protected Areas IUCN Category 6 | <ul style="list-style-type: none"> • Managed mainly for the sustainable use of natural resources, e.g. fishing. • Managed to ensure long-term protection and maintenance of biological diversity while providing at same time a sustained flow of natural products and services to meet local and national development needs, e.g. mining | <ul style="list-style-type: none"> • Mining sites (following compulsory EIA) - but only mining of strategic minerals (no 'hobby', subsistence or dimension stone mining) |

2.3.3.2 Land uses

The following land uses are permitted and or should be developed within the Namib-Naukluft Area (Table 6):

| Land use categories | Specific applications |
|----------------------------|---|
| 1. Accommodation | <p>1.1 Up-market Lodge development concession opportunity for the Gobabeb Research and Training Centre in the Kuiseb River on the border between the NNA and CA, max 24 beds, including an area in the CA and a small area into the dune area of the NNA. This concession package focuses on "information / research" tourism, and could involve overnight fly camps, hiring and 4x4 guided trails on approved routes.</p> <p>1.2 Up market Lodge concession site in the Sesriem / Sossusvlei area for Namibia Wildlife Resorts (NWR). Max 16 beds.</p> <p>1.3 Tented camp concession site, max 16 beds, on the coast, south of Meob Bay.</p> <p>1.4 Upgrade and develop existing old farm houses in the Naukluft area as (a) trophy hunting lodge and (b) B &B and/or self catering accommodation.</p> |
| 2. Camp sites | 2.1 Camp site at Hobas in the Kuiseb River, as a |

| | |
|----------------------|--|
| | <p>concession site to the Topnaar community. This may be upgraded to add tourist bungalows or a lodge, either directly by the concessionaire or as a joint venture. Max 24 beds</p> <p>2.2 Sesriem camp site, run by NWR.</p> |
| 3. Day visitors | 3.1 Sossusvlei / Tsauchab River / Sesriem area, open to day visitors as well as Sesriem camping and lodge overnight "residents". Specific "Tourism carrying capacity and management systems" study and implementation plan to be commissioned for this high intensity use area |
| 4. Ballooning | 4.1 Ballooning concession area south of Sossusvlei / Tsondab River, with soft outer boundary because of dependence on wind |
| 5. Hiking | <p>5.1 Guided hiking trail concession in the Kuiseb River, which may also be developed as a mule trail (to support hikers), with designated overnight camping sites with appropriate and approved waste management</p> <p>5.2 Unguided demarcated hiking trails in the Naukluft Mountains, with designated overnight camping sites</p> |
| 6. Guided 4x4 trails | <p>6.1 4x4 guided coastal & dunes trail from Walvis Bay and/or Rooibank area to Conception Bay area concession, overnighting at designated sites with appropriate and approved waste management</p> <p>6.2 4x4 guided coastal & dunes trail from Luderitz and/or from the Aus-Luderitz road to Walvis Bay concession, overnight camping at designated sites with appropriate and approved waste management</p> <p>6.3 4x4 guided trans-Namib dunes trail from Naukluft to Conception Bay and north to Walvis Bay and/or Rooibank concession, overnight camping at designated sites with appropriate and approved waste management</p> <p>6.4 4x4 guided plains, river and dunes trail from the NNA eastern border about 40 km north of Sesriem to the Kuiseb River, down the river for</p> |

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|--|--|
| | about 45 km, then south and west to Conception Bay and north to Walvis Bay and/or Rooibank concession, overnight camping at designated sites with appropriate and approved waste management |
| 7. Wild horses trails | 7.1 Guided wild horses concession area in the Aus / Garub south-eastern corner of the NNA, accessed by 4x4, horse riding or hiking, with overnight camping at designated sites with appropriate and approved waste management |
| 8. Eastern Namib plains & mountains concession, with 4x4 link to coast | 8.1 Concession area on eastern boundary, north of the Wild Horses Concession area, for small groups on concessionaire's vehicle(s) (max 2 vehicles), with overnight fly camping with appropriate and approved waste management, and with possible 4x4 link to coast and then down to Luderitz or Aus-Luderitz road |
| 9. Hunting | 9.1 Hunting concession in the Naukluft Area to the Topnaar community, quotas to be set by MET on a three-yearly basis, adjusted where necessary year-on-year, and PH contract to be reviewed and agreed by MET |

| 2.3.4 Actions | Timing | Record of progress |
|--|---------------|---------------------------|
| 1. Complete list of allowable activities per zone | By end 2009 | |
| 2. Prepare poster for residents, visitors and officials on zonation and activities | Mid 2010 | |

Notes:

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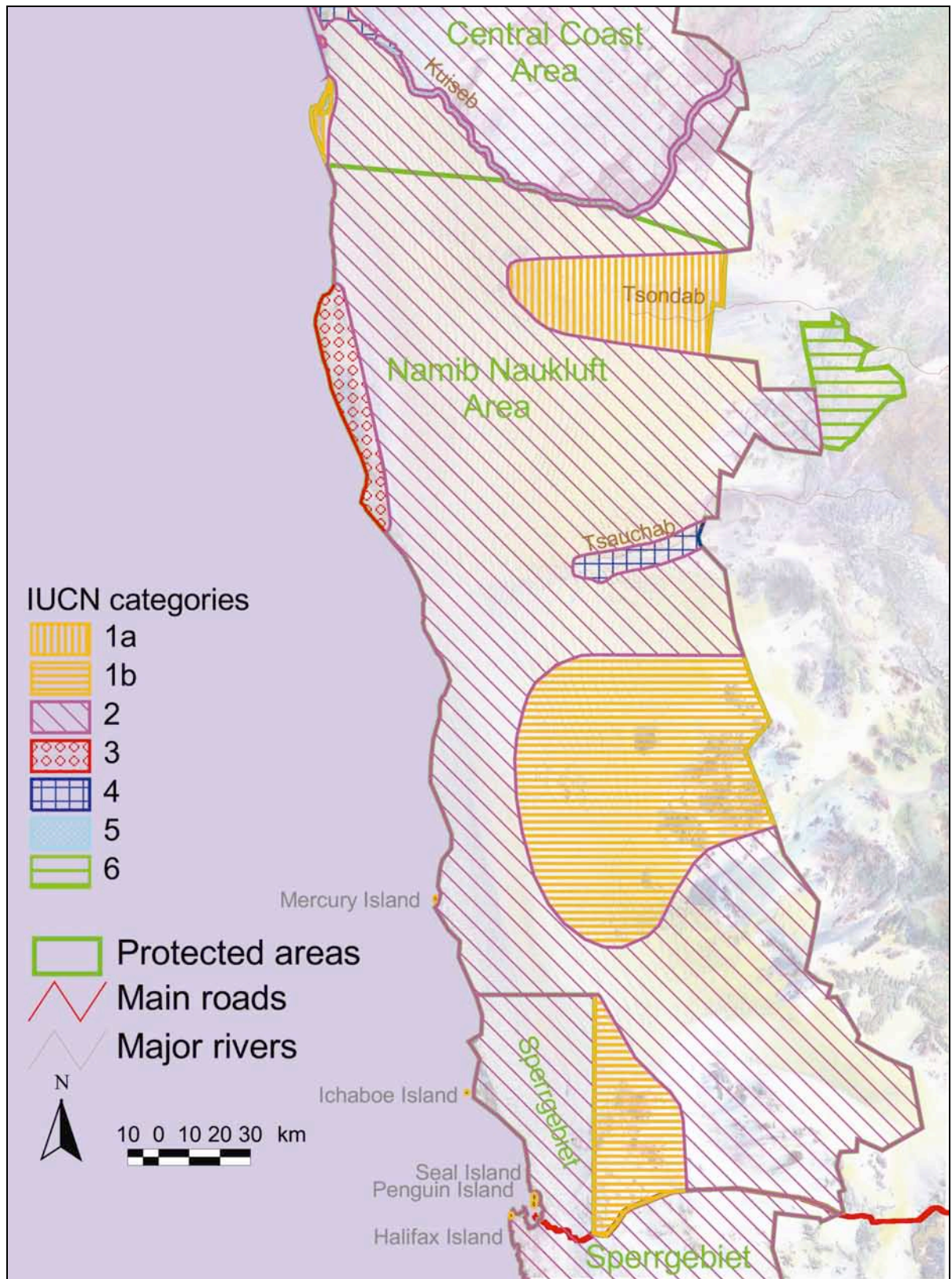


Figure 3: IUCN zones in the Namib-Naukluft Area of the NSCNP

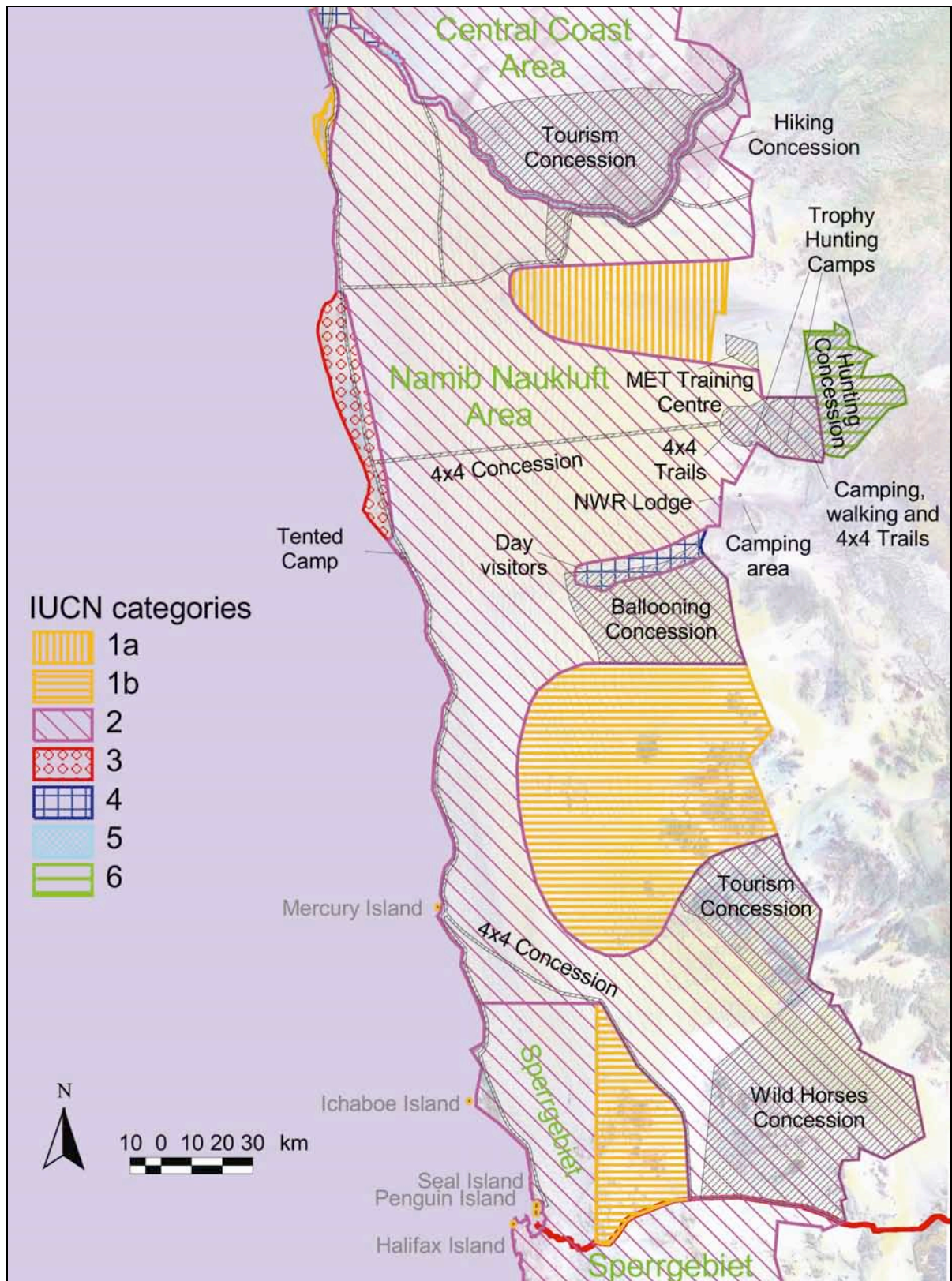


Figure 4: Land use and concessions for the Namib-Naukluft Area of the NSCNP

Part 3: Management targets

3.1 Landscape approach

3.1.1 Principle: Open, contiguous landscapes and seascapes are promoted and managed to ensure seamless linkages between the Namib-Naukluft Area and adjacent terrestrial and coastal ecosystems.

3.1.2 Vision: To maintain and, where relevant, expand the area under conservation management, and manage for larger landscape values, through partnership, with particular emphasis on:

- (i) west-east linkages between the marine, coastal and terrestrial ecosystems, in partnership with the MFMR and neighbouring land-holders; and
- (ii) north-south linkages with neighbouring Management Areas of the Namib-Skeleton Coast National Park.

3.1.3 Strategies:

- a) Work with MFMR to identify coastal and marine protected area collaboration adjacent to the NNA and to strengthen co-management mechanisms and partnerships.
- b) Establish seamless collaboration and cooperation procedures and practices with other management units in the NSCNP.
- c) A hard eastern boundary to the NNA is a major environmental impediment to natural wildlife migration up into the escarpment, particularly in dry times, and a significant cause of mortality and population diminution in some species. It also prevents species that would enter the NNA from the east in good rainfall years from doing so. It is therefore a high priority to pro-actively work with neighbours to promote open, co-managed systems that link the NNA to the escarpment.

| 3.1.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Establish an effective collaborative framework between MET and MFMR to plan and harmonise terrestrial and coastal/marine protected areas and their rational and | 2009 and ongoing | |

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| efficient management, including a focus on collaboration and co-management | | |
| 2. Establish a planning, management and monitoring framework for collaboration, cooperation, mutual support and harmonization with other management units in the NSCNP. | 2009 and ongoing | |
| 3. Pro-actively engage with neighbouring land-owners to the east of the NNA that have compatible land uses, to create open, co-managed systems that help link the NNA to the escarpment. | | |

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3.2 Co-management

3.2.1 Principle: The "world class Protected Desert Landscape and Tourism destination" vision for the NNA, under the brand "Desert Discovery", is planned, managed, implemented, developed and monitored using a collective co-management approach that fully involves civil society, business and relevant government agencies.

3.2.2 Vision: To develop co-management mechanisms that fully integrate MET and MFMR, the relevant business sector, civil society (including environmental NGOs and communities), into all aspects of the management and development of the NNA in full collaboration and "smart partnerships", and with the respective partners being empowered to contribute to their full competitive competencies.

3.2.3 Strategies:

- a) To establish a strategic NNA Steering Body (the Strategic Forum - SF) that provides overall direction, assesses progress and performance and helps to remove constraints, and comprises representation at senior levels of relevant stakeholders including Regional Council, MET, MFMR, and a representative of each of the following: the tourism sector, neighbouring co-management partners and civil society in the form of environmental NGOs.
- b) To establish a practical and operational Consultative Forum (CF) that provides ongoing operational assistance, guidance, support and feedback, and comprises practitioners in relevant sectors such as business, NGOs, line ministries, community groups, neighbours and other supportive individuals and organisations.
- c) To establish a team of Honorary Wardens to work with MET and MFMR to help implement this MDP, legislation, regulations and zonation.
- d) Widely publicize the roles and authority of the Honorary Wardens.
- e) To establish procedures for planning, managing, developing and monitoring the NNA seamlessly with adjacent Management Areas of the Namib-Skeleton Coast National Park, with the coastal and marine ecosystem and with neighbours.

- f) Engage pro-actively with willing neighbours, to explore the establishment of a co-management and development approach for the "Greater Namib-Naukluft Complex" to enhance the development of a shared vision, common objectives and agreed principles, and promote a common management approach, as well as to facilitate park-to-neighbour liaison, with particular focus on establishing linkages between the Namib and the escarpment, to reinstate wildlife movement patterns and to help counter the potential impacts of climate change.
- g) To work closely with Regional Government, organized business and interest groups, communities, NGOs and the media to keep people informed of developments, to invite their input and participation in these and future evolving initiatives.

| 3.2.4 Actions | Timing | Record of progress |
|--|-------------|--------------------|
| 1. Establish a NNA Strategic Forum with clear Terms of Reference | By mid 2009 | |
| 2. Establish a practical NNA Consultative Forum with clear Terms of Reference | By mid 2009 | |
| 3. Appoint a team of Honorary Wardens with clear TOR and identification mechanisms, ensure that these appointments are well advertised and their responsibilities and authority well publicized and that the appointees receive orientation and training on their roles and responsibilities | By end 2009 | |
| 4. Establish close and collaborative working relations and clear procedures for seamless collaboration between the different Management Areas of the Namib-Skeleton Coast National Park | Mid 2009 | |
| 5. Establish close and collaborative working relations | Mid 2009 | |

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| and clear procedures for seamless collaboration between MET and partners on the terrestrial landscapes with MFMR in the coastal and marine ecosystems | | |
| 6. Engage pro-actively in the development of a Greater Namib-Naukluft Co-management Complex with park neighbours | Mid 2010 | |
| 7. Create an inclusive, participatory environment within the NNA where all interested stakeholders can contribute ideas, energy and time; foster a spirit of volunteerism to optimize potential support for the management and development of the NNA | Ongoing | |
| 8. Initiate a feasibility assessment for the greater Namib-Skeleton Coast Complex (Park and neighbours) to become registered as a World Heritage Site. | Mid 2010 | |

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3.3 Biodiversity conservation

3.1.1 Principle: The comprehensive diversity of landscapes, habitats, plants and animals indigenous to the NNA are protected and both ecosystem functioning and natural evolutionary processes take place effectively.

3.1.2 Vision: To protect and conserve the diversity of "sense of place", landscapes, habitats and biota of the NNA in healthy and productive condition within the context of the Namib-Skeleton Coast National Park and the Greater Namib Area.

3.1.3 Strategies:

- a) Because of the large open systems involved, and the intention to create linkages with adjacent ecosystems (e.g. coastal and marine to west and escarpment belt to east), ecosystem management should be minimal, and a largely hands-off approach should be adopted, but 'hands-on' in terms of forging strategic partnerships for open landscape co-management and to prevent and/or minimizing damage to important habitats and species in the NNA.
- b) Should it become necessary to apply active management, interventions should aim to manage the arid ecosystems for long-term diversity, health, productivity and climate change resilience and adaptation, by ensuring connectivity, preventing over use of all components, including water, fauna and flora, landscapes, etc.
- c) Allow and promote variability in management and "patchiness" in ecosystem expression in response to variable climatic conditions and ecosystem functioning.
- d) Build up a good monitoring record of ecological and bio-climatic information, including the diversity and abundance of various species in different taxa, including the less studied lower plants, invertebrates, etc.
- e) Monitor the health of populations of species high on the food chain (e.g. key predators and scavengers), flagship and key-stone species and other strategic key indicator species (including indicator species for early warning of climate change impacts) - if these species prosper it follows that the base of the food chain is likely to be diverse and in good condition.

- f) Monitor key habitats such as Important Bird Areas and Important Plant Areas.
- g) Monitor human impacts of landscapes, ecosystems, habitats and species with particular attention to fragile and high value components of the system, and human activities known to have significant impacts.
- h) Participatory and outsourced approaches for monitoring should be used, fully involving relevant stakeholders.
- i) No poisons or pesticides (or other toxic chemicals) may be used in the park.

| 3.3.4 Actions | Timing | Record of progress |
|--|-----------------|--------------------|
| 1. Set up (where necessary), implement and support monitoring systems for ecosystem health, key habitats, and biodiversity building on existing systems used elsewhere (e.g. Event Book system) and continuing with long-term data series (e.g. wetland bird counts) | During 2009 | |
| 2. Identify priority baseline information needs | During 2009 | |
| 3. Set up, implement and support monitoring systems for human impacts on important components of the CA | During 2009 | |
| 4. Ensure that no toxic substances, poisons or pesticides are used in the CA | Now and onwards | |

The following components are subsets of the Biodiversity Conservation category, and provide more details on specific components.

3.3.a Wildlife population management

3.3.a.1 Principle: A rich diversity of indigenous wildlife prospers within an open, dynamic and resilient ecosystem.

3.3.a.2 Vision: Wildlife population numbers will be managed, mainly through self-regulation, at levels where biomass carrying capacity is considered conservatively appropriate and sustainable, per species and for the total wildlife population, under different rainfall and range conditions. Mass mortalities during droughts will be avoided - mainly by working to establish open systems, particularly west-east. Population fluctuations due to good breeding and slow attrition during wet and dry cycles, and from predation, will not be cause for concern.

Trophy hunting, under carefully controlled conditions, based on population census data and very conservative quotas will be permitted only in a selected area of the Naukluft mountains and for approved ungulate species that are not considered to be threatened. Live capture for conservation purposes such as population reduction and special reintroduction elsewhere will be permitted.

3.3.a.3 Strategies:

a) Population trends, health (age and sex structures and body condition) and distribution of populations will be monitored as necessary, as part of the Namib-Skeleton Coast National Park monitoring process.

b) Wildlife management decisions will be taken in an adaptive manner, with a minimalist intervention philosophy, and based on good monitoring and research information, as may be decided from time to time.

| 3.3.a.4 Actions | Timing | Record of progress |
|--|---|--------------------|
| 1. Design and implement integrated monitoring systems for rainfall, vegetation condition (particularly in vicinity of artificial water points) and | Design during 2010, implementation thereafter and ongoing | |

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| wildlife (numbers, age & sex classes and condition), making use of "Event Book" system | | |
| 2. Obtain and document historic information on wildlife diversity, numbers, extinctions and other relevant issue. | 2010 | |
| 3. Proactively review information on key variables to determine if any management actions are necessary, and identify management options | Systems set up and tested starting 2011 and then ongoing | |
| 4. Adaptively manage wildlife using a minimalist intervention approach and most relevant practices | As necessary | |

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3.3.b Wildlife introductions

3.3.b.1 Principle: The historic diversity of wildlife and their full suite of interactions are reinstated, as far as is practically possible under prevailing conditions,

3.3.b.2 Vision: Re-introduce and/or augment as appropriate species that were locally indigenous within historic times provided these have a reasonable chance of survival under current conditions and are practically and socially acceptable.

3.3.b.3 Strategies:

- a) Carry out an assessment of species that historically occurred in the NNA of the Namib-Skeleton Coast National Park.
- b) Review which species that no longer occur, or occur at below optimal numbers, could be re-introduced under current conditions, and prepare a prioritized list.
- c) Be mindful that the NNA is on the extreme western edge of a number of species' ranges. In higher rainfall years such species may/would have moved westwards into the NNA of the Park, and in lower rainfall years they would have retreated eastwards into the escarpment. Once large, open areas have been secured, reintroductions into the greater area may be viable, but which would not be so if confined to the NNA. Thus take a larger picture view of wildlife reintroductions, and be mindful of the linear oases provided by the Kuiseb River and other ephemeral systems entering the NNA.
- d) Introduce wildlife in phases as per the list, and subject to rainfall and veld condition being adequate to enhance survival chances.
- e) Acquire wildlife from similar habitats (e.g. Namib and Karoo Transition ecosystem) for genetic integrity and optimal chances of success.
- f) Introduce wildlife in sufficient numbers to be viable, rather than having small token introductions.
- g) Where species are likely to recolonise or to augment existing populations by in-migration, allow this to happen rather than active reintroduction.
- h) No species exotic to the NNA of the Namib-Skeleton Coast Park will be introduced.

- i) No subspecies or components of populations from elsewhere will be introduced if there is any risk of genetic pollution to the indigenous populations' genetic integrity, and where suitable animals can be acquired from within the required gene pool.
- j) In the case of introductions that have a potential impact on communities within and adjacent to the NNA, full consultations will take place prior to any introductions.

| 3.3.b.4 Actions | Timing | Record of progress |
|---|------------------------------------|--------------------|
| 1. Carry out an assessment of historic distributions of wildlife in and adjacent to the NNA | 2010 | |
| 2. Based on the above and present-day viability and acceptability, develop and implement a phased reintroduction and augmentation plan (e.g. giraffe in the Kuiseb River, Red Hartebeest in the Naukluft, etc). | 2011 and ongoing | |
| 3. Monitor introduced and augmented populations - numbers, breeding, sex and age ratios, distribution, etc. | From each introduction and ongoing | |

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3.3.c Alien plants and animals

3.3.c.1 Principle: The NNA is free of all invasive alien plants and animals, with the exception of the Desert Wild Horses in the Garub area.

3.3.c.2 Vision: No feral populations of alien plants and animals will be permitted within the NNA, with the exception of the Wild Horses which will be confined to the Garub area and treated as part of the history of the region. Domestic species will not be permitted in the NNA except under concession (e.g. horse trails), and then only where they pose no threat of invasion, are under the full control of designated owners or are an integral part of the operation of the park, and where they pose no threat to the conservation of indigenous species and the integrity of the park.

3.3.c.3 Strategies:

- a) Establish a monitoring system for alien species, with particular attention to high risk species and areas such as along rivers and drainage lines, roadways, mining areas, water points, etc.
- b) Manage feral populations of plants and animals as appropriate and practical including eradication where feasible.
- c) Establish community interest groups of local residents to help eradicate and monitor alien species, particularly where infestations occur from outside the NNA, e.g. along drainage lines entering the park.

| 3.3.c.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Manage and where practical eradicate invasive alien species throughout the NNA | 2010 and ongoing | |
| 2. Work with neighbours to eradicate alien plants from drainage lines entering the NNA | 2010 and ongoing | |
| 3. Follow up on cleared areas and remove re-growth/new seedlings | 2010 and ongoing | |
| 4. Establish community interest groups of local residents to help address the invasive alien problem | 2010 and ongoing | |

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3.4 Coastal management

3.4.1 Principle: The intertidal coastal zone, its biota and the species that transcend the marine/terrestrial interface are managed jointly by the MET and MFMR under agreed co-management principles and protocols that promote synergy, efficiency and elevated conservation management, monitoring and protection of habitats, processes and species.

3.4.2 Vision: The intertidal co-management approach is a model of collaboration with clear benefits to the ecosystem and responsible institutions, and this approach is expanded to the entire Namibian coast.

3.4.3 Strategies:

- a) A close and mutually supportive working environment will be created between the Park MET and MFMR institutions and their respective staff. To this end, a Park MET-MFMR Management Committee will be established.
- b) The above Committee will identify the key areas, issues and species that require joint monitoring and management.
- c) The above committee will establish operational principles, procedures and protocols for monitoring, managing and reporting on the areas and biota of mutual interest, as well as means of collaboration, communication and mutual support.

| 3.4.4 Actions | Timing | Record of progress |
|---|------------------|--------------------|
| 1. Establish a MET/MFMR Management Committee | 2009 | |
| 2. Establish practical and efficient operating procedures for collaboration, communication and reporting for identified priority areas and species. | 2009 | |
| 3. Explore ways of expanding collaboration and co-management where this would be beneficial to the ecosystem and to the partner institutions. | 2010 and ongoing | |

3.5 Tourism management and development

3.5.1 Principle: Use of the NNA is planned and implemented to retain a "Desert Discovery" atmosphere, safeguarding its wilderness and "sense of place" attributes, within a zonation and management framework that ensures that the character, beauty, diversity and integrity of the NNA is maintained, and that visitors have an exceptional experience.

3.5.2 Vision: To provide for present and expanding high quality eco-friendly tourism opportunities through good planning, zonation, management and collaboration between the conservation and tourism sectors, to help raise awareness and educate visitors about the NNA and the Namib-Skeleton Coast National Park, desert and coastal environments, and to promote investment opportunities for all Namibians, particularly those previously excluded from the tourism sector as envisaged in the MET's Concessions policy and the Tourism Transformation Charter.

3.5.3 Strategies:

- a) Develop a detailed "Tourism Plan" for the NNA within the context of the Namib-Skeleton Coast National Park that includes a feasibility assessment, sets carrying capacities, management actions and tourism impact monitoring within the context of the Area's zonation plan. The plan should address the following components:
- Take full cognizance of the environmental sensitivities and biodiversity values of the area and its zonation, and should strive to enhance, but never diminish these.
 - Take full cognizance of the "Desert Discovery", wilderness and "sense of place" attributes which the NNA has adopted.
 - Take full cognizance of the rights and livelihoods of local communities and neighbouring residents in the area.
 - Promote a diversity of multiple market tourism, but with an emphasis on promoting low impact "Desert Discovery" tourism packages.
 - Provide affordable tourism access to the NNA, particularly for Namibians.
 - Make special provision for opportunities for community participation in the tourism development of the NNA. In this regard, the MET's Concessions policy will apply.

- Place special consideration on promoting broad-based Black Economic Empowerment and involvement in the tourism development of the NNA. FENATA's Transformation Charter should be applied.
 - Make provision (as incentives) for neighbours practicing compatible land uses to obtain concession into the park, thereby cementing commitments to co-management and open landscape approaches.
 - Establish Concession Areas for Educational 4x4 Desert and Coastal Trips, wilderness and walking trails, accommodation facilities, etc.
 - Focus should be on high financial return, low impact tourism in the more remote areas.
 - Explore potential of small high end-of-market lodges on eastern edge of area.
 - Develop open air museum and Information Centre in Sesriem / Sossusvlei area.
 - Develop appropriate tourist maps of the CA and relevant information materials.
- b) Prepare and disseminate maps and information on the ecology, biodiversity, sensitivity, zonation and regulations of the NNA.
- c) Develop agreed procedures and conditions for the various concessions.
- d) Aerial zonation, heights and no-flying zones to be determined and form part of the zonation and tourism plan.
- e) Ensure that tour guides are well trained, motivated and well tuned to visitor's needs and local conditions.
- f) Ensure that the role and authority of Honorary Wardens are well publicized.

| 3.5.4 Actions | Timing | Record of progress |
|---|-----------------------|---------------------------|
| 1. Develop a detailed Tourism Plan | 2009 | |
| 2. Develop agreed procedures and conditions for the various concessions | Late 2009 and ongoing | |
| 3. Design phased implementation mechanisms for the Tourism | 2010 and implement in | |

| Plan | phases | |
|---|-------------------|--|
| 4. Set standards for tour operators and guides | From time to time | |
| 5. Prepare and disseminate maps and information, and establish good quality sign boards throughout the area | 2010 | |
| 6. Establish monitoring system to track and document tourism numbers, activities, impacts, etc. | As necessary | |
| 7. Explore the feasibility of developing an open air museum and Information Centre in Sessriem /Sossusvleis area. | 2010 | |

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3.6 Prospecting and mining

3.6.1 Principle: No prospecting and mining activities will take place for non strategic minerals anywhere in the NNA. For strategic minerals, no mining will be permitted in areas zones as IUCN Categories 1a (Strict Nature Reserves), 1b (Wilderness Areas) and 3 (Monuments). All prospecting and mining activities in other areas are planned, managed and decommissioned using best available practice, taking into account long-term national benefits vis-à-vis benefits from other current and potential land-uses, and applying precautionary and polluter pays principles and due caution so as to minimize negative environmental impacts.

3.6.2 Vision: To not allow any prospecting and mining activities anywhere in the NNA for non-strategic and low value minerals (e.g. dimension stone), and no prospecting and mining in areas zones as 1a, 1b and 3 under IUCN categories. Further, to integrate high value nationally strategic prospecting and mining activities in other parts into the land-use and management of the NNA in ways that minimize environmental and socio-economic impacts and that optimize biodiversity, ecosystem and landscape conservation. To restore areas damaged by past prospecting and mining to as near a natural state as can reasonably be expected, or as may be decided.

3.6.3 Strategies

- a) Key zones categorized for high conservation values (i.e. those falling into IUCN categories of 1a, 1b and 3) will be demarked and closed to prospecting and mining.
- b) Prospecting and mining in other parts of the NNA will be for high value nationally important minerals only. No low value, non-strategic prospecting and mining will be permitted (e.g. dimension stone, semi-precious stone).
- c) The long-term national benefits from the use of the land for mining must clearly outweigh benefits from other appropriate forms of land use, such as recreation and sustainable tourism. The onus is on the proponent to demonstrate such national comparative benefits, taking into account ecosystem services and non-monetary benefits of peoples' perceptions and how residents and visitors wish to use their countryside.
- d) Applying safeguards is a key strategy for avoiding and/or reducing impacts to acceptable levels. All prospecting and mining activities **MUST** be preceded by an Environmental Impact Assessment in

accordance with the word and spirit of Namibia's EA Policy (1995) and legislation (Environmental Management Act No. 7 of 2007, and Minerals (Prospecting and Mining) Act, 2003.). The logical consequence of the EIA is the compilation of an Environmental Management Plan (EMP). The EMP must define both outcomes and the methodology (in some detail) as to how the outcomes will be achieved.

- e) Approved prospecting and/or mining company must provide the NNA staff with an environmental report every 6 months, showing its progress towards meeting agreed upon safeguard targets. Once prospecting and/or mining has ceased, the impacts must be rehabilitated in accordance with the stipulations of the EMP.
- f) Communication with prospecting and mining companies is conducted on a regular basis to ensure that mutual-expectations are clear and re-enforced. Mining representatives will serve on the Consultative Forums, but it is still necessary for the Park staff to visit and talk to operators on the ground. Regular visits will not only facilitate dialogue, but they will also demonstrate MET's "hands on" approach towards monitoring. Visits by MET staff must be fully facilitated by mining companies in a spirit of open-cards and transparent partnership.
- g) Monitor implementation of EMPs, paying special attention to the achievement of safeguard targets. A detailed inspection report must be completed after each visit to the prospect or mine by Park staff, with copies sent to MET Head Office, the Strategic Forum, the mine/company inspected and the Mining Commissioner within MME. The report must include an "action" column, where it is clear what action needs to be undertaken by whom and by when, to remedy an environmental concern. As far as possible, the inspecting office should take photographs of key issues of concern. These should be digital since the camera will record date and time - both essential pieces of information. If possible, the inspecting officer must obtain the counter-signature of the prospector/miner who was present during the inspection.
- h) In the case of non-compliance, Park staff must immediately report the matter to the Strategic Forum in order to enable "in house" remediation. If this fails, the matter must be reported to MET HQ for higher level attention. The Park should request external review/inspection should they not have the technical capacity to assess the situation themselves. If possible (i.e. within the provisions of the law), the prospector/miner must be responsible for carrying all the costs of external consultants. Refer to the Environmental Management Act (No. 7 of 2007) for specific actions to be taken.

- i) Establish a "daily park user fee" mechanism (as per filming industry) for prospecting and mining. The fees shall accrue in an account available for park management and development activities in compliance with the MDP. The administration and management of the account shall be by the CF and follow recognized accounting practices and standards.

| 3.6.4 Actions | Timing | Record of progress |
|---|------------------------------------|---------------------------|
| 1. Compile an inventory of all prospecting and mineral licenses in the NNA, noting type of license, its boundaries, conditions of approval, ownership, status and contact persons. | 2009 | |
| 2. Establish a library of all the relevant EIA reports, EMPs and Records of Decision for each license. | 2009 and ongoing | |
| 3. Develop a "prospecting and mining monitoring sheet" that enables easy field monitoring. | Mid 2009 | |
| 4. Compile a "prospecting and mining inspection schedule" - say, twice annual visits. The schedule should be provided to each mineral license holder so that they know when to expect an inspection (this does not preclude unscheduled spot-checks). | 2009 | |
| 5. Obtain agreement from MME to allow the establishment of park specific prospecting and mining user fees. | 2009 | |
| 6. Monitor as per schedule. | Commence 2009 - thereafter ongoing | |

3.7 Law enforcement

3.7.1 Principle: Illegal entry, activities and use of wildlife, plants and other natural resources within and adjacent to the park is controlled and kept to a minimum.

3.7.2 Vision: A zero tolerance approach will be followed against all illegal activities within and adjacent to the NNA. A partnership of collaboration will be established with all relevant stakeholders, under MET/MFMR leadership, and fully incorporating the Honourary Wardens, to secure adherence to law and order in and around the CA.

3.7.3 Strategies:

- a) Develop a practical, harmonized approach to the implementation of law enforcement within the context of this MDP, Park legislation and regulations, by establishing strong partnerships between MET and MFMR, with the Namibian Police and Traffic Department and by establishing a team of Honourary Wardens.
- b) Plan, develop and implement, in partnership with MFMR, Namibian Police and Traffic Department, and the Honourary Wardens, an efficient and effective tourism management and access control system.
- c) Ensure security and anti-poaching (including plant, reptile and other natural resource collection/theft) patrols and surveillance are conducted, in partnership with supportive neighbours, at regular but unpredictable intervals, particularly in high-risk areas (e.g. along main access routes and around mining areas) and that they are highly visible.
- d) Develop an attractive reward system and let it (and the zero tolerance approach) be widely known in the area.
- e) Establish a "Hot-Line" for people to report transgressors, and an efficient response mechanism.
- f) Ensure that the Honourary Warden system, their roles and authority, are well publicized and known throughout the area, to both residents and visitors.
- g) Ensure that MET, MFMR and Honourary Wardens are well trained to preserve and collect evidence so that arrests result in convictions.

| 3.7.4 Actions | Timing | Record of progress |
|----------------------------------|--------|--------------------|
| 1. Plan (with relevant partners, | 2010 | |

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| including Hon. Wardens and supportive neighbours) a practical plan for implementing law enforcement in the context of this MDP & relevant legislation | | |
| 2. Develop (with partners) an effective tourism management and access control system, with particular attention to the holiday seasons | 2009 | |
| 3. Disseminate information on zero tolerance approach & reward scheme, as well as information on roles and authority of Hon. Wardens | 2009 and ongoing | |
| 4. Carry out regular patrols (ground and air) to ensure high presence level | Ongoing | |
| 5. Train staff and Hon Wardens in collection of evidence | 2010 and ongoing | |
| 6. Establish a Hot-Line for reporting of transgressors | 2009 | |

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3.8 Water management

3.8.1 Principle: A minimalist and ecologically appropriate water plan is implemented, taking into account neighbouring land use and water provision.

3.8.2 Vision: The provision of water for wildlife will be undertaken strategically in the interests of maintaining biological diversity in a fenced ecosystem. Emphasis will be placed on securing open systems and corridors in west-east and north-south directions, to facilitate natural ecological processes and reinstating historic movement patterns. Water use for other purposes will be judicious, minimalist and based on environmental assessment principles.

3.8.3 Strategies:

a) Water point development and management will be on a strategic basis - the default setting is a minimalist provision of water.

b) In a critical situation, e.g. wildlife building up along fenced eastern boundary in times of extreme drought, then temporary water provision may be availed if considered absolutely necessary.

c) The park-neighbour policy and strategy will be energetically pursued to explore partnerships to the east, removal of fences and the opening up of west-east corridors with landowners that share compatible values and land-uses with those of the park.

d) All natural water points will be carefully managed to avoid disturbance and degradation, and an appropriate monitoring system will be established.

e) Abstraction of groundwater from the NNA, and in adjacent areas, will be carefully monitored, both the volumes abstracted and impacts on the environment, and adaptively managed.

f) Use of water for tourism, mining and other purposes must be judicious, minimalist, demand managed and monitored. Sustainable sources of water must be used. No unsustainable extraction will take place or any extraction that may have negative biodiversity impacts.

| 3.8.4 Actions | Timing | Record of progress |
|---|---------|--------------------|
| 1. Create a map and inventory of all natural water points as well as boreholes & infrastructure, together with their attributes, such as yield, depth and water quality | 2009 | |
| 2. Ensure that all natural water points remain undisturbed, with low level monitoring | Ongoing | |
| 3. All bulk water abstraction projects must be preceded by an EIA. The default setting is no bulk water abstraction should be allowed in the NNA | Ongoing | |
| 4. Good water demand management practices and monitoring should be implemented for water use in the NNA and throughout the Namib-Skeleton Coast NP | Ongoing | |

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3.9 Fencing

3.9.1 Principle: Open systems are maintained for the largest possible landscape integrity, both within and beyond the NNA and the Namib-Skeleton Coast National Park.

3.9.2 Vision: Remove all internal fences excepting those fences that have strategic value (e.g. to contain recently introduced high value wildlife).

Remove/breach boundary fences where neighboring land-use is compatible and where joint venture / co-management agreements have been secured.

Secure boundary fences where neighboring land use and/or security is a threat to the park's integrity, or where secure fencing is essential for good neighbourliness (e.g. to protect neighbouring small stock farmers from predators).

3.9.3 Strategies:

- a) Boundary fences (east border of the NNA) where security is of concern and where neighbours practice incompatible land uses will be monitored and maintained.
- b) Boundary fences (east border of the NNA) where neighbours practice compatible land uses, are in support of establishing open systems and where co-management agreements are in place, will be removed or breached and co-management practice implemented (e.g. joint monitoring, surveillance, law enforcement).

| 3.9.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Patrol & maintain fences as appropriate where security is of concern and with incompatible neighbours | 2009 and ongoing | |
| 2. Negotiate with sympathetic neighbours for boundary fence removal/breaching | 2009 and ongoing | |

Notes:

3.10 Roads

3.10.1 Principle: A minimal, practical, ecologically and aesthetically appropriate road network will be maintained to help achieve the objectives of the NNA.

3.10.2 Vision: Rationalise and maintain a road network to serve the management (including monitoring and research) and tourism needs of the NNA.

Close and rehabilitate obsolete roads. No new roads developed without strong rationale and EIA, and no off-road driving except in areas clearly designated and zoned for this purpose, e.g. up coastal and across dune concessions.

3.10 Strategies:

- a) A carefully selected network of roads will be maintained for the effective management of the park and approved tourism activities.
- b) Existing roads, tracks and borrow pits not forming part of the network will be closed and rehabilitated.
- c) Any new roads and associated infrastructures (e.g. borrow pits) will be subject to an EIA.
- d) No billboards (that advertise products or services) will be allowed anywhere in the NNA.

| 3.10.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Develop an accurate GIS-based map of current roads & tracks, including making use of aerial photographs | 2009 and ongoing | |
| 2. Develop a road network plan showing roads and related infrastructure to be retained or decommissioned and rehabilitated | 2010 | |
| 3. Close off unneeded roads | From 2010 | |
| 4. Rehabilitate closed roads, tracks and old borrow pits | 2010-2013 | |
| 5. Any new roads, borrow pits, etc to be subject to EIA | Ongoing | |

3.11 Monitoring and Information Management

3.11.1 Principle: Carefully selected indicators and groups of indicators are monitored to allow for timely and judicious assessments and adaptive management.

3.11.2 Vision: A minimal but regular monitoring of key climate, habitat and biodiversity, land use impacts, water quality, park management performance and other key indicators will be conducted and promoted to help understand ecological changes, stresses and management effectiveness.

Participatory monitoring will be encouraged and, where appropriate, monitoring shall be outsourced to special interest groups and specialist stakeholders.

Information and data resulting from monitoring activities will be recorded, stored and curated as time-series and geo-referenced data sets within a Namib-Skeleton Coast National Park Information System.

The information produced from the monitoring systems will be in the public domain and will feed into adaptive management decision-making.

3.11.3 Strategies:

- a) Monitoring will focus on key indicator processes, impacts, habitats and species, with an emphasis on ensuring regular data collection at appropriate intervals, cost efficiency and sustainability.
- b) Monitoring will also assess the effectiveness of management of the NNA, applying best practice tools such as "Namibia's Management Effectiveness Tracking Tool" (NAMETT).
- c) Monitoring systems shall apply approved tools already being widely used (e.g. Event Book system), and shall also continue with systems already established and running within the NNA.
- d) Monitoring systems will be balanced to ensure that the entire range of critical information needs is covered.
- e) A Namib-Skeleton Coast Park Information System will be established to store, manage and help analyse spatial and temporal data sets as well as other pertinent information.
- f) Information will be made widely and freely available, in accessible format, to all stakeholders, including via the media.

- g) The Gobabeb Training and Research Centre will be the host institution for collating, curating, analyzing and disseminating data and information resulting from monitoring within the NNA and the entire NSCNP.

| 3.11.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Develop an appropriate monitoring framework to include the monitoring requirements of the NNA, and incorporate ongoing monitoring initiatives and where appropriate, adapt other national systems such as the "Event-Book", with appropriate training for staff and other implementing partners | 2009 onwards | |
| 2. Develop an accessible and user-friendly Namib-Skeleton Coast National Park Information System and meta database (for spatial & temporal data and other info), that can be easily expanded and up-scaled to serve larger co-managed landscape complexes, to: <ul style="list-style-type: none"> • store, manage, curate data/info • retrieve, interrogate, analyse and aggregate data/info • generate reports based on carefully designed templates for key information needs | 2010 and ongoing | |
| 3. Establish fixed photo-point and aerial photography monitoring of key aspects (e.g. ephemeral river for impact of water abstraction, tracks, mining footprint, etc), and repeat photographs at regular intervals (every 6 or 12 months) | 2009 onwards | |
| 4. Make time-series data and | Ongoing | |

| | | |
|---|------------------|--|
| analysed information available for adaptive management, and for distribution to interested stakeholders, decision-makers and the general public | | |
| 5. Establish the Gobabeb Training and Research Centre as the base for all monitoring data and information for the NNA and the NSCNP | | |
| 6. Use above data and information to prepare an annual State of Namib-Skeleton Coast National Park Report. Establish computer-based analyses and map/figure protocols to automate this process as far as possible, with minimal explanatory text. | 2010 and ongoing | |

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3.12 Research

3.12.1 Principle: Management and development of the NNA of the Namib-Skeleton Coast National Park will be information-based, drawing on good quality research and monitoring. To ensure that good data are available, the Park will implement a research-friendly and supportive philosophy and encourage the non-invasive use of the park as an open air laboratory. The Gobabeb Training and Research Centre shall be the research headquarters for the terrestrial components of the Park, while the Fisheries Research and Information Centre (FRIC) shall serve this function for the coastal and marine ecosystems.

3.12.2 Vision: Park management will be based on good scientific information. Gobabeb will be supported to become the research headquarters for the Park, and to become a research hub for MET and partner research on desert systems of Namibia. A supportive environment will be created for visiting scientists, including the facilitation of research permits. Two levels of research are recognized:

- (a) Applied research in support of priority park information and management needs, and
- (b) Basic or interest research identified by outside researchers.

Preferential support will be given to the former, while the latter will be supported when feasible. All forms of research are encouraged, including biological, hydrological, geological, paleontological, archaeological, historical, climatological, social, economic, etc.

3.12.3 Strategies:

- a) A prioritised and open-ended list of key research topics will be developed for the Park and disseminated to appropriate research institutions.
- b) An appropriate support mechanism will be developed for visiting scientists, making use of Gobabeb where appropriate, with emphasis on those addressing priority research topics relevant to the park.
- c) Appropriate mechanisms will be developed to ensure that optimum feed-back and other values from national and visiting researchers are obtained.
- d) Links will be established with research activities carried out in other parks, particularly in arid regions, as well as with other relevant research organisations and field stations in Namibia, and comparative studies between the different desert ecosystems will

be encouraged, including transboundary with other components of the Nama and Succulent Karoo, Kalahari and Namib Ecosystems, in adjacent countries.

- e) Ensure that Gobabeb and FRIC are integrated into the Park Information System and meta database and that results from research are added to this System.

| 3.12.4 Actions | Timing | Record of progress |
|--|---------------------------|--------------------|
| 1. Develop an open-ended list of priority research topics based on information needs for the NNA management, facilitated by Gobabeb and the FRIC | Start in 2009 and ongoing | |
| 2. Design a reciprocal "support package" for researchers addressing priority research topics and ensuring maximum returns to the NNA, the Park and Namibia, facilitated by Gobabeb | 2009 and ongoing | |
| 3. Participate actively in comparative research programmes across the arid zones and between the various desert ecosystems | 2010 and ongoing | |
| 4. Ensure research outputs and findings are integrated with monitoring data in the Park Information System. | From 2008 | |

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3.13 Education and Awareness

3.13.1 Principle: The Namib, Escarpment and adjacent coastal ecosystems offer unique open-air classroom and laboratory opportunities for education and awareness creation on the subjects of geology, geomorphology, climatology, hydrology, zoology, botany, arid-zone ecology, wetland biology, adaptive evolution, paleontology, archaeology, conservation, sustainable development and many other fields. The NNA contains dune fields, gravel plains, ephemeral rivers, sandy and rocky shores, inselbergs and mountain ranges, a host of arid-adapted plant and animal life plus human-ecosystem interactions. The area thus has huge educational and awareness-raising potential, which will be exploited in the interests of ensuring that visitors and staff are well informed and enriched by associating with the NNA and the Park.

3.13.2 Vision: To develop good quality, accessible and stimulating information and activities on the key biophysical and socio-archaeological aspects of the different habitats within the Namib, Escarpment and coastal ecosystems that are represented within the NNA, and to share this information with guests, visitors, youth groups, specialist groups, decision-makers, officials and the general public in interesting and exciting ways so as to promote an understanding of and commitment to the conservation and sustainable development of the Namib Desert and coastal areas of Namibia. Participatory and collaborative mechanisms will be used, harnessing the strengths of different government agencies, NGOs and special interest groups, the business community and the Gobabeb Training and Research Centre.

3.13.3 Strategy

- a) Establish an open air Museum and Information Centre in the NNA, preferably in the immediate vicinity of the Sesriem / Sossusvlei area.
- b) Prepare good quality information in different forms (posters, brochures, reports, maps, newsletters, displays, booklets, DVDs, website, etc.), that is made available to visitors, staff and the general public.
- c) Ensure that research carried out in the NNA and other parts of the Park is translated into accessible information for the lay person.

- d) Engage local communities, schools, youth groups and decision-makers in ongoing activities, e.g. monitoring, and organize field excursions into key area of the NNA, including a visit to the Information Centre.
- e) Ensure that tour guides are well trained at national and local levels, and that they create exceptional field experiences for tourists by sharing their knowledge in interesting and stimulating ways.

| 3.13.4 Actions | Timing | Record of progress |
|--|------------------|--------------------|
| 1. Establish an open air Museum and Information Centre, preferably near Sessriem / Sossusvlei | 2010-2011 | |
| 2. Compile good quality information on different aspects of the geology, ecology, archaeology, etc. of the NNA and from this, prepare materials for the dissemination of key information | Ongoing | |
| 3. Produce small information boards for strategic placement at key sites | 2009 and ongoing | |
| 4. Produce maps and special information sheets on aspects such as off-road driving, areas open to quad bikes and expected etiquette, duties and responsibilities of Honorary Wardens, info on the Environmental Hot-Line, etc. | 2008 - 2010 | |
| 5. Set standards for tour guides - both procedural (e.g. track etiquette) and technical (environmental knowledge, etc), as well as social (tourism interaction skills) - at both the NNA and Park levels. | 2009-2011 | |

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3.14 Development Guidelines

3.14.1 Principle: All management and development decisions and activities within the NNA and the Namib-Skeleton Coast National Park will be based on the principle of Sustainability and on the Precautionary and Polluter Pays Principles.

3.14.2 Vision: All developments and activities within the NNA and the Park will be guided by the sensitivity of the environment and by the unique and unusual opportunities that the environment offers for innovative developments and activities.

In addition, such developments and activities will be conducted in an environmentally sensitive manner according to best available practices as required by national law, international standards and high environmental principles and ethics.

3.14.3 Strategies:

- a) Foster an environment in which all players (MET & MFMR staff, other ministries and parastatals, local communities, business operators and visitors) are encouraged to be innovative and fully committed to the highest ideals of sustainable development, ecosystem and landscape integrity, and to create the lightest possible "footprint".
- b) Apply best environmental practices, including existing and evolving EIA and strategic assessment approaches to all developments in the NNA that are likely to have a significant impact.
- d) Apply Namibia's Eco-Awards guidelines and criteria to the development and management of all tourism initiatives and developments - both infrastructure and activities.
- e) Develop a list of priority issues (e.g. prospecting and mining, road development, tourism activities, waste disposal, water use) for which specific guidelines (policies) should be systematically developed, and ensure that they are fully understood and implemented by relevant staff and stakeholders.

| 3.14.4 Actions | Timing | Record of progress |
|--|------------------|---------------------------|
| 1. Locate, be familiar with and use best practice policies and guidelines, including strategic | 2009 and ongoing | |

| | | |
|--|------------------|--|
| assessment, EIA and Eco-Awards materials | | |
| 2. Develop specific guidelines and policies for priority issues | 2010 and ongoing | |
| 3. Ensure staff are familiar with and implementing the guidelines to appropriate standards | 2010 and ongoing | |

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3.15 Rehabilitation

3.15.1 Principle: Natural landscapes and biodiversity are, as far as possible and practical, reestablished to their pristine condition or in line with agreed future land use.

3.15.2 Vision: To remove all unnecessary evidence of human occupation from the Park, except agreed infrastructure e.g. Topnaar settlements, historic mining sites, and to rehabilitate landscapes and biodiversity, using best available practices, with emphasis on those areas of greatest ecological and aesthetic importance.

3.15.3 Strategies:

- a) Commission a rehabilitation plan based on an inventory and criteria (log of areas, prioritization, costs and timelines) for the NNA.
- b) Identify responsibilities for rehabilitation - both technical and financial responsibilities.
- c) MET and other relevant parties, including designated organizations entrusted or employed to do this work, to systematically implement rehabilitation in areas and on aspects of respective responsibilities, to agreed standards and levels, starting with the affordable priorities.

| 3.15.4 Actions | Timing | Record of progress |
|--|-----------------------|--------------------|
| 1. Commission a rehabilitation plan | Start in 2010 | |
| 2. Identify responsibilities for rehabilitation | Completed during 2010 | |
| 3. Implement rehabilitation in areas and on aspects of respective responsibilities, starting with the affordable priorities and using job-creating opportunities where possible. | 2011 and ongoing | |

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3.16 Financing

3.16.1 Principle: A significant component of the financial resources required to effectively implement this MDP are raised from within the NNA through levies, concession fees, fines, donations and other sources. These funds are held, administered and deployed under the local control of the Consultative Forum, using transparent and accepted accounting practices.

3.16.2 Vision: To raise, administer and apply funds for the implementation of this MDP. This would include:

- exploring and implementing appropriate mechanisms for resource collection and mobilization,
- establishing and implementing financial administration and management systems under the jurisdiction of the Consultative Forum and applying transparent and accepted accounting practices,
- establishing procedures for the Consultative Forum to review, discuss and approve fund deployment for legitimate activities towards the implementation of the MDP,
- reporting on funds received and expended, and on the outputs, outcomes and impacts of the actions funded.

3.16.3 Strategies:

- a) Initiate a discussion between MET, MFMR, Ministry of Finance and representatives of the Consultative Forum on mechanisms to raise, hold, administer, manage and apply funds, within the control of the Consultative Forum, for the implementation of the MDP.
- b) Based on the outcome of the above, establish the necessary financial management procedures, accounts and processes required to ensure good transparent financial accounting and reporting.

| 3.16.4 Actions | Timing | Record of progress |
|---|-------------------|---------------------------|
| • Initiate a discussion with MoF on procedures for raising, holding, administering and applying funds locally for this MDP. | Start in mid 2009 | |
| • Plan next steps based on the | Following on | |

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| outcomes of the above discussions | from above | |
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Part 4: Record keeping

4.1 Annual work plans

Each year's work plan must be filed under this section.

The annual work plan consists of a simple matrix that states:

- What should be done
- When should it be done, and
- Who should do it

These activities are derived from the MDP and follow the sequence of actionable topics under Part 3. They are best divided into five categories

- *Routine management issues,*
- *Development issues,*
- *Monitoring requirements,*
- *Research priorities and*
- *Administration of work plan*

| Namib-Naukluft Area of the Namib-Skeleton Coast National Park | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|-------------|
| Annual Work Plan for 20 __ __ | | | | | | | | | | | | | |
| Activities | J | F | M | A | M | J | J | A | S | O | N | D | Responsible |
| Routine management | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | |
| Etc. | | | | | | | | | | | | | |
| Development issues | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | |
| 4. | | | | | | | | | | | | | |
| Etc. | | | | | | | | | | | | | |
| Monitoring aspects | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | |
| 2. | | | | | | | | | | | | | |
| 3. | | | | | | | | | | | | | |
| Etc. | | | | | | | | | | | | | |
| Research priorities | | | | | | | | | | | | | |
| 1. | | | | | | | | | | | | | |
| Etc. | | | | | | | | | | | | | |
| Administration of work plan | | | | | | | | | | | | | |
| 1. Park CF meeting - progress report | | * | | | | | * | | | | * | | Committee |
| 2. Adopt w/plan & budget for next year | | | | | | | | | | | * | | Committee |
| 3. Annual technical report from past year | | * | | | | | | | | | | | Committee |
| 4. Annual monitoring report (feed into w/p) | | * | | | | | * | | | | * | | Committee |
| 5. Etc. | | | | | | | | | | | | | |

4.2 Annual budget

Based on a "zero budget" approach, and aimed at making maximum sustained impact in most cost effective and efficient ways. The budget should closely follow the contents of the Annual Work plan. It essentially aims to allocate financial resources to ensure that the work plan is effectively implemented. A standard budget format should be developed that allows for smooth and simple integration with the budgets for other Parks in the region, and then at the national level.

An example of an annual budget for the NNA is shown below:

| Namib-Naukluft Management Area of the Namib-Skeleton Coast National Park | | | | |
|--|-----------------|------------|-------------|-------|
| Annual budget for 20 _ _ | | | | |
| Budget line items | Unit cost (N\$) | No. Units | Total (N\$) | Notes |
| 1. Staff remunerations | | | | |
| 1.1 Park Warden | | | | |
| 1.2 Chief ranger | Xxx/month | 12 + 1 | | 1 |
| 1.3 Rangers x 3 | Yyy/month | 12 + 1 | | 2 |
| 1.4 Labourer x 3 | Zzz/month | 36 + 3 | | 3 |
| 1.5 Casual labour | Aaa hours | Bb hours | | 4 |
| 1.6 Social Security | | | | 5 |
| 1.7 Medical aid | | | | 6 |
| 1.8 Rations | | | | 7 |
| 1.9 etc | | | | 8 |
| 1.10 Consultancy services | Xxx/days | Yy days/yr | | 9 |
| 2. Transport | | | | |
| 2.1 Vehicle fuel | Xxkm/mnth@yy/km | 12 | | 10 |
| 2.2 Vehicle maintenance | | | | 11 |
| 2.3 Licence, etc, | | | | 12 |
| 3. Equipment | | | | |
| 3.1 Chainsaw | xxx | 1 | | 13 |
| 3.2 etc | | | | 14 |
| 4. Building materials | | | | |
| 4.1 Cement | | | | 15 |
| 4.2 etc | | | | 16 |
| 5. Co-management support | | | | |
| 6. Monitoring | | | | |
| 7. Research | | | | |
| 6. Information sharing and dissemination | | | | |
| 7. Rehabilitation | | | | |
| 8. Administration | | | | |

Comprehensive notes should accompany the budget so that a person not familiar with the NNA would understand the logic of how resource allocation has been determined and calculated

| No. | Budget Notes |
|-----|--------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| Etc | |

A copy of each annual budget should be filed under this section.

Agendas and Minutes of Strategic NNA Forum meetings

The agenda and minutes of each Strategic Forum meeting, plus the Terms of Reference for this Body, must be filed under this section.

Agendas and Minutes of practical NNA Consultative Forum meetings

The agenda and minutes of each practical NNA Consultative Forum meeting, plus the Terms of Reference for this Forum, must be filed under this section.

Annual reports

Each annual report for the NNA should be filed under this section.

Amendments/changes to the NNA MDP

Any changes to Parts 1-4 of the MDP must be recommended at a formal NNA Consultative Forum meeting and approved by the NNA Strategic Forum at a formal meeting, and such changes must be formally reflected in the minutes. Copies of the relevant sections of the minutes must be filed under this section of the Plan.

All changes must be entered into the "Record of Management Plan Updates" (see table below) and the amended section(s) circulated to the people/offices listed below, with a completed Record of Management Plan Updates form.

| Update number | Date | Page/s removed | Page/s inserted |
|---------------|------|----------------|-----------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |

Original copies of the MDP

The following will be provided with original copies of the MDP and its updates:

- NNA Wardens and staff
- Chief Warden, Namib-Skeleton Coast National Park
- Central Namib Management Area
- Skeleton Coast Management Area
- Sperrgebiet Management Area
- Parks Deputy Director, Windhoek
- Parks & Wildlife Director, Windhoek
- MET Library, Windhoek
- Office of the MET PS, Windhoek
- Offices of the PSs of MME, MFMR, MLR, MAWRD, MLRGHRD
- Office of the MET Deputy Minister, Windhoek
- Office of the MET Minister, Windhoek
- MME offices (Swakopmund / Central Coast & Luderitz)
- Geological Survey
- MLR office (Swakopmund / Central Coast & Luderitz)
- MFMR (Swakopmund & Luderitz / Central Coast)
- Office of the Governor - Hardap and Councilors
- Chamber of Commerce & Industry
- FENATA
- Gobabeb Training and Research Centre
- Relevant NGOs
- Topnaar Community
- Any other stakeholder that requests a copy
- Pdf copy on the MET website

Part 5: Inventories and background information

This is a very dynamic part of the MDP, and should be added to and updated as information becomes available. The following topics, which may be added to, are relevant:

- 5.1 Geographic location, coverage and topography (maps)
- 5.2 Climate
- 5.3 Geology & geomorphology
- 5.4 Paleontology
- 5.5 Hydrology
- 5.6 Ephemeral river systems, vleis and pans
- 5.7 Ground water
- 5.8 Broad habitats
- 5.9 Flora
- 5.10 Mammals
- 5.11 Birds
- 5.12 Reptiles
- 5.13 Amphibians
- 5.14 Fishes
- 5.15 Coastal and marine fauna
- 5.16 Terrestrial invertebrates
- 5.17 Endemic species and patterns of distribution
- 5.18 Red Data species
- 5.19 Alien species
- 5.20 Archaeology
- 5.21 History
- 5.22 Land use, past and present
- 5.23 Infrastructure
- 5.24 Administration
- 5.25 Legal issues

Information for this section should be obtained opportunistically, by Park staff, informed visitors, by attracting visiting scientists, and by working with universities and other interested organisations and individuals.

New information may have management implications. Such information, where relevant, should be tabled at NNA Consultative Forum meetings. New information may lead to recommendations for changes in aspects of monitoring and management.

Part 6: Studies and reports

This is also a dynamic part of the MDP. As the results of studies, reports and publications on the NNA and relevant adjacent areas and topics are completed and become available, their full citation should be listed here, with author, date, title and reference. Copies of the reports and publications should be kept at:

- a) The MET library in Windhoek,
- b) The Park HQ of the Namib-Skeleton Coast National Park, and
- c) The NNA head office.

| List of Reports and Publications from and relevant to, the CA of the Namib-Skeleton Coast National Park | | | | |
|--|------------------|-------------|--------------|------------------|
| No. | Author(s) | Date | Title | Reference |
| 1 | | | | |
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Regulations

Preamble

These regulations specify what is permitted or not permitted in the Namib-Naukluft Area (NNA) of the Namib-Skeleton Coast National Park (NSCNP) (hereinafter referred to as 'the park'). They are a compliment to the Management and Development Plan (MDP) of the NSCNP. Thus, an issue not included in the regulations, but covered in the MDP, is in such cases regulated by the text in the MDP.

A. Public Access

1. Any person entering the NNA of the NSCNP does so wholly at his/her own risk. Thus, the Government of the Republic of Namibia shall not be liable for any damage suffered on account of physical injury, whether fatal or not, incurred in any way whatsoever in the park.
2. Unless permitted through a concession agreement authorized by the Minister, bikes and quad bikes may only access the following areas:
 - a. Any proclaimed road, subject to the relevant Traffic Ordinance and regulations,
3. Unless permitted through a concession agreement, beach buggies and motor vehicles may only access the following areas:
 - a. Any proclaimed or park road, subject to the relevant Traffic Ordinance and regulations,
 - b. Designated 4x4 trails in and immediately adjacent to the Naukluft mountains.
3. Walking and jogging is permitted in designated areas in the park (e.g. Sossusvlei, Naukluft mountains) under specific conditions. No pets may accompany the owner anywhere in the park.
4. Aircraft, microlights and gliders may overfly the NNA providing they are above 3000 feet in the Tsondabvlei area and 1000 feet anywhere else, and that all Civil Aviation laws and regulations are conformed with. Aircraft may only land on registered airfields, unless a forced landing is required in an emergency, in which case the required Civil Aviation procedures must be followed.
5. Overnighting in the NNA is only permitted in designated campsites and lodges.

6. Fires may only be made in designated fireplaces.
7. Bonfires and fireworks may not be made/discharged anywhere in the NNA.

B. Signage, advertising and structures

1. Only the Government of the Republic of Namibia (GRN) and legal entities duly authorized by them to do so may erect signs in the park, and all signs shall conform to the standards specified by the Namibian Roads Authority (NRA) or agreed by them.
2. Billboards or outdoor advertising of any kind are/is explicitly prohibited.

C. Tourism and Concessions

1. No one may offer accommodation, tours or special events in the NNA unless they have a valid concession or permit authorized by the Minister and issued by the Permanent Secretary of MET.
2. No lodge or campsite may be established in the NNA without a valid concession or permit authorized by the Minister and issued by the Permanent Secretary of MET and unless its establishment has been guided by either an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), or a fast-track EMP should MET decide that an EIA is not necessary. In any event, there must be a competent Environmental Contract that stipulates the environmental safeguards that must be complied with.
3. The GRN may issue concessions in the NNA consistent with this MDP and in accordance with the MET's tourism and concession policies.
4. No person may make any film or photo for commercial purposes in the NNA without the written permission of the Park Authorities.
5. Without the written permission of the Park Authority, no person, except an officer acting in an official capacity, may
 - a. present public entertainment,
 - b. collect money from the public,
 - c. carry out any trade or business,
 - d. distribute any pamphlet, book, handbill or any other printed or written document, or
 - e. organize, hold or address any meeting or assembly, or

6. In all cases, conditions will be stipulated for the concession and these must be adhered to.

D. Plant and animal harvesting

1. Unless explicitly allowed by virtue of a valid permit, no-one may harvest any plant or animal for commercial purposes in the park
2. Angling, fishing and crayfishing is not permitted anywhere along the coast in the NNA.
3. No bait and shellfish may be harvested anywhere along the coast in the NNA.
4. Beach-combing is permitted by guests on tour in concession areas, providing that the intention is to collect items for personal use only, and that items are collected by hand only.
5. No marine mammals may be harvested or disturbed.
6. Other than the above, no animal may be killed, chased, baited or harassed, and no eggs may be removed from a nest, nor may the nest be tampered with or damaged.

E. Prospecting and mining

1. Prospecting and mining for strategic minerals only, will be permitted in the park, and then only in areas where they will not unduly undermine conservation priorities, i.e. nowhere in a zone categorized as a Strict Nature Reserve (IUCN category 1a), a Wilderness Area (IUCN category 1b) and a Monument (IUCN category 3), not in the intertidal zone, not within 5 km's of Damara tern nesting sites, Penguin and Seal colonies, not in or within 5km's of the Naukluft Mountains and/or public recreation and tourism (i.e. not within 5km's of any lodge or public campsite).
2. All prospecting and mining will be preceded by an EIA and EMP, in accordance with Namibia's Environmental Management Act of 2007, and the relevant mining legislation.
3. All mines must be rehabilitated after closure or abandonment, in accordance with the Environmental Management Act of 2007.

F. Industries

1. Given that the park is surrounded by various forms of development, e.g. farmlands, tourism activities, it is acceptable that certain activities and infrastructure required to satisfy national and/or public interest, may be located in or immediately adjacent to the park. Examples include roads, power lines, pipelines, tourism facilities and activities, and research facilities.
2. In all such cases, future developments will be preceded by an EIA and EMP, in accordance with Namibia's Environmental Management Act of 2007. If past developments are of concern, they may be subject to an environmental audit, which may result in changes being required and an EMP.
3. Notwithstanding 1 and 2 above, no person may erect or lay out any building, structure, water installation, fence, seaward protection, beach wall, boat house landing place, nursery, borehole, trench or any other works or facilities without the written permission of the Park Authority.

G. Waste, pollution and litter

1. Any form of littering is illegal. 'Littering' in this case means discarding or leaving a human-made object or food item in the park or on or adjacent to a public road running through the park. 'Leaving' in this case means going away from the place or area where the item was left by the person, whether or not the person intended returning to fetch it later.
2. Any form of environmental defacing is illegal. 'Defacing' in this case means painting, scratching, writing or spraying names, patterns or motifs on any part of nature or creating new vehicle tracks on the unspoilt desert environment.
3. No waste disposal site may be created in the park unless authorized in writing by the MET, and then with clear directives on how the waste must be managed, applying best available practices.
4. Should a person have no alternative than to use nature as a 'toilet', the toilet paper must either be burnt or removed, and the human waste buried or removed.
5. No person may pollute the soil, ocean or freshwater in any manner.

H. Honorary Wardens

Honorary Wardens will be appointed to assist the GRN in managing the park, and shall have the following responsibilities and powers:

1. To provide information to the public and other stakeholders
2. To inform people that they are in contravention of the regulations, and request them to immediately comply
3. To stop a person and search a vehicle, boat or aircraft, providing there is a reasonable suspicion that the person has been involved in an illegal activity
4. To demand a persons name (as above)
5. To inspect a suspects luggage (in search of any illegal items, such as fish, shellfish, bait, venison, live animals, plants, etc.)
6. To count and/or measure fish or shellfish to determine if they comply with legal requirements
7. To issue an offender with an official warning.
8. To report an offender to the authorized law enforcement agencies, whose task it is to perform an arrest/issue a fine, as the case may be.

I. Powers of an Officer

An officer shall have all the powers accorded to Honorary Warden, as well as the following additional powers:

1. An officer who performs duty in the park may order a person who, in his/her considered opinion commits or has committed an offence, or does or has done anything which gives offence or has given offence to other people in the park, to leave the park forthwith.
2. Any person who has been lawfully ordered by an officer to leave the park in accordance with 1, above, shall leave the park forthwith along the shortest route on which the public may travel.
3. If the Park Authority decides that the person evicted from the park in accordance with 1, above, is a threat to the park or the public in the park, s/he may order that the person may not re-enter the park for a period of 6 months.
4. Any person banned from entering the park in accordance with 3, above, may appeal his/her ban in writing. The appeal will be considered by the Permanent Secretaries of MET and MFMR, and the decision conveyed by them in writing to the appellant.
5. An officer who performs duty in the park may warn, fine or arrest a person who, in his/her considered opinion has contravened any of the park regulations. In the case of a fine, the amount to be fined shall be made known in the Government

Gazette from time to time. If the contravention was damage to State property, the officer may issue a fine that is in relation to the costs of repairing or replacing, as the case may be, the damaged property.

6. An officer who performs duty in the park may confiscate from any person an object that has been used to contravene any of the park regulations, or an item that constitutes evidence of the contravention, when s/he issues a fine to the person for the contravention, or arrests the person, as the case may be. The officer shall issue the person a confiscation receipt for the item and shall be responsible for its safekeeping until the case is heard by a competent Court. The Court shall decide whether the item be forfeited to the State or returned to the person.

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Annex 21

Bibliography



Namib Sand Sea Bibliography - 2011

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Annex 22

Relevant Curriculum Polytechnic of Namibia



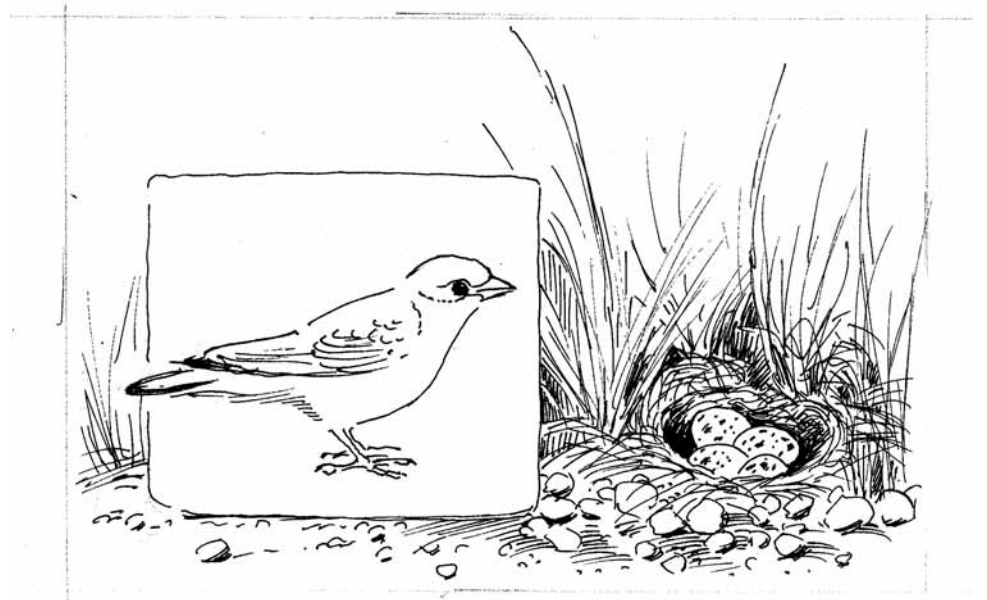
Relevant courses at the Polytechnic of Namibia as per Prospectus 2011

| Course Name | Code | Year | Department |
|---|-------------|-------------|---------------------|
| Plant Identification | PID110S | 1 | Nature Conservation |
| Nature Conservation Administration | NAT5001 | 1 | Nature Conservation |
| Nature Conservation Techniques (Module A) | NCT110S | 1 | Nature Conservation |
| Nature Conservation Techniques (Module B) | NCT120S | 1 | Nature Conservation |
| Nature Conservation Techniques (Module C) | NCT130S | 1 | Nature Conservation |
| Law Enforcement | NAT5002 | 1 | Nature Conservation |
| Computer Usage | RGB111N | 1 | Nature Conservation |
| Nature Conservation Calculations | NCA110S | 1 | Nature Conservation |
| Animal Studies 1 | NAT0100 | 1 | Nature Conservation |
| Plant Studies 1 | NAT5100 | 1 | Nature Conservation |
| Nature Conservation Ecology 1 | NAT1100 | 1 | Nature Conservation |
| Animal Studies 2 | NAT0200 | 1 | Nature Conservation |
| Plant Studies 2 | NAT5200 | 1 | Nature Conservation |
| Nature Conservation Ecology 2 | NAT1200 | 1 | Nature Conservation |
| Nature Conservation Techniques 1 | NAT4100 | 1 | Nature Conservation |
| Communication Skills | CSK0420 | 1 | Nature Conservation |
| Our Environment: Issues, risks and responses | OEM101Y | 1 | Nature Conservation |
| Animal Studies 3 | NAT0300 | 2 | Nature Conservation |
| Environmental Conservation Development | NAT2100 | 2 | Nature Conservation |
| Methodology of Environmental Education | MEE221S | 2 | Nature Conservation |
| Nature Conservation Ecology 3 | NAT1300 | 2 | Nature Conservation |
| Nature Conservation Techniques 2 | NAT4200 | 2 | Nature Conservation |
| Plant Studies 3 | NAT5300 | 3 | Nature Conservation |
| Nature Conservation Techniques 3 | NAT4300 | 3 | Nature Conservation |
| Aquatic Ecosystem Management | NAT6003 | 3 | Nature Conservation |
| Natural Resource Management | NRM210S | 3 | Nature Conservation |
| Plant Studies IV (Module A) | PSO411Z | 4 | Nature Conservation |
| Resource Management IV (Module A) | RMM451U | 4 | Nature Conservation |
| Conservation Management | CVM112Y | 4 | Nature Conservation |
| Plant Studies IV (Module B) | PSO421Y | 5 | Nature Conservation |
| Financial Management I (Nature Conservation) | FMN451Z | 5 | Nature Conservation |
| Management Principles I (Nature Conservation) | POM191R | 5 | Nature Conservation |
| Resource Management IV (Module B) | RMM461T | 5 | Nature Conservation |
| Community-Based Natural Resource Management | CBR410Y | 5 | Nature Conservation |
| Geographic Information Systems 1 | GES512S | 1 | Land Management |

| | | | |
|--|---------|---|-----------------|
| Introduction to Databases 1B | IDB220S | 1 | Land Management |
| Introduction to Geospatial Data | IGD411S | 1 | Land Management |
| Introduction to Survey and Mapping | ISM110S | 1 | Land Management |
| Basic Ecology | BEC110S | 1 | Land Management |
| Natural Resource Management 1 | NRT120S | 1 | Land Management |
| Community Based Land Use Management 1 | CBL120S | 1 | Land Management |
| Introduction to Land Use Planning and Management | ILP510S | 2 | Land Management |
| Land Tenure Systems | LTS520S | 2 | Land Management |
| Land Information Systems | LIS610S | 2 | Land Management |
| Introduction to Geography | IGE420S | 2 | Land Management |
| Natural Resource Management 2 | NRT210S | 2 | Land Management |
| Natural Resource Management 3 | NRT220S | 2 | Land Management |
| Introduction to Biology | IBI510S | 1 | Agriculture |
| Soil Science | SSA120S | 1 | Agriculture |
| Rangeland Science | RSC112S | 1 | Agriculture |
| Rangeland Management | RMN211S | 2 | Agriculture |

Annex 23

Relevant Curriculum University of Namibia



Relevant courses at the University of Namibia as per Prospectus 2011.

| Course Name | Code | Year | Credits | Degree |
|---|-------------|-------------|----------------|---------------|
| Biology | AASC 2401 | 1 | 8 | BSc |
| Plant Taxonomy | AIES 2422 | 1 | 8 | BSc |
| General Ecology | AIES 2442 | 1 | 8 | BSc |
| Introduction to Biology | SBLG 3411 | 1 | 16 | BSc |
| Diversity of Life | SBLG 3512 | 1 | 16 | BSc |
| Soil Science | ACSC 2512 | 2 | 16 | BSc |
| Vegetation assessment and Monitoring Techniques | AIES 2501 | 2 | 8 | BSc |
| Wildlife Survey Techniques and Monitoring | AIES 2521 | 2 | 8 | BSc |
| Ecology | AIES 3601 | 2 | 8 | BSc |
| Principles of Wildlife Management | AIES 3621 | 2 | 8 | BSc |
| Environmental Science | AIES 3641 | 2 | 8 | BSc |
| Plant Physiology | AIES 3682 | 2 | 12 | BSc |
| General Soil Science | AIES 3602 | 2 | 8 | BSc |
| Forest and Veld Fire Management | AIES 2512 | 2 | 16 | BSc |
| Wildlife Diseases | AWLM 3882 | 2 | 12 | BSc |
| Ornithology and Mammalogy | AWLM 3811 | 2 | 16 | BSc |
| Water Management and Soil Conservation | ACSC 2601 | 3 | 8 | BSc |
| Game Farming | AASC 2602 | 3 | 8 | BSc |
| Community Based Natural Resource Management (CBNRM) | AIES 2631 | 3 | 16 | BSc |
| Game Ranching | AASC 3742 | 3 | 8 | BSc |
| Conservation Biology | ANRC 3792 | 3 | 12 | BSc |
| Population and Community Ecology | AIES 3781 | 3 | 12 | BSc |
| Rangeland Management | AWLR 3831 | 3 | 16 | BSc |
| Management of Arid and Semi-Arid Lands | AENV 3882 | 3 | 12 | BSc |
| Intro Integrated Resource Management | AASC 5981 | 1 | 12 | MSc |
| Rangeland Ecosystem Structure and Function | AASC 5991 | 1 | 12 | MSc |
| Soil Dynamics | AASD 5981 | 1 | 12 | MSc |
| Water Dynamics | AASW 5981 | 1 | 12 | MSc |
| Environmental Physiology | AASE 5981 | 1 | 12 | MSc |
| Land Use Planning | AASL 5981 | 1 | 12 | MSc |
| Fodder Flow | AASF 5981 | 1 | 12 | MSc |
| Rangeland Management | AASR 5981 | 1 | 12 | MSc |
| Wildlife Ecology and Management | AASC 5982 | 1 | 12 | MSc |
| Rangeland Degradation and its Mitigation | AASC 5992 | 1 | 12 | MSc |
| Range Biodiversity and Conservation | AASR 5982 | 1 | 12 | MSc |

Annex 24

Stakeholders Consulted during Preparation of this Nomination Dossier



24a - From: Minutes of Honourable Ministers' meeting on the Southern Namib Sand Sea Nomination Dossier

20 July 2011

Attendance

1. Hon. Dr. Abraham Iyambo – Minister of Education and **Chairperson**
2. Hon. Mr. Isak Katali – Minister, MME
3. Hon. Mr. Pohamba Shifeta – Deputy Minister, MYNSSC
4. Hon. Mr. Kilus Nguvauva – Deputy Minister, MFMR
5. Dr. Gabi Schneider – MME
6. Dr. Nashilongo Shivute – MLR
7. Mr. Damir Dijkovic – UNESCO Windhoek Cluster Office
8. Ms. Esther Moombolah-Goagoses – NMN
9. Mr. Marius Kudumo – NATCOM Secretariat
10. Ms. Frieda Kanime - NATCOM Secretariat
11. Mr. Ferdinand Katire – NATCOM Secretariat
12. Ms. Anne Borchert – NATCOM Secretariat

Apologies

- Hon. Netumbo Nandi-Ndaitwah- Minister, MET
- Hon. Alpheus !Naruseb – Minister, MLR

24b - From: Gobabeb World Heritage Nomination Dossier Preparation Training Course

21 August – 2 September 2011

| Name | Country |
|-----------------------|----------------|
| ABUNGU, George | Kenya |
| ALIYU, Aliyu | Nigeria |
| BALSAMO, Alessandro | Italy |
| BADMAN Tim | UK |
| BARBE, Therese | Seychelles |
| BARRA, Julienne | Seychelles |
| DARSOT, Leon | France |
| DEACON, Jeanette | South Africa |
| ELNOUR OGEIL, Eltahir | Sudan |
| HAGOS, Futsum | Eritrea |
| KANYEMBA, Linda | Zambia |
| KHIDER TAHA, Rihab | Sudan |
| KIRIAMA, Herman | Kenya |
| MAHASHA, Raditshaba | South Africa |

| | |
|--|--------------|
| MUGHONGORA, Vincent | Namibia |
| MULAUDZI, Amos | South Africa |
| MUSALIZI, Sarah | Uganda |
| NYIRACYIZA, Jackie | Uganda |
| PALMER, Guy | South Africa |
| PAULOS, Thomas | Eritrea |
| PRINS SOLANI, Deirdre | South Africa |
| RUHOMAUN, Kevin | Mauritius |
| SOOBARAH, G. | Mauritius |
| SURAYU WUDIL, Yusuf | Nigeria |
| TARUVINGA, Pascal | Zimbabwe |
| Gobabeb Training and Research Centre participants: | Namibia |
| Grummon, Christine | |
| Kapalaga, Taimi | |
| McElroy, Laura | |
| Siyaya, Annetjie | |
| Tjilumbu, Lahja | |
| Ward, Vivienne | |

24c – From: Attendees of Regional Governors’ and Traditional Leader’s briefing session on the Namib Sand Sea, World Heritage Site, Gobabeb, 18 October 2011

| Name | Position | Organisation | e-mail |
|-----------------------------|---------------------------------|-----------------------|---|
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| Hardap Region | | | |
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| Ms Katrina M. Hanse-Himarwa | Governor | Hardap Region Council | rashidtryane@yahoo.com; kmhansehimarwa@hardaprc.com.na |
| Mr Jeremias G. van Neel | Chairperson | HRC | JG.vanneel@gmail.com |

| | | | |
|-------------------------------|----------------------------------|--------------------------------------|----------------------------|
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| Mr Jims Christiaan | | KRC | jimschristiaan@google.com |
| Mr Jan Scholtz | Chairperson Management Committee | KRC | Janscholtz2@gmail.com |
| Mr Joseph P Stephanus | CRO | KRC | Joseph.stephanus@gmail.com |
| Mr Bernadus Swartbooi | Governor | KRC | bernadus@karasrc.com |
| Mr Dawid Tiboth | Office of the Governor | KRC | david@karasrc.com |
| Topnaar TA | | | |
| Mr Stoffel Anamab | Traditional Councillor | | 081 209 9105 |
| Mr Joel Kooitjie | MAWF-DEES/ Topnaar | | joelkooitjie@yahoo.com |
| Mr Seth Kooitjie | Traditional Chief | | 081 277 5899 |
| Other | | | |
| Dr Eugene Marais | Chief Curator | National Museum of Namibia | Eugene.marais@gmail.com |
| Mr Manie le Roux | Chief Control Officer | MET | Met.nnp@iway.na |
| Dr Mary Seely | Associate | Gobabeb Training and Research Centre | Mary.seely@drfn.org.na |
| Dr Peingeondjabi Titus Shipoh | PS | MYNSSC | ps@mynssc.gov.na |
| Mr Vincentius Mughongora | Technician | National Museum of Namibia | Vince100@webmail.co.za |

24d – From: World Heritage Site Briefing & NAMPLACE Inception Meeting, Sossusvlei Lodge

11 November 2011

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| Jack Chatanga | Wilderness Safaris | jack@wilderness.com.na |

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| Jonas Heita | NAMPLACE | jheita@namplace.org.na |
| Timothy Iita | MET | ombugu@gmail.com |
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| Mannie le Roux | MET | |
| Eugene Marais | MYNSSC | marais.eugene@gmail.com |
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