Sandrine JOB Consultant

ALOFA TUVALU small is beautiful

TUVALU MARINE LIFE PROJECT

Phase 1: Literature review

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CRISP Coral Reef InitiativeS for the Pacific Initiatives Corail pour le Pacifique

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Helping to save Tuvalu means helping to save your world too (Alofa Tuvalu)

1. CONTEXT AND OBJECTIVES

1.1. Context of the survey

1.1.1. Introduction

The present survey is part of the Alofa Tuvalu 10 years plan « Small is Beautiful » which primary objective is to help Tuvalu survive as a nation and to preserve what makes Tuvaluan culture and tradition unique.

Tuvalu is located in the Central Pacific. It is an archipelago composed of nine islands (4 low islands and 5 atolls), with a total land mass of 26 km^2 scattered over 900,000 km^2 of ocean area. One of the very distinctive characteristics of these islands is to be very low above the sea level, with an average height of one meter above sea level while the highest elevation is no greater than 4 metres. With a population of more than 12,000 people, Tuvalu is the first sovereign nation threatened with becoming totally uninhabitable within the next 50 years due to climate change related flooding and sea level rise. Moreover, global warming alters marine species composition and health, with likely repercussion on food stocks. Tuvalu is thus facing a double threat, for its biodiversity and livelihood. In addition, with saltwater intrusion into groundwater lens due to sea level rise, the traditional crops are no longer able to grow in many places of the islands, the sea becoming an even more important source of food for the Tuvaluan people.

Recognizing this nation, its people and natural environment, is under serious danger, it is now urgent and crucial assess its natural biodiversity firstly to preserve it, and secondly to keep a stamp of its richness if it has to disappear for ever.

1.1.2. Tuvalu's national adaptation programme of action (NAPA)

The government of Tuvalu signed the United Nations Framework Convention on Climate Change in June 1992. Recognizing Tuvalu's environmental concerns due to threats caused by climate change, especially the impacts of droughts, saltwater intrusion and coastal erosion on the livelihood of the people, Tuvalu developed several plans over the following years: the National Environmental Management Strategy (SPREP, 1997), Te Kakeega II 2005-2015 National Strategy for Sustainable Development (2005) and recently the National Adaptation Programme of Action (2007).

The Tuvalu NAPA has been prepared with the primary objective of identifying and

promoting activities that address urgent and immediate needs of Tuvaluan stakeholders for adapting to climate change impacts, especially in the field of agriculture, water, fisheries, land, disaster and human health.

In the fisheries sector, NAPA has highlighted the need of strengthening community-based conservation programmes on highly vulnerable near-shore marine ecosystems, recognizing the presence of a rich and unique community of marine life, some of the species being endemic, the lack of marine biological resources baseline information, and the impact of climate change on these communities. One of the outcomes of NAPA is therefore to identify, implement or reinforce conservation areas for each of the islands, process that can be helped by the development of a marine resources inventory for the local communities. This lack of coastal resources information has been pointed out as one of the main obstacles to the implementation and management of conservation areas. In this context, our project is heading toward the same goal as NAPA and should serve to increase the knowledge on Tuvalu marine resources.

1.1.3. Tuvalu national biodiversity strategies and action plan (NBSAP)

Tuvalu signed the Convention on Biological Diversity (CDB) in 1992 and ratified it in 2002. While 166 countries have developed National Biodiversity Strategies and Action Plans, Tuvalu is one of the 25 remaining countries for which NBSAP is under development, and should be implemented by 2010. More specifically, up to the 14 south pacific countries, Tuvalu is one of the 3 countries that have yet to produce a NBSAP (along with Nauru and the Solomon Islands).

The main goals of the NBSAP are to (Article 6 of the CBD):

- Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes.
- Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

As stated in the Pacific regional overview of NBSAPs prepared by SPREP (Carter, 2007): "*there is no 'right or wrong' way to produce an NBSAP, and no fixed criteria or 'mandatory' checklist that nations are required to follow. It is very much up to individual nation states what approach they feel best suits their needs and challenges*".

Series of guidelines have been produced to assist and support governmental departments in producing NBSAPs and a list of themes to develop is recommended. These are: Community – empowerment, awareness, involvement, ownership and benefits; Traditional culture and practices; indigenous property rights; Improving knowledge, research, education, public awareness; Developing and managing protected areas, habitats; Species conservation – terrestrial, coastal and marine, and agro-biodiversity; Management of invasive species and genetically modified organisms; Capacity building and training, governance; Sustainable economic development, sustainable use of resources; Mainstreaming conservation; Financial resources, mechanisms; Waste management, pollution; Climate change; Natural disaster; Energy; Water management.

The most common areas covered in the NBSAPs are: agricultural biodiversity; island biodiversity and marine and coastal biodiversity (Carter, 2007). Again, in this context the findings of our project are on line with the NBSAP goals and should help in its development and implementation.

1.2. Objectives

1.2.1. General objectives

The general objective of this survey is to document Tuvalu marine life, which might include sea birds, turtles, mammals, corals, fishes, and macro-invertebrate. Special attention will be taken to the following aspects: global warming and its effect on reef ecosystem, endemic and rare species, fishing traditional knowledge (methods, calendar, spawning sites).

The information is then intended to be gathered in a book (A4 format, 500 pages, 1000 pictures) and other leaflets and communication tools as community materials to disseminate the information among the Tuvaluan population.

Such a work should serve at the local scale for:

- Education and knowledge: inform Tuvaluan communities on the status of their marine environment to encourage them to behave in a way to preserve their lagoon and coastal marine life.
- Helping identifying potential marine conservation areas based on marine biodiversity census and its health status.
- Conserving cultural heritage and sustaining cultural identity.

At the global scale, this project aims at:

- Providing reference publications for local, regional and worldwide releases based on approved scientific techniques.
- Providing a baseline status for future monitoring.
- Participating to the classification of some Tuvalu marine species to the World Heritage Marine Programme of UNESCO and the IUCN Red List of Threatened Species.
- Providing a case study as an assessment of the effects of global warming on marine ecosystems.

1.2.2. Specific objectives

The "Tuvalu Marine Life" project can be divided into 3 phases:

- Phase 1: Literature synthesis and definition of knowledge gaps
- Phase 2: Field work to collect all or part of missing data outlined in Phase 1
- Phase 3: Restitution of Tuvalu marine biodiversity data (including traditional knowledge), in the form of a comprehensive book and community materials.

The present report only concerns Phase 1 of the project that includes the following activities:

- Activity 1: Gathering existing data and classifying them,
- Activity 2: Identifying missing data and knowledge gaps,
- Activity 3: Drawing a work plan (methodology and associated costs) to collect missing data in the field (in preparation of Phase 2).

2. METHODOLOGY

2.1. Gathering of existing data

2.1.1. Contacts

About 40 people have been contacted throughout the present survey; most of them have responded and collaborated. Some people have been met while others were just contacted by email. These are listed on Table 1 with their titles, contact details and area of expertise. The asterisk beside the name indicates that the person has been met physically. The aim of this initial contact was to discuss with people who might have worked in Tuvalu and share their experience, to access to unpublished material, and to be advised on people to contact or documents to read. People contacted were mostly based in the Pacific region (Tuvalu, New Caledonia, Fiji, Samoa, Australia, New Zealand, Hawaii, China, Japan), as well as in France, Italy, United Kingdom, United States and Canada.

2.1.2. Data gathering

Most of the documents and data were obtained by searching into libraries databases from environmental organisations based in the Pacific. These were:

- The University of the South Pacific, which included the PIMRIS (Pacific Islands Marine Resources Information System) and MOANA databases
- IRD: Institut de Recherche et de Développement (French Institute of research and development)
- SOPAC: South Pacific Applied Geoscience Commission
- South Pacific Commission
- SPREP: South Pacific Regional Environment Programme
- University of Hawaii

Other databases from international organisations were consulted, resulting in the compilation of additional documents, data or information. These were:

- Birdlife International
- Earth Trends (online database maintained by the World Resources Institute)
- FishBase
- ReefBase
- IUCN Red List: the International Union for Conservation of Nature
- FAO: the Food and Agriculture Organization of the United Nations
- Pacific Biodiversity Information Forum
- CITES Species Database

The web address of the above libraries and databases are given in Table 2.

Table 1. List of the people contacted for the survey, their titles, contact details and area of interest

Surname	Name	Title	Adress	E-mail	Area of Interest
Semese	Alefaio*	Coastal Programme Coordinator	Tuvalu Association of NGO, Funafuti, Tuvalu	semalefaio@gmail.com	Marine resources and communities
Paul	Anderson	Marine Conservation Analyst	SPREP, P.O. Box 240, Apia, Western Samoa	paula@sprep.org	Marine Conservation
Nikolasi	Apinelu*	Fisheries officer	Fisheries Department, Ministry of Natural Resources, Private Mail Bag, Funafuti, Tuvalu	apinelu@yahoo.com	Fisheries
Francesca	Benzoni	Ph.D. Coral Reef Biologist	Dept. of Biotechnologies and Biosciences, Univ of Milan-Bicocca-P.zza della Scienza, 2-I-20126, Milan, Italy	francesca.benzoni@unimib.it	Corals
Kent	Carpenter	Professor, Global Marine Species Assessment Coordinator IUCN	Department of Biological Sciences, Old Dominion University, Norfolk, Virginia 23529-0266 USA	kcarpent@odu.edu	Corals
Eric	Clua*	Ph.D. Fisheries	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	ericc@spc.int	Fish
Leah	Collett	Junior Professional Internship - IUCN Species Programme	Red List Unit, 219c Huntingdon Road, Cambridge CB3 0DL, United Kingdom	redlist@iucn.org	Information
Aymeric	Desurmont*	Fisheries Information Specialist	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	AymericD@spc.int	Information
Eliala	Fihaki*	Project officer - National Biodiversity Strategic Action Plan	Fisheries Department, Ministry of Natural Resources, Private Mail Bag, Funafuti, Tuvalu	efihaki@gmail.com	Biodiversity
Sam	Finikaso*	Director of Fisheries	Fisheries Department, Ministry of Natural Resources, Private Mail Bag, Funafuti, Tuvalu	sfinikaso@gov.tv, safin70@yahoo.com	Fisheries

Dave	Fisk	Ph.D. Coral Reef Biologist	PO Box 1833, Cairns QLD 4870, Australia	davefisk@gmail.com	Corals
Sarah	Fowler	Chair of IUCN Sharks and Rays Specialist Group	Nature Conservation Bureau Ltd, 36 Kingfisher Court, Hambridge Road, Newbury, Berkshire RG14 5SJ, United Kingdom	sarah@naturebureau.co.uk	Sharks and rays
Maria	Kalenchits*	Librarian/Coordinator PIMRIS	The University of the South Pacific. Laucala Campus. Suva, Fiji	maria.kalenchits@usp.ac.fj	Information
Norman	Kaneshiro	Subscriptions & Advertising Manager	Journals Department, University of Hawaii Press, 2840 Kolowalu Street, Honolulu HI 96822	uhpjourn@hawaii.edu	Information
Fa'alata	Kilisi*	Project officer	Department of Environment, Government of Tuvalu, Vaiaku, Funafuti, Tuvalu		Turtles
Eleanor	Kleiber*	Librarian	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	EleanorK@spc.int	Information
Michel	Kulbicki	Senior scientist	IRD, Université de Perpignan Via Domitia, 52 Avenue Paul Alduy, 66860 Perpignan cedex, France	michel.kulbicki@univ-perp.fr	Fish
Denis	Lepage	Senior Scientist	National Data Center on Bird Studies Canada PO Box/B.P. 160, Port Rowan, ON N0E 1M0	dlepage@bsc-eoc.org	Birds
Jim	Maragos	Ph.D. Coral Reef Biologist	Pacific/Remote Islands National Wildlife Refuge Complex. U.S. Fish and Wildlife Service. 300 Ala Moana Blvd., Rm 5-231, Box 50167 Honolulu, HI 96850 USA	jim_maragos@fws.gov	Corals
Mataio	Mataio*	Director of Environment	Department of Environment, Government of Tuvalu, Vaiaku, Funafuti, Tuvalu	mataiotekinene@yahoo.com	Environment
Dorene	Naidu	Librarian	SOPAC Pacific Islands Applied Geoscience Commission. Mead Road, Nabua, Fiji Islands	dorene@sopac	Information
Jainul	Nisha Ali	Librarian Assistant	The University of the South Pacific. Lower Campus. School of Marine Studies. Suva, Fiji	jainul.ali@usp.ac.fj	Information
Michel	Pichon	Senior coral scientist	Museum of Tropical Queensland Address: 70-102 Flinders St, Townsville, Australia	pichon01@bigpond.com	Corals

Silvia	Pinca*	Senior reef fisheries scientist	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	SilviaP@spc.int	Fisheries
Tupulaga	Poulasi*	Fisheries officer	Fisheries Department, Ministry of Natural Resources, Private Mail Bag, Funafuti, Tuvalu	tpoulasi@gov.tv	Fisheries
Randall	Reeves	Professor, Chair of IUCN Cetaceans Specialist Group	Okapi Wildlife Associates, 27 Chandler Lane, Hudson, Quebec J0P 1H0, Canada	rrreeves@okapis.ca	Cetaceans
Yvonne	Sadovy	Professor, Chair of IUCN Groupers and Wrasses Specialist Group	The Division of Ecology & Biodiversity, School of Biological Science, The University of Hong Kong, Pokfulam Road, Hong Kong, China	yjsadovy@hkucc.hku.hk	Fish
Mary	Seddon	Head of Mollusca, Chair of IUCN Molluscs Specialist Group	National Museum Cardiff, Cathays Park, Cardiff, CF10 3NP	mary.seddon@nmgw.ac.uk	Molluscs
Caroline	Vieux	Coral reef management officer	SPREP, P.O. Box 240, Apia, Western Samoa	carolinev@sprep.org	Marine Conservation
Stéphanie	Watt*	Librarian Assistant	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	StephanieW@spc.int	Information
Annie	Wheeler	Acting Manager Education and Community Outreach	Department of Conservation/Te Papa Atawhai - Conservation House 18-32 Manners St, Wellington PO Box 10-420, Wellington 6143 New Zealand	awheeler@doc.govt.nz	Large marine species (cetaceans, turtles, sharks and rays)
Being	Yeeting*	Senior Fisheries Scientist	Secretariat of the Pacific Community. B.P. D5-98846 Noumea cedex-New Caledonia	BeingY@spc.int	Live reef fish

Table 2. List of websites and databases consulted for the survey

Database	Link	Information on the database
University of the South Pacific	www.library.usp.ac.fj	More than 830,000 volumes. All topics covered at USP: agriculture, arts and culture, biological and physical science, chemistry, business, economics and finance, education, communication, computer science, health, law, tourism, marine studies, mathematics.
PIMRIS	http://www.usp.ac.fj/index.php?id=pimris	PIMRIS is a formal cooperative network of libraries and information centers within regional organizations and government agencies concerned with the development of fisheries and marine resources in the Pacific. PIMRIS participants include ministerial or departmental libraries in most Pacific nations, as well as regional agencies based in Apia, Samoa (SPREP), Honiara in the Solomon Islands (FFA), Nouméa, New Caledonia (SPC) and Suva, Fiji (SOPAC).
MOANA	http://www.sprep.org/publication/moana_library.asp	MOANA (”Ocean”) is an initiative of PIMRIS, to contribute records of their documents to a shared database of regional marine literature Maintained at the PIMRIS Coordination Unit, a searchable web version of Moana is hosted by SPREP.
IRD	http://www.documentation.ird.fr/	The IRD library comprises more than 67,000 documents (37,000 downloadable), all produced by searchers of the Institute.
SOPAC	http://www.sopac.org/Library	The SOPAC Library provides information from its collection and other regional and international sources. The main collection comprises approximately 15,000 documents, both published and unpublished. Subject coverage focuses mainly on non-living marine resources in the Pacific. It includes coastal protection works; coastal, near shore and offshore minerals; sea-level changes; wave energy; petroleum geology and exploration; oceanography; marine geology and geophysics; marine technology; dredging; drilling; meteorology; climatology; water resources, water supply, sanitation, water treatment; disaster management.

South Pacific Commission	www.spc.int/Library/	The current collection of over 40,000 items has regional and international publications in French, English and some Pacific languages. The subject areas of the collection reflect the work of the organisation and include HIV/AIDS, public health, tobacco and alcohol issues, epidemiology, nutrition and lifestyle diseases, fisheries, aquaculture, marine and oceanic sciences, demography, statistics, culture, gender, women, and youth issues.
SPREP	http://www.sprep.org/publication/pub_top.asp	The SPREP Library & Information Resource Centre (IRC) hosts about 34,000 environmental records of 20 Pacific island states and territories. The SPREP IRC also hosts and provides access to the Moana database of Pacific marine resources developed by PIMRIS.
University of Hawaii	http://pacificscience.wordpress.com/	The University of Hawaii Press publishes or distributes 17 journals, amongst which *Pacific Science*, devoted to the biological and physical sciences of the Pacific region. It focuses on biogeography, ecology, evolution, geology and volcanology, oceanography, palaeontology, and systematics. In addition to publishing original research, the journal features review articles providing a synthesis of current knowledge.
Birdlife International	http://www.birdlife.org/index.html	BirdLife International is a global Partnership of conservation organisations that strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.
Earth Trends	http://earthtrends.wri.org/	EarthTrends is a comprehensive online database, maintained by the World Resources Institute that focuses on the environmental, social, and economic trends that shape our world.
FishBase	http://www.fishbase.org/search.php?lang=English	FishBase was developed at the WorldFish Center in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and many other partners, and with support from the European Commission (EC). It includes 31,100 species, 276,100 common names, 47,400 pictures, 42,700 references, and 1,660 collaborators.

ReefBase	http://www.reefbase.org/main.aspx	ReefBase is the largest coral reef online library which contains a total collection of 26,348 coral reef related articles, reports and publications. This library includes the publications from International Coral Reef Symposium (ICRS) Proceedings, Coral Reefs Status Report, Reef Fisheries Portal and International Tropical Marine Ecosystems Management Symposium (ITMEMS) Symposium Papers.
IUCN Red List	http://www.iucnredlist.org/	The IUCN Species Programme working with the IUCN Species Survival Commission (SSC) assess the conservation status of species, subspecies, varieties, and even selected subpopulations on a global scale in order to highlight taxa threatened with extinction, and therefore promote their conservation. The IUCN Red List of Threatened Species™ provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those plants and animals that are facing a higher risk of global extinction.
FAO	http://www.fao.org/	The Food and Agriculture Organization of the United Nations leads international efforts to defeat hunger. Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information.
Pacific Biodiversity Information Forum	http://www.pbif.org/data/default.html	The Pacific Biodiversity Information Forum (PBIF) seeks to develop a complete, scientifically sound, and electronically accessible Pacific biological knowledge base and make it widely available to local, national, regional and global users for decision-making. PBIF's geographic scope includes the countries of Polynesia, Micronesia and Melanesia, as well as the Australasian countries bordering these regions.
CITES species database	http://www.cites.org/eng/resources/species.html	Roughly 5,000 species of animals and 28,000 species of plants are protected by CITES against over-exploitation through international trade. They are listed in the three CITES Appendices. The species are grouped in the Appendices according to how threatened they are by international trade. They include some whole groups, such as primates, cetaceans (whales, dolphins and porpoises), sea turtles, parrots, corals, cacti and orchids.

2.1.3. Documents referencing

Once most of the documents were gathered from the different sources cited above, they were read and properly referenced in a homogeneous way. They were then ranked by order of interest based on the information they contain regarding the objective of the present survey. The different categories used for the referencing were as follow:

- Interesting: contains marine species list with or without their geographical localisation. Work is issued from field investigations by expert team. Might contain Tuvaluan names.
- Passably interesting: does not contain species list but presents interesting information related to marine species and/or biodiversity and/or climate change.
- Not interesting: does not contain any marine species or biodiversity information.

This phase allowed selecting a limited number of reports, which were then used to produce the list of existing Tuvalu marine species.

2.2. Data analysis

2.2.1. Data verification and classification

Based on the selected reports, all marine species encountered were listed in Excel sheets. The lists of marine animals and plants are presented in Appendix 1 but you should also refer to the Excel files to have more detailed information on each species such as their localisation (at the scale of islands) and the reference of the document in which each specie is mentioned.

All species names, the families they belong to as well as their common English names were verified or found using different specific databases and widely recognized books (Table 3).

Table 3. Databases and identification books consulted for species' names verification

Taxonomic group	Databases	Identification books
Fish	FishBase (www.fishbase.org/search.php)	• Reef and Shore Fishes of the South Pacific (Randall, 2005) • Coral Reef Fishes (Lieske and Myers, 2001)
Algae	AlgaeBase (www.algaebase.org/)	Algae of French Polynesia (Payri *et al.*, 2000)
Marine invertebrates including corals, other cnidarians and macro-invertebrates	• CITES Species database (www.cites.org/eng/resources/species.html) • ZipCodeZoo (zipcodezoo.com/search.asp) • Wikipedia (fr.wikipedia.org)	• Corals of Australia and the Indo-Pacific (Veron, 1993) • Soft Corals and Sea Fans (Fabricius and Alderslade, 2001) • Tropical Pacific Invertebrates (Colin and Arneson, 1995) • Handbook of the sea-stars, sea-urchins and related echinoderms of New Caledonia lagoon (Guille et al., 1986) • FAO species identification guide for fishery purposes. The living marine resources of the Western Central Pacific (Carpenter and Niem, 1998) • Pacific Island sea cucumber and beche-de-mer identification cards (SPC, 2004).

2.2.2. Identification of gaps

To identify gaps in the present knowledge it is essential to have a rough idea of which and how many species we are expecting to observe within Tuvalu marine areas. This information has been gathered for each taxonomic group either from specialists (personal

communications) or from citations in books, publications or technical reports. The number of expected species in each taxonomic group must be considered as indicative, mostly derived from comparisons with other Pacific islands where this work has already been conducted (for an example in the Cook Islands, see http://cookislands.bishopmuseum.org/).

Based on the present data (species names and the localisation of their observation), a table has been edited to synthesise the existing information and highlight the missing data in each taxonomic group.

2.3. Planning for Phase 2

2.3.1. Decision on which survey to conduct to fill gaps in the knowledge

Once the literature review on existing knowledge has been completed and the gaps identified, this information has been presented to the Tuvalu departments of Environment and Fisheries as well as other interested stakeholders. The goal of this presentation was to:

- Present the existing data on Tuvalu marine life gathered for the survey
- Present gaps in the existing knowledge
- Decide on which survey to conduct in the field to fill some or all the gaps in the knowledge in consultation with all stakeholders, depending on needs and strategies.

At the end of the meeting, agreements have been made on which islands to visit and which surveys to conduct owing the management priorities of marine areas of Tuvalu.

2.3.2. Work plan on methodologies for the collection of missing data and associated costs

Five different options have been described that correspond to the needs and expectations of all the different actors of this project (Alofa Tuvalu, CRISP, Fondation Total, Tuvalu fisheries department, Tuvalu department of environment, TANGO). It is important to mention that, at this stage, none decision has been made on which option to choose and which method to use. This will be the subject of the first activity of phase 2 (Fieldwork preparation), once all the budgets will be consolidated.

Amongst the numerous existing methodologies to assess marine life, only a few were described, which were thought to be the most appropriate to the current suvey (particularly regarding the fieldwork related constrainsts such as the use of SCUBA, the availability of

local assessors and their level of expertise, the relative isolation of islands and atolls of Tuvalu, etc.).

Contacts have been initiated with regional experts who have experience in the field of Pacific coral reef species evaluation (from Australia and New Caledonia), especially in remote locations and with a community-based approach. Advices were requested from these experts, regarding methodologies and logistic concerns. Peer-reviewed paper on marine assessments were also consulted (the list of paper is included in Appendix 2).

Each option has been described in terms of

- Its objective
- Its general procedure (brief description of the methodology)
- The logistic implicated:
    - The human resources required (number of people and their level of expertise)
    - The necessary equipement

Finally, a budget was drawn up for each option, with the help of the fisheries department and TANGO, to evaluate as precisely as possible the costs of fieldwork surveys to be conducted for Phase 2.

3. RESULTS

3.1. Existing information on Tuvalu marine biodiversity

3.1.1. Reports and documents

A total of 115 documents (see the complete list of documents in Appendix 2) were consulted, amongst which:

- 100 technical and scientific reports and articles
- 6 species lists
- 9 identification books

Based on the referencing classification described in § 2.1.3, the documents can be sorted as follow:

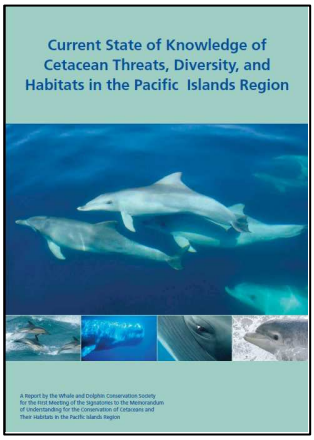
- 59 documents were identified as “interesting”, amongst which the 6 species lists and the 9 identification books;
- 24 were identified as “passably interesting”;
- 32 were identified as “not interesting” for the present survey.

The documents listed as “interesting” were used to produce marine species lists. The table below shows the number of documents that were used to produce each taxonomic group’s lists (Table 4).

Table 4. Number and reference of the documents used to produce marine species lists

Taxonomic groups	Number of documents consulted	Documents' references
Fish	17	1, 2, 4, 9, 10, 19, 20, 28, 29, 30, 31, 35, 36, 37, 38, 39, 40, 103, 104, 107
Turtles	3	25, 26, 27, 103, 104
Cetaceans	1	3, 103, 104, 108, 109
Birds	3	4, 6, 24, 103, 104
Cnidarians	9	2, 4, 8, 22, 30, 31, 37, 60, 81, 103, 104, 107
Algae	6	13, 15, 28, 30, 31, 60,102, 107
Sponges	1	4
Mangroves	4	16, 17, 33, 60
Macro-invertebrates	15	2, 3, 4, 5, 11, 13, 14, 15, 18, 21, 28, 30, 32, 37, 60, 103, 104, 107

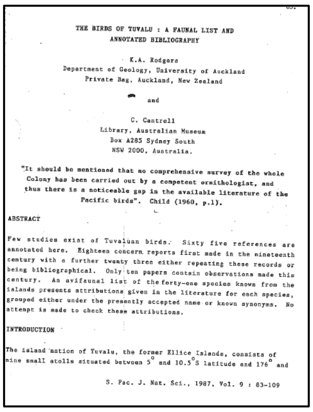
Some of the most interesting reports are listed below, and a brief description of their contents is given:



<u>Current State of Knowledge of Cetacean Threats, Diversity and Habitats in the Pacific Islands Region</u> (Miller, 2007)

This report provides an overview of the current state of knowledge of cetacean diversity, habitat and threats in the Pacific Islands Region, which comprises 22 Pacific island countries and territories, as well as a portion of the Australian continent, both the North and South Islands of New Zealand, and a portion of the Hawaiian Islands. This report provides an overview of potential threats to cetaceans inhabiting the Pacific Islands Region such as climate change and habitat degradation, chemical pollution and disease, noise, cetacean tourism, fisheries by-catch and entanglement, fisheries depredation interactions, ship strikes, whaling, 'scientific' whaling, drive hunts, and live captures for display. An initial examination of country-specific cetacean diversity in the region was conducted, acting as a checklist of cetacean diversity rather than an analysis of relative composition and densities of the cetacean fauna in this region. Finally a complete listing of the species identified as occurring

within the Pacific Islands Region was produced. For each of cetacean species habitat description, subspecies classification, possible issues with identification and status (in terms of IUCN criteria) are listed.



THE BIRDS OF TUVALU : A FAUNAL LIST AND ANNOTATED BIBLIOGRAPHY

K.A. Rodgers
Department of Geology, University of Auckland
Private Bag, Auckland, New Zealand

and

C. Cantrell
Library, Australian Museum
Box A285 Sydney South
NSW 2000, Australia.

"It should be mentioned that no comprehensive survey of the whole Colony has been carried out by a competent ornithologist, and thus there is a noticeable gap in the available literature of the Pacific birds". Child (1960, p.1).

ABSTRACT

Few studies exist of Tuvaluan birds. Sixty five references are annotated here. Eighteen concern reports first made in the nineteenth century with a further twenty three either repeating these records or being bibliographical. Only ten papers contain observations made this century. An avifaunal list of the forty-one species known from the islands presents attributions given in the literature for each species, grouped either under the presently accepted name or known synonyms. No attempt is made to check these attributions.

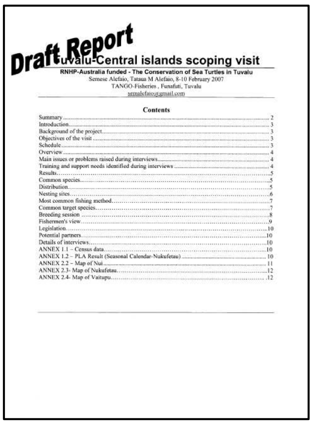
INTRODUCTION

The island nation of Tuvalu, the former Ellice Islands, consists of nine small atolls situated between 5° and 10.5°S latitude and 176° and

S. Pac. J. Nat. Sci., 1987, Vol. 9 : 83-109

<u>The birds of Tuvalu: a faunal list and annotated bibliography</u> (Rodgers and Cantrell, 1987)

Very few studies exist on Tuvaluan birds. The present survey gathers existing literature on birds surveys in Tuvalu (65 references, amongst which only 10 contain observations made this century). A list of the avifauna is presented, with geographical localisation and Tuvaluan names.

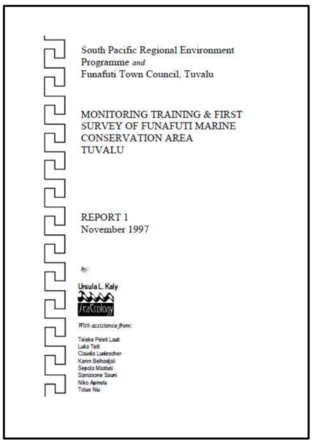


Draft Report
Tuvalu-Central islands scoping visit
RNHP-Australia funded - The Conservation of Sea Turtles in Tuvalu
Semese Alefaio, Tataua M Alefaio, 8-10 February 2007
TANGO-Fisheries, Funafuti, Tuvalu
semalefaio@gmail.com

Contents

<u>Tuvalu turtle conservation - Central island: scoping for Tuvalu Turtle Conservation</u> (Alefaio and Alefaio, 2007)

This report relates a survey on turtles' assessment that was conducted in Nui, Nukufetau and Vaitupu, by members of TANGO. The aim was to localise nesting sites, to list species observed, to discuss and identify possible management actions in concordance with local needs and traditional use of turtles. The survey was conducted by distributing questionnaires and by discussing with targeted people from the communities.



South Pacific Regional Environment Programme *and*
Funafuti Town Council, Tuvalu

MONITORING TRAINING & FIRST SURVEY OF FUNAFUTI MARINE CONSERVATION AREA TUVALU

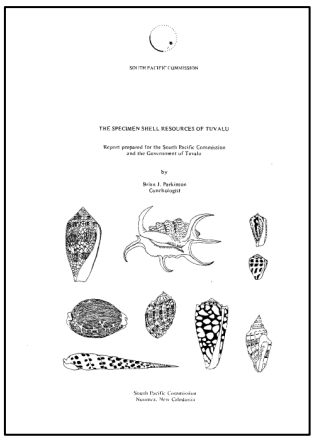
REPORT 1
November 1997

by:
Ursula L. Kaly
SeaEcology

With assistance from:
Teleke Peleti Lauti
Luka Teiti
Claudia Ludescher
Karim Belhadjali
Sepola Maatusi
Samasone Sauni
Niko Apinelu
Tolue Niu

<u>Monitoring training and first survey of Funafuti Marine Conservation Area</u> (Kaly, 1997)

At the time of the report, the Funafuti Conservation Area was about to be implemented, covering an approximate area of 33km², accounting for 20% of the reef area of the atoll. This report relates the training course, field programme and public awareness campaign that were conducted as part of the establishment of the FCA. A quantitative baseline survey was conducted as a reference point for further monitoring within the FCA. The monitoring methodology is presented as well as the results of the baseline survey (i.e. list of marine species).


SOUTH PACIFIC COMMISSION

THE SPECIMEN SHELL RESOURCES OF TUVALU

Report prepared for the South Pacific Commission and the Government of Tuvalu

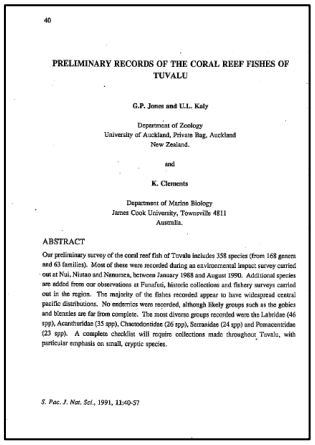
by

Brian J. Parkinson
Conchologist

South Pacific Commission
Noumea, New Caledonia

<u>The specimen shell resources of Tuvalu</u> (Parkinson, 1984)

This report is an assessment of the shell resources of Tuvalu, undertaken in response to a request from the Government for advice on the possibility of establishing a small-scale specimen shell industry. Fieldwork has been carried out to quantify and assess shell resources, to report on the potential for development of a small-scale shell industry in Tuvalu, to advise on suitable collection techniques and methods of shell preparation, to identify and advise on possible marketing problems, to advise on options for the promotion of a shell industry in Tuvalu, with recommendations for Government action and to prepare a commercial catalogue of specimen shells found in Tuvalu.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PRELIMINARY RECORDS OF THE CORAL REEF FISHES OF TUVALU

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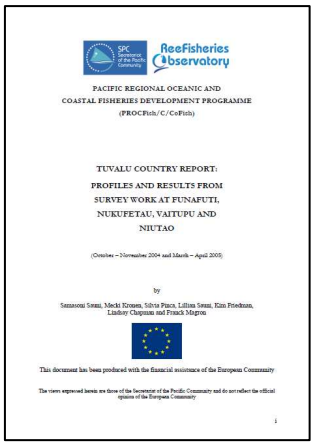
ABSTRACT

Our preliminary survey of the coral reef fish of Tuvalu includes 358 species (from 168 genera and 63 families). Most of these were recorded during an environmental impact survey carried out at Nui, Niutao and Nanumea, between January 1988 and August 1990. Additional species are added from our observations at Funafuti, historic collections and fishery surveys carried out in the region. The majority of the fishes recorded appear to have widespread central pacific distributions. No endemics were recorded, although likely groups such as the gobies and blennies are far from complete. The most diverse groups recorded were the Labridae (46 spp), Acanthuridae (35 spp), Chaetodontidae (26 spp), Serranidae (24 spp) and Pomacentridae (23 spp). A complete checklist will require collections made throughout Tuvalu, with particular emphasis on small, cryptic species.

S. Pac. J. Nat. Sci., 1991, 11:40-57

<u>Preliminary records of the coral reef fishes of Tuvalu</u> (Jones and Kaly, 1991)

The document aims at listing all known fish species from Tuvalu. Most of the species recorded were observed during an environmental impact survey at Nui, Niutao and Nanumea, as well as observations at Funafuti and historic collections and fishery surveys. A total of 358 species of coral reef fish are listed, amongst which no endemic species were observed. The list provided is incomplete, especially regarding small and cryptic species.


SPC Secretariat of the Pacific Community

ReefFisheries Observatory

PACIFIC REGIONAL OCEANIC AND COASTAL FISHERIES DEVELOPMENT PROGRAMME
(PROCFish/C/CoFish)

TUVALU COUNTRY REPORT:
PROFILES AND RESULTS FROM SURVEY WORK AT FUNAFUTI, NUKUFETAU, VAITUPU AND NIUTAO

(October – November 2004 and March – April 2005)

by

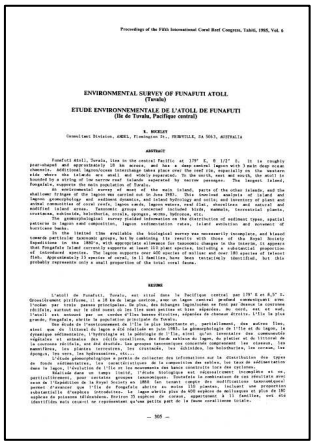
Samasoni Sauni, Meeki Kronen, Silvia Pinca, Lillian Sauni, Kim Friedman, Lindsay Chapman and Franck Magron

This document has been produced with the financial assistance of the European Community

The views expressed herein are those of the Secretariat of the Pacific Community and do not reflect the official opinion of the European Community

<u>Tuvalu country report: profile and results from in-country survey work (October–November 2004 and March–April 2005)</u> (Sauni *et al.*, 2008)

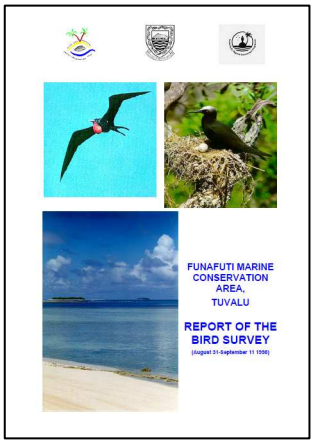
The report presents results of an intensive survey on commercial fish and invertebrates, as well as socio-economics issues, conducted by the coastal component of the EU-funded Pacific Regional Oceanic and Coastal Fisheries Development Programme (PROCFish/C). The aim of the survey work was to provide baseline information on the status of reef fisheries, and to help fill the massive information gap that hinders the effective management of reef fisheries. Four sites were selected for the assessment: Funafuti, Nukufetau, Vaitupu and Niutao. Species lists are provided for each island.



ENVIRONMENTAL SURVEY OF FUNAFUTI ATOLL
(Tuvalu)
ETUDE ENVIRONNEMENTALE DE L'ATOLL DE FUNAFUTI
(Ile de Tuvalu, Pacifique central)

Environmental survey of Funafuti atoll (Tuvalu) (Buckley, 1985)

An environmental survey was conducted on most of the main island (Fongafale) and parts of the other islands. This involves analysis of island and lagoon geomorphology and sediment dynamics, an inventory of plant and animal communities of coral reefs, lagoon sands, lagoon waters, reef flat, shorelines and natural and modified island areas. The biological survey is incomplete and biased towards particular taxonomic groups.



Report of a bird survey in Funafuti Conservation Area (Watling, 1998)

A survey of the birds of the Funafuti Marine Conservation Area (FMCA), Tuvalu and adjacent waters and motu, was undertaken between in October 1998. Sixteen bird species were observed and four were found to be breeding. The survey was undertaken outside of the main wader season but during what was believed to be the breeding season of several seabirds. This report documents the observations by species and by motu. It discusses the management issues and provides recommendations for monitoring and other initiatives by FMCA staff and SPREP.

3.1.2. Data on marine species

A. General overview

A total of 1453 marine species were recorded from the literature, which can be classified as follow:

- 532 species of fish, belonging to 72 families and 210 genera (see Table 7)
- 411 species of macro-invertebrates belonging to 8 phylum and 92 families (see Table 8)
- 379 species of cnidarians belonging to 3 classes, 12 orders and 26 families (see Table 9)
- 59 species of marine algae belonging to 4 phylum and 25 families (see Table 10)
- 41 species of birds belonging to 15 families (see Table 11)

- 21 mammals belonging to 4 families (see Table 12)
- 4 species of sponges
- 4 species of reptiles (1 family)
- 2 species of mangroves (2 families)

B. Species listed under the CITES Convention

The CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

Roughly 5,000 species of animals and 28,000 species of plants are protected by CITES against over-exploitation through international trade. They are listed in the three CITES Appendices. The species are grouped in the Appendices according to how threatened they are by international trade and to the degree of protection they need.

- Appendix I includes species threatened with extinction. Trade in specimens of these species is permitted only in exceptional circumstances.
- Appendix II includes species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival.
- Appendix III contains species that are protected in at least one country, which has asked other CITES Parties for assistance in controlling the trade.

A search for Tuvalu has been done on the CITES species database (Appendix 3): 90 species are listed under the CITES Convention, amongst which:

- 2 species are listed in Appendix I (2 species of marine turtles)
- 88 species are listed in Appendix II:
    - 1 dolphin
    - 2 sharks
    - 6 bivalves (clams)
    - 79 cnidarians:
        - 1 blue coral (Helioporacea)
        - 2 black corals (Anthipatharia)
        - 4 fire corals (Milleporina)
        - 72 hard corals (Scleractinia)

C. Species listed on the IUCN Red List

❖*Introduction*

The IUCN (International Union for the Conservation of Nature) Red List of Threatened Species™ provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those plants and animals that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on plants and animals that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e., are Data Deficient); and on plants and animals that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e., are Near Threatened).

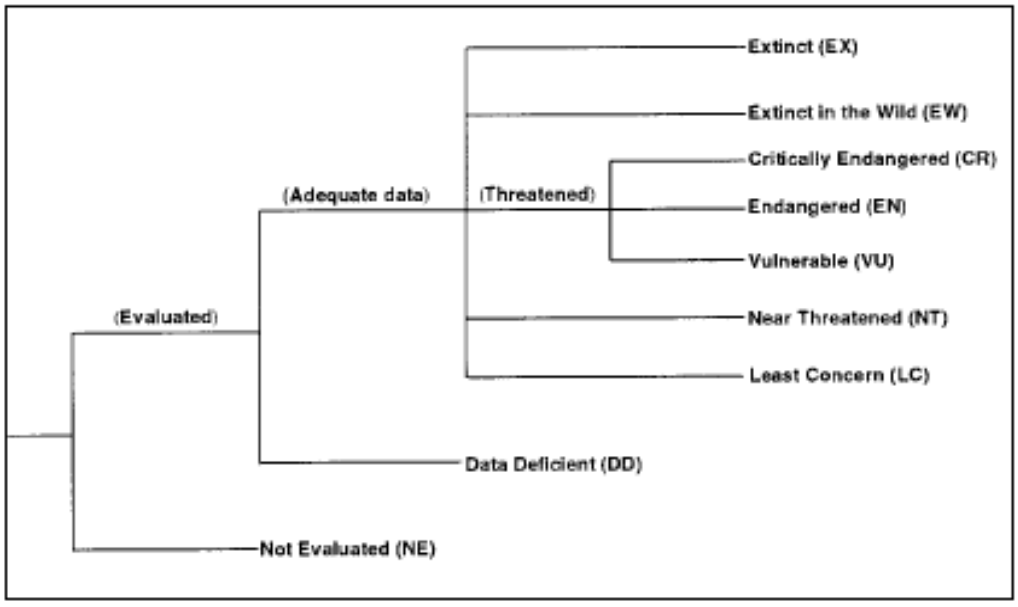


Figure 1. Structure of the IUCN Red List categories

❖*IUCN categories and criteria*

The different categories are described in the table below (Table 5):

Table 5. IUCN categories and their description (IUCN, 2001)

IUCN Category	Description
Extinct (EX)	A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Extinct in the wild (EW)	A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.
Critically endangered (CR)	A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.
Near threatened (NT)	A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

Least concern (LC)	A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data deficient (DD)	A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate.
Not evaluated (NE)	A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.

A search for Tuvalu has been done on the IUCN Red List species database (IUCN, 2009 and Appendix 4) and has led to the following results: 442 marine species are listed, amongst which 83 species can be considered as threatened (4 endangered species and 79 vulnerable species).

Table 6 presents the number of Tuvalu marine species recorded in each category, classified by their family names.

❖*Red list species reliability*

This information has been gathered through personal communication with the chairs of each IUCN specialist groups (see Table 1 for their contact details).

SERRANIDS AND LABRIDS:

"The data provided on the Red List are global assessments and were done by experts working on these fishes. The assessments were collected by biologists and managers from all information available to them. This information ranges from published data, to field surveys, to fishery reports to personal knowledge, etc. and the

completed assessments is based on the best available information so can be consider to be as reliable as was possible" (Yvonne Sadovy).

CORALS:

"Generalized distributions were used rather than actual field observations. The experts who created the generalized distributions were the best in the world and therefore there is a fairly high degree of certainty, however, I would not say that we can be 100% sure that the species listed will be found under the water" (Kent Carpenter).

SHARKS AND RAYS:

"I can confirm from direct observation the occurrence of *Carcharhinus amblyrhynchos*, *C. melanopterus* and *Triaenodon obesus* in Tuvalu, and I have received observations from Environment and Fisheries staff of *Hexanchus griseus*, *Galeocerdo cuvier* and *Rhincodon typus* from Funafuti, and *Carcharhinus longimanus* from Kosciusko Table Mount. The remaining species records are based upon exploratory fishing by the Japan International Cooperation Agency in Fiji and Tuvalu during the mid 1980's. Unfortunately this report lumps all records of these species from Fijian and Tuvaluan waters together so most require confirmation that they occur in Tuvalu. While I was in Tuvalu I spoke to local fishers that confirmed hammerheads occur on several seamounts in the archipelago. These are probably *Sphyrna lewini* but again the species identification requires confirmation" (Clinton Duffy).

CETACEANS:

"This needs to be verified thoroughly, but I suspect many/most of the listings for Tuvalu cetaceans (perhaps even all of them?) are from extrapolation rather than direct observation" (Randal Reeves).

Table 6. Marine families listed on the IUCN Red List of Threatened Species for Tuvalu and their classification based on IUCN Red List categories (the marine species list is given in Appendix 4)

						Threatened					
Phylum	**Class**	**Order**	**Family**	**Common names**	**Number of species**	**Critically endangered**	**Endangered**	**Vulnerable**	**Near threatened**	**Least concern**	**Data deficient**
ARTHROPODA	CRUSTACEA	DECAPODA	COENOBITIDAE	Crabs	1						1
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	Clams	6			2	3	1	
CHORDATA	ACTINOPTERYGII	PERCIFORMES	LABRIDAE	Wrasses	1		1				
			SERRANIDAE	Groupers	35			3	3	23	6
			SCOMBRIDAE	Mackerels	3				1	1	1
			XIPHIIDAE	Swordfishes	1						1
	AVES	CHARADRIIFORMES	LARIDAE	Seagulls	4					4	
	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	Requiem sharks	8			1	7		
			SPHYRNIDAE	Hammerhead sharks	2				2		
		HEXANCHIFORMES	HEXANCHIDAE	Sharks	1				1		
		LAMNIFORMES	LAMNIDAE	Sharks	2			1	1		
		ORECTOLOBIFORMES	RHINCODONTIDAE	Whale sharks	1			1			
		RAJIFORMES	MOBULIDAE	Rays	1				1		
	MAMMALIA	CETARTIODACTYLA	BALAENOPTERIDAE	Rorquals	3		2				1
			DELPHINIDAE	Dolphins	11					6	5
			PHYSETERIDAE	Sperm whales	3			1			2
			ZIPHIIDAE	Beaked whales	3					1	2
	REPTILIA	TESTUDINES	CHELONIIDAE	Marine turtles	1		1				
CNIDARIA	ANTHOZOA	HELIOPORACEA	HELIOPORIDAE	Blue corals	1			1			
		SCLERACTINIA	ACROPORIDAE	Acroporids	123			37	30	45	11
			AGARICIIDAE	Agaricids	24			7	1	16	
			ASTROCOENIIDAE	Astrocoenids	3					3	
			CARYOPHYLLIIDAE	Caryophyllids	1					1	
			DENDROPHYLLIIDAE	Dendrophyllids	7			5		2	
			EUPHYLLIDAE	Euphyllids	6			2	4		
			FAVIIDAE	Favids	63			4	30	29	
			FUNGIIDAE	Fungids	25				4	21	
			MERULINIDAE	Merulinids	9				3	6	
			MUSSIDAE	Mussids	17			3	6	8	
			OCULINIDAE	Oculinids	3			1	1	1	
			PECTINIIDAE	Pectinids	9			2	2	5	
			POCILLOPORIDAE	Pocilloporids	14			1	4	9	
			PORITIDAE	Poritids	34			7	12	14	1
			SIDERASTREIDAE	Siderastreids	13				4	9	
		STOLONIFERA	TUBIPORIDAE	Organ pipe corals	1				1		
	HYDROZOA	MILLEPORINA	MILLEPORIDAE	Fire corals	2					2	
						0	**4**	**79**	**121**	**207**	**31**

D. Reef fishes

A total of 532 species of fish, belonging to 72 families and 210 genera were recorded (Appendix 1). The most diversified families (with more than 10 species recorded per family) are: Labridae (wrasses, 49 sp.), Serranidae (groupers, 47 sp.), Acanthuridae (surgeonfishes, 41 sp.), Lutjanidae (snappers, 34 sp.), Chaetodontidae (butterflyfishes, 32 sp.), Pomacentridae (damselfishes, 28 sp.), Scaridae (parrotfishes, 28 sp.), Carangidae (jacks, 24 sp.), Lethrinidae (emperors, 21 sp.), Balistidae (triggerfishes, 16 sp.) Scombridae (mackerels and tunas, 13 sp.), Carcharinidae (requiem sharks, 12 sp.), Holocentridae (squirrelfishes and soldierfishes, 11 sp.), Pomacanthidae (angelfishes, 11 sp.), Blennidae (blennies, 10 sp.) and Mullidae (goatfishes, 10 sp.). They account for the 2 third of the total number of species recorded (Table 7).

Most of the species recorded derived from 2 main reports: Preliminary record of the reef fishes of Tuvalu (Jones and Kaly, 1991) and the PROCFish report (Sauni *et al*., 2008). In the first report, the authors were able to record 358 species, and they concluded in the need to investigate more on small and cryptic species (particularly species from the families Apogonidae, Blenniidae, Gobiidae, Scorpaenidae and Syngnathidae which required detailed taxonomic analysis that could not be undergone. These groups are thus under-represented). Furthermore surveys were conducted in only 3 of the 9 islands (Nui, Niutao and Nanumea, the northern islands) and focused mainly on species that were readily identified underwater. The second report was focusing on commercial fish and macro-invertebrates, and fieldwork was carried out on 4 of the 9 islands (Funafuti, Vaitupu, Niutao and Nukufetau). In terms of fish biodiversity there is clearly a lack of information with the methodology used, owing the sites surveyed and the targeted species. Only one document reported “small” species (Yeeting and Poulasi, *in press*), but rather for aquarium trade purposes than biodiversity, and focusing on Funafuti exclusively. Therefore the list of small species is certainly underestimated even tough this last report adds some species that were not recorded in the two former reports cited.

To conclude, none complete list of fish species exist for Tuvalu to this date, but if we refer to existing lists from neighbouring islands (cited in Jones and Kaly, 1991: 854 species for the Mariana islands, 817 from the Marshall islands, 915 from Samoa, 460 from Hawaii, 620 from French Polynesia and 425 from Rotuma), the number of species for Tuvalu might approach that of the Marshall islands, although since there are only nine atolls (as compared with over 30 at the Marshalls), fewer species may be expected. Personal communication with Dr. Michel Kulbicki (IRD senior scientist) confirms that the total number of reef fish species might approach 800 species.

Only one species of fish is listed under the CITES Appendix II: *Cheilinus undulatus* (Maori wrasse) and 2 species of sharks: *Rhincodon typus* (whale shark) and *Carcharodon carcharias* (great white shark).

Regarding the IUCN Red list of Threatened Species, 55 fish species are listed for Tuvalu, including 35 groupers, 3 mackerels, 1 wrasse (*Cheilinus undulatus*, Maori wrasse), 1 swordfish (*Xiphias gladius*), 1 ray (*Mobula japonica*, devil ray), and 14 sharks. Seven species are considered as threatened, 16 species are "near threatened", 24 species are "least concern" and 8 species are "data deficient" (see Table 6 and Appendix 4 for more details).

Table 7. Number of fish species recorded per family

CONNOM NAME	FAMILY	NUMBER OF SPECIES
WRASSES	LABRIDAE	49
GROUPERS	SERRANIDAE	47
SURGEONFISHES	ACANTHURIDAE	41
SNAPPERS	LUTJANIDAE	34
BUTTERFLYFISHES	CHAETODONTIDAE	32
DAMSELFISHES	POMACENTRIDAE	28
PARROTFISHES	SCARIDAE	28
JACKS	CARANGIDAE	24
EMPERORS	LETHRINIDAE	21
TRIGGERFISHES	BALISTIDAE	16
MACKERELS/TUNAS	SCOMBRIDAE	13
REQUIEM SHARKS	CARCHARHINIDAE	12
SQUIRRELFISHES	HOLOCENTRIDAE	11
ANGELFISHES	POMACANTHIDAE	11
BLENNIES	BLENNIDAE	10
GOATFISHES	MULLIDAE	10
FUSILIERS	CAESIONIDAE	9
SOLDIERFISHES	HOLOCENTRIDAE	8
RABBITFISHES	SIGANIDAE	8
CARDINALFISHES	APOGONIDAE	7
PUFFERS	TETRAODONTIDAE	7
HAWKFISHES	CIRRITHIDAE	6
GOBIES	GOBIIDAE	6
SCORPIONFISHES	SCORPAENIDAE	5
FLYINGFISHES	EXOCOETIDAE	4
SAILFISHES	ISTIOPHORIDAE	4
DARTFISHES	MICRODESMIDAE	4
FILEFISHES	MONACANTHIDAE	4
MULLETS	MUGILIDAE	4
SILVERSIDES	ATHERINIDAE	3

STINGRAYS	DASYATIDAE	3
BATFISHES	EPHIPPIDAE	3
SEA CHUBS	KYPHOSIDAE	3
MORAYS	MURENIDAE	3
SWEEPERS	PEMPHERIDIDAE	3
BARRACUDAS	SPHYRAENIDAE	3
NEEDLEFISHES	BELONIDAE	2
FLOUNDERS	BOTHIDAE	2
REMORAS	ECHENEIDIDAE	2
SNAKE MACKERELS	GEMPYLIDAE	2
SOAPFISHES	GRAMMISTIDAE	2
LAMNIFORMES	LAMNIDAE	2
PONYFISHES	LEIOGNATHIDAE	2
SAND TILEFISHES	MALACANTHIDAE	2
MANTAS	MOBULIDAE	2
EAGLE RAYS	MYLIOBATIDAE	2
BOXFISHES	OSTRACIIDAE	2
HAMMERHEAD SHARKS	SPHYRNIDAE	2
BONEFISHES	ALBULIDAE	1
THRESHER SHARKS	ALOPIDAE	1
TRUMPETFISHES	AULOSTOMIDAE	1
PEARLFIHES	CARAPODIDAE	1
MILKFISHES	CHANIDAE	1
HERRINGS	CLUPEIDAE	1
DOLPHINFISHES	CORYPHAENIDAE	1
PORCUPINEFISHES	DIODONTIDAE	1
CORNETFISHES	FISTULARIDAE	1
THREADFINS	GERRIDAE	1
NURSE SHARKS	GINGLYMOSTORMATIDAE	1
HALFBEAKS	HEMIRAMPHIDAE	1
COW SHARKS	HEXANCHIDAE	1
FLAGTAILS	KUHLIDAE	1
EEL CATFISHES	PLOTOSIDAE	1
THREADFINS	POLYNEMIDAE	1
BIGEYES	PRIACANTHIDAE	1
ORECTOLOBIFORMES	RHINCODONTIDAE	1
GUITARFISHES	RHINOBATIDAE	1
ZEBRA SHARKS	STEGOSTOMATIDAE	1
LIZARDFISHES	SYNODONTIDAE	1
HOUNDSHARKS	TRIAKIDAE	1
SWORDFISHES	XIPHIIDAE	1
MOORISH IDOL	ZANCLIDAE	1

E. Macro-invertebrates

A total of 411 species of macro-invertebrates were recorded in this study (Table 8 and Appendix 1). The most diversified group of macro-invertebrates is the gastropods one (molluscs), particularly the snails (or seashells). They account for 62% of the total number of species recorded (253 species). They are described by 29 families, amongst which some families show a high number of species: Cypraeae (cowries, 50 species), Conidae (cone shells, 42 species), Mitricidae (mitra shells, 31 species) and Cerithiidae (ceriths, 25 species).

The second most diversified group is composed of crabs, shrimps and lobsters (arthropods, crustaceans, decapods), with 68 species recorded: 41 species of crabs, 24 species of shrimps and 3 species of lobsters. They account for 17% of the total list.

From Buckley's findings (Buckley, 1985), in accordance with the observations of the Royal Society Expeditions in the 1880's, the only lagoon of Funafuti might support over 400 species of molluscs. In the present survey, a total of 304 species of molluscs have been identified, highlighting that this group is certainly under-estimated and needs further investigations. Additionally, as noted for fishes, the most recent report on Tuvalu macro-invertebrates is the ProcFish survey conducted in 2006 and published in 2008. It is focusing on commercial species exclusively and only 4 islands have been investigated: Funafuti, Vaitupu, Niutao and Nukufetau (Sauni *et al.,* 2008). However, one report relates about other islands macro-fauna (Rodgers and Olerod, 1988) that lists the zoological specimens collected by Sixten Bock in 1917, from Nanumaga, Nui, Vaitupu, Nukulaelae, Nukufetau, Niutao and Nanumea. Considering the advances in marine biology methodologies to census species since then and the apparition or disappearance of species all along this century, this list might well be incomplete (as it has been shown when compared to other more recent or more specific lists).

Some macro-invertebrates are listed under the CITES convention, Appendix II, these are exclusively bivalves from the Tridacnidae family (giant clams): *Hippopus hippopus*, *Tridacna crocea*, *T. derasa*, *T. gigas*, *T. maxima* and *T. squamosa.*

These species are also listed on the IUCN Red List:

- *Tridacna derasa* and *T. gigas* are considered as "vulnerable" (threatened)
- *Tridacna maxima, T. squamosa* and *Hippopus hippopus* are considered as "Lower Risk/Conservation dependant" (species for which the cessation of a conservation programme would result in the species qualifying for one of the threatened categories within five years)
- *Tridacna crocea* is considered as "least concern" (not threatened)

All these species need to be updated on their status.

Table 8. Number of macro-invertebrates species recorded per phylum and subphylum/classis/order

Phylum	Subphylum/Classis/Order	Common name	Number of species
MOLLUSCA	GASTEROPODA	Snails	253
ARTHROPODA	CRUSTACEA/DECAPOD	Crabs, shrimps and lobsters	68
MOLLUSCA	BIVALVIA	Bivalves	40
ECHINODERMATA	HOLOTHUROIDEA	Sea cucumbers	15
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	Seaslugs	7
ECHINODERMATA	ECHINOIDAE	Sea urchins	6
ECHINODERMATA	ASTEROIDEA	Seastars	5
ARTHROPODA	CRUSTACEA/ISOPOD		3
PROTOZOA	FORAMINIFERIDAE	Worms	3
ARTHROPODA	CRUSTACEA/AMPHIPOD		2
MOLLUSCA	CEPHALOPODA	Cephalopods	2
MOLLUSCA	CEPHALOPODA	Octopus	2
ANNELIDA	POLYCHETA	Worms	1
MOLLUSCA	POLYPLACOPHORA	Chitons	1
MOLLUSCA	SCAPHOPODA		1
PLATYHELMINTHES	TURBELLARIA	Planarians	1
SIPUNCULA	SIPUNCULIFORMES	Peanut worms	1

F. Cnidarians

A total of 379 species of cnidarians have been documented in this study (Table 9 and Appendix 1), most of them being recorded from the Red List and CITES species lists.

Up to the 442 species of the Red List for Tuvalu, 355 are cnidarians: 351 hard corals (Scleractinia), 1 blue coral (Helioporacea), 1 organ pipe coral (Stolonifera) and 2 fire corals (Milleporina). Based on IUCN classification, they belong to the different categories: 70 species are “vulnerable” (threatened), 102 species are “near threatened”, 171 species are “least concern” (not threatened) and 12 species are “data deficient”.

The CITES species database for Tuvalu includes 79 species of cnidarians: 1 blue coral, 2 black corals, 4 fire corals and 72 hard corals. These are all listed under Appendix II.

Additionally, few species have been reported from field investigations in technical reports such as the baseline survey of Funafuti Conservation Area conducted by Ursula Kaly and the Fisheries Department of Tuvalu (Kaly, 1997).

Cnidarians can be divided into 3 different classes: anthozoans (sea anemones, hard and soft corals, blue and black corals; 98% of the total number of species recorded), hydrozoans (jellyfishes and fire corals; 2% of the total number of species recorded), and cubozoans (box jellyfishes that are categorized separately from other types of jellyfish because they are considered more complex; <1% of the total number of species recorded).

The most diversified taxonomic group is Scleractinia (hard corals), with 365 species recorded: 130 Acroporids, 63 Faviids, 34 Poritids, 25 Fungids, 24 Agaricids, 17 Mussids, 15 Pocilloporids, 14 Siderastreids and fewer number of species from the following families: Caryophylliidae, Merulinidae, Pectiniidae, Dendrophyllidae, Euphyllidae, Astrocoeniidae, Oculinidae and Flabellidae.

Table 9. Number of cnidarians species recorded per order and family

CLASS	ORDER	FAMILY	NUMBER OF SPECIES
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	130
ANTHOZOA	SCLERACTINIA	FAVIIDAE	63
ANTHOZOA	SCLERACTINIA	PORITIDAE	34
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	25
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	24
ANTHOZOA	SCLERACTINIA	MUSSIDAE	17
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	15
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	14
ANTHOZOA	SCLERACTINIA	MERULINIDAE	9
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	9
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	7
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	6
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	5
ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	3
ANTHOZOA	SCLERACTINIA	OCULINIDAE	3
ANTHOZOA	ANTIPATHARIA	ANTIPATHIDAE	2
ANTHOZOA	ACTINARIA	STICHODACTYLIDAE	1
ANTHOZOA	ALCYONARIA	XENIIDAE	1
ANTHOZOA	HELIOPORACEA	HELIOPORIDAE	1
ANTHOZOA	SCLERACTINIA	FLABELLIDAE	1
ANTHOZOA	STOLONIFERA	TUBIPORIDAE	1
CUBOZOA	CUBOMEDUSAE	CHIRODROPIDAE	1
HYDROZOA	MILLEPORINA	MILLEPORIDAE	4
HYDROZOA	ANTHOMEDUSAE	PORPITIDAE	1
HYDROZOA	LEPTOMEDUSAE	SERTULARIIDAE	1
HYDROZOA	SIPHONOPHORA	PHYSALIIDAE	1

G. Marine algae

A total number of 59 species of algae were recorded from the literature (Table 10 and Appendix 1). Green algae (Chlorophyta) are the most diverse group, accounting for 46% of the total number of species, with *Halimeda* species being the most diverse family (7 different species reported). Red algae (Rhodophyta) accounts for 30% of the total number of species: 18 species belonging to 10 families are listed. Finally, brown and blue algae (respectively Fucophycea and Cyanobacteria) accounts for 10% and 14% of the total assemblage.

Table 10. Number of marine algae species recorded per family

Phylum	Family	Number of species
CHLOROPHYTA	HALIMEDACEAE	7
	CAULERPACEAE	5
	SIPHONOCLADACEAE	4
	ANADYOMENACEAE	2
	BOODLEACEAE	2
	UDOTEACEAE	2
	VALONIACEAE	2
	DASYCLADACEAE	1
	POLYPHYSACEAE	1
	ULVACEAE	1
CYANOBACTERIA	PHORMIDIACEAE	4
	OSCILLATORIACEAE	3
	RIVULARIACEAE	1
FUCOPHYCEA	DICTYOTACEAE	5
	ECTOCARPACEAE	1
RHODOPHYTA	CORALLINACEAE	6
	RHODOMELACEAE	3
	CERAMIACEAE	2
	ARESCHOUGIACEAE	1
	GALAXAURACEAE	1
	GRACILARIACEAE	1
	HAPALIDIACEAE	1
	HYPNEACEAE	1
	LIAGORACEAE	1
	SOLIERIACEAE	1

It is important to highlight that very few reports are documenting marine algae of Tuvalu: 6 reports were used, amongst which 3 documented most of the algae presented in this report (Chapman, 1955; Buckley, 1985; Kaly, 1997). All these reports were focusing on Funafuti atoll. None investigations seem to have been undergone on other islands of Tuvalu.

H. Birds

A total of 41 species of birds have been identified in the present survey (Table 11 and Appendix 1). The 3 most diversified families are: terns and noddies (Sternidae, 8 species), tatlers, godwits, curlews and stints (Scolopacidae, 6 species) and shearwaters and petrels (Procellariidae, 5 species). These 3 families account for 46% of the total number of species recorded.

Terns and noddies are resident birds and most of them are breeding in Tuvalu islands (some breeding sites are known). The most common species are black noddy (*Anous minutus*, "Lakia"), black-napped terns (*Sterna sumatrana*, "Matapula") and white terns (*Gygis alba*, "Akiaki").

Tatlers, godwits, curlews and stints are migratory birds. The most common species are wandering tattlers (*Heteroscelus incanus*, "Kilikilitai ") and Pacific godwits (*Limosa lapponica*, "Kaka/Kotau").

Shearwaters and petrels are visitors, quite uncommon and for which no breeding sites are known.

Table 11. Number of bird species recorded per family

Common name	Family	Number of species
Terns, noddies	STERNIDAE	8
Tatlers, Godwits, Curlews, Stints	SCOLOPACIDAE	6
Shearwaters, Petrels	PROCELLARIIDAE	5
Plovers, Turnstones	CHARADIIDAE	4
Ducks	ANATIDAE	3
Doves, Pigeons	COLUMBIDAE	3
Gannets, Boobies	SULIDAE	3
Frigate-birds	FREGATIDAE	2
Tropic birds	PHAETONTIDAE	2
Herons	ARDEIDAE	1
Cuckoos	CUCULIDAE	1
Seagulls	LARIDAE	1
Fowls	PHASIANIDAE	1
Coots, Rails	RALLIDAE	1

Four species of birds are listed on the Red List of Threatened Species, these are the black noddy (*Anous minutus*), the brown noddy (*Anous stolidus*), the blue noddy (*Procelsterna cerulea*) and the grey-backed tern (*Sterna lunata*). They are all members of the family Sternidae and are classified as "Least Concern" (not threatened).

I. Cetaceans

Twenty-one species of cetaceans were listed from the literature, belonging to 4 different families: Delphinidae (11 species of dolphins and 1 orca), Physeteridae (3 sperm whales), Ziphiidae (3 beaked whales) and Balaenopteridae (3 rorquals). Four species are listed under the Appendix II of the CITES Convention (*) and 20 of them are included in the IUCN Red List of Threatened Species. The species are presented in the table below (Table 12 and Appendix 1).

Table 12. List of cetaceans recorded for the survey. Red List categories: E: Endangered; V: Vulnerable; LC: Least Concern; DD: Data Deficient.

Family	Latin name	Common name	Red List category
BALAENOPTERIDAE	*Balaenoptera edeni*	Bryde's Whale	DD
BALAENOPTERIDAE	*Balaenoptera physalus*	Fin Whale	E
BALAENOPTERIDAE	*Megaptera novaeangliae*	Humpback Whale	E
DELPHINIDAE	*Feresa attenuata*	Pygmy Killer Whale	DD
DELPHINIDAE	*Globicephala macrorhynchus*	Short-finned Pilot Whale	DD
DELPHINIDAE	*Grampus griseus*	Grey Dolphin	LC
DELPHINIDAE	*Lagenodelphis hosei*	Fraser's Dolphin	LC
DELPHINIDAE	*Orcinus orca**	Orca/Killer whale	DD
DELPHINIDAE	*Peponocephala electra*	Melon-headed Whale	LC
DELPHINIDAE	*Pseudorca crassidens*	False Killer Whale	DD
DELPHINIDAE	*Stenella attenuata**	Spotted dolphin	LC
DELPHINIDAE	*Stenella coeruleoalba*	Striped Dolphin	LC
DELPHINIDAE	*Stenella longirostris*	Spinner dolphin	DD
DELPHINIDAE	*Steno bredanensis*	Rough-toothed Dolphin	LC
DELPHINIDAE	*Tursiops sp.**	Bottlenose dolphin	
PHYSETERIDAE	*Kogia breviceps*	Pygmy Sperm Whale	DD
PHYSETERIDAE	*Kogia sima*	Dwarf Sperm Whale	DD
PHYSETERIDAE	*Physeter macrocephalus**	Sperm whale	V
ZIPHIIDAE	*Mesoplodon densirostris*	Blainville's Beaked Whale	DD
ZIPHIIDAE	*Mesoplodon ginkgodens*	Ginkgo-toothed Beaked Whale	DD
ZIPHIIDAE	*Ziphius cavirostris*	Cuvier's Beaked Whale	LC

Some species are derived from extrapolation based on their geographical range, whereas an extensive survey on cetaceans (funded by NZAid) in Tuvalu waters has allowed the direct observations of the following species:

- *Balanoptera sp*. (Childerhouse and Wheeler, 2008)

- *Orcinus orca* (Childerhouse and Wheeler, 2008)
- *Stenella attenuata* (Oremus *et al*., 2007)
- *Stenella longirostris* (Spinner dolphin) (Oremus *et al*., 2007)
- *Kogia sp*. (Oremus *et al*., 2007)
- *Physeter macrocephalus* (SPWRC, 2008, V. Iese, pers. comm. with Cara Miller)
- *Pseudorca crassidens* needs to be confirmed (V. Iese, pers. comm. with Cara Miller)

J. Sponges

Four species of sponges were recorded, belonging to 2 families, which are listed in the table below (Table 13 and Appendix 1). Sponges present a high species diversity throughout the Indo-Pacific region. The total number of sponges present on tropical areas is not known but estimates ranges from 5 000 to 9 000 species. As examples, in the Eastern and Central Caroline Islands of Micronesia, there are at least 300-400 species; Palau has probably 600 or more species; in Papua New Guinea and Indonesia, the total number of species of sponges is 1 000 or more (Colin and Arneson, 1995).

Very complete investigations are thus required to assess marine sponges' biodiversity in Tuvalu waters.

Table 13. List of marine sponges recorded for the survey

Family	Genus specie
SPONGIIDAE	*Spongia officinalis mollissima*
SPONGIIDAE	*Spongia zimocca*
SPONGIIDAE	*Euspongia irregularis*
CALLYSPONGIIDAE	*Callyspongia glomerata*

K. Reptiles

Three species of marine turtles were recorded from the literature, from one single family (Cheloniidae). These are the loggerhead sea turtle (*Caretta caretta*), the green turtle (*Chelonia mydas*) and the hawksbill turtle (*Eretmochelys imbricata*). One additional specie was observed in Funafuti by local fishermen (Semese Alefaio, pers. comm.): the leatherback turtle (*Dermochelys coriacea*).

These 3 first species are listed under the Appendix I of the CITES Convention. Only the green turtle is listed in the Red List, considered as endangered.

L. Mangroves

Two species of mangrove trees are reported form the literature: *Lumnitzera littorea* (Combretaceae) and *Rhizophora stylosa* (Rhizophoridae). These species are often in association with the back-mangrove shrub *Pemphis acidula.* The total mangrove area of Tuvalu islands covers about 40 ha.

The following paragraph, describing the mangroves of Tuvalu, is derived from the summary of the wetland situation by RAMSAR:

"Small stands of mangrove occur on at least five of the nine islands in the Tuvalu group: Nanumanga, Niutao, Funafuti, Nui and Vaitupu. Niutao and Nanumanga are limestone islands with enclosed brackish to saline lagoons. Mangroves occur as fringes around these lagoons, and are entirely cut off from the sea. On Nanumanga, the lagoon is surrounded by extensive woodland of *Rhizophora* covering about 28.5 ha. Funafuti and Nui are atolls, with a number of small islets scattered around a large, marine lagoon. Small patches of mangrove (covering 1.7 ha) occur in sheltered bays on three of the islets in Nui Atoll, while in Funafuti Atoll, there is an inland mangrove swamp on the main islet, cut off from the sea by a shingle barrier. Vaitupu is intermediate in type, with two virtually landlocked lagoons connected to the sea by narrow channels. Mangroves occur on the shores of both lagoons, and in total cover about 6.0 ha (Woodroffe, 1987)."

The mangroves of Tuvalu were listed as a threatened ecosystem by Dahl (1986).

From discussion with the Tuvalu Fisheries Department some mangrove stands are also found in Nukufetau, Nukulaelae and Nanumea. Mangrove would therefore be present in all islands except Niulakita.

3.2. Knowledge gaps

The table below (Table 14) presents the state of the knowledge on Tuvalu marine species biodiversity to this date. For each taxonomic group, the number of species found in the reports consulted for the survey is noted, as well as an indicative number of species that we might expect, where the information exists. The last column indicates the gaps of information for each taxonomic group as well as an indication of the nature of this gap.

Table 14. Existing information and knowledge gaps for each taxonomic group of marine species

Taxonomic group		Existing information: number of species recorded (expected number of species in brackets)	Knowledge gaps and their nature
PLANTS	**Marine algae**	59 species (420 in Costa Rica[1], 425 in French Polynesia[2], 360 in Samoa archipelago[3])	Surveys conducted on Funafuti only.
	Mangrove plants	2 species	Distribution and composition in Nanumanga, Niutao, Funafuti, Nui and Vaitupu: OK but would need to be updated Distribution and composition in Nukufetau, Nukulaelae and Nanumea: need to be checked
	Seagrass beds	0 species (14 species in the Tropical Pacific[4])	None information recorded: are there any?
INVERTEBRATES	**Cnidarians**	379 species incl. 366 hard corals (≈ 400 scleractinians in Tuvalu[5])	The information is derived from generalized distribution: need fieldwork to confirm the presence/absence of species. None information on coral health and spatial distribution of species within the reef system.
	Sponges	4 species (300-400 species in Caroline islands, 600 species in Palau, 1000 species in PNG and Indonesia[6])	Complete investigations are needed.

[1] I.S. Wehrtmann and J. Cortés (2009). Marine Biodiversity of Costa Rica, Central America, Springer (ed.)
[2] C. Payri, A. de R. N'Yeurt and J. Orempuller (2000). Algae of French Polynesia, Au Vent Des Iles (ed.), 320p.
[3] S.G. Robin (2007) The benthic marine algae of the Samoan Archipelago, South Pacific, with emphasis on the Apia District, Nova Hedwigia (ed.) – 132, 350p.
[4] J.E. Maragos, M.N.A. Peterson, L.G.E. Eldredge, J.E. Bardach and H.F. Takeuchi (1995). Marine and coastal biodiversity in the tropical island pacific region. Vol. I. Species systematics and information management priorities. 424p.
[5] Francesca Benzoni, pers. comm.
[6] P.L. Colin and C. Arneson (1995). Tropical Pacific Invertebrates. Coral Reef Press (ed.), 296p.

	Molluscs	306 species (≈ 400 species in Tuvalu[7], 500 in the Marquise islands[8])	Most information is focusing on commercial species and few islands (Funafuti, Vaitupu, Niutao, Nukufetau for the ProcFish survey): the other islands need to be investigated. Non-commercial species need to be assessed. One report record macro-invertebrates from Nanumea, Nui, Vaitupu, Nukulaelae, Nukufetau, Niutao and Nanumanga (Rodgers and Olerod, 1988) but the list is probably incomplete.
	Arthropods	73 species (127 in Wallis and Futuna[9])	
	Annelids	2 species	
	Echinoderms	26 species (≈ 1300 species in the Indo-Pacific tropical region[10])	
VERTEBRATES	**Fishes/Sharks/Rays**	494 species (≈ 800 species in Tuvalu[11])	Lack on small and cryptic species (Jones & Kaly) Lack on non-commercial fishes (ProcFish) Only some islands have been investigated: Funafuti, Vaitupu, Niutao & Nukufetau (ProcFish survey), Nui, Niutao & Nanumea (Jones & Kaly, 1991).
	Reptiles	4 species (3 species in Cook Islands[12])	Distribution and composition OK, no gap.
	Birds	41 species (83 species in Cook Islands[13])	Might need more investigations to update the data.
	Mammals	21 species (21 species in Cook Islands[14])	*Extensive surveys have been conducted, no gap*

[7] R. Buckley (1985). Environmental survey of Funafuti atoll (Tuvalu), Proc. of the 5th Int. Coral Reef Symp., Tahiti, 1985, Vol. 6, p. 305-310.
[8] Emmanuel Tardy, pers. comm.
[9] Emmanuel Tardy, pers. comm.
[10] J.E. Maragos, M.N.A. Peterson, L.G.E. Eldredge, J.E. Bardach and H.F. Takeuchi (1995). Marine and coastal biodiversity in the tropical island pacific region. Vol. I. Species systematics and information management priorities. 424p.
[11] G.P. Jones, U.L. Kaly and K. Clements (1991). Preliminary records of the coral reef fishes of Tuvalu. South Pacific journal of natural science, vol. 11. 18p.
[12] Cook Islands Biodiversity & Natural Heritage. http://cookislands.bishopmuseum.org/
[13] Cook Islands Biodiversity & Natural Heritage. http://cookislands.bishopmuseum.org/
[14] Cook Islands Biodiversity & Natural Heritage. http://cookislands.bishopmuseum.org/

4. WORK PLAN FOR THE COLLECTION OF FIELD DATA

4.1. Meetings in Tuvalu

A field trip was conducted in Fongafale (capitale of Tuvalu, atoll of Funafuti), on the 5th-14th of May 2009. The goals of this trip were to:

- Meet with all stakeholders interested with the survey
- Gather existing information (reports/data) on marine life that were held in Tuvalu (mostly unpublished reports/data)
- Present the findings of the survey to this date
- Discuss about which survey to conduct to fill some or all gaps in the present knowledge depending on local needs
- Discuss about the schedule of phase 2 with the people who will be involved in field investigations
- Gather information on costs, logistics and constraints related to the planned fieldwork (several options).

The table below lists all the people met in Tuvalu, their titles and departments they belong to (see also "List of contact"). Depending on their availability these people were met individually or as a group (during a meeting that was organised on the 8th of May).

Table 15. List of people met in Tuvalu (5-14 May 2009)

Surname	Name	Title	Organisation/Department
Mataio	Mataio	Director	Tuvalu Department of Environment
Kilifi	O'Bryen	Project officer	Tuvalu Department of Environment
Fa'alata	Kilisi	Project officer	Tuvalu Department of Environment
Nikolasi	Apinelu	Project officer	Tuvalu Fisheries Department
Tupulanga	Poulasi	Project officer	Tuvalu Fisheries Department
Semese	Alefaio	Coastal Programme coordinator	Tuvalu Association of NGO (TANGO)
Eliala	Fihaki	Project officer	National Biodiversity Strategic Action Plan - UNDP
Kilisi	Salanoa	Project officer	Funafuti Conservation Area

Group meeting for the Tuvalu Marine Life Project (8th May 2009, Fongafale, Funafuti)

From left to right: Kilisi Salanoa, Eliala Fihaki and Sandrine Job

From left to right: Semese Alefaio, Tupulaga Poulasi, Gilliane Le Gallic and Nikolasi Apinelu

4.2. Recommendations on field surveys to be conducted

In consultation with the Tuvalu departments of Fisheries and Environment, TANGO, the Funafuti Conservation Area and NBSAP officer, it has been stated that:

- Two islands are chosen for field investigations in priority: Nukulaelae and Nanumea. If additional budgets are available, the islands of Nanumaga, Nui and Niulakita should be investigated first as they have never been assessed in terms of fish stock.

- Field surveys should focus in priority on fish (due to budget constraints it is not possible for the moment to investigate all taxonomic groups). The department of Fisheries is requesting to obtain data that can be useful to assess their fish stock (not only on biodiversity).

- TANGO is requesting to take the opportunity of this survey to implement a monitoring program on commercial fish and macro-invertebrates on each island; following a methodology that could be conducted by local people (low-cost and low-tech methods are thus needed). If possible, the activities of this survey should serve to help implementing locally managed marine areas in the islands we will be visiting.

- Different options have been explored, in terms of financial and human resources as well as logistics needs. These options are developed in the following paragraphs.
  - Option 1: fish biodiversity assessment
  - Option 2: valuable fish stock assessment (density and biomass)
  - Option 3: fish biodiversity and valuable fish stock assessments
  - Option 4: valuable fish and macro-invertebrates stock assessments
  - Option 5: fish biodiversity and valuable fish and macro-invertebrates stock assessments

- Substrate should be investigated while assessing fish stock to explore the relationship between environment quality and resource status.

- Survey on commercial macro-invertebrates has been envisaged in the 2 islands selected if additional budget is found (Options 4 and 5).

- None detailed taxonomic survey on corals was envisaged during the meeting due to budget limitations. Furthermore, no need was expressed by stakeholders.

- None survey on marine algae and sponges are planned for the moment (no need expressed).

- Owing the existing knowledge, it seems that enough information is available concerning the following taxonomic groups for publication without conducting additional surveys, with some limitations though:
    - Birds: this would require a validation by an ornithologist as most of the data is old.
    - Cetaceans: this needs to be further discussed with NZAid who conducted extensive surveys in Tuvalu waters these last years.
    - Marine turtles: surveys are on progress in Tuvalu that would need to be added to the existing knowledge.
    - Mangroves: the composition and surface area of mangroves from Nanumanga, Niutao, Funafuti, Nui and Vaitupu is known. The localisation of mangroves from the 3 remaining islands (Nukufetau, Nukulaelae and Nanumea) is possible through recent aerial pictures analysis. A visit to these mangroves should be envisaged while in the field.

Note on existing monitoring programs:

Tuvalu is part of the GCRMN (Global Coral Reef Monitoring Network) since 2001. The objective of this monitoring is to detect changes in coral reef health status, due to human or natural causes. Three monitoring sessions have been conducted, in Funafuti only, on 6 permanent stations, from 2001 to 2004. Some data were collected in 2006 but were discarded because of some inconsistencies and also that they were far from complete. Since then, none monitoring was conducted due to several problems ranging from manpower shortage to equipment problem.

4.3. Proposed methodologies

4.3.1. Option 1: fish species richness assessment

A. Introduction

Fish biodiversity, or species richness, can be assessed using rapid assessment methods that have been widely used by Conservation International and other scientists assessing biodiversity for management purposes. Rapid assessment's goal is to rapidly generate and disseminate information on coastal and near-shore shallow-water marine biodiversity. These surveys help yielding priority recommendations for conservation by defining biodiversity hotspots where conservation efforts should be targeted.

Fish biodiversity assessment would allow finalising the complete list of Tuvaluan reef fishes (with a strong focus on non commercial species, small and cryptic species particularly, as it has not been explored yet).

B. General procedure

The method can be described as follow: a team of divers go down to the deepest zone (most often -30m), on the outer reef slope, then swim to the reef crest and inside the lagoon if accessible. While swimming, the divers record all fish species encountered as well as the reef unit where they are located. The method involves using timed swims (usually for 60 to 90 minutes at each survey site) and that all fish species are counted by visual census. It is essential to select sites that represent as many possible habitats. Each site selected can be sampled once (i.e. one dive per site).

Additionally, fish species can be given a semi-quantitative abundance rating, following a defined scale on their relative abundance (see Table 16).

Table 16. Semi-quantitative abundance rating for coral reef fishes (from Beger and Turak, 2006)

Rating	Abundance
0	None
1	Rare, 1 individual seen
2	Occasional, 2 to 6 individuals seen
3	Frequent, 7 to 50 individuals seen
4	Abundant, 30 to 200 individuals seen
5	Dominant, more than 200 individuals AND they form a major part of the overall fish biomass

To use this information in a management perspective it is essential to analyse the data collected. The analysis commonly used in RAP is to calculate an estimate of total expected coral reef fish fauna using the Coral Fish Diversity Index (CFDI) described by Allen (2002). Additionally, variations in community composition and relative abundance of fishes can be assessed by multidimensional scaling (MDS) analysis (from Beger and Turak, 2006).

C. Logistics

❖*Personnel*

- 2 divers and 1 boat driver. The fish counter must be able to identify all fish at the species level; the other diver may possess a lower level of expertise.

❖*Equipment*

- 1 small boat and safety equipment on board (oxygen case, dive flag, etc.)
- SCUBA equipment
- Pencils, slates and underwater paper
- Underwater camera (for identification)

4.3.2. Option 2: valuable fish stock assessment

A. Introduction

Several methods can be employed to assess commercial fish stocks. Two are selected and presented below: the simplified PROCFish methodology and the LMMA method. These methods are not exclusive, both could be employed as a baseline survey, to gather more exhaustive and reliable data using the first technique, and to implement a monitoring program using the community-based technique (LMMA) that could be repeated each year.

The Pacific Regional Oceanic and Coastal Fisheries (PROCFish) project has used the distance-sampling underwater visual census (D-UVC) method to assess fish density and biomass in 17 Pacific countries and territories including Tuvalu (Sauni *et al*., 2008). Briefly, the method consists of recording the species name, abundance, body length and the distance to the transect line for each fish or group of fish observed. The transect consists of a 50 m line, represented on the seafloor by an underwater tape. Through discussion with both local assessors (Tuvalu department of Fisheries officers and TANGO marine coastal officer) and scientists from the PROCFish team it appears that the method described above requires

a too high level of expertise to be widely used by local communities on their own and that it is possible (and needed) to simplify this method. One of the last outputs of the PROCFish project is actually to edit a manual that synthesize information gathered in the 17 Pacific countries and present a simplified method that can be used by local people (Silvia Pinca, pers. comm.). This manual should be released by the end of the year 2009. The simplified method presented below (see General procedure) might be refined at that time.

Marine resources in LMMA (Locally Managed Marine Areas) are usually assessed using very easy and straightforward methods and that require simplified logistics to meet with remote islands constraints (Govan et al., 2008). In many cases, these methods include qualitative ranking techniques and the collection of anecdotes and stories. Through their experience, the LMMA network has recognized that the use of very precise and accurate assessment methods tend to be more complex and/or expensive to use. The use of simple methods promote community members involvement which is a key factor in continued community interest in the project and best for ongoing adaptive management.

B. General procedure

The simplified PROCFish method consists of assessing reef fish population using visual census along a belt transect (50m long, 5m wide), using SCUBA. Only selected species can be counted (instead of all fish), such as the ones most eaten, the toxic ones, the endangered or threatened species. This list of selected species must be defined by local people (fishermen, women, fisheries officers, etc.) and written in Tuvaluan (Silvia Pinca, pers. comm.).

Methods used in LMMA are conducted by snorkeling. These are:

- Timed counts on belt transects: 3 minutes count every 5m of a 100m tape. Record of the number of fish and their size.
- Line Intercept Transects and quadrats to assess substrate type and coverage as well as population of sessile marine species: 1 quadrat every 10m.
- Timed counts are used to measure marine resources that can be harvested in a specific time frame.

Whatever the method used to assess fish community, the fish visual census should be done in conjunction with benthic lifeform surveys. Benthic lifeforms can be assessed using several methods. Three are presented below:

- The medium-scale approach (MSA) has been developed by Clua *et al*. (2006) to specifically complement D-UVC surveys. Briefly, the method consists of recording depth, habitat complexity, and 23 substrate parameters within ten 5 m x 5 m quadrats located on each side of the 50m transect used for counting fish, for a total of 20 quadrats per transect. The transect's habitat characteristics are then calculated by averaging substrate records over the 20 quadrats. This method is also planned to be simplified by PROCFish.
- Line Intercept Transect (LIT) has been developed by AIMS (English *et al*., 1997) to complement fish visual census along belt transects. LIT are usually 20m long and should be done after the fish have been counted. Basically, the benthic communities of coral reefs have been described using 31 lifeforms categories (ex. *Acropora* encrusting, coral branching, mushroom coral, soft coral, sponge, etc.). A diver lay out a 20m tape close to the substratum and record lifeform categories encountered under the transect tape.
- Digital photo transects methodology has been recently developed in Australia (Roelfsema *et al.,* 2007). It consists of taking photographs along a transect tape (e.g. one every 2m) to determine the percentage cover of the benthic communities and the species composition. The photographs are then analysed using specialized software (CPCE: Coral Point Count using Excel). In the context of a monitoring it is recommended to conduct this survey on permanent transects or combined with a GPS recording (the GPS is towed by the diver who is taking photographs). One advantage of this method is that it is quick and it does not require a high level of expertise from the divers.

While considering benthic lifeforms it is possible to assess the status of coral reef health with a rapid and simple method:

- The transect should be the same as the one used to count fish and record lifeforms
- 1 observation every 0,5m is made along the 20m tape (40 points)
- For each observation the diver should note the presence of injuries or degradation on living organisms and its cause, as well as the presence of threats or invasive species (example: bleaching, coral disease, COTs, *Drupella*, *Coraliophilla*, fish predation, human action: fins, anchor, etc.)
- IUCN Red List species observed should be noted

As for species richness, to use the data collected in a management perspective it is essential to analyse it. Analyses should provide information on fish abundance (comparison amongst species, between depths, sites, zones, reef units and locations), and on the relationship between fish abundance, species richness and diversity and benthic community data.

C. Logistics

❖*Personnel*

- 4 divers and 1 boat driver.
  - One team of 2 divers is conducting the fish survey: the fish counter must be able to identify all fish listed; the other diver may possess a lower level of expertise.
  - The other team of 2 divers is conducting the benthic survey: the benthic assessor must be familiar with all lifeforms categories (MSA or LIT); the other diver may possess a lower level of expertise.

❖*Equipment*

- 1 small boat and safety equipment on board (oxygen case, dive flag, etc.)
- SCUBA equipment (optional)
- Pencils, slates and underwater paper
- Fibreglass measuring tapes (at least 2)
- Underwater camera (one per team of diver if possible)

4.3.3. Option 3: fish species richness and valuable fish stock assessment

A. Introduction

Both methods described in option 1 and 2 will be conducted. This would allow obtaining data on fish species richness and to assess the state of the fish stock (quantitative data) based on selected fish species. Benthic communities should be assessed to investigate the relationship between fish population and their habitat. For general procedures please refer to §4.3.1 and 4.3.2.

B. Logistics

❖*Personnel*

- 6 divers and 2 boat drivers.
  - One team of 2 divers is conducting the fish biodiversity assessment. The fish counter must be able to identify all fish at the species level; the other diver may possess a lower level of expertise.
  - One team of 2 divers is conducting the fish stock survey: the fish counter must be able to identify all fish listed; the other diver may possess a lower level of expertise.
  - One team of 2 divers is conducting the benthic survey: the benthic assessor must be familiar with all lifeforms categories (MSA or LIT); the other diver may possess a lower level of expertise.

❖*Equipment*

- 2 small boats and safety equipment on board (oxygen case, dive flag, etc.)
- SCUBA equipment (optional)
- Pencils, slates and underwater paper
- Fibreglass measuring tapes (at least 2)
- Underwater cameras (one per team of diver if possible)

4.3.4. Option 4: Valuable fish and macro-invertebrates stock assessments

A. Introduction

In addition to the assessment of valuable fish resources, the diversity and abundance of macro-invertebrate species can be evaluated. A range of survey techniques may be used, from broad-scale assessment (using the manta tow technique) to finer-scale assessment of specific reef and benthic habitats. The following methods are, for the first one derived from the PROCFish methodology, and for the second one derived from methodologies usually employed in LMMAs.

Using the PROCFish methodology would allow comparing data between islands, from the ones that have been investigated in 2005-2006 to the ones targeted for the present survey. Using the LMMA methodology could serve as a baseline for on going monitoring that would be conducted by local communities.

Whatever the method used, a broad scale assessment should be conducted first to describe the large-scale distribution pattern of macro-invertebrates (i.e. their relative rarity and patchiness) and, more importantly, to identify target areas for further fine-scale assessment. Broad-scale assessments are also used to record large sedentary invertebrates. Fine-scale assessments are conducted in target areas (areas with naturally higher abundance and/or the most suitable habitat) to specifically describe and monitor resource status.

B. General procedure

Broad-scale assessment can be done using manta-tow technique (a diver is towed by a boat). Long transect can also be used, such as 300 m long × 2 m wide transect. While recording macro-invertebrates, divers can also note the presence of Crown-of-thorns or other threats.

The PROCFish methodology consists of recording macro-invertebrates (only in areas of high abundance of macro-invertebrates) along 40 m transects (1 m wide), using SCUBA. The assessment of macro-invertebrates should be based on a predefined list of valuable species, such as trochus, sea cucumbers, pearl oysters, clams. Size of each individual might also be recorded to assess size distribution and monitor it through time.

The LMMA method is conducted by snorkeling. It consists of recording selected species along belt transects or line transects and quadrats (1 quadrat every 10m). Timed counts can also be used to measure marine resources that can be harvested in a specific time frame.

C. Logistics

❖*Personnel*

- 4 to 6 divers and 1 boat driver.
  - One team of 2 divers is conducting the fish stock survey: the fish counter must be able to identify all fish listed; the other diver may possess a lower level of expertise.
  - One team of 2 divers is conducting the benthic survey: the benthic assessor must be familiar with all lifeforms categories (MSA or LIT); the other diver may possess a lower level of expertise.
  - One team of 2 divers is conducting the macro-invertebrates stock

assessment: the counter must be able to identify all macro-invertebrates listed; the other diver may possess a lower level of expertise. The macro-invertebrates stock assessment might be conducted by the benthic survey team if human resources are limited.

❖*Equipment*

- 1 small boat and safety equipment on board (oxygen case, dive flag, etc.)
- SCUBA equipment (optional)
- Pencils, slates and underwater paper
- Fibreglass measuring tapes (at least 2)
- Underwater camera (one per team of diver if possible)
- A 18 metre tow rope
- A manta board

4.3.5. Option 5: Fish biodiversity and valuable fish and macro-invertebrates stock assessments

A. Introduction

All methods described in option 3 and 4 will be conducted. This would allow obtaining data on fish species richness and to assess the state of the fish stock (quantitative data) based on selected fish species. Additionally, valuable macro-invertebrates can be evaluated using broad and fine scale surveys. Benthic communities should be assessed to investigate the relationship between fish population and their habitat. For general procedures please refer to §4.3.3 and 4.3.4.

B. Logistics

❖*Personnel*

- 6 to 8 divers and 2 boat drivers.
  - One team of 2 divers is conducting the fish biodiversity assessment. The fish counter must be able to identify all fish at the species level; the other diver may possess a lower level of expertise.
  - One team of 2 divers is conducting the fish stock survey: the fish

counter must be able to identify all fish listed; the other diver may possess a lower level of expertise.

- One team of 2 divers is conducting the benthic survey: the benthic assessor must be familiar with all lifeforms categories (MSA or LIT); the other diver may possess a lower level of expertise.
- One team of 2 divers is conducting the macro-invertebrates stock assessment: the counter must be able to identify all macro-invertebrates listed; the other diver may possess a lower level of expertise. The macro-invertebrates stock assessment might be conducted by the benthic survey team if human resources are limited.

❖*Equipment*

- 2 small boats and safety equipment on board (oxygen case, dive flag, etc.)
- SCUBA equipment
- Pencils, slates and underwater paper
- Fibreglass measuring tapes (at least 3)
- Underwater camera (one per team of diver if possible)
- A 18 metre tow rope
- A manta board

Table 17. Synthesis on human resources (and their level of expertise) and equipment required to achieve the different objectives

Option	Objective	Human resources and level of expertise	Equipment required
Option 1	Fish biodiversity	2 divers + 1 boat driver • 1 fish expert (all species) • 1 field assistant	• 1 boat • SCUBA gear • Pencil, slates, underwater paper • Underwater camera
Option 2	Valuable fish stock	4 divers + 1 boat driver • 1 fish assessor (valuable species) • 1 substrate assessor • 2 field assistants	• 1 boat • SCUBA or free diving gear • Pencil, slates, underwater paper • Underwater camera • Measuring tapes
Option 3	Fish biodiversity and valuable fish stock	6 divers + 2 boat drivers • 1 fish expert (all species) • 1 fish assessor (valuable species) • 1 substrate assessor • 3 field assistants	• 1 boat • SCUBA and free diving gear • Pencil, slates, underwater paper • Underwater camera • Measuring tapes
Option 4	Valuable fish and macro-invertebrates stock	4 to 6 divers + 1 boat driver • 1 fish assessor (valuable species) • 1 substrate assessor • 1 macro-invertebrates assessor (valuable species) • 1 to 3 field assistants	• 1 boat • Free diving gear • Pencil, slates, underwater paper • Underwater camera • Measuring tapes • Manta board, rope
Option 5	Fish biodiversity and valuable and macro-invertebrates fish stock	6 to 8 divers + 2 boat drivers • 1 fish expert (all species) • 1 fish assessor (valuable species) • 1 macro-invertebrates assessor (valuable species) • 1 to 4 field assistants	• 1 boat • SCUBA and free diving gear • Pencil, slates, underwater paper • Underwater camera • Measuring tapes • Manta board, rope

4.4. Training of local assessors

A training course should be conducted prior to field investigations. Participants will be selected from the Marine Conservation & Environment Unit of the Funafuti Town Council, the Fisheries Division, the Department of Environment and TANGO.

The aims of the training course are to prepare the participants to carry out the baseline quantitative survey on fish and macro-invertebrates in Nanumea and Nukulaelae and to provide training on the techniques required for effective environmental monitoring of their conservation areas. Participants are expected to improve their skills for identifying species or groups of marine organisms to be monitored, to understand the concepts and needs of monitoring (to be able to transfer this knowledge at a community level), and to progress on monitoring marine resources techniques to be used during this survey and in the future, under a limited supervision.

Additionally, as it was recommended by Dr Ursula Kaly (Kaly, 1997) when the baseline survey and first monitoring of the Funafuti Conservation Area were conducted, it might be interesting (if needed) to include in the training course a component of public awareness and understanding of the values of marine conservation areas and monitoring (through meetings, video shows, radio programs or press releases).

4.5. Planned schedule

Due to meteorological constraints (the South Pacific cyclone season is running from November through April), it is recommended that field investigations take place from May to October 2010. Field dates will depend on local and regional participants' work load as well as Fisheries vessel availability.

The different activities and their approximate duration are presented below (Table 18).

Table 18. Duration (approx.) of each activity for the different options

Activity	Duration	
	Options 1, 2 and 3	Options 4 and 5
Training course	3 days	3 days
Field survey in Nanumea*	9 days	11 days
Field survey in Nukulaelae*	9 days	11 days
Data analysis and reporting	10 days	15 days
Total	**31 days**	**40 days**

* including navigation time from Funafuti to the outer islands

The training course and field surveys in Nanumea and Nukulaelae should be conducted continuously to take the opportunity of the visit of one or 2 regional assessors in Tuvalu.

4.6. Costs

Each option described above has been budgeted for. This is presented in the table below (Table 19).

Table 19. Costs breakdown for the different options

		Option 1	Option 2	Option 3	Option 4	Option 5
Salaries	Regional	13 200	24 000	37 200	29 400	49 720
	Local	5 600	6 680	8 180	7 280	9 020
Travel costs		3 500	3 000	6 500	3 000	6 500
Local costs (allowance, accommodation and food)		2 798	4 758	7 068	5 878	8 748
Navigation costs (Fisheries vessel, local boats and fuel)		26 137	26 137	26 137	29 887	29 887
Survey costs		860	1 560	1 560	1 680	1 680
Total (AU$)		**52 095**	**66 135**	**86 645**	**77 125**	**100 035**
Total (€)		**29 133,3**	**36 990,8**	**48 337,4**	**43 137,8**	**55 797,2**

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APPENDIX 1: LIST OF MARINE SPECIES RECORDED FROM THE LITERATURE FOR TUVALU

Appendix 1A: List of fishes

Common name (family)	Family	Genus Specie	Common name (specie)	Tuvaluan name
SURGEONFISHES	ACANTHURIDAE	*Acanthurus achilles*	Achilles tang	Maito/Maninilakau
SURGEONFISHES	ACANTHURIDAE	*Acanthurus albipectoralis*	Whitefin surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus blochii*	Ringtail surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus dussumieri*	Eyestripe surgeonfish	Kapalagi
SURGEONFISHES	ACANTHURIDAE	*Acanthurus guttatus*	Whitespotted surgeonfish	Api/Maono
SURGEONFISHES	ACANTHURIDAE	*Acanthurus leucocheilus*	Palelipped surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus leucopareius*	Whitebar surgeonfish	Maono
SURGEONFISHES	ACANTHURIDAE	*Acanthurus lineatus*	Lined surgeonfish	Ponelolo
SURGEONFISHES	ACANTHURIDAE	*Acanthurus maculiceps*	Spottedface surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus mata*	Black surgeonfish	Homo/Kapalagi
SURGEONFISHES	ACANTHURIDAE	*Acanthurus nigricans*	Goldrim surgeonfish	Pone, pone sina
SURGEONFISHES	ACANTHURIDAE	*Acanthurus nigricauda*	Blackstreak surgeonfish	Kapalagi
SURGEONFISHES	ACANTHURIDAE	*Acanthurus nigrofuscus*	Brown surgeonfish	Pone
SURGEONFISHES	ACANTHURIDAE	*Acanthurus nigroris*	Bluelined surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus olivaceus*	Orangeband surgeonfish	Pone, pone kaokao kula
SURGEONFISHES	ACANTHURIDAE	*Acanthurus pyroferus*	Mimic surgeonfish	Alogo, pone?
SURGEONFISHES	ACANTHURIDAE	*Acanthurus thompsoni*	Thompson's surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Acanthurus triostegus*	Convict surgeonfish	Manini
SURGEONFISHES	ACANTHURIDAE	*Acanthurus xanthopterus*	Yellowfin surgeonfish	Kapalagi
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus binotatus*	Twospot bristletooth	Pone uli
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus hawaiiensis*	Hawaiian bristletooth	Pone uli
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus marginatus*	Bluespotted bristletooth	Pone uli
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus striatus*	Striped bristletooth	Pone uli, alogo/Pone lolo
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus strigosus*	Goldring bristletooth	Pone uli
SURGEONFISHES	ACANTHURIDAE	*Ctenochaetus tominiensis*	Tomini surgeonfish	

SURGEONFISHES	ACANTHURIDAE	*Naso annulatus*	Whitemargin unicornfish	
SURGEONFISHES	ACANTHURIDAE	*Naso brachycentron*	Humpback unicornfish	Osotu faitua
SURGEONFISHES	ACANTHURIDAE	*Naso brevirostrus*	Short-snouted unicornfish	Pokapoka/Kosotu
SURGEONFISHES	ACANTHURIDAE	*Naso caesius*	Gray unicornfish	
SURGEONFISHES	ACANTHURIDAE	*Naso hexacanthus*	Sleek unicornfish	Ume
SURGEONFISHES	ACANTHURIDAE	*Naso lituratus*	Orangespine unicornfish	Maninilakau
SURGEONFISHES	ACANTHURIDAE	*Naso lopezi*	Slender unicornfish	Osotu gutuloa
SURGEONFISHES	ACANTHURIDAE	*Naso thorpei*	Thorpe's unicornfish	Osotu gutupuku
SURGEONFISHES	ACANTHURIDAE	*Naso thynnoides*	Singlespine unicornfish	
SURGEONFISHES	ACANTHURIDAE	*Naso tuberosus*	Humpnose unicornfish	
SURGEONFISHES	ACANTHURIDAE	*Naso unicornis*	Bluespine unicornfish	Pokapoka/Ume
SURGEONFISHES	ACANTHURIDAE	*Naso vlamingii*	Bignose Unicornfish	Pokapoka
SURGEONFISHES	ACANTHURIDAE	*Paracanthus hepatus*	Palette surgeonfish	
SURGEONFISHES	ACANTHURIDAE	*Zebrasoma rostratum*	Longnose tang	
SURGEONFISHES	ACANTHURIDAE	*Zebrasoma scopas*	Brushtail tang	Maono/Api
SURGEONFISHES	ACANTHURIDAE	*Zebrasoma veliferum*	Sailfin tang	
BONEFISHES	ALBULIDAE	*Albula glassodonta*	Shortjaw bonefish	Kiokio
THRESHER SHARKS	ALOPIDAE	*Alopias pelagicus*	Thresher shark	Kimoa
CARDINALFISHES	APOGONIDAE	*Apogon angustatus*	Broadstriped cardinalfish	
CARDINALFISHES	APOGONIDAE	*Apogon exostigma*	One-lined cardinalfish	Palumaliau
CARDINALFISHES	APOGONIDAE	*Apogon kallopterus*	Iridescent cardinalfish	
CARDINALFISHES	APOGONIDAE	*Archamia fucata*	Orangelined cardinalfish	Matapa
CARDINALFISHES	APOGONIDAE	*Archamia lineolata*	Bronze-streaked cardinalfish	Matapa
CARDINALFISHES	APOGONIDAE	*Cheilodipterus quinquelineatus*	Five-lined cardinalfish	Kalisi
CARDINALFISHES	APOGONIDAE	*Pseudamia polystigma*	Cardinalfish	
SILVERSIDES	ATHERINIDAE	*Atherinomorus lacunosus*	Broad-banded hardyhead	Salii
SILVERSIDES	ATHERINIDAE	*Hypoatherina barnesi*	Barnes hardyhead	Salii
SILVERSIDES	ATHERINIDAE	*Stenatherina panatela*	Panatela riverside	

TRUMPETFISHES	AULOSTOMIDAE	*Aulostomus chinensis*	Trumpetfish	Taotaoama
TRIGGERFISHES	BALISTIDAE	*Balistapus undulatus*	Orange-lined triggerfish	Mumu fatu
TRIGGERFISHES	BALISTIDAE	*Balistoides conspicillum*	Clown triggerfish	Umu fatu pulepule
TRIGGERFISHES	BALISTIDAE	*Balistoides viridescens*	Titan triggerfish	Umu fatu
TRIGGERFISHES	BALISTIDAE	*Melichthys niger*	Black durgon	Sumu lega
TRIGGERFISHES	BALISTIDAE	*Melichthys vidua*	Pinktailed durgon	Sumu papa
TRIGGERFISHES	BALISTIDAE	*Odonus niger*	Redtooth triggerfish	
TRIGGERFISHES	BALISTIDAE	*Pseudobalistes flavimarginatus*	Yellowmargin triggerfish	Umu fatu
TRIGGERFISHES	BALISTIDAE	*Pseudobalistes fuscus*	Yellow-spotted triggerfish	
TRIGGERFISHES	BALISTIDAE	*Rhinecanthus aculeatus*	Picassofish	Sumu uta
TRIGGERFISHES	BALISTIDAE	*Rhinecanthus rectangulus*	Wedge picassofish	Umu
TRIGGERFISHES	BALISTIDAE	*Rhinecanthus verrucosus*	Blackpatch triggerfish	Sumu
TRIGGERFISHES	BALISTIDAE	*Sufflamen bursa*	Scimitar triggerfish	
TRIGGERFISHES	BALISTIDAE	*Sufflamen chrysopterum*	Halfmoon triggerfish	
TRIGGERFISHES	BALISTIDAE	*Sufflamen fraenatum*	Bridled triggerfish	
TRIGGERFISHES	BALISTIDAE	*Xanthichthys auromarginatus*	Gilded triggerfish	
TRIGGERFISHES	BALISTIDAE	*Xanthichthys caeruleolineatus*	Blueline triggerfish	
NEEDLEFISHES	BELONIDAE	*Platybelone argalus platyura*	Keeltail needlefish	Ise/Taotao/Kasufu
NEEDLEFISHES	BELONIDAE	*Tylosurus crocodilus*	Crocodilian needlefish	Kasufe
BLENNIES	BLENNIDAE	*Blenniella chrysospilos*	Red-spotted blenny	Manoko
BLENNIES	BLENNIDAE	*Blenniella periophthalmus*	Blue-dashed rockskypper	Manoko
BLENNIES	BLENNIDAE	*Cirripectes castaneus*	Chestnut Blenny	Manoko selesele
BLENNIES	BLENNIDAE	*Cirripectes filamentosus*	Filamentous blenny	Manoko
BLENNIES	BLENNIDAE	*Cirripectes stigmaticus*	Reticulated Blenny	Manoko tuututu
BLENNIES	BLENNIDAE	*Cirripectes variolosus*	Pacific plate blenny	Manoko
BLENNIES	BLENNIDAE	*Entomacrodus striatus*	Blackspotted rockskypper	Manoko
BLENNIES	BLENNIDAE	*Istiblennius edentulus*	Rippled rockskypper	Manoko
BLENNIES	BLENNIDAE	*Meiacanthus atrodorsalis*	Yelowtail fangblenny	Manoko

BLENNIES	BLENNIDAE	*Plagiotremus laudandus*	Bicolour fangblenny	
FLOUNDERS	BOTHIDAE	*Bothus mancus*	Flowery mancus	Ali
FLOUNDERS	BOTHIDAE	*Bothus pantherinus*	Leopard flounder	Ali
FUSILIERS	CAESIONIDAE	*Caesio caerulaura*	Scissortail fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Caesio cuning*	Red-bellied fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Caesio lunaris*	Lunar fusilier	
FUSILIERS	CAESIONIDAE	*Caesio teres*	Blue and yellow fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Pterocaesio diagramma*	Two-lined fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Pterocaesio lativittata*	Wideband fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Pterocaesio marri*	Marr's fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Pterocaesio tile*	Neon fusilier	Ulia
FUSILIERS	CAESIONIDAE	*Pterocaesio trilineata*	Three-stripe fusilier	
JACKS	CARANGIDAE	*Atule mate*	Yellowtail scad	
JACKS	CARANGIDAE	*Carangoides equula*	Whitefin trevally	Aseu
JACKS	CARANGIDAE	*Carangoides ferdau*	Barred jack	Pula
JACKS	CARANGIDAE	*Carangoides malarbaricus*	Malarbar trevally	Lupo
JACKS	CARANGIDAE	*Carangoides orthogrammus*	Gold-spot trevally	Filu
JACKS	CARANGIDAE	*Caranx ignobilis*	Giant trevally	Tinoulua/Ulua/Aseu
JACKS	CARANGIDAE	*Caranx lugubris*	Black trevally	Tafauli
JACKS	CARANGIDAE	*Caranx melampygus*	Bluefin trevally	Ulua/Asea
JACKS	CARANGIDAE	*Caranx sexfasciatus*	Bigeye trevally	Teu/Ulua/Aseu
JACKS	CARANGIDAE	*Decapterus macarellus*	Mackerel scad	Atule
JACKS	CARANGIDAE	*Decapterus macrosoma*	Shorfin scad	
JACKS	CARANGIDAE	*Elegatis bipinnulata*	Rainbow runner	Kamai
JACKS	CARANGIDAE	*Gnathanodon speciosus*	Golden trevally	Lupolupo/Lupo
JACKS	CARANGIDAE	*Scomberoides lysan*	Doublespotted queenfish	Lai/Ata
JACKS	CARANGIDAE	*Scomberoides tala*	Barred queenfish	Lai
JACKS	CARANGIDAE	*Scomberomerus commersonianus*	Talang queenfish	palu

JACKS	CARANGIDAE	*Selar boops*	Oxeye scad	Atule
JACKS	CARANGIDAE	*Selar crumenophthalmus*	Bigeye scad	Atule, Salala
JACKS	CARANGIDAE	*Seriola dumerilii*	Greater amberjack	Kamai
JACKS	CARANGIDAE	*Seriola lalandi*	Yellowtail kingfish	Kamai
JACKS	CARANGIDAE	*Seriola rivoliana*	Deep-water ampberjack	Palu matu
JACKS	CARANGIDAE	*Trachinotus bailloni*	Blackspotted dart	Lai
JACKS	CARANGIDAE	*Trachinotus blochii*	Snub-nosed dart	Lai
JACKS	CARANGIDAE	*Trachinotus botla*	Common dart	Lai
PEARLFIHES	CARAPODIDAE	*Encheliophis homei*	Silver pearlfish	
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus albimarginatus*	Silvertip shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus amblyrhynchos*	Grey reef shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus limbatus*	Small blacktip shark	
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus longimanus*	Oceanic whitetip shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus melanopterus*	Blacktip reef shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus obscurus*	Dusky Shark	
REQUIEM SHARKS	CARCHARHINIDAE	*Carcharhinus plumbeus*	Sandbar Shark	
REQUIEM SHARKS	CARCHARHINIDAE	*Galeocerdo cuvier*	Tiger shark	Mago/Uninuni
REQUIEM SHARKS	CARCHARHINIDAE	*Isurus sp.*	Mako shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Negaprion acutidens*	Indo-Pacific Lemon Shark	Mago
REQUIEM SHARKS	CARCHARHINIDAE	*Prionace glauca*	Blue shark	
REQUIEM SHARKS	CARCHARHINIDAE	*Triaenodon obesus*	White tip reef shark	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon auriga*	Threadfin butterflyfish	Moitete/Tifitifi/Maninipapa
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon bennetti*	Bennett's butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon citrinellus*	Citron butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon ephippium*	Saddled butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon flavirostris*	Black butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon kleinii*	Blacklip butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon lineolatus*	Lined butterflyfish	

BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon lunula*	Racoon butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon lunulatus*	Oval butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon melannotus*	Blackback butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon mertensii*	Merten's butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon meyeri*	Meyer's butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon ornatissimus*	Ornate butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon pelewensis*	Dot-dash butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon plebeius*	Blueblotch butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon quadrimaculatus*	Fourspot butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon rafflesii*	Latticed butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon reticulatus*	Reticulated butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon semeion*	Dotted butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon trifascialis*	Chevron butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon trifasciatus*	Redfin butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon ulietensis*	Doublebarred butterflyfish	Laulaufou
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon unimaculatus*	Teardrop butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Chaetodon vagabundus*	Vagbond butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Forcipiger flavissimus*	Forcepsfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Forcipiger longirostris*	Longnose butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Hemitaurichthys polylepis*	Pyramid butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Hemitaurichthys thompsoni*	Thompson's butterflyfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Heniochus acuminatus*	Longfin bannerfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Heniochus chrysostomus*	Pennant bannerfish	Moepepe
BUTTERFLYFISHES	CHAETODONTIDAE	*Heniochus monoceros*	Masked bannerfish	
BUTTERFLYFISHES	CHAETODONTIDAE	*Heniochus varius*	Humphead bannerfish	
MILKFISHES	CHANIDAE	*Chanos chanos*	Milkfish	Paneava
HAWKFISHES	CIRRITHIDAE	*Cirrhitichthys oxycephalus*	Pixie hawkfish	Patuki
HAWKFISHES	CIRRITHIDAE	*Cirrhitus pinnulatus*	Stocky hawkfish	Patuki

HAWKFISHES	CIRRITHIDAE	*Neocirrhites armattus*	Flame hawkfish	Patuki
HAWKFISHES	CIRRITHIDAE	*Paracirrhites arcatus*	Arc-eye hawkfish	Patukilautalo
HAWKFISHES	CIRRITHIDAE	*Paracirrhites forsteri*	Blackside hawkfish	Patukilautalo
HAWKFISHES	CIRRITHIDAE	*Paracirrhites hemistictus*	Halfspotted hawkfish	Patukilautalo
HERRINGS	CLUPEIDAE	*Spratelloides delicatulus*	Delicate roundherring	Kavaliki
DOLPHINFISHES	CORYPHAENIDAE	*Coryphaena hippurus*	Common dolphin fish	Masimasi
STINGRAYS	DASYATIDAE	*Himantura uarnak*	Honeycomb stingray	Fai pusi
STINGRAYS	DASYATIDAE	*Taeniura meyeni*	Marbled Stingray	Fai Uli
STINGRAYS	DASYATIDIDAE	*Dasyatis kuhlii*	Blue-spotted stingray	Fai kili
PORCUPINEFISHES	DIODONTIDAE	*Diodon hystrix*	Porcupine fish, pufferfish	Tautau/Sue
REMORAS	ECHENEIDIDAE	*Echeneis naucrates*	Sharksucker	Talitaliuli
REMORAS	ECHENEIDIDAE	*Remora remora*	Remora	
BATFISHES	EPHIPPIDAE	*Platax orbicularis*	Orbicular platax	Lau laufau
BATFISHES	EPHIPPIDAE	*Platax pinnatus*	Pinnate Bat Fish	Laufaufou
BATFISHES	EPHIPPIDAE	*Platax teira*	Blunthead platax	Api
FLYINGFISHES	EXOCOETIDAE	*Cheilopogon spp.*	Flying fish	Isave
FLYINGFISHES	EXOCOETIDAE	*Cypselurus cyanopterus*	Margined flying fish	Isave
FLYINGFISHES	EXOCOETIDAE	*Cypselurus poecilopterus*	Yellow-wing flyingfish	Isave
FLYINGFISHES	EXOCOETIDAE	*Cypselurus suttoni*	Flying Fish	Isave
CORNETFISHES	FISTULARIDAE	*Fistularia commersonii*	Smooth cornetfish	Taotaoama
SNAKE MACKERELS	GEMPYLIDAE	*Promethichthys prometheus*	Snake mackerel	Palu kanane
SNAKE MACKERELS	GEMPYLIDAE	*Ruvettus pretiosus*	Castor oilfish	Palu talatala
THREADFINS	GERRIDAE	*Gerres oyena*	Blacktip mojarra	Matu
NURSE SHARKS	GINGLYMOSTORMATIDAE	*Nebrius concolor*	Giant sleepy shark	
GOBIES	GOBIIDAE	*Amblygobius phalaena*	Calico goby	Manoko
GOBIES	GOBIIDAE	*Bryanops natans*	Redeye Goby	Manoleo
GOBIES	GOBIIDAE	*Ctenogobiops feroculus*	Fierce shrimpgoby	Manoko

GOBIES	GOBIIDAE	*Ctenogobiops pomastictus*	Gold-speckled shrimpgoby	Manoko
GOBIES	GOBIIDAE	*Valenciennea muralis*	Mural goby	Manoko
GOBIES	GOBIIDAE	*Valenciennea strigata*	Bluestreak goby	Manoko
SOAPFISHES	GRAMMISTIDAE	*Grammistes sexlineatus*	Sixline soapfish	Patuki/Lafalafa
SOAPFISHES	GRAMMISTIDAE	*Pogonoperca punctata*	Spotted soapfish	Patuki/Lafalafa
HALFBEAKS	HEMIRAMPHIDAE	*Hyporhamphus dussumieri*	Dussumier's halfbeak	Tute
COW SHARKS	HEXANCHIDAE	*Hexanchus griseus*	Bluntnose sixgill shark	
SQUIRRELFISHES	HOLOCENTRIDAE	*Adioryx spinifer*	Scarlet squirrelfish	Taa
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis adusta*	Shadowfin soldierfish	
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis amaena*	Brick soldierfish	Malau
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis berndti*	Bigscale soldierfish	Malau
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis hexagona*	Double Tooth Soldierfish	Malau
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis kuntee*	Epaulet soldierfish	Malau
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis murdjan*	Blotcheye soldierfish	
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis violacea*	Lattice soldierfish	Malau puku
SOLDIERFISHES	HOLOCENTRIDAE	*Myripristis vittata*	Whitetip soldierfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Neoniphon opercularis*	Blackfin squirrelfish	Talakisi
SQUIRRELFISHES	HOLOCENTRIDAE	*Neoniphon sammara*	Spotfin squirrelfish	Talakisi
SQUIRRELFISHES	HOLOCENTRIDAE	*Ostichthys japonicus*	Japanese soldierfish, Brocade perch	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron caudimaculatum*	Tailspot squirrelfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron diadema*	Crown squirrelfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron microstoma*	Smallmouth squirrelfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron punctatissimum*	Peppered squirrelfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron rubrum*	Redcoat Squirrelfish	Malu
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron spiniferum*	Long-jawed squirrelfish	
SQUIRRELFISHES	HOLOCENTRIDAE	*Sargocentron tiere*	Blue lined squirrelfish	
SAILFISHES	ISTIOPHORIDAE	*Istiophorus platypterus*	Indo-Pacific sailfish	
SAILFISHES	ISTIOPHORIDAE	*Makaira indica*	Black marlin	Ulau/Sakula

SAILFISHES	ISTIOPHORIDAE	*Makaira mazara*	Blue marlin	Sakula
SAILFISHES	ISTIOPHORIDAE	*Makaira nigricans*	Blue marlin	Sakula
FLAGTAILS	KUHLIDAE	*Kuhlia mugil*	Fiveband flagtail	Safole
SEA CHUBS	KYPHOSIDAE	*Kyphosus bigibbus*	Gray chub	Nanue
SEA CHUBS	KYPHOSIDAE	*Kyphosus cinerascens*	Highfin chub	Nanue
SEA CHUBS	KYPHOSIDAE	*Kyphosus vaigiensis*	Brassy chub	Nanue
WRASSES	LABRIDAE	*Anampses caeruleopunctatus*	Blue-spotted wrasse	Uloulo/Kimoa/Kiole
WRASSES	LABRIDAE	*Anampses melanurus*	Blacktail wrasse	
WRASSES	LABRIDAE	*Anampses meleagrides*	Spotted wrasse	
WRASSES	LABRIDAE	*Anampses twisti*	Yellowbreasted wrasse	
WRASSES	LABRIDAE	*Bodianus axillaris*	Axilspot hogfish	
WRASSES	LABRIDAE	*Bodianus diana*	Diana's hogfish	
WRASSES	LABRIDAE	*Cheilinus chlorourus*	Floral wrasse	
WRASSES	LABRIDAE	*Cheilinus fasciatus*	Redbreasted wrasse	Gole
WRASSES	LABRIDAE	*Cheilinus trilobatus*	Tripletail wrasse	Gole/Safole
WRASSES	LABRIDAE	*Cheilinus undulatus*	Humpheaded Maori wrasse	Tagafa
WRASSES	LABRIDAE	*Cheilio inermis*	Cigar Wrasse	
WRASSES	LABRIDAE	*Cirrhilabrus cyanopleura*	Blueside wrasse	
WRASSES	LABRIDAE	*Cirrhilabrus exquisitus*	Exquisite wrasse	
WRASSES	LABRIDAE	*Cirrhilabrus punctatus*	Dotted wrasse	
WRASSES	LABRIDAE	*Coris aygula*	Clown coris	
WRASSES	LABRIDAE	*Coris gaimard*	Yellow tail coris	
WRASSES	LABRIDAE	*Epibulus insidiator*	Slingjaw wrasse	
WRASSES	LABRIDAE	*Gomphosus varius*	Bird wrasse	Kimoa/Kioli/Tai
WRASSES	LABRIDAE	*Halichoeres biocellatus*	Two-spotted wrasse	
WRASSES	LABRIDAE	*Halichoeres hortulanus*	Checkerboard wrasse	
WRASSES	LABRIDAE	*Halichoeres margaritaceus*	Pink-belly wrasse	
WRASSES	LABRIDAE	*Halichoeres marginatus*	Dusky wrasse	

WRASSES	LABRIDAE	*Halichoeres melanurus*	Tail-spot wrasse	
WRASSES	LABRIDAE	*Halichoeres melasmapomus*	Ocellated wrasse	
WRASSES	LABRIDAE	*Halichoeres ornatissimus*	Ornate wrasse	
WRASSES	LABRIDAE	*Halichoeres trimaculatus*	Threespot wrasse	
WRASSES	LABRIDAE	*Hemigymnus fasciatus*	Barred thicklip	
WRASSES	LABRIDAE	*Hemigymnus melapterus*	Blackeye thicklip	
WRASSES	LABRIDAE	*Hologymnosus doliatus*	Pastel ringwrasse	
WRASSES	LABRIDAE	*Labrichthys unilineatus*	Tubelip wrasse	
WRASSES	LABRIDAE	*Labroides bicolor*	Bicolor Cleaner Wrasse	
WRASSES	LABRIDAE	*Labroides dimidiatus*	Bluestreak Cleaner Wrasse	
WRASSES	LABRIDAE	*Labroides pectoralis*	Blackspot cleaner wrasse	
WRASSES	LABRIDAE	*Labropsis xanthonota*	Yellowback tubelip	
WRASSES	LABRIDAE	*Macropharyngydon meleagris*	Blackspotted wrasse	
WRASSES	LABRIDAE	*Novaculicthys taeniourus*	Rockmover wrasse	Gole
WRASSES	LABRIDAE	*Oxycheilinus digramma*	Cheeklined wrasse	
WRASSES	LABRIDAE	*Pseudocheilinus evanidus*	Disappearing wrasse	
WRASSES	LABRIDAE	*Pseudocheilinus hexataenia*	Sixstripe wrasse	
WRASSES	LABRIDAE	*Pseudocheilinus octotaenia*	Eightstripe wrasse	
WRASSES	LABRIDAE	*Pseudodax moluccanus*	Chiseltooth wrasse	
WRASSES	LABRIDAE	*Stethojulis bandanensis*	Red-shoulder wrase	
WRASSES	LABRIDAE	*Stethojulis strigiventer*	Three-ribbon wrasse	
WRASSES	LABRIDAE	*Thalassoma amblycephalum*	Twotone wrasse	
WRASSES	LABRIDAE	*Thalassoma hardwicki*	Sixbar wrasse	
WRASSES	LABRIDAE	*Thalassoma lunare*	Crescent wrasse	
WRASSES	LABRIDAE	*Thalassoma purpureum*	Surge wrasse	Uloulo
WRASSES	LABRIDAE	*Thalassoma quinquevittatum*	Fivestrip wrasse	
WRASSES	LABRIDAE	*Thalassoma trilobatum*	Christmas wrasse	
LAMNIFORMES	LAMNIDAE	*Carcharodon carcharias*	Great white shark	

LAMNIFORMES	LAMNIDAE	*Isurus oxyrinchus*	Shortfin mako	
PONYFISHES	LEIOGNATHIDAE	*Gazza minuta*	Toothpony	
PONYFISHES	LEIOGNATHIDAE	*Leiognathus equulus*	Common ponyfish	
EMPERORS	LETHRINIDAE	*Gnathodentex aurolineatus*	Goldlined emperor	Mu
EMPERORS	LETHRINIDAE	*Gnathodentex mossambicus*	Large eyed sea bream	
EMPERORS	LETHRINIDAE	*Lethrinus amboinensis*	Ambon emperor	
EMPERORS	LETHRINIDAE	*Lethrinus chrysostomus*	Sweetlip emperor	
EMPERORS	LETHRINIDAE	*Lethrinus elongatus*	Long-nosed emperor	Filoa
EMPERORS	LETHRINIDAE	*Lethrinus erythracanthus*	Orange-spotted emperor	
EMPERORS	LETHRINIDAE	*Lethrinus genivittatus*	Longspine emperor	
EMPERORS	LETHRINIDAE	*Lethrinus harak*	Thumbprint emperor	Tanutanu
EMPERORS	LETHRINIDAE	*Lethrinus kallopterus*	Yellow spotted emperor	
EMPERORS	LETHRINIDAE	*Lethrinus mahsena*	Yellow-tailed emperor	
EMPERORS	LETHRINIDAE	*Lethrinus microdon*	Smalltooth emperor	
EMPERORS	LETHRINIDAE	*Lethrinus miniatus*	Long nosed emperor	Filoa
EMPERORS	LETHRINIDAE	*Lethrinus nebulosus*	Spangled emperor	Tanutanu
EMPERORS	LETHRINIDAE	*Lethrinus obsoletus*	Orange-striped emperor	
EMPERORS	LETHRINIDAE	*Lethrinus olivaceus*	Longface emperor	Kapatiko
EMPERORS	LETHRINIDAE	*Lethrinus ornatus*	Ornate emperor	
EMPERORS	LETHRINIDAE	*Lethrinus reticulatus*	Red snout emperor	
EMPERORS	LETHRINIDAE	*Lethrinus variegatus*	Variegated emperor	Noto
EMPERORS	LETHRINIDAE	*Lethrinus xanthochilus*	Yellowlip emperor	Gutula
EMPERORS	LETHRINIDAE	*Monotaxis grandoculis*	Bigeye emperor	Kailo/Muu/Mufala
EMPERORS	LETHRINIDAE	*Wattsia mossambica*	Mozambique large-eye bream	
SNAPPERS	LUTJANIDAE	*Aphareus furca*	Smalltooth jobfish/Blue jobfish	Palusega
SNAPPERS	LUTJANIDAE	*Aphareus rutilans*	Rusty jobfish	Sega loa, Palusega
SNAPPERS	LUTJANIDAE	*Aprion microlepis*	Blue-green snapper	
SNAPPERS	LUTJANIDAE	*Aprion virescens*	Green jobfish	Utu

SNAPPERS	LUTJANIDAE	*Etelis carbunculus*	Red snapper	Palu malau Puku
SNAPPERS	LUTJANIDAE	*Etelis coruscans*	Longtail snapper	Palu malau loa
SNAPPERS	LUTJANIDAE	*Etelis oculatus*	Queen snapper	Palu loa
SNAPPERS	LUTJANIDAE	*Etelis radiosus*	Scarlet snapper	Palu
SNAPPERS	LUTJANIDAE	*Lutjanus adetii*	Yellow-banded snapper	Savane
SNAPPERS	LUTJANIDAE	*Lutjanus argentimaculatus*	River snapper	
SNAPPERS	LUTJANIDAE	*Lutjanus bohar*	Twinspot snapper	Fagamea
SNAPPERS	LUTJANIDAE	*Lutjanus ehrenbergi*	Blackspot snapper	
SNAPPERS	LUTJANIDAE	*Lutjanus fulviflamma*	Dory snapper	Taaiva
SNAPPERS	LUTJANIDAE	*Lutjanus fulvus*	Blacktail snapper	Tagau
SNAPPERS	LUTJANIDAE	*Lutjanus gibbus*	Humpback snapper	Tagau/Taaea
SNAPPERS	LUTJANIDAE	*Lutjanus kasmira*	Bluestriped snapper	Savane
SNAPPERS	LUTJANIDAE	*Lutjanus lemniscatus*	Dark-tailed Perch	Tagau
SNAPPERS	LUTJANIDAE	*Lutjanus monostigma*	Onespot snapper	Taiva
SNAPPERS	LUTJANIDAE	*Lutjanus quinquelineatus*	Five-lined SeaPerch	Savane
SNAPPERS	LUTJANIDAE	*Lutjanus rivulatus*	Blubberlip snapper	Tagau
SNAPPERS	LUTJANIDAE	*Lutjanus rufolineatus*	Moluccan snapper	
SNAPPERS	LUTJANIDAE	*Lutjanus russellii*	Russell's snapper	Tagau
SNAPPERS	LUTJANIDAE	*Lutjanus semicinctus*	Black-banded snapper	
SNAPPERS	LUTJANIDAE	*Macolor macularis*	Midnight snapper	Tonu
SNAPPERS	LUTJANIDAE	*Macolor niger*	Black and white snapper	
SNAPPERS	LUTJANIDAE	*Paracaesio kusakarii*	Saddleback snapper	Palu kailo
SNAPPERS	LUTJANIDAE	*Paracaesio xanthura*	Yellowtail blue snapper	Palu ulia
SNAPPERS	LUTJANIDAE	*Pristipomoides amoenus*	Ornate jobfish	
SNAPPERS	LUTJANIDAE	*Pristipomoides auricilla*	Goldflag jobfish	
SNAPPERS	LUTJANIDAE	*Pristipomoides filamentosus*	Crimson jobfish	Palu matu
SNAPPERS	LUTJANIDAE	*Pristipomoides flavipinnis*	Golden eye jobfish	Palu/palu sina
SNAPPERS	LUTJANIDAE	*Pristipomoides multidens*	Goldbanded jobfish	

SNAPPERS	LUTJANIDAE	*Pristipomoides zonatus*	Banded flower snapper	Palu savane
SNAPPERS	LUTJANIDAE	*Tropidinius zonatus*	Banded flower snapper	palu savane
SAND TILEFISHES	MALACANTHIDAE	*Hoplolatilus starcki*	Bluehead sandtilefish	
SAND TILEFISHES	MALACANTHIDAE	*Malacanthus latovittatus*	Blue sandtilefish	
DARTFISHES	MICRODESMIDAE	*Nemateleotris magnifica*	Fire dartfish	
DARTFISHES	MICRODESMIDAE	*Ptereleotris evides*	Twotone dartfish	
DARTFISHES	MICRODESMIDAE	*Ptereleotris microlepis*	Smallscale dartfish	
DARTFISHES	MICRODESMIDAE	*Ptereleotris zebra*	Zebra dartfish	
MANTAS	MOBULIDAE	*Manta alfredi*	Manta ray	Faifalua
MANTAS	MOBULIDAE	*Mobula japanica*	DeviLagoon reefay	
FILEFISHES	MONACANTHIDAE	*Aluterus scriptus*	Scrawled filefish	Kimoa ote tai
FILEFISHES	MONACANTHIDAE	*Amanses scopas*	Broom filefish	Sumu
FILEFISHES	MONACANTHIDAE	*Cantherhines dumerilii*	Barred filefish	Sumu
FILEFISHES	MONACANTHIDAE	*Oxymonacanthus longirostris*	Longnose filefish	Sumu
MULLETS	MUGILIDAE	*Crenimugil crenilabis*	Fringelip mullet	Kanase
MULLETS	MUGILIDAE	*Liza vaigiensis*	Squaretail mullet	Kafakafa
MULLETS	MUGILIDAE	*Mugil cephalus*	Striped mullet	Kanase
MULLETS	MUGILIDAE	*Valamugil seheli*	Bluespot mullet	Kanase
GOATFISHES	MULLIDAE	*Mulloidichthys flavolineatus*	Yellowstripe goatfish	Kaivete
GOATFISHES	MULLIDAE	*Mulloidichthys vanicolensis*	Yellowfin goatfish	Kalo
GOATFISHES	MULLIDAE	*Parupeneus barberinus*	Dot-dash goatfish	Malili
GOATFISHES	MULLIDAE	*Parupeneus bifasciatus*	Twobarred goatfish	Afulu
GOATFISHES	MULLIDAE	*Parupeneus cyclostomus*	Goldsaddle goatfish	
GOATFISHES	MULLIDAE	*Parupeneus multifasciatus*	Multibar goatfish	Afulu
GOATFISHES	MULLIDAE	*Parupeneus pleurostigma*	Sidespot goatfish	
GOATFISHES	MULLIDAE	*Parupeneus spilurus*	Blackspot goatfish	
GOATFISHES	MULLIDAE	*Upeneus arge*	Molucca goatfish	Maalili
GOATFISHES	MULLIDAE	*Upeneus vittatus*	Yellowstriped goatfish	Mailili

MORAYS	MURENIDAE	*Echidna nebulosa*	Snowflake moray	
MORAYS	MURENIDAE	*Gymnothorax fimbriatus*	Fimbriate moray	Pusi
MORAYS	MURENIDAE	*Gymnothorax javanicus*	Giant moray	
EAGLE RAYS	MYLIOBATIDAE	*Aetobatus narinari*	Spotted eagle ray	Fai Manu
EAGLE RAYS	MYLIOBATIDAE	*Manta birostris*	Eagle ray	Fai Faalua
BOXFISHES	OSTRACIIDAE	*Ostracion cubicus*	Yellow boxfish	Moamoa/Pokisi
BOXFISHES	OSTRACIIDAE	*Ostracion meleagris*	Spotted boxfish	Moamoa/Pokisi
SWEEPERS	PEMPHERIDIDAE	*Parapriacanthus ransonneti*	Pygmy sweeper	
SWEEPERS	PEMPHERIDIDAE	*Pempheris oualensis*	Copper sweeper	Matapa
SWEEPERS	PEMPHERIDIDAE	*Pempheris schwenkii*	Silver Sweeper	Matapa
EEL CATFISHES	PLOTOSIDAE	*Plotosus lineatus*	Striped eel catfish	Manoko vao
THREADFINS	POLYNEMIDAE	*Polydactylus sexfilis*	Sixfeeler threadfin	Afulu
ANGELFISHES	POMACANTHIDAE	*Apolemichthys griffisi*	Griffis' angelfish	Moimoi/Moipepe
ANGELFISHES	POMACANTHIDAE	*Apolemichthys trimaculatus*	Threespot angelfish	
ANGELFISHES	POMACANTHIDAE	*Apolemichthys xanthopunctatus*	Goldspotted angelfish	
ANGELFISHES	POMACANTHIDAE	*Centropyge bicolor*	Bicolor angelfish	
ANGELFISHES	POMACANTHIDAE	*Centropyge flavissimus*	Lemonpeel angelfish	
ANGELFISHES	POMACANTHIDAE	*Centropyge loriculus*	Flame angelfish	
ANGELFISHES	POMACANTHIDAE	*Centropyge multifasciata*	Multibar angelfish	
ANGELFISHES	POMACANTHIDAE	*Centropyge vrolicki*	Pearlscale angelfish	
ANGELFISHES	POMACANTHIDAE	*Pomacanthus imperator*	Emperor angelfish	
ANGELFISHES	POMACANTHIDAE	*Pomacanthus sexstriatus*	Sixbar angelfish	
ANGELFISHES	POMACANTHIDAE	*Pygoplites diacanthus*	Regal angelfish	
DAMSELFISHES	POMACENTRIDAE	*Abudefduf bengalensis*	Bengal Sergeant	Mutumutu
DAMSELFISHES	POMACENTRIDAE	*Abudefduf septemfasciatus*	Seven-bar sergeant	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Abudefduf sordidus*	Blackspot sergeant	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Acanthocanthus polyacanthus*	Damsel Fish	Moimoi-uli
DAMSELFISHES	POMACENTRIDAE	*Amblyglyphidodon aureus*	Golden damselfish	Mutumutu/Moimoi

DAMSELFISHES	POMACENTRIDAE	*Amphirion chrysopterus*	Orange-fin anemonefish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Amphirion clarkii*	Clark's anemonefish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chromis acares*	Midget chromis	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chromis iomelas*	Half-and-half chromis	
DAMSELFISHES	POMACENTRIDAE	*Chromis margaritifer*	Bicolor chromis	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chromis ternatensis*	Ternate chromis	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chromis viridis*	Bluegreen chromis	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chrysiptera biocellata*	Twospot damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chrysiptera caeruleolineata*	Blueline damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chrysiptera cyanea*	Blue devil	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chrysiptera glauca*	Gray damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Chrysiptera leucopoma*	Surge damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Dascyllus aruanus*	Humbug dascyllus	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Dascyllus reticulatus*	Reticulate dascyllus	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Dascyllus trimaculatus*	Threespot dascyllus	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Plectroglyphidodon dickii*	Dick's damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Plectroglyphidodon johnstonianus*	Blue-eye damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Pomacentrus amboinensis*	Ambon damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Pomacentrus bankanensis*	Speckled damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Pomacentrus pavo*	Peacock damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Pomacentrus vaiuli*	Ocellate damselfish	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Stegastes fasciolatus*	South Pacific gregory	Mutumutu/Moimoi
DAMSELFISHES	POMACENTRIDAE	*Stegastes nigricans*	Dusky gregory	Mutumutu/Moimoi
BIGEYES	PRIACANTHIDAE	*Priacanthus hamrur*	Moontail bullseye	Matapa
ORECTOLOBIFORMES	RHINCODONTIDAE	*Rhincodon typus*	Whale shark	Tapapa
GUITARFISHES	RHINOBATIDAE	*Rhynchobatus djiddensis*	Giant guitarfish	Fai Magoo
PARROTFISHES	SCARIDAE	*Bolbometopon muricatum*	Bumphead parrotfish	Taona/Tafaga
PARROTFISHES	SCARIDAE	*Calotomus carolinus*	Stareye parrotfish	Laea/Ulafi/Uloulo/Lavia

PARROTFISHES	SCARIDAE	*Cetoscarus bicolor*	Bicolor parrotfish	
PARROTFISHES	SCARIDAE	*Chlorurus frontalis*	Reefcrest parrotfish	
PARROTFISHES	SCARIDAE	*Chlorurus japanensis*	Palecheek parrotfish	
PARROTFISHES	SCARIDAE	*Chlorurus microrhinos*	Steephead parrotfish	
PARROTFISHES	SCARIDAE	*Chlorurus sordidus*	Daisy parrotfish	
PARROTFISHES	SCARIDAE	*Hipposcarus longiceps*	Longnose parrotfish	
PARROTFISHES	SCARIDAE	*Scarus altipinnis*	Minifin parrotfish	
PARROTFISHES	SCARIDAE	*Scarus chameleon*	Chameleon parrotfish	
PARROTFISHES	SCARIDAE	*Scarus dimidiatus*	Yellowbarred parrotfish	
PARROTFISHES	SCARIDAE	*Scarus festivus*	Festive parrotfish	
PARROTFISHES	SCARIDAE	*Scarus flavipectoralis*	Yellowfin parrotfish	
PARROTFISHES	SCARIDAE	*Scarus forsteni*	Whitespot parrotfish	
PARROTFISHES	SCARIDAE	*Scarus frenatus*	Bridled parrotfish	Ulafi
PARROTFISHES	SCARIDAE	*Scarus ghobban*	Bluebarred parrotfish	Ulafi (ika ole)
PARROTFISHES	SCARIDAE	*Scarus globiceps*	Globehead parrotfish	
PARROTFISHES	SCARIDAE	*Scarus microrhinos*	Steephead Parrotfish	Laela
PARROTFISHES	SCARIDAE	*Scarus niger*	Swarthy parrotfish	
PARROTFISHES	SCARIDAE	*Scarus oviceps*	Dark-capped parrotfish	
PARROTFISHES	SCARIDAE	*Scarus psittacus*	Palenose parrotfish	
PARROTFISHES	SCARIDAE	*Scarus quoyi*	Quoy's parrotfish	
PARROTFISHES	SCARIDAE	*Scarus rivulatus*	Rivulated parrotfish	
PARROTFISHES	SCARIDAE	*Scarus rubroviolaceus*	Redlip parrotfish	
PARROTFISHES	SCARIDAE	*Scarus schlegeli*	Schlegel's parrotfish	
PARROTFISHES	SCARIDAE	*Scarus spinus*	Greencap parrotfish	
PARROTFISHES	SCARIDAE	*Scarus tricolor*	Tricolor parrotfish	
PARROTFISHES	SCARIDAE	*Scarus xanthopleura*	Red parrotfish	
MACKERELS/TUNAS	SCOMBRIDAE	*Acanthocybium solandri*	Wahoo	Paala
MACKERELS/TUNAS	SCOMBRIDAE	*Auxis thazard*	Frigate mackerel	

MACKERELS/TUNAS	SCOMBRIDAE	*Euthynnus affinis*	Mackerel Tuna	Atualo/Tavatava
MACKERELS/TUNAS	SCOMBRIDAE	*Grammatorcymus bilineatus*	Double lined mackerel	
MACKERELS/TUNAS	SCOMBRIDAE	*Gymnosarda nuda*	Dogtooth tuna	
MACKERELS/TUNAS	SCOMBRIDAE	*Gymnosarda unicolor*	Dogtooth tuna	Valu
MACKERELS/TUNAS	SCOMBRIDAE	*Katsuwonus pelamis*	Skipjack tuna	Atu
MACKERELS/TUNAS	SCOMBRIDAE	*Rastrelliger kanakurta*	Indian mackerel	Salala
MACKERELS/TUNAS	SCOMBRIDAE	*Scomberomorus commerson*	Narrowbarred spanish mackerel	Paala
MACKERELS/TUNAS	SCOMBRIDAE	*Thunnus alalunga*	Albacore	
MACKERELS/TUNAS	SCOMBRIDAE	*Thunnus albacares*	Yellowfin tuna	Takua, kasi/tavataua
MACKERELS/TUNAS	SCOMBRIDAE	*Thunnus obesus*	Bigeye tuna	
MACKERELS/TUNAS	SCOMBRIDAE	*Thunnus thynnus*	Bluefin tuna	
SCORPIONFISHES	SCORPAENIDAE	*Pterois antennata*	Ragged Finned Firefish	Sakulele
SCORPIONFISHES	SCORPAENIDAE	*Pterois radiata*	Clearfin turkeyfish	Tai/Senofeu
SCORPIONFISHES	SCORPAENIDAE	*Pterois volitans*	Turkeyfish	Tai/Senofeu
SCORPIONFISHES	SCORPAENIDAE	*Scorpaenopsis oxycephala*	Tassled scorpionfish	Tai/Senofeu
SCORPIONFISHES	SCORPAENIDAE	*Scorpaenopsis verrucosa*	Reef Stonefish	Nofu
GROUPERS	SERRANIDAE	*Aethaloperca rogaa*	Redmouth grouper	
GROUPERS	SERRANIDAE	*Anyperodon leucogrammicus*	Slender grouper	
GROUPERS	SERRANIDAE	*Cephalopholis aurantia*	Golden hind	Mataele
GROUPERS	SERRANIDAE	*Cephalopholis sonnerati*	Tomato hind	Munua
GROUPERS	SERRANIDAE	*Cephalopholis argus*	Peacock hind	Loi (loi uli)
GROUPERS	SERRANIDAE	*Cephalopholis igarashiensis*	Yellow-banded grouper	
GROUPERS	SERRANIDAE	*Cephalopholis leopardus*	Leopard Hind	
GROUPERS	SERRANIDAE	*Cephalopholis miniata*	Coral hind	
GROUPERS	SERRANIDAE	*Cephalopholis sexmaculata*	Six-blotch Hind	
GROUPERS	SERRANIDAE	*Cephalopholis spiloparaea*	Strawberry hind	Gatala
GROUPERS	SERRANIDAE	*Cephalopholis urodela*	Darkfin hind	Mata ele/Gatala
GROUPERS	SERRANIDAE	*Epinephelus areolatus*	Areolate grouper	

GROUPERS	SERRANIDAE	*Epinephelus chlorostigma*	Brownspotted grouper	Feata
GROUPERS	SERRANIDAE	*Epinephelus coeruleopunctatus*	Whitespotted grouper	
GROUPERS	SERRANIDAE	*Epinephelus coioides*	Orange-spotted grouper	
GROUPERS	SERRANIDAE	*Epinephelus cyanopodus*	Speckled grouper	
GROUPERS	SERRANIDAE	*Epinephelus fasciatus*	Blacktip grouper	
GROUPERS	SERRANIDAE	*Epinephelus fuscoguttatus*	Brownmarbled grouper	
GROUPERS	SERRANIDAE	*Epinephelus hexagonatus*	Starspotted grouper	Eve
GROUPERS	SERRANIDAE	*Epinephelus hoedti*	Purple rock cod	
GROUPERS	SERRANIDAE	*Epinephelus howlandi*	Blacksaddle grouper	
GROUPERS	SERRANIDAE	*Epinephelus lanceolatus*	Snubnose grouper	Palugatala
GROUPERS	SERRANIDAE	*Epinephelus macrospilos*	Snubnose grouper	
GROUPERS	SERRANIDAE	*Epinephelus maculatus*	Highfin grouper	Fapuku
GROUPERS	SERRANIDAE	*Epinephelus melanostigma*	Blackspot grouper	Fapuku
GROUPERS	SERRANIDAE	*Epinephelus merra*	Dwarf spotted grouper	Gataliki
GROUPERS	SERRANIDAE	*Epinephelus microdon*	Marbled cod	Gatala liki/fapuku
GROUPERS	SERRANIDAE	*Epinephelus millaris*	Netfin grouper	
GROUPERS	SERRANIDAE	*Epinephelus morrhua*	Curve banded grouper	Palugatala
GROUPERS	SERRANIDAE	*Epinephelus octofasciatus*	Eightbar grouper	
GROUPERS	SERRANIDAE	*Epinephelus ongus*	White-streaked Grouper	
GROUPERS	SERRANIDAE	*Epinephelus polyphekadion*	Camouflage grouper	
GROUPERS	SERRANIDAE	*Epinephelus retouti*	Redtipped grouper	
GROUPERS	SERRANIDAE	*Epinephelus septemfasciatus*	Seven-banded grouper	Palupatuki
GROUPERS	SERRANIDAE	*Epinephelus socialis*	Surge grouper	
GROUPERS	SERRANIDAE	*Epinephelus spilotoceps*	Foursaddle grouper	
GROUPERS	SERRANIDAE	*Epinephelus tauvina*	Greasy grouper	Eve
GROUPERS	SERRANIDAE	*Gracila albomarginata*	Slenderspine grouper	
GROUPERS	SERRANIDAE	*Plectropomus areolatus*	Squaretail coralgrouper	
GROUPERS	SERRANIDAE	*Plectropomus laevis*	Blacksaddled coralgrouper	

GROUPERS	SERRANIDAE	*Plectropomus leopardus*	Leopard coralgrouper	tonu
GROUPERS	SERRANIDAE	*Plectropomus maculatus*	Spotted coralgrouper	Tonu
ANTHIAS	SERRANIDAE	*Pseudanthias bartletorum*	Bartlett's athias	Moimoi
ANTHIAS	SERRANIDAE	*Pseudanthias pascalus*	Purple queen	Moimoi
GROUPERS	SERRANIDAE	*Saloptia powelli*	Golden grouper	
GROUPERS	SERRANIDAE	*Variola albimarginata*	White-edged lyretail	Pula
GROUPERS	SERRANIDAE	*Variola louti*	Yellow-edged lyretail	Pula lautalo
RABBITFISHES	SIGANIDAE	*Siganus argenteus*	Streamlined spinefoot	Maiava
RABBITFISHES	SIGANIDAE	*Siganus corallinus*	Coral spinefoot	Maiava puku
RABBITFISHES	SIGANIDAE	*Siganus fuscescens*	Mottled spinefoot	Maiava
RABBITFISHES	SIGANIDAE	*Siganus niger*	Black foxface	
RABBITFISHES	SIGANIDAE	*Siganus punctatus*	Goldspotted spinefoot	Maiava
RABBITFISHES	SIGANIDAE	*Siganus spinus*	Little spinefoot	Maiava
RABBITFISHES	SIGANIDAE	*Siganus vermiculatus*	Vermiculated spinefoot	Maiava
RABBITFISHES	SIGANIDAE	*Siganus vulpinus*	Foxface	Laulaufou
BARRACUDAS	SPHYRAENIDAE	*Sphyraena barracuda*	Great barracuda	Ono
BARRACUDAS	SPHYRAENIDAE	*Sphyraena forsteri*	Forster seapike	Taotao
BARRACUDAS	SPHYRAENIDAE	*Sphyraena qenie*	Blackfin barracuda	
HAMMERHEAD SHARKS	SPHYRNIDAE	*Sphyrna lewini*	Scalloped hammerhead	Mago fuasu
HAMMERHEAD SHARKS	SPHYRNIDAE	*Sphyrna zygaena*	Smooth hammerhead	
ZEBRA SHARKS	STEGOSTOMATIDAE	*Stegostoma fasciatum*	Leopard shark	Moemoeao
LIZARDFISHES	SYNODONTIDAE	*Synodus variegatus*	Reef lizardfish	Tanifa
PUFFERS	TETRAODONTIDAE	*Arothron hispidus*	Stripebelly puffer	Hue, Puhi
PUFFERS	TETRAODONTIDAE	*Arothron manilensis*	Striped puffer	
PUFFERS	TETRAODONTIDAE	*Arothron meleagris*	Guineafowl puffer	Fuatate/Puni/Sue
PUFFERS	TETRAODONTIDAE	*Arothron nigropunctatus*	Blackspotted puffer	
PUFFERS	TETRAODONTIDAE	*Arothron stellatus*	Stellate puffer	Tautu
PUFFERS	TETRAODONTIDAE	*Canthigaster solandri*	Solander's toby	

PUFFERS	TETRAODONTIDAE	*Canthigaster valentini*	Model toby	
HOUNDSHARKS	TRIAKIDAE	*Mustelus griseus*	Spotless smooth-hound	Mago
SWORDFISHES	XIPHIIDAE	*Xiphias gladius*	Broad-Bill Sword-Fish	Ulau
MOORISH IDOL	ZANCLIDAE	*Zanclus cornutus*	Moorish idol	Maninipapa

Appendix 1B: List of marine macro-invertebrates

PHYLUM	**SUBPHYLUM/CLASSIS/ORDER**	**COMMON NAME**	**FAMILY**	**Genus Specie**
ANNELIDA	POLYCHETA	WORMS	EUNICIDAE	*Eunice viridis*
ARTHROPODA	CRUSTACEA/AMPHIPOD		MELITIDAE	*Maera insignis*
ARTHROPODA	CRUSTACEA/AMPHIPOD		PARAMELITIDAE	*Paranamixis bocki*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	CALAPPIDAE	*Calappa spp.*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	COENOBITIDAE	*Birgus latro*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Aniculus maximum*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Clibanarius seurati*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Dardanus guttatus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Dardanus lagopodes*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Dardanus megitos*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DIOGENIDAE	*Trizopagrus strigatus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DROMIIDAE	*Cryptodromia canaliculata*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DROMIIDAE	*Cryptodromia hilgendorfi*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	DYNOMENIDAE	*Dynomene praedator*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	ERIPHIIDAE	*Eriphia scabricula*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	ERIPHIIDAE	*Eriphia sebana*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GECARCINIDAE	*Cardisoma carnifex*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GERYONIDAE	*Thalamita admeta*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GERYONIDAE	*Thalamita crenata*

ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GERYONIDAE	*Thalamita picta*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GRAPSOIDEA	*Grapsus strigosus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GRAPSOIDEA	*Pachygrapsus laevis*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GRAPSOIDEA	*Pachygrapsus plicatus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	GRAPSOIDEA	*Percnon planissimum*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	MAJIDAE	*Tylocarcinus dumerilii*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	MAJOIDEA	*Menaethius monoceros*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	MAJOIDEA	*Perinea tumida*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	PILUMNIDAE	*Pilumnus coerulescens*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	PORTUNIDAE	*Catoptrus nitidus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Carpilodes pallidus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Carpilodes vaillantianus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Chlorodiella laevissima*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Chlorodiella niger*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Chlorodiella venusta*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Chlorodopsis areolata*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Chlorodopsis venusta*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Tetralia glaberrima*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Zozymus aeneus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Carpilius maculatus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Kraussia rugulosa*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Leptodius sanguineus*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Trapezia digitalis*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS	XANTHIDAE	*Trapezia ferruginea*
ARTHROPODA	CRUSTACEA/DECAPOD	CRABS		*Crapsus maculatus*
ARTHROPODA	CRUSTACEA/DECAPOD	LOBSTERS	PANULIROIDEA	*Panulirus ornatus*
ARTHROPODA	CRUSTACEA/DECAPOD	LOBSTERS	PANULIROIDEA	*Panulirus penicillatus*
ARTHROPODA	CRUSTACEA/DECAPOD	LOBSTERS	PANULIROIDEA	*Panulirus versicolor*

ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus bucephalus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus frontalis*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus fucatus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus lanceloli*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus macrochirus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus pachychirus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus pacificus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus paragracilis*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus parvirostris*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Alpheus strenuus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Athanas djiboutensis*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Automate gardineri*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ANCHISTIOIDIDAE	*Gnathophyllum fasciolatum*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	GONODACTYLIDAE	*Gonodactylus chiragra*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ANCHISTIOIDIDAE	*Hymenocera elegans*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Jousseaumea sibogae*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	CORONIDIDAE	*Lysiosquilla maculata*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	PALAEMONIDAE	*Onycocaris quadratophthalma*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	PALAEMONIDAE	*Periclimenes grandis*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	PALAEMONIDAE	*Periclimenes suvadivensis*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEOIDEA	*Saron marmoratus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	STENOPODIDAE	*Stenopus hispidus*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Synalpheus charon*
ARTHROPODA	CRUSTACEA/DECAPOD	SHRIMPS	ALPHEIDAE	*Synalpheus paraneomeris*
ARTHROPODA	CRUSTACEA/ISOPOD		NOCTUOIDEA	*Alcirona insularis*
ARTHROPODA	CRUSTACEA/ISOPOD		STENETRIIDAE	*Hansenium chiltoni*
ARTROPODA	CRUSTACEA/ISOPOD		CERAPHRONOIDEA	*Cirolana cranchii*
ECHINODERMATA	ASTEROIDEA	SEASTARS	ACANTHASTERIDAE	*Acanthaster planci*

ECHINODERMATA	ASTEROIDEA	SEASTARS	OREASTEROIDEA	*Culcita novaeguinea*
ECHINODERMATA	ASTEROIDEA	SEASTARS	OPHIDIASTERIDAE	*Linckia laevigata*
ECHINODERMATA	ASTEROIDEA	SEASTARS	OPHIDIASTERIDAE	*Linckia multiflora*
ECHINODERMATA	ASTEROIDEA	SEASTARS	OPHIDIASTERIDAE	*Neoferdina cumingi*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	DIADEMATIDAE	*Diadema savignyi*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	ECHINOMETRIDAE	*Echinometra mathaei*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	ECHINOMETRIDAE	*Echinostrephus aciculatus*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	DIADEMATIDAE	*Echinothrix calamaris*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	DIADEMATIDAE	*Echinothrix diadema*
ECHINODERMATA	ECHINOIDAE	SEA URCHINS	ECHINOMETRIDAE	*Heterocentrus mammilatus*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Actinopyga echinites*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Actinopyga mauritiana*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Actinopyga miliaris*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Bohadschia argus*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Bohadschia vitiensis*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Bohadshia marmorata*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria atra*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria edulis*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria fuscogilva*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria fuscopunctata*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria nobilis*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Holothuria scabra*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Stichopus chloronotus*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Thelenota ananas*
ECHINODERMATA	HOLOTHUROIDEA	SEA CUCUMBERS	HOLOTHURIDAE	*Thelenota anax*
MOLLUSCA	BIVALVIA	BIVALVES	ARCIDAE	*Arca ventricosa*
MOLLUSCA	BIVALVIA	BIVALVES	ARCIDAE	*Barbatia lacerta*
MOLLUSCA	BIVALVIA	BIVALVES	ARCIDAE	*Barbatia velata*

MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Cardium sueziense*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Fragum fragum*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Fragum unedo*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Fulvia tenuicostata*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Trachycardium angulatum*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Trachycardium orbita*
MOLLUSCA	BIVALVIA	BIVALVES	CARDIIDAE	*Trachycardium transcendens*
MOLLUSCA	BIVALVIA	BIVALVES	CHAMIDAE	*Chama sp.*
MOLLUSCA	BIVALVIA	BIVALVES	LUCINIDAE	*Codakia tigerina*
MOLLUSCA	BIVALVIA	BIVALVES	MESODESMATIDAE	*Paphies striata*
MOLLUSCA	BIVALVIA	BIVALVES	MYTILIDAE	*Brachyodontes (Septifer) bilocularis*
MOLLUSCA	BIVALVIA	BIVALVES	PECTINIDAE	*Chlamys pallium*
MOLLUSCA	BIVALVIA	BIVALVES	PECTINIDAE	*Pedum spondyloideum*
MOLLUSCA	BIVALVIA	BIVALVES	PSAMMOBIIDAE	*Asaphis violascens*
MOLLUSCA	BIVALVIA	BIVALVES	PTERIIDAE	*Pinctada margaritifera*
MOLLUSCA	BIVALVIA	BIVALVES	PTERIIDAE	*Pteria margaritifera*
MOLLUSCA	BIVALVIA	BIVALVES	SPONDYLIDAE	*Spondylus sp. spondylus*
MOLLUSCA	BIVALVIA	BIVALVES	SPONDYLIDAE	*Spondylus squamosus*
MOLLUSCA	BIVALVIA	BIVALVES	SPONDYLIDAE	*Spondylus varius*
MOLLUSCA	BIVALVIA	BIVALVES	TELLINIDAE	*Tellina pinguis*
MOLLUSCA	BIVALVIA	BIVALVES	TELLINIDAE	*Tellina rugosa*
MOLLUSCA	BIVALVIA	BIVALVES	TELLINIDAE	*Tellina scobinata*
MOLLUSCA	BIVALVIA	BIVALVES	TELLINIDAE	*Tellina virgata*
MOLLUSCA	BIVALVIA	BIVALVES	TRAPEZIIDAE	*Trapezium oblongum*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Gari sp.*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Hippopus hippopus*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tapes literata*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tridacna crocea*

MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tridacna derasa*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tridacna gigas*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tridacna maxima*
MOLLUSCA	BIVALVIA	BIVALVES	TRIDACNIDAE	*Tridacna squamosa*
MOLLUSCA	BIVALVIA	BIVALVES	VENERIDAE	*Lioconcha castrensis*
MOLLUSCA	BIVALVIA	BIVALVES	VENERIDAE	*Lioconcha ornata*
MOLLUSCA	BIVALVIA	BIVALVES	VENERIDAE	*Periglypta reticulata*
MOLLUSCA	BIVALVIA	BIVALVES	VENERIDAE	*Pitar pellucidus*
MOLLUSCA	BIVALVIA	BIVALVES	VESPOIDEA	*Saccostrea cucullata*
MOLLUSCA	CEPHALOPODA	CEPHALOPODS	JANIROIDEA	*Nautilus pompilius*
MOLLUSCA	CEPHALOPODA/NAUTILIDA	CEPHALOPODS	ONISCOIDEA	*Spirula spirula*
MOLLUSCA	CEPHALOPODA/OCTOPODA	OCTOPUS	OCTOPODIDAE	*Octopus cyanea*
MOLLUSCA	CEPHALOPODA/OCTOPODA	OCTOPUS	OCTOPODIDAE	*Octopus globosus*
MOLLUSCA	GASTEROPODA	SNAILS	BUCCINIDAE	*Cantharus undosus*
MOLLUSCA	GASTEROPODA	SNAILS	BUCCINIDAE	*Colubraria muricata*
MOLLUSCA	GASTEROPODA	SNAILS	BUCCINIDAE	*Engina mendicaria*
MOLLUSCA	GASTEROPODA	SNAILS	BUCCINIDAE	*Phos senticosus*
MOLLUSCA	GASTEROPODA	SNAILS	BULLIDAE	*Bulla sp.*
MOLLUSCA	GASTEROPODA	SNAILS	BURSIDAE	*Bursa bufonia*
MOLLUSCA	GASTEROPODA	SNAILS	BURSIDAE	*Bursa rubeta*
MOLLUSCA	GASTEROPODA	SNAILS	CASSIDAE	*Casmaria erinaceus*
MOLLUSCA	GASTEROPODA	SNAILS	CASSIDAE	*Cassis cornuta*
MOLLUSCA	GASTEROPODA	SNAILS	CASSIDAE	*Cassis ponderosa*
MOLLUSCA	GASTEROPODA	SNAILS	CASSIDAE	*Cassis rufa*
MOLLUSCA	GASTEROPODA	SNAILS	CASSIDAE	*Cassis vibex*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium aluco*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium alveolus*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium articulacus*

MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium asper cerith*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium atromarginatum*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium brevis*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium citrinum*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium columns*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium echinatum*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium elegantissimum*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium fasciatus*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium impendens*
MOLLUSCA	GASTEROPODA	SNAILS	CERITHIIDAE	*Cerithium nodulosum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium oceanic vim*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium pfeiferri*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium pharos*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium rostratum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium salebrosum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium sinensis*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium sp. cerith*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium spiculum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium striccurn*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium tnoniliferum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Cerithium zebrum*
MOLLUSCA	GASTROPODA	SNAILS	CERITHIIDAE	*Rhinoclavis asper*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus ammiralis*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus arenatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus aulicus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus auricomus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus betulinus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus cacus*

MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus capitaneus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus chaldeus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus coronatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus distans*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus ebraeus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus episcopus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus flavidus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus frigidus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus generalis*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus geographus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus glans*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus imperialus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus leopardus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus litteratus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus lividus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus marmoreus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus miles*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus miliaris*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus musicus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus nasatella*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus planorbis*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus pulicarius*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus rattus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus retifer*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus sponsalis*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus striatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus sugillatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus sulcatus*

MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus suturatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus tenuistriatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus terebra*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus tessulatus*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus tulipa*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus vexillum*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus virgo*
MOLLUSCA	GASTROPODA	SNAILS	CONIDAE	*Conus vitulinus*
MOLLUSCA	GASTROPODA	SNAILS	CORALLIOPHILINAE	*Coralliophila radula*
MOLLUSCA	GASTROPODA	SNAILS	COSTELLARIIDAE	*Vexillum rubrocostatum*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea annulus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea arabica*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea argus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea aurantium*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea becki*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea bistrinotata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea caputserpentis*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea carneola*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea childreni*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea chinensis*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea cicercula*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea clandestina*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea cribraria*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea depressa*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea eglantina*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea eroea*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea erronfis*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea felina*

MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea fimbriata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea goodalli*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea gracilis*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea helvola*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea irrorata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea isabella*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea labrolineata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea lynx*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea maculifera*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea mappa*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea mauritiania*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea moneta*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea nucleus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea obvelata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea ovum*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea poraria*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea scurra*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea serrulifera*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea staphylaea*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea talpa*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea teres*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea testudinaria*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea tigris*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea ventriculus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea vitellus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Cypraea ziczac*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Lyncina lynx*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Lyncina vitellus*

MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Monetaria annulus*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Monetaria moneta*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Naria irrorata*
MOLLUSCA	GASTROPODA	SNAILS	CYPRAEIDAE	*Palmadusta clandestina*
MOLLUSCA	GASTROPODA	SNAILS	EULIMIDAE	*Balcis sp.*
MOLLUSCA	GASTROPODA	SNAILS	FASCIOLARIIDAE	*Pleuroploca filamentosa*
MOLLUSCA	GASTROPODA	SNAILS	GYMNODORIDIDAE	*Nembrotha kubaryana*
MOLLUSCA	GASTROPODA	SNAILS	HARPIDAE	*Harpa amouretta*
MOLLUSCA	GASTROPODA	SNAILS	HIPPOIDEA	*Planaxis sulcatus*
MOLLUSCA	GASTROPODA	SNAILS	HIPPONICIDAE	*Amalthea australis*
MOLLUSCA	GASTROPODA	SNAILS	JANIROIDEA	*Nassarius papillosus*
MOLLUSCA	GASTROPODA	SNAILS	LITTORINIDAE	*Littoraria scabra*
MOLLUSCA	GASTROPODA	SNAILS	LITTORINIDAE	*Tectarius pagodus*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra acuminata*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra acupictum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra ambigua*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra apupercula*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra chrysalis*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra clathrus*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra contracta*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra cucumerina*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra dactylus*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra eremitarum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra exasparatum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra ferruginea*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra fusca*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra granatina*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra imperialus*

MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra litterata*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra mitra*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra nucea*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra olivaeformis*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra pacificum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra papalis*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra papilio*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra paupercula*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra pelliserpentis*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra punctata*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra retusa*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra rugosum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra sticta*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra stictica*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra turrigerum*
MOLLUSCA	GASTROPODA	SNAILS	MITRICIDAE	*Mitra verrucosa*
MOLLUSCA	GASTROPODA	SNAILS	MITRIDAE	*Chrysame eremiatrum*
MOLLUSCA	GASTROPODA	SNAILS	MITRIDAE	*Scabricola vicdani*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Chicoreus ramosus*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Drupa morum*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Drupa ricina*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Drupa ricinus*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Drupa rubusidaeus*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Drupina grossularia*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Murex adusta*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Murex ramosus*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Purpura armigera*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Thais (Purpura) aculeata*

MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Thais armigera*
MOLLUSCA	GASTROPODA	SNAILS	MURICIDAE	*Thais tuberosa*
MOLLUSCA	GASTROPODA	SNAILS	NERITIDAE	*Nerita albicilla*
MOLLUSCA	GASTROPODA	SNAILS	NERITIDAE	*Nerita plicata*
MOLLUSCA	GASTROPODA	SNAILS	NERITIDAE	*Nerita posini*
MOLLUSCA	GASTROPODA	SNAILS	NERITIDAE	*Neritina oualaniensis*
MOLLUSCA	GASTROPODA	SNAILS	NERITIDAE	*Neritina reticulata*
MOLLUSCA	GASTROPODA	SNAILS	OLIVIDAE	*Oliva miniacea*
MOLLUSCA	GASTROPODA	SNAILS	OLIVIDAE	*Oliva oliva*
MOLLUSCA	GASTROPODA	SNAILS	PYRAMIDELLINAE	*Pyramidella terebellum*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Charonia tritonis*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium aquatile*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium articulatus*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium distortio anus*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium fasciatus*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium gemmatum*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium lotorium*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium maculosum*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium muricinum*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium nicobaricum*
MOLLUSCA	GASTROPODA	SLUGS	RANELLIDAE	*Cymatium pilaere*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium rubeculum*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium serriale*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium sinensis*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium tritonis*
MOLLUSCA	GASTROPODA	SNAILS	RANELLIDAE	*Cymatium muricinum*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Lambis chiragra*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Lambis crocata*

MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Lambis lambis*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Lambis truncata*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus aurisdiannae*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus bulla*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus epidromis*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus erythrinus*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus fragilis*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus fusiformis*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus gibberulus*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus labiatue*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus lentignosus*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus luahunus*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Strombus microurceue*
MOLLUSCA	GASTROPODA	SNAILS	STROMBIDAE	*Terebellum terebellum*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Impages hectica*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra affinifi*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra archimedis*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra areolata*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra argus*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra cingulifera*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra crenulata*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra dimidiate*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra kilburni*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra maculata*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra paucistriata*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra rugosum*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra stictica*
MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra subulata*

MOLLUSCA	GASTROPODA	SNAILS	TEREBRIDAE	*Terebra textilis*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Trochus maculata*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Trochus niloticus*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Trochus pyramis*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Trochus sarcellus*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Trochus verrucosus*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Tectus niloticus*
MOLLUSCA	GASTROPODA	SNAILS	TROCHIDAE	*Tectus pyramis*
MOLLUSCA	GASTROPODA	SNAILS	TRUNCATELLIDAE	*Truncatella valida*
MOLLUSCA	GASTROPODA	SNAILS	TURBINELLIDAE	*Vasum ceramicum*
MOLLUSCA	GASTROPODA	SNAILS	TURBININAE	*Turbo argyrostomus*
MOLLUSCA	GASTROPODA	SNAILS	TURBININAE	*Turbo bruneus*
MOLLUSCA	GASTROPODA	SNAILS	TURBININAE	*Turbo chrysostoma*
MOLLUSCA	GASTROPODA	SNAILS	TURBININAE	*Turbo petholatus*
MOLLUSCA	GASTROPODA	SNAILS	TURBININAE	*Turbo setosus*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	CHROMODORIDIDAE	*Chromodoris geometrica*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	DENDRODORIDIDAE	*Dendrodoris (Doriopsis)*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	ELYSIIDAE	*Plakobranchus*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	PHYLLIDIIDAE	*Phyllidia coelestics*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	PHYLLIDIIDAE	*Phyllidia pustulosa*
MOLLUSCA	GASTROPODA/NUDIBRANCHIA	SEASLUGS	PHYLLIDIIDAE	*Phyllidia varicosa*
MOLLUSCA	POLYPLACOPHORA	CHITONS	CRYPTOPLACIDAE	*Cryptoplax jugosus*
MOLLUSCA	SCAPHOPODA		DENTALIIDAE	*Dentalium elephantium*
PLATYHELMINTHES	TURBELLARIA	PLANARIANS	LEPTOPLANIDAE	*Discoplana subviridis*
PROTOZOA	FORAMINIFERIDAE	WORMS	AMPHISTEGINIDAE	*Amphistegina lessonii*
PROTOZOA	FORAMINIFERIDAE	WORMS	CALCARIDINIDAE	*Tinoporus baculatus*
PROTOZOA	FORAMINIFERIDAE	WORMS	CARTERINIDAE	*Carterina spiculotesta*
SIPUNCULA	SIPUNCULIFORMES	PEANUT WORMS	SIPUNCULIDAE	*Siphonosoma australe*

Appendix 1C: List of cnidarians

CLASS	ORDER	FAMILY	Genus Specie
ANTHOZOA	ACTINARIA	STICHODACTYLIDAE	*Stichodactyla spp.*
ANTHOZOA	ALCYONARIA	XENIIDAE	*Xenia elongata*
ANTHOZOA	ANTIPATHARIA	ANTIPATHIDAE	*Antipathes atlantica*
ANTHOZOA	ANTIPATHARIA	ANTIPATHIDAE	*Antipathes brookii*
ANTHOZOA	HELIOPORACEA	HELIOPORIDAE	*Heliopora coerulea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora abrolhosensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora abrotanoides*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora aculeus*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora acuminata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora anthocercis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora aspera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora austera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cerealis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora chesterfieldensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora clathrata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora conigera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora copiosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora crateriformis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cuneata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cytherea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora dendrum*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora digitifera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora divaricata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora donei*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora echinata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora efflorescens*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora elseyi*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora eurystoma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora exquisita*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora florida*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora formosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora globiceps*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora grandis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora granulosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora horrida*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora humilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora hyacinthus*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora inermis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora insignis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora intermedia*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora kirstyae*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora latistella*

ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora listeri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora longicyathus*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora loripes*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora lovelli*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora lutkeni*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora microclados*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora microphthalma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora millepora*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora monticulosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nana*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nasuta*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nobilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora palmerae*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora paniculata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora parilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora polystoma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora prostrata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora pulchra*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora rambleri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora retusa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora robusta*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora rosaria*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora samoensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora sarmentosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora schmitti*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora secale*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora selago*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora solitaryensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora speciosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora spicifera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora subglabra*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora subulata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tenuis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora teres*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tortuosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tutuilensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora valenciennesi*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora valida*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora vaughani*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora verweyi*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora yongei*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Anacropora forbesi*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Anacropora puertogalerae*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora cucullata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora expansa*

ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora gracilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora incrustans*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora listeri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora macrostoma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora myriophthalma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora ocellata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora randalli*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora scabra*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora suggesta*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Isopora cuneata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Isopora palifera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora aequituberculata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora altasepta*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora angulata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora australiensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora calcarea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora caliculata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora capitata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora capricornis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora cebuensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora corbettensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora crassituberculata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora danae*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora digitata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora efflorescens*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora effusa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora floweri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora foliosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora foveolata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora grisea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora hispida*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora hoffmeisteri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora incrassata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora informis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora lobulata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora millepora*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora mollis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora monasteriata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora nodosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora peltiformis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora samarensis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora spongodes*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora spumosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora tuberculosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora turgescens*

ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora undata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora venosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora verrucosa*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Coeloseris mayeri*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Gardineroseris planulata*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris explanata*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris gardineri*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris hawaiiensis*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris incrustans*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris mycetoseroides*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris papyracea*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris scabra*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris solida*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris yabei*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pachyseris rugosa*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pachyseris speciosa*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona bipartita*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona cactus*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona clavus*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona decussata*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona duerdeni*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona explanulata*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona frondifera*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona maldivensis*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona minuta*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona varians*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona venosa*
ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Madracis kirbyi*
ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Stylocoeniella armata*
ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Stylocoeniella guentheri*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Bourneotrochus stellulatus*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Caryophyllia smithii*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Trochocyathus hastatus*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Trochocyathus vasiformis*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Heterocyathus aequicostatus*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Heteropsammia cochlea*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria frondens*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria mesenterina*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria patula*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria peltata*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria reniformis*
ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria stellulata*
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia cristata*
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia glabrescens*
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia yaeyamaensis*

ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Physogyra lichtensteini*
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Plerogyra simplex*
ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Plerogyra sinuosa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Barabattoia amicorum*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Barabattoia laddi*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Caulastrea curvata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Caulastrea furcata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea chalcidicum*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea decadia*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea microphthalma*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea ocellina*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea serailia*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Diploastrea heliopora*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora gemmacea*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora hirsutissima*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora horrida*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora lamellosa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora mammiformis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora pacificus*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia danae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia favus*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia helianthoides*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia lizardensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia maritima*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia matthaii*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia pallida*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia rotumana*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia rotundata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia speciosa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia stelligera*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia veroni*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites abdita*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites bestae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites chinensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites complanata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites flexuosa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites halicora*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites pentagoa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites russelli*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea aspera*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea australensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea edwardsi*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea favulus*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea palauensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea pectinata*

ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea retiformis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea bottae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea inaequalis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea pruinosa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea purpurea*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea transversa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptoria phrygia*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea annuligera*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea curta*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea magnistellata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea mulitpunctata*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea valenciennesi*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Oulophyllia bennettae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Oulophyllia crispa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra contorta*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra daedalea*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra lamellina*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra pini*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra ryukyuensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra sinensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Plesiastrea versipora*
ANTHOZOA	SCLERACTINIA	FLABELLIDAE	*Rhizotrochus levidensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis albitentaculata*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis crassa*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis echinata*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia concinna*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia fragilis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia fungites*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia granulosa*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia horrida*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia moluccensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia paumotensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia repanda*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia scruposa*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia scrutaria*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia sinensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia tenuis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia vaughani*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Halomitra pileus*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Herpolitha limax*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Lithophyllon mokai*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Podabacia crustacea*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Podabacia motuporensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Polyphyllia novaehiberniae*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Sandalolitha dentata*

ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Sandalolitha robusta*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Zoopilus echinatus*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora exesa*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora grandis*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora microconos*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora pilosa*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora rigida*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Merulina ampliata*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Merulina scabricula*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Paraclavarina triangularis*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Scapophyllia cylindrica*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea bowerbanki*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea echinata*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea hillae*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea ishigakiensis*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Blastomussa wellsi*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Cynarina lacrymalis*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia corymbosa*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia diminuta*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia hataii*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia hemprichii*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia pachysepta*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Micromussa amakusensis*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Scolymia vitiensis*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia agaricia*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia radians*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia recta*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia valenciennesii*
ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea astreata*
ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea fascicularis*
ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea horrescens*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Echinophyllia aspera*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Echinophyllia echinata*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Mycedium elephantotus*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Mycedium mancaoi*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Oxypora lacera*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia alcicornis*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia elongata*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia lactuca*
ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia paeonia*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora capitata*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora damicornis*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora danae*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora elegans*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora eydouxi*

ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora ligulata*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora meandrina*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora verrucosa*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora woodjonesi*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora zelli*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora caliendrum*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora hystrix*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora stellata*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Stylophora pistillata*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Stylophora subseriata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora allingi*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora catalai*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora fenestrata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora marionensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora ocellata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora spongiosa*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora tizardi*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora verrilliana*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora columna*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora djiboutiensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora lobata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora minor*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora pandoraensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora somaliensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora stokesi*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora stutchburyi*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora tenuidens*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites annae*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites arnaudi*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites attenuata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites australiensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites cylindrica*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites deformis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites horizontalata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites latistela*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lichen*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lobata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lutea*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites murrayensis*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites nigescens*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites rus*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites solida*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites stephensoni*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites vaughani*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea columna*

ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea exesa*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea fossata*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea wellsi*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora contigua*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora digitata*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora explanulata*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora haimeana*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora nierstraszi*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora profundacella*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora superficialis*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora vaughani*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Pseudosiderastrea tayami*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Siderastrea savignyana*
ANTHOZOA	STOLONIFERA	TUBIPORIDAE	*Tubipora musica*
CUBOZOA	CUBOMEDUSAE	CHIRODROPIDAE	*Chironex fleckeri*
HYDROZOA	ANTHOMEDUSAE	PORPITIDAE	*Velella velella*
HYDROZOA	LEPTOMEDUSAE	SERTULARIIDAE	*Sertularia tubuliformis*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora exaesa*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora platyphylla*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora squarrosa*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora tenera*
HYDROZOA	SIPHONOPHORA	PHYSALIIDAE	*Physalia spp.*

Appendix 1D: List of marine algae

PHYLUM	**FAMILY**	**Genus Specie**
CHLOROPHYTA	ANADYOMENACEAE	*Microdictyon japonicum*
CHLOROPHYTA	ANADYOMENACEAE	*Microdictyon setchellianum*
CHLOROPHYTA	BOODLEACEAE	*Boodlea composita*
CHLOROPHYTA	BOODLEACEAE	*Phyllodictyon anastomosans*
CHLOROPHYTA	CAULERPACEAE	*Caulerpa cupressoides*
CHLOROPHYTA	CAULERPACEAE	*Caulerpa mexicana*
CHLOROPHYTA	CAULERPACEAE	*Caulerpa racemosa*
CHLOROPHYTA	CAULERPACEAE	*Caulerpa serrulata*
CHLOROPHYTA	CAULERPACEAE	*Caulerpa urvilliana*
CHLOROPHYTA	DASYCLADACEAE	*Neomeris van-bosseae*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda copiosa*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda cylindrica*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda gracilis*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda incrassata*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda macrolobata*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda opuntiae*
CHLOROPHYTA	HALIMEDACEAE	*Halimeda tuna*
CHLOROPHYTA	POLYPHYSACEAE	*Parvocaulis parvulus*

CHLOROPHYTA	SIPHONOCLADACEAE	*Cladophoropsis membranaceae*
CHLOROPHYTA	SIPHONOCLADACEAE	*Cladophoropsis zollingeri*
CHLOROPHYTA	SIPHONOCLADACEAE	*Dictyosphaeria cavernosa*
CHLOROPHYTA	SIPHONOCLADACEAE	*Dictyosphaeria versluysii*
CHLOROPHYTA	UDOTEACEAE	*Avrainvillea pacifica*
CHLOROPHYTA	UDOTEACEAE	*Udotea sp.*
CHLOROPHYTA	ULVACEAE	*Ulva procera*
CHLOROPHYTA	VALONIACEAE	*Valonia aegagropila*
CHLOROPHYTA	VALONIACEAE	*Valonia ventricosa*
CYANOBACTERIA	OSCILLATORIACEAE	*Lyngbya confervoides*
CYANOBACTERIA	OSCILLATORIACEAE	*Lyngbya majuscula*
CYANOBACTERIA	OSCILLATORIACEAE	*Lyngbya semiplena*
CYANOBACTERIA	PHORMIDIACEAE	*Hydrocoleus coccineus*
CYANOBACTERIA	PHORMIDIACEAE	*Phormidium corium*
CYANOBACTERIA	PHORMIDIACEAE	*Phormidium lyngbyaceum*
CYANOBACTERIA	PHORMIDIACEAE	*Phormidium nigroviride*
CYANOBACTERIA	RIVULARIACEAE	*Calothrix confervicola*
FUCOPHYCEA	DICTYOTACEAE	*Dictyota cervicornis*
FUCOPHYCEA	DICTYOTACEAE	*Dictyota dichotoma*
FUCOPHYCEA	DICTYOTACEAE	*Padina australis*
FUCOPHYCEA	DICTYOTACEAE	*Padina commersonii*
FUCOPHYCEA	DICTYOTACEAE	*Pocockiella variegata*
FUCOPHYCEA	ECTOCARPACEAE	*Ectocarpus indicus*
RHODOPHYTA	ARESCHOUGIACEAE	*Eucheuma (Kappaphycus) cottonii*
RHODOPHYTA	CERAMIACEAE	*Centroceras clavulatum*
RHODOPHYTA	CERAMIACEAE	*Ceramium personatum*
RHODOPHYTA	CORALLINACEAE	*Hydrolithon farinosum*
RHODOPHYTA	CORALLINACEAE	*Hydrolithon gardineri*
RHODOPHYTA	CORALLINACEAE	*Hydrolithon onkodes*
RHODOPHYTA	CORALLINACEAE	*Jania rubens*
RHODOPHYTA	CORALLINACEAE	*Lithophyllum fasciculatum f. subtilis*
RHODOPHYTA	CORALLINACEAE	*Lithophyllum frutescens*
RHODOPHYTA	GALAXAURACEAE	*Galaxaura filamentosa*
RHODOPHYTA	GRACILARIACEAE	*Gracilaria coronopifolia*
RHODOPHYTA	HAPALIDIACEAE	*Mesophyllum funafutiensis*
RHODOPHYTA	HYPNEACEAE	*Hypnea sp.*
RHODOPHYTA	LIAGORACEAE	*Liagora sp.*
RHODOPHYTA	RHODOMELACEAE	*Herposiphonia secunda*
RHODOPHYTA	RHODOMELACEAE	*Laurencia intricata*
RHODOPHYTA	RHODOMELACEAE	*Roschera calodictyon*
RHODOPHYTA	SOLIERIACEAE	*Wurdemannia miniata*

Appendix 1E: List of sea birds

FAMILY	Genus Specie	Common name	Tuvaluan name
ANATIDAE	*Anas clypeata*	Northern shoveeller	Tola
ANATIDAE	*Anas platyrhynchos*	Mallard	Tola
ANATIDAE	*Cairina moschata*	Muscovy Duck	Taki
ARDEIDAE	*Egretta sacra*	Pacific reef heron	Matuku
CHARADIDAE	*Arenaria interpres*	Ruddy Turnstone	Kolili
CHARADIIDAE	*Charadrius hiaticula*	Ringed plover	
CHARADIIDAE	*Pluvialis apricaria*	Plover/Eurasian golden plover	Vivitai
CHARADIIDAE	*Pluvialis dominica*	Pacific golden plover	Tuli
COLUMBIDAE	*Columba livia*	Feral Pigeon	Pisini
COLUMBIDAE	*Ducula pacifica*	Pacific pigeon	Lupe
COLUMBIDAE	*Gallicolumba erythoptera*	Ground dove	Lupe palangi
CUCULIDAE	*Eudynamis taitensis*	Long tailed cuckoo	Kaleva
FREGATIDAE	*Fregata ariel*	Lesser frigatebird	Katafa
FREGATIDAE	*Fregata minor*	Great frigatebird	Katafa
LARIDAE	*Larus cirrocephalus*	Grey-headed gull	Talaliki
PHAETONTIDAE	*Phaethon lepturus*	White tailed tropic bird	Tavake
PHAETONTIDAE	*Phaethon rubricauda*	Red tailed tropic bird	Tavaketoto
PHASIANIDAE	*Gallus gallus*	Red junglefowl/Domestic fowl	Moa
PROCELLARIIDAE	*Petrodoma alba*	Phoenix petrel	Lulu
PROCELLARIIDAE	*Puffinus assimilis*	Little or Dusky shearwater	Takupu?
PROCELLARIIDAE	*Puffinus lherminieri*	Audubon's shearwater	Takupu
PROCELLARIIDAE	*Puffinus nativitatis*	Christmas Island shearwater	
PROCELLARIIDAE	*Puffinus pacificus*	Wedge-tailed shearwater	Lulu
RALLIDAE	*Gallirallus philippensis*	Buff-banded Rail	Manukiki
SCOLOPACIDAE	*Calidris alba*	Sanderling	Kolili
SCOLOPACIDAE	*Heteroscelus brevipes*	Grey-tailed Tattler	
SCOLOPACIDAE	*Heteroscelus incanus*	Wandering Tattler	Kilikilitai
SCOLOPACIDAE	*Limosa lapponica*	Pacific or Bar-tailed godwit	Kaka/Kotau
SCOLOPACIDAE	*Numenius phaeopus*	Whimbrel	Fouga
SCOLOPACIDAE	*Numenius tahitensis*	Bristle-thighed curlew	Fouga
STERNIDAE	*Anous minutus*	Black noddy	Lakia
STERNIDAE	*Anous stolidus*	Brown noddy	Gogo
STERNIDAE	*Gygis alba*	White tern	Akiaki
STERNIDAE	*Procelsterna cerulea*	Blue Noddy	
STERNIDAE	*Sterna bergii*	Great crested tern	
STERNIDAE	*Sterna fuscata*	Sooty tern	Talaliki
STERNIDAE	*Sterna lunata*	Grey-backed tern	Kalakala
STERNIDAE	*Sterna sumatrana*	Black napped tern	Matapula
SULIDAE	*Sula dactylatra*	Masked booby	Kotaa
SULIDAE	*Sula leucogaster*	Brown booby	Kotaa
SULIDAE	*Sula sula*	Red footed booby	Te-Kena

Appendix 1F: List of marine mammals

FAMILY	Genus Specie	Common name
BALAENOPTERIDAE	*Balaenoptera edeni*	Bryde's Whale
BALAENOPTERIDAE	*Balaenoptera physalus*	Fin Whale
BALAENOPTERIDAE	*Megaptera novaeangliae*	Humpback Whale
DELPHINIDAE	*Feresa attenuata*	Pygmy Killer Whale
DELPHINIDAE	*Globicephala macrorhynchus*	Short-finned Pilot Whale
DELPHINIDAE	*Grampus griseus*	Grey Dolphin
DELPHINIDAE	*Lagenodelphis hosei*	Fraser's Dolphin
DELPHINIDAE	*Orcinus orca*	Orca/Killer whale
DELPHINIDAE	*Peponocephala electra*	Melon-headed Whale
DELPHINIDAE	*Pseudorca crassidens*	False Killer Whale
DELPHINIDAE	*Stenella attenuata*	Pantropical spotted dolphin
DELPHINIDAE	*Stenella coeruleoalba*	Striped Dolphin
DELPHINIDAE	*Stenella longirostris*	Spinner dolphin
DELPHINIDAE	*Steno bredanensis*	Rough-toothed Dolphin
DELPHINIDAE	*Tursiops sp.*	Bottlenose dolphin
PHYSETERIDAE	*Kogia breviceps*	Pygmy Sperm Whale
PHYSETERIDAE	*Kogia sima*	Dwarf Sperm Whale
PHYSETERIDAE	*Physeter macrocephalus*	Sperm whale
ZIPHIIDAE	*Mesoplodon densirostris*	Blainville's Beaked Whale
ZIPHIIDAE	*Mesoplodon ginkgodens*	Ginkgo-toothed Beaked Whale
ZIPHIIDAE	*Ziphius cavirostris*	Cuvier's Beaked Whale

Appendix 1G: List of marine turtles

FAMILY	Genus Specie	Common name
CHELONIIDAE	*Caretta caretta*	Loggerhead sea turtle
CHELONIIDAE	*Chelonia mydas*	Green turtle
CHELONIIDAE	*Eretmochelys imbricata*	Hawksbill turtle (Cahouane)
CHELONIIDAE	*Dermochelys coriacea*	Leatherback turtle

Appendix 1H: List of sponges

FAMILY	**Genus specie**
SPONGIIDAE	*Spongia officinalis mollissima*
SPONGIIDAE	*Spongia zimocca*
SPONGIIDAE	*Euspongia irregularis*
CALLYSPONGIIDAE	*Callyspongia glomerata*

Appendix 1I: List of mangrove species

FAMILY	**Genus specie**
COMBRETACEAE	*Lumnitzera littorea*
RHIZOPHORIDAE	*Rhizophora stylosa*

APPENDIX 2: LIST OF DOCUMENTS CONSULTED FOR THE SURVEY

Author	Year	Title	Publication	# pages
?	1988	Marine species introductions to tropical Pacific islands	SPC/Inshore Fish. Res.	2
Alefaio S. and T. Alefaio	2007	Tuvalu turtle conservation - Central island: scoping for Tuvalu Turtle Conservation	TANGO report	10
Alefaio S., T. Alefaio and A. Resture	2006	Turtle monitoring on Funafuti, Tuvalu	Department of Fisheries/Department of Environment/TANGO	4
Apinelu N.	1990	Report of survey of giant clams in Nanumea and Nui lagoons		2
Baines G.B.K., P.J. Beveridge and J.E. Maragos	1974	Storms and island building at Funafuti atoll, Ellice islands	Proceedings of the 2nd International Coral Reef Symposium, Australia, 1974, p. 485-496	12
Beger M. and Turak E.	2006	A Rapid Ecological Assessment of the reef fishes and scleractinian corals of Komodo Island National Park, Indonesia.	The Nature Conservancy - Southeast Asia Center for Marine Protected Areas	116
Belhadjali K.	1997	Beche-de-mer production in Tuvalu	SPC Beche-de-mer Information Bulletin #9	2
Belhadjali K.	1997	Production de bêche-de-mer à Tuvalu	Bulletin de la CPS n°9	2
Belhadjali K.	1998	A survey of the inshore fisheries resources of Tuvalu	Fisheries Department of Tuvalu	102
Brodie J.E. *et al*.	1990	State of the marine environment in the South Pacific Region	UNEP Regional Seas Reports and Studies No. 127 - SPREP Topic Review No. 40	64
Buckley R.	1985	Environmental survey of Funafuti atoll (Tuvalu)	Proceedings of the 5th International Coral Reef Symposium, Tahiti, 1985, Vol. 6, p. 305-310	6
Carter E.	2007	National Biodiversity Strategies & Action Plans	SPREP & Commonwealth Secretariat	49
Chapman L.B. and P. Cusack	1990	Report on the deep sea fisheries development project in Funafuti-2nd visit, Tuvalu		54
Chapman V.J.	1955	Algal collections from Funafuti Atoll	Pacific Science, vol.9, 354-356	3

Clua E. *et al*.	2006	Medium scale approach (MSA) for improved assessment of coral reef fish habitat	Journal of Experimental Marine Biology and Ecology. Volume 333, Issue 2, 13 June 2006, Pages 219-230	12
Conand C.	1996	Statistiques sur les exportations de bêche-de-mer	Bulletin de la CPS n°8	2
Damlamian H.	2008	Hydrodynamic Model of Funafuti: Water Circulation and Applications	EU-SOPAC Project Report 50	25
Eade J.V.	1988	THE CCOP/SOPAC precious coral programme in the South Pacific	SPC/Inshore Fish. Res.	14
Eginton R.	1978	Report on the SPC outer reef fisheries project in Funafuti (Tuvalu)	SPC/Fisheries 9/WP.30	14
Eginton R. and P. Mead	1978	Report on the SPC outer reef fisheries project in Funafuti (Tuvalu)	SPC, Nouméa New Caledonia	21
Eldredge L.G., J.E. Maragos, P.F. Holthus and H.F. Takeuchi	1995	Marine and coastal biodiversity in the tropical island pacific region. Vol. II. Population, development and conservation priorities	Proceedings of two workshops held at the East-West Center, Honolulu, in November 1994.	456
Ellway C.P., R.S. Farman, A.W. Argue and R.E. Kearney	1983	An assessment of the skipjack and baitfish resources of Tuvalu	Skipjack Survey and Assessment Programme - Final Country Report No. 8 - SPC, Nouméa New Caledonia	49
FAO	2009	Fishery and Aquaculture Country Profile Tuvalu	http://www.fao.org/fishery/countrysector/FI-CP_TV/en	6
Gillett R.D.	1987	Projet d'étude et d'exploitation des poissons appats à Tuvalu	Programme d'évaluation des thonidés et marlins - Rapport technique No.14 - SPC, Nouméa New Caledonia	45
Gillett R.D.	2003	Domestic Tuna Industry Development in the Pacific Islands: The Current Situation and Considerations for Future Development Assistance	FFA Report 03/01	197
Gillett R.D.	2003	Transplantation de trocas dans les îles du Pacifique : 1927-1998	Bulletin d'information de la CPS n°9	5
Gillett R.D.	1988	Tokelau and Tuvalu: An Atoll Fisheries Bibliography	FAO/UNDP Regional Fishery Support Programme, Suva, Fiji	71
Govan H., Aalbersberg W., Tawake A. and	2008	Locally-Managed Marine Areas: A guide for practitioners	The Locally-Managed Marine Area Network	70

Parks J.E.				
Govan H.	2009	Status and potential of locally-managed marine areas in the South Pacifi c: meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs	SPREP/WWF/WorldFish-Reefbase/CRISP	148
Graham S.	2005	Building capacity to insure against disaster in Tuvalu	SOPAC Technical Report 380	140
Guinther E.B., J.E. Maragos and R.R. Thaman	1992	National Biodiversity Overview: Republic of Tuvalu	The South Pacific Biodiversity Conservation Programme and SPREP	7
Hedley C.	1897	The atoll of Funafuti, Ellice group: its zoology, botany, ethnology and general structure. Part I: General account of the atoll of Funafuti	Australian Museum, Sydney, Memoir III	86
Hedley C.	1897	The atoll of Funafuti, Ellice group: its zoology, botany, ethnology and general structure. Part IV: The ethnology of Funafuti	Australian Museum, Sydney, Memoir III	86
IUCN	2009	IUCN Red List species for Tuvalu	http://www.iucnredlist.org/search	
Jones G.P., U.L. Kaly and K. Clements	1991	Preliminary records of the coral reef fishes of Tuvalu	South Pacific journal of natural science, vol. 11 (1991)	18
Kaly U.L.	1997	Monitoring training and first survey of Funafuti Marine Conservation Area	South Pacific Regional Environment Programme and Funafuti Town Council, Tuvalu	21
Kaly U.L. and G.P. Jones	1993	Preliminary report on the pilot dredging project - Funafuti Tuvalu: assessment of ecological impacts on lagoon communities	SPREP, Apia, Western Samoa	46
Kaly U.L. and G.P. Jones	1991	Ciguatera in Tuvalu: Results of surveys and recommendations for management	NZ Ministry of External Relations and Trade, Wellington, New Zealand.	33
Kaly U.L. and G.P. Jones.	1994	Long-term effects of blasted boat passages on intertidal organisms in Tuvalu : a meso-scale human disturbance	Bulletin of marine science. - Vol. 54, no. 1 (1994).	16

Kaly U.L., T.M. Alefaio, C.M. Ludescher, K. Talakatoa and S. Alefaio	1999	Second marine survey of Funafuti Conservation Area, Tuvalu	SPREP and Funafuti Town Council	22
Krüger J.	2008	High-Resolution Bathymetric Survey	EU-SOPAC Project Report 50	73
Laloniu S. and K. Belhadjali	1995	Giant clam and Trochus resource assessment in Tuvalu	Fisheries Department of Tuvalu	10
Lane J.	1993	Tuvalu: State of the environment report	SPREP	64
Langi V.	1990	Marine resource survey of Nanumea and Nui Islands, Tuvalu : (giant clam, commercial species beche-de-mer, pearl oysters, and trochus)	Report for the Fisheries Division of the Ministry of Natural Resources and Home Affairs, Government of Tuvalu.	15
Levine M.	?	Tuvalu and the effect of sea level rise	?	17
Lovell E. *et al.*	2004	Status of coral reefs in the Southwest Pacific: Fiji, Nauru, New Caledonia, Samoa, Solomon Islands, Tuvalu and Vanuatu	Status of coral reefs of the world: 2004 - p. 337-361	26
Maragos J.E.	1992	National Report for the United Nations Conference on Environment and Development (UNCED). Rio de Janeiro, Brazil		7
Maragos J.E.	1992	National Report for the United Nations Conference on Environment and Development (UNCED). Species List		12
Maragos J.E., *et al.*	1995	Marine and coastal biodiversity in the tropical island pacific region. Vol. I. Species systematics and information management priorities	Proceedings of two workshops held at the East-West Center, Honolulu, in November 1994.	424
McQuarrie P.	1991	A check list of the Cypraeidae of Tuvalu	South Pacific journal of natural science, vol. 11 (1991)	4
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Miller C.	2007	Current State of Knowledge of Cetacean Threats, Diversity and Habitats in the Pacific Islands Region	WDCS Australasia Inc.	98

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Mimura N.	1999	Vulnerability of island countries in the South Pacific to sea level rise and climate change	Clim Res vol 12: 137-143	7
Min. of Natural Resources and Envt of Tuvalu	1999	Tuvalu Initial National Communication under the United Nations Framework Convention on Climate Change	SPREP & UNDP	38
Min. of Natural Resources, Envt, Agriculture and Lands of Tuvalu	2007	Tuvalu's National Adaptation Programme of Action	Under the auspices of the United Nations Framework Convention on Climate Change	55
Morris C. and K. Mackay	2008	Status of coral reefs in the Southwest Pacific: Fiji, Nauru, New Caledonia, Samoa, Solomon Islands, Tuvalu and Vanuatu	Status of coral reefs of the world: 2008 - p. 177-188	12
Oberdorfer J.A. and R.W. Buddemeier	1988	Climate change: effects on reef island resources	Proceedings of the 6th International Coral Reef Symposium, Australia, 1988, Vol. 3, p. 523-527	5
Oremus M., A. Wheeler and V. Iese	2007	Summary of preliminary cetacean surveys at Tuvalu, April 2007 . Draft version.	Unpublished	6
Parkinson B.J.	1984	A report of the potential for the introduction of Trochus (*Trochus niloticus*) to Tuvalu	SPC/Government of Tuvalu	10
Parkinson B.J.	1984	The specimen shell resources of Tuvalu	SPC/Government of Tuvalu	52
Petaia S.	1994	Bottom Fish project concludes in Tuvalu	SPC Fisheries Newsletter #70	3
Pita E.	1980	The turtle status in Tuvalu	SPC-NMFS/Turtle/WP.3	3
Pita E.	1988	Development of the inshore fishery resources of Tuvalu	Workshop on Pacific Inshore Fishery Resources - SPC - Nouméa, New Caledonia	25
Pratt C.R. and J. Mitchell	2003	EVI Country Profile Review – Tuvalu	SOPAC Miscellaneous Report 529	67
Preston G.L.	1990	Survey of Pearl Oyster Resources at Nukulaelae Atoll, Tuvalu	SPC Pearl Oyster Information Bulletin # 2	2

Preston G.L., M.T. Gentle and M. Kamatie	1990	Report of survey of the pearl oyster ressources at Nukulaelae atoll, Tuvalu	Inshore Fisheries Research Project: Country assignment report, South Pacific Commission, Noumea, New Caledonia	16
RAMSAR	2009	Tuvalu	ramsar.wetlands.org/Portals/15/Tuvalu.pdf	4
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Rodgers K.A. and C. Cantrell	1987	The birds of Tuvalu : a faunal list and annotated bibliography	South Pacific journal of natural science, vol. 9 (1987)	19
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Roelfsema C., Phinn S., and Joyce K.	2007	A manual for using GPS referenced digital photo transects to validate benthic cover maps. Version 2.0	Centre for Remote Sensing & Spatial Information Science, School of Geography, Planning & Architecture, University of Queensland	29
Sauni S.	2000	The status of coral reefs of Tuvalu	Nouméa : IRD. Doc. Sci. Tech. II 5, 485 p. p. 331-350	20
Sauni S., M. Kronen, S. Pinca, L. Sauni, K. Friedman, L. Chapman and F. Magron	2008	Tuvalu country report: profile and results from in-country survey work (October–November 2004 and March–April 2005)	Pacific Regional Oceanic and Coastal Fisheries Development Programme (PROCFish/C/CoFish) / Secretariat of the Pacific Community	343
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Smith R.	1995	Assessment of lagoon sand and aggregate resources. Funafuti atoll, Tuvalu.	SOPAC Technical Report 212	70
Smith R.B., D.M. Rearic, E. Saphore and F. Seneka	1990	Survey of Nukulaelae and Nukufetau lagoons, Tuvalu	SOPAC Technical Report 105	59

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SPREP	1997	Tuvalu National Environmental Management Strategy	USP Library Cataloguing-in-Publication data	104
SPREP	2005	State of the Environment in Asia and the Pacific 2005	Chapter 8 - p. 237-259	22
Stoddart D.R.	1992	Biogeography of the Tropical Pacific	Pacific Science, vol. 46, no. 2: 276-293	18
Sulu R. *et al*.	2002	Status of coral reefs in the Southwest Pacific to 2002: Fiji, Nauru, New Caledonia, Samoa, Solomon Islands, Tuvalu and Vanuatu	Status of coral reefs of the world: 2002 - p. 181-202	22
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Taumaia P. and M. Gentle	1982	Report on the deep sea fisheries development project in Funafuti, Tuvalu	South Pacific Commission, Nouméa, New Caledonia	32
Tebano T.	1991	A preliminary survey on ciguatera fish poisoning in Tuvalu	Institute of Marine Science - University of South Pacific, Suva, Fiji	11
Tiraa-Passfield A.	1997	Utilisation des coquillages dans la fabrication d'objets artisanaux traditionnels à Tuvalu	Ressources marines et traditions – Bulletin de la CPS n°7	5
Tupau F.	2006	Tuvalu National Tuna Fisheries Report	Western and Central Pacific Fisheries Commission	14
Tuvalu Fisheries Division	1982	Annual report	Ministry of Natural Resources	38
Tuvalu Fisheries Division	1990	Annual report	Ministry of Natural Resources	25
Tuvalu Fisheries Division	1991	Annual report	Ministry of Natural Resources	38
Tuvalu Fisheries Division	1992	Annual report	Ministry of Natural Resources	36
Tuvalu Fisheries Division	1993	Annual report	Ministry of Natural Resources	17
Tuvalu Fisheries Division	1987	Annual report	Ministry of Natural Resources	67

Tuvalu Fisheries Division	2004	Community fishing centres	Ministry of Natural Resources	31
Tuvalu Government	2005	National Strategy for Sustainable Development: 2005 - 2015		28
UNDP - Govt of Tuvalu	2006	Tuvalu Millenium Development Goals report 2006		52
UNEP and SOPAC	?	Building Resilience in SIDS: The Environmental Vulnerability Index	UNEP & SOPAC	16
UNEP-WCMC	2009	UNEP-WCMC Species database: CITES listed species for Tuvalu	http: //sea.unep-wcmc .org/isdb/CITES/Taxonomy/country_list .cfm/isdb/CITES/Taxonomy/country_list.cfm?displayl anguage=eng&Country=TV	
United Nations Statistics Division	2008	Environment Statistics Country Snapshot: Tuvalu	unstats.un.org/unsd/*ENVIRONMENT/envpdf/Country %20Snapshots_apr2007/Tuvalu.pdf*	1
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Wheeler A.	2007	Training and research programme on cetaceans, sharks, rays and turtles in Tuvalu waters. Progress report.		5
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Woodroffe C.D.	1985	Vegetation and flora of Nui atoll, Tuvalu	Atoll Research Bulletin No. 283	30
Yeeting B. and T. Poulasi	in press	An underwater visual census survey of the marine aquarium fish resources of Funafuti Atoll, Tuvalu - Draft version	South Pacific Commission, Nouméa, New Caledonia	48
Zann L.P. and L. Bolton	?	The distribution, abundance and ecology of the blue coral *Heliopora coerulea* in the Pacific		29

APPENDIX 3: LIST OF MARINE SPECIES LISTED UNDER THE CITES CONVENTION FOR TUVALU

Appendix 3A: Marine species listed under the CITES Convention, Appendix I

CLASS	ORDER	FAMILY	Genus Specie
REPTILIA	TESTUDINES	CHELONIIDAE	*Caretta caretta*
REPTILIA	TESTUDINES	CHELONIIDAE	*Chelonia mydas*

Appendix 3B: Marine species listed under the CITES Convention, Appendix II

CLASS	ORDER	FAMILY	Genus Specie
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Bourneotrochus stellulatus*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Caryophyllia smithii*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Trochocyathus hastatus*
ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Trochocyathus vasiformis*
ANTHOZOA	ANTIPATHARIA	ANTIPATHIDAE	*Antipathes atlantica*
ANTHOZOA	ANTIPATHARIA	ANTIPATHIDAE	*Antipathes brookii*
ANTHOZOA	HELIOPORACEA	HELIOPORIDAE	*Heliopora coerulea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora austera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora crateriformis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cuneata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cytherea*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora digitifera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora efflorescens*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora eurystoma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora granulosa*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora horrida*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora humilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora hyacinthus*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora intermedia*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora latistella*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora loripes*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nana*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nobilis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora spicifera*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tenuis*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora incrustans*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora listeri*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora myriophthalma*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora ocellata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora caliculata*

ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora foveolata*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora turgescens*
ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora verrucosa*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona explanulata*
ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona varians*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea serailia*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Diploastrea heliopora*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia danae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia favus*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia pallida*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia rotumana*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea bottae*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea purpurea*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea transversa*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea curta*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra daedalea*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra lamellina*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra sinensis*
ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Plesiastrea versipora*
ANTHOZOA	SCLERACTINIA	FLABELLIDAE	*Rhizotrochus levidensis*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis crassa*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia repanda*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia scrutaria*
ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Sandalolitha robusta*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora exesa*
ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora microconos*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea echinata*
ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia hemprichii*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora damicornis*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora danae*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora eydouxi*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora ligulata*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora meandrina*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora verrucosa*
ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Stylophora pistillata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lichen*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lobata*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lutea*
ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites rus*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea columna*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea fossata*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora contigua*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora haimeana*
ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora profundacella*

ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora superficialis*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora exaesa*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora platyphylla*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora squarrosa*
HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora tenera*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Hippopus hippopus*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna crocea*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna derasa*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna gigas*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna maxima*
BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna squamosa*
ACTINOPTERYGII	PERCIFORMES	LABRIDAE	*Cheilinus undulatus*
CHONDRICHTHYES	LAMNIFORMES	LAMNIDAE	*Carcharodon carcharias*
CHONDRICHTHYES	ORECTOLOBIFORMES	RHINCODONTIDAE	*Rhincodon typus*
MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Orcinus orca*
MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Stenella attenuata*
MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Tursiops sp.*
MAMMALIA	CETARTIODACTYLA	PHYSETERIDAE	*Physeter macrocephalus*

APPENDIX 4: IUCN RED LIST OF THREATENED SPECIES FOR TUVALU MARINE SPECIES

Red List categories: EN: Endangered;V: Vulnerable; NT: Near Threatened; LC: Least Concern; LR/CD: Lower Risk/Conservation Dependent; DD: Data Deficient (IUCN, 2009).

Phylum	Class	Order	Family	Scientific Name	Status	Population trend
ARTHROPODA	CRUSTACEA	DECAPODA	COENOBITIDAE	*Birgus latro*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	LABRIDAE	*Cheilinus undulatus*	EN	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SCOMBRIDAE	*Thunnus alalunga*	DD	Needs updating
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SCOMBRIDAE	*Thunnus albacares*	LC	Needs updating
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SCOMBRIDAE	*Thunnus obesus*	NT	Needs updating
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus melanostigma*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus tauvina*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Anyperodon leucogrammicus*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis argus*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis leopardus*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis miniata*	LC	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis sexmaculata*	LC	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis sonnerati*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis spiloparaea*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis urodeta*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus chlorostigma*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus coeruleopunctatus*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus cyanopodus*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus fasciatus*	LC	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus hexagonatus*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus howlandi*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus macrospilos*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus maculatus*	LC	Decreasing

CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus merra*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus miliaris*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus ongus*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus spilotoceps*	LC	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus fuscoguttatus*	NT	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus polyphekadion*	NT	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus socialis*	NT	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus lanceolatus*	V	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Aethaloperca rogaa*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Cephalopholis aurantia*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Gracila albomarginata*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus octofasciatus*	DD	Unknown
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Variola albimarginata*	LC	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Variola louti*	LC	Stable
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Epinephelus morrhua*	LC	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Plectropomus areolatus*	V	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	SERRANIDAE	*Plectropomus laevis*	V	Decreasing
CHORDATA	ACTINOPTERYGII	PERCIFORMES	XIPHIIDAE	*Xiphias gladius*	DD	Needs updating
CHORDATA	AVES	CHARADRIIFORMES	LARIDAE	*Anous minutus*	LC	Unknown
CHORDATA	AVES	CHARADRIIFORMES	LARIDAE	*Anous stolidus*	LC	
CHORDATA	AVES	CHARADRIIFORMES	LARIDAE	*Procelsterna cerulea*	LC	Unknown
CHORDATA	AVES	CHARADRIIFORMES	LARIDAE	*Sterna lunata*	LC	
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Carcharhinus amblyrhynchos*	NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Carcharhinus longimanus*	V	Decreasing
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Carcharhinus melanopterus*	NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Carcharhinus obscurus*	NT	Decreasing
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Carcharhinus plumbeus*	LR/NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Galeocerdo cuvier*	NT	Unknown

CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Prionace glauca*	NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	CARCHARHINIDAE	*Triaenodon obesus*	LR/NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	SPHYRNIDAE	*Sphyrna lewini*	NT	Unknown
CHORDATA	CHONDRICHTHYES	CARCHARHINIFORMES	SPHYRNIDAE	*Sphyrna zygaena*	NT	Unknown
CHORDATA	CHONDRICHTHYES	HEXANCHIFORMES	HEXANCHIDAE	*Hexanchus griseus*	NT	Unknown
CHORDATA	CHONDRICHTHYES	LAMNIFORMES	LAMNIDAE	*Isurus oxyrinchus*	NT	Unknown
CHORDATA	CHONDRICHTHYES	LAMNIFORMES	LAMNIDAE	*Carcharodon carcharias*	V	Unknown
CHORDATA	CHONDRICHTHYES	ORECTOLOBIFORMES	RHINCODONTIDAE	*Rhincodon typus*	V	Decreasing
CHORDATA	CHONDRICHTHYES	RAJIFORMES	MOBULIDAE	*Mobula japanica*	NT	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	BALAENOPTERIDAE	*Balaenoptera edeni*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	BALAENOPTERIDAE	*Balaenoptera physalus*	EN	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	BALAENOPTERIDAE	*Megaptera novaeangliae*	EN	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Feresa attenuata*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Globicephala macrorhynchus*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Orcinus orca*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Pseudorca crassidens*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Stenella longirostris*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Grampus griseus*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Lagenodelphis hosei*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Peponocephala electra*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Stenella attenuata*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Stenella coeruleoalba*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	DELPHINIDAE	*Steno bredanensis*	LC	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	PHYSETERIDAE	*Kogia breviceps*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	PHYSETERIDAE	*Kogia sima*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	PHYSETERIDAE	*Physeter macrocephalus*	V	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	ZIPHIIDAE	*Mesoplodon densirostris*	DD	Unknown
CHORDATA	MAMMALIA	CETARTIODACTYLA	ZIPHIIDAE	*Mesoplodon ginkgodens*	DD	Unknown

CHORDATA	MAMMALIA	CETARTIODACTYLA	ZIPHIIDAE	*Ziphius cavirostris*	LC	Unknown
CHORDATA	REPTILIA	TESTUDINES	CHELONIIDAE	*Chelonia mydas*	EN	Decreasing
CNIDARIA	ANTHOZOA	HELIOPORACEA	HELIOPORIDAE	*Heliopora coerulea*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora copiosa*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora exquisita*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora inermis*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora insignis*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora parilis*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora prostrata*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora rambleri*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora rosaria*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora schmitti*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora teres*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tutuilensis*	DD	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora abrotanoides*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cerealis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora chesterfieldensis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora clathrata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora cytherea*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora elseyi*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora grandis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora latistella*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora longicyathus*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora microphthalma*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nobilis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora pulchra*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora robusta*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora samoensis*	LC	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora sarmentosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora subglabra*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora subulata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tortuosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora valenciennesi*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora verweyi*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora yongei*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Anacropora forbesi*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora gracilis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora listeri*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora myriophthalma*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora ocellata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora randalli*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora scabra*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora suggesta*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora aequituberculata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora danae*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora digitata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora floweri*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora grisea*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora hispida*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora hoffmeisteri*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora informis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora millepora*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora mollis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora monasteriata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora spongodes*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora spumosa*	LC	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora tuberculosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora turgescens*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora verrucosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora austera*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora digitifera*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora divaricata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora florida*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora formosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora granulosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora humilis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora hyacinthus*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora loripes*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora lutkeni*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora millepora*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora monticulosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nana*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora nasuta*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora secale*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora selago*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora tenuis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora expansa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora macrostoma*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Isopora palifera*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora capitata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora efflorescens*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora effusa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora foliosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora foveolata*	NT	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora incrassata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora nodosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora peltiformis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora undata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora venosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora abrolhosensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora aculeus*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora acuminata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora anthocercis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora aspera*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora dendrum*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora donei*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora echinata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora globiceps*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora horrida*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora kirstyae*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora listeri*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora lovelli*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora microclados*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora palmerae*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora paniculata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora polystoma*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora retusa*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora solitaryensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora speciosa*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora spicifera*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora valida*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Acropora vaughani*	V	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Anacropora puertogalerae*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Astreopora cucullata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Isopora cuneata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora altasepta*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora angulata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora australiensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora calcarea*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora caliculata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora capricornis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora cebuensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora corbettensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora crassituberculata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora lobulata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	ACROPORIDAE	*Montipora samarensis*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Coeloseris mayeri*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Gardineroseris planulata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris explanata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris gardineri*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris hawaiiensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris mycetoseroides*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris papyracea*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris scabra*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris solida*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pachyseris speciosa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona clavus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona duerdeni*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona explanulata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona frondifera*	LC	Unknown

CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona maldivensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona varians*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona minuta*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris incrustans*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Leptoseris yabei*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pachyseris rugosa*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona bipartita*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona cactus*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona decussata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	AGARICIIDAE	*Pavona venosa*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Madracis kirbyi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Stylocoeniella armata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	ASTROCOENIIDAE	*Stylocoeniella guentheri*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	CARYOPHYLLIIDAE	*Heterocyathus aequicostatus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Heteropsammia cochlea*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria frondens*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria mesenterina*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria patula*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria peltata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria reniformis*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinaria stellulata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia glabrescens*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia yaeyamaensis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Plerogyra simplex*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Plerogyra sinuosa*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Euphyllia cristata*	V	Stable
CNIDARIA	ANTHOZOA	SCLERACTINIA	EUPHYLLIDAE	*Physogyra lichtensteini*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Barabattoia amicorum*	LC	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Caulastrea furcata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea chalcidicum*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea decadia*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea microphthalma*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea serailia*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora gemmacea*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora hirsutissima*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora lamellosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia danae*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia favus*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia pallida*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia rotumana*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia speciosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites pentagoa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea aspera*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea australensis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea edwardsi*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea pectinata*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea retiformis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea pruinosa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea purpurea*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea transversa*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea curta*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra contorta*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra daedalea*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra pini*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra sinensis*	LC	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Plesiastrea versipora*	LC	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Diploastrea heliopora*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora horrida*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora mammiformis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Echinopora pacificus*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia helianthoides*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia lizardensis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia maritima*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia matthaii*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia rotundata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia stelligera*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favia veroni*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites abdita*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites bestae*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites chinensis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites complanata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites flexuosa*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites halicora*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Favites russelli*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea favulus*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Goniastrea palauensis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea bottae*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptastrea inaequalis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Leptoria phrygia*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea annuligera*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea magnistellata*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea valenciennesi*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Oulophyllia bennettae*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Oulophyllia crispa*	NT	Decreasing

CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra lamellina*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Platygyra ryukyuensis*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Barabattoia laddi*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Caulastrea curvata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Cyphastrea ocellina*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FAVIIDAE	*Montastrea mulitpunctata*	V	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis crassa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis echinata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia concinna*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia fragilis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia granulosa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia horrida*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia moluccensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia paumotensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia repanda*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia scruposa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia scrutaria*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia sinensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia tenuis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia vaughani*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Halomitra pileus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Herpolitha limax*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Lithophyllon mokai*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Podabacia crustacea*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Sandalolitha dentata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Sandalolitha robusta*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Zoopilus echinatus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Ctenactis albitentaculata*	NT	Unknown

CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Fungia fungites*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Podabacia motuporensis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	FUNGIIDAE	*Polyphyllia novaehiberniae*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora grandis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora pilosa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora rigida*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Merulina ampliata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Merulina scabricula*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Scapophyllia cylindrica*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora exesa*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Hydnophora microconos*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MERULINIDAE	*Paraclavarina triangularis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea echinata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia corymbosa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia hataii*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia hemprichii*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia agaricia*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia radians*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia recta*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Symphyllia valenciennesii*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea hillae*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Blastomussa wellsi*	NT	Decreasing
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Cynarina lacrymalis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia pachysepta*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Micromussa amakusensis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Scolymia vitiensis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea bowerbanki*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Acanthastrea ishigakiensis*	V	Unknown

CNIDARIA	ANTHOZOA	SCLERACTINIA	MUSSIDAE	*Lobophyllia diminuta*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea horrescens*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea fascicularis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	OCULINIDAE	*Galaxea astreata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Echinophyllia aspera*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Echinophyllia echinata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Mycedium elephantotus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Mycedium mancaoi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Oxypora lacera*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia elongata*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia paeonia*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia alcicornis*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PECTINIIDAE	*Pectinia lactuca*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora capitata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora damicornis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora ligulata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora meandrina*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora verrucosa*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora woodjonesi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora zelli*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora hystrix*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Stylophora subseriata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora eydouxi*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora caliendrum*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Seriatopora stellata*	NT	Stable
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Stylophora pistillata*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	POCILLOPORIDAE	*Pocillopora elegans*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora ocellata*	DD	Unknown

CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora tizardi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora djiboutiensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora pandoraensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora somaliensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora stutchburyi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora tenuidens*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites arnaudi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites australiensis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites latistela*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lichen*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lutea*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites rus*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites solida*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites vaughani*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora catalai*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora spongiosa*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora columna*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora lobata*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora minor*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Goniopora stokesi*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites annae*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites cylindrica*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites deformis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites lobata*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites murrayensis*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites stephensoni*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora allingi*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora fenestrata*	V	Unknown

CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora marionensis*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Alveopora verrilliana*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites attenuata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites horizontalata*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	PORITIDAE	*Porites nigescens*	V	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea columna*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea exesa*	LC	Stable
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Coscinaraea wellsi*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora explanulata*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora haimeana*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora nierstraszi*	LC	Stable
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora profundacella*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora superficialis*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Siderastrea savignyana*	LC	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora contigua*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora digitata*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Psammocora vaughani*	NT	Unknown
CNIDARIA	ANTHOZOA	SCLERACTINIA	SIDERASTREIDAE	*Pseudosiderastrea tayami*	NT	Unknown
CNIDARIA	ANTHOZOA	STOLONIFERA	TUBIPORIDAE	*Tubipora musica*	NT	Unknown
CNIDARIA	HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora platyphylla*	LC	Unknown
CNIDARIA	HYDROZOA	MILLEPORINA	MILLEPORIDAE	*Millepora tenera*	LC	Unknown
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna crocea*	LC	Needs updating
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Hippopus hippopus*	LR/CD	Needs updating
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna maxima*	LR/CD	Needs updating
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna squamosa*	LR/CD	Needs updating
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna derasa*	V	Needs updating
MOLLUSCA	BIVALVIA	VENEROIDA	TRIDACNIDAE	*Tridacna gigas*	V	Needs updating