



Horizon Power
Learmonth (Exmouth) Line Rebuild
Flora and Fauna Survey

July 2019

Executive summary

Horizon Power is proposing to rebuild the Learmonth (Exmouth) Line, adjacent to the existing line that extends from the Exmouth town site south to RAAF Learmonth, located in the Gascoyne Region of Western Australia (WA). Horizon Power submitted an application to clear native vegetation under the *Environmental Protection Act 1986* (EP Act) to the Department of Water and Environmental Regulation (DWER) on 11 May 2018 (reference CPS 8067/1). The application was to clear 42 hectares of native vegetation within a 157.89 hectare (ha) footprint, within road reserve 1508699, unallocated crown land and various properties in the localities of Exmouth, North West Cape and Learmonth. DWER conducted a preliminary assessment of the native vegetation within the application area and has requested further information regarding on vegetation and flora and terrestrial fauna.

Horizon Power commissioned GHD Pty Ltd to undertake a vegetation, flora and fauna survey of the proposed clearing area for the proposed Learmonth Line re-build. The purpose of the survey is to address the request for further information from DWER to support Horizon Power's current native vegetation clearing permit application.

This report is subject to, and must be read in conjunction with, the limitations set out in section 1.6 and the assumptions and qualifications contained throughout this report.

Key findings

- Six vegetation types were identified and described for the survey area, not including cleared and/or highly degraded areas. The survey area is predominantly located along an existing power line corridor and adjacent access tracks
- The vegetation within the survey area primarily consists of mixed *Acacia* open shrublands over *Triodia* hummock grasslands on sandy and stony plains and low undulating rises. The plains are dissected by a number of minor drainage lines lined by *Eucalyptus* and/or *Corymbia* species. Towards the southern end of the survey area the soils become more clay based and dominated by sparse *Acacia* shrubs over chenopod shrublands
- Vegetation type VT_3 is considered representative of riparian vegetation
- No vegetation communities identified within the survey area are representative of a Threatened or Priority Ecological Community
- A total of 82 flora taxa (including subspecies and varieties) representing 28 families and 60 genera were recorded in the survey area
- No threatened flora species listed under the EPBC Act and/or BC Act was recorded within the survey area. Four Priority species listed by the DBCA were recorded within the survey area:
 - *Corchorus congener* (Priority 3)
 - *Eremophila forrestii* subsp. *capensis* (Priority 3)
 - *Tephrosia* sp. North West Cape (G. Marsh 81) (Priority 2)
 - *Tinospora esiangkara* (Priority 2)
- Four broad fauna habitat types were identified within the survey area which closely align with the vegetation types
- The survey area is part of a larger continuous area of similar habitat throughout the surrounding area as it has complete habitat connectivity with surrounding vegetation of similar or better condition vegetation

- A total of 43 fauna species, including 35 birds, five mammals and three reptiles were recorded during the survey
- No Threatened or priority fauna species or evidence of their presence was recorded in the survey area during the field assessment. One species listed as “Other specially protection” under the BC Act, the Peregrine Falcon (*Falco peregrinus*), and one Migratory listed bird, Osprey (*Pandion haliaetus*), were recorded during the survey.

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1. Introduction

1.1 Project background

Horizon Power is proposing to rebuild the Learmonth (Exmouth) Line, adjacent to the existing line that extends from the Exmouth town site south to RAAF Learmonth, located in the Gascoyne Region of Western Australia (WA). The existing line will be removed following construction of the new line and any Horizon Power maintained cleared areas allowed to revegetate naturally.

Horizon Power submitted an application to clear native vegetation under the *Environmental Protection Act 1986* (EP Act) to the Department of Water and Environmental Regulation (DWER) on 11 May 2018 (reference CPS 8067/1). The application was to clear 42 hectares of native vegetation within a 157.89 hectare (ha) footprint, within road reserve 1508699, unallocated crown land and various properties in the localities of Exmouth, North West Cape and Learmonth. DWER conducted a preliminary assessment of the native vegetation within the application area and has requested further information regarding on vegetation and flora and terrestrial fauna, specifically:

- A flora survey of the proposed clearing area and surrounding vegetation to identify the presence of Department of Biodiversity, Conservation and Attractions (DBCA) Priority -listed flora species
- Information on the presence of potential habitat for six threatened and 21 internationally significant migratory avian species as well as the Black-flanked rock-wallaby
- The extent of riparian areas within the proposed clearing area.

1.2 Purpose of this report

GHD was commissioned by Horizon Power to undertake a vegetation, flora and fauna survey of the proposed clearing area for the proposed Learmonth Line re-build. The purpose of the survey is to address the request for further information from DWER to support Horizon Power's current native vegetation clearing permit application (CPS 8067/1).

1.3 Survey area

The proposed Learmonth Line extends from near Welch Street in Exmouth, south to RAAF Learmonth, adjacent to (approximately 15 metres (m) from) the existing Learmonth transmission line. The line is approximately 31 kilometres (km) long, up to 50 m wide and includes eight T-off areas. The survey area covers 157.89 hectares (ha) and is mapped in Figure 1, Appendix A.

1.4 Scope of works

GHD understands the scope of works includes the following:

- Undertake a flora and vegetation survey to broadly map vegetation units, condition and identify Priority flora within the clearing permit application area
- Undertake a fauna survey to broadly map fauna habitat types and identify potential habitat for six threatened and 21 internationally significant migratory avian species as well as the Black-flanked rock-wallaby
- Prepare a technical report
- Provide spatial data suitable for submission to the DWER.

1.5 Relevant legislation and requirements

In WA some ecological communities, flora and fauna are protected under both Federal and State Government legislation. In addition, regulatory authorities also provide a range of guidance and information on expected standards and protocols for environmental surveys.

An overview of key legislation and guidelines, conservation codes and background information relevant to this biological survey is provided in Appendix B.

1.6 Limitations and assumptions

This report has been prepared by GHD for Horizon Power and may only be used and relied on by Horizon Power for the purpose agreed between GHD and the Horizon Power as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Horizon Power arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Horizon Power and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on information obtained from specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of access tracks, operational works, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

Site conditions may change after the date of the field survey. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

This report has assessed the flora and fauna within the survey area (Figure 1, Appendix A). Should the survey area change or be refined, further assessment may be required.

2. Methodology

2.1 Desktop review

Prior to the commencement of the field survey, a desktop review was undertaken to identify relevant environmental information pertaining to the survey area and to assist in survey design. This included a review of:

- The Department of the Environment and Energy (DotEE) Protected Matters Search Tool (PMST) to identify communities and species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) potentially occurring within the study area (DotEE 2019a) (Appendix C)
- The DBCA TEC and PEC database to determine the potential for conservation significant communities to be present within the survey area
- The DBCA *NatureMap* database for flora and fauna species previously recorded within the survey area (DBCA 2019) (Appendix C)
- The DBCA Threatened (Declared Rare) and Priority Flora (TPFL) database and the WA Herbarium database (WAHERB) for Threatened flora listed under the *Biodiversity Conservation Act 2016* (BC Act) and listed as Priority by the DBCA, previously recorded within the survey area
- Existing datasets including previous pre-European vegetation mapping of the survey area (Beard 1976), aerial photography, hydrology information to provide background information on the variability of the environment, likely vegetation units and fauna habitats and to identify areas that potentially contain TECs and PECs
- Existing reports and/or data:
 - Clearing Permit Supporting Report for the Learmonth Line Rebuild (GHD 2018)
 - Preliminary Environmental Impact Assessment for the Learmonth Line Rebuild (GHD 2017)

2.2 Field survey

2.2.1 Flora and vegetation

GHD botanist Joel Collins (flora licence no. SL012542) and ecologist Erin Lynch (flora licence no. SL012374) completed a reconnaissance flora and vegetation survey of the survey area from the 13 to 16 May 2019. The field survey was undertaken to identify and describe the dominant vegetation units, assess vegetation condition, and identify and record vascular flora taxa present at the time of survey. Searches for conservation significant or other significant ecological communities and flora taxa were also undertaken during the field survey.

The survey methods involved low intensity sampling including walking traverses, relevés and photographic reference points located in identified vegetation units. The following data was recorded at each relevé: GPS coordinates and datum, vegetation association, landform and soils, vegetation condition, period since last fire, description of disturbances and list of flora species.

The survey methodology employed by GHD was undertaken with reference to the Environmental Protection Authority (EPA) *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA 2016a).

Vegetation units

Vegetation units were identified and boundaries delineated using a combination of aerial photography, topographical features and field data/observations.

Vegetation units were described based on structure, dominant taxa and cover characteristics as defined by quadrat and relevé data and field observations. Vegetation unit descriptions follow NVIS and are consistent with NVIS Level V (Association). At Level V up to three taxa per stratum are used to describe the association (NVIS Technical Working Group 2017).

Vegetation condition

The vegetation condition was assessed and mapped in accordance with the vegetation condition rating scale for the Eremaean and Northern Botanical Provinces of Western Australia (IBRA) (devised by Keighery (1994) and adapted by EPA (2016a)). The scale recognises the intactness of vegetation and consists of six rating levels. The vegetation condition rating scale is located in Appendix B.

Surveys for conservation significant flora

Prior to the field survey, information obtained from the desktop assessments (e.g. previous surveys, aerial photography, geology, soils and topography data, EPBC Act PMST (DotEE 2019a), TPFL, *NatureMap* (DBCA 2019) and the WAHERB databases search results) were reviewed to determine conservation significant flora taxa potentially present within the study area. Additionally, ecological information (e.g. habitat, associated flora taxa and phenology) was sourced from *FloraBase* (WA Herbarium 1998–) to provide further details.

Potential habitats and locations of previous records were thoroughly searched by walking traverses across the entire survey area. Locations within the survey area with differing hydrology, fire or disturbance history to the surrounding areas were also searched where identified. Where individuals were identified, the location and number of plants present were recorded using handheld GPS units. When conservation significant flora were recorded, fine scale transects and meandering was performed.

Flora identification and nomenclature

Species well known to the survey botanist were identified in the field; all other species were collected and assigned a unique collection number to facilitate tracking. All specimens collected during the field assessment were dried and processed in accordance with the requirements of the WA Herbarium. Species were identified by the use of taxonomic literature, electronic keys and online electronic databases.

The conservation status of all recorded flora was compared against the current lists available on *FloraBase* (WA Herbarium 1998–) and the EPBC Act Threatened species database provided by DotEE (2019b). Nomenclature used in this report follows that used by the WA Herbarium as reported on *FloraBase* (WA Herbarium 1998–).

2.2.2 Fauna

GHD ecologist Erin Lynch undertook a level 1 fauna survey (reconnaissance survey) in conjunction with the flora and vegetation survey. The survey area was traversed on foot over the course of the survey to identify and describe the dominant fauna habitat types present and their condition, assess habitat connectivity, and identify and record fauna species within the survey area. An assessment of the likelihood of conservation significant fauna and their habitats occurring within the survey area was also undertaken.

The survey methodology employed by GHD was undertaken in accordance with the EPA *Technical Guidance– Sampling methods for terrestrial vertebrate fauna* (EPA 2016b) and *Technical Guidance– Terrestrial Fauna Surveys* (EPA 2016c).

Opportunistic fauna searches

Opportunistic fauna searches were conducted across the survey area. Opportunistic searches involved:

- Searching the survey area for tracks, scats, bones, diggings and feeding areas for both native and feral species
- Searching through microhabitats including turning over logs or rocks, turning over leaf litter and examining tree hollows and hollow logs
- Visual and aural surveys, which accounted for many bird species potentially utilising the survey area
- Recording GPS locations of any conservation significant fauna species observed.

Fauna species identification

Identification of fauna species was made in the field using available field guides and electronic guides (e.g. Morcombe 2014). Where identification was not possible, photographs of specimens were collected to be later identified.

Fauna nomenclature

Nomenclature used in this report follows that used by the Western Australian Museum and the DBCA NatureMap database (DBCA 2019) with the exception of birds, where Christidis & Boles (2008) was used.

2.3 Limitations

2.3.1 Desktop limitations

The EPBC Act PMST is based on bioclimatic modelling for the potential presence of species. As such, this does not represent actual records of the species within the area. The records from the DBCA searches of Threatened fauna provide more accurate information for the general area and local occurrence. However, some collection, sighting or trapping records cannot be dated and often misrepresent the current range of Threatened species.

2.3.2 Field survey limitations

The EPA (2016a, b) states that flora and fauna survey reports for environmental impact assessment in WA should contain a section describing the limitations of the survey methods used. The limitations and constraints associated with this field survey are discussed in Table 1.

Table 1 Flora and fauna survey limitations

Aspect	Constraint	Comment
Sources of information and availability of contextual information.	Nil	Adequate information is available for the survey area. <ul style="list-style-type: none"> GHD (2017, 2018) Pre-European vegetation mapping (Beard 1976)
Scope (what life forms were sampled etc.)	Nil	Vascular flora and terrestrial vertebrate fauna were sampled during the survey. Non-vascular flora, invertebrate and aquatic fauna were not surveyed. Adequate time was available to complete the biological survey to the required standard.
Proportion of flora collected and identified (based on sampling, timing and intensity) Proportion of fauna identified, recorded and/or collected	Nil	The survey sampling and intensity was considered adequate, and seasonal conditions were considered satisfactory. All taxonomic groups were considered to be represented. The portion of flora collected and identified was considered moderate; and it is likely the survey under-recorded some grass species (Poaceae), annuals and herbs due to lower than average rainfall and consequently poor flowering material. However, based on the likelihood assessment it is unlikely these species would be conservation significant. The reconnaissance fauna survey was undertaken in May 2019. The fauna assessment sampled those species that can be easily seen, heard or have distinctive signs, such as tracks, scats, diggings, etc. Many cryptic species would not have been identified during a reconnaissance survey and seasonal variation within species often requires targeted surveys at a particular time of the year. Of the fauna species recorded during the survey, all were identified to species level.
Flora determination	Minor	Flora determination was undertaken by GHD botanist/ecologist in the field and at the WA Herbarium. Five taxa could be identified to genus level only, and five taxon could be tentatively identified to species level, due to lack of flowering and/or fruiting material required for identification. None of these species were considered to be potential conservation significant flora. The taxonomy and conservation status of the WA flora is dynamic. This report was prepared with reliance on taxonomy and conservation status current at the time of report development, but it should be noted this may change in response to ongoing research and review of the International Union for Conservation Nature criteria.
Completeness and further work which might be needed (e.g. was the relevant area fully surveyed)	Minor	The entire survey area was accessible and was accessed by foot and vehicle.
Mapping reliability	Nil	The vegetation was mapped using high-resolution ESRI aerial imagery obtained from Landgate, topographical features, previous broad scale mapping (Beard 1976) and field data.

Aspect	Constraint	Comment
		Data was recorded in the field using hand-held GPS tools (e.g. Samsung tablet and Garmin GPS). Certain atmospheric factors and other sources of error can affect the accuracy of GPS receivers. The Garmin GPS units used for this survey are accurate to within ± 5 metres on average. Therefore the data points consisting of coordinates recorded from the GPS may contain inaccuracies.
Timing/weather/season/cycle	Minor	The field survey was conducted in May 2019. In the three months prior to the flora survey (February to April), Learmonth Airport weather station (Bureau of Meteorology (BoM) 2019) recorded a total of 78.2 mm of rainfall. This rainfall total is lower than the long term average for the same period (February-April; 98.9 mm) (BoM 2019). The weather conditions recorded during the survey (warm and sunny) were considered unlikely to have impacted the survey results. The survey timings were considered appropriate for the flora and fauna field surveys.
Disturbances (e.g. fire, flood, accidental human intervention)	Minor	The survey area was not subject to any disturbances that impacted or limited the biological survey.
Resources	Nil	Adequate resources were employed during the field survey. Two staff over four days were spent undertaking the survey using a dedicated botanist and ecologist.
Access restrictions	Nil	No access problems were encountered during the survey.
Experience levels	Nil	The ecologists who executed the survey were practitioners suitably qualified in their respective fields. Joel Collins and Erin Lynch are botanists/ecologists with over 12 years' experience in undertaking ecological surveys in Western Australia.

3. Results

3.1 Vegetation

3.1.1 Vegetation types

Six vegetation types were identified and described for the survey area, not including cleared and/or highly degraded areas (total cleared 14.52 ha). The survey area is predominantly located along an existing power line corridor and adjacent access tracks.

The vegetation within the survey area primarily consists of mixed *Acacia* open shrublands over *Triodia* hummock grasslands on sandy and stony plains and low undulating rises. The plains are dissected by a number of minor drainage lines lined by *Eucalyptus* and/or *Corymbia* species. Towards the southern end of the survey area the soils become more clay based and dominated by sparse *Acacia* shrubs over chenopod shrublands.

Vegetation type VT_3 is considered representative of riparian vegetation.

A more detailed description of the vegetation types mapped across the survey area is provided in Table 2 and mapped in Figure 1, Appendix A.

Table 2 Vegetation types recorded within the survey area

Vegetation Type Code	Vegetation Type Description	Relevés and extent (ha)	Photograph
VT_1	<i>Corymbia hamersleyana</i> isolated trees over <i>Acacia tetragonophylla</i> , <i>Acacia bivenosa</i> and <i>Acacia synchronicia</i> sparse shrubland over <i>Triodia epactia</i> and <i>Triodia wiseana</i> sparse hummock grassland and * <i>Cenchrus ciliaris</i> and <i>Enneapogon caerulescens</i> tussock grassland on sandy/stony plain. Other indicator species include <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Hakea lorea</i> subsp. <i>lorea</i> , <i>Solanum diversiflorum</i> and <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	EX_01, EX_16 Area: 3,90 ha	
VT_2	<i>Corymbia hamersleyana</i> isolated trees over <i>Acacia tetragonophylla</i> , <i>Acacia bivenosa</i> and <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> open shrubland over <i>Melaleuca cardiophylla</i> , <i>Acacia arida</i> and <i>Acacia gregorii</i> sparse shrubland over <i>Triodia wiseana</i> and <i>Triodia epactia</i> open hummock to hummock grassland on rocky plain to low undulating rises. Other indicator species include <i>Exocarpos aphyllus</i> , <i>Tephrosia rosea</i> var. <i>clementii</i>	EX_02, EX_03, EX_05, EX_07, EX_15 Area: 76.44 ha	

Vegetation Type Code	Vegetation Type Description	Relevés and extent (ha)	Photograph
VT_3	<p><i>Corymbia hamersleyana</i> isolated trees over <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Acacia tetragonophylla</i> open shrubland over <i>Corchorus crozophorifolius</i> and <i>Tephrosia rosea</i> var. <i>clementii</i> shrubland over <i>Cymbopogon ambiguus</i> sparse grassland and <i>Cleome viscosa</i> and <i>Trichodesma zeylanicum</i> sparse forbland on rocky drainage lines (riparian). Other indicator species include <i>Ipomoea costata</i>, <i>Eremophila longifolia</i>, <i>Hybanthus aurantiacus</i> and <i>Acacia arida</i></p>	<p>EX_04, EX_06, EX_10, EX_17, EX_18</p> <p>Area: 8.96 ha</p>	
VT_4	<p><i>Acacia bivenosa</i>, <i>Scaevola spinescens</i> and <i>Acacia synchronica</i> shrubland over <i>Eremophila longifolia</i> and <i>Diplopeltis eriocarpa</i> sparse shrubland over <i>Triodia epactia</i> sparse hummock grassland and *<i>Cenchrus ciliaris</i> sparse grassland on sandy loam plain</p>	<p>EX_08, EX_09, EX_19</p> <p>Area: 29.38 ha</p>	

Vegetation Type Code	Vegetation Type Description	Releves and extent (ha)	Photograph
VT_5	<p><i>Acacia xiphophylla</i> open shrubland over <i>Acacia tetragonophylla</i>, <i>Exocarpos aphyllus</i> and <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i> sparse shrubland over <i>Triodia epactia</i> and <i>Triodia wiseana</i> sparse hummock grassland and *<i>Cenchrus ciliaris</i> sparse grassland on sandy loam plain. Other indicator species include <i>Eucalyptus xerothematica</i>, <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> and <i>Acacia synchronicia</i>. More degraded areas of this vegetation type has *<i>Cenchrus ciliaris</i> grassland dominant in the ground layer.</p>	<p>EX_11, EX_12, EX_13, EX_14, EX_20, EX_21, EX_22</p> <p>Area: 21.27 ha</p>	
VT_6	<p><i>Acacia synchronicia</i> and <i>Acacia tetragonophylla</i> sparse shrubland over <i>Maireana planifolia</i>, <i>Rhagodia eremaea</i> and <i>Sclerolaena</i> sp. open chenopod shrubland over *<i>Cenchrus ciliaris</i> sparse grassland on clay saline drainage flats.</p>	<p>EX_23</p> <p>Area: 3.41 ha</p>	

3.1.2 Conservation significant ecological communities

The desktop review undertaken by GHD (2019) identified one Threatened Ecological Community (TEC) within the vicinity of the project, the Camerons Cave Troglobitic Community, listed as a Critically Endangered TEC by DBCA. Camerons Cave occurs within the Exmouth townsite on Lot No. 1388, north of Heron Way (entrance location confirmed by Horizon Power with DBCA in February 2018). The cave is a doline (sinkhole) about 10 m x 15 m in diameter, with a hole in the middle that drops into a horizontal cave that goes down to and beyond the watertable. Threatening processes identified for this TEC include uncontrolled access to Camerons Cave and its surrounds, modification of the local or regional hydrological processes and pollution, and dumping of rubbish or toxic waste that may affect conditions in Camerons (Department of Environment and Conservation (DEC) 2012).

This TEC consists of an underground troglobitic community and does not comprise of terrestrial vegetation or vertebrate fauna; an assessment of this TEC is outside the scope of this biological assessment. However, given the project is of a linear nature, does not require the extraction of groundwater and requires minimal clearing, the project is unlikely to have a significant impact on the conservation value of this TEC.

No cave entrances were identified within or adjacent to the survey area during the field assessment. Furthermore, given the new line will be to the west of the existing line in this area, the new line will be further away from the cave. Horizon Power has sought advice from DBCA who provided recommendations for managing and minimising impacts to the Camerons Cave troglobitic community TEC. Based on this advice Horizon Power will implement management measures (where possible).

3.1.3 Vegetation condition

The vegetation condition throughout the survey area was generally consistent, with the majority of the survey area determined to be in Very Good condition. The exceptions were areas which had been previously cleared or disturbed and edges of access tracks where the weed species **Cenchrus ciliaris* (Buffel grass) was more dominant. Fire has also has an impact on the structure and condition of the vegetation within the survey area.

The southern half of the survey area was generally more degraded than the remainder of the survey area with the extent and occurrence of Buffel grass becoming more dominant.

The extent of the vegetation condition mapped within the survey area is provided in Table 3 and mapped in Figure 2, Appendix A.

Table 3 Extent of vegetation condition mapped within the survey area

Vegetation Condition (EPA 2016a)	Extent mapped (ha)
Excellent (2)	6.40 ha
Very Good (3)	108.10 ha
Good (4)	12.52 ha
Degraded (5)	16.33 ha
Completely Degraded (6)	14.52 ha

3.2 Flora

3.2.1 Flora diversity

The survey recorded a total of 82 flora taxa (including subspecies and varieties) representing 28 families and 60 genera within the survey area. This total comprised of 80 native taxa and two introduced taxa, **Cenchrus ciliaris* (Buffel grass) and **Chloris barbata* (Purpletop Chloris). The most serious and widespread in the Exmouth area is Buffel grass which has largely replaced *Triodia* grasslands because of fire and grazing pressure.

The vegetation of the survey area is relatively low in species diversity, and varies mainly in the proportion of the same predominant species.

The list of flora recorded within the survey area is provided in Appendix D.

3.2.2 Conservation significant flora

No threatened flora species listed under the EPBC Act and/or BC Act was recorded within the survey area.

Four Priority species listed by the DBCA were recorded within the survey area:

- *Corchorus congener* (Priority 3)
- *Eremophila forrestii* subsp. *capensis* (Priority 3)
- *Tephrosia* sp. North West Cape (G. Marsh 81) (Priority 2)
- *Tinospora esiangkara* (Priority 2)

The location of the priority flora recorded within the survey area are provided in Appendix D and mapped on Figure 3, Appendix A.

Corchorus congener

Corchorus congener (Plate 1) is listed priority 3 and is a spreading shrub, to 0.6 m high with yellow flowers flowering from April to June or August to November. It is known to occur on sand and red sand loam with limestone on sand dunes and plains (Western Australian Herbarium 1998–). According to *Naturemap* (DBCA 2019) there are 143 records of this species, with most records concentrated on the Exmouth Peninsula, Barrow Island and islands off the Dampier Peninsula.



Plate 1 *Corchorus congener*

Seven plants from six locations were recorded in the survey area.

Eremophila forrestii subsp. capensis

Eremophila forrestii subsp. *capensis* (Plate 2) is listed priority 3 is a sparsely to much-branched shrub growing to 1.4 m high. It is known to occur on brown rocky soils on limestone and ridges (Western Australian Herbarium 1998–). According to *Naturemap* (DBCA 2019) there are only eight known records of this species, all records are restricted to the Exmouth Peninsula.



Plate 2 *Eremophila forrestii subsp. capensis*

Nine plants from two locations were recorded in the survey area.

***Tephrosia* sp. North West Cape (G. Marsh 81)**

Tephrosia sp. North West Cape (G. Marsh 81) (Plate 3) is listed priority 2 and is a low perennial shrub growing to approximately 0.3 m high. It has previously been recorded from red brown / orange soils over limestone on plains (Western Australian Herbarium 1998–). According to *Naturemap* (DBCA 2019) there are only four known records of this species, all of which have been recorded within the Exmouth Peninsula.



Plate 3 *Tephrosia* sp. North West Cape (G. Marsh 81)

This species was recorded from one location within the survey area.

Tinospora esiangkara

Tinospora esiangkara (Plate 4) is listed priority 2 and is a climber growing to 2 m tall with large stems with brown, flaky bark. It has green flowers and flowers in July. It is known to occur on Pebbly orange-brown calcareous loam, limestone outcrops or ridges and near creek banks (Western Australian Herbarium 1998–). According to *Naturemap* (DBCA 2019) there are only 10 records of this species with all records are restricted to the Exmouth Peninsula.



Plate 4 *Tinospora esiangkara*

Two plants from two locations were recorded within the survey area.

Likelihood of occurrence

A likelihood of occurrence assessment was conducted post-field survey for all conservation significant flora taxa identified in the desktop assessment by GHD (2018) and from updated desktop searches (provided in Appendix C). This assessment took into account previous records, habitat requirements, efficacy of the survey, intensity of the survey, flowering times and the cryptic nature of the species (Appendix D).

The likelihood of occurrence assessment post-field survey concluded that no further priority flora are considered likely to occur within the survey area.

3.3 Fauna

3.3.1 Fauna habitat

Four broad fauna habitat types have been identified within the survey area. These habitat types closely align with the vegetation types described in section 3.1.1. The topography of the survey area is generally flat plains to low undulating rises with some rocky outcropping. A number of minor drainage lines and creeklines dissect the survey area, which drain to the east into the Exmouth Gulf.

The habitat types recorded in the survey area are described in Table 4.

Table 4 Fauna habitat types recorded within the survey area

Fauna Habitat	Representative Photograph
<p>Rocky plains</p> <p>This habitat type is associated with stony/rocky plains and low undulating rises and consists of scattered <i>Corymbia hamersleyana</i> over a sparse to open mixed <i>Acacia</i> shrubland over a <i>Triodia</i> hummock grassland.</p> <p>The hummock grasslands form a dense ground cover and provides refuge for reptiles (such as snakes, skinks, goannas and dragons) and small mammals and ground dwelling birds. The shrubs and scattered trees provides refuge for native birds. Rocky outcrops contain small crevices which provide refuge for reptile species. The majority of the habitat was well connected with some minor clearing as a result of access tracks and existing powerlines.</p> <p>This habitat type aligns with VT_1 and VT_2.</p>	
<p>Creeklines and minor drainage lines</p> <p>A number of creeks and minor drainage lines dissect the survey area. <i>Corymbia hamersleyana</i>, the occasional <i>Eucalyptus victrix</i> and mixed <i>Acacia</i> shrubs lined the edges of the drainage lines. Mixed hummock and tussock grasses and small herbs dominate the groundcover along the banks of the creeks with very few scattered plants on the rocky river beds. The creeklines/drainage lines were all generally in good condition with minimal weed invasion (some buffel grass).</p> <p>Creeklines are considered to be important ecological corridors to other broader habitats within the local area and provide a source of water during periods of heavy rainfall. Trees and shrubs provide shelter and food resources to a number of native fauna species, in particular birds.</p> <p>This habitat type aligns with VT_3</p>	

Fauna Habitat

Representative Photograph

Mixed shrublands on sandy loam plains

The sandy loam plains support mixed shrublands to open shrublands over open hummock grasslands of *Triodia* species and patches of buffel grass. The hummock and tussock grasslands form a dense ground cover and provides refuge for reptiles, small mammals and ground dwelling birds. The shrubs provides refuge and food resources for native birds.

This habitat type aligns with VT_4 and VT_5.



Clay flats

This habitat type occurs on the low lying saline clay flats. The clay flats support a sparse mid shrubland of *Acacia* species over a low open chenopod shrubland. This habitat type consists of large areas of bare open ground. During periods of water inundation this habitat is likely to provide suitable habitat for some water bird species. During dry periods the habitat provides habitat for ground dwelling birds and reptiles and small mammals.

This habitat type aligns with VT_6



3.3.2 Habitat corridors and linkages

The habitat types within the survey area are well connected and part of a largely contiguous landscape. The fauna habitats of the survey area are part of a much larger area of similar habitats within the local area and the greater survey area. The vegetation within the survey area is connected to the Cape Range National Park to the west and connected to the east towards the Exmouth Gulf. To the east of the survey area, the Minilya-Exmouth Road and small pockets of development create the only major barrier to fauna moving east-west through the landscape, particularly for mammal and reptiles species.

3.3.3 Fauna diversity

A total of 43 fauna species, including 35 birds, five mammals and three reptiles were recorded during the survey. Of these three species are introduced: sheep, goat and feral cat. All fauna species recorded during the survey are generally common and are known to occur in the area.

A full list of fauna recorded during the survey is provided in Appendix E.

3.3.4 Conservation significant fauna

No Threatened or priority fauna species or evidence of their presence was recorded in the survey area during the field assessment. One bird, the Peregrine Falcon (*Falco peregrinus*), listed under Other specially protected fauna (BC Act) was observed flying over in close proximity to the survey area. Additionally one Migratory listed bird, Osprey (*Pandion haliaetus*) was recorded from the survey area.

Likelihood of occurrence

A likelihood of occurrence assessment was conducted post-field survey for conservation significant fauna identified in the desktop assessment during the desktop assessment by GHD (2018) and from updated desktop searches (provided in Appendix C). This assessment was based on species biology, habitat requirements, the quality and availability of suitable habitat, and local occurrence (Appendix E).

The likelihood of occurrence assessment concluded two species are known to occur (recorded during the survey), one species are likely to occur and the remaining species are considered unlikely or highly unlikely to occur within the survey area.

Table 5 Conservation significant fauna likely to occur in the survey area

Species	EPBC Act	BC Act/ DBCA	Likelihood of occurrence
Peregrine Falcon (<i>Falco peregrinus</i>)		OS	Known – The species is known to occur locally and was recorded during the survey. The shrubland habitat within the survey area represents suitable foraging habitat, although lacks suitable breeding habitat. Therefore likely to occur at least on an occasional basis.
Osprey (<i>Pandion haliaetus</i>)	Mi	IA	Known – The survey area is situated near the coastline. This species is likely to fly over, and opportunistically utilise portions of the habitat.
Cape Range Stone Gecko (<i>Diplodactylus capensis</i>)		P2	Likely - There are a number of records of the species on the Exmouth Peninsula, with most records restricted to the ranges within Cape Range National Park. There are a couple of records on the lower plains. Suitable habitat is present within the survey area.

The likelihood of occurrence assessment identified other fauna species of conservation significance could occasionally occur within the habitats of the survey area (e.g. species deemed unlikely). However, it is considered unlikely the survey area provides important habitat (e.g. breeding habitat or key foraging habitat) for any of these species and that these other species may occasional use the habitats of the survey area for temporary refuge and dispersal between other areas of habitat.

No species of conservation significance are likely to be solely dependent on the habitats present within the survey area.

4. References

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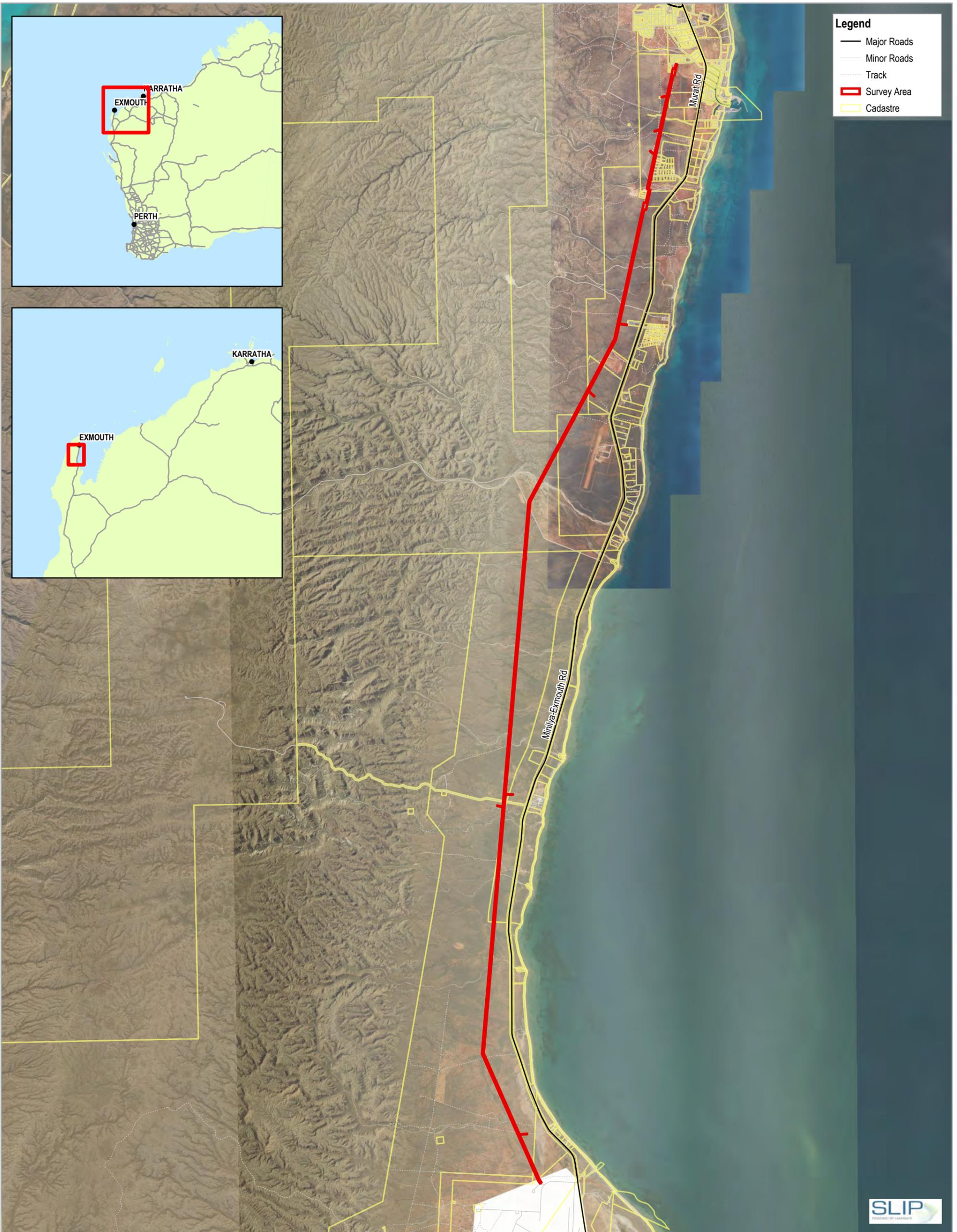
Appendices

Appendix A – Figures

Figure 1 Locality and biological constraints

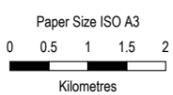
Figure 2 Vegetation types and condition

Figure 3 Conservation significant flora records



Legend

- Major Roads
- Minor Roads
- ⋯ Track
- ▭ Survey Area
- ▭ Cadastre



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 Grid: GDA 1994 MGA Zone 50



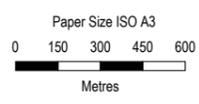
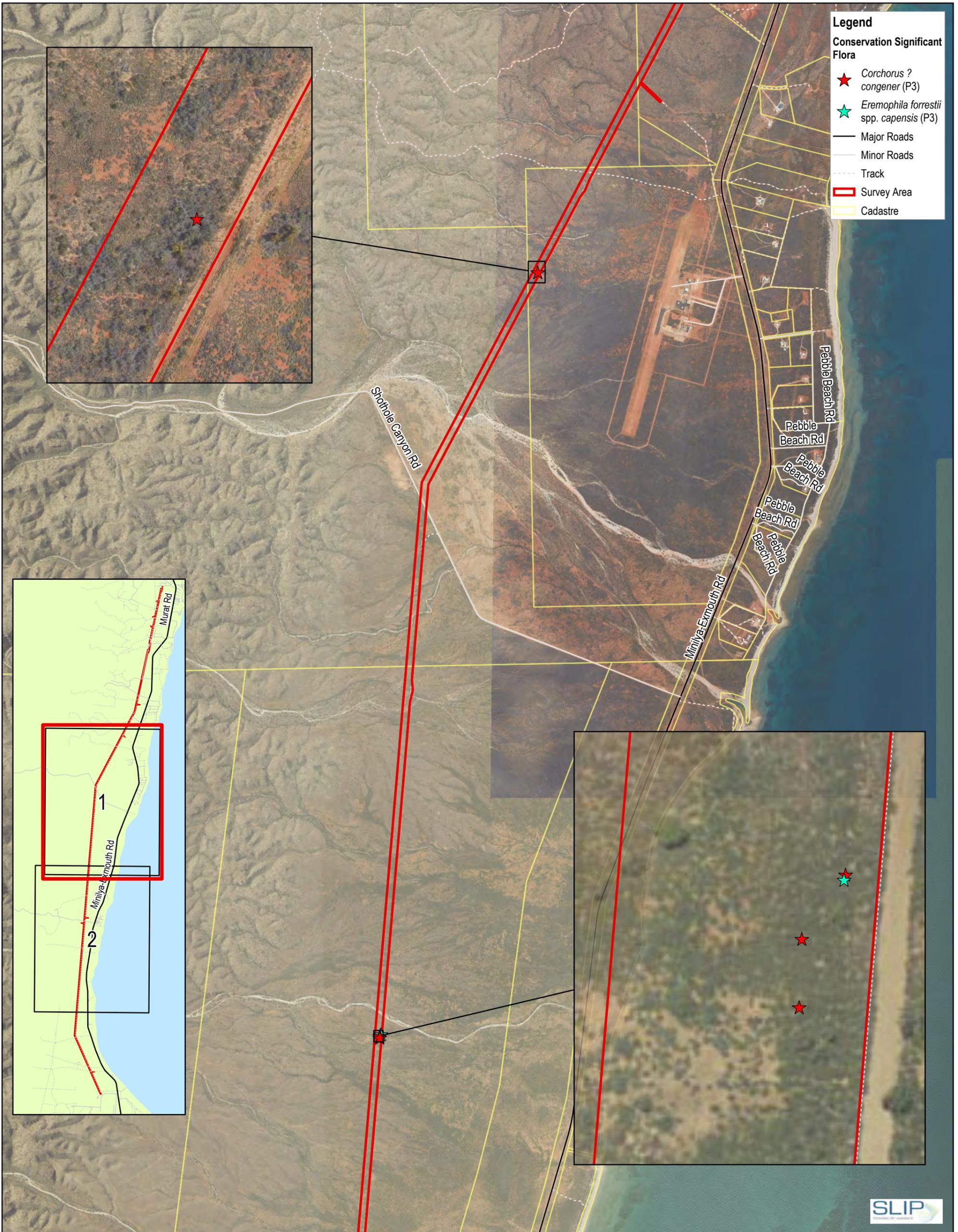
Horizon Power
 022 - Learmonth Biological Line Survey

Location of Survey Area

Project No. 61-37995
 Revision No. 0
 Date 16/07/2019



FIGURE 1



Map Projection: Transverse Mercator
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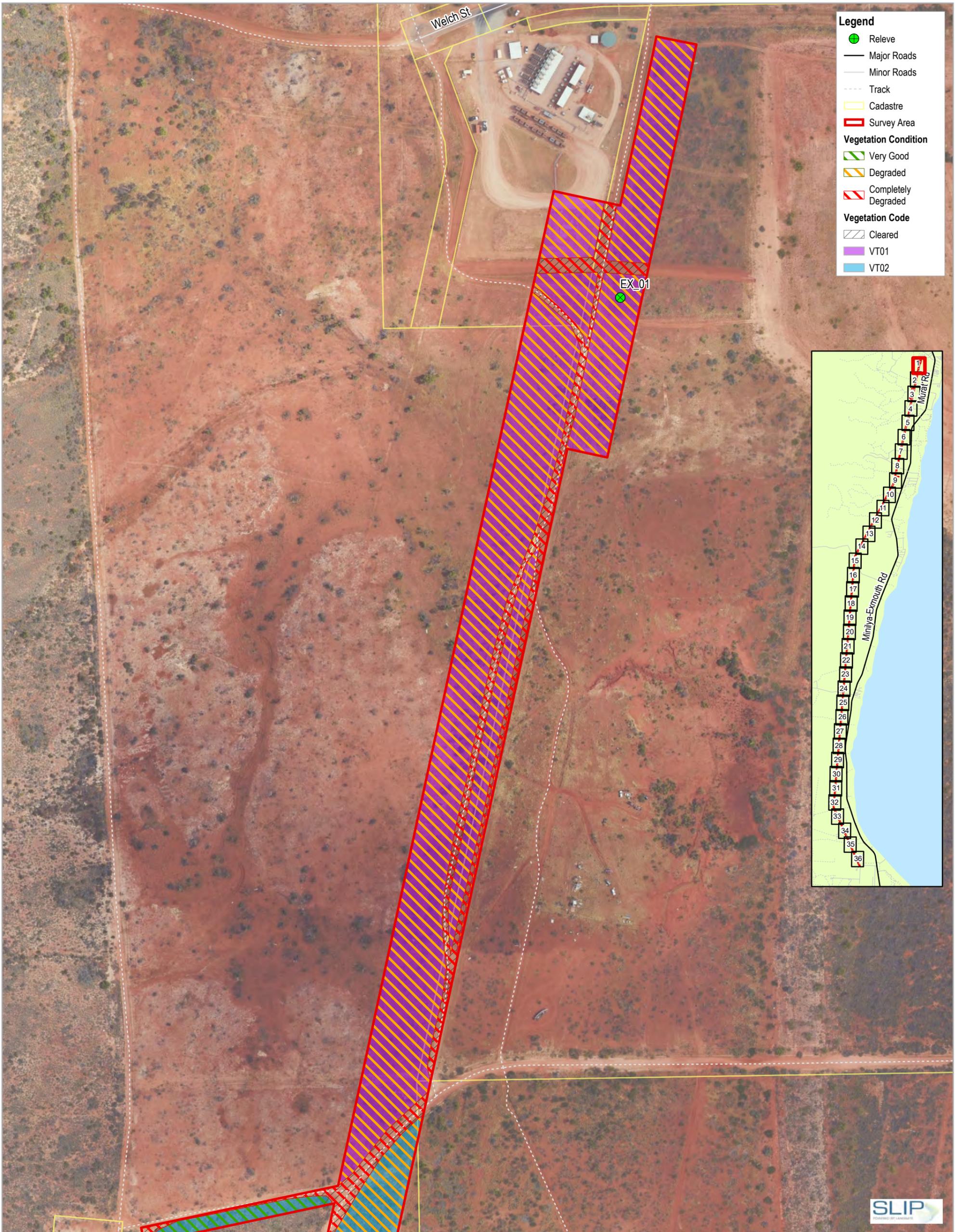


Horizon Power
022 - Learmonth Biological Line Survey

Conservation Significant Flora

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Date 16/07/2019

FIGURE 3
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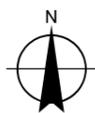


- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Very Good
 - ▨ Degraded
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
 - ▨ VT01
 - ▨ VT02



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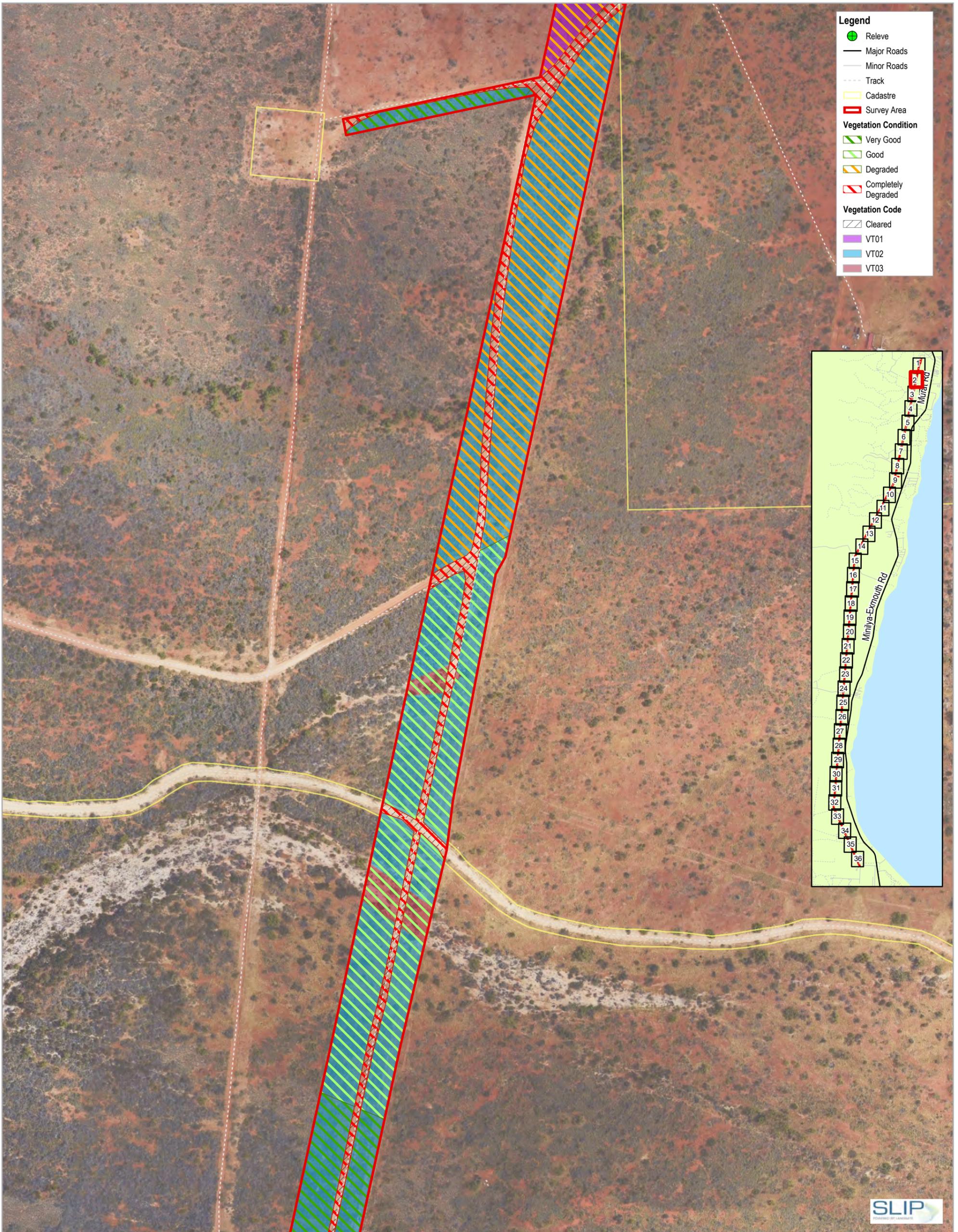


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Vegetation Types and Condition

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FIGURE 2
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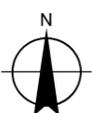


- Legend**
- Revele
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▭ Very Good
 - ▭ Good
 - ▭ Degraded
 - ▭ Completely Degraded
- Vegetation Code**
- ▭ Cleared
 - ▭ VT01
 - ▭ VT02
 - ▭ VT03



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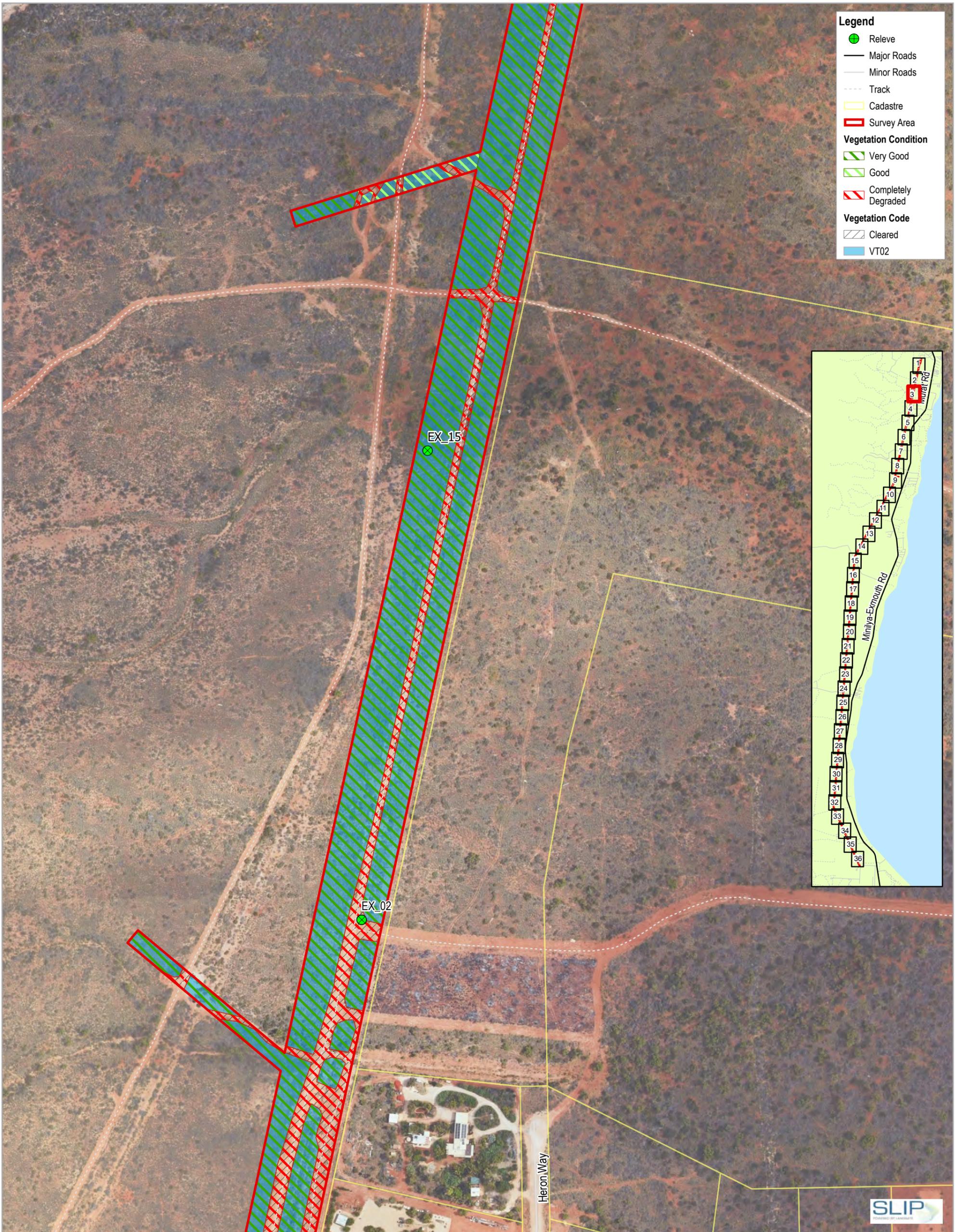


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FIGURE 2
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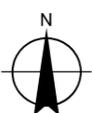


- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
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 - ▨ Good
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
 - ▨ VT02



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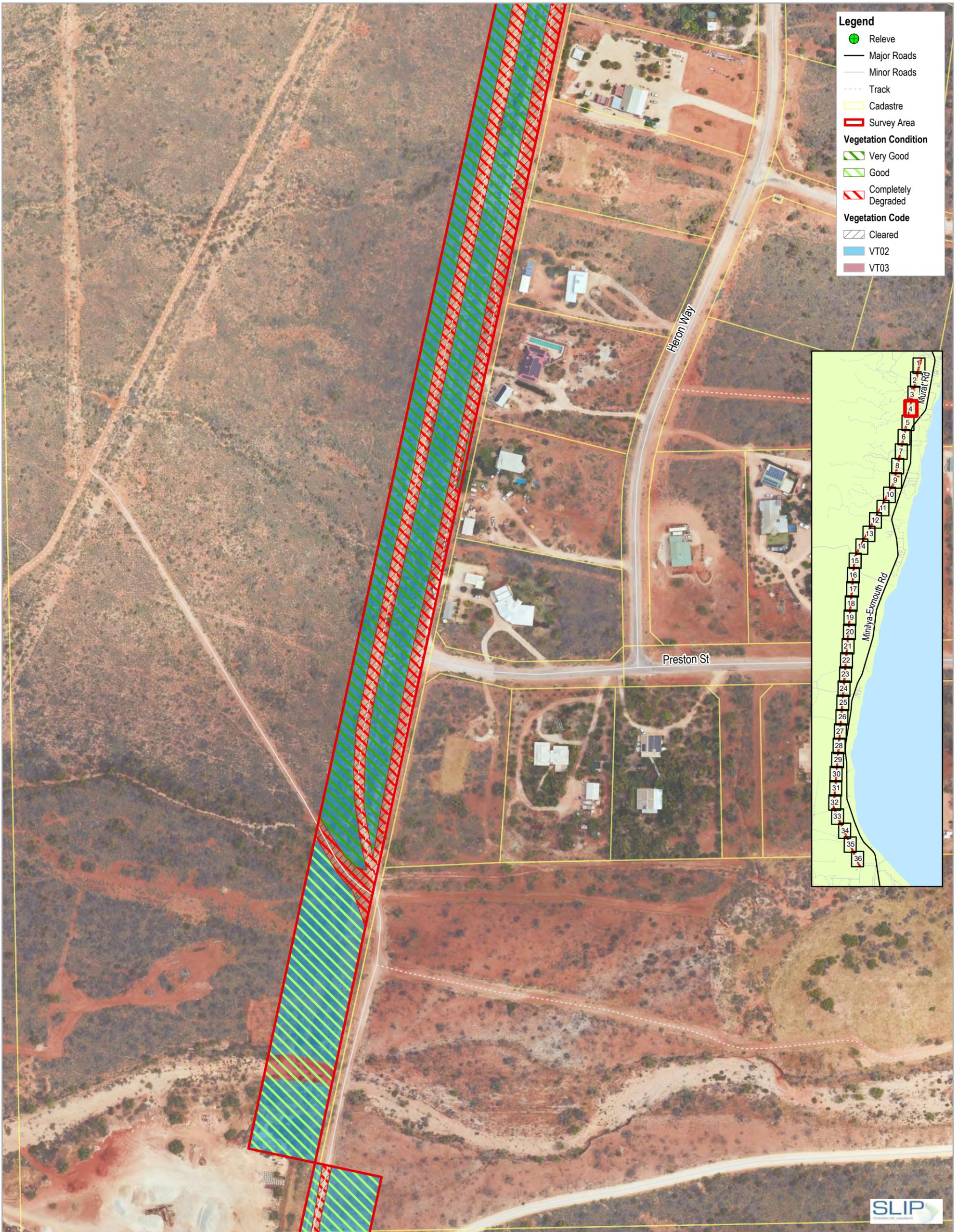


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022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Revele
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▭ Very Good
- ▭ Good
- ▭ Completely Degraded

Vegetation Code

- ▭ Cleared
- ▭ VT02
- ▭ VT03



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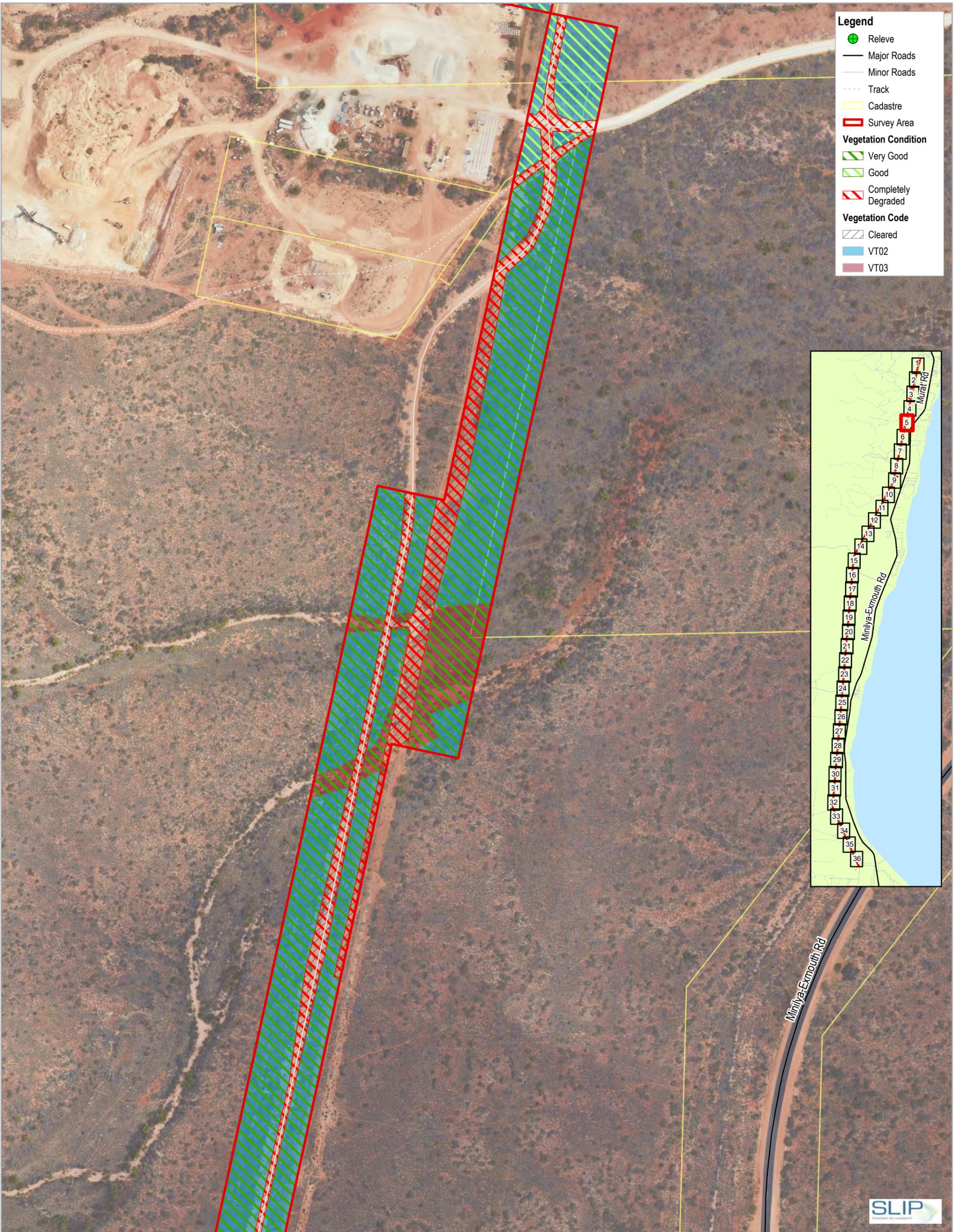


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Vegetation Types and Condition

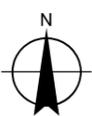
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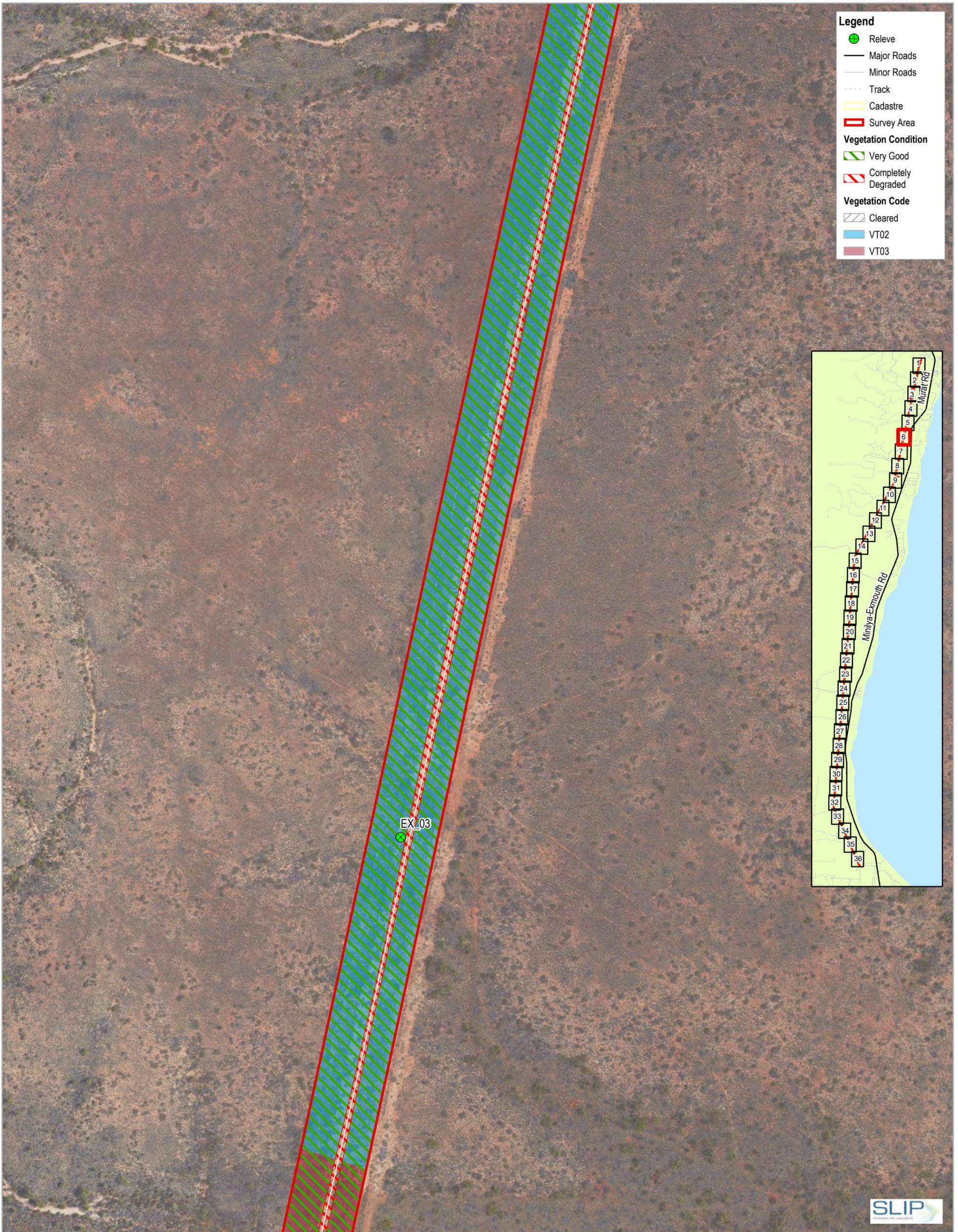
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Horizon Power
022 - Learmonth Biological Line Survey
Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ VT02
- ▨ VT03



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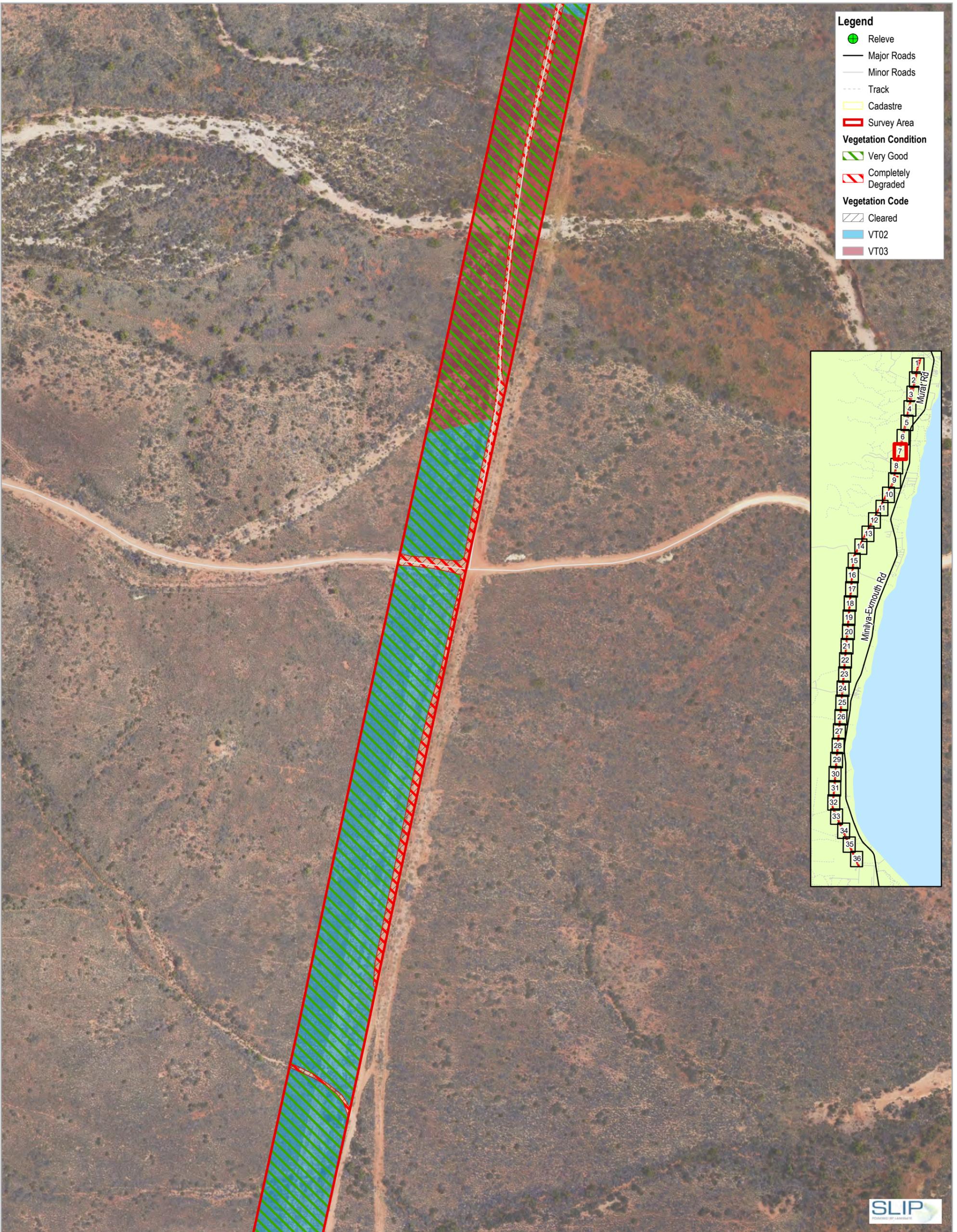


Horizon Power
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Vegetation Types and Condition

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FIGURE 2
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- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - Track
 - Cadastre
 - Survey Area
- Vegetation Condition**
- Very Good
 - Completely Degraded
- Vegetation Code**
- Cleared
 - VT02
 - VT03



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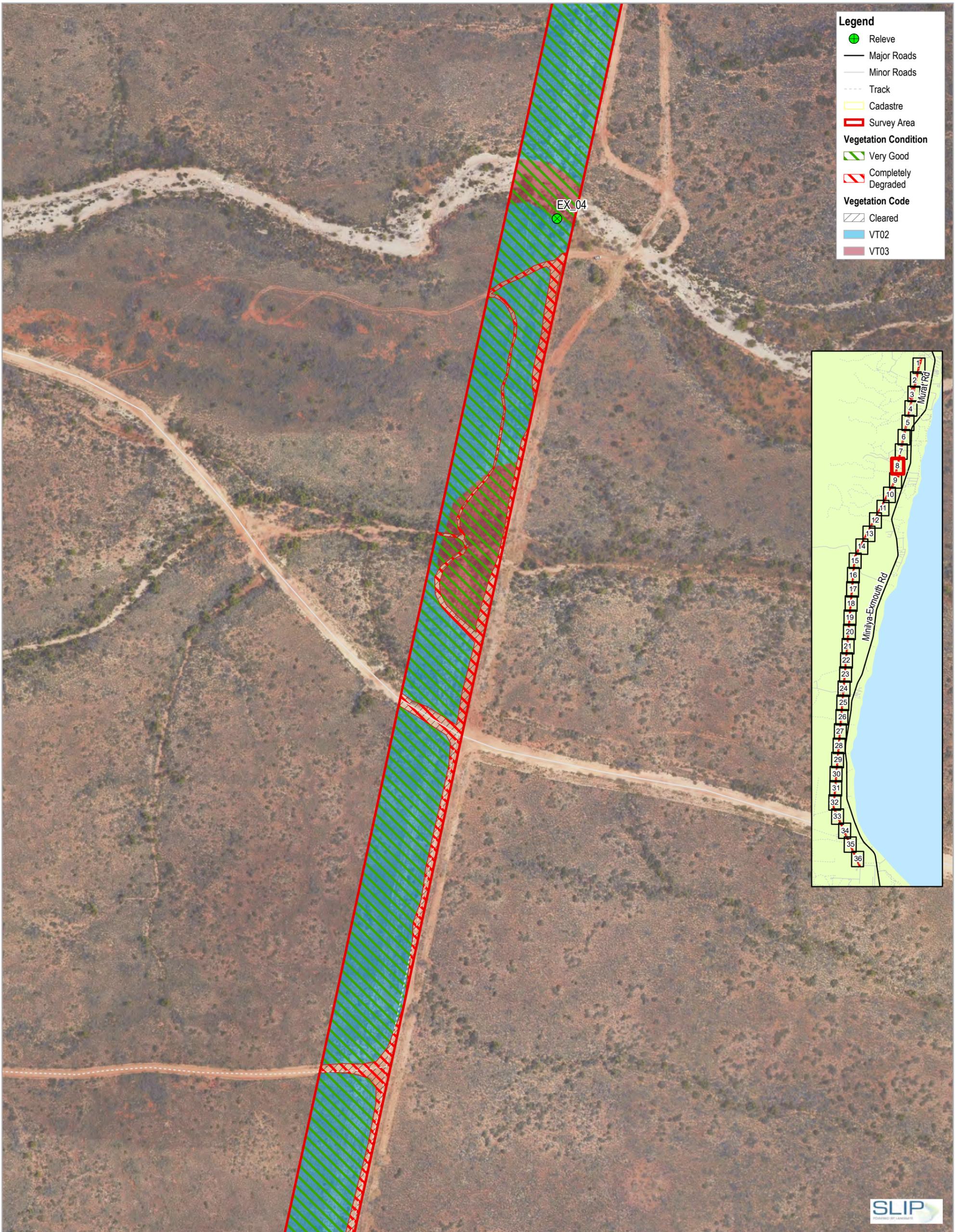


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

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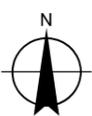
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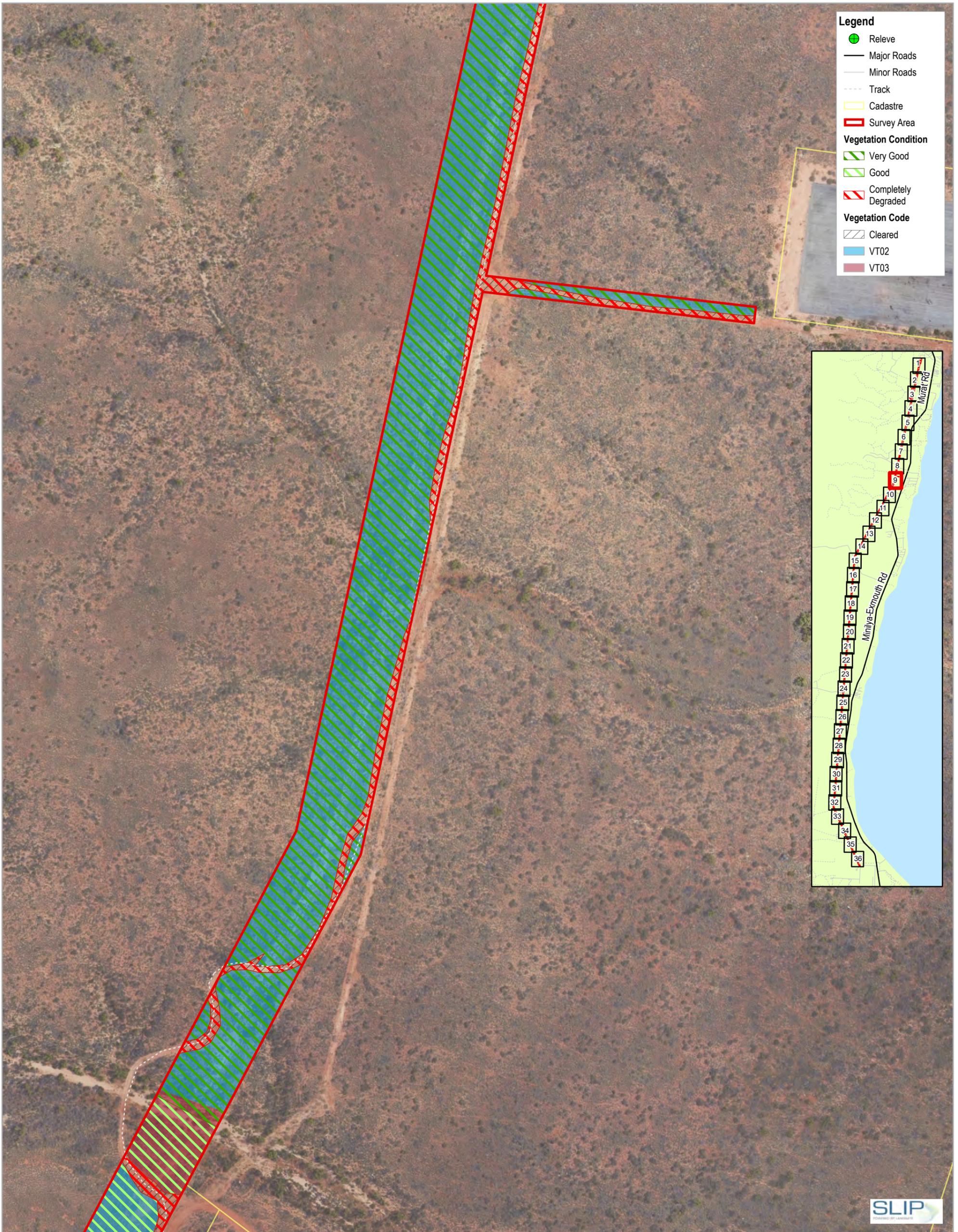


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Vegetation Types and Condition

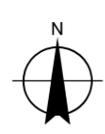
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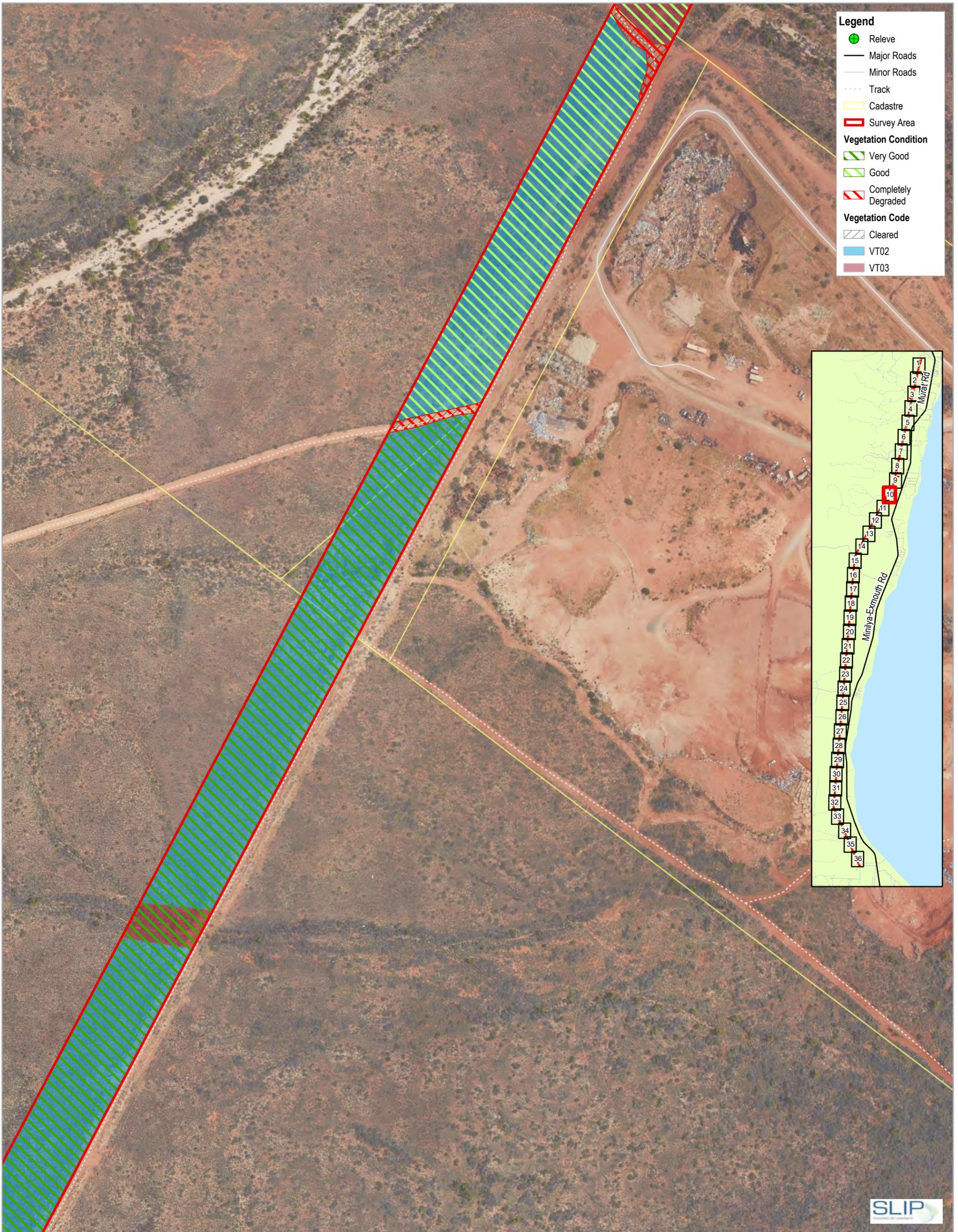


Horizon Power
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Vegetation Types and Condition

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FIGURE 2
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- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
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 - ▨ Good
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
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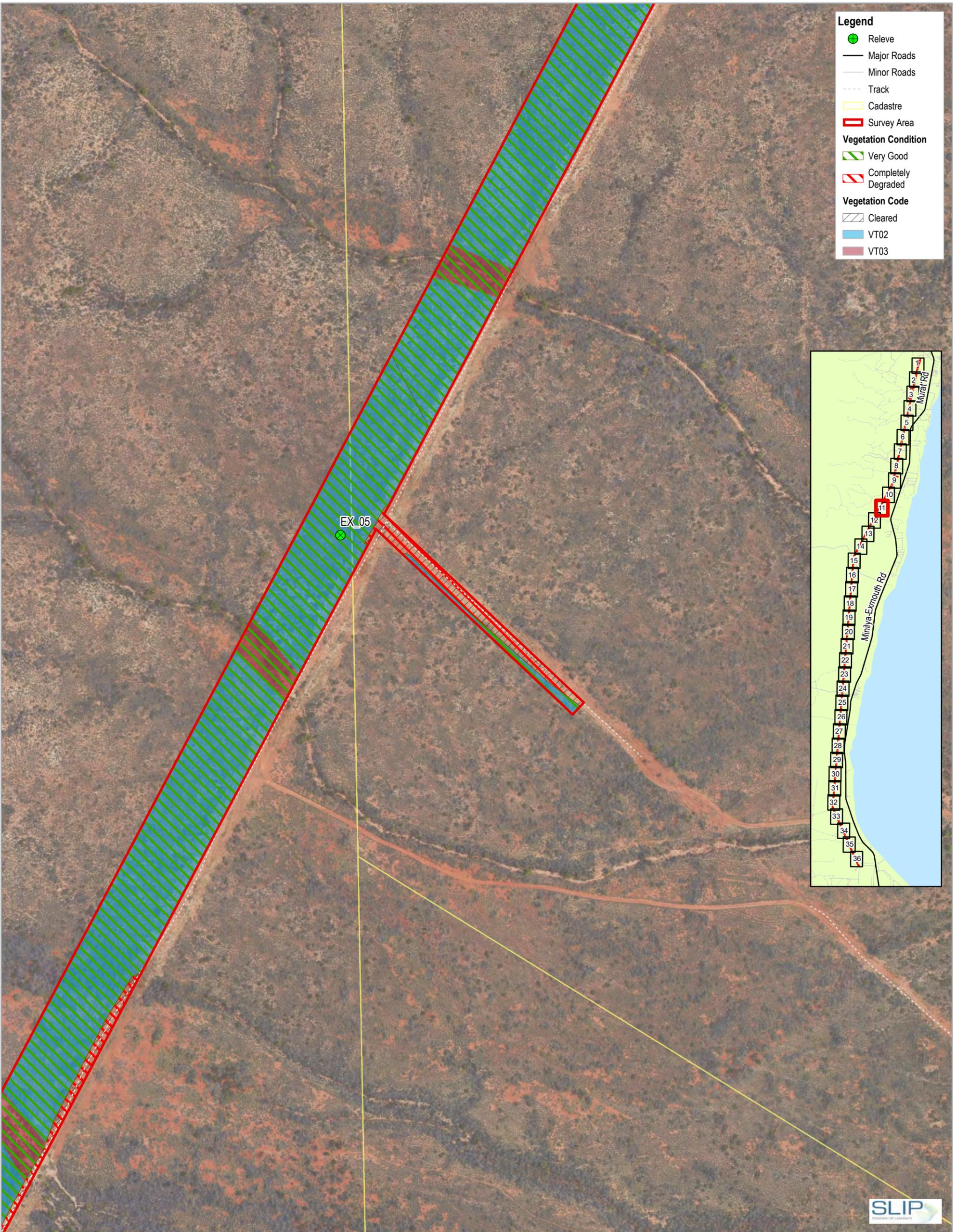


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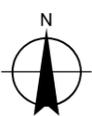
Vegetation Types and Condition

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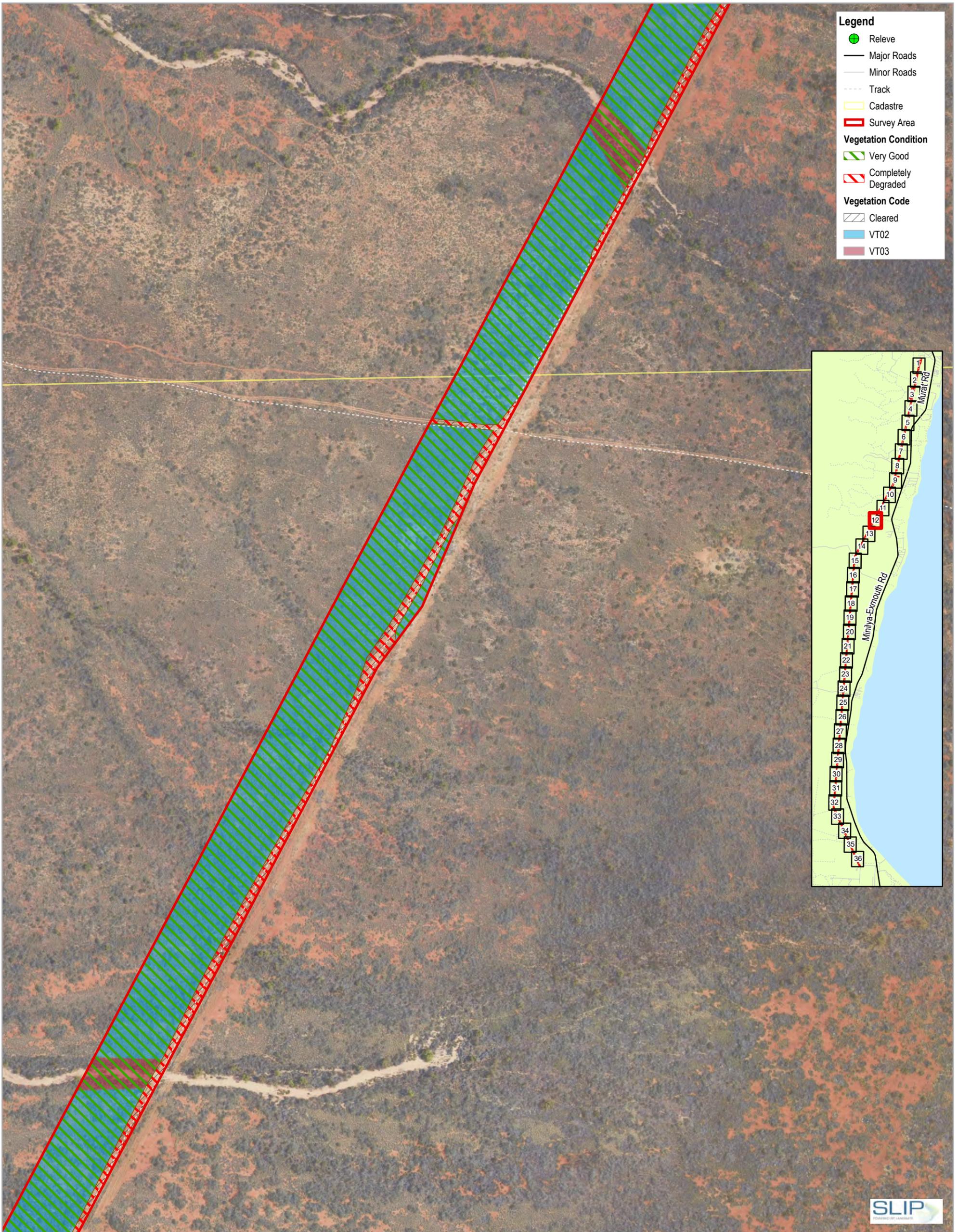


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

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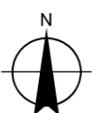
Vegetation Code

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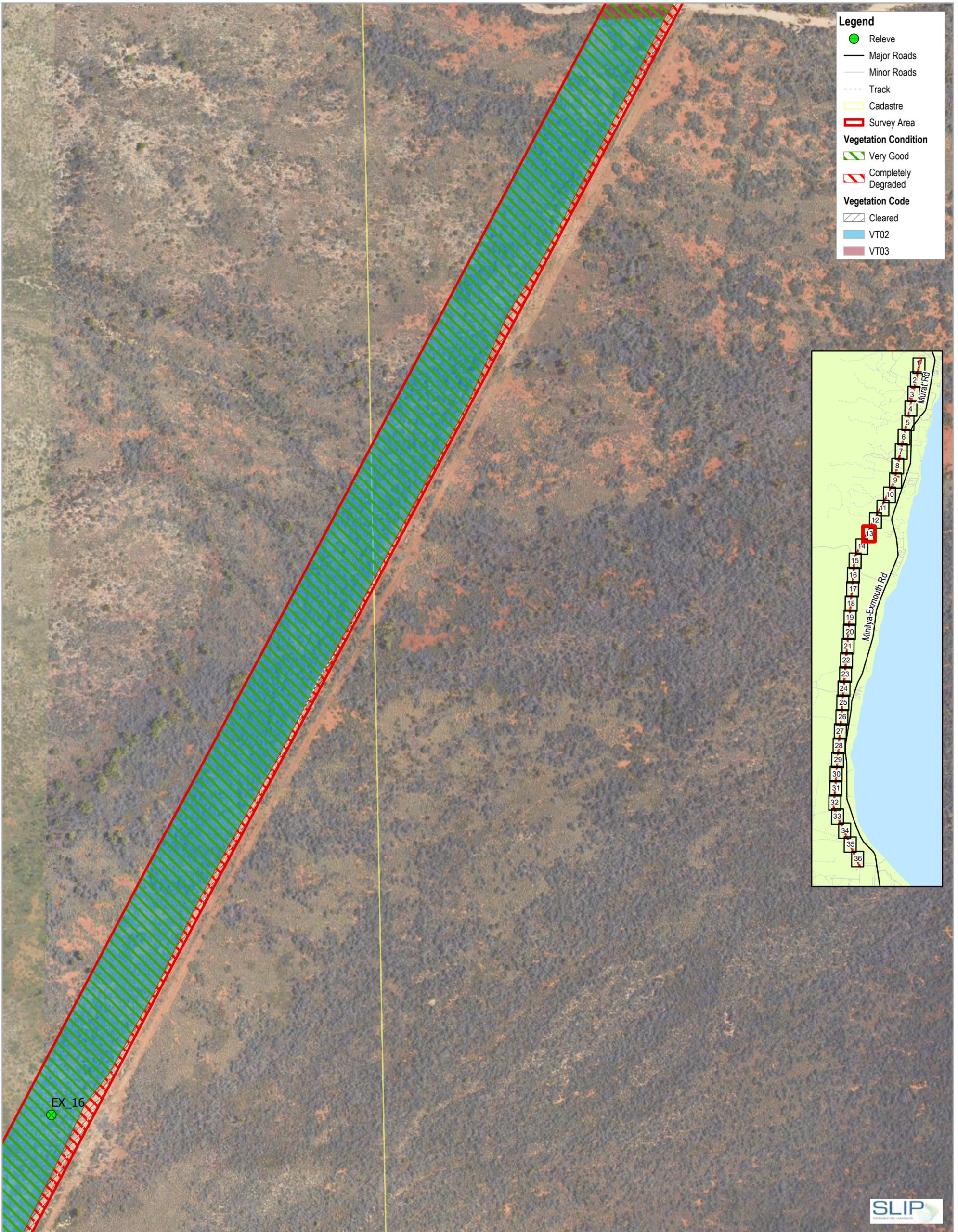
Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Very Good
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- Vegetation Code**
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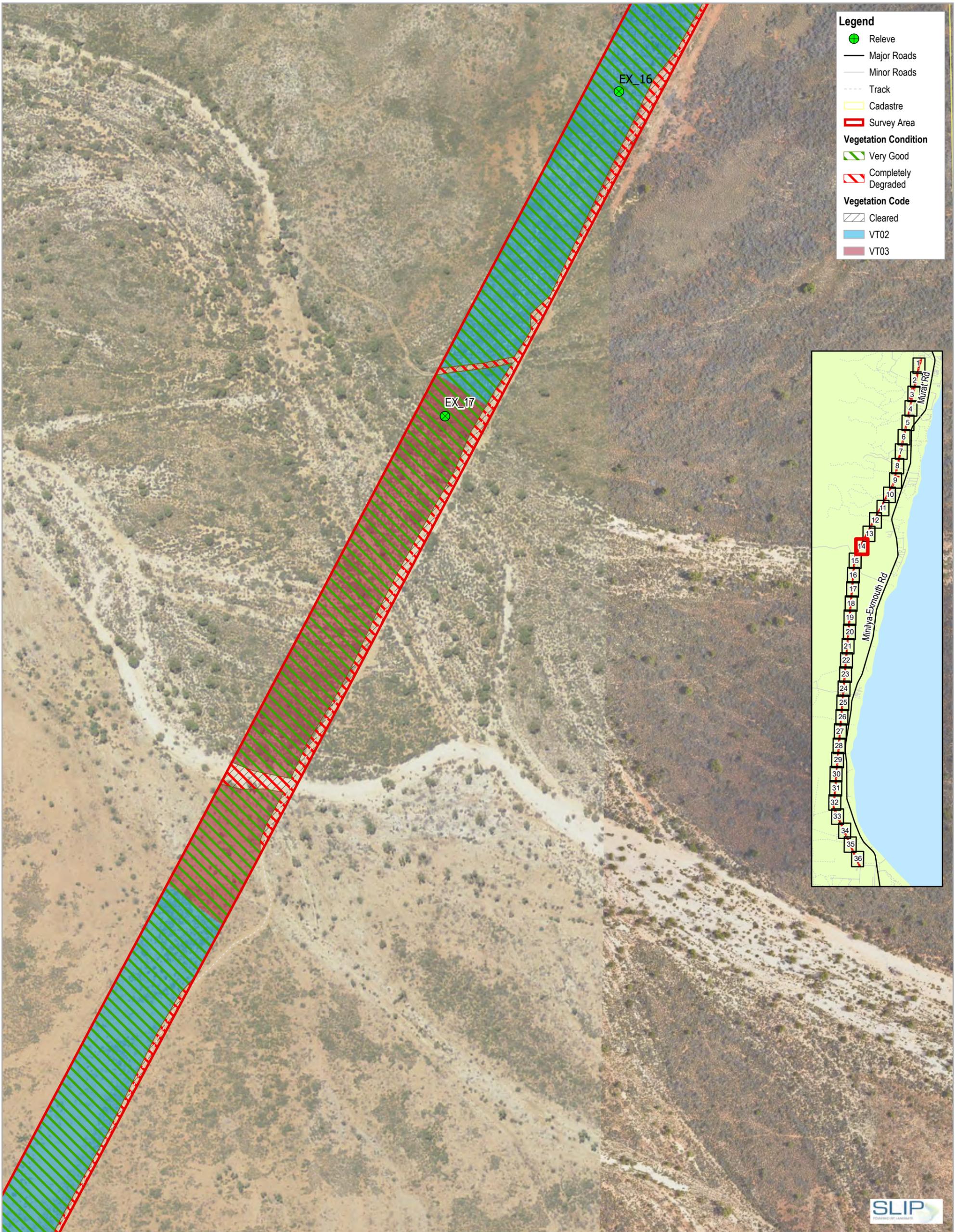
Horizon Power
022 - Learmonth Biological Line Survey

Project No. 61-37995
Revision No. 0
Date 16/07/2019

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 50

Vegetation Types and Condition

FIGURE 2
Page 13 of 36



Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT02
- ▨ VT03



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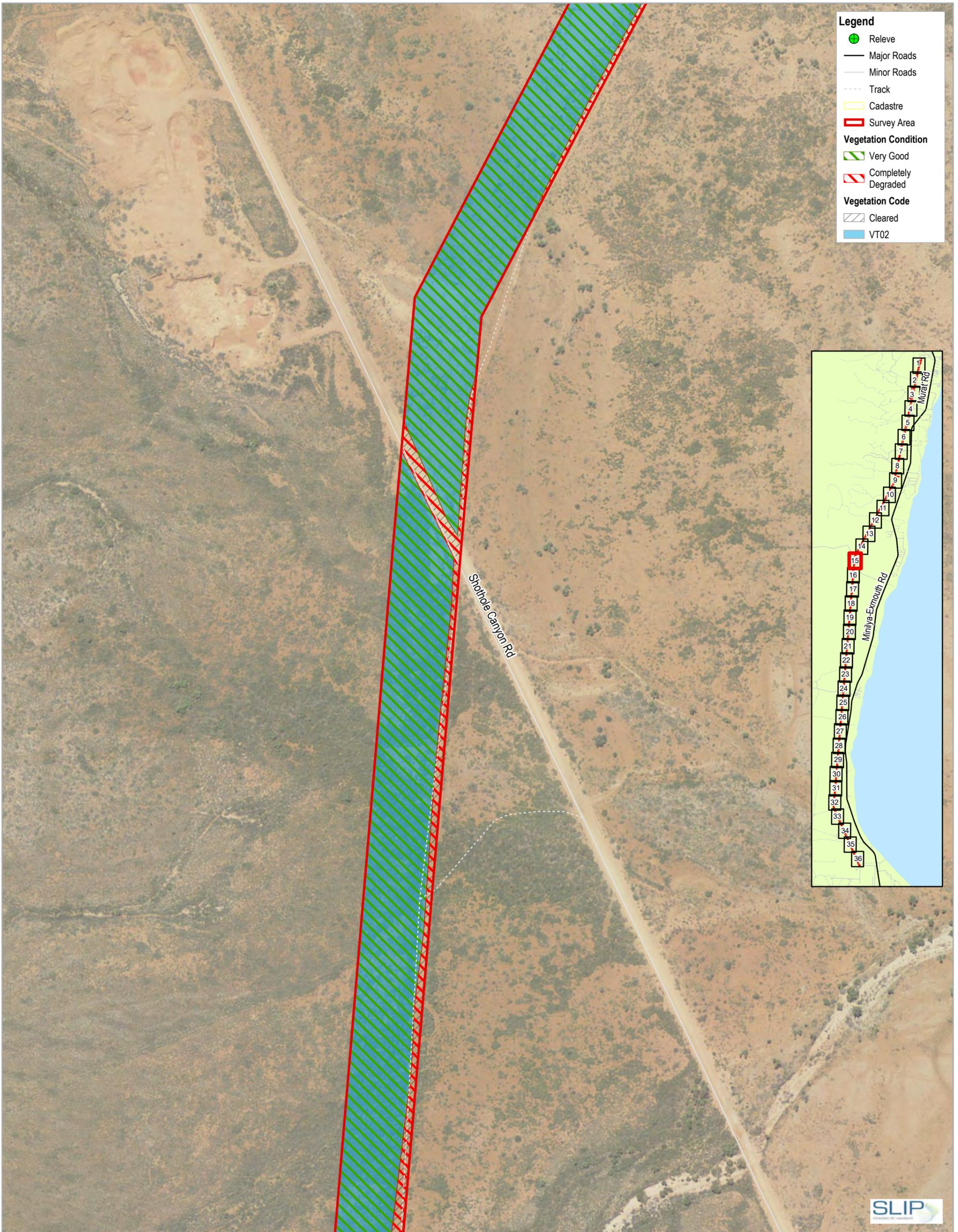


Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

Project No. 61-37995
 Revision No. 0
 Date 16/07/2019

FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT02



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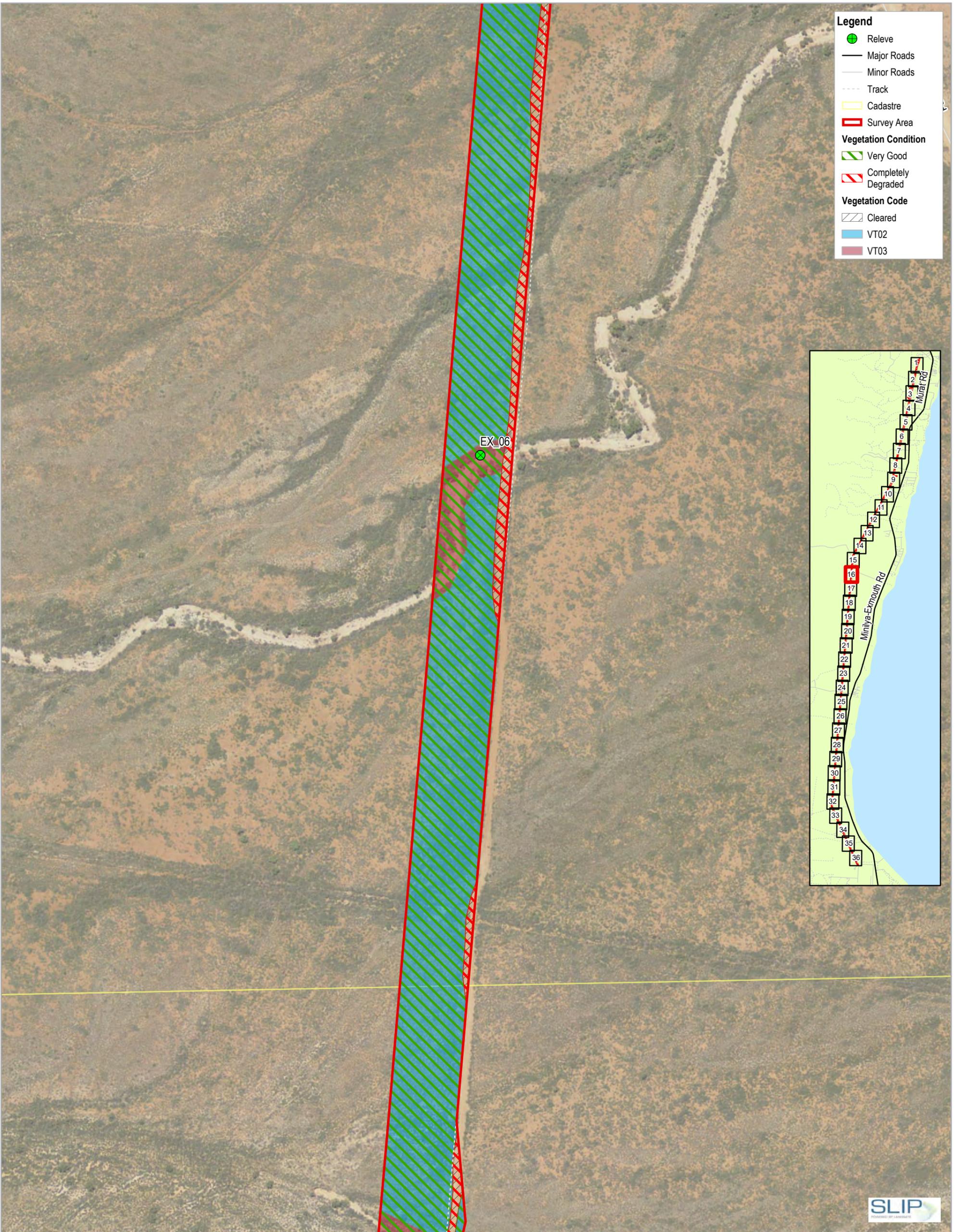
Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

Project No. 61-37995
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FIGURE 2
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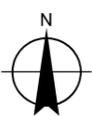




- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Very Good
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
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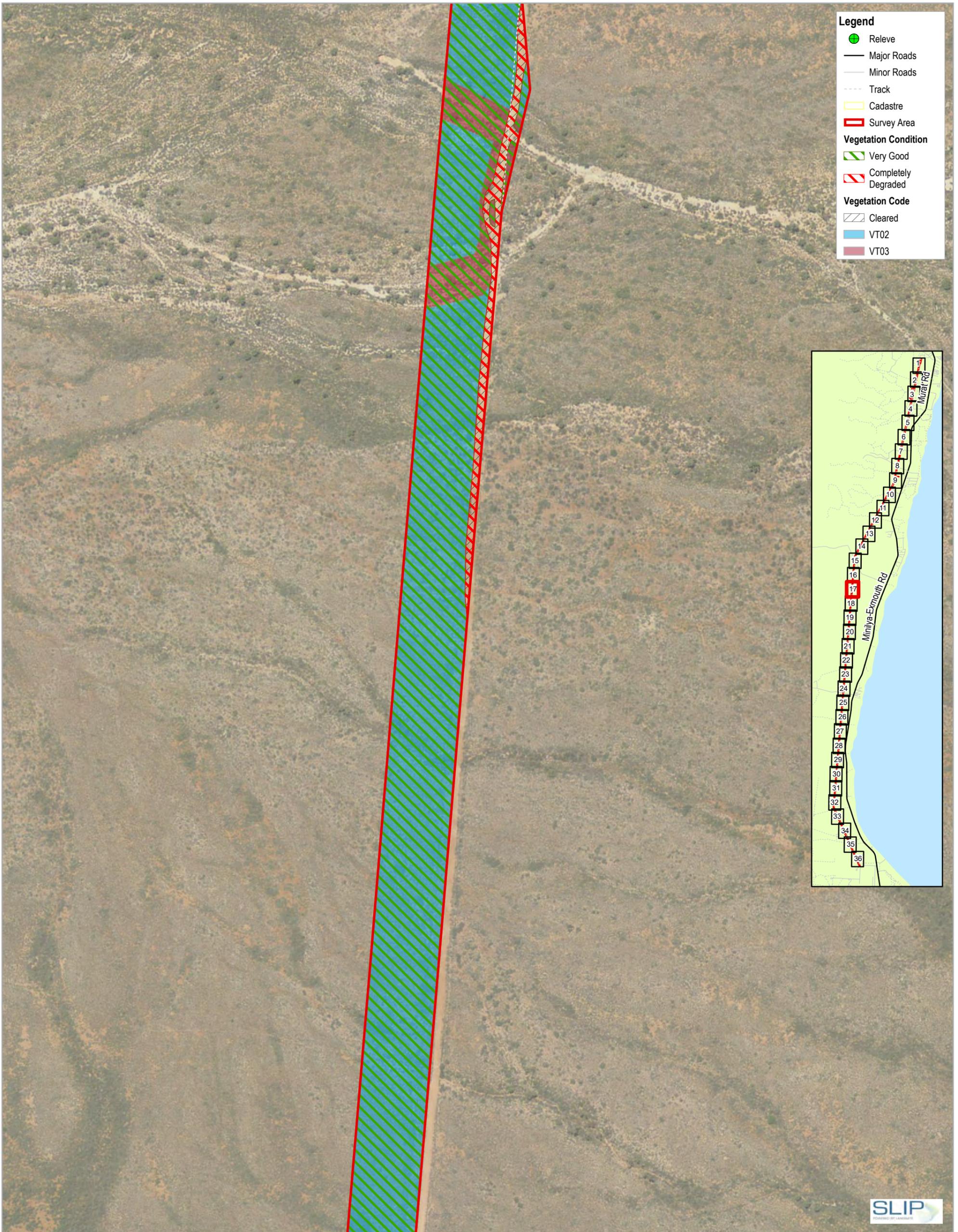


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- Cadastre
- Survey Area

Vegetation Condition

- Very Good
- Completely Degraded

Vegetation Code

- VT02
- VT03



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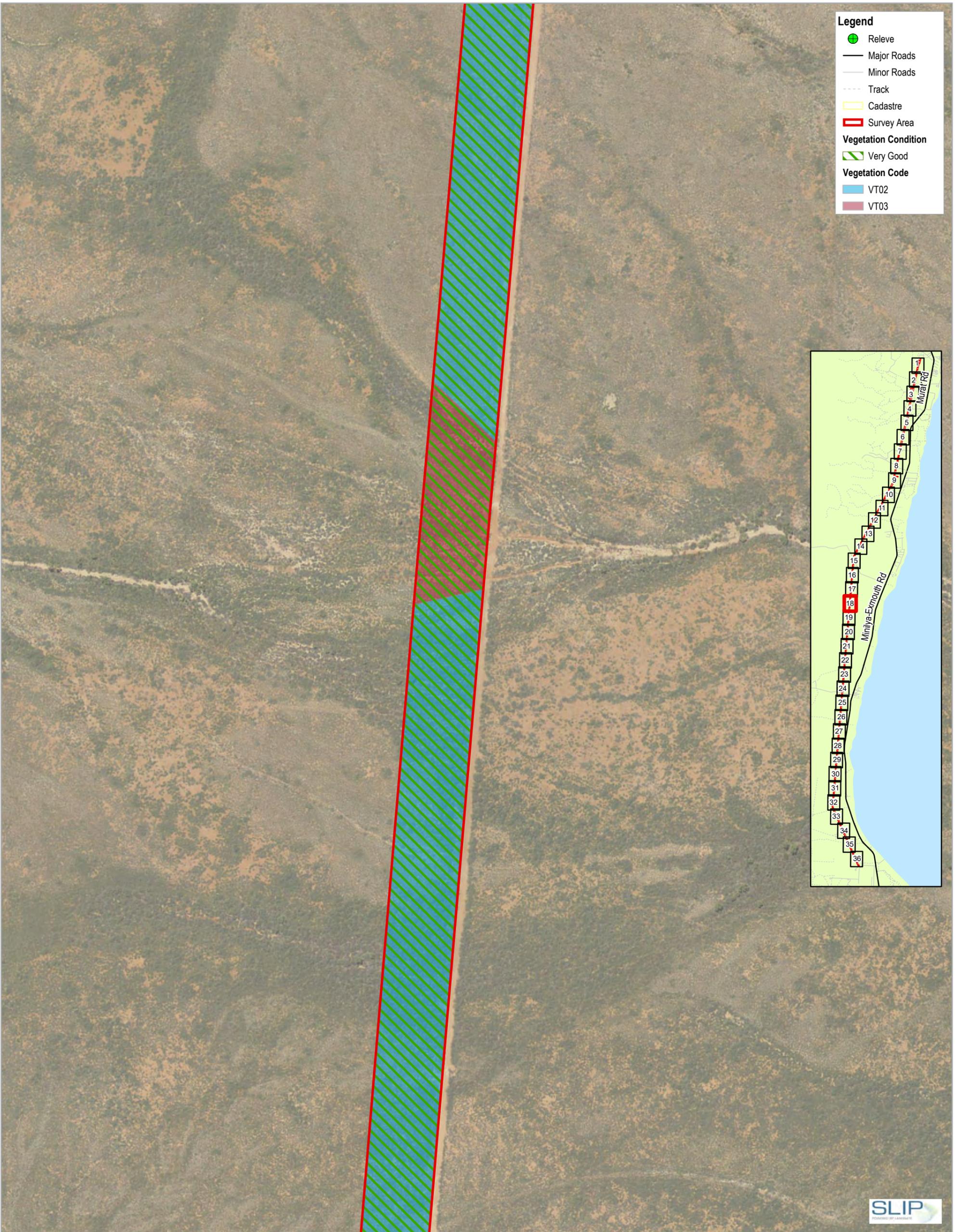


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
Page 17 of 36



Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good

Vegetation Code

- ▨ VT02
- ▨ VT03



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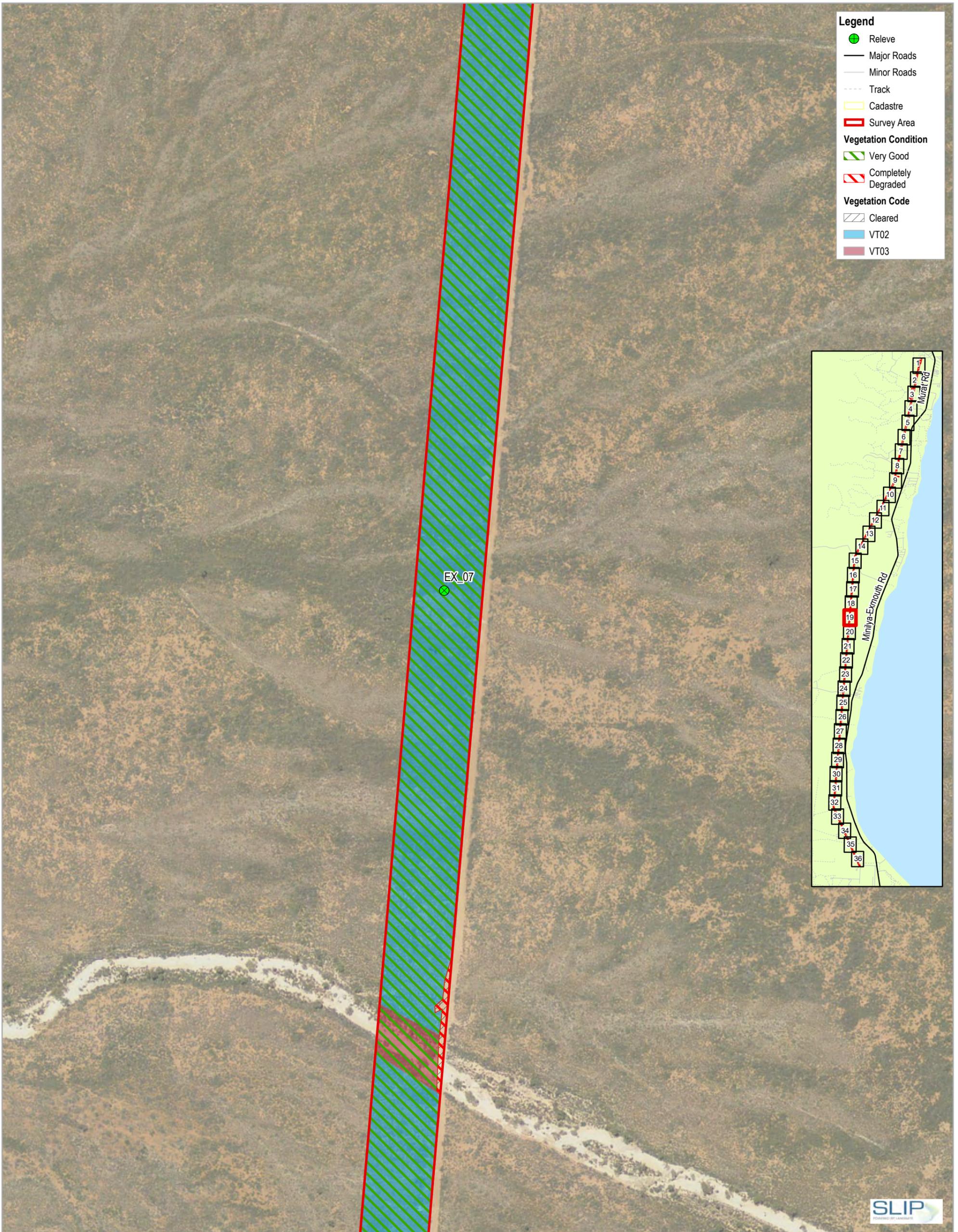


Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area
- ▨ Very Good
- ▨ Completely Degraded
- ▨ Cleared
- ▭ VT02
- ▭ VT03

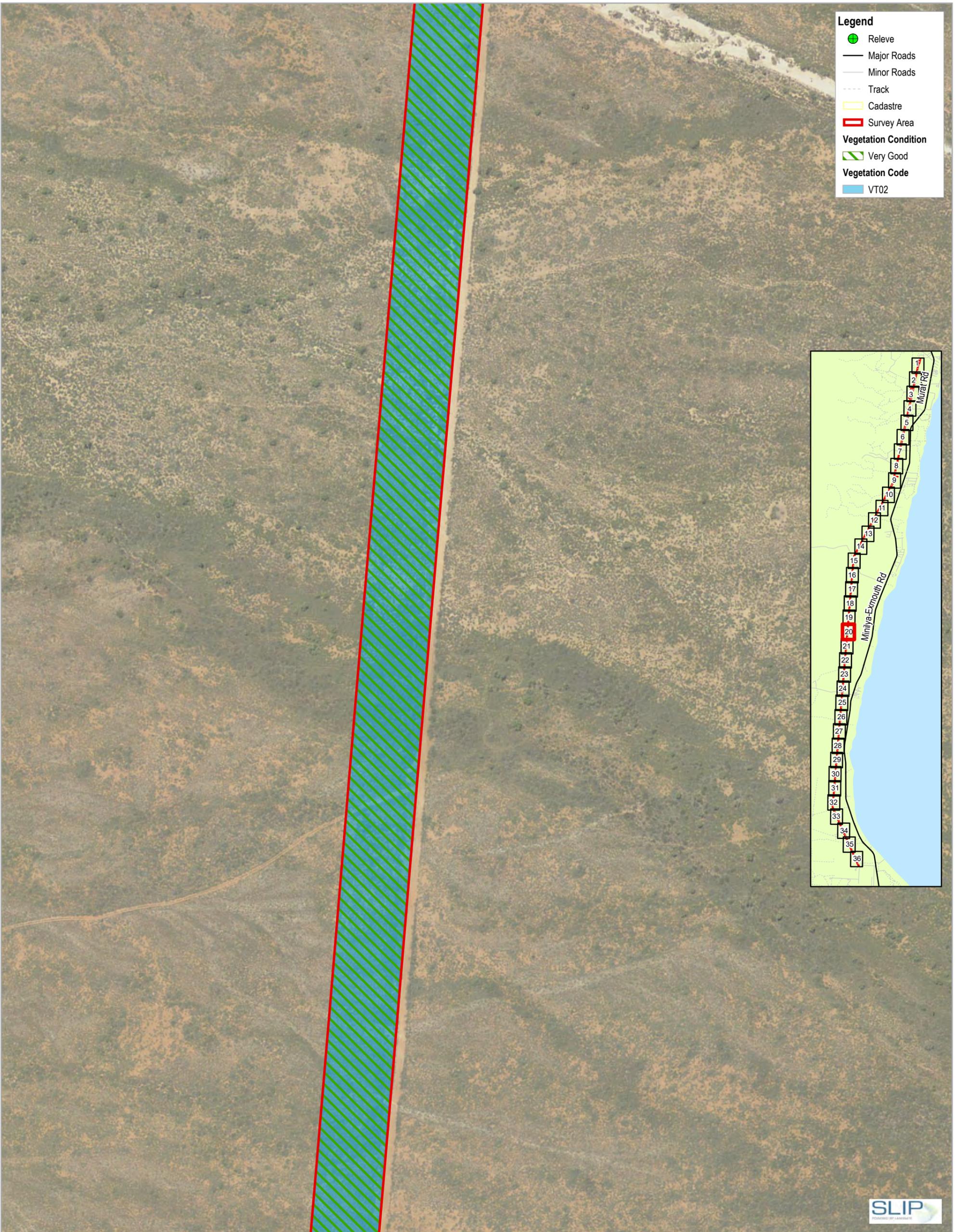
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Horizon Power
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Vegetation Types and Condition

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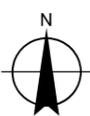


Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area
- ▨ Vegetation Condition
Very Good
- ▭ Vegetation Code
VT02



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Metres



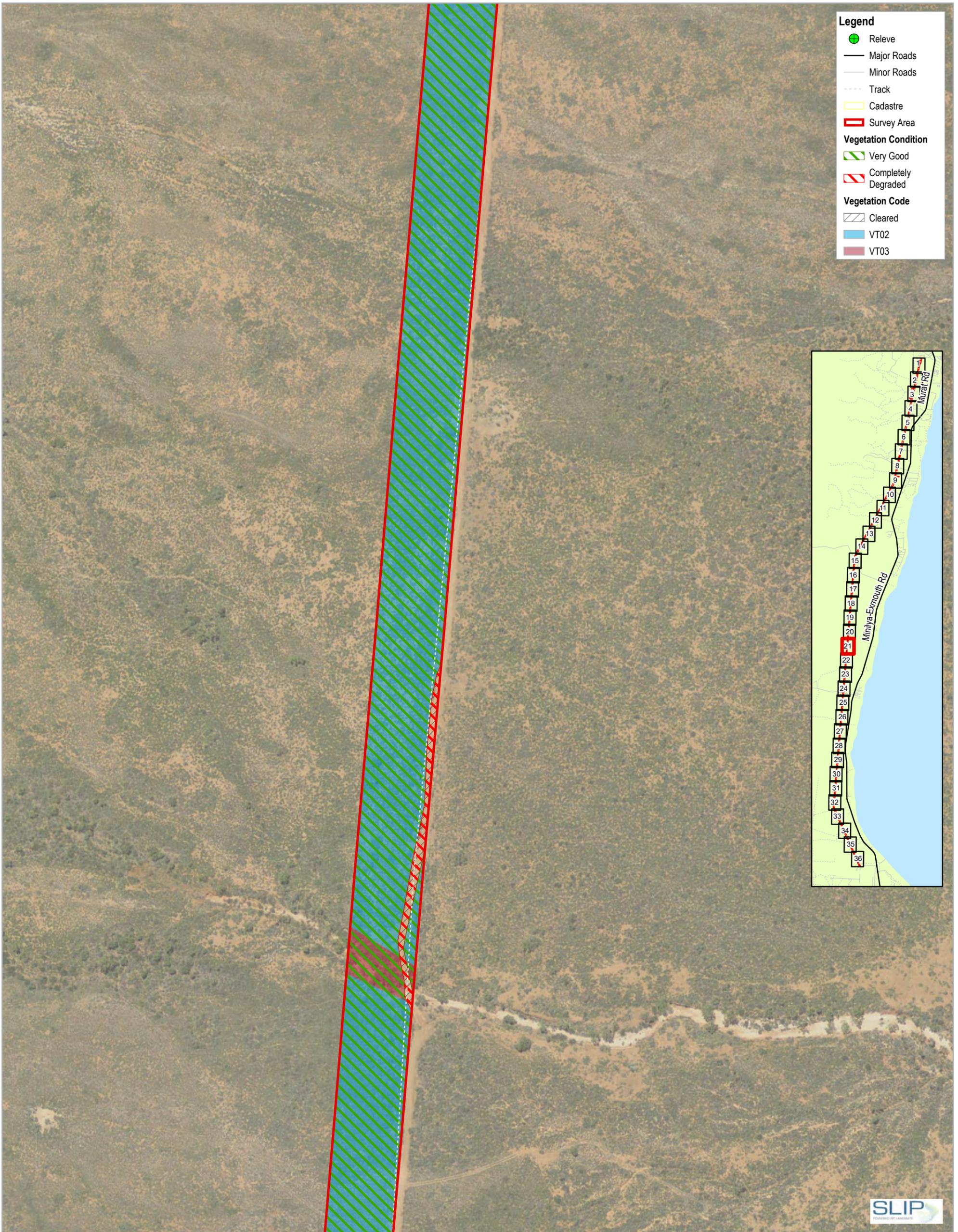
Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT02
- ▨ VT03



Paper Size ISO A3
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Metres

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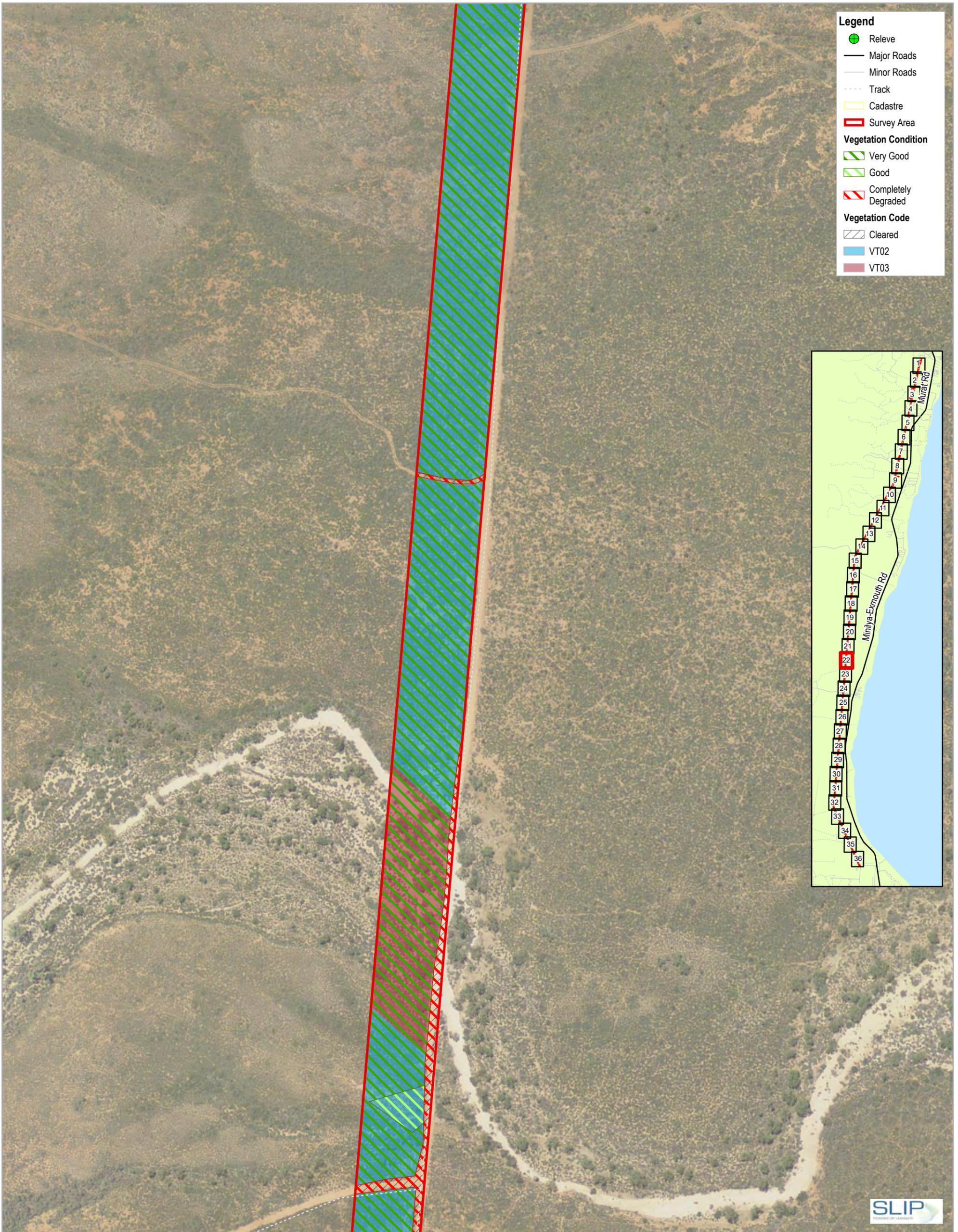


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Date 16/07/2019

FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT02
- ▨ VT03



Paper Size ISO A3
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Grid: GDA 1994 MGA Zone 50

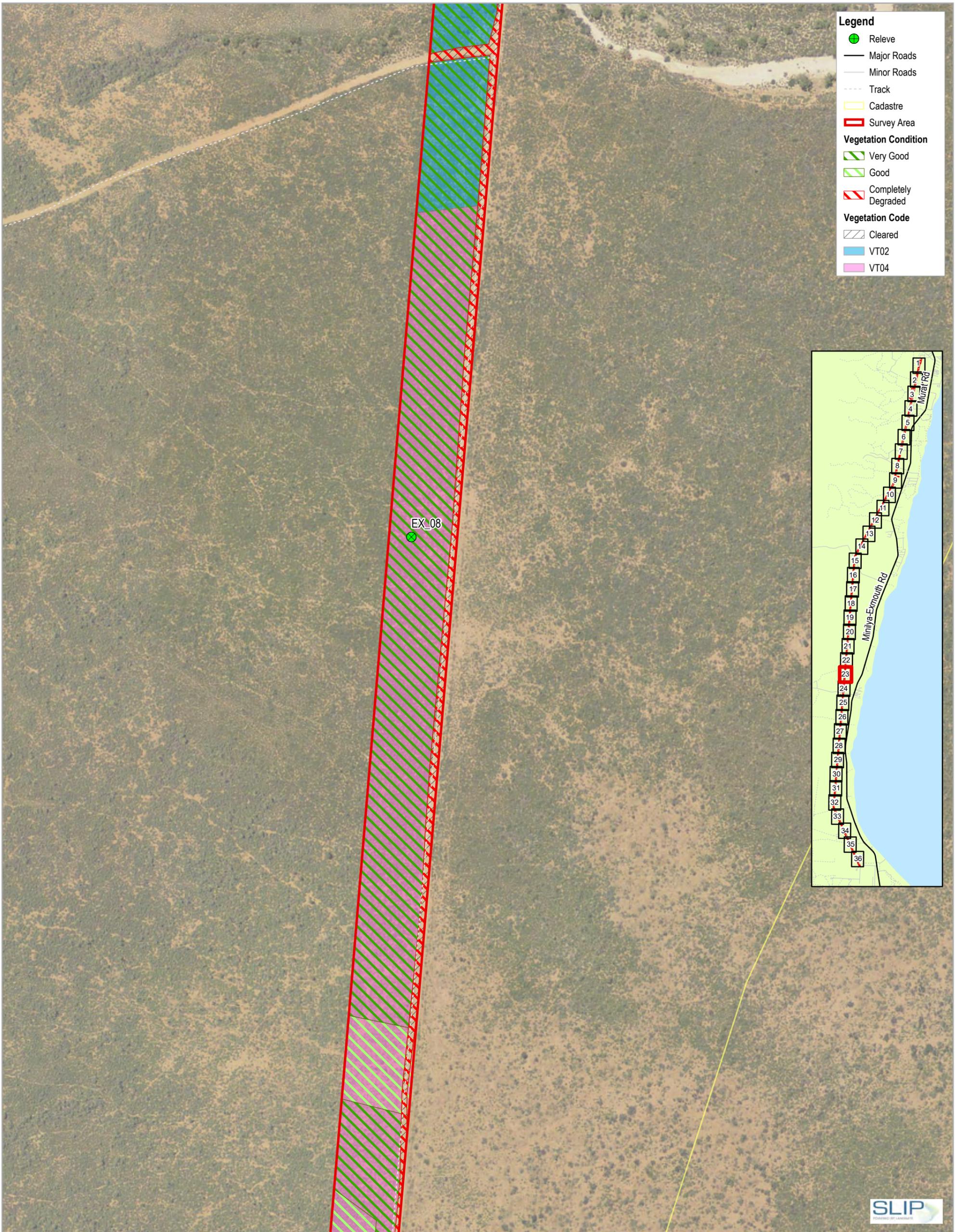


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

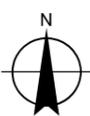
Vegetation Code

- ▨ Cleared
- ▨ VT02
- ▨ VT04



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 Grid: GDA 1994 MGA Zone 50



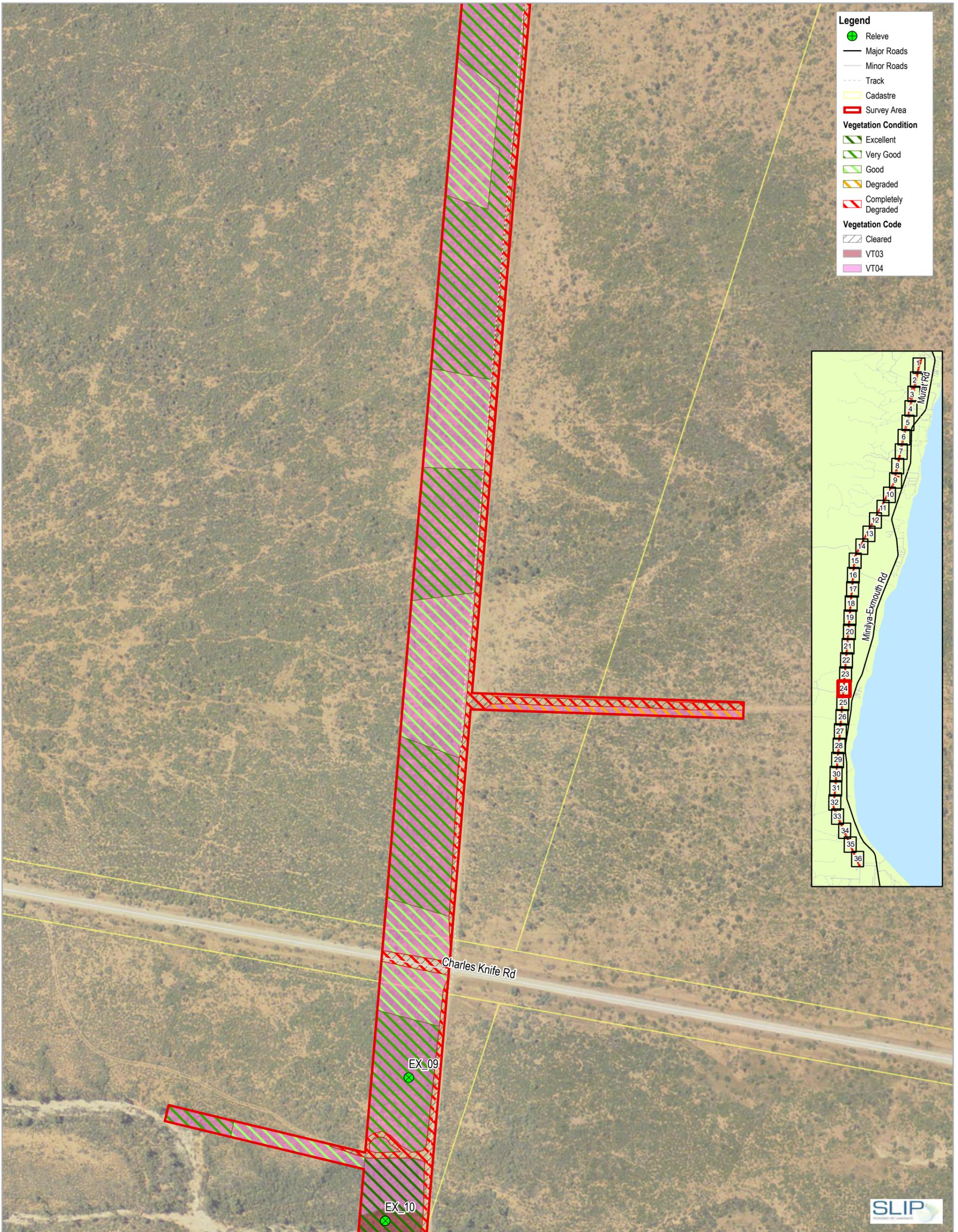
Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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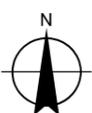


- Legend**
- Revele
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Excellent
 - ▨ Very Good
 - ▨ Good
 - ▨ Degraded
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
 - ▨ VT03
 - ▨ VT04



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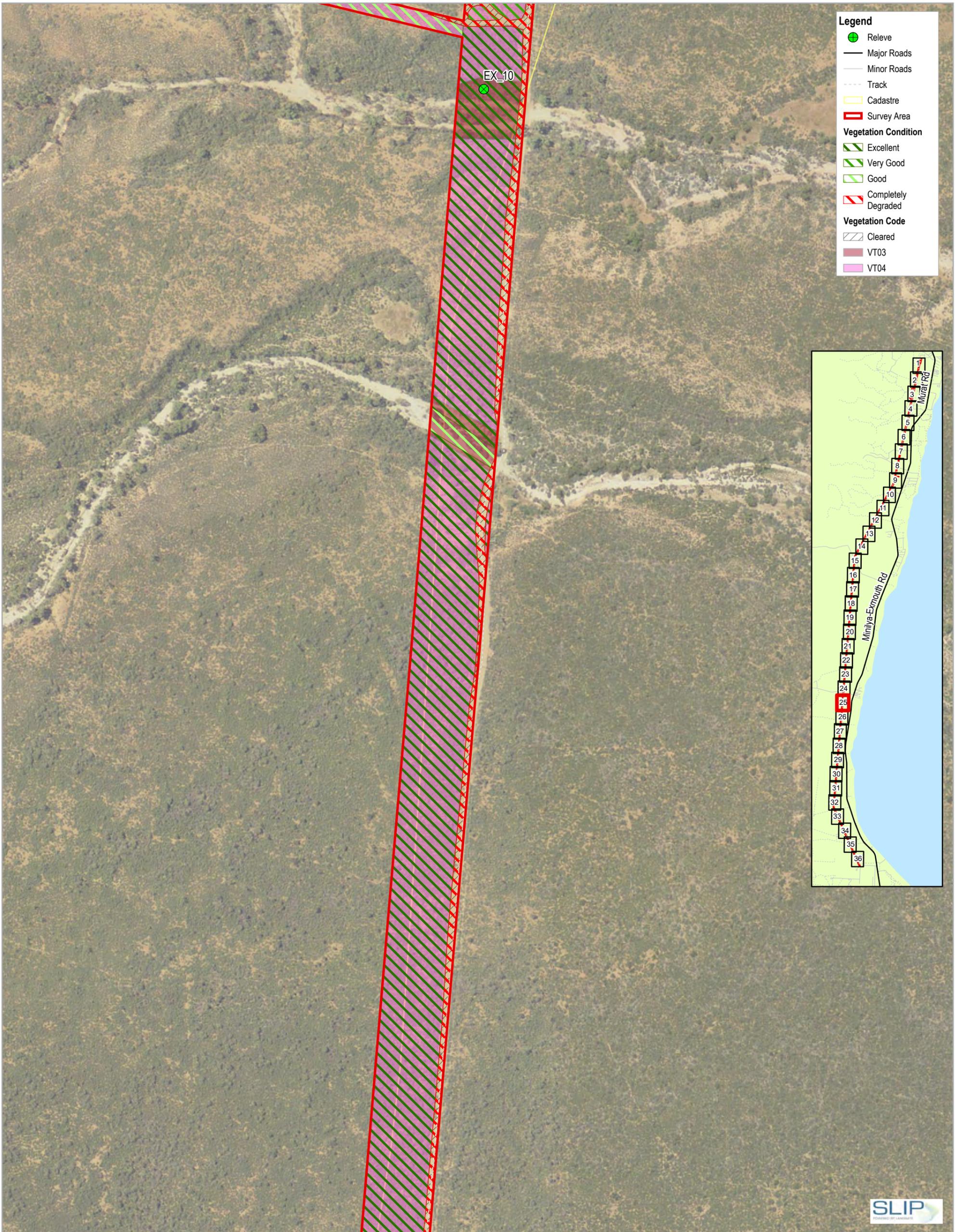


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Excellent
- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT03
- ▨ VT04



Paper Size ISO A3
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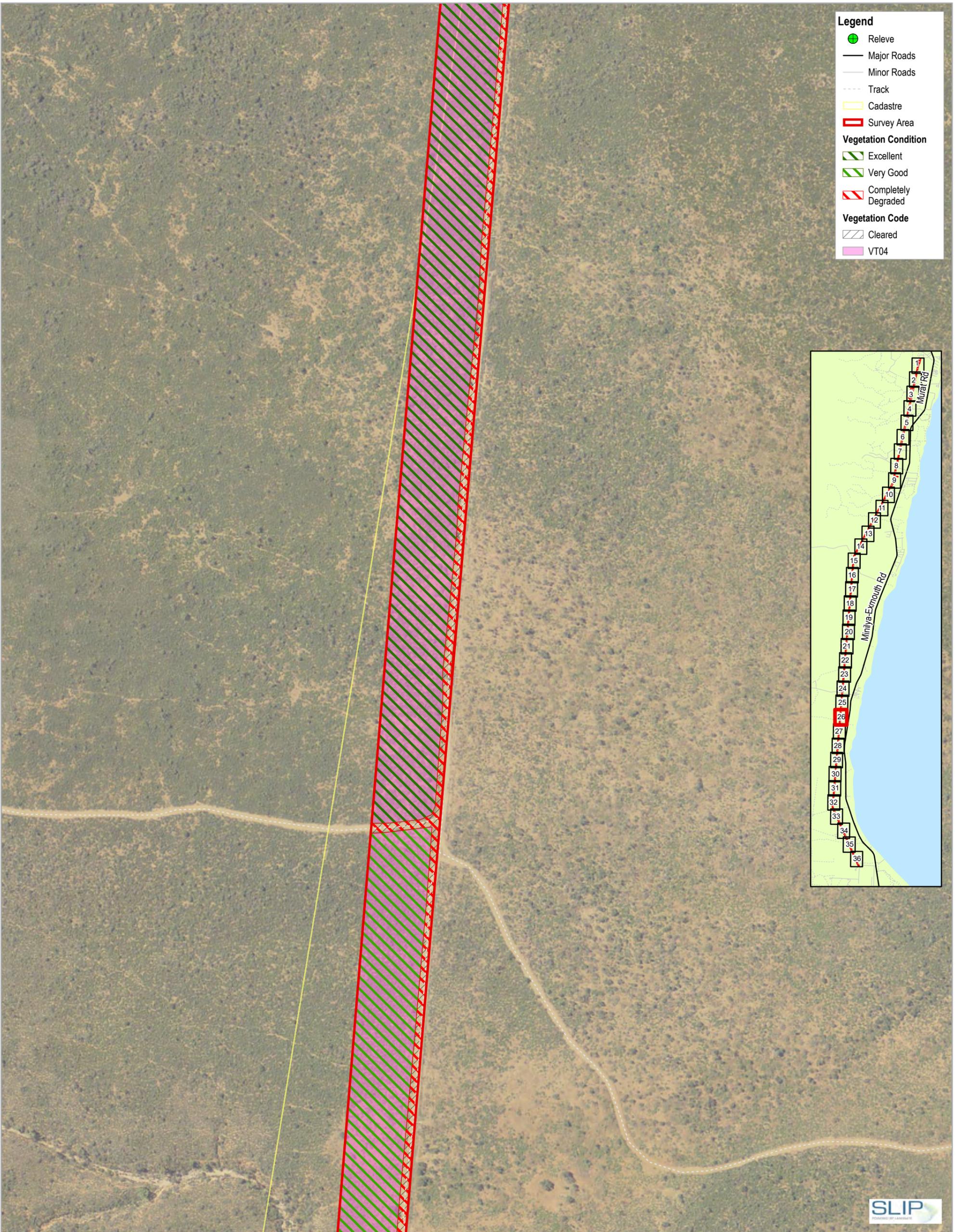


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Paper Size ISO A3
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Metres

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Grid: GDA 1994 MGA Zone 50

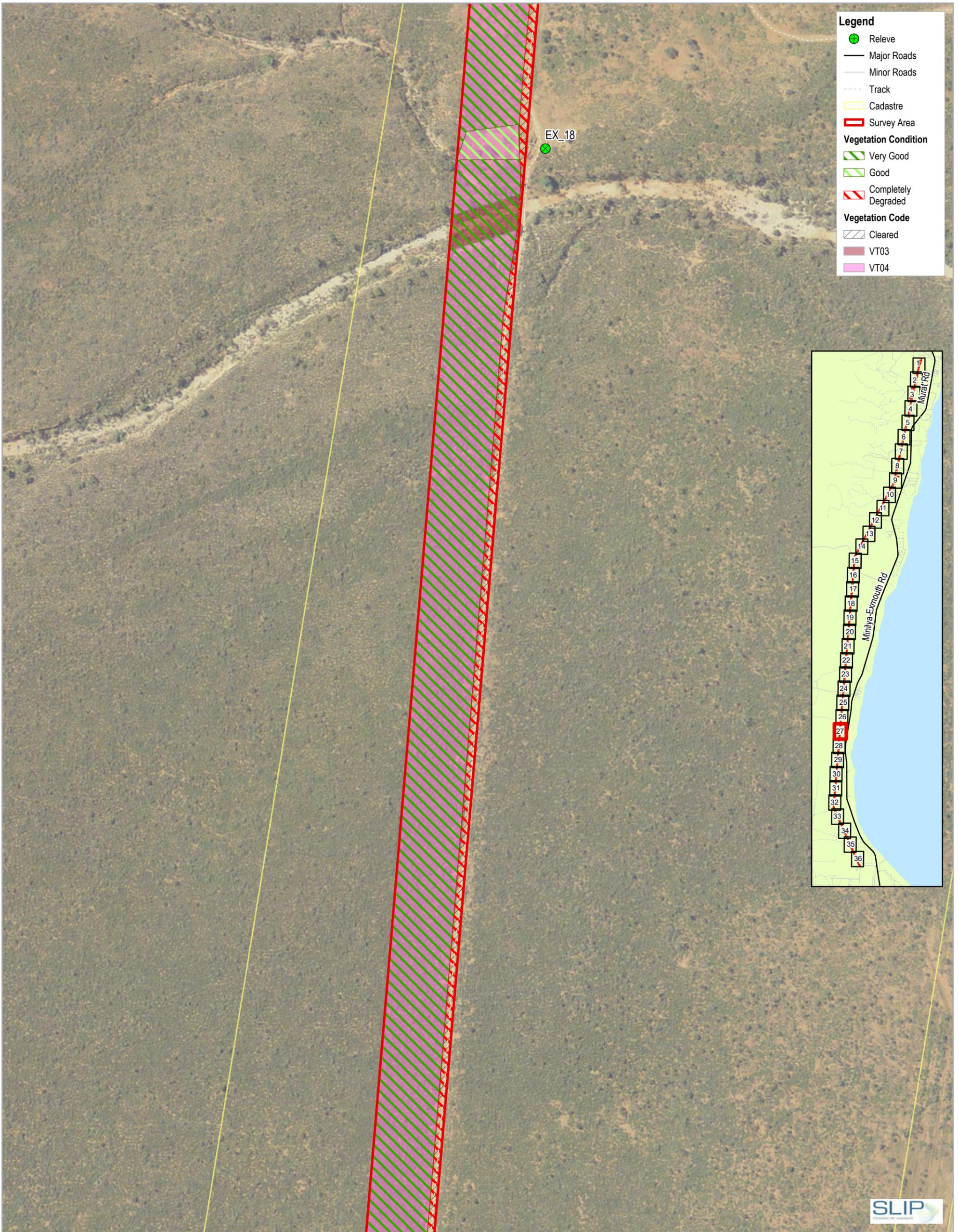


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT03
- ▨ VT04



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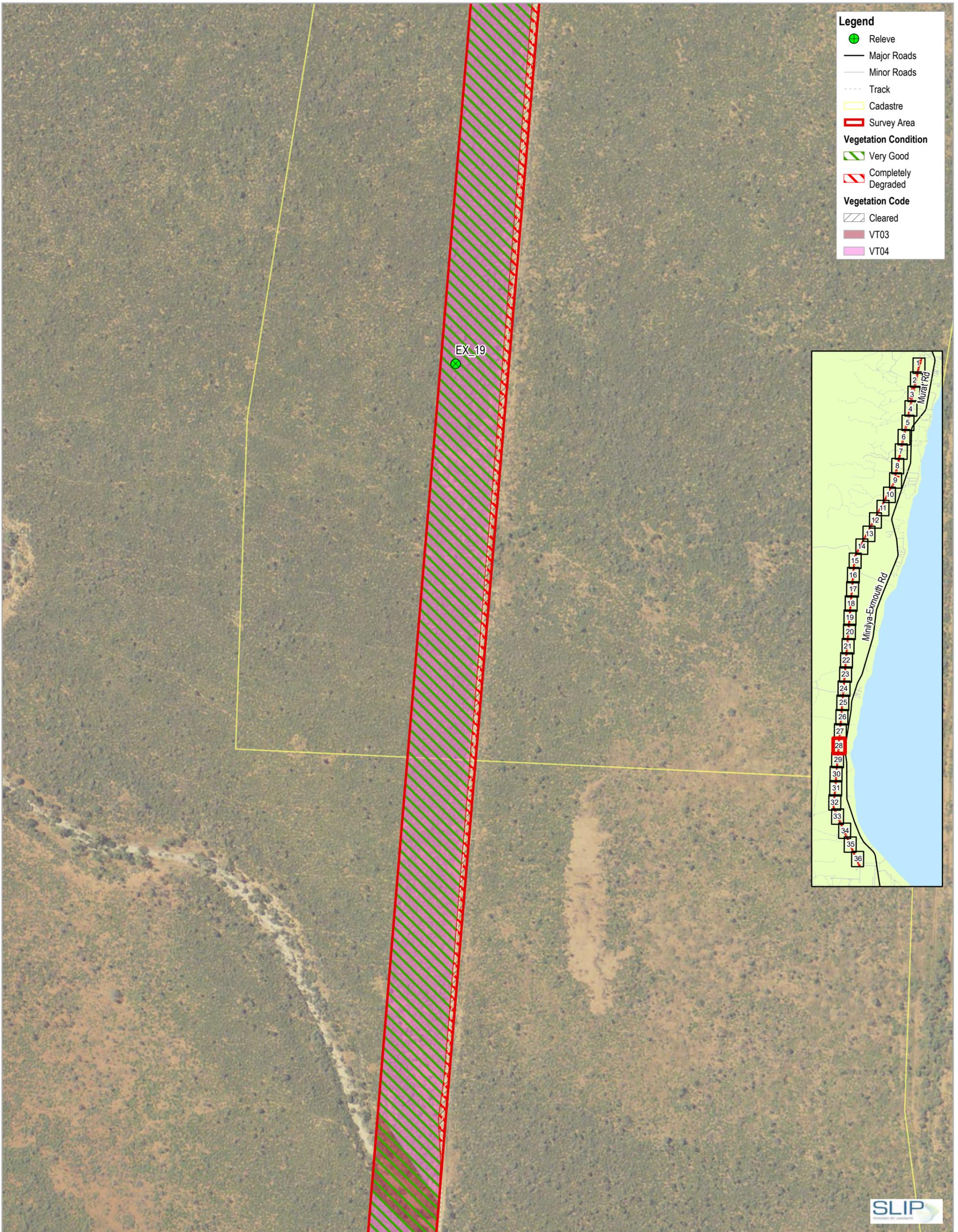
Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Revele
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT03
- ▨ VT04



Paper Size ISO A3
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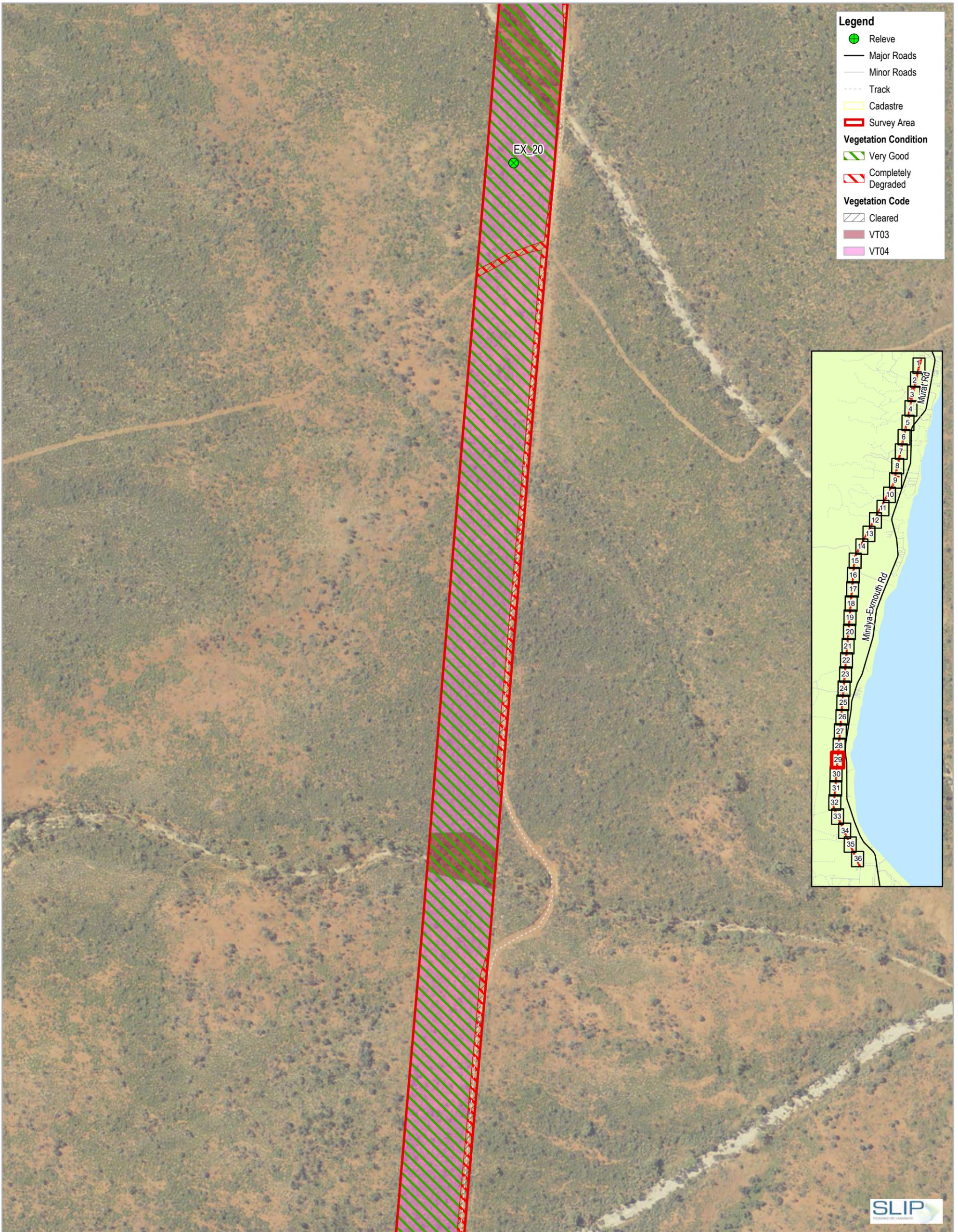


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

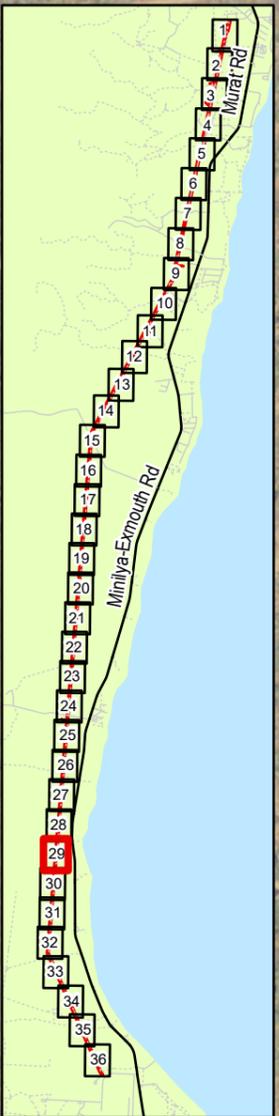
- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

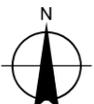
- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▭ VT03
- ▭ VT04



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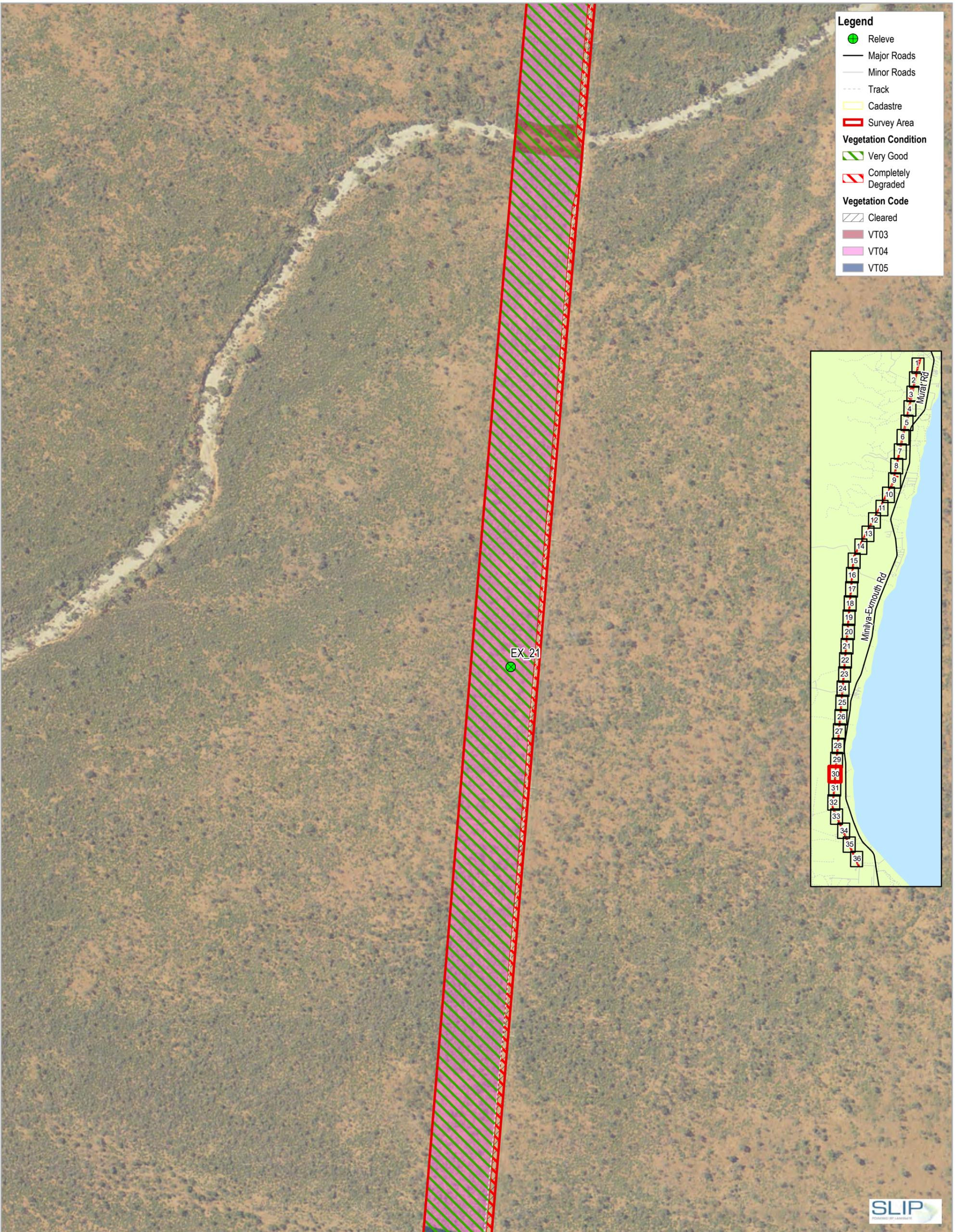


Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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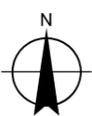


- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Very Good
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
 - ▨ VT03
 - ▨ VT04
 - ▨ VT05



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Metres

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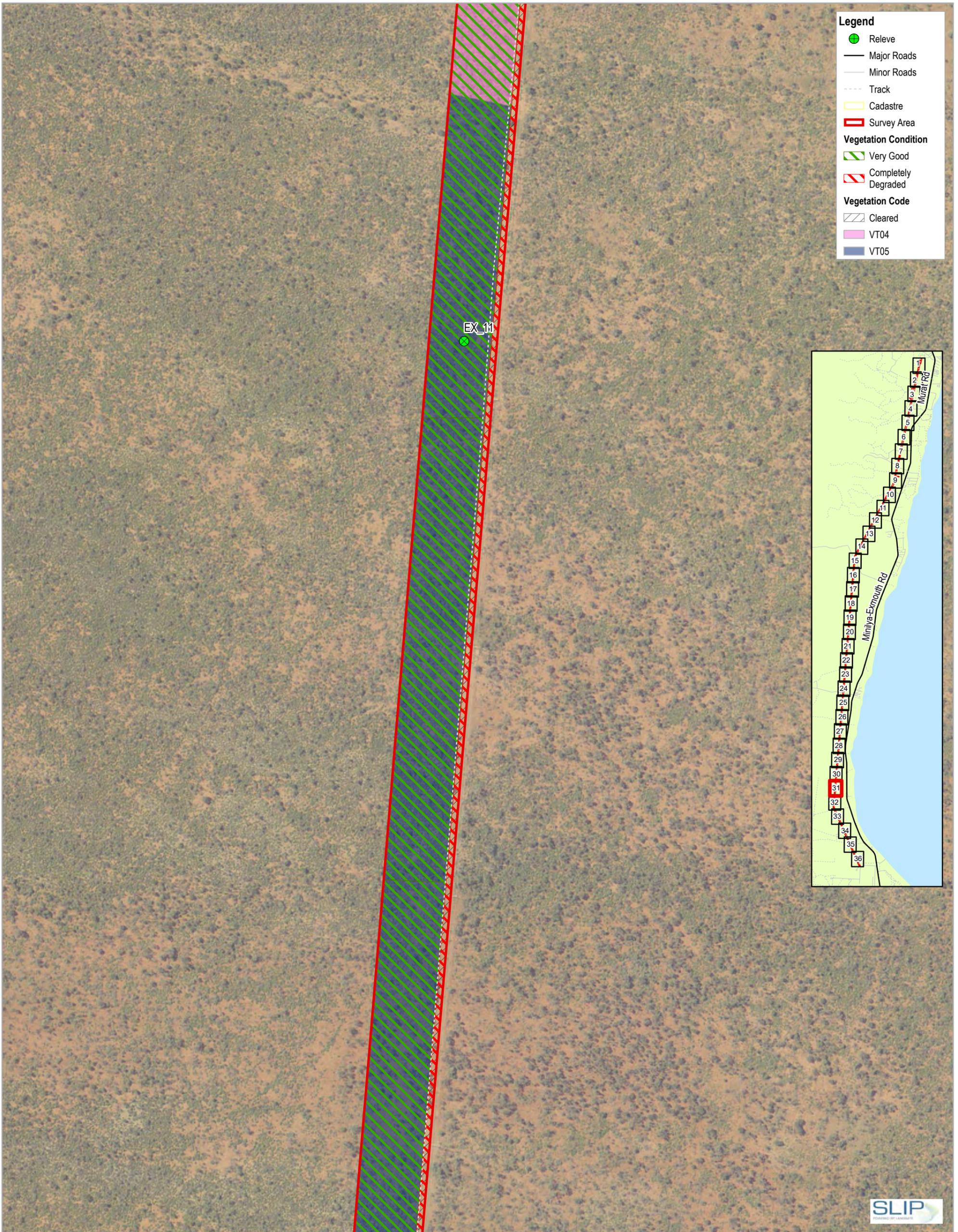


Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

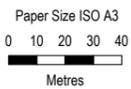
- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT04
- ▨ VT05



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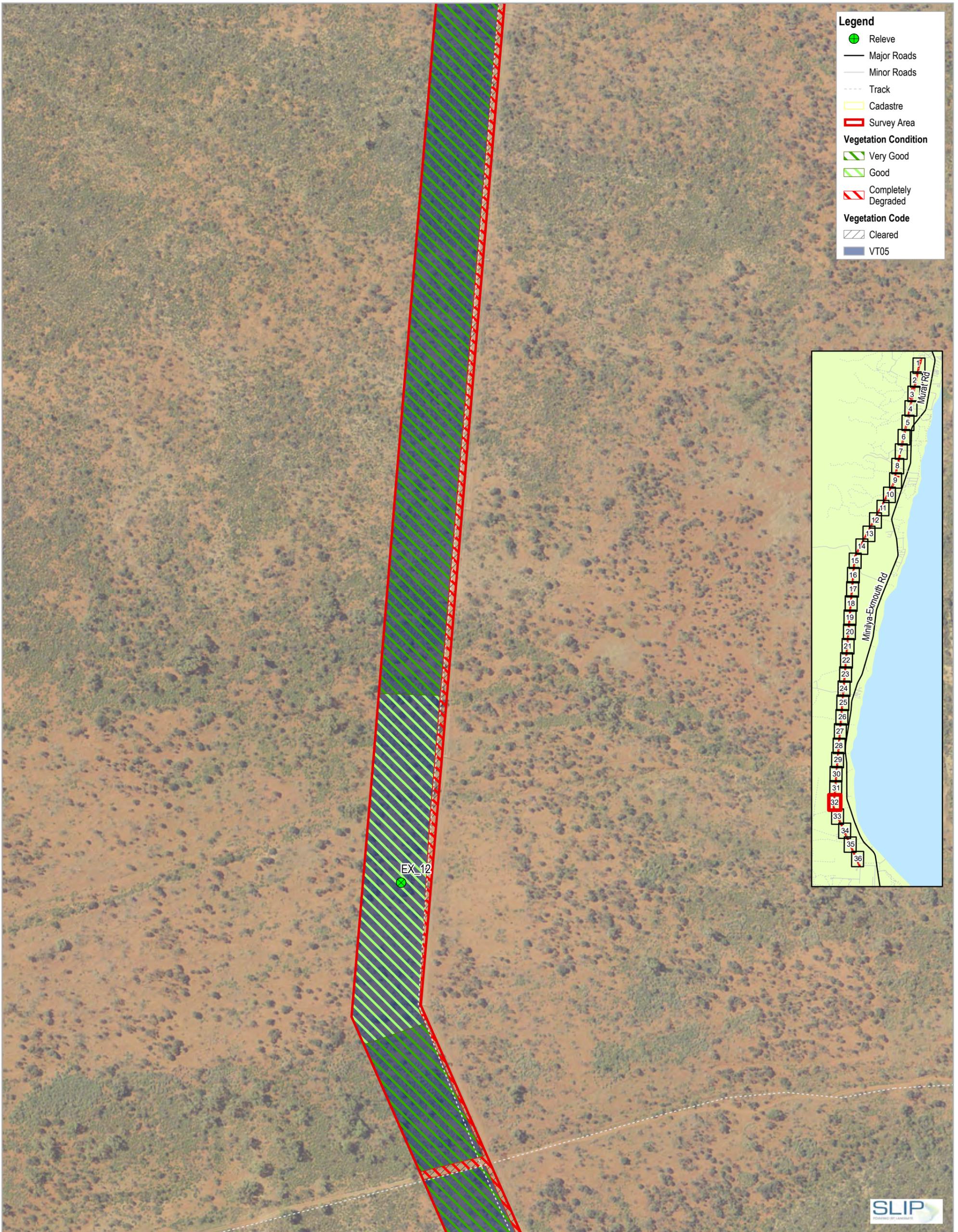


Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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FIGURE 2
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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT05



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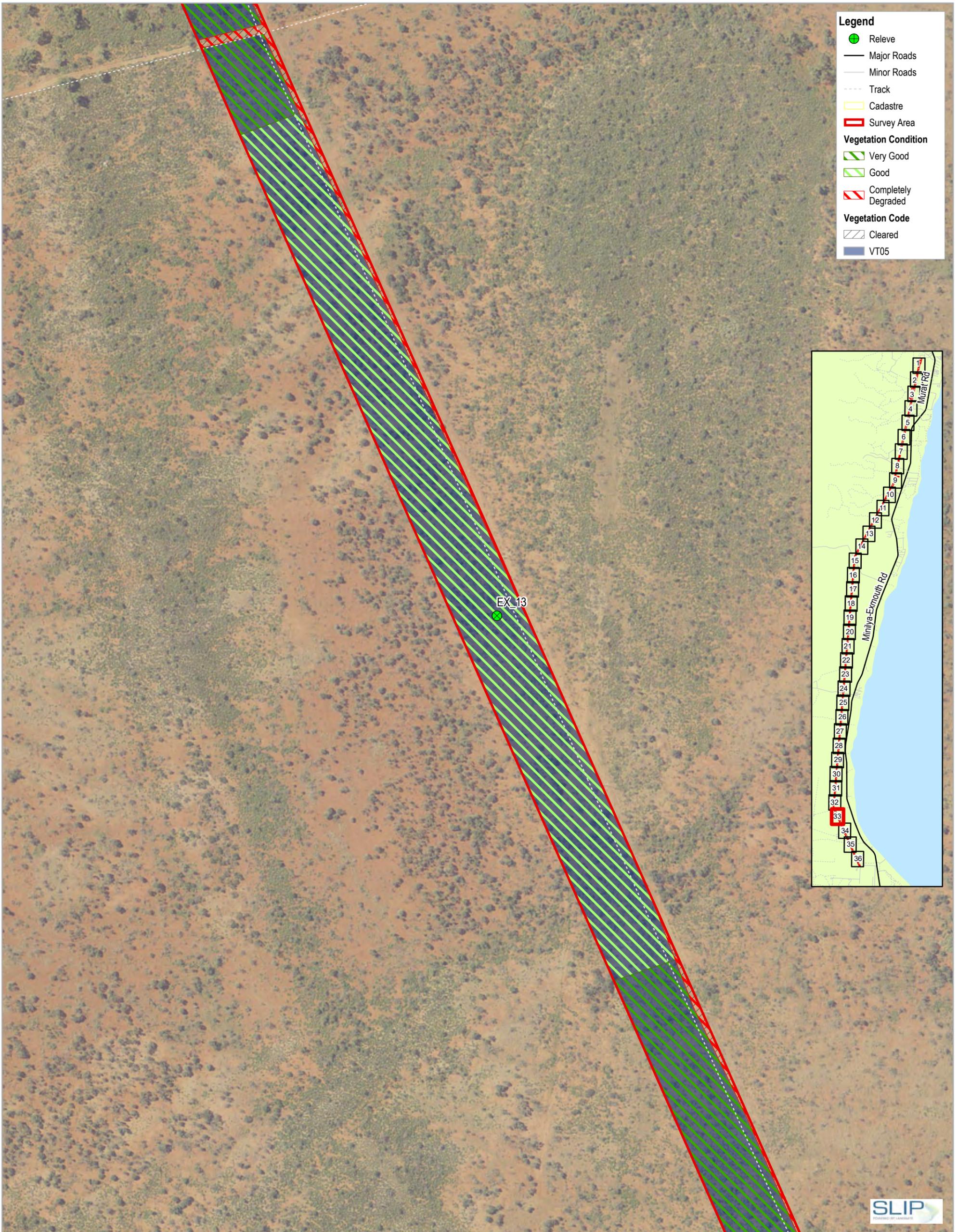
Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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 Date 16/07/2019



FIGURE 2
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Legend

- Revele
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Completely Degraded

Vegetation Code

- ▨ Cleared
- ▨ VT05



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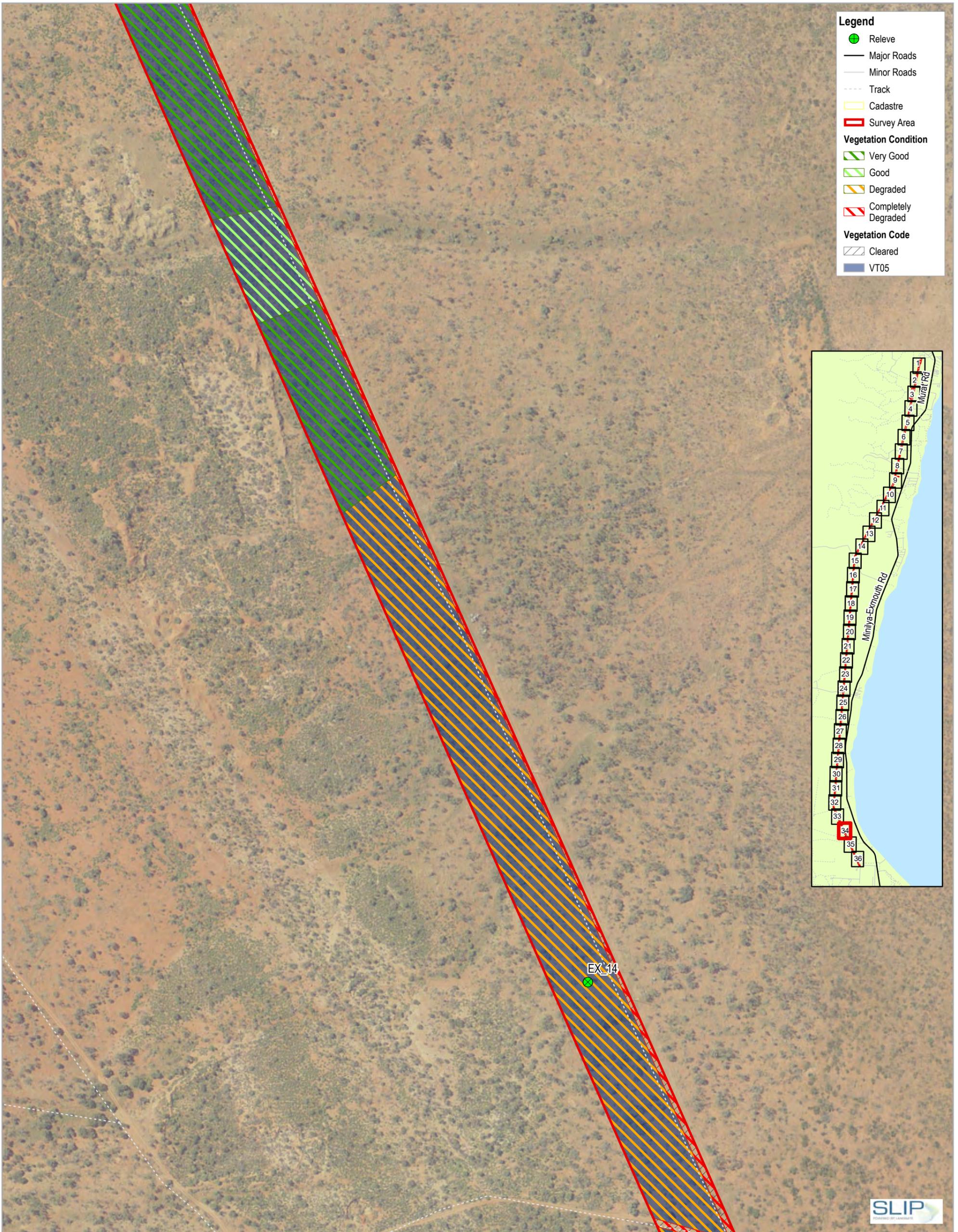
Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

- Releve
- Major Roads
- Minor Roads
- Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▨ Very Good
- ▨ Good
- ▨ Degraded
- ▨ Completely Degraded

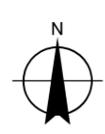
Vegetation Code

- ▨ Cleared
- ▨ VT05



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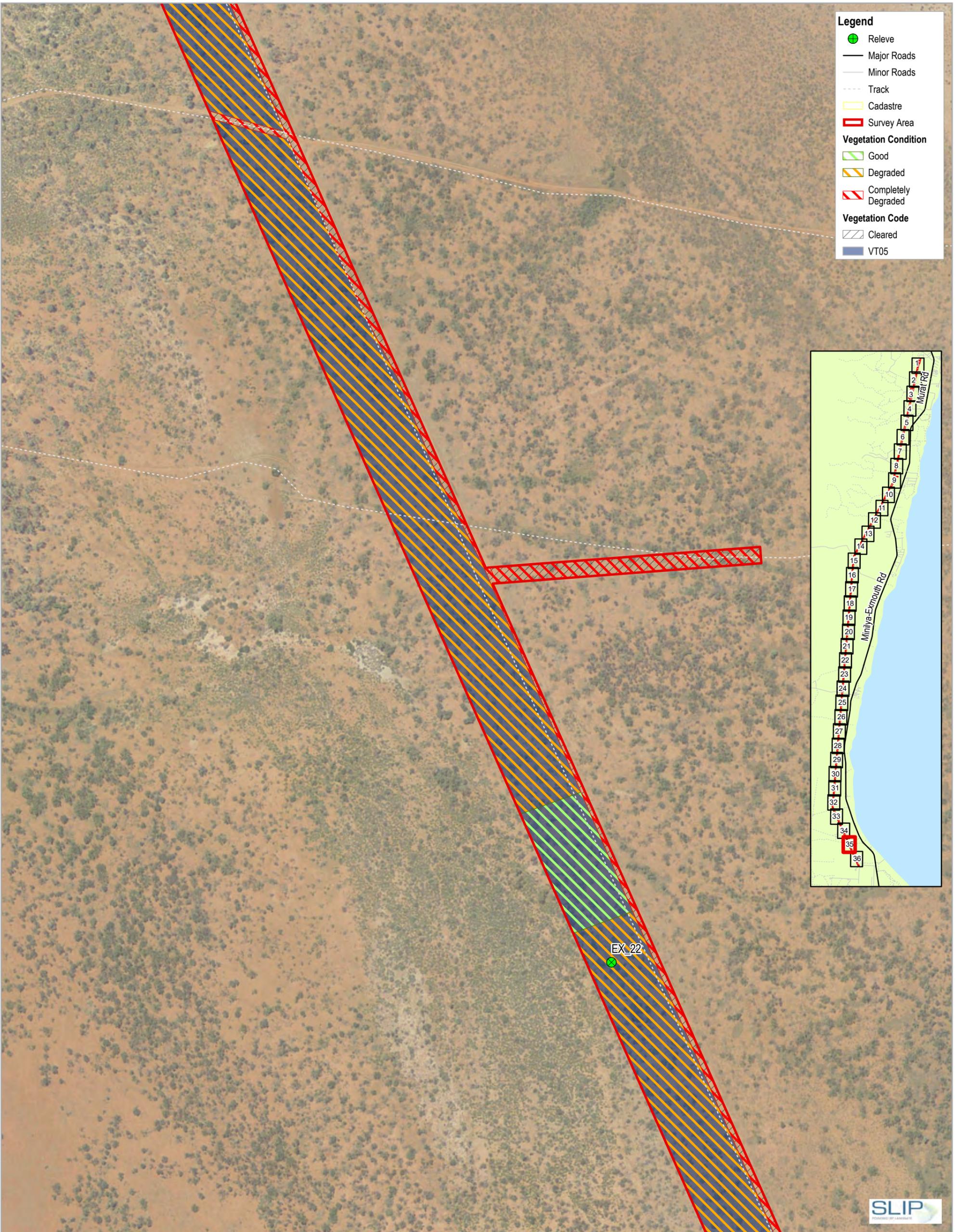
Horizon Power
 022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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Legend

- Releve
- Major Roads
- Minor Roads
- - - Track
- ▭ Cadastre
- ▭ Survey Area

Vegetation Condition

- ▭ Good
- ▭ Degraded
- ▭ Completely Degraded

Vegetation Code

- ▭ Cleared
- ▭ VT05



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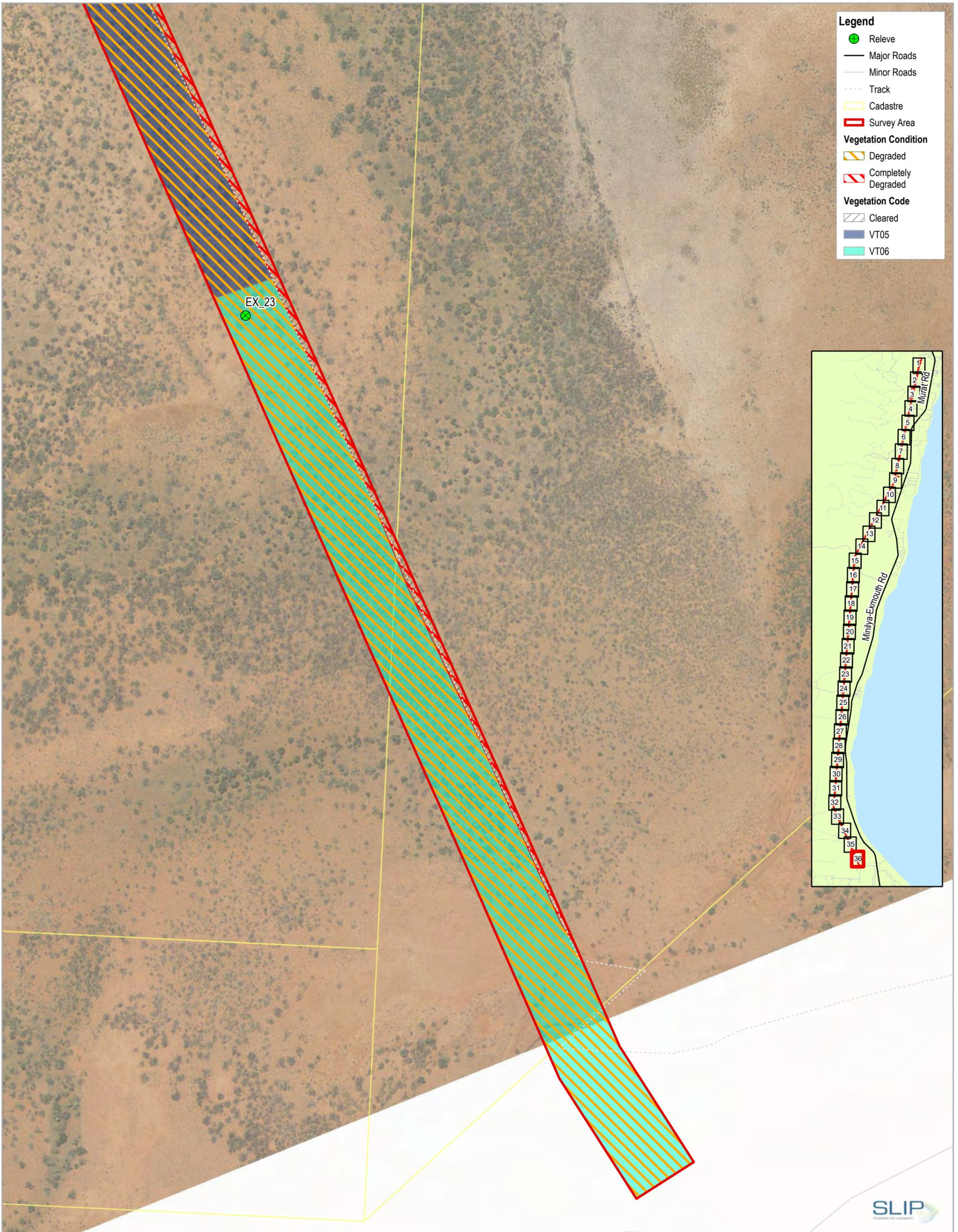
Horizon Power
022 - Learmonth Biological Line Survey

Vegetation Types and Condition

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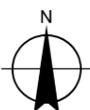


- Legend**
- Releve
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Cadastre
 - ▭ Survey Area
- Vegetation Condition**
- ▨ Degraded
 - ▨ Completely Degraded
- Vegetation Code**
- ▨ Cleared
 - ▨ VT05
 - ▨ VT06



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Metres

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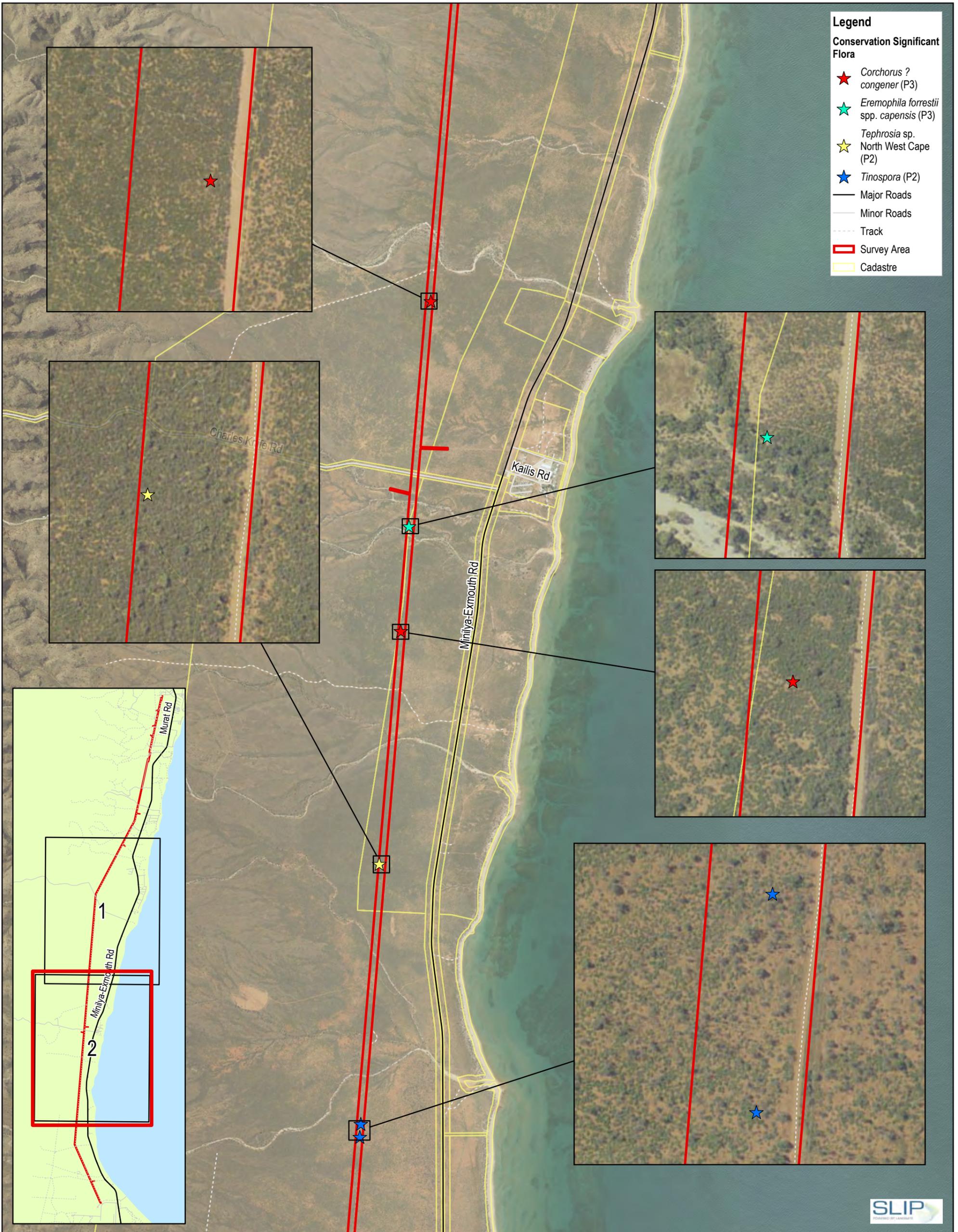


Horizon Power
022 - Learmonth Biological Line Survey

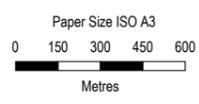
Vegetation Types and Condition

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- Legend**
- Conservation Significant Flora**
- ★ *Corchorus ? congener* (P3)
 - ★ *Eremophila forrestii* spp. *capensis* (P3)
 - ★ *Tephrosia* sp. North West Cape (P2)
 - ★ *Tinospora* (P2)
 - Major Roads
 - Minor Roads
 - - - Track
 - ▭ Survey Area
 - ▭ Cadastre



Horizon Power
022 - Learmonth Biological Line Survey

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Conservation Significant Flora

FIGURE 3
Page 2 of 2

Appendix B – Relevant legislation, background information conservation codes

Relevant legislation

Federal *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Federal Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as Matters of National Environmental Significance (MNES).

The biological aspects listed as MNES include:

- Nationally threatened flora and fauna species and ecological communities
- Migratory species

A person must not undertake an action that has, will have, or is likely to have a significant impact (direct or indirect) on MNES, without approval from the Federal Minister for the Environment.

The EPBC Act is administered by the Department of the Environment and Energy (DEE).

State *Environmental Protection Act 1986*

The *Environmental Protection Act 1986* (EP Act) is the primary legislative Act dealing with the protection of the environment in Western Australia. The Act allows the Environmental Protection Authority (EPA), to prevent, control and abate pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing. Part IV of the EP Act is administered by the EPA and makes provisions for the EPA to undertake environmental impact assessment of significant proposals, strategic proposals and land use planning schemes.

The Department of Water and Environment Regulation (DWER) is responsible for administering the clearing provisions of the EP Act (Part V). Clearing of native vegetation in Western Australia requires a permit from the DWER, unless exemptions apply. Applications for clearing permits are assessed by the Department and decisions are made to grant or refuse the application in accordance with the Act. When making a decision the assessment considers clearing against the ten clearing principles as specified in Schedule 5 of the EP Act:

- a) Native vegetation should not be cleared if it comprises a high level of biodiversity.
- b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significance habitat for fauna indigenous to Western Australia.
- c) Native vegetation should not be cleared if it includes, or is necessary, for the continued existence of rare flora.
- d) Native vegetation should not be cleared if it comprises the whole or part of native vegetation in an area that has been extensively cleared.
- e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- g) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- h) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

- i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Exemptions for clearing include clearing that is a requirement of a written law or authorised under certain statutory processes (listed in Schedule 6 of the EP Act) and exemptions for prescribed low impact day-to-day activities (prescribed in the Environmental Protection (Clearing of Native Vegetation) Regulations 2004); these exemptions do not apply in environmentally sensitive areas (ESAs).

State Biodiversity and Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) provides for the conservation and protection of biodiversity and biodiversity components, as well as the promotion of the ecologically sustainable use of biodiversity components in Western Australia. The BC Act replaces both the repealed *Wildlife Conservation Act 1950* (WC Act) and the *Sandalwood Act 1929* (Sandalwood Act), as well as their associated regulations. To attain the objectives of the BC Act, principles of ecological sustainable development have been established:

- Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making
- Improved valuation, pricing and incentive mechanisms should be promoted.

The BC Act is administered by the Department of Biodiversity Conservation and Attractions (DBCA).

State Biosecurity and Agriculture Management Act 2007

The *Biosecurity and Agriculture Management Act 2007* (BAM Act) and associated regulations are administered by the Department of Primary Industries and Regional Development (DPIRD) and replace the repealed *Agriculture and Related Resources Protection Act 1976*. The main purposes of the BAM Act and its regulations are to:

- Prevent new animal and plant pests (vermin and weeds) and diseases from entering WA
- Manage the impact and spread of those pests already present in the state
- Safely manage the use of agricultural and veterinary chemicals
- Increased control over the sale of agricultural products that contain violative chemical residues.

The Western Australian Organism List (WAOL) provides the status of organisms which have been categorised under the BAM Act. A Declared Pest is a prohibited organism or an organism for which a declaration under Section 22(2) of the Act is in force. Declared Pests may be assigned a control category including: C1 (exclusion), C2 (eradication) and C3 (management). The category may apply to the whole of the State, LGAs, districts, individual properties or even paddocks, and all landholders are obliged to comply with the specific category of control. Categories of control are defined below.

DPIRD Categories for Declared Pests under the BAM Act

Control class code	Description
C1 (Exclusion)	Pests will be assigned to this category if they are not established in Western Australia and control measures are to be taken, including border checks, in order to prevent them entering and establishing in the State.
C2 (Eradication)	Pests will be assigned to this category if they are present in Western Australia in low enough numbers or in sufficiently limited areas that their eradication is still a possibility.
C3 (Management)	Pests will be assigned to this category if they are established in Western Australia but it is feasible, or desirable, to manage them in order to limit their damage. Control measures can prevent a C3 pest from increasing in population size or density or moving from an area in which it is established into an area which currently is free of that pest.

Background information

Vegetation condition

The vegetation condition can be assessed in accordance with the vegetation condition rating scale for the Eremaean and Northern Botanical Provinces (EPA 2016a). The scale recognises the intactness of vegetation and consists of six rating levels as outlined below.

Vegetation condition rating scale for the Eremaean and Northern Botanical Provinces

Condition	Eremaean and Northern Botanical Provinces description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds..
Degraded	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Conservation codes

Species of significant flora, fauna and communities are protected under both Federal and State Acts. The Federal EPBC Act provides a legal framework to protect and manage nationally important flora and communities. The State BC Act is the primary wildlife conservation legislation in Western Australia. Information on the conservation codes is summarised in the following sections.

Ecological communities

Conservation significant communities

Ecological communities are defined as naturally occurring biological assemblages that occur in a particular type of habitat (English and Blyth 1997). Federally listed Threatened Ecological Communities (TECs) are protected under the EPBC Act. The BC Act provides for the Minister to list an ecological community as a TEC (section 27), or as a collapsed ecological community (section 31) statutory listing of State TECs by the Minister. The legislation also describes statutory processes for preparing recovery plans for TECs, the registration of their critical habitat, and penalties for unauthorised modification of TECs.

Possible TECs that do not meet survey criteria are added to the DBCA Priority Ecological Community (PEC) List under Priorities 1, 2 and 3. These are ecological communities that are adequately known; are rare but not threatened, or meet criteria for Near Threatened. PECs that have been recently removed from the threatened list are placed in Priority 4. These ecological communities require regular monitoring. Conservation dependent ecological communities are placed in Priority 5. PECs are not listed under any formal Federal or State legislation, however, may be listed as TECs under the EPBC Act.

Conservation codes and definitions for TECs listed under the EPBC Act and/ or BC Act

Categories	Definition
Federal Government Conservation Categories (EPBC Act)	
Critically Endangered (CR)	An ecological community if, at that time, is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Endangered (EN)	An ecological community if, at that time: A) is not critically endangered; and B) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Vulnerable (VU)	An ecological community if, at that time: A) is not critically endangered or endangered; and B) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria (as outlined in Environment Protection and Biodiversity Conservation Regulations 2000)
Western Australia Conservation Categories (BC Act)	
<u>Threatened Ecological Communities</u>	

Categories	Definition
Critically Endangered (CR)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or that was originally of limited distribution and is facing severe modification or destruction throughout its range in the immediate future, or is already severely degraded throughout its range but capable of being substantially restored or rehabilitated.
Endangered (EN)	An ecological community that has been adequately surveyed and found to have been subject to a major contraction in area and/or was originally of limited distribution and is in danger of significant modification throughout its range or severe modification or destruction over most of its range in the near future.
Vulnerable (VU)	An ecological community that has been adequately surveyed and is found to be declining and/or has declined in distribution and/or condition and whose ultimate security has not yet been assured and/or a community that is still widespread but is believed likely to move into a category of higher threat in the near future if threatening processes continue or begin operating throughout its range.

Collapsed ecological communities

An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time –

(a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed); or

(b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover –

(i) its species composition or structure; or

(ii) its species composition and structure.

Section 33 of the BC Act provides for a collapsed ecological community to be regarded as a threatened ecological community if it is discovered in a state that no longer makes it eligible for listing as a collapsed ecological community.

Conservation categories and definitions for PECS as listed by the DBCA

Category	Description
Priority 1	<p>Poorly known ecological communities.</p> <p>Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100 ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.</p>
Priority 2	<p>Poorly known ecological communities.</p> <p>Communities that are known from few occurrences with a restricted distribution (generally ≤ 10 occurrences or a total area of ≤ 200 ha). At least some occurrences are not believed to be under immediate threat of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.</p>

Category	Description
Priority 3	<p>Poorly known ecological communities.</p> <p>(i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:</p> <p>(ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;</p> <p>(iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes.</p> <p>Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.</p>
Priority 4	<p>Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.</p> <p>(i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.</p> <p>(ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>(iii) Ecological communities that have been removed from the list of threatened communities during the past five years.</p>
Priority 5	<p>Conservation Dependent ecological communities.</p> <p>Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.</p>

Other significant vegetation

Vegetation may be significant for a range of reasons other than a statutory listing. The EPA (2016b) states that significant vegetation may include vegetation that includes the following:

- Restricted distribution
- Degree of historical impact from threatening processes
- Local endemism in restricted habitats
- Novel combinations of taxa
- A role as a refuge
- A role as a key habitat for Threatened species or large population representing a significant proportion of the local to regional total population of a species
- Being representative of a vegetation unit in 'pristine' condition in a highly cleared landscape, recently discovered range extensions, or isolated outliers of the main range)
- Being poorly reserved.

This may apply at a number of levels, so the unit may be significant when considered at the fine-scale (intra-locality), intermediate-scale (locality or inter-locality) or broad-scale (local to region).

Flora and fauna

Conservation significant flora and fauna

Species of significant flora are protected under both Federal and State legislation. Any activities that are deemed to have a significant impact on species that are recognised by the EPBC Act, and/or the BC Act can warrant referral to the DEE and/or the EPA.

The Federal conservation level of flora and fauna species and their significance status is assessed under the EPBC Act. The significance levels for flora and fauna used in the EPBC Act align with the International Union for Conservation of Nature (IUCN) Red List criteria, which are internationally recognised as providing best practice for assigning the conservation status of species. The EPBC Act also protects land and migratory species that are listed under International Agreements. The list of migratory species established under section 209 of the EPBC Act comprises:

- Migratory species which are native to Australia and are included in the appendices to the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals Appendices I and II)
- Migratory species included in annexes established under the Japan-Australia Migratory Bird Agreement (JAMBA) and the China–Australia Migratory Bird Agreement (CAMBA)
- Native, migratory species identified in a list established under, or an instrument made under, an international agreement approved by the Minister, such as the Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)

The State conservation level of flora and fauna species and their significance status also follows the IUCN Red List criteria. Under the BC Act flora and fauna can be listed as Threatened, Extinct and as Specially Protected species.

Threatened species are those species which have been adequately searched for and are deemed to be, in the wild, either rare, under identifiable threat of extinction, or otherwise in need of special protection, and have been gazetted as such. The assessment of the conservation status of Threatened species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria. Specially protected species meet one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection. Species that are listed as Threatened or Extinct species under the BC Act cannot also be listed as Specially Protected species.

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

For the purposes of this assessment, all species listed under the EPBC Act, BC Act and DBCA Priority species are considered conservation significant.

Conservation categories and definitions for EPBC Act and BC Act listed flora and fauna species

Conservation category	Definition
Threatened species	
Critically Endangered (CR)	<p>Threatened species considered to be “facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines”.</p> <p>Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.</p>
Endangered (EN)	<p>Threatened species considered to be “facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines”.</p> <p>Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines</p>
Vulnerable (VU)	<p>Threatened species considered to be “facing a high risk of extinction in the wild in the medium term future, as determined in accordance with criteria set out in the ministerial guidelines”.</p> <p>Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.</p>
Extinct species	
Extinct (EX)	Species where “there is no reasonable doubt that the last member of the species has died”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).
Extinct in the Wild (EW)	Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).
Specially protected species	
Migratory (MI)	<p>Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).</p> <p>Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species</p>

Conservation category	Definition
Species of special conservation interest (conservation dependent fauna) (CD)	Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened.
Other specially protected fauna (OS)	Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Conservation codes for DBCA listed Priority flora and fauna

Priority category	Definition
Priority 1	<p>Poorly-known taxa</p> <p>Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.</p>
Priority 2	<p>Poorly-known taxa</p> <p>Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.</p>
Priority 3	<p>Poorly-known taxa</p> <p>Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.</p>
Priority 4	<p>Rare, Near Threatened and other taxa in need of monitoring</p> <p>A. Rare: Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.</p> <p>B. Near Threatened. Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.</p> <p>C. Taxa that have been removed from the list of threatened taxa during the past five years for reasons other than taxonomy.</p>

Other significant flora

Flora species, subspecies, varieties, hybrids and ecotypes may be significant for a range of reasons, other than a statutory listing. The EPA (2016b) states that significant flora may include taxa that have:

- A keystone role in a particular habitat for threatened or Priority flora or fauna species, or large populations representing a considerable proportion of the local or regional total population of a species
- Relictual status, being representation of taxonomic or physiognomic groups that no longer occur widely in the broader landscape
- Anomalous features that indicate a potential new discovery
- Being representative of the range of a species (particularly, at the extremes of range, recently discovered range extensions, or isolated outliers of the main range)
- The presence of restricted subspecies, varieties, or naturally occurring hybrids
- Local endemism (a restricted distribution) or association with a restricted habitat type (e.g. surface water or groundwater dependent ecosystems)
- Being poorly reserved

Other significant fauna

Fauna species may be significant for a range of reasons other than those protected by international agreement or treaty, Specially Protected or Priority Fauna. Significant fauna may include short-range endemic species, species that have declining populations or declining distributions, species at the extremes of their range, or isolated outlying populations, or species which may be undescribed (EPA 2010).

Introduced plants (weeds)

Declared Pests

Information on species considered to be Declared Pests is provided under *State Biosecurity and Agriculture Management Act 2007*.

Weeds of National Significance

The spread of weeds across a range of land uses or ecosystems is important in the context of socio-economic and environmental values. The assessment of Weeds of National Significance (WoNS) is based on four major criteria:

- Invasiveness
- Impacts
- Potential for spread
- Socio-economic and environmental values

Australian state and territory governments have identified thirty-two Weeds of National Significance (WoNS); a list of 20 WoNS was endorsed in 1999 and a further 12 were added in 2012.

References

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- DEE 2019a, *Criteria for determining nationally important wetlands*, retrieved 2019, from <http://www.environment.gov.au/topics/water/water-our-environment/wetlands/australian-wetlands-database/directory-important>.
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- EPA 2016a, *Technical Guide – Flora and Vegetation Surveys for Environmental Impact Assessment*, EPA, Perth, WA.
- EPA 2016b, *Environmental Factor Guideline - Flora and Vegetation*, EPA, Perth, WA.
- GoWA 2018, *Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full report)*, Current as of December 2017, Perth Western Australia, Department of Environment and Conservation, from <https://www2.landgate.wa.gov.au/web/guest/downloader>.
- Shepherd, DP, Beeston, GR & Hopkins, AJM 2002, *Native Vegetation in Western Australia – Extent, Type and Status*, Resource Management Technical Report 249, Perth, Department of Agriculture.

Appendix C – Desktop searches

EPBC Act PMST (20 km)

Naturemap Flora Report (20 km)

Naturemap Fauna Report (20 km)



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 08/05/19 11:50:30

[Summary](#)

[Details](#)

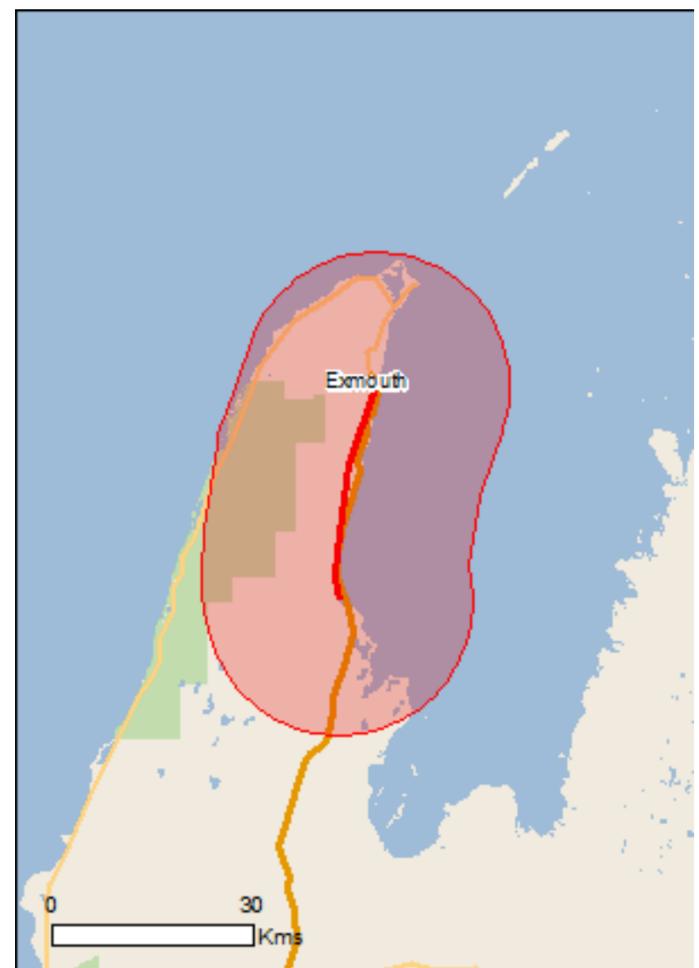
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 20.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	31
Listed Migratory Species:	43

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	8
Commonwealth Heritage Places:	None
Listed Marine Species:	77
Whales and Other Cetaceans:	15
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	3
Regional Forest Agreements:	None
Invasive Species:	11
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Status
The Ningaloo Coast	WA	Declared property

National Heritage Properties [\[Resource Information \]](#)

Name	State	Status
Natural		
The Ningaloo Coast	WA	Listed place

Listed Threatened Species [\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		

Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
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Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
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Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
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Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
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Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
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Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
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Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
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Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
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Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
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Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
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Fish

Milyeringa veritas Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
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Name	Status	Type of Presence
Ophisternon candidum Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Rhinonictes aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Listed Migratory Species [[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area

Name	Threatened	Type of Presence
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Defence - EXMOUTH ADMIN & HF TRANSMITTING Defence - EXMOUTH NAVAL HF RECEIVING STATION (H/F Receiving Station, Learmonth, WA) Defence - EXMOUTH VLF TRANSMITTER STATION Defence - LEARMONTH - RAAF BASE Defence - LEARMONTH RADAR SITE - TWIN TANKS EXMOUTH Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH Defence - LEARMONTH TRANSMITTING STATION

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur

Name	Threatened	Type of Presence within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Breeding known to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

Name	Threatened	Type of Presence
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Congregation or aggregation known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Bundegi Coastal Park	WA
Cape Range	WA
Jurabi Coastal Park	WA

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
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Birds

Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
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Mammals

Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
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Capra hircus Goat [2]		Species or species habitat likely to occur within area
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Equus caballus Horse [5]		Species or species habitat likely to occur within area
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Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
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Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
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Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
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Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
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Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
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Name	Status	Type of Presence
Plants		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Nationally Important Wetlands		<u>[Resource Information]</u>
Name	State	
Cape Range Subterranean Waterways	WA	

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-21.942373 114.132737,-22.037297 114.095906,-22.145457 114.078431,-22.179568 114.075306,-22.206728 114.082173,-22.206728 114.082173

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

NatureMap Species Report_Flora 20km

Created By Guest user on 19/06/2019

Kingdom Plantae
Current Names Only Yes
Core Datasets Only Yes
Method 'By Line'
Vertices 21° 57' 27" S,114° 07' 20" E 22° 00' 01" S,114° 06' 45" E 22° 01' 13" S,114° 06' 18" E 22° 02' 52" S,114° 05' 15" E 22° 06' 52" S,114° 04' 42" E 22° 11' 04" S,114° 04' 25" E 22° 12' 55" S,114° 05' 02" E
Group By Family

Family	Species	Records
Acanthaceae	5	29
Aizoaceae	2	3
Amaranthaceae	17	47
Anadyomenaceae	2	4
Apiaceae	1	3
Apocynaceae	8	14
Asparagaceae	5	25
Asphodelaceae	1	2
Asteraceae	43	130
Bignoniaceae	1	2
Bonnemaisoniaceae	1	1
Boodleaceae	1	1
Boraginaceae	6	23
Brassicaceae	5	10
Callithamniaceae	1	1
Campanulaceae	4	5
Capparaceae	5	14
Caulerpaceae	10	15
Celastraceae	3	16
Ceramiaceae	2	2
Champiaceae	2	4
Chenopodiaceae	30	53
Cladophoraceae	1	1
Cleomaceae	1	3
Colchicaceae	1	8
Commelinaceae	1	5
Convolvulaceae	11	40
Coralliaceae	1	1
Crassulaceae	2	3
Cymodoceaceae	5	23
Cyperaceae	4	6
Dichotomosiphonaceae	1	1
Dilleniaceae	2	12
Emblingiaceae	1	1
Euphorbiaceae	10	36
Fabaceae	69	278
Frankeniaceae	1	6
Galaxauraceae	2	3
Gentianaceae	2	3
Geraniaceae	2	6
Goodeniaceae	13	68
Gracilariaceae	2	4
Gyrostemonaceae	1	5
Halimedaceae	4	12
Haloragaceae	3	4
Hemerocallidaceae	4	11
Hydrocharitaceae	2	7
Isoetaceae	2	2
Juncaginaceae	1	2
Kallymeniaceae	1	1
Lamiaceae	9	24
Lauraceae	3	11
Liagoraceae	2	4
Loganiaceae	1	9
Loranthaceae	6	35
Malvaceae	38	114
Marsileaceae	2	2
Menispermaceae	1	9
Montiaceae	2	4
Moraceae	2	11
Myrtaceae	19	150
Nyctaginaceae	3	6
Olaceaceae	1	2
Oleaceae	2	9
Ophioglossaceae	3	4
Orchidaceae	1	1
Orobanchaceae	1	2
Phrymaceae	1	5
Phyllanthaceae	5	14
Pittosporaceae	2	5
Plantaginaceae	3	9
Plumbaginaceae	3	15
Poaceae	40	99
Polygonaceae	1	1

Polyphysaceae	1	1
Portulacaceae	1	1
Pottiaceae	1	1
Primulaceae	2	3
Proteaceae	11	56
Pteridaceae	3	3
Rhizophoraceae	2	6
Rhizophyllidaceae	1	2
Rhodomelaceae	5	6
Rhodymeniaceae	1	2
Ricciaceae	3	3
Rubiaceae	3	9
Ruppiaceae	1	1
Rutaceae	1	2
Santalaceae	3	15
Sapindaceae	4	12
Scrophulariaceae	9	32
Selaginellaceae	1	1
Siphonocladaceae	1	1
Solanaceae	10	27
Solieriaceae	1	2
Surianaceae	1	2
Thymelaeaceae	2	13
Udoteaceae	1	1
Urticaceae	1	2
Valoniaceae	2	2
Verbenaceae	1	1
Violaceae	2	5
Zygophyllaceae	9	23
TOTAL	540	1736

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
Acanthaceae				
1.	6828 <i>Avicennia marina</i> (White Mangrove)			
2.	7164 <i>Dicladanthera forrestii</i>			
3.	11320 <i>Dipteracanthus australasicus</i> subsp. <i>australasicus</i>			
4.	11746 <i>Dipteracanthus australasicus</i> subsp. <i>corynothecus</i>			
5.	17327 <i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>		P2	Y
Aizoaceae				
6.	2818 <i>Sesuvium portulacastrum</i>			
7.	44305 <i>Trianthena pilosum</i>			
Amaranthaceae				
8.	2645 <i>Achyranthes aspera</i> (Chaff Flower)			
9.	2646 <i>Aerva javanica</i> (Kapok Bush)	Y		
10.	2653 <i>Alternanthera pungens</i> (Khaki Weed)	Y		
11.	2657 <i>Amaranthus clementii</i>			
12.	20018 <i>Amaranthus undulatus</i>			
13.	2677 <i>Gomphrena celosioides</i> (Gomphrena Weed)	Y		
14.	2696 <i>Ptilotus astrolasius</i>			
15.	2699 <i>Ptilotus axillaris</i> (Mat Mulla Mulla)			
16.	2711 <i>Ptilotus clementii</i> (Tassel Top)			
17.	2717 <i>Ptilotus divaricatus</i> (Climbing Mulla Mulla)			
18.	2721 <i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
19.	2727 <i>Ptilotus gaudichaudii</i>			
20.	2731 <i>Ptilotus helipteroides</i> (Hairy Mulla Mulla)			
21.	2747 <i>Ptilotus obovatus</i> (Cotton Bush)			
22.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
23.	2766 <i>Ptilotus villosiflorus</i>			
24.	43203 <i>Surreya diandra</i>			
Anadyomenaceae				
25.	35872 <i>Anadyomene plicata</i>			
26.	35858 <i>Anadyomene wrightii</i>			
Apiaceae				
27.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
Apocynaceae				
28.	6569 <i>Catharanthus roseus</i> (Pink Periwinkle)	Y		
29.	6584 <i>Cynanchum floribundum</i> (Dumara Bush, Tjipa)			
30.	48280 <i>Cynanchum viminalis</i> subsp. <i>australe</i>			
31.	12832 <i>Gymnanthera cunninghamii</i>		P3	
32.	12949 <i>Marsdenia australis</i>			
33.	48983 <i>Vincetoxicum cinerascens</i>			
34.	48987 <i>Vincetoxicum flexuosum</i>			
35.	48986 <i>Vincetoxicum lineare</i>			
Asparagaceae				
36.	1208 <i>Acanthocarpus preissii</i>			
37.	1209 <i>Acanthocarpus robustus</i>			
38.	1210 <i>Acanthocarpus rupestris</i>		P2	
39.	1211 <i>Acanthocarpus verticillatus</i>			
40.	46756 <i>Thysanotus exfimbriatus</i>			
Asphodelaceae				
41.	1364 <i>Asphodelus fistulosus</i> (Onion Weed)	Y		
Asteraceae				
42.	7822 <i>Angianthus acrohyalinus</i> (Hook-leaf Angianthus)			
43.	7827 <i>Angianthus cunninghamii</i> (Coast Angianthus)			
44.	7838 <i>Arctotheca calendula</i> (Cape Weed, African Marigold)	Y		
45.	7854 <i>Bidens bipinnata</i> (Bipinnate Beggartick)	Y		
46.	46338 <i>Bidens subalternans</i> var. <i>simulans</i>	Y		
47.	7871 <i>Brachyscome ciliaris</i>			
48.	7906 <i>Calotis plumulifera</i>			
49.	47174 <i>Chrysocephalum apiculatum</i> subsp. <i>pilbarensis</i>			
50.	7958 <i>Decazesia hecatocephala</i>			
51.	35558 <i>Flaveria trinervia</i> (Speedy Weed)	Y		
52.	8086 <i>Hypochaeris glabra</i> (Smooth Catsear)	Y		
53.	8098 <i>Launaea sarmentosa</i>			
54.	8105 <i>Millotia myosotidifolia</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
55.	8107 <i>Minuria cunninghamii</i> (Bush Minuria)			
56.	8110 <i>Minuria leptophylla</i> (Minnie Daisy)			
57.	42024 <i>Olearia</i> sp. Kennedy Range (G. Byrne 66)			
58.	20611 <i>Pembertonia latisquamea</i>			
59.	34997 <i>Peripleura arida</i>			
60.	35003 <i>Peripleura hispidula</i> var. <i>setosa</i>			
61.	8167 <i>Plucheia dentex</i>			
62.	17816 <i>Plucheia ferdinandi-muelleri</i>			
63.	43944 <i>Plucheia longiseta</i>			
64.	8168 <i>Plucheia rubelliflora</i>			
65.	45237 <i>Podolepis aristata</i> subsp. <i>aristata</i>			
66.	45242 <i>Podolepis remota</i>			
67.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cudweed)			
68.	8192 <i>Pterocaulon sphacelatum</i> (Apple Bush, Fruit Salad Plant)			
69.	8193 <i>Pterocaulon sphaeranthoides</i>			
70.	13291 <i>Rhodanthe condensata</i>			
71.	13301 <i>Rhodanthe floribunda</i>			
72.	13246 <i>Rhodanthe humboldtiana</i>			
73.	13297 <i>Rhodanthe psammophila</i>			
74.	13254 <i>Rhodanthe stricta</i>			
75.	45146 <i>Roebuckiella oncocarpa</i>			
76.	13285 <i>Schoenia ayersii</i>			
77.	25880 <i>Senecio hamersleyensis</i>			
78.	8213 <i>Senecio magnificus</i> (Showy Groundsel)			
79.	20161 <i>Senecio pinnatifolius</i>			
80.	25883 <i>Senecio pinnatifolius</i> var. <i>pinnatifolius</i>			
81.	8223 <i>Sigesbeckia orientalis</i> (Indian Weed)	Y		
82.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
83.	8237 <i>Streptoglossa decurrens</i>			
84.	8238 <i>Streptoglossa liatroides</i>			
Bignoniaceae				
85.	36447 <i>Tecoma stans</i> var. <i>stans</i>	Y		
Bonnemaisoniaceae				
86.	26486 <i>Asparagopsis taxiformis</i>			
Boodleaceae				
87.	44726 <i>Cladophoropsis vaucheriiformis</i>			
Boraginaceae				
88.	6680 <i>Cynoglossum australe</i> (Australian Hound's-tongue)			
89.	29840 <i>Halgania cyanea</i> var. <i>Allambi Stn</i> (B.W. Strong 676)			
90.	6705 <i>Heliotropium crispatum</i>			
91.	17305 <i>Heliotropium glanduliferum</i>			
92.	6713 <i>Heliotropium ovalifolium</i>			
93.	6727 <i>Trichodesma zeylanicum</i> (Camel Bush, Kumbalin)			
Brassicaceae				
94.	3032 <i>Lepidium muelleri-ferdinandii</i>			
95.	3035 <i>Lepidium pedicellosum</i>			
96.	3039 <i>Lepidium platypetalum</i> (Slender Peppergrass)			
97.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
98.	3072 <i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
Callithamniaceae				
99.	27204 <i>Ptilocladia vestita</i>			
Campanulaceae				
100.	7403 <i>Lobelia heterophylla</i> (Wing-seeded Lobelia)			
101.	48829 <i>Wahlenbergia capillaris</i>			
102.	<i>Wahlenbergia</i> sp.			
103.	7393 <i>Wahlenbergia tumidifruca</i>			
Capparaceae				
104.	2976 <i>Capparis lasiantha</i> (Split Jack, Balqarda)			
105.	2978 <i>Capparis mitchellii</i> (Wild Orange)			
106.	<i>Capparis</i> sp.			
107.	2981 <i>Capparis spinosa</i>			
108.	48291 <i>Capparis spinosa</i> subsp. <i>nummularia</i>			
Caulerpaceae				
109.	26554 <i>Caulerpa brachypus</i>			
110.	42620 <i>Caulerpa chemnitzia</i>			
111.	35158 <i>Caulerpa corynephora</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
112.	26559 <i>Caulerpa cupressoides</i>			
113.	27378 <i>Caulerpa cupressoides</i> var. <i>lycopodium</i>			
114.	44547 <i>Caulerpa lamourouxii</i>			
115.	26568 <i>Caulerpa lentillifera</i>			
116.	44551 <i>Caulerpa macrodisca</i>			
117.	26576 <i>Caulerpa serrulata</i>			
118.	26577 <i>Caulerpa sertularioides</i>			
Celastraceae				
119.	4734 <i>Stackhousia muricata</i>			
120.	43601 <i>Stackhousia</i> sp. Mid west coastal (D. & B. Bellairs 6561)			
121.	4736 <i>Stackhousia umbellata</i>		P3	
Ceramiaceae				
122.	26469 <i>Anotrichium tenue</i>			
123.	27310 <i>Spyridia filamentosa</i>			
Champiaceae				
124.	26618 <i>Champia parvula</i>			
125.	26619 <i>Champia stipitata</i>			
Chenopodiaceae				
126.	2453 <i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
127.	2456 <i>Atriplex elachophylla</i>			
128.	2463 <i>Atriplex isatidea</i> (Coast Saltbush)			
129.	2476 <i>Atriplex semilunaris</i> (Annual Saltbush)			
130.	2489 <i>Chenopodium gaudichaudianum</i> (Cottony Saltbush)			
131.	2499 <i>Dissocarpus paradoxus</i> (Curious Saltbush)			
132.	33501 <i>Dysphania cristata</i> (Crested Goosefoot)			
133.	2504 <i>Dysphania plantaginella</i>			
134.	2511 <i>Enchylaena tomentosa</i> (Barrier Saltbush)			
135.	12064 <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Barrier Saltbush)			
136.	2513 <i>Eremophea spinosa</i>			
137.	2546 <i>Maireana integra</i>			
138.	2556 <i>Maireana planifolia</i> (Low Bluebush)			
139.	2558 <i>Maireana polypterygia</i> (Gascoyne Bluebush)			
140.	11662 <i>Maireana tomentosa</i> subsp. <i>tomentosa</i>			
141.	2573 <i>Neobassia astrocarpa</i>			
142.	2582 <i>Rhagodia eremaea</i> (Thorny Saltbush)			
143.	2584 <i>Rhagodia preissii</i>			
144.	11240 <i>Rhagodia preissii</i> subsp. <i>obovata</i>			
145.	30434 <i>Salsola australis</i>			
146.	2609 <i>Sclerolaena diacantha</i> (Grey Copperburr)			
147.	8877 <i>Sclerolaena gardneri</i>			
148.	2628 <i>Sclerolaena recurvicuspis</i>			
149.	2638 <i>Suaeda arbusculoides</i>			
150.	33236 <i>Tecticornia halocnemoides</i> (Shrubby Samphire)			
151.	33238 <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>			
152.	33318 <i>Tecticornia indica</i> subsp. <i>leiostachya</i> (Samphire)			
153.	31618 <i>Tecticornia pruinosa</i>			
154.	33220 <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>			
155.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
Cladophoraceae				
156.	26658 <i>Cladophora vagabunda</i>			
Cleomaceae				
157.	2988 <i>Cleome viscosa</i> (Tickweed, Tjinduwadhu)			
Colchicaceae				
158.	1400 <i>Wurmbea odorata</i>			
Commelinaceae				
159.	1165 <i>Commelina ensifolia</i> (Wandering Jew, Buargu)			
Convolvulaceae				
160.	11167 <i>Bonamia erecta</i>			
161.	31274 <i>Duperreya commixta</i>			
162.	11416 <i>Evolvulus alsinoides</i> var. <i>decumbens</i>			
163.	11200 <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>			
164.	6624 <i>Ipomoea costata</i> (Rock Morning Glory, Kanti)			
165.	6633 <i>Ipomoea muelleri</i> (Poison Morning Glory, Yumbu)			
166.	6635 <i>Ipomoea pes-caprae</i>			
167.	11312 <i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>			
168.	6637 <i>Ipomoea polymorpha</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
169.	6641 <i>Ipomoea yardiensis</i> (Yardie Morning Glory)			
170.	6653 <i>Polymeria ambigua</i> (Morning Glory)			
Corallinaceae				
171.	26983 <i>Jania adhaerens</i>			
Crassulaceae				
172.	3137 <i>Crassula colorata</i> (Dense Stonecrop)			
173.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
Cymodoceaceae				
174.	128 <i>Cymodocea angustata</i>			
175.	129 <i>Cymodocea serrulata</i>			
176.	131 <i>Halodule uninervis</i>			
177.	132 <i>Syringodium isoetifolium</i>			
178.	133 <i>Thalassodendron ciliatum</i>			
Cyperaceae				
179.	750 <i>Bulbostylis barbata</i>			
180.	777 <i>Cyperus bulbosus</i> (Bush Onion, Tjanmata)			
181.	814 <i>Cyperus squarrosus</i>			
182.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
Dichotomosiphonaceae				
183.	26498 <i>Avrainvillea obscura</i>			
Dilleniaceae				
184.	5171 <i>Hibbertia spicata</i>			
185.	11481 <i>Hibbertia spicata</i> subsp. <i>spicata</i>			
Emblingiaceae				
186.	2989 <i>Emblingia calceoliflora</i>			
Euphorbiaceae				
187.	17422 <i>Adriana tomentosa</i> var. <i>tomentosa</i>			
188.	35307 <i>Euphorbia australis</i> var. <i>australis</i>			
189.	4619 <i>Euphorbia biconvexa</i>			
190.	4626 <i>Euphorbia drummondii</i> (Caustic Weed, Piwi)			
191.	4635 <i>Euphorbia myrtilloides</i>			
192.	4644 <i>Euphorbia sharkoensis</i>			
193.	4647 <i>Euphorbia tannensis</i>			
194.	12097 <i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Desert Spurge)			
195.	42879 <i>Euphorbia trigonosperma</i>			
196.	4658 <i>Mallotus nesophilus</i>			
Fabaceae				
197.	13074 <i>Acacia alexandri</i>		P3	
198.	3223 <i>Acacia arida</i>			
199.	3241 <i>Acacia bivenosa</i>			
200.	3270 <i>Acacia coriacea</i> (Wirewood)			
201.	13500 <i>Acacia coriacea</i> subsp. <i>coriacea</i>			
202.	3356 <i>Acacia gregorii</i> (Gregory's Wattle)			
203.	3452 <i>Acacia murrayana</i> (Sandplain Wattle)			
204.	3506 <i>Acacia pyrifolia</i> (Ranji Bush, Kandji)			
205.	29015 <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>			
206.	13071 <i>Acacia ryaniana</i>		P2	
207.	13078 <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
208.	29135 <i>Acacia sericophylla</i>			
209.	3549 <i>Acacia spathulifolia</i>			
210.	13076 <i>Acacia startii</i>		P3	
211.	19456 <i>Acacia stellaticeps</i>			
212.	13070 <i>Acacia synchronica</i>			
213.	3577 <i>Acacia tetragonophylla</i> (Kurara, Wakalpuka)			
214.	3606 <i>Acacia xiphophylla</i>			
215.	3749 <i>Canavalia rosea</i> (Wild Jack Bean)			
216.	13114 <i>Chorizema racemosum</i>			
217.	3774 <i>Crotalaria cunninghamii</i> (Green Birdflower, Bilbun)			
218.	18147 <i>Crotalaria incana</i> subsp. <i>incana</i>	Y		
219.	3783 <i>Crotalaria medicaginea</i>			
220.	20179 <i>Crotalaria medicaginea</i> var. <i>neglecta</i>			
221.	17439 <i>Cullen lachnostachys</i>			
222.	17118 <i>Cullen leucanthum</i>			
223.	17120 <i>Cullen pogonocarpum</i>			
224.	14375 <i>Daviesia pleurophylla</i>			
225.	3871 <i>Erythrina vespertilio</i> (Yulbah)		P2	

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
226.	3938 <i>Glycine canescens</i> (Silky Glycine)			
227.	17113 <i>Indigofera boviparda</i> subsp. <i>boviparda</i>			
228.	45436 <i>Indigofera chamaeclada</i> subsp. <i>pubens</i>			
229.	3973 <i>Indigofera colutea</i> (Sticky Indigo)			
230.	3980 <i>Indigofera linifolia</i>			
231.	3981 <i>Indigofera linnaei</i> (Birdsville Indigo)			
232.	3982 <i>Indigofera monophylla</i>			
233.	3987 <i>Indigofera trita</i>			
234.	3989 <i>Isotropis atropurpurea</i> (Poison Sage)			
235.	3664 <i>Labichea cassioides</i>			
236.	16489 <i>Leptosema macrocarpum</i>			
237.	18351 <i>Leucaena leucocephala</i> subsp. <i>leucocephala</i>	Y		
238.	4060 <i>Lotus australis</i> (Austral Trefoil)			
239.	24021 <i>Lotus australis</i> var. <i>australis</i>			
240.	4061 <i>Lotus cruentus</i> (Redflower Lotus)			
241.	4097 <i>Mirbelia ramulosa</i>			
242.	20027 <i>Mirbelia</i> sp. <i>Carnarvon</i> (J.S. Beard 6008)			
243.	4105 <i>Mirbelia viminalis</i>			
244.	3673 <i>Parkinsonia aculeata</i> (Parkinsonia)	Y		
245.	3674 <i>Petalostylis cassioides</i>			
246.	4191 <i>Rhynchosia minima</i> (Rhynchosia)			
247.	12280 <i>Senna artemisioides</i> subsp. <i>oligophylla</i>			
248.	18443 <i>Senna ferraria</i>			
249.	12307 <i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
250.	12309 <i>Senna glutinosa</i> subsp. <i>pruinosa</i>			
251.	12312 <i>Senna notabilis</i>			
252.	<i>Sesbania</i> sp.			
253.	12353 <i>Stylosanthes hamata</i> (Verano Stylo)	Y		
254.	13592 <i>Swainsona calcicola</i>			
255.	13596 <i>Swainsona complanata</i>			
256.	12356 <i>Swainsona formosa</i>			
257.	4231 <i>Swainsona kingii</i>			
258.	4233 <i>Swainsona leeana</i>			
259.	4242 <i>Swainsona pterostylis</i>			
260.	49017 <i>Tephrosia gardneri</i>			
261.	19531 <i>Tephrosia rosea</i> var. <i>clementii</i>			
262.	46053 <i>Tephrosia</i> sp. <i>North West Cape</i> (G. Marsh 81)		P2	
263.	30716 <i>Vachellia farnesiana</i> (Mimosa Bush)	Y		
264.	4323 <i>Vigna lanceolata</i> (Maloga Vigna, Wega)			
265.	31391 <i>Vigna</i> sp. <i>Hamersley Clay</i> (A.A. Mitchell PRP 113)			

Frankeniaceae

266. 5209 *Frankenia pauciflora* (Seaheath)

Galaxauraceae

267. 29616 *Dichotomaria marginata*

268. 26835 *Galaxaura rugosa*

Gentianaceae

269. 41660 *Schenkia australis*

270. 41646 *Schenkia clementii*

Geraniaceae

271. 4332 *Erodium botrys* (Long Storksbill) Y | | |

272. 4335 *Erodium cygnorum* (Blue Heronsbill)

Goodeniaceae

273. 7448 *Dampiera incana* (Hoary Dampiera)

274. 11723 *Dampiera incana* var. *incana*

275. 7509 *Goodenia forrestii*

276. 7526 *Goodenia microptera*

277. 12574 *Goodenia prostrata*

278. 7556 *Goodenia tenuiloba*

279. 7588 *Lechenaultia subcymosa* (Wide-branching Leschenaultia)

280. 7606 *Scaevola crassifolia* (Thick-leaved Fan-flower)

281. 7608 *Scaevola cunninghamii*

282. 12584 *Scaevola pulchella*

283. 7643 *Scaevola sericophylla*

284. 7644 *Scaevola spinescens* (Currant Bush, Maroon)

285. 7648 *Scaevola tomentosa* (Raggedleaf Fanflower)

Gracilariaceae

286. 35899 *Gracilaria canaliculata*

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Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
287.	35905 <i>Hydropuntia eucheumatoides</i>			
Gyrostemonaceae				
288.	2784 <i>Gyrostemon ramulosus</i> (Corkybark)			
Halimedaceae				
289.	26892 <i>Halimeda discoidea</i>			
290.	26894 <i>Halimeda macroloba</i>			
291.	26898 <i>Halimeda velasquezii</i>			
292.	47213 <i>Halimeda versatilis</i>			
Haloragaceae				
293.	6174 <i>Haloragis gossei</i>			
294.	23464 <i>Haloragis gossei</i> var. <i>inflata</i>			
295.	6180 <i>Haloragis trigonocarpa</i>			
Hemerocallidaceae				
296.	1284 <i>Corynotheca flexuosissima</i>			
297.	1286 <i>Corynotheca pungens</i>			
298.	1360 <i>Tricoryne corynothecoides</i>			
299.	29477 <i>Tricoryne</i> sp. <i>Mullewa</i> (G.J. Keighery 12080)			
Hydrocharitaceae				
300.	164 <i>Halophila ovalis</i> (Sea Wrack)			
301.	169 <i>Thalassia hemprichii</i>			
Isoetaceae				
302.	11 <i>Isoetes drummondii</i> (Quillwort)			
303.	12 <i>Isoetes inflata</i>			
Juncaginaceae				
304.	145 <i>Triglochin hexagona</i> (Six-point Arrowgrass)			
Kallymeniaceae				
305.	48421 <i>Leiomenia lacunata</i>			
Lamiaceae				
306.	6732 <i>Clerodendrum tomentosum</i>			
307.	13689 <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>			
308.	13690 <i>Clerodendrum tomentosum</i> var. <i>tomentosum</i>			
309.	6754 <i>Dicrastylis cordifolia</i>			
310.	6910 <i>Plectranthus intraterraneus</i>			
311.	35276 <i>Plectranthus scutellarioides</i>			
312.	41063 <i>Quoya loxocarpa</i>			
313.	41061 <i>Quoya paniculata</i>			
314.	48603 <i>Teucrium teucriiflorum</i>			
Lauraceae				
315.	12073 <i>Cassytha aurea</i> var. <i>aurea</i>			
316.	2949 <i>Cassytha capillaris</i>			
317.	11242 <i>Cassytha racemosa</i> forma <i>pilosa</i>			
Liagoraceae				
318.	26637 <i>Ganonema farinosum</i>			
319.	26912 <i>Helminthocladia australis</i>			
Loganiaceae				
320.	16798 <i>Logania litoralis</i>			
Loranthaceae				
321.	2369 <i>Amyema benthamii</i>			
322.	2372 <i>Amyema fitzgeraldii</i> (Pincushion Mistletoe)			
323.	2380 <i>Amyema miquelii</i> (Stalked Mistletoe)			
324.	13266 <i>Amyema miraculosa</i> subsp. <i>miraculosa</i>			
325.	2383 <i>Amyema preissii</i> (Wireleaf Mistletoe)			
326.	11874 <i>Amyema sanguinea</i> var. <i>sanguinea</i>			
Malvaceae				
327.	9080 <i>Abutilon cunninghamii</i>			
328.	4891 <i>Abutilon fraseri</i> (Lantern Bush)			
329.	11325 <i>Abutilon indicum</i> var. <i>australiense</i>			
330.	4895 <i>Abutilon lepidum</i>			
331.	4901 <i>Abutilon otocarpum</i> (Desert Chinese Lantern)			
332.	<i>Abutilon</i> sp.			
333.	14115 <i>Abutilon</i> sp. <i>Cape Range</i> (A.S. George 1312)			
334.	42920 <i>Abutilon</i> sp. <i>Dioicum</i> (A.A. Mitchell PRP 1618)			
335.	4904 <i>Alyogyne cuneiformis</i> (Coastal Hibiscus)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
336.	4907 <i>Alyogyne pinoniana</i> (Sand Hibiscus)			
337.	40910 <i>Androcalva luteiflora</i> (Yellow-flowered Rulingia)			
338.	12714 <i>Brachychiton obtusilobus</i>		P4	
339.	18410 <i>Corchorus carmarvonensis</i>			
340.	18411 <i>Corchorus congener</i>		P3	
341.	13560 <i>Corchorus crozophorifolius</i>			
342.	<i>Corchorus</i> sp.			
343.	4918 <i>Gossypium robinsonii</i> (Wild Cotton)			
344.	4919 <i>Gossypium sturtianum</i> (Sturt's Desert Rose)			
345.	11559 <i>Gossypium sturtianum</i> var. <i>sturtianum</i>			
346.	17782 <i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>			
347.	4925 <i>Hibiscus coatesii</i>			
348.	4930 <i>Hibiscus goldsworthii</i>			
349.	4933 <i>Hibiscus leptocladus</i>			
350.	4942 <i>Hibiscus sturtii</i> (Sturt's Hibiscus)			
351.	4960 <i>Lawrenzia viridigrisea</i>			
352.	4962 <i>Malvastrum americanum</i> (Spiked Malvastrum)	Y		
353.	5051 <i>Melhania oblongifolia</i>			
354.	46818 <i>Seringia hermanniifolia</i> (Crinkle-leaved firebush)			
355.	4966 <i>Sida arenicola</i>			
356.	4970 <i>Sida calyxhymenia</i> (Tall Sida)			
357.	4977 <i>Sida fibulifera</i> (Silver Sida)			
358.	4982 <i>Sida kingii</i>			
359.	18149 <i>Sida rohlenae</i> subsp. <i>rohlenae</i>			
360.	4989 <i>Sida spinosa</i> (Spiny Sida)			
361.	14694 <i>Triumfetta clementii</i>			
362.	13481 <i>Triumfetta ramosa</i>			
363.	17529 <i>Triumfetta tenuiseta</i>			
364.	5106 <i>Waltheria indica</i>			

Marsileaceae

365.	76 <i>Marsilea hirsuta</i> (Nardoo)			
366.	<i>Marsilea</i> sp.			

Menispermaceae

367.	17345 <i>Tinospora esiangkara</i>		P2	Y
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Montiaceae

368.	2864 <i>Calandrinia ptychosperma</i>			
369.	49022 <i>Calandrinia</i> sp. Cape Range (F. Obbens FO 10/18)		P2	

Moraceae

370.	19648 <i>Ficus brachypoda</i>			
371.	12096 <i>Ficus virens</i> var. <i>virens</i>			

Myrtaceae

372.	35798 <i>Calothamnus borealis</i> subsp. <i>borealis</i>			
373.	49009 <i>Calytrix</i> sp. Learmonth (S. Fox EMopp 1)		P1	Y
374.	5484 <i>Calytrix truncatifolia</i>			
375.	17093 <i>Corymbia hamersleyana</i>			
376.	17092 <i>Corymbia opaca</i>			
377.	17084 <i>Corymbia zygophylla</i>			
378.	33519 <i>Eucalyptus baiophylla</i>			
379.	35345 <i>Eucalyptus camaldulensis</i> subsp. <i>obtusa</i> (Blunt-budded River Red Gum)			
380.	5752 <i>Eucalyptus prominens</i>			
381.	15597 <i>Eucalyptus ultima</i>			
382.	14548 <i>Eucalyptus victrix</i>			
383.	15592 <i>Eucalyptus xerothermica</i>			
384.	5879 <i>Melaleuca bracteata</i> (River Teatree)			
385.	5887 <i>Melaleuca cardiophylla</i> (Tangling Melaleuca)			
386.	6010 <i>Pileanthus limacis</i> (Coastal Coppercups)			
387.	18260 <i>Pileanthus septentrionalis</i>			
388.	44710 <i>Thyptomene dampieri</i>			
389.	6081 <i>Verticordia forrestii</i> (Forrest's Featherflower)			
390.	12457 <i>Verticordia serotina</i>		P2	

Nyctaginaceae

391.	2770 <i>Boerhavia coccinea</i> (Tar Vine, Wituka)			
392.	<i>Boerhavia</i> sp.			
393.	2776 <i>Commicarpus australis</i> (Perennial Tar Vine)			

Olacaceae

394.	2364 <i>Olax aurantia</i>			
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Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Oleaceae				
395.	12059 <i>Jasminum didymum</i> subsp. <i>lineare</i> (Desert Jasmine)			
396.	29056 <i>Jasminum</i> sp. <i>Exmouth</i> (G. Marsh 77)			
Ophioglossaceae				
397.	16 <i>Helminthostachys zeylanica</i>		P3	
398.	12782 <i>Ophioglossum gramineum</i>			
399.	17 <i>Ophioglossum lusitanicum</i> (Adders Tongue)			
Orchidaceae				
400.	15426 <i>Pterostylis aspera</i>			
Orobanchaceae				
401.	12492 <i>Striga squamigera</i>			
Phrymaceae				
402.	7082 <i>Mimulus gracilis</i>			
Phyllanthaceae				
403.	17626 <i>Phyllanthus erwinii</i>			
404.	4677 <i>Phyllanthus fuernrohrii</i> (Sand Sponge)		P3	
405.	45696 <i>Phyllanthus hamelinii</i> (Shark Bay Phyllanthus)			
406.	4680 <i>Phyllanthus maderaspatensis</i>			
407.	4706 <i>Sauropus crassifolius</i>			
Pittosporaceae				
408.	19744 <i>Pittosporum angustifolium</i>			
409.	41300 <i>Pittosporum phillyreoides</i> (Weeping Pittosporum, Yaliti)			
Plantaginaceae				
410.	7098 <i>Stemodia grossa</i> (Marsh Stemodia, Mindjaara)			
411.	48755 <i>Stemodia</i> sp. <i>Carnarvon</i> (W.R. Barker 2154)			
412.	17295 <i>Stemodia</i> sp. <i>Onslow</i> (A.A. Mitchell 76/148)			
Plumbaginaceae				
413.	6486 <i>Aegialitis annulata</i> (Club Mangrove)			
414.	6490 <i>Muellerolimon salicorniaceum</i>			
415.	6491 <i>Plumbago zeylanica</i> (Native Plumbago)			
Poaceae				
416.	207 <i>Aristida contorta</i> (Bunched Kerosene Grass)			
417.	210 <i>Aristida holathera</i>			
418.	12063 <i>Aristida holathera</i> var. <i>holathera</i>			
419.	217 <i>Aristida nitidula</i> (Flat-awned Threeawn)			
420.	235 <i>Avena sativa</i> (Common Oat)	Y		
421.	240 <i>Bothriochloa ewartiana</i> (Desert Bluegrass)			
422.	258 <i>Cenchrus ciliaris</i> (Buffel Grass)	Y		
423.	266 <i>Chloris barbata</i> (Purpletop Chloris)	Y		
424.	273 <i>Chrysopogon fallax</i> (Golden Beard Grass)			
425.	279 <i>Cymbopogon ambiguus</i> (Scentgrass)			
426.	13741 <i>Dichanthium sericeum</i> subsp. <i>humilius</i>			
427.	313 <i>Digitaria ctenantha</i> (Comb Finger Grass)			
428.	328 <i>Echinochloa colona</i> (Awnless Barnyard Grass)	Y		
429.	357 <i>Enneapogon caeruleus</i> (Limestone Grass)			
430.	360 <i>Enneapogon lindleyanus</i> (Wiry Nineawn, Purple-head Nineawn)			
431.	375 <i>Eragrostis cumingii</i> (Cuming's Love Grass)			
432.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
433.	380 <i>Eragrostis eriopoda</i> (Woollybutt Grass, Wangurnu)			
434.	381 <i>Eragrostis falcata</i> (Sickle Lovegrass)			
435.	400 <i>Eriachne aristidea</i>			
436.	411 <i>Eriachne helmsii</i> (Buck Wanderrie Grass)			
437.	413 <i>Eriachne mucronata</i> (Mountain Wanderrie Grass)			
438.	414 <i>Eriachne obtusa</i> (Northern Wandarrie Grass)			
439.	11011 <i>Eulalia aurea</i>			
440.	458 <i>Iseilema dolichotrichum</i>			
441.	459 <i>Iseilema eremaeum</i>			
442.	503 <i>Panicum decompositum</i> (Native Millet, Kaltu-kaltu)			
443.	11232 <i>Paractaenium novae-hollandiae</i> subsp. <i>novae-hollandiae</i>			
444.	518 <i>Paspalidium clementii</i> (Clements Paspalidium)			
445.	525 <i>Paspalidium tabulatum</i>			
446.	606 <i>Setaria dielsii</i> (Diels' Pigeon Grass)			
447.	619 <i>Sorghum plumosum</i> (Plume Canegrass)			
448.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
449.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
450.	679 <i>Triodia angusta</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
451.	13131 <i>Triodia epactia</i>			
452.	48467 <i>Triodia glabra</i>			
453.	17873 <i>Triodia schinzii</i>			
454.	704 <i>Triodia wiseana (Limestone Spinifex)</i>			
455.	706 <i>Triraphis mollis (Needle Grass)</i>			
Polygonaceae				
456.	46434 <i>Rumex hypogaeus</i>	Y		
Polyphysaceae				
457.	48409 <i>Acetabularia caliculus</i>			
Portulacaceae				
458.	2884 <i>Portulaca oleracea (Purslane, Wakati)</i>			
Pottiaceae				
459.	32415 <i>Pottia scabrifolia</i>			
Primulaceae				
460.	6484 <i>Samolus repens (Creeping Brookweed)</i>			
461.	14026 <i>Samolus sp. Shark Bay (M.E. Trudgen 7410)</i>			
Proteaceae				
462.	1799 <i>Banksia ashbyi (Ashby's Banksia)</i>			
463.	33400 <i>Banksia ashbyi subsp. boreoscaia</i>			
464.	1972 <i>Grevillea calcicola</i>		P3	
465.	2001 <i>Grevillea eriostachya (Flame Grevillea, Kaliny-kalinypa)</i>			
466.	2012 <i>Grevillea gordoniana</i>			
467.	2096 <i>Grevillea stenobotrya</i>			
468.	2117 <i>Grevillea variifolia (Cape Range Grevillea)</i>			Y
469.	15686 <i>Grevillea variifolia subsp. bundera</i>			
470.	15685 <i>Grevillea variifolia subsp. variifolia</i>			
471.	2207 <i>Hakea stenophylla</i>			
472.	16897 <i>Hakea stenophylla subsp. stenophylla</i>			
Pteridaceae				
473.	12796 <i>Cheilanthes adiantoides</i>			
474.	31 <i>Cheilanthes austrotenuifolia</i>			
475.	37 <i>Cheilanthes lasiophylla (Woolly Cloak Fern)</i>			
Rhizophoraceae				
476.	39680 <i>Ceriops australis</i>			
477.	5295 <i>Rhizophora stylosa (Spotted-leaved Red Mangrove)</i>			
Rhizophyllidaceae				
478.	27186 <i>Portieria hornemannii</i>			
Rhodomelaceae				
479.	26453 <i>Amansia rhodantha</i>			
480.	26628 <i>Chondria armata</i>			
481.	26992 <i>Kentrophora pectinella</i>			
482.	46834 <i>Osmundaria melvillii</i>			
483.	27171 <i>Polysiphonia blandii</i>			
Rhodymeniaceae				
484.	26686 <i>Coelarthurum opuntia</i>			
Ricciaceae				
485.	<i>Riccia bifurca</i>			
486.	<i>Riccia limbata</i>			
487.	<i>Riccia vesiculosa</i>			
Rubiaceae				
488.	7338 <i>Oldenlandia crouchiana</i>			
489.	18256 <i>Opercularia spermacoea</i>			
490.	13339 <i>Synaptantha tillaeacea var. tillaeacea</i>			
Ruppiaceae				
491.	114 <i>Ruppia maritima (Sea Tassel)</i>			
Rutaceae				
492.	4456 <i>Diplolaena grandiflora (Wild Rose)</i>			
Santalaceae				
493.	10977 <i>Exocarpos aphyllus (Leafless Ballart)</i>			
494.	10765 <i>Exocarpos sparteus (Broom Ballart, Djuk)</i>			
495.	2357 <i>Santalum lanceolatum (Northern Sandalwood, Yarnguli)</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
Sapindaceae				
496.	11487 <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>			
497.	4745 <i>Diplopeltis eriocarpa</i> (Hairy Pepperflower)			
498.	4747 <i>Diplopeltis intermedia</i>			
499.	11669 <i>Diplopeltis intermedia</i> var. <i>intermedia</i>			
Scrophulariaceae				
500.	7198 <i>Eremophila deserti</i>			
501.	29715 <i>Eremophila forrestii</i> subsp. <i>capensis</i>		P3	
502.	15052 <i>Eremophila forrestii</i> subsp. <i>forrestii</i>			
503.	7234 <i>Eremophila longifolia</i> (Berrigan, Tulypurpa)			
504.	16363 <i>Eremophila maculata</i> subsp. <i>brevifolia</i> (Native Fuchsia)			
505.	15032 <i>Eremophila occidens</i>		P2	
506.	16733 <i>Eremophila setacea</i>			
507.	23997 <i>Eremophila tietkensis</i>			
508.	16040 <i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	
Selaginellaceae				
509.	5 <i>Selaginella ciliaris</i>			
Siphonocladaceae				
510.	26507 <i>Boergesenia forbesii</i>			
Solanaceae				
511.	47241 <i>Datura leichhardtii</i> subsp. <i>leichhardtii</i>	Y		
512.	6966 <i>Duboisia hopwoodii</i> (Pituri, Kundugu)			
513.	6974 <i>Nicotiana glauca</i> (Tree Tobacco)	Y		
514.	6976 <i>Nicotiana occidentalis</i> (Native Tobacco)			
515.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
516.	11856 <i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>			
517.	6998 <i>Solanum cleistogamum</i>			
518.	7002 <i>Solanum diversiflorum</i>			
519.	7018 <i>Solanum lasiophyllum</i> (Flannel Bush, Mindjulu)			
520.	47173 <i>Solanum lycopersicum</i> (Tomato)	Y		
Solieriaceae				
521.	26827 <i>Eucheuma denticulatum</i>			
Surianaceae				
522.	3182 <i>Stylobasium spathulatum</i> (Pebble Bush)			
Thymelaeaceae				
523.	5230 <i>Pimelea ammocharis</i>			
524.	11185 <i>Pimelea microcephala</i> subsp. <i>microcephala</i>			
Udoteaceae				
525.	27121 <i>Penicillus nodulosus</i>			
Urticaceae				
526.	12670 <i>Parietaria cardiostegia</i>			
Valoniaceae				
527.	36143 <i>Valonia fastigiata</i>			
528.	46438 <i>Valonia ventricosa</i>			
Verbenaceae				
529.	6733 <i>Lantana camara</i> (Common Lantana)	Y		
Violaceae				
530.	5215 <i>Hybanthus aurantiacus</i>			
531.	5219 <i>Hybanthus enneaspermus</i>			
Zygophyllaceae				
532.	48884 <i>Roepera aurantiaca</i>			
533.	48891 <i>Roepera fruticulosa</i>			
534.	48900 <i>Roepera retivalvis</i>			
535.	4375 <i>Tribulus cistoides</i>			
536.	4377 <i>Tribulus hirsutus</i>			
537.	4378 <i>Tribulus hystrix</i>			
538.	4379 <i>Tribulus macrocarpus</i>			
539.	4380 <i>Tribulus occidentalis</i> (Perennial Caltrop)			
540.	18072 <i>Tribulus suberosus</i>			

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement
S - Other specially protected fauna

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
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1 - Priority 1
2 - Priority 2
3 - Priority 3
4 - Priority 4
5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

NatureMap Species Report_Fauna 20km

Created By Guest user on 19/06/2019

Kingdom Animalia
Current Names Only Yes
Core Datasets Only Yes
Method 'By Line'
Vertices 21° 57' 27" S, 114° 07' 20" E 22° 00' 01" S, 114° 06' 45" E 22° 01' 13" S, 114° 06' 18" E 22° 02'
Group By 52° S, 114° 05' 15" E 22° 06' 52" S, 114° 04' 42" E 22° 11' 04" S, 114° 04' 25" E 22° 12' 55"
 S, 114° 05' 02" E
 Species Group

Species Group	Species	Records
Amphibian	5	70
Bird	219	4270
Fish	499	1300
Invertebrate	86	1132
Mammal	41	1161
Reptile	101	1161
TOTAL	951	9094

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Amphibian				
1.	25375 <i>Cyclorana maini</i> (Sheep Frog)			
2.	25422 <i>Neobatrachus aquilonius</i> (Northern Burrowing Frog)			
3.	25424 <i>Neobatrachus fulvus</i> (Tawny Trilling Frog)			
4.	25427 <i>Neobatrachus sutor</i> (Shoemaker Frog)			
5.	25432 <i>Pseudophryne douglasi</i> (Gorge Toadlet)			
Bird				
6.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
7.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
8.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
9.	24282 <i>Accipiter fasciatus subsp. fasciatus</i> (Brown Goshawk)			
10.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
11.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
12.	24301 <i>Aegotheles cristatus subsp. cristatus</i> (Australian Owlet-nightjar)			
13.	24312 <i>Anas gracilis</i> (Grey Teal)			
14.	<i>Anas platyrhynchos subsp. domesticus</i>			
15.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
16.	47414 <i>Anhinga novaehollandiae</i> (Australasian Darter)			
17.	25634 <i>Anous stolidus</i> (Common Noddy)		IA	
18.	24599 <i>Anthus australis subsp. australis</i> (Australian Pipit)			
19.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
20.	25558 <i>Ardea ibis</i> (Cattle Egret)			
21.	25559 <i>Ardea intermedia</i> (Intermediate Egret)			
22.	41324 <i>Ardea modesta</i> (great egret, white egret)			
23.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
24.	25560 <i>Ardea sacra</i> (Eastern Reef Egret, Eastern Reef Heron)			
25.	24343 <i>Ardea sacra subsp. sacra</i> (Eastern Reef Egret, Eastern Reef Heron)			
26.	48573 <i>Ardenna pacifica</i> (Wedge-tailed Shearwater)		IA	
27.	24610 <i>Ardeotis australis</i> (Australian Bustard)			
28.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
29.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
30.	24352 <i>Artamus cinereus subsp. melanops</i> (Black-faced Woodswallow)			
31.	25567 <i>Artamus leucorhynchus</i> (White-breasted Woodswallow)			
32.	24354 <i>Artamus leucorhynchus subsp. leucopygialis</i> (White-breasted Woodswallow)			
33.	24355 <i>Artamus minor</i> (Little Woodswallow)			
34.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
35.	24318 <i>Aythya australis</i> (Hardhead)			
36.	<i>Barnardius zonarius</i>			
37.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
38.	47897 <i>Butorides striata</i> (Striated Heron, Mangrove Heron)			
39.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
40.	24727 <i>Cacatua sanguinea</i> subsp. <i>westralensis</i> (Little Corella)			
41.	42307 <i>Cacomantis pallidus</i> (Pallid Cuckoo)			
42.	24269 <i>Calamanthus campestris</i> (Rufous Fieldwren)			
43.	<i>Calamanthus campestris</i> subsp. <i>campestris</i>			Y
44.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)		IA	
45.	24780 <i>Calidris alba</i> (Sanderling)		IA	
46.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)		T	
47.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
48.	24789 <i>Calidris subminuta</i> (Long-toed Stint)		IA	
49.	24790 <i>Calidris tenuirostris</i> (Great Knot)		T	
50.	25600 <i>Centropus phasianinus</i> (Pheasant Coucal)			
51.	24564 <i>Certhionyx variegatus</i> (Pied Honeyeater)			
52.	25575 <i>Charadrius leschenaultii</i> (Greater Sand Plover)		T	
53.	25576 <i>Charadrius mongolus</i> (Lesser Sand Plover)		T	
54.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
55.	24378 <i>Charadrius veredus</i> (Oriental Plover)		IA	
56.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck, Wood Duck)			
57.	47909 <i>Cheramoeca leucosterna</i> (White-backed Swallow)			
58.	41332 <i>Chlidonias leucopterus</i> (White-winged Black Tern, white-winged tern)		IA	
59.	<i>Chroicocephalus novaehollandiae</i>			
60.	24431 <i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
61.	24288 <i>Circus approximans</i> (Swamp Harrier)			
62.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
63.	24612 <i>Colluricincla harmonica</i> subsp. <i>kolichisi</i> (Grey Shrike-thrush)			
64.	24613 <i>Colluricincla harmonica</i> subsp. <i>rufiventris</i> (Grey Shrike-thrush)			
65.	24399 <i>Columba livia</i> (Domestic Pigeon)	Y		
66.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
67.	24362 <i>Coracina novaehollandiae</i> subsp. <i>novaehollandiae</i> (Black-faced Cuckoo-shrike)			
68.	24363 <i>Coracina novaehollandiae</i> subsp. <i>subpallida</i> (Black-faced Cuckoo-shrike)			
69.	24416 <i>Corvus bennetti</i> (Little Crow)			
70.	25593 <i>Corvus orru</i> (Torresian Crow)			
71.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
72.	25701 <i>Coturnix ypsilophora</i> (Brown Quail)			
73.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
74.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
75.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
76.	24322 <i>Cygnus atratus</i> (Black Swan)			
77.	25547 <i>Dacelo leachii</i> (Blue-winged Kookaburra)			
78.	24324 <i>Dendrocygna arcuata</i> (Wandering Whistling Duck, Chestnut Whistling Duck)			
79.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
80.	24441 <i>Dicaeum hirundinaceum</i> subsp. <i>hirundinaceum</i> (Mistletoebird)			
81.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
82.	<i>Egretta garzetta</i>			
83.	<i>Egretta novaehollandiae</i>			
84.	<i>Elanus axillaris</i>			
85.	25540 <i>Elanus caeruleus</i> (Black-shouldered Kite)			
86.	47937 <i>Eiseyornis melanops</i> (Black-fronted Dotterel)			
87.	24631 <i>Emblema pictum</i> (Painted Finch)			
88.	<i>Eolophus roseicapillus</i>			
89.	24653 <i>Eopsaltria pulverulenta</i> (Mangrove Robin)			
90.	25578 <i>Ephippiorhynchus asiaticus</i> (Black-necked Stork)			
91.	24567 <i>Epthianura albifrons</i> (White-fronted Chat)			
92.	24568 <i>Epthianura aurifrons</i> (Orange Chat)			
93.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
94.	24837 <i>Eremiornis carteri</i> (Spinifex-bird)			
95.	24379 <i>Erythrogonys cinctus</i> (Red-kneed Dotterel)			
96.	47938 <i>Esacus magnirostris</i> (Beach Stone-curlew, Beach Thick-knee)			
97.	25621 <i>Falco berigora</i> (Brown Falcon)			
98.	25622 <i>Falco cenchroides</i> (Australian Kestrel, Nankeen Kestrel)			
99.	25623 <i>Falco longipennis</i> (Australian Hobby)			
100.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
101.	25727 <i>Fulica atra</i> (Eurasian Coot)			
102.	24793 <i>Gallinago stenura</i> (Pin-tailed Snipe)		IA	
103.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			
104.	24765 <i>Gallirallus philippensis</i> subsp. <i>melloni</i> (Buff-banded Rail)			
105.	42314 <i>Gavicalis virescens</i> (Singing Honeyeater)			
106.	47954 <i>Gelochelidon nilotica</i> (Gull-billed Tern)		IA	
107.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
108.	24402 <i>Geopelia humeralis</i> (Bar-shouldered Dove)			
109.	25585 <i>Geopelia striata</i> (Zebra Dove)			
110.	24404 <i>Geophaps plumifera</i> (Spinifex Pigeon)			
111.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
112.	24276 <i>Gerygone tenebrosa</i> (Dusky Gerygone)			
113.	24481 <i>Glareola maldivarum</i> (Oriental Pratincole)		IA	
114.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
115.	24484 <i>Grus rubicunda</i> (Brolga)			
116.	25627 <i>Haematopus fuliginosus</i> (Sooty Oystercatcher)			
117.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
118.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
119.	25541 <i>Haliastur indus</i> (Brahminy Kite)			
120.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
121.	24297 <i>Hamirostra melanosternon</i> (Black-breasted Buzzard)			
122.	47965 <i>Hieraaetus morphnoides</i> (Little Eagle)			
123.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
124.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
125.	48587 <i>Hydroprogne caspia</i> (Caspian Tern)		IA	
126.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
127.	25637 <i>Larus novaehollandiae</i> (Silver Gull)			
128.	25638 <i>Larus pacificus</i> (Pacific Gull)			
129.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
130.	24582 <i>Lichmera indistincta</i> subsp. <i>indistincta</i> (Brown Honeyeater)			
131.	25739 <i>Limicola falcinellus</i> (Broad-billed Sandpiper)		IA	
132.	30932 <i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
133.	25741 <i>Limosa limosa</i> (Black-tailed Godwit)		IA	
134.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
135.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
136.	24549 <i>Malurus leucopterus</i> subsp. <i>leuconotus</i> (White-winged Fairy-wren)			
137.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
138.	47997 <i>Melanodryas cucullata</i> (Hooded Robin)			
139.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
140.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
141.	<i>Microcarbo melanoleucos</i>			
142.	25542 <i>Milvus migrans</i> (Black Kite)			
143.	25545 <i>Mirafra javanica</i> (Horsfield's Bushlark, Singing Bushlark)			
144.	25685 <i>Neochmia ruficauda</i> (Star Finch)			
145.	25747 <i>Ninox connivens</i> (Barking Owl)			
146.	24798 <i>Numenius madagascariensis</i> (Eastern Curlew)		T	
147.	24799 <i>Numenius minutus</i> (Little Curlew, Little Whimbrel)		IA	
148.	25742 <i>Numenius phaeopus</i> (Whimbrel)		IA	
149.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
150.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
151.	24497 <i>Oceanites oceanicus</i> (Wilson's Storm-petrel)		IA	
152.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
153.	41347 <i>Onychoprion anaethetus</i> (Bridled Tern)		IA	
154.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
155.	34012 <i>Oreoica gutturalis</i> subsp. <i>pallescens</i> (Crested Bellbird, central)			
156.	24620 <i>Pachycephala lanioides</i> (White-breasted Whistler)			
157.	25678 <i>Pachycephala melanura</i> (Mangrove Golden Whistler)			
158.	24621 <i>Pachycephala melanura</i> subsp. <i>melanura</i> (Mangrove Golden Whistler)			
159.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
160.	48591 <i>Pandion cristatus</i> (Osprey, Eastern Osprey)		IA	
161.	24627 <i>Pardalotus rubricatus</i> (Red-browed Pardalote)			
162.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
163.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
164.	48060 <i>Petrochelidon ariel</i> (Fairy Martin)			
165.	48061 <i>Petrochelidon nigricans</i> (Tree Martin)			
166.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
167.	24662 <i>Phaethon lepturus</i> (White-tailed Tropicbird)		IA	
168.	24663 <i>Phaethon rubricauda</i> (Red-tailed Tropicbird)		P4	
169.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
170.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
171.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
172.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
173.	24842 <i>Platalea regia</i> (Royal Spoonbill)			
174.	24751 <i>Platycercus zonarius</i> subsp. <i>zonarius</i> (Port Lincoln Parrot)			
175.	24382 <i>Pluvialis fulva</i> (Pacific Golden Plover)		IA	
176.	24383 <i>Pluvialis squatarola</i> (Grey Plover)		IA	
177.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			

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178.	24679 <i>Podargus strigoides</i> subsp. <i>brachypterus</i> (Tawny Frogmouth)			
179.	24681 <i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
180.	25706 <i>Pomatostomus temporalis</i> (Grey-crowned Babbler)			
181.	24769 <i>Porzana fluminea</i> (Australian Spotted Crane)			
182.	24390 <i>Psophodes occidentalis</i> (Western Wedgebill, Chiming Wedgebill)			
183.	25711 <i>Pterodroma mollis</i> (Soft-plumaged Petrel)			
184.	<i>Ptilonorhynchus guttatus</i>			
185.	25724 <i>Ptilonorhynchus maculatus</i> (Spotted Bowerbird)			
186.	24757 <i>Ptilonorhynchus maculatus</i> subsp. <i>guttatus</i> (Western Bowerbird)			
187.	42323 <i>Ptilotula keartlandi</i> (Grey-headed Honeyeater)			
188.	24715 <i>Puffinus huttoni</i> (Hutton's Shearwater)		T	
189.	24278 <i>Pyrrholaemus brunneus</i> (Redthroat)			
190.	48096 <i>Rhipidura albiscapa</i> (Grey Fantail)			
191.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
192.	24454 <i>Rhipidura leucophrys</i> subsp. <i>leucophrys</i> (Willie Wagtail)			
193.	24457 <i>Rhipidura phasiana</i> (Mangrove Grey Fantail)			
194.	30948 <i>Smicromis brevirostris</i> (Weebill)			
195.	24521 <i>Sterna bengalensis</i> (Lesser Crested Tern)			
196.	24522 <i>Sterna bergii</i> (Crested Tern)			
197.	25640 <i>Sterna dougallii</i> (Roseate Tern)		IA	
198.	25642 <i>Sterna hirundo</i> (Common Tern)		IA	
199.	48593 <i>Sternula albifrons</i> (Little Tern)		IA	
200.	48594 <i>Sternula nereis</i> (Fairy Tern)			
201.	25656 <i>Stipiturus ruficeps</i> (Rufous-crowned Emu-wren)			
202.	24556 <i>Stipiturus ruficeps</i> subsp. <i>ruficeps</i> (Rufous-crowned Emu-wren)			
203.	25590 <i>Streptopelia senegalensis</i> (Laughing Turtle-Dove)	Y		
204.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe, Black-throated Grebe)			
205.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
206.	34007 <i>Thalassarche chlororhynchos</i> (Atlantic Yellow-nosed Albatross)		T	
207.	<i>Thalasseus bengalensis</i>			
208.	48597 <i>Thalasseus bergii</i> (Crested Tern)		IA	
209.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
210.	25548 <i>Todiramphus chloris</i> (Collared Kingfisher)			
211.	24306 <i>Todiramphus chloris</i> subsp. <i>pilbara</i> (Pilbara Collared Kingfisher)			
212.	42351 <i>Todiramphus pyrrhopygius</i> (Red-backed Kingfisher)			
213.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
214.	48141 <i>Tribonyx ventralis</i> (Black-tailed Native-hen)			
215.	24803 <i>Tringa brevipes</i> (Grey-tailed Tattler)		P4	
216.	24806 <i>Tringa glareola</i> (Wood Sandpiper)		IA	
217.	24808 <i>Tringa nebularia</i> (Common Greenshank, greenshank)		IA	
218.	24809 <i>Tringa stagnatilis</i> (Marsh Sandpiper, little greenshank)		IA	
219.	24851 <i>Turnix velox</i> (Little Button-quail)			
220.	24386 <i>Vanellus tricolor</i> (Banded Lapwing)			
221.	41351 <i>Xenus cinereus</i> (Terek Sandpiper)		IA	
222.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye, Silvereye)			
223.	24857 <i>Zosterops luteus</i> (Yellow White-eye)			
224.	<i>Zosterops luteus</i> subsp. <i>balstoni</i>			

Fish

225.	??			
226.	<i>Ablabys taenianotus</i>			
227.	<i>Abudefduf bengalensis</i>			
228.	<i>Abudefduf saxatilis</i>			
229.	<i>Abudefduf sordidus</i>			
230.	<i>Acanthocephala abbreviata</i>			
231.	<i>Acanthopagrus latus</i>			
232.	<i>Acanthurus triostegus</i>			
233.	<i>Adventor elongatus</i>			
234.	<i>Albula forsteri</i>			
235.	<i>Alectis ciliaris</i>			
236.	<i>Alectis indica</i>			
237.	<i>Alepes apercna</i>			
238.	<i>Aluterus scriptus</i>			
239.	<i>Ambassis vachellii</i>			
240.	<i>Amblyeleotris wheeleri</i>			
241.	<i>Amblygobius phalaena</i>			
242.	<i>Amphiprion perideraion</i>			
243.	<i>Amphiprion rubrocinctus</i>			
244.	<i>Anacanthus barbatus</i>			
245.	<i>Anampses caeruleopunctatus</i>			
246.	<i>Anampses meleagrides</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
247.	<i>Antennarius nummifer</i>			
248.	<i>Apistus carinatus</i>			
249.	<i>Apogon angustatus</i>			
250.	<i>Apogon argyrogaster</i>			
251.	<i>Apogon breviceudatus</i>			
252.	<i>Apogon cookii</i>			
253.	<i>Apogon fasciatus</i>			
254.	<i>Apogon fraenatus</i>			
255.	<i>Apogon multilineatus</i>			Y
256.	<i>Apogon nigripinnis</i>			
257.	<i>Apogon pallidofasciatus</i>			
258.	<i>Apogon poecilopterus</i>			
259.	<i>Apogon rueppellii</i>			
260.	<i>Apogon semiornatus</i>			
261.	<i>Apogon septemstriatus</i>			
262.	<i>Apogon sp.</i>			
263.	<i>Apogon taeniophorus</i>			
264.	<i>Apogon timorensis</i>			
265.	<i>Apolemichthys trimaculatus</i>			
266.	<i>Archamia fucata</i>			
267.	<i>Argyrosomus japonicus</i>			
268.	<i>Arius thalassinus</i>			
269.	<i>Arothron manilensis</i>			
270.	<i>Arothron stellatus</i>			
271.	<i>Aseraggodes sp.</i>			
272.	<i>Aseraggodes whitleyi</i>			
273.	<i>Aspidontus taeniatus</i>			
274.	<i>Assiculus punctatus</i>			
275.	<i>Asterropteryx semipunctatus</i>			
276.	<i>Atelomycterus fasciatus</i>			
277.	<i>Atherinomorus lacunosus</i>			
278.	<i>Atherinomorus vaigiensis</i>			
279.	<i>Atrosalaria sp.</i>			
280.	<i>Banjos banjos</i>			
281.	<i>Bathygobius cocosensis</i>			
282.	<i>Bathygobius fuscus</i>			
283.	<i>Bathygobius laddi</i>			
284.	<i>Batrachomoeus occidentalis</i>			
285.	<i>Batrachomoeus sp.</i>			
286.	<i>Belone sp.</i>			
287.	<i>Belonepterygion fasciolatum</i>			
288.	<i>Blenniella chrysospilos</i>			
289.	<i>Bodianus axillaris</i>			
290.	<i>Bodianus bilunulatus</i>			
291.	<i>Brachysomophis cirrocheilos</i>			
292.	<i>Callionymus grossi</i>			
293.	<i>Callionymus sublaevis</i>			
294.	<i>Callopleiops altivelis</i>			
295.	<i>Cantherhines frontocinctus</i>			
296.	<i>Cantherhines pardalis</i>			
297.	<i>Canthigaster coronata</i>			
298.	<i>Canthigaster janthinoptera</i>			
299.	<i>Carangoides caeruleopinnatus</i>			
300.	<i>Carangoides chrysophrys</i>			
301.	<i>Carangoides coeruleopinnatus</i>			
302.	<i>Carangoides equula</i>			
303.	<i>Carangoides hedlandensis</i>			
304.	<i>Carangoides humerosus</i>			
305.	<i>Carangoides malabaricus</i>			
306.	<i>Carangoides talamparoides</i>			
307.	<i>Caranx bucculentus</i>			
308.	<i>Caranx ignobilis</i>			
309.	<i>Caranx sexfasciatus</i>			
310.	<i>Carcharhinus cautus</i>			
311.	<i>Carcharhinus sp.</i>			
312.	34031 <i>Carcharodon carcharias</i> (Great White Shark)		T	
313.	<i>Centriscus cristatus</i>			
314.	<i>Centriscus scutatus</i>			
315.	<i>Centrogenys vaigiensis</i>			
316.	<i>Centrolophus niger</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
317.	<i>Centropyge eibli</i>			
318.	<i>Centropyge tibicen</i>			
319.	<i>Cephalopholis boenak</i>			
320.	<i>Cephalopholis sonnerati</i>			
321.	<i>Chaetodermis penicilligera</i>			
322.	<i>Chaetodon adiergastos</i>			
323.	<i>Chaetodon assarius</i>			
324.	<i>Chaetodon lunula</i>			
325.	<i>Chaetodon punctatofasciatus</i>			
326.	<i>Chaetodon trifascialis</i>			
327.	<i>Chaetodontoplus duboulayi</i>			
328.	<i>Chanos chanos</i>			
329.	<i>Cheilinus chlorourus</i>			
330.	<i>Cheilio inermis</i>			
331.	<i>Chelmon marginalis</i>			
332.	<i>Chelonodon patoca</i>			
333.	<i>Chiloscyllium punctatum</i>			
334.	<i>Chirocentrus dorab</i>			
335.	<i>Choerodon cauteroma</i>			
336.	<i>Choerodon cephalotes</i>			
337.	<i>Choerodon schoenleinii</i>			
338.	<i>Choerodon sp.</i>			
339.	<i>Choerodon vitta</i>			
340.	<i>Chromis fumea</i>			
341.	<i>Chromis margaritifer</i>			
342.	<i>Chromis weberi</i>			
343.	<i>Chromis westaustralis</i>			
344.	<i>Cirrhilabrus randalli</i>			
345.	<i>Cirrhilabrus sp.</i>			
346.	<i>Cirrhimuraena calamus</i>			
347.	<i>Cirrhitichthys aprinus</i>			
348.	<i>Cirrhitichthys oxycephalus</i>			
349.	<i>Cirrhitis pinnulatus</i>			
350.	<i>Cirripectes filamentosus</i>			
351.	<i>Cirripectes hutchinsi</i>			
352.	<i>Conger cinereus</i>			
353.	<i>Conger sp.</i>			
354.	<i>Congrogadus malayanus</i>			Y
355.	<i>Congrogadus spinifer</i>			
356.	<i>Coradion chrysozonus</i>			
357.	<i>Coris aygula</i>			
358.	<i>Coris caudimacula</i>			
359.	<i>Coryphaena hippurus</i>			
360.	<i>Coryphopterus duospilus</i>			
361.	<i>Coryphopterus sp.</i>			
362.	<i>Craterocephalus mugiloides</i>			
363.	<i>Craterocephalus pauciradiatus</i>			
364.	<i>Cryptocentrus sp.</i>			
365.	<i>Ctenochaetus strigosus</i>			
366.	<i>Cymbacephalus nematophthalmus</i>			
367.	<i>Cynoglossus sp.</i>			
368.	<i>Dactyloptena orientalis</i>			
369.	<i>Dactyloptena papilio</i>			
370.	<i>Dactylopus dactylopus</i>			
371.	<i>Dascyllus reticulatus</i>			
372.	<i>Dascyllus trimaculatus</i>			
373.	<i>Dasyatis kuhlii</i>			
374.	<i>Decapterus macrosoma</i>			
375.	<i>Decapterus russelli</i>			
376.	<i>Dendrochirus brachypterus</i>			
377.	<i>Dendrochirus zebra</i>			
378.	<i>Dentex tumifrons</i>			
379.	<i>Dexillus muelleri</i>			
380.	<i>Diademichthys lineatus</i>			
381.	<i>Diodon sp.</i>			
382.	<i>Echeneis naucrates</i>			
383.	<i>Ecsenius bicolor</i>			
384.	<i>Ecsenius lineatus</i>			
385.	<i>Ecsenius oculatus</i>			
386.	<i>Ecsenius yaeyamaensis</i>			

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387.	<i>Elops hawaiensis</i>			
388.	<i>Engyprosopon</i> sp.			
389.	<i>Enneapterygius gracilis</i>			
390.	<i>Enneapterygius larsonae</i>			
391.	<i>Enneapterygius philippinus</i>			
392.	<i>Enneapterygius tutuilae</i>			
393.	<i>Entomacrodus striatus</i>			
394.	<i>Entomacrodus thalassinus</i>			
395.	<i>Epinephelus bilobatus</i>			
396.	<i>Epinephelus coioides</i>			
397.	<i>Epinephelus rivulatus</i>			
398.	<i>Epinephelus sexfasciatus</i>			
399.	<i>Epinephelus</i> sp.			
400.	<i>Equulites moretoniensis</i>			
401.	<i>Eubalichthys caeruleoguttatus</i>			
402.	<i>Euristhmus nudiceps</i>			
403.	<i>Eviota bipunctata</i>			Y
404.	<i>Eviota</i> sp.			
405.	<i>Exallias brevis</i>			
406.	<i>Feroxodon multistriatus</i>			
407.	<i>Fistularia petimba</i>			
408.	<i>Foa</i> sp.			Y
409.	<i>Fowleria aurita</i>			
410.	<i>Fowleria variegata</i>			
411.	<i>Fusigobius maximus</i>			Y
412.	<i>Gambusia holbrooki</i>			
413.	<i>Gazza minuta</i>			
414.	<i>Gerres oblongus?</i>			Y
415.	<i>Gerres</i> sp.			
416.	<i>Gerres subfasciatus</i>			
417.	<i>Glaucosoma buergeri</i>			
418.	<i>Glaucosoma hebraicum</i>			
419.	<i>Glaucosoma magnificum</i>			
420.	<i>Gnathanodon speciosus</i>			
421.	<i>Gobiodon axillaris</i>			
422.	<i>Gobiodon citrinus</i>			
423.	<i>Grammatobothus polyophthalmus</i>			
424.	<i>Grammistes sexlineatus</i>			
425.	<i>Gymnocranius griseus</i>			
426.	<i>Gymnothorax buroensis</i>			
427.	<i>Gymnothorax nudivomer</i>			Y
428.	<i>Gymnothorax pseudothyrsoides</i>			
429.	<i>Gymnothorax undulatus</i>			
430.	<i>Gymnothorax zonipectis</i>			
431.	<i>Gymnura australis</i>			
432.	<i>Halicampus grayi</i>			
433.	<i>Halicampus spirostris</i>			Y
434.	<i>Halichoeres biocellatus</i>			
435.	<i>Halichoeres margaritaceus</i>			
436.	<i>Halichoeres melanochir</i>			
437.	<i>Halichoeres nebulosus</i>			
438.	<i>Halophryne diemensis</i>			
439.	<i>Halophryne ocellatus</i>			
440.	<i>Helcogramma decurrens</i>			
441.	<i>Helcogramma striata</i>			
442.	<i>Hemigaleus</i> sp.			
443.	<i>Heniochus acuminatus</i>			
444.	<i>Herklotsichthys blackburni</i>			
445.	<i>Herklotsichthys koningsbergeri</i>			
446.	<i>Hologymnosus annulatus</i>			
447.	<i>Hypnos monopterygium</i>			
448.	<i>Hypoatherina temminckii</i>			
449.	<i>Ichthyoscopus insperatus</i>			
450.	<i>Inegocia japonica</i>			
451.	<i>Inimicus sinensis</i>			
452.	<i>Istiblennius edentulus</i>			
453.	<i>Istiblennius lineatus</i>			
454.	<i>Istiblennius meleagris</i>			
455.	<i>Istigobius decoratus</i>			
456.	<i>Istiophorus platypterus</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
457.	<i>Labroides dimidiatus</i>			
458.	<i>Lactoria cornuta</i>			
459.	<i>Lactoria fornasini</i>			
460.	<i>Lagocephalus sceleratus</i>			
461.	<i>Leiognathus bindus</i>			
462.	<i>Leiognathus leuciscus</i>			
463.	<i>Leiognathus</i> sp.			
464.	<i>Lepidotrigla</i> sp.			
465.	<i>Leptoscarus vaigiensis</i>			
466.	<i>Lethrinus atkinsoni</i>			
467.	<i>Lethrinus genivittatus</i>			
468.	<i>Lethrinus laticaudis</i>			
469.	<i>Lethrinus miniatus</i>			
470.	<i>Lethrinus nebulosus</i>			
471.	<i>Lethrinus punctulatus</i>			
472.	<i>Lethrinus rubrioperculatus</i>			
473.	<i>Lethrinus</i> sp.			
474.	<i>Liachirus whiteyi</i>			Y
475.	<i>Limnichthys fasciatus</i>			
476.	<i>Liocranium praepositum</i>			
477.	<i>Liza alata</i>			
478.	<i>Liza</i> sp.			
479.	<i>Lobotes surinamensis</i>			
480.	<i>Lophiocharon trisignatus</i>			
481.	<i>Lutjanus carponotatus</i>			
482.	<i>Lutjanus erythropterus</i>			
483.	<i>Lutjanus fulviflamma</i>			
484.	<i>Lutjanus lemniscatus</i>			
485.	<i>Lutjanus malabaricus</i>			
486.	<i>Lutjanus vitta</i>			
487.	<i>Macropharyngodon negrosensis</i>			
488.	<i>Macropharyngodon ornatus</i>			
489.	<i>Megalaspis cordyla</i>			
490.	<i>Mene maculata</i>			
491.	<i>Metavelifer multiradiatus</i>			
492.	<i>Microcanthus strigatus</i>			
493.	34025 <i>Milyeringa veritas</i> (Cave Gudgeon, Blind Gudgeon)		T	
494.	<i>Minous</i> sp.			
495.	<i>Minous versicolor</i>			
496.	<i>Monacanthus chinensis</i>			
497.	<i>Monocentris japonicus</i>			
498.	<i>Monodactylus argenteus</i>			
499.	<i>Mugil cephalus</i>			
500.	<i>Muraenichthys gymnotus</i>			
501.	<i>Myripristis murdjan</i>			
502.	<i>Narcine westraliensis</i>			
503.	<i>Naso brevirostris</i>			
504.	<i>Nectamia fusca</i>			
505.	<i>Nectamia savayensis</i>			
506.	<i>Nemipterus peronii</i>			
507.	<i>Neopomacentrus azysron</i>			
508.	<i>Neopomacentrus cyanomos</i>			
509.	<i>Neosebastes occidentalis</i>			
510.	<i>Norfolkia brachylepis</i>			
511.	<i>Norfolkia</i> sp.			
512.	<i>Notograptus guttatus</i>			
513.	<i>Omobranchus germaini</i>			
514.	<i>Omobranchus rotundiceps</i>			
515.	<i>Omobranchus</i> sp.			
516.	<i>Ophichthus celebicus?</i>			
517.	34038 <i>Ophisternon candidum</i> (Blind Cave Eel)		T	
518.	<i>Opistognathus darwiniensis</i>			
519.	<i>Opistognathus inornatus</i>			
520.	<i>Oplopomus</i> sp.			Y
521.	<i>Ostracion cubicus</i>			
522.	<i>Ostracion meleagris</i>			
523.	<i>Oxycheilinus unifasciatus</i>			
524.	<i>Oxymonacanthus longirostris</i>			
525.	<i>Paracentropogon vespa</i>			
526.	<i>Parachaetodon ocellatus</i>			

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527.	<i>Parachaeturichthys polynema</i>			
528.	<i>Paracirrhites arcatus</i>			
529.	<i>Paracirrhites forsteri</i>			
530.	<i>Paramonacanthus choirocephalus</i>			
531.	<i>Parapercis diplospilus</i>			
532.	<i>Parapercis millepunctata</i>			
533.	<i>Parapercis multiplicata</i>			
534.	<i>Parapercis nebulosa</i>			
535.	<i>Paraplagusia bilineata</i>			
536.	<i>Paraplotosus albilabris</i>			
537.	<i>Paraplotosus butleri</i>			
538.	<i>Parapriacanthus ransonneti</i>			
539.	<i>Parascolopsis</i> sp.			
540.	<i>Parascorpaena picta</i>			
541.	<i>Parastromateus niger</i>			
542.	<i>Parupeneus barberinoides</i>			
543.	<i>Parupeneus pleurostigma</i>			
544.	<i>Parupeneus</i> sp.			
545.	<i>Parupeneus spilurus</i>			
546.	<i>Pataecus</i> sp.			
547.	<i>Pegasus volitans</i>			
548.	<i>Pelates quadriineatus</i>			
549.	<i>Pelates sexlineatus</i>			
550.	<i>Pellona ditchela</i>			
551.	<i>Pempheris mangula</i>			
552.	<i>Pempheris</i> n.sp.			
553.	<i>Pempheris ypsilychnus</i>			
554.	<i>Pentapodus emeryii</i>			
555.	<i>Pentapodus porosus</i>			
556.	<i>Pentapodus</i> sp.			
557.	<i>Pentapodus vitta</i>			
558.	<i>Periophthalmus argentilineatus</i>			
559.	<i>Peristrominous dolosus</i>			
560.	<i>Pervagor janthinosoma</i>			
561.	<i>Petroscirtes breviceps</i>			
562.	<i>Petroscirtes mitratus</i>			
563.	<i>Plagiotremus rhinorhynchos</i>			
564.	<i>Platax batavianus</i>			
565.	<i>Platax</i> sp.			
566.	<i>Platycephalus arenarius</i>			
567.	<i>Platycephalus endrachtensis</i>			
568.	<i>Plectorhinchus flavomaculatus</i>			
569.	<i>Plectorhinchus pictus</i>			
570.	<i>Plectorhinchus unicolor</i>			
571.	<i>Plectroglyphidodon lacrymatus</i>			
572.	<i>Plectroglyphidodon leucozonus</i>			
573.	<i>Plectropomus maculatus</i>			
574.	<i>Plesiops coeruleolineatus</i>			
575.	<i>Plotosus lineatus</i>			
576.	<i>Poecilia reticulata</i>			
577.	<i>Polydactylus multiradiatus</i>			
578.	<i>Polydactylus plebius</i>			
579.	<i>Pomacanthus semicirculatus</i>			
580.	<i>Pomacentrus milleri</i>			
581.	<i>Pomacentrus moluccensis</i>			
582.	<i>Pomacentrus nagasakiensis</i>			
583.	<i>Pomacentrus</i> sp.			
584.	<i>Pomacentrus vaiuli</i>			
585.	<i>Pomadasys argenteus</i>			
586.	<i>Pomadasys maculatus</i>			
587.	<i>Priacanthus hamrur</i>			
588.	<i>Priacanthus tayenus</i>			
589.	<i>Priolepis cincta</i>			
590.	<i>Priolepis nuchifasciata</i>			
591.	<i>Pristipomoides argyrogrammicus</i>			
592.	<i>Pristipomoides typus</i>			
593.	34037 <i>Pristis zijsron</i> (Green Sawfish)		T	
594.	<i>Pristotis obtusirostris</i>			
595.	<i>Psammodyscus ocellatus</i>			
596.	<i>Psammoperca waigiensis</i>			

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597.	<i>Psenes seriollela?</i>			Y
598.	<i>Psettodes erumei</i>			
599.	<i>Pseudanthias cooperi</i>			
600.	<i>Pseudobalistes fuscus</i>			
601.	<i>Pseudocalliurichthys goodladi</i>			
602.	<i>Pseudocaranx dentex</i>			
603.	<i>Pseudochromis fuscus</i>			
604.	<i>Pseudochromis marshallensis</i>			
605.	<i>Pseudochromis tapeinosoma</i>			
606.	<i>Pseudogramma polyacanthum</i>			
607.	<i>Pseudojuloides elongatus</i>			
608.	<i>Pseudomonacanthus peroni</i>			
609.	<i>Pseudopleksiops rosae</i>			
610.	<i>Pseudorhombus arsius</i>			
611.	<i>Pseudorhombus duplisciocellatus</i>			
612.	<i>Pseudorhombus jenynsii</i>			
613.	<i>Pseudorhombus sp.</i>			
614.	<i>Pteragogus enneacanthus</i>			
615.	<i>Pterapogon mirifica</i>			
616.	<i>Ptereleotris evides</i>			
617.	<i>Pterois antennata</i>			
618.	<i>Pterois russelli</i>			
619.	<i>Pterois volitans</i>			
620.	<i>Rachycentron canadum</i>			
621.	<i>Rainfordia opercularis</i>			
622.	<i>Ranzania laevis</i>			
623.	<i>Rastrelliger kanagurta</i>			
624.	<i>Rhabdamia cypselurus</i>			
625.	<i>Rhabdamia gracilis</i>			
626.	<i>Rhabdosargus sarba</i>			
627.	42358 <i>Rhincodon typus (Whale Shark)</i>		S	
628.	<i>Rhinecanthus aculeatus</i>			
629.	<i>Rhynchobatus djiddensis</i>			
630.	<i>Rhynchostracion nasus</i>			
631.	<i>Salarias fasciatus</i>			
632.	<i>Salarias sexfilum</i>			
633.	<i>Saurida argentea</i>			
634.	<i>Saurida gracilis</i>			
635.	<i>Saurida grandisquamis</i>			
636.	<i>Saurida nebulosa</i>			
637.	<i>Saurida undosquamis</i>			
638.	<i>Scaevius milii</i>			
639.	<i>Scarus aeruginosus</i>			Y
640.	<i>Scarus schlegeli</i>			
641.	<i>Scolopsis monogramma</i>			
642.	<i>Scolopsis sp.</i>			
643.	<i>Scolopsis taenioptera</i>			
644.	<i>Scomberoides commersonianus</i>			
645.	<i>Scomberoides lysan</i>			
646.	<i>Scomberomorus commerson</i>			
647.	<i>Scomberomorus queenslandicus</i>			
648.	<i>Scorpaenodes guamensis</i>			
649.	<i>Scorpaenodes sp.</i>			
650.	<i>Scorpaenodes varipinnis</i>			
651.	<i>Scorpaenopsis diabolus</i>			
652.	<i>Scorpaenopsis papuensis</i>			
653.	<i>Secutor insidiator</i>			
654.	<i>Secutor interruptus</i>			
655.	<i>Selar sp.</i>			
656.	<i>Selaroides leptolepis</i>			
657.	<i>Selenotoca multifasciata</i>			
658.	<i>Seriolina nigrofasciata</i>			
659.	<i>Siganus fuscescens</i>			
660.	<i>Siganus sp.</i>			
661.	<i>Siganus spinus</i>			
662.	<i>Siganus trispilos</i>			Y
663.	<i>Sillago analis</i>			
664.	<i>Sillago burrus</i>			
665.	<i>Sillago lutea</i>			
666.	<i>Sillago maculata</i>			

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667.	<i>Sillago sp.</i>			
668.	<i>Sphyaena barracuda</i>			
669.	<i>Sphyaena obtusata</i>			
670.	<i>Stanulus talboti</i>			
671.	<i>Stegastes fasciolatus</i>			
672.	<i>Stegastes obreptus</i>			
673.	<i>Stethojulis bandanensis</i>			
674.	<i>Stethojulis strigiventer</i>			
675.	<i>Suezichthys cyanolaemus</i>			
676.	<i>Sufflamen fraenatus</i>			
677.	<i>Suggrundus sp.</i>			
678.	<i>Synanceia horrida</i>			
679.	<i>Synodus hoshinonis?</i>			Y
680.	<i>Synodus sp.</i>			
681.	<i>Synodus variegatus</i>			
682.	<i>Taenioides buchanani</i>			Y
683.	<i>Taeniura lymma</i>			
684.	<i>Terapon jarbua</i>			
685.	<i>Terapon puta</i>			
686.	<i>Terapon theraps</i>			
687.	<i>Thalassoma hardwicke</i>			
688.	<i>Thalassoma lunare</i>			
689.	<i>Thalassoma lutescens</i>			
690.	<i>Thyssa hamiltonii</i>			
691.	<i>Thyssa mystax?</i>			
692.	<i>Thyssa setirostris</i>			
693.	<i>Torquigener pallimaculatus</i>			
694.	<i>Torquigener tuberculiferus</i>			
695.	<i>Torquigener whitleyi</i>			
696.	<i>Trachinocephalus myops</i>			
697.	<i>Trachinotus blochii</i>			
698.	<i>Trachurus novaezelandiae</i>			
699.	<i>Trachyrhynchus longirostris</i>			Y
700.	<i>Tragulichthys jaculiferus</i>			
701.	<i>Tragulichthys sp.</i>			Y
702.	<i>Triacanthus biaculeatus</i>			
703.	<i>Triacanthus sp.</i>			
704.	<i>Trichiurus sp.</i>			
705.	<i>Trimma lantana</i>			
706.	<i>Trimma okinawae</i>			
707.	<i>Tylosurus crocodilus</i>			
708.	<i>Ulua mentalis</i>			
709.	<i>Upeneus moluccensis</i>			
710.	<i>Upeneus sp.</i>			
711.	<i>Upeneus tragula</i>			
712.	<i>Upeneus vittatus</i>			
713.	<i>Uraspis secunda</i>			Y
714.	<i>Valamugil buchanani</i>			
715.	<i>Valenciennesa muralis</i>			
716.	<i>Velifer hypselopterus</i>			
717.	<i>Xenojulis margaritaceus</i>			
718.	<i>Xiphasia setifer</i>			
719.	<i>Yongeichthys criniger</i>			Y
720.	<i>Yongeichthys nebulosus</i>			
721.	<i>Zabidius novemaculeatus</i>			
722.	<i>Zebrias cancellatus</i>			
723.	<i>Zebrias quagga</i>			
Invertebrate				
724.	<i>Amblyomma calabyi</i>			Y
725.	<i>Amblyomma triguttatum</i>			
726.	<i>Anapistula troglobia</i>			Y
727.	<i>Antichiropus sp.</i>			
728.	<i>Argiope protensa</i>			
729.	<i>Argiope trifasciata</i>			
730.	<i>Artema atlanta</i>			
731.	<i>Asadipus cape</i>			
732.	<i>Australoschendyla capensis</i>			Y
733.	<i>Austrochthonius easti</i>			
734.	<i>Backbourkia collina</i>			
735.	33905 <i>Bamazomus subsolanus (Eastern Cape Range Bamazomus)</i>			

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736.	33906 <i>Bamazomus vespertinus</i> (Western Cape Range <i>Bamazomus</i>)		T	Y
737.	<i>Bengalla bertmaini</i>		T	Y
738.	<i>Boreohesperus capensis</i>			Y
739.	<i>Cercophonius granulosus</i>			
740.	<i>Chthiononetes tenuis</i>			
741.	<i>Cormocephalus aurantiipes</i>			
742.	<i>Cormocephalus strigosus</i>			
743.	<i>Cosmophasis baehrae</i>			
744.	<i>Crossopriza lyoni</i>			
745.	<i>Cryptoerithus harveyi</i>			
746.	<i>Cyclosa camelodes</i>			
747.	<i>Cyrtobill darwini</i>			
748.	<i>Dampetrus isolatus</i>			Y
749.	33907 <i>Draculoides brooksi</i> (Northern Cape Range <i>Draculoides</i>)		T	Y
750.	33909 <i>Draculoides julianneae</i> (Western Cape Range <i>Draculoides</i>)		T	Y
751.	33915 <i>Draculoides vinei</i> (Cape Range <i>Draculoides</i>)			
752.	<i>Dunedinia occidentalis</i>			Y
753.	<i>Ethmostigmus rubripes</i>			
754.	<i>Euasteron ursulae</i>			
755.	<i>Glennhuntia glennhunti</i>			Y
756.	<i>Heteropoda hermitis</i>			
757.	<i>Heurodes turritus</i>			
758.	<i>Hoggicosa snelli</i>			
759.	<i>Ideoblothrus papillon</i>			Y
760.	<i>Ideoblothrus woodi</i>			Y
761.	34145 <i>Indohya damocles</i> (Cameron's Cave <i>Pseudoscorpion</i>)		T	Y
762.	<i>Indohya humphreysi</i>			Y
763.	<i>Indolpium</i> sp.			
764.	<i>Isopedella tindalei</i>			
765.	<i>Jalmenus clementi</i>			Y
766.	<i>Lampona quinqueplagiata</i>			
767.	<i>Lamponina scutata</i>			
768.	<i>Latrodectus hasseltii</i>			
769.	<i>Leptasteron platyconductor</i>			
770.	<i>Leptus waldockae</i>			Y
771.	<i>Lychas mjobergi</i>			
772.	<i>Masasteron gracilis</i>			
773.	<i>Masasteron sampeyae</i>			
774.	<i>Missulena occatoria</i>			
775.	<i>Miturga occidentalis</i>			
776.	<i>Nephila edulis</i>			
777.	<i>Nephila plumipes</i>			
778.	33985 <i>Nocticola flabella</i> (Cape Range delicate cockroach, Cape Range Blind Cockroach)		P4	Y
779.	<i>Nomindra leuweni</i>			
780.	<i>Notsodipus bidgemia</i>			
781.	<i>Notsodipus capensis</i>			
782.	<i>Ocrisiona leucocomis</i>			
783.	<i>Oreo capensis</i>			
784.	<i>Ornithodoros gurneyi</i>			
785.	<i>Prethopalpus alexanderi</i>			Y
786.	<i>Prethopalpus infernalis</i>			Y
787.	<i>Pseudolampona marun</i>			Y
788.	<i>Rhagada capensis</i>			
789.	<i>Scolopendra morsitans</i>			
790.	<i>Storena sinuosa</i>			
791.	33963 <i>Stygiocaris lancifera</i> (Lance-beaked Cave Shrimp)		T	
792.	33964 <i>Stygiocaris stylifera</i> (Spear-beaked Cave Shrimp)		P4	
793.	<i>Stygiochiropus communis</i>			
794.	33967 <i>Stygiochiropus isolatus</i> (a <i>stygiochiropus</i> millipede (Cape Range), millipede)		T	Y
795.	33968 <i>Stygiochiropus peculiaris</i> (Cameron's Cave Millipede)		T	Y
796.	33969 <i>Stygiochiropus sympatricus</i> (a <i>stygiochiropus</i> millipede (Cape Range), millipede)		T	Y
797.	<i>Tetragnatha demissa</i>			
798.	<i>Thereuopoda lesueurii</i>			
799.	<i>Trachyspina capensis</i>			
800.	<i>Trichocyclus nigropunctatus</i>			
801.	<i>Trichocyclus septentrionalis</i>			Y
802.	<i>Tuoba sydneyensis</i>			
803.	<i>Tyrannochthonius brooksi</i>			Y
804.	<i>Tyrannochthonius butleri</i>			Y

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805.	<i>Urodacus hoplurus</i>			
806.	<i>Wandella waldockae</i>			
807.	<i>Wesmaldra learmonth</i>			
808.	<i>Wyndundra kennedy</i>			
809.	<i>Yardiella humphreysi</i>			Y
Mammal				
810.	24161 <i>Bettongia lesueur</i> subsp. <i>graii</i> (<i>Boodie (inland), Burrowing Bettong (inland)</i>)		X	
811.	24251 <i>Bos taurus</i> (<i>European Cattle</i>)	Y		
812.	24186 <i>Chalinolobus gouldii</i> (<i>Gould's Wattled Bat</i>)			
813.	24091 <i>Dasykaluta rosamondae</i> (<i>Little Red Kaluta</i>)			
814.	24084 <i>Dugong dugon</i> (<i>Dugong</i>)		S	
815.	24043 <i>Eubalaena australis</i> (<i>Southern Right Whale</i>)		T	
816.	24041 <i>Felis catus</i> (<i>Cat</i>)	Y		
817.	24054 <i>Globicephala macrorhynchus</i> (<i>Short-finned Pilot Whale</i>)			
818.	24218 <i>Leporillus apicalis</i> (<i>Lesser Stick-nest Rat</i>)		X	
819.	24135 <i>Macropus robustus</i> subsp. <i>erubescens</i> (<i>Euro, Biggada</i>)			
820.	24136 <i>Macropus rufus</i> (<i>Red Kangaroo, Marlu</i>)			
821.	24051 <i>Megaptera novaeangliae</i> (<i>Humpback Whale</i>)		S	
822.	24222 <i>Mesembriomys macrurus</i> (<i>Golden-backed Tree-rat</i>)		P4	
823.	24213 <i>Mirounga leonina</i> (<i>Southern Elephant Seal</i>)			
824.	24223 <i>Mus musculus</i> (<i>House Mouse</i>)	Y		
825.	24095 <i>Ningau timealeyi</i> (<i>Pilbara Ningau</i>)			
826.	24224 <i>Notomys alexis</i> (<i>Spinifex Hopping-mouse</i>)			
827.	24194 <i>Nyctophilus geoffroyi</i> (<i>Lesser Long-eared Bat</i>)			
828.	24060 <i>Orcaella heinsohni</i> (<i>Australian Snubfin Dolphin</i>)		P4	
829.	24085 <i>Oryctolagus cuniculus</i> (<i>Rabbit</i>)	Y		
830.	48034 <i>Osphranter robustus</i> (<i>Euro, Biggada</i>)			
831.	34016 <i>Ovis aries</i> (<i>Sheep</i>)			
832.	24142 <i>Petrogale lateralis</i> subsp. <i>lateralis</i> (<i>Black-flanked Rock-wallaby, Black-footed Rock-wallaby</i>)		T	
833.	24098 <i>Phascogale calura</i> (<i>Red-tailed Phascogale, Kenngoos</i>)		S	
834.	24164 <i>Potorous platyops</i> (<i>Broad-faced Potoroo</i>)		X	
835.	24105 <i>Pseudantechinus roryi</i> (<i>Rory's Pseudantechinus</i>)			
836.	24233 <i>Pseudomys chapmani</i> (<i>Western Pebble-mound Mouse, Ngadji</i>)		P4	
837.	24236 <i>Pseudomys fieldi</i> (<i>Shark Bay Mouse, Djoongari</i>)		T	
838.	24237 <i>Pseudomys hermannsburgensis</i> (<i>Sandy Inland Mouse</i>)			
839.	24172 <i>Pteropus alecto</i> (<i>Black Flying-fox</i>)			
840.	24173 <i>Pteropus scapulatus</i> (<i>Little Red Flying-fox</i>)			
841.	24245 <i>Rattus rattus</i> (<i>Black Rat</i>)	Y		
842.	43368 <i>Rhinonicteris aurantia</i> (<i>Orange Leaf-nosed bat</i>)		P4	
843.	24115 <i>Sminthopsis longicaudata</i> (<i>Long-tailed Dunnart</i>)		P4	
844.	24116 <i>Sminthopsis macroura</i> (<i>Stripe-faced Dunnart</i>)			
845.	48107 <i>Sousa sahalensis</i> (<i>Australian humpback dolphin</i>)		P4	
846.	24207 <i>Tachyglossus aculeatus</i> (<i>Short-beaked Echidna</i>)			
847.	24175 <i>Taphozous georgianus</i> (<i>Common Sheath-tailed Bat</i>)			
848.	30954 <i>Tursiops aduncus</i> (<i>Indo-Pacific Bottlenose Dolphin</i>)			
849.	24205 <i>Vespadelus finlaysoni</i> (<i>Finlayson's Cave Bat</i>)			
850.	24249 <i>Zyzomys pedunculatus</i> (<i>Central Rock-rat, Antina</i>)		T	
Reptile				
851.	25332 <i>Acanthophis wellsi</i> (<i>Pilbara Death Adder</i>)			
852.	25350 <i>Aipysurus apraefrontalis</i> (<i>Short-nosed Seasnake</i>)		T	
853.	25351 <i>Aipysurus duboisii</i> (<i>Dubois' Seasnake</i>)			
854.	25355 <i>Aipysurus laevis</i> (<i>Olive Seasnake</i>)			
855.	30831 <i>Amphibolurus gilberti</i> (<i>Ta-ta, Gilbert's Dragon</i>)			
856.	30833 <i>Amphibolurus longirostris</i> (<i>Long-nosed Dragon</i>)			
857.	44647 <i>Anilios splendidus</i> (<i>splendid blind snake (North West Cape), blind snake (Milyering Well)</i>)		P2	Y
858.	25318 <i>Antaresia perthensis</i> (<i>Pygmy Python</i>)			
859.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i> (<i>Stimson's Python</i>)			
860.	24992 <i>Aprasia rostrata</i> (<i>Ningaloo worm-lizard, Monte Bello Worm-lizard</i>)		P3	
861.	25320 <i>Aspidites melanocephalus</i> (<i>Black-headed Python</i>)			
862.	25331 <i>Brachyuropsis approximans</i> (<i>North-western Shovel-nosed Snake</i>)			
863.	25335 <i>Caretta caretta</i> (<i>Loggerhead Turtle</i>)		T	
864.	25015 <i>Carlia munda</i> (<i>Shaded-litter Rainbow Skink</i>)			
865.	25336 <i>Chelonia mydas</i> (<i>Green Turtle</i>)		T	
866.	24919 <i>Crenadactylus ocellatus</i> subsp. <i>horni</i> (<i>Clawless Gecko</i>)			
867.	25020 <i>Cryptoblepharus plagiocephalus</i>			
868.	24868 <i>Ctenophorus clayi</i> (<i>Collared Dragon</i>)			
869.	24872 <i>Ctenophorus femoralis</i> (<i>Dune Dragon</i>)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
870.	24875 <i>Ctenophorus isolepis</i> subsp. <i>gularis</i> (Central Military Dragon)			
871.	24876 <i>Ctenophorus isolepis</i> subsp. <i>isolepis</i> (Crested Dragon, Military Dragon)			
872.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
873.	30897 <i>Ctenophorus parviceps</i> (Western Heath Dragon, Northern Heath Dragon)			
874.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
875.	25043 <i>Ctenotus grandis</i> subsp. <i>titan</i>			
876.	25044 <i>Ctenotus hanloni</i>			
877.	25046 <i>Ctenotus iapetus</i>			
878.	25048 <i>Ctenotus inornatus</i>			
879.	25463 <i>Ctenotus pantherinus</i> (Leopard Ctenotus)			
880.	25064 <i>Ctenotus pantherinus</i> subsp. <i>ocellifer</i> (Leopard Ctenotus)			
881.	25069 <i>Ctenotus rufescens</i>			
882.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
883.	25090 <i>Cyclodomorphus melanops</i> subsp. <i>melanops</i> (Slender Blue-tongue)			
884.	<i>Cyclodomorphus</i> sp.			
885.	24995 <i>Delma australis</i>			
886.	25001 <i>Delma nasuta</i>			
887.	30829 <i>Delma tealei</i>			
888.	25004 <i>Delma tincta</i>			
889.	25292 <i>Demansia calodera</i> (Black-necked Whipsnake)			
890.	25295 <i>Demansia psammophis</i> subsp. <i>cupreiceps</i> (Yellow-faced Whipsnake)			
891.	34146 <i>Diplodactylus capensis</i> (Cape Range Stone Gecko)		P2	Y
892.	24926 <i>Diplodactylus conspicillatus</i> (Fat-tailed Gecko)			
893.	24938 <i>Diplodactylus ornatus</i>			
894.	42400 <i>Diporiphora adductus</i> (Carnarvon Dragon)			
895.	25362 <i>Ephalophis greyae</i>			
896.	43381 <i>Eremiascincus pallidus</i> (Western Narrow-banded Skink, Narrow-banded Sand Swimmer)			
897.	25109 <i>Eremiascincus richardsonii</i> (Broad-banded Sand Swimmer)			
898.	25473 <i>Eretmochelys imbricata</i> (Hawksbill Turtle)		T	
899.	25342 <i>Eretmochelys imbricata</i> subsp. <i>bissa</i> (Hawksbill Turtle)		T	
900.	25301 <i>Furina ornata</i> (Moon Snake)			
901.	24952 <i>Gehyra australis</i>			
902.	24956 <i>Gehyra pilbara</i>			
903.	24959 <i>Gehyra variegata</i>			
904.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
905.	25366 <i>Hydrophis elegans</i> (Elegant Seasnake, Bar-bellied Seasnake)			
906.	44656 <i>Hydrophis major</i> (Olive-headed seasnake, greater seasnake)			
907.	42410 <i>Hydrophis ornatus</i> (Ornate Reef Seasnake, Sea Snake)			
908.	43385 <i>Hydrophis stokesii</i> (Stoke's Seasnake, Sea Snake)			
909.	25120 <i>Lerista allochira</i> (Cape Range Slider)		P3	
910.	25125 <i>Lerista bipes</i>			
911.	30928 <i>Lerista clara</i>			
912.	25133 <i>Lerista elegans</i>			
913.	25148 <i>Lerista lineopunctulata</i>			
914.	25482 <i>Lerista macropisthopus</i>			
915.	25151 <i>Lerista macropisthopus</i> subsp. <i>fusciceps</i>			
916.	<i>Lerista miopus</i>			Y
917.	25484 <i>Lerista planiventralis</i>			
918.	25163 <i>Lerista planiventralis</i> subsp. <i>planiventralis</i>			
919.	25005 <i>Lialis burtonis</i>			
920.	30933 <i>Lucasium stenodactylum</i>			
921.	25184 <i>Menetia greyii</i>			
922.	25491 <i>Menetia surda</i>			
923.	24904 <i>Moloch horridus</i> (Thorny Devil)			
924.	25191 <i>Morethia lineocellata</i>			
925.	25495 <i>Morethia ruficauda</i>			
926.	25193 <i>Morethia ruficauda</i> subsp. <i>exquisita</i>			
927.	25497 <i>Nephruus levis</i>			
928.	24968 <i>Nephruus levis</i> subsp. <i>occidentalis</i>			
929.	25499 <i>Notoscincus ornatus</i>			
930.	25197 <i>Notoscincus ornatus</i> subsp. <i>ornatus</i>			
931.	24907 <i>Pogona minor</i> subsp. <i>minor</i> (Dwarf Bearded Dragon)			
932.	25261 <i>Pseudechis australis</i> (Mulga Snake)			
933.	42416 <i>Pseudonaja mengdeni</i> (Western Brown Snake)			
934.	25263 <i>Pseudonaja modesta</i> (Ringed Brown Snake)			
935.	25009 <i>Pygopus nigriceps</i>			
936.	25266 <i>Simoselaps bertholdi</i> (Jan's Banded Snake)			
937.	25267 <i>Simoselaps littoralis</i> (West Coast Banded Snake)			
938.	24924 <i>Strophurus ciliaris</i> subsp. <i>aberrans</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
939.	24927 <i>Strophurus elderi</i>			
940.	24932 <i>Strophurus jeanae</i>			
941.	24941 <i>Strophurus rankini</i>			
942.	24946 <i>Strophurus strophurus</i>			
943.	25269 <i>Suta fasciata</i> (Rosen's Snake)			
944.	25202 <i>Tiliqua multifasciata</i> (Central Blue-tongue)			
945.	25207 <i>Tiliqua rugosa subsp. rugosa</i>			
946.	25209 <i>Varanus acanthurus</i> (Spiny-tailed Monitor)			
947.	25210 <i>Varanus brevicauda</i> (Short-tailed Pygmy Monitor)			
948.	25212 <i>Varanus eremius</i> (Pygmy Desert Monitor)			
949.	25216 <i>Varanus giganteus</i> (Perentie)			
950.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
951.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			

Conservation Codes

- T - Rare or likely to become extinct
- X - Presumed extinct
- IA - Protected under international agreement
- S - Other specially protected fauna
- 1 - Priority 1
- 2 - Priority 2
- 3 - Priority 3
- 4 - Priority 4
- 5 - Priority 5

¹ For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasource, only records from that datasource are used to determine if a species is restricted to the query area.

Appendix D – Flora data

Flora species list

Releve data

Conservation significant flora records

Flora likelihood of occurrence assessment

Flora species recorded within the survey area

Family	Taxon	Status
Acanthaceae	<i>Dipteracanthus australasicus</i>	
Amaranthaceae	<i>Ptilotus exaltatus</i>	
Amaranthaceae	<i>Ptilotus obovatus</i>	
Asparagaceae	<i>Acanthocarpus verticillatus</i>	
Asteraceae	<i>Olearia</i> sp. Kennedy Range (G. Byrne 66)	
Asteraceae	<i>Pluchea ?rubellifera</i>	
Boraginaceae	<i>Heliotropium crispatum</i>	
Boraginaceae	<i>Trichodesma zeylanicum</i>	
Brassicaceae	<i>Lepidium platypetalum</i>	
Capparaceae	<i>Capparis spinosa</i>	
Chenopodiaceae	<i>Atriplex</i> sp.	
Chenopodiaceae	<i>Enchylaena tomentosa</i>	
Chenopodiaceae	<i>Maireana planifolia</i>	
Chenopodiaceae	<i>Maireana tomentosa</i>	
Chenopodiaceae	<i>Rhagodia eremaea</i>	
Chenopodiaceae	<i>Salsola australis</i>	
Chenopodiaceae	<i>Sclerolaena</i> sp.	
Cleomaceae	<i>Cleome viscosa</i>	
Convolvulaceae	<i>Duperreya commixta</i>	
Convolvulaceae	<i>Ipomoea costata</i>	
Convolvulaceae	<i>Polymeria ambigua</i>	
Cucurbitaceae	<i>Cucumis</i> sp.	
Dilleniaceae	<i>Hibbertia spicata</i> subsp. <i>spicata</i>	
Euphorbiaceae	<i>Euphorbia australis</i> var. <i>subtomentosa</i>	
Fabaceae	<i>Acacia arida</i>	
Fabaceae	<i>Acacia bivenosa</i>	
Fabaceae	<i>Acacia gregorii</i>	
Fabaceae	<i>Acacia ligulata</i>	
Fabaceae	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	
Fabaceae	<i>Acacia synchronicia</i>	
Fabaceae	<i>Acacia tetragonophylla</i>	
Fabaceae	<i>Acacia xiphophylla</i>	
Fabaceae	<i>Cullen</i> aff. <i>leucanthum</i>	
Fabaceae	<i>Indigofera chamaeclada</i> subsp. <i>pubens</i>	
Fabaceae	<i>Indigofera monophylla</i>	
Fabaceae	<i>Leptosema macrocarpum</i>	
Fabaceae	<i>Rhynchosia minima</i>	
Fabaceae	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	
Fabaceae	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	
Fabaceae	<i>Tephrosia rosea</i> var. <i>clementii</i>	
Fabaceae	<i>Tephrosia</i> sp. North West Cape (G. Marsh 81)	Priority 2
Goodeniaceae	<i>Dampiera incana</i> var. <i>incana</i>	
Goodeniaceae	<i>Goodenia forrestii</i>	

Family	Taxon	Status
Goodeniaceae	<i>Scaevola spinescens</i>	
Goodeniaceae	<i>Scaevola tomentosa</i>	
Hemerocallidaceae	<i>Tricoryne corynothecoides</i>	
Lauraceae	<i>Cassytha aurea</i>	
Malvaceae	<i>Abutilon cunninghamii</i>	
Malvaceae	<i>Androcalva luteiflora</i>	
Malvaceae	<i>Corchorus ?sidoides</i> subsp. <i>vermicularis</i>	
Malvaceae	<i>Corchorus carnarvonensis</i>	
Malvaceae	<i>Corchorus congener</i>	Priority 3
Malvaceae	<i>Corchorus crozophorifolius</i>	
Malvaceae	<i>Corchorus</i> sp.	
Malvaceae	<i>Gossypium robinsonii</i>	
Malvaceae	<i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>	
Malvaceae	<i>Hibiscus sturtii</i> ?var. <i>campylochlamys</i>	
Malvaceae	<i>Sida ?fibulifera</i>	
Menispermaceae	<i>Tinospora esiangkara</i>	Priority 2
Myrtaceae	<i>Corymbia hamersleyana</i>	
Myrtaceae	<i>Eucalyptus victrix</i>	
Myrtaceae	<i>Eucalyptus xerothermica</i>	
Myrtaceae	<i>Melaleuca cardiophylla</i>	
Oleaceae	<i>Jasminum didymum</i>	
Plantaginaceae	<i>Stemodia</i> sp.	
Poaceae	* <i>Cenchrus ciliaris</i>	
Poaceae	* <i>Chloris barbata</i>	
Poaceae	<i>Chrysopogon fallax</i>	
Poaceae	<i>Cymbopogon ambiguus</i>	
Poaceae	<i>Enneapogon caerulescens</i>	
Poaceae	<i>Eriachne helmsii</i>	
Poaceae	<i>Themeda triandra</i>	
Poaceae	<i>Triodia angusta</i>	
Poaceae	<i>Triodia epactia</i>	
Poaceae	<i>Triodia wiseana</i>	
Proteaceae	<i>Grevillea ?stenobotrya</i>	
Proteaceae	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	
Proteaceae	<i>Hakea lorea</i> subsp. <i>lorea</i>	
Santalaceae	<i>Exocarpos aphyllus</i>	
Santalaceae	<i>Exocarpos sparteus</i>	
Sapindaceae	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	
Sapindaceae	<i>Diplopeltis eriocarpa</i>	
Sapindaceae	<i>Dodonaea viscosa</i> subsp. <i>mucronata</i>	
Scrophuriaceae	<i>Eremophila forrestii</i> subsp. <i>capensis</i>	Priority 3
Scrophuriaceae	<i>Eremophila forrestii</i> subsp. <i>forrestii</i>	
Scrophuriaceae	<i>Eremophila longifolia</i>	
Solanaceae	<i>Solanum diversiflorum</i>	
Solanaceae	<i>Solanum lasiophyllum</i>	
Surianaceae	<i>Stylobasium spathulatum</i>	

Family	Taxon	Status
Violaceae	<i>Hybanthus aurantiacus</i>	

*- denotes introduced species

Releve data

Releve	Taxa	Cover	Height	Form/stratum
EX_01	<i>Corymbia hamersleyana</i>	<2% Numerous	9.25	Tree, palm (U)
EX_01	<i>Acacia synchronicia</i>	<2% Numerous	2.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_01	<i>Acacia tetragonophylla</i>	<2% Numerous	2.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_01	* <i>Cenchrus ciliaris</i>	70-30%	0.25	Tussock grass (G)
EX_01	<i>Enneapogon caerulescens</i>	<2% Numerous	0.1	Tussock grass (G)
EX_01	<i>Triodia epactia</i>	<10%	0.25	Hummock grass (G)
EX_01	<i>Acacia bivenosa</i>	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_01	<i>Senna artemisioides subsp. oligophylla</i>	<2% Few than 10	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_01	<i>Hakea lorea subsp. lorea</i>	<2% Numerous	5	Tree, palm (U)
EX_01	<i>Solanum diversiflorum</i>	<2% Numerous	0.25	Forb (G)
EX_01	<i>Acacia pyrifolia var. pyrifolia</i>	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_01	<i>Triodia wiseana</i>	<2% Numerous	0.5	Hummock grass (G)
EX_02	<i>Corymbia hamersleyana</i>	<2% Numerous	9.25	Tree, palm (U)
EX_02	<i>Exocarpos aphyllus</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Acacia tetragonophylla</i>	<2% Numerous	2.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Triodia epactia</i>	30-10%	0.25	Hummock grass (G)
EX_02	<i>Acacia bivenosa</i>	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Melaleuca cardiophylla</i>	30-10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Acacia pyrifolia var. pyrifolia</i>	<2% Numerous	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Eremophila forrestii subsp. forrestii</i>	<2% Few than 10	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Acacia pyrifolia var. pyrifolia</i>	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Triodia wiseana</i>	<2% Numerous	0.5	Hummock grass (G)
EX_02	<i>Triodia wiseana</i>	<2% Few than 10	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_02	<i>Acacia arida</i>	<2% Few than 10	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_03	<i>Melaleuca cardiophylla</i>	70-30%	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_03	<i>Acacia bivenosa</i>	70-30%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_03	<i>Acacia tetragonophylla</i>	30-10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_03	<i>Corymbia hamersleyana</i>	<2% Few than 10	8	Tree, palm (U)
EX_03	<i>Triodia wiseana</i>	70-30%	0.5	Hummock grass (G)
EX_03	<i>Acacia gregorii</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_03	<i>Acacia arida</i>	<10%	0.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_03	<i>Acacia pyrifolia var. pyrifolia</i>	30-10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Corymbia hamersleyana</i>	<2% Numerous	9	Tree, palm (U)
EX_04	<i>Acacia pyrifolia var. pyrifolia</i>	30-10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Acacia tetragonophylla</i>	<2% Few than 10	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Ipomoea costata</i>	<2% Numerous	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Tephrosia rosea var. clementii</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Corchorus crozophorifolius</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Cleome viscosa</i>	<2% Numerous	0.25	Forb (G)
EX_04	<i>Cymbopogon ambiguus</i>	<2% Numerous	0.5	Tussock grass (G)
EX_04	<i>Trichodesma zeylanicum</i>	<2% Numerous	0.25	Forb (G)
EX_04	<i>Acacia arida</i>	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Eremophila longifolia</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_04	<i>Hybanthus aurantiacus</i>	<2% Few than 10	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Corymbia hamersleyana</i>	<2% Numerous	6	Tree, palm (U)
EX_05	<i>Acacia pyrifolia var. pyrifolia</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Melaleuca cardiophylla</i>	30-10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Leptosema macrocarpum</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Triodia wiseana</i>	70-30%	0.5	Hummock grass (G)
EX_05	<i>Acacia tetragonophylla</i>	<10%	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Eremophila longifolia</i>	<2% Numerous	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Acacia arida</i>	<2% Numerous	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Trichodesma zeylanicum</i>	<2% Numerous	0.5	Forb (G)
EX_05	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_05	<i>Exocarpos aphyllus</i>	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_05	<i>Acacia gregorii</i>	<2% Numerous	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Corymbia hamersleyana</i>	<2% Numerous	8	Tree, palm (U)
EX_06	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Triodia epactia</i>	30-10%	1	Hummock grass (G)
EX_06	<i>Leptosema macrocarpum</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Triodia wiseana</i>	<2% Numerous	0.5	Hummock grass (G)
EX_06	<i>Acacia arida</i>	<2% Numerous	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Diplopeltis eriocarpa</i>	<2% Numerous	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Hannafordia quadrivalvis</i> subsp. <i>recurva</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Tricoryne corynothecoides</i>	<2% Numerous	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Tephrosia rosea</i> var. <i>clementii</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Acanthocarpus verticillatus</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Dampiera incana</i> var. <i>incana</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_06	<i>Hibbertia spicata</i> subsp. <i>spicata</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Corymbia hamersleyana</i>	<2% Numerous	7	Tree, palm (U)
EX_07	<i>Acacia synchronicia</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Acacia bivenosa</i>	70-30%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Triodia epactia</i>	30-10%	1	Hummock grass (G)
EX_07	<i>Acacia tetragonophylla</i>	<2% Numerous	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Triodia wiseana</i>	70-30%	0.5	Hummock grass (G)
EX_07	<i>Melaleuca cardiophylla</i>	30-10%	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<2% Numerous	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_07	<i>Jasminum didymum</i>	<2% Numerous	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_08	<i>Scaevola spinescens</i>	30-10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_08	<i>Acacia synchronicia</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_08	<i>Acacia bivenosa</i>	70-30%	2	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_08	<i>Triodia epactia</i>	<2% Numerous	1	Hummock grass (G)
EX_08	<i>Acacia tetragonophylla</i>	<10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_08	<i>Eremophila longifolia</i>	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_08	* <i>Cenchrus ciliaris</i>	<2% Numerous	0.5	Tussock grass (G)
EX_08	<i>Diplopeltis eriocarpa</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	<i>Scaevola spinescens</i>	<2% Numerous	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	<i>Acacia synchronicia</i>	<2% Numerous	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	<i>Triodia epactia</i>	70-30%	1	Hummock grass (G)
EX_09	<i>Acacia tetragonophylla</i>	<10%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	<i>Eremophila longifolia</i>	<2% Numerous	1.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_09	* <i>Cenchrus ciliaris</i>	<2% Numerous	0.5	Tussock grass (G)
EX_09	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Corymbia hamersleyana</i>	<2% Numerous	8	Tree, palm (U)
EX_10	<i>Acacia bivenosa</i>	70-30%	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Gossypium robinsonii</i>	<2% Numerous	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Tricoryne corynothecoides</i>	<10%	0.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Diplopeltis eriocarpa</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Acanthocarpus verticillatus</i>	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Triodia epactia</i>	70-30%	0.75	Hummock grass (G)
EX_10	<i>Indigofera monophylla</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_10	<i>Dampiera incana</i> var. <i>incana</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	30-10%	4.5	Tree, palm (U)
EX_11	<i>Acacia tetragonophylla</i>	30-10%	4.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Exocarpos aphyllus</i>	<10%	2.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Acacia synchronicia</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<2% Few than 10	3	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_11	<i>Triodia epactia</i>	70-30%	0.75	Hummock grass (G)
EX_11	* <i>Cenchrus ciliaris</i>	<2% Numerous	0.5	Tussock grass (G)
EX_11	<i>Indigofera chamaeclada</i> subsp. <i>pubens</i>	<2% Few than 10	0.25	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Ptilotus obovatus</i>	<2% Numerous	0.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Stylobasium spathulatum</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<2% Numerous	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_11	<i>Acacia bivenosa</i>	<2% Numerous	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_12	<i>Acacia xiphophylla</i>	30-10%	3.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_12	<i>Eucalyptus xerothermica</i>	<2% Few than 10	5	Tree mallee (U)
EX_12	* <i>Cenchrus ciliaris</i>	<2% Numerous	0.25	Tussock grass (G)
EX_12	<i>Acacia tetragonophylla</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_12	<i>Triodia wiseana</i>	<2% Numerous	0.75	Hummock grass (G)
EX_12	<i>Triodia epactia</i>	<2% Numerous	0.5	Hummock grass (G)
EX_12	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	<2% Few than 10	2	Tree, palm (U)
EX_12	<i>Exocarpos aphyllus</i>	<2% Few than 10	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_13	<i>Acacia xiphophylla</i>	30-10%	3.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_13	* <i>Cenchrus ciliaris</i>	<10%	0.25	Tussock grass (G)
EX_13	<i>Acacia tetragonophylla</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_13	<i>Triodia epactia</i>	70-30%	0.5	Hummock grass (G)
EX_13	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	<2% Few than 10	2	Tree, palm (U)
EX_13	<i>Exocarpos aphyllus</i>	<2% Few than 10	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_13	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_13	<i>Rhagodia eremaea</i>	<2% Few than 10	1	Chenopod shrub (M)
EX_14	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_14	* <i>Cenchrus ciliaris</i>	70-30%	0.5	Tussock grass (G)
EX_14	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_14	<i>Ptilotus obovatus</i>	<2% Numerous	0.5	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_14	<i>Triodia epactia</i>	<2% Numerous	0.5	Hummock grass (G)
EX_14	<i>Acacia tetragonophylla</i>	<2% Numerous	1.75	Shrub, cycad, grass-tree, tree-fern (M)
EX_14	<i>Cucumis sp</i>	<2% Numerous	0.5	Vine (G)
EX_14	<i>Acacia xiphophylla</i>	<2% Numerous	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_14	<i>Acacia synchronicia</i>	<2% Few than 10	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Corymbia hamersleyana</i>	<2% Few than 10	6	Tree, palm (U)
EX_15	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Melaleuca cardiophylla</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Eremophila longifolia</i>	<10%	1.4	
EX_15	<i>Cassytha aurea</i>	<2% Few than 10	creeper	Vine (G)
EX_15	<i>Leptosema macrocarpum</i>	30-10%	0.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Eremophila forrestii</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Tricoryne corynothecoides</i>	<10%	0.8	Forb (G)
EX_15	<i>Triodia epactia</i>	70-30%	1	Hummock grass (G)
EX_15	<i>Exocarpos sparteus</i>	<2% Few than 10	0.9	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Indigofera monophylla</i>	<2% few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Acacia tetragonophylla</i>	<2% Few than 10	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_15	<i>Ptilotus exaltatus</i>	<2% Few than 10	0.5	Forb (G)
EX_15	<i>Acacia arida</i>	<2% Few than 10	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Acacia tetragonophylla</i>	30-10%	2.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Acacia synchronicia</i>	<10%	2.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Triodia wiseana</i>	30-10%	1.1	Hummock grass (G)
EX_16	<i>Triodia epactia</i>	70-30%	1.1	Hummock grass (G)
EX_16	<i>Corymbia hamersleyana</i>	<2% Few than 10	6	Tree, palm (U)
EX_16	<i>Scaevola spinescens</i>	<2% Few than 10	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Hybanthus aurantiacus</i>	<2% Few than 10	0.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Senna artemisioides subsp. oligophylla</i>	<2% Few than 10	1.5	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_16	<i>Eremophila longifolia</i>	<2% Few than 10	1.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Indigofera monophylla</i>	<10%	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Melaleuca cardiophylla</i>	<2% Few than 10	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_16	<i>Corchorus ?sidoides subsp. vermicularis</i>	<2% Few than 10	0.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Corymbia hamersleyana</i>	<10%	8	Tree, palm (U)
EX_17	<i>Acacia bivenosa</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Acacia ligulata</i>	<10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Acacia arida</i>	30-10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Cullen aff. leucanthum</i>	<10%	1.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Senna artemisioides subsp. oligophylla</i>	<2% Few than 10	1.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Indigofera monophylla</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Eremophila longifolia</i>	<2% Few than 10	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Gossypium robinsonii</i>	<2% Few than 10	1.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Hybanthus aurantiacus</i>	<2% Few than 10	0.4	Forb (G)
EX_17	<i>Corchorus ?sidoides subsp. vermicularis</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Dampiera incana var. incana</i>	<2% Few than 10	0.2	Forb (G)
EX_17	<i>Leptosema macrocarpum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Cassytha aurea</i>	<2% Few than 10	-	Vine (G)
EX_17	<i>Triodia epactia</i>	30-10%	1.2	Hummock grass (G)
EX_17	<i>Triodia angusta</i>	<10%	1.4	Hummock grass (G)
EX_17	<i>Cymbopogon ambiguus</i>	<10%	1.1	Tussock grass (G)
EX_17	<i>Enneapogon caerulescens</i>	<10%	0.3	Tussock grass (G)
EX_17	<i>Tricoryne corynothecoides</i>	<2% Few than 10	0.3	Forb (G)
EX_17	<i>Acacia gregorii</i>	<10%	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Melaleuca cardiophylla</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Olearia sp. Kennedy Range (G. Byrne 66)</i>	<2% Few than 10	0.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_17	<i>Corchorus crozophorifolius</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_17	<i>Exocarpos sparteus</i>	<2% Few than 10	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Acacia xiphophylla</i>	<10%	3.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Acacia bivenosa</i>	<10%	1.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Corymbia hamersleyana</i>	30-10%	5	Tree, palm (U)
EX_18	<i>Scaevola spinescens</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Acacia synchronicia</i>	<10%	1.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Solanum lasiophyllum</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Senna glutinosa subsp. glutinosa</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	* <i>Cenchrus ciliaris</i>	<10%	0.5	Tussock grass (G)
EX_18	<i>Acanthocarpus verticillatus</i>	<2% Few than 10	0.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Hibbertia spicata subsp. spicata</i>	<10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Tricoryne corynothecoides</i>	<2% Few than 10	0.4	Forb (G)
EX_18	<i>Senna artemisioides subsp. oligophylla</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Triodia epactia</i>	70-30%	1.1	Hummock grass (G)
EX_18	<i>Acacia arida</i>	<10%	1.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Hybanthus aurantiacus</i>	<2% Few than 10	0.4	Forb (G)
EX_18	<i>Triodia angusta</i>	30-10%	1.2	Hummock grass (G)
EX_18	<i>Leptosema macrocarpum</i>	<2% Few than 10	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Indigofera monophylla</i>	<10%	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Acacia pyrifolia var. pyrifolia</i>	<10%	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Eriachne helmsii</i>	<10%	0.4	Tussock grass (G)
EX_18	<i>Enneapogon caerulescens</i>	<10%	0.4	Tussock grass (G)
EX_18	<i>Cymbopogon ambiguus</i>	<10%	0.8	Tussock grass (G)
EX_18	* <i>Chloris barbata</i>	<2% Few than 10	0.7	Tussock grass (G)
EX_18	<i>Polymeria ambigua</i>	<2% Few than 10	0.2	Forb (G)
EX_18	<i>Acacia tetragonophylla</i>	<10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_18	<i>Abutilon cunninghamii</i>	<10%	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	* <i>Cenchrus ciliaris</i>	30-10%	0.6	Tussock grass (G)

Releve	Taxa	Cover	Height	Form/stratum
EX_19	<i>Acacia synchronicia</i>	30-10%	2.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Acacia bivenosa</i>	70-30%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Acacia tetragonophylla</i>	30-10%	2.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Senna artemisioides subsp. oligophylla</i>	<10%	1.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Lepidium platypetalum</i>	<2% Few than 10	0.4	Forb (G)
EX_19	<i>Indigofera chamaeclada subsp. pubens</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Scaevola tomentosa</i>	30-10%	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Triodia epactia</i>	>70%	1.1	Hummock grass (G)
EX_19	<i>Enchylaena tomentosa</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Ptilotus obovatus</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_19	<i>Rhagodia eremaea</i>	<10%	0.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Acacia xiphophylla</i>	30-10%	2.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Acacia synchronicia</i>	<10%	2	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Senna artemisioides subsp. oligophylla</i>	<10%	1.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Acacia tetragonophylla</i>	<10%	1.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Acacia bivenosa</i>	<10%	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Exocarpos sparteus</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Scaevola tomentosa</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Indigofera chamaeclada subsp. pubens</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_20	<i>Triodia epactia</i>	70-30%	0.9	Hummock grass (G)
EX_20	* <i>Cenchrus ciliaris</i>	<10%	0.5	Tussock grass (G)
EX_20	<i>Scaevola spinescens</i>	<10%	1	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Acacia xiphophylla</i>	30-10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Acacia tetragonophylla</i>	30-10%	2.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Acacia synchronicia</i>	30-10%	2.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Stylobasium spathulatum</i>	<10%	1.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Exocarpos sparteus</i>	<10%	1.1	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_21	<i>Scaevola tomentosa</i>	<10%	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Ptilotus obovatus</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Solanum lasiophyllum</i>	<2% Few than 10	0.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Maireana planifolia</i>	<2% Few than 10	0.3	Chenopod shrub (M)
EX_21	<i>Triodia epactia</i>	70-30%	1	Hummock grass (G)
EX_21	* <i>Cenchrus ciliaris</i>	70-30%	0.6	Tussock grass (G)
EX_21	<i>Rhagodia eremaea</i>	<2% Few than 10	0.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<10%	1.7	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Acacia bivenosa</i>	<10%	1.6	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Indigofera monophylla</i>	<10%	0.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_21	<i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>	<2% Few than 10	1.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Eucalyptus xerothermica</i>	<10%	12	Tree, palm (U)
EX_22	<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	<10%	2.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Acacia tetragonophylla</i>	30-10%	2.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Acacia xiphophylla</i>	30-10%	3	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Acacia synchronicia</i>	<10%	2.8	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Exocarpos aphyllus</i>	<10%	1.2	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Rhagodia eremaea</i>	<10%	1.4	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Ptilotus obovatus</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_22	<i>Maireana planifolia</i>	<10%	0.3	Chenopod shrub (M)
EX_22	<i>Sclerolaena</i> sp.	<2% Few than 10	0.2	Chenopod shrub (M)
EX_22	* <i>Cenchrus ciliaris</i>	70-30%	0.4	Tussock grass (G)
EX_23	<i>Acacia synchronicia</i>	<10%	2.3	Shrub, cycad, grass-tree, tree-fern (M)
EX_23	<i>Sclerolaena</i> sp.	<10%	0.2	Chenopod shrub (M)
EX_23	<i>Maireana planifolia</i>	30-10%	0.4	Chenopod shrub (M)
EX_23	<i>Rhagodia eremaea</i>	<10%	0.5	Shrub, cycad, grass-tree, tree-fern (M)
EX_23	* <i>Cenchrus ciliaris</i>	<10%	0.4	Tussock grass (G)
EX_23	<i>Acacia tetragonophylla</i>	<2% few than 10	2	Shrub, cycad, grass-tree, tree-fern (M)

Releve	Taxa	Cover	Height	Form/stratum
EX_23	<i>Atriplex sp.</i>	<2% Few than 10	0.4	Shrub, cycad, grass-tree, tree-fern (M)

Location of Priority flora identified within the survey area

Taxon	Conservation Status	No. of plants	Easting	Northing
<i>Corchorus congener</i>	Priority 3	1	200038.3	7560220
<i>Corchorus congener</i>	Priority 3	1	198651.7	7551941
<i>Corchorus congener</i>	Priority 3	2	198430.7	7549516
<i>Corchorus congener</i>	Priority 3	1	198886.9	7554621
<i>Corchorus congener</i>	Priority 3	1	198878.5	7554608
<i>Corchorus congener</i>	Priority 3	1	198878	7554595
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	Priority 3	1	198491.2	7550286
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	Priority 3	8	198886.6	7554620
<i>Tephrosia</i> sp. North West cape (G. Marsh 81)	Priority 2	1	198272.5	7547806
<i>Tinospora esiangkara</i>	Priority 2	1	198137	7545896
<i>Tinospora esiangkara</i>	Priority 2	1	198129.9	7545799

Flora likelihood of occurrence assessment guidelines

Likelihood of occurrence	Guideline
Known	Species recorded within study area from field project results (none as this is a desktop search only).
Likely	Species previously recorded within 2 km and large areas of suitable habitat occur in the project area.
Possible	Species previously recorded within 10 km and areas of suitable habitat occur/may occur in the project area.
Unlikely	Species previously recorded within 20 km, or suitable habitat does not occur in the project area.
Highly unlikely	Species not previously recorded within 20 km, suitable habitat does not occur in the project area and/or the project area is outside the natural distribution of the species.
Other considerations	Date of known records, cryptic nature of species, anecdotal evidence from previous Broome studies/surveys

Definitions

Term	Description
Study area	A 20 km buffer around the project area
Survey area	The potential project footprint
Cr	Critically endangered
En	Endangered
T	Threatened
Vu	Vulnerable
P1 – P4	Priority 1 – Priority 4
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
DBCA	Department of Biodiversity and Conservation Attractions 2018. WA Government, Department of Parks and Wildlife Threatened (Declared Rare) and Priority Flora List
BC Act	<i>Biodiversity Conservation Act 2016</i>

Flora likelihood of occurrence assessment of conservation significant flora identified in the desktop assessment as potentially occurring within the survey area.

Taxa	Conservation Status	Description and habitat requirements	Likelihood of occurrence within the survey area
<i>Acacia alexandri</i>	Priority 3	Open or moderately dense, sometimes wispy shrub, 1.5-3 m high. Fl. cream, Jun or Aug to Sep. Limestone. Stony creeks, steep rocky slopes	Unlikely - There are multiple records of this species on the Exmouth Peninsula with some records within 200 m of the survey area. While suitable habitat was found within the survey area, this species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Acacia ryaniana</i>	Priority 2	Prostrate, straggly or domed, spinescent shrub, 0.1-0.4 m high. Fl. yellow, Jun to Nov. White or red sand. Coastal sand dunes.	Unlikely – No suitable habitat was present within the survey area.
<i>Acacia startii</i>	Priority 3	Dense, rounded, much-branched shrub, 1-2 m high, to 3 m wide. Fl. green-yellow, Jul to Aug. Calcareous loam with limestone pebbles. Stony hills & watercourses.	Unlikely – Suitable habitat was present within the survey area however this species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Acanthocarpus rupestris</i>	Priority 2	Rhizomatous, tufted perennial, herb, to 0.5 m high. Fl. white, May to Jun. Red sand, limestone.	Unlikely – There are known records of this species within 600 m of the survey area and suitable habitat is present. The more commonly occurring species <i>Acanthocarpus verticillatus</i> was recorded from the survey area. Given survey effort this species is unlikely to occur within the survey area.
<i>Brachychiton obtusilobus</i>	Priority 4	Tree, 3.5-6 m high. Fl. cream, Aug to Sep. Skeletal soils. Rocky limestone ranges, gorges, occasionally sandplains.	Unlikely – There is a record within 500 m of the survey area. This species is distinctive and would not likely to have been overlooked within

Taxa	Conservation Status	Description and habitat requirements	Likelihood of occurrence within the survey area
			the survey area given the survey intensity.
<i>Calandrinia</i> sp. Cape range (F. Obbens FO 10/18)	Priority 2	A scrambling perennial herb, up to 0.4 cm high. Occurs on lower slopes of ranges on skeletal limestone soil and creeklines. Red brown sandy clay loam in cracks between rock over limestone.	Unlikely – Suitable habitat is present within the survey area.
<i>Calytrix</i> sp. Learmonth (S. Fox EMopp 1)	Priority 1	Low shrub to 0.3 m. Previous record from raised rocky high point with limestone with large percentage of bare area. Previous record on pastoral station near the Learmonth airport.	Unlikely - This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Corchorus congener</i>	Priority 3	Spreading shrub, to 0.6 m high. Fl. yellow, Apr to Jun or Aug to Nov. Sand, red sandy loam with limestone. Sand dunes, plains.	Present – There are multiple records within 2 km of survey area. This species was recorded during the survey from six locations within the survey area.
<i>Daviesia pleurophylla</i>	Priority 2	Divaricately branched shrub, ca 0.7 m high. Sand dunes.	Unlikely – There is no suitable habitat within the survey area.
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	Priority 3	Sparsely to much-branched shrub, to 1.4 m high. Brown rocky soils, limestone. Ridges.	Present – This species was recorded from two locations within the survey area.
<i>Eremophila occidentis</i>	Priority 2	Shrub, to 1.5 m high. Fl. purple-violet, Aug to Sep. Orange/brown sand. Limestone ranges, dunes.	Unlikely - This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	Priority 4	Dense, spreading shrub, (0.2-) 1-3 m high. Fl. purple-red-pink, Jan or Mar or Jun or Aug to Sep. Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats.	Unlikely - This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Grevillea calcicola</i>	Priority 3	Small straggly tree or shrub (several stemmed), to 4 m high. Fl. Cream white, May or Jul to Aug. Limestone hilltops.	Unlikely - This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.

Taxa	Conservation Status	Description and habitat requirements	Likelihood of occurrence within the survey area
<i>Gymnanthera cunninghamii</i>	Priority 3	Erect shrub, 1-2 m high. Fl. Cream yellow-green, Jan to Dec. Sandy soils.	Unlikely – No suitable habitat present within the survey area.
<i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>	Priority 2	Erect or sprawling, spreading, straggly shrub, to 1 m high. Fl. pink/red-purple, May to Sep. Calcareous loam. Amongst limestone rocks, creek banks.	Unlikely – This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Helminthostachys zeylanica</i>	Priority 3	Rhizomatous, perennial, herb or (fern), 0.4-0.6 m high, sterile frond palmately divided; fertile blade spikelike; vernation not circinnate. Fl. May. Black peat. Shady sites in gallery forest, margins of creeks.	Unlikely – the species has been recorded within 20 km of the survey area, however no suitable habitat is present.
<i>Phyllanthus fuernrohrii</i>	Priority 3	Low shrub up to 1 m tall, flowers green, leaves ovate and soft. Previously recorded on limestone	Unlikely – This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Stackhousia umbellata</i>	Priority 3	Spreading perennial, herb, to 0.7 m high. Fl. yellow, May to Aug. Sandy soils on limestone and red sandy loam.	Unlikely – This species is distinctive and would not likely to have been overlooked within the survey area given the survey intensity.
<i>Tephrosia</i> sp. North West cape (G. Marsh 81)	Priority 2	Low perennial shrub growing to approximately 0.3 m high. It has previously been recorded from red brown / orange soils over limestone on plains.	Present – One individual was recorded within the survey area.
<i>Tinospora esiangkara</i>	Priority 2	Climber, to 2 m high, large stems with brown, flaky bark. Fl. green, Jul. Pebbly orange-brown calcareous loam. Limestone outcrops or ridges, near creek bank.	Present - Two plants were recorded from two separate locations within the survey area.
<i>Verticordia serotina</i>	Priority 2	Shrub, 0.5-1.5 m high. Fl. pink, Aug to Sep. Red sand. Sand dunes.	Unlikely – no suitable habitat is present within the survey area.

Appendix E – Fauna data

Fauna species

Fauna likelihood of occurrence assessment

Fauna species recorded from the survey area during the May 2019 survey

Family	Species	Common name	Status
BIRDS			
Accipitridae	<i>Elanus caeruleus</i>	Black-shouldered Kite	
Accipitridae	<i>Haliastur sphenurus</i>	Whistling Kite	
Accipitridae	<i>Hamirostra isura</i>	Square-tailed Kite	
Alcedinidae	<i>Todiramphus sanctus</i>	Sacred Kingfisher	
Artamidae	<i>Artamus cinereus</i>	Black-faced Woodswallow	
Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella	
Cacatuidae	<i>Cacatua roseicapilla</i>	Galah	
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike	
Columbidae	<i>Ocyphaps lophotes</i>	Crested Pigeon	
Corvidae	<i>Corvus orru</i>	Torresian Crow	
Cracticidae	<i>Cracticus nigrogularis</i>	Pied Butcherbird	
Cuculidae	<i>Chrysococcyx basalis</i>	Horsfield's Bronze Cuckoo	
Dromaiidae	<i>Dromaius novaehollandiae</i>	Emu	
Estrildidae	<i>Taeniopygia guttata</i>	Zebra Finch	
Falconidae	<i>Falco berigora</i>	Brown Falcon	
Falconidae	<i>Falco cenchroides</i>	Australian Kestrel	
Falconidae	<i>Falco peregrinus</i>	Peregrine Falcon	OS
Locustellidae	<i>Megalurus mathewsi</i>	Rufous Songlark	
Locustellidae	<i>Eremiornis carteri</i>	Spinifexbird	
Maluridae	<i>Malurus lamberti</i>	Variiegated Fairy-wren	
Meliphagidae	<i>Gavicalis virescens</i>	Singing Honeyeater	
Meliphagidae	<i>Ptilotula ornata</i>	Yellow-plumed Honeyeater	
Meliphagidae	<i>Manorina flavigula</i>	Yellow-throated Miner	
Meliphagidae	<i>Sugomel niger</i>	Black Honeyeater	
Meliphagidae	<i>Ptilotula keartlandi</i>	Grey-headed Honeyeater	
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater	
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark	
Motacillidae	<i>Anthus australis</i>	Australian Pipit	
Oreoicidae	<i>Oreoica gutturalis</i>	Crested Bellbird	
Otididae	<i>Ardeotis australis</i>	Australian Bustard	
Pandionidae	<i>Pandion cristatus</i>	Osprey	
Petroicidae	<i>Melanodryas cucullata</i>	Hooded Robin	
Psittacidae	<i>Melopsittacus undulatus</i>	Budgerigar	
Psittacidae	<i>Platycercus zonarius subsp. zonarius</i>	Port Lincoln Parrot	
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail	
REPTILES			
Agamidae	<i>Pogona minor subsp. minor</i>	Dwarf Bearded Dragon	
Scincidae	<i>Carlia munda</i>	Shaded-litter Rainbow Skink	
Scincidae	<i>Cyclodomorphus melanops subsp. melanops</i>	Slender Blue-tongue	
MAMMALS			
Bovidae	<i>Ovis aries</i>	Sheep	Introduced

Family	Species	Common name	Status
Bovidae	<i>Capra hircus</i>	Goat	Introduced
Canidae	<i>Canus dingo</i>	Dingo	
Felidae	<i>Felis catus</i>	Cat	Introduced
Macropodidae	<i>Osphranter rufus</i>	Red Kangaroo	

Parameters of fauna likelihood of occurrence assessment

Assessment outcome	Description
Likely	Species are likely to occur in the project area where there is suitable habitat within the project area and there are recent records of occurrence of the species in close proximity to the project area. OR Species known distribution overlaps with the project area and there is suitable habitat within the project area.
Unlikely	Species assessed as unlikely include those species previously recorded within 5 km of the project area however: <ul style="list-style-type: none"> • There is limited (i.e. the type, quality and quantity of the habitat is generally poor or restricted) habitat in the project area. • The suitable habitat within the project area is isolated from other areas of suitable habitat and the species has no capacity to migrate into the project area. OR Those species that have a known distribution overlapping with the project area however: <ul style="list-style-type: none"> • There is limited habitat in the project area (i.e. the type, quality and quantity of the habitat is generally poor or restricted). • The suitable habitat within the project area is isolated from other areas of suitable habitat and species has no capacity to migrate into the project area.
Highly unlikely	Species that are considered highly unlikely to occur in the project area include: <ul style="list-style-type: none"> • Those species that have no suitable habitat within the project area. • Those species that have become locally extinct, or are not known to have ever been present in the region of the project area.

Definitions

Term	Description
Study area	A 20 km buffer around the survey area
Survey area	The potential project footprint
Cr	Critically endangered
En	Endangered
Vu	Vulnerable
IA	International agreement
Mi, Ma	Migratory, Marine
CD	Conservation dependent
OS	Other specially protected fauna
P1 – P4	Priority 1 – Priority 4
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
DBCA	Department of Biodiversity and Conservation Attractions 2019 WA Government, Department of Parks and Wildlife Threatened and Priority fauna rankings
BC Act	<i>Biodiversity Conservation Act 2016</i>

Fauna likelihood of occurrence assessment of conservation significant fauna identified in the desktop assessment as potentially occurring within the survey area

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
Birds						
<i>Calidris canutus</i> Red knot, Knot	En, Mi	En	x		In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (DotE 2017).	Unlikely Species known from the region but no suitable habitat present.
<i>Calidris ferruginea</i> Curlew Sandpiper	Cr, Mi	Cr	x	x	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. They forage at the edges of shallow pools and drains of intertidal mudflats and sandy shores. At high tide, they forage among low sparse emergent vegetation, such as saltmarsh, and sometimes forage in flooded paddocks or inundated saltflats (DotE 2017).	Unlikely Species known from the region but no suitable habitat present.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Calidris tenuirostris</i> Great Knot	Cr, Mi	Cr		x	The Great Knot has been recorded around the entirety of the Australian coast, with a few scattered records inland. It is now absent from some sites along the south coast where it used to be a regular visitor (Garnett and Crowley 2000). The greatest numbers are found in northern Australia; where the species is common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the Northern Territory border, and in the Northern Territory from Darwin and Melville Island, through Arnhem Land to the south-east Gulf of Carpentaria. In Australasia, the species typically prefers sheltered coastal habitats, with large intertidal mudflats or sandflats. This includes inlets, bays, harbors, estuaries and lagoons (DEE 2019).	Unlikely Species known from the region but no suitable habitat present.
<i>Charadrius leschenaultii</i> Greater Sand Plover	Vu, Mi	Vu		x	In the non-breeding grounds in Australasia, the species is almost entirely coastal, inhabiting littoral and estuarine habitats. They mainly occur on sheltered sandy, shelly or muddy beaches with large intertidal mudflats or sandbanks, as well as sandy estuarine lagoons and inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs. They are occasionally recorded on near-coastal saltworks and saltlakes, including marginal saltmarsh, and on brackish swamps (Stewart <i>et al.</i> 2007).	Unlikely Species known from the region but no suitable habitat present.
<i>Charadrius mongolus</i> Lesser Sand Plover	En, Mi	En		x	In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. In north-western Australia, the species appears to use the Port Hedland saltworks in preference to nearby beaches. The species is seldom recorded away from the coast, at margins of lakes, soaks and swamps associated with artesian bores (Marchant & Higgins 1993).	Unlikely Species known from the region but no suitable habitat present.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Limosa lapponica baueri</i> Bar-tailed Godwit	Vu	Vu	x		The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and airstrips, although it is commonly recorded in paddocks at some locations overseas (Marchant & Higgins 1993).	Unlikely Species known from the region but no suitable habitat present.
<i>Limosa lapponica menzbieri</i> Northern Siberian bar-tailed Godwit	Cr	Cr	x		The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh (Morcombe 2004). They usually forage near the edge of water or in shallow water, mainly in tidal estuaries and harbours and roost on sandy beaches, sandbars, spits and also in near-coastal saltmarshes (Marchant & Higgins 1993).	Unlikely Species known from the region but no suitable habitat present.
<i>Macronectes giganteus</i> Southern Giant Petrel	En	IA	x		The Southern Giant Petrel is a marine bird and occurs over open seas and inshore waters in Antarctic and subtropical waters. In summer it occurs predominantly in sub-Antarctic to Antarctic waters, usually below 60° S in the South Pacific and southeast Indian Oceans. During winter most adults disperse widely and are rare in the southern waters of the Indian Ocean. The Southern Giant Petrel breeds on the Antarctic Continent, Peninsula and islands, and on sub-Antarctic islands and South America (Morcombe 2004).	Highly unlikely This species is primarily pelagic preferring off-shore ocean habitats.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Numenius madagascariensis</i> Eastern Curlew	Cr	Cr	x	x	The Eastern Curlew is a large non-breeding migratory shorebird, found commonly along the north coast of Western Australia, but rarely south of Shark Bay. The species is found along the coastline from Barrow Island and Dampier Archipelago, through the Kimberley in WA to the NT. It is found in estuaries, bays, harbours, inlets and coastal lagoons, saltworks and sewerage farms, areas (e.g. intertidal mudflats or sandflats fringed by mangroves) often with beds of seagrass and occasionally on ocean beaches, coral reefs, rock platforms and rocky islets. The Eastern Curlew forages on soft, sheltered, intertidal sand- or mudflats, often near mangroves, on saltflats, saltmarshes, rockpools, coastal reefs and ocean beaches near the tideline. The species roosts in large flocks, separate from other waders on sandy spits and islets, dry beach sand near the high-water mark, among coastal vegetation (including low saltmarsh and mangroves) and occasionally on reef-flats, in the shallow water of lagoons, near-coastal wetlands, in trees and posts (Morcombe 2004).	Unlikely Species known from the region but no suitable habitat present.
<i>Pezoporus occidentalis</i> Night Parrot	En	Cr	x		The Night Parrot inhabits arid and semi-arid areas that are characterised by having dense, low vegetation. Based on accepted records, the habitat of the Night Parrot consists of <i>Triodia</i> grasslands in stony or sandy environments and of samphire and chenopod shrublands, including genera such as <i>Atriplex</i> , <i>Bassia</i> and <i>Maireana</i> , on floodplains and claypans, and on the margins of saltlakes, creeks or other sources of water (Parker, 1980). It has also been observed to enter dense <i>Muehlenbecki</i> growth when flushed from a more typical habitat (Boles et al. 1994).	Unlikely Limited suitable habitat present within the survey area. Given the lack of recent and historic records within or nearby the survey area, it is considered unlikely that this species would occur within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Pterodroma mollis</i> Soft-plumaged Petrel	Vu		x		The Soft-plumaged Petrel is a marine, oceanic species. Soft-plumaged Petrels are mainly subantarctic, but occur over a wide range of sea surface-temperatures. In the Weddell Sea, the species is attracted to areas with icebergs with a surface-temperature of 0.7 to 1.0°C. Birds breeding at Iles Crozet forage mainly to the north of the islands, over subtropical waters (Marchant & Higgins 1990, cited in DEWSPAC). The birds breed on islands off Tasmania (n=1), in the New Zealand region (n=1), and in the Indian and South Atlantic Oceans. The birds burrow among tussock grass and ferns on slopes and valleys. The species is mainly coastal but occasionally occurs inland (Imber 1983; Marchant & Higgins 1990; Wiltshire & Hamilton 2002, cited in DEWSPAC).	Unlikely This species is primarily pelagic preferring off-shore ocean habitats.
<i>Puffinus huttoni</i> Hutton's Shearwater		En		x	Hutton's Shearwater breed in New Zealand with young birds migrating to Australia, including north west WA. They generally form large flocks travelling in open formations or coursing in wide circles. They dive from low flights, swimming under water to feed (Pizzey and Knight 2012).	Unlikely The survey area lacks suitable habitat.
<i>Sternula nereis nereis</i> Australian Fairy Tern	Vu	Vu	x		The habitat of the fairy tern is essentially marine, including sheltered coasts, bays, inlets, estuaries, coastal lagoons, ocean beaches but rarely out to sea or out of sight of land. They also inhabit wetlands near the coast including salt ponds and lakes. This species favours sites with sand spits and small sand islets in river mouth channels (Morcombe 2004).	Unlikely Survey area does not contain suitable habitat for this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Thalassarche impavida</i> Campbell Albatross	Vu, Mi	Vu	x		The Campbell Albatross is a marine sea bird inhabiting sub-Antarctic and subtropical waters from pelagic to shelf-break water habitats (Marchant & Higgins 1990). In breeding and non-breeding seasons, the Campbell Albatross are specialised shelf feeders, concentrating around breeding islands or over adjacent submarine banks (Weimerskirch et al. 1986, 1988). In winter, they are commonly found in the coastal waters of continents, over upwellings or boundaries of currents (DotE 2019). The Campbell Albatross breed on Campbell Island (Marchant & Higgins 1990). They make their nests on tussock-covered ledges and terraces of cliffs, slopes and hills, overlooking the sea or valleys, and on the summits of rocky islets (DotE 2019).	Highly unlikely The survey area does not provide suitable habitat to support this species.
<i>Falco peregrinus</i> Peregrine Falcon		OS		x	The Peregrine Falcon is uncommon but wide ranging across Australia. Found everywhere from woodlands to open grasslands and coastal cliffs – though less frequently in desert regions – it feeds almost entirely on other birds. It also eats rabbits and other moderate sized mammals, bats and reptiles. The Peregrine Falcon is very territorial during breeding season, the male courting the female with an impressive display of aerobatics (DEE 2019, Morcombe 2004).	Present Known to occur locally and was recorded during the survey. The shrubland habitat within the survey area represents suitable foraging habitat, although lacks suitable breeding habitat. Therefore likely to occur at least on an occasional basis.
<i>Phaethon rubricauda</i> Red-tailed Tropicbird		P4		x	The Red-tailed Tropicbird lives in tropical seas, islands and coasts, seldom near land except at nesting sites. Breeding occurs near Cape Naturalise in WA (Prizzey & Knight 2012).	Unlikely The survey area is not considered to provide suitable habitat to support this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Tringa brevipes</i> Grey-tailed Tattler		P4		x	The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It can also be found at intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide. It has been found around shores of rock, shingle, gravel or shells and also on intertidal mudflats in embayments, estuaries and coastal lagoons, especially fringed with mangroves. In Moreton Bay, Queensland, it is most abundant in areas with dense beds of seagrass. In Tasmania it is also abundant in areas with seagrass beds. It is less often on open flat sandy beaches or sandbanks, especially around accumulated seaweed or isolated clumps of dead coral. It is occasionally found around near-coastal wetlands, such as lagoons and lakes and ponds in sewage farms and saltworks. Inland records for the species are rare with sightings on river banks and the edges of rock pools (Higgins & Davies 1996).	Unlikely Species known from the region but no suitable habitat present.
Migratory Terrestrial Species						
<i>Hirundo rustica</i> Barn Swallow	Mi	IA	x		In Australia, the Barn Swallow is recorded in open country in coastal lowlands, often near water, towns and cities. Birds are often sighted perched on overhead wires, and also in or over freshwater wetlands, paperbark Melaleuca woodland, mesophyll shrub thickets and tussock grassland (DEE 2019).	Unlikely The shrubland plains provide suitable foraging habitat for this species. However the species is a rare vagrant to Western Australia and is likely to occur on an occasional or seasonal basis.
<i>Motacilla cinerea</i> Grey Wagtail	Mi	IA	x		The Grey Wagtail is an opportunistic migrant to Australia. The species typically migrates to Indonesia occasionally landing in Australia. Most records for the species are from Northern Australia and South Australia (Morcombe 2004). The non-breeding habitat only of the Grey Wagtail has a strong association with water, particularly rocky substrates along water courses but also lakes and marshes (DotE 2016). It can be found mainly in banks and rocks in fast-running freshwater habitats: rivers, creeks, streams,	Unlikely No suitable habitat within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					and around waterfalls, both in forest and open country; but occurs almost anywhere during migration (Johnstone & Storr 2004).	
<i>Motacilla flava</i> Yellow Wagtail	Mi	IA	x		The Yellow Wagtail occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra (IUCN Redlist 2017). In Australia, the Yellow Wagtail is a very uncommon except in the Broome region. They can often be found in northern towns wherever there are well watered grass areas (DotEE 2017).	Unlikely Species is unlikely to occur in the region. No suitable habitat present.
Migratory Wetland Species						
<i>Actitis hypoleucos</i> Common Sandpiper	Mi	IA	x	x	The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow, and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (DotE 2019b)	Unlikely Species known from the region and may opportunistically occur on minor drainage lines during the wet season however use would be opportunistic and seasonal.
<i>Calidris acuminata</i> Sharp-tailed Sandpiper	Mi	IA	x	x	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, salt pans and hypersaline salt lakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also	Unlikely No suitable habitat present within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands, and coastal areas with much beachcast seaweed. Sometimes they occur on rocky shores and rarely on exposed reefs (Higgins & Davies 1996).	
<i>Calidris melanotos</i> Pectoral Sandpiper	Mi	IA	x		In Australia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. In Western Australia the species is rarely recorded. It has been observed at the Nullarbor Plain, Reid, Stoke's Inlet, Grassmere Lake, Warden Lake, Dalyup and Yellilup Swamp, Swan River, Bengier Swamp, Guraga Lake, Wittecarra, Harding River, coastal Gascoyne, the Pilbara and the Kimberley (DotE 2016).	Unlikely No suitable habitat present within the survey area.
<i>Calidris ruficollis</i> Red-necked Stint	Mi	IA		x	The Red-necked Stint can be found in fresh and saline water, but primarily in coastal regions (Nevill 2013). It is mostly found in areas including sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. Occasionally they have been recorded on exposed or ocean beaches, and on stony or rocky shores, reefs or shoals. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in saltflats. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation. It has been observed at the Nullarbor Plain, Reid, Stoke's Inlet, Grassmere	Unlikely No suitable habitat present within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					Lake, Warden Lake, Dalyup and Yellilup Swamp, Swan River, Bengel Swamp, Guraga Lake, Wittecarra, Harding River, coastal Gascoyne, the Pilbara and the Kimberley (DotE 2016).	
<i>Calidris subminuta</i> Long-toed Stint	Mi	IA		x	In Australia, the Long-toed Stint occurs in a variety of terrestrial wetlands. They prefer shallow freshwater or brackish wetlands including lakes, swamps, river floodplains, streams, lagoons and sewage ponds. The species is also fond of areas of muddy shoreline, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire. It has been observed at open, less vegetated shores of larger lakes and ponds and is common on muddy fringes of drying ephemeral lakes and swamps, and frequents permanent wetlands such as reservoirs and artificial lakes. On the south-west coast the species is known from the Vasse River estuary, Guraga Lake and the Namming Nature Reserve. The species has occasionally been recorded in the Gascoyne Region, around Lake Wooleen, Meeberrie Station and McNeill Claypan. Inland records include Lake Brown, Hannan Lake, Lake Biolet, Newman Sewage Farm and Lake Gregory (DotE 2016).	Unlikely No suitable habitat present within the survey area.
<i>Charadrius veredus</i> Oriental Plover, Oriental Dotterel	Mi	IA	x	x	Immediately after arriving in non-breeding grounds in northern Australia, Oriental Plovers spend a few weeks in coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland. Thereafter they usually inhabit flat, open, semi-arid or arid grasslands, where the grass is short and sparse, and interspersed with hard, bare ground, such as claypans, and dry paddocks, or open areas that have been recently burnt. At the onset of the Wet Season, some may move into lightly wooded grasslands. Some remain in estuarine and littoral environments, and a few are occasionally recorded around terrestrial wetlands or flooded paddocks. Most records are along	Unlikely Species known from the region and may opportunistically occur on minor drainage lines during the wet season however use would be opportunistic and seasonal.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					the north-western coast, between Exmouth Gulf and Derby, and there are records at a few scattered sites elsewhere, mainly along the northern coast, such as in the Top End, the Gulf of Carpentaria and on Cape York Peninsula. The species also often occurs further inland on the 'blacksoil' plains of northern WA (DotE 2016).	
<i>Gallinago stenura</i> Pin-tailed Snipe	Mi	IA		x	During non-breeding periods the Pin-tailed Snipe occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation. The species is also found in drier, more open wetlands such as claypans in more arid parts of species' range. It is also commonly seen at sewage ponds; not normally in saline or inter-tidal wetlands. In WA the species was reported at Pilbara, Port Headland, Myaree Pool, Maitland River and near Karratha. In Pilbarra the distribution is believed to be bound by Pardoo (Banningarra Spring) and the lower Maitland River and Shay Gap (DotE 2016).	Unlikely No suitable habitat present within the survey area.
<i>Glareola maldivarum</i> Oriental Pratincole	Mi	IA	x	x	The Oriental Pratincole usually inhabits open plains, floodplains or short grassland (including farmland or airstrips), often with extensive bare areas. They often occur near terrestrial wetlands, such as billabongs, lakes or creeks, and artificial wetlands such as reservoirs, saltworks and sewage farms, especially around the margins. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons. The Oriental Pratincole is widespread in northern areas, especially along the coasts of the Pilbara Region and the Kimberley Division. It is also widespread but scattered inland, mostly north of 20° S, and on various outlying islands (DotE 2016).	Unlikely Species known from the region and may opportunistically occur on minor drainage lines during the wet season however use would be opportunistic and seasonal.
<i>Hydroprogne caspia</i> Caspian Tern	Mi	IA		x	The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use	Unlikely No suitable habitat present within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs. In WA, the Caspian Tern is widespread in coastal regions, from the Great Australian Bight to the Dampier Peninsula (DotE 2016).	
<i>Limicola falcinellus</i> Broad-billed Sandpiper	Mi	IA		x	The Broad-billed Sandpiper occurs in sheltered parts of the coast, favouring estuarine mudflats but also occasionally occur on saltmarshes, shallow freshwater lagoons, saltworks and sewage farms, and in areas with large soft intertidal mudflats, which may have shell or sandbanks nearby. Occasionally they occur on reefs or rocky platforms. They have also been recorded in creeks, swamps and lakes near the coast, particularly those with bare mudflats or sand exposed by receding water. They often favour mud among, or fringed by, mangroves, particularly on the seaward side and sometimes occur in estuaries edged by saltmarsh. They are rarely recorded inland. Foraging occurs on exposed flats of soft mud or wet sand at edges of coastal and near-coastal wetlands, often around channels on mudflats or in accumulated mud in swales between shell banks. In northern Australia, they forage in soft mud near mangroves, but may remain on same muddy section, even though fresher substrate may be exposed by the receding tide. They also forage in shallow water on muddy edges of ponds. They roost on the banks of sheltered sandy, shelly or shingly beaches (Higgins & Davies 1996).	Unlikely No suitable habitat present within the survey area.
<i>Limosa lapponica</i> Bar-tailed Godwit	Mi	IA	x	x	The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. It has been sighted in coastal sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy ocean beaches, rock platforms, and coral reef-flats. It is rarely found on inland wetlands or in areas of short grass, such as farmland, paddocks and	Unlikely No suitable habitat present within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					airstrips, although it is commonly recorded in paddocks at some locations overseas (Marchant & Higgins 1993).	
<i>Limosa limosa</i> Black-tailed Godwit	Mi	IA		x	In Australia the Black-tailed Godwit has a primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit. The use of habitat often depends on the stage of the tide. It is also found in shallow and sparsely vegetated, near-coastal, wetlands; such as saltmarsh, saltflats, river pools, swamps, lagoons and floodplains. There are a few inland records, around freshwater and saline lakes, swamps, dams and bore-overflows. They also use lagoons in sewage farms and saltworks (Higgins & Davies 1996).	Unlikely No suitable habitat present within the survey area.
<i>Numenius minutus</i> Little Curlew, Little Whimbrel	Mi	IA		x	When resting during the heat of day, the Little Curlew congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs. The species prefers pools with bare dry mud (including mudbanks in shallow water) and they do not use pools if they are totally dry, flooded or heavily vegetated (Higgins & Davies 1996). Birds may also rest in grassy, open woodlands and on bare blacksoil plains, or on dry or recently burnt grasslands on floodplains, which may be without vegetation for hundreds of metres, and occasionally on mudflats when nearby grasslands are unburnt, or around swamps. Resting has also been recorded under partly submerged vegetation. After freshwater pools dry up, roosting may occur in the shallows of reservoirs and the sea (Higgins & Davies 1996).	Unlikely No suitable habitat present within the survey area.
<i>Numenius phaeopus</i> Whimbrel	Mi	IA		x	The Whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has	Unlikely No suitable habitat present within the survey area.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high spring-tides, and in similar habitats in sewage farms and saltfields. There are a small number of inland records from saline lakes and canegrass swamps. The Whimbrel is common and widespread from Carnarvon to the north-east Kimberley Division. It is occasionally seen on the south coast of WA and has occasionally been recorded in the south-west and further north to Shark Bay (DotE 2016).	
<i>Pandion haliaetus</i> Osprey	Mi	IA	x	x	Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. They require extensive areas of open fresh, brackish or saline water for foraging (Marchant & Higgins 1993). They frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes. They exhibit a preference for coastal cliffs and elevated islands in some parts of their range, but may also occur on low sandy, muddy or rocky shores and over coral cays.	Present The Osprey was recorded flying over the survey area during the field assessment.
<i>Pluvialis fulva</i> Pacific Golden Plover	Mi	IA		x	In non-breeding grounds in Australia this species usually inhabits coastal habitats, though it occasionally occurs around inland wetlands. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as <i>Sarcocornia</i> , or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks. They are less often recorded in terrestrial habitats, usually wetlands such as fresh, brackish or saline lakes, billabongs, pools, swamps and wet claypans, especially those with muddy margins and often with submerged	Unlikely There is no suitable habitat within the survey area for this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					<p>vegetation or short emergent grass. On its breeding grounds it occurs in tundra (Dement'ev & Gladkov 1951).</p> <p>Roosting habitat: They usually roost near foraging areas, on sandy beaches and spits or rocky points, islets or exposed reefs, occasionally among or beneath vegetation including mangroves or low saltmarsh, or among beachcast seaweed.</p>	
<i>Pluvialis squatarola</i> Grey Plover	Mi	IA		x	<p>In non-breeding grounds in Australia, Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes (Marchant & Higgins 1993).</p>	<p>Unlikely There is no suitable habitat within the survey area for this species.</p>
<i>Tringa glareola</i> Wood Sandpiper	Mi	IA		x	<p>The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They are typically associated with emergent, aquatic plants or grass, and dominated by taller fringing vegetation, such as dense stands of rushes or reeds, shrubs, or dead or live trees, especially Melaleuca and River Red Gums Eucalyptus camaldulensis and often with fallen timber. They also frequent inundated grasslands, short herbage or wooded floodplains, where floodwaters are temporary or receding, and irrigated crops. They are also found at some small wetlands only when they are drying. They are rarely found using brackish wetlands, or dry stunted saltmarsh. Typically they do not use coastal flats, but are occasionally recorded in stony wetlands. This species uses artificial wetlands, including open sewage ponds, reservoirs, large farm dams, and bore drains (Higgins & Davies 1996). In Western Australia, within wetlands, birds often occur within a few metres of one another and are concentrated at a few sites in a wetland (Higgins & Davies 1996).</p>	<p>Unlikely There is no suitable habitat within the survey area for this species.</p>

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Tringa nebularia</i> Common Greenshank	Mi	IA	x		The Common Greenshank is found in a wide variety of inland wetlands and coastal habitats of varying salinity. It occurs in sheltered coastal areas typically with large mudflats and saltmarsh, mangroves or seagrass, including embayments, harbours, river estuaries, deltas and lagoons, but less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats, and artificial wetlands. They occur around most of the coast from Cape Arid in the south to Carnarvon in the north-west (DotE 2016).	Unlikely Species known from the region and may opportunistically occur on minor drainage lines during the wet season however use would be opportunistic and seasonal.
<i>Tringa stagnatilis</i> Marsh Sandpiper, Little Greenshank	Mi	IA		x	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. There are scattered records in WA where they are mainly found around the coast in freshwater to marine environments (DotE 2016).	Unlikely There is no suitable habitat within the survey area for this species.
<i>Xenus cinereus</i> Terek Sandpiper	Mi	IA		x	The Terek Sandpiper mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire (<i>Halosarcia</i> spp.). Birds are seldom near the edge of water, however, birds may wade into the water (Marchant & Higgins 1993). Occasionally, on sandy beaches, among seaweed and other debris and in rocky areas, Terek Sandpipers will use the supralittoral or upper littoral zone, where a film of water covers the sand. However, on exposed rock platforms, the species forages in the lower littoral zone and not the supralittoral or upper littoral zones (Marchant & Higgins 1993). Less often seen on sandy or shingle beaches, or on rock or coral reefs or platforms, Terek Sandpipers are occasionally sighted around drying sewage ponds and saltpans if surrounded by	Unlikely The survey area does not provide significant habitat for this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
					mudflats. The species is also found around brackish coastal swamps, lagoons and dune-lakes; and also on gravel or rocky edges of estuarine pools and freshwater river-pools (Marchant & Higgins 1993). Very occasionally, birds use swampy, grassy or cultivated paddocks near the coast (Marchant & Higgins 1993). Preferring to roost in or among mangroves, birds may perch in branches or roots up to 2 m from the ground, or beneath them in the shade on hot days.	
Mammals						
<i>Dasyurus hallucatus</i> Northern Quoll	En	En	x		The Northern Quoll once occurred across the majority of northern Australia but its range has significantly contracted. It occurs in the Pilbara region but in disjunct populations. The Northern Quoll inhabits a range of vegetation associations but is especially abundant on dissected rocky escarpment and eucalypt woodland within 200 km of the coast. It is known to den in rock crevices and rock piles and favours rocky areas. They are predominantly nocturnal but are occasionally active during the day, particularly during the mating season and are known to have a large home range (Van Dyck and Strahan 2008).	Unlikely Species not known from the survey area, nearest population known from Hamersley Range.
<i>Mesembriomys macrourus</i> Golden-backed Tree-rat		P4		x	The Golden-backed Tree-rat is a large rodent weighing 207-330 grams. It has been recorded from the top end of the Northern Territory, and the Kimberley and Pilbara in Western Australia. It has undergone a substantial historical range contraction and appears to have disappeared from the NT, the Pilbara and the south-west Kimberley. The current distribution of the Golden-backed Tree-rat is restricted to the north-west Kimberley, from near Kalumburu in the north to Yampi Peninsula in the south, including several islands in the Buccaneer Archipelago (DotEE 2019).	Highly unlikely The survey area is outside the currently known distribution for this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Petrogale lateralis lateralis</i> Black-flanked Rock-wallaby	Vu	En	x	x	The habitat of Black-flanked Rock-wallaby varies between colonies but always involves grassland feeding habitat for feeding in close proximity to cliff, rock-pile, talus or escarpment refuge habitat. Rock cliffs or other steep substrates with adequate shelter and refuge are essential for breeding. Examples of habitat include limestone outcrops and coastal cliffs on Barrow Island, the gorge of the Murchison River in Kalbarri National Park, granite outcrops in the wheatbelt, and granite outcrops, sandstone cliffs and gabbro rock piles on Depuch Island (Maxwell et al. 1996; Pearson & Kinnear 1997).	Unlikely Species known from the region however the survey area is not considered significant habitat for this species.
<i>Pseudomys chapmani</i> Western Pebble-mound Mouse		P4		x	The Western Pebble-mound Mouse is restricted to the Pilbara region where it is recognised as an endemic species. Habitat for the Western Pebble-mound Mouse can be found on stony hillsides with hummocky grasslands and little or no soil. It constructs large mounds of pebbles on stony slopes which cover an area of 0.5-9.0 square metres. 'Active' mounds are characterized by volcano-like cones capped by 'craters' that mark occluded entrances to subterranean burrow systems in which the mice live, often gregariously (Van Dyck and Strahan 2008).	Unlikely Species not known from the survey area and is generally confined to the central and eastern Pilbara. No potential pebble-mound mouse mounds were identified during the survey.
<i>Pseudomys fieldi</i> Shark Bay Mouse	Vu	Vu		x	This species is extinct on the mainland and now restricted to Bernier Island, in Shark Bay.	Highly unlikely The survey area is outside of the known distribution for this species.

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Rhinonictoris aurantia</i> Pilbara Leaf-nosed Bat (Pilbara form)	Vu	Vu	x		The Pilbara Leaf-nosed Bat roosts in deep caves or mines in the wet season and forages nearby. This species occurs in the Pilbara region where its populations are scattered and localised. There are a few known populations of this species in the western Pilbara, roosting in caves formed in gorges that dissect massive siliceous sedimentary geology. It is most often observed in flight over waterholes in gorges (Van Dyck and Strahan 2008). Optimal roosts are thought to occur in caves that form between ascending rock layers, where humidity is maintained from seeping groundwater (Van Dyck and Strahan 2008). Roosts are commonly located over pools of water, or areas deep within the mine or cave structure which provides elevated temperature and humidity. Foraging habitat includes: <i>Triodia</i> hummock grasslands covering low rolling hills and shallow gullies, with <i>Eucalyptus camaldulensis</i> along the creeks; over small watercourses throughout granite boulder terrain; over pools and low shrubs in ironstone gorges; and in and around gravelly watercourses with <i>Melaleuca leucadendron</i> .	Unlikely This species is restricted to the Pilbara region of Western Australia. This species does not occur within the survey area.
<i>Sminthopsis longicaudata</i> Long-tailed Dunnart		P4		x	The Long-tailed Dunnart occurs throughout the Gibson Desert, Murchison, southern Carnarvon Basin and the Pilbara in Western Australia. Its habitat includes rugged, rocky areas with hummock grasses, shrubs and tall open shrublands and woodlands. In the Young Range in the Gibson Desert, the Long-tailed Dunnart has been found to be associated with plateaus, composed of boulders and stones, with some fine red soils, and sparsely vegetated Mulga (<i>Acacia aneura</i>) and Minniritchi (<i>A. grasbyi</i>) shrubs over spinifex (Van Dyck and Strahan 2008).	Highly unlikely Species not known from the region.
<i>Zyzomys pedunculatus</i> Central Rock-rat	Cr	Cr		x	The central rock-rat was rediscovered in 1996, the central rock-rat is restricted to the West MacDonnell Ranges of central Australia.	Highly unlikely The survey area is outside the current known distribution for this species.
Reptiles						

Species name	Status		Source		Description and habitat requirements	Likelihood of occurrence
	EPBC Act	BC Act/ DBCA	PMST	NM		
<i>Anilius splendidus</i> Splendid blind snake (North West Cape)		P2		x	A rare species only known from two individuals. Recent genetics assessment suggests this species is a northern range limit of <i>A. pinguis</i> and may not be a restricted rare species (Gaikhorst pers comm)	Unknown There is only one known record of this species, located in the western side of the Exmouth Cape (recorded in 1995). Suitable habitat for this species is unknown.
<i>Aprasia rostrata</i> Ningaloo worm-lizard		P3		x	The Ningaloo worm-lizard occupies a variety of sandy habitats including white coastal dunes and red dunes vegetated with <i>Triodia</i> from North West Cape to Yardie Creek and Learmonth and inland to Bullara Station (Wilson and Swan 2017).	Unlikely No suitable habitat present within the survey area.
<i>Diplodactylus capensis</i> Cape Range Stone Gecko		P2		x	The Cape Range Stone gecko is restricted to the rocky northern end of North West Cape (Wilson and Swan 2017).	Likely There are a number of records of the species on the Exmouth Peninsula, with most records restricted to the ranges within Cape Range National Park. There are a couple of records on the lower plains. Suitable habitat is present within the survey area.
<i>Lerista allochira</i> Cape Range Slider		P3		x	The Cape Range Slider is restricted to dissected limestone gorges and plateaux on North West Cape (Wilson and Swan 2017).	Unlikely The species is known from the region but is restricted to rocky ridgeline and valleys of the Cape Range. Some rocky habitat is present but appears not to be associated with the range.

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