Australian Government
Department of the Environment

Referral of proposed action

Project title: KUR-World Integrated Eco-resort

1 Summary of proposed action

NOTE: You must also attach a map/plan(s) and associated geographic information system (GIS) vector (shapefile) dataset showing the location and approximate boundaries of the area in which the project is to occur. Maps in A4 size are preferred. You must also attach a map(s)/plan(s) showing the location and boundaries of the project area in respect to any features identified in 3.1 & 3.2, as well as the extent of any freehold, leasehold or other tenure identified in 3.3(i).

1.1 **Short description**

The project site is located at Myola, approximately 2.5 km due west of the centre of Kuranda and 20 km north west of the Cairns central business district, in Mareeba Shire in North Queensland. The proponent seeks to develop the site into a world class integrated eco-resort, known as 'KUR-World' (the proposed development).

1.2 **Latitude and longitude**

Points provided in an anti-clockwise direction starting from the north west corner (see map Attachment A)

Location Point	Latitude	Longitude
North West corner	16°48'51.02"S	145°35'45.39"E
Western boundary 1	16°49'8.92"S	145°35'44.00"E
Western boundary 2	16°49'6.58"S	145°35'33.25"E
Western boundary 3	16°49'26.26"S	145°35'31.31"E
Western boundary 4	16°49'26.80"S	145°35'36.48"E
Western boundary 5	16°49'36.62"S	145°35'34.72"E
Western boundary 6	16°49'40.38"S	145°35'38.64"E
Western boundary 7	16°49'41.26"S	145°35'30.61"E
Western boundary 8	16°49'56.20"S	145°35'28.33"E
Western boundary 9	16°49'54.27"S	145°34'59.95"E
Western boundary 10	16°50'0.32"S	145°35'05.39"E
South West corner	16°50'19.03"S	145°34'55.79"E
Southern boundary 1	16°50'20.94"S	145°35'15.14"E
Southern boundary 2	16°50'35.51"S	145°35'14.60"E
Southern boundary 3	16°50'39.32"S	145°35'53.96"E
Southern boundary 4	16°50'21.12"S	145°35'57.58"E
South East corner	16°50'24.55"S	145°36'34.05"E
Eastern boundary 1	16°50'13.04"S	145°36'46.34"E
Eastern boundary 2	16°50'13.60"S	145°36'52.57"E
Eastern boundary 3	16°50'5.65"S	145°37'01.07"E
Eastern boundary 4	16°50'2.71"S	145°36'35.90"E
Eastern boundary 5	16°49'42.34"S	145°36'38.08"E
Eastern boundary 6	16°49'42.08"S	145°36'49.24"E
Eastern boundary 7	16°49'18.23"S	145°36'52.42"E
Eastern boundary 8	16°49'17.83"S	145°36'55.48"E
Road reserve south east	16°49'21.90"S	145°37'29.83"E
Road reserve north east	16°49'20.93"S	145°37'26.88"E
North East corner	16°49'9.25"S	145°36'56.42"E
North boundary 1	16°49'4.89"S	145°36'13.47"E
North boundary 2	16°48'53.47"S	145°36'13.78"E

1.3 **Locality and property description**

Provide a brief physical description of the property on which the proposed action will take place and the project location (eg. proximity to major towns, or for off-shore projects, shortest distance to mainland).

The project site is located at Myola, approximately 2.5 km due west of the centre of Kuranda and 20 km north west of the Cairns central business district, in Mareeba Shire in North Queensland. The lots, all located in Mareeba Shire in a rural zone, are (listed in order from north to south):

- Lot 22 N157227 (37.259 ha)
- Lot 1 RP703984 (16.187 ha)
- Lot 2 RP703984 (48.312 ha)
- Lot 17 N157227 (57.713 ha)
- Lot 18 N157227 (63.012 ha)
- Lot 19 N157452 (39.598 ha)
- Lot 95 N157452 (34.049 ha)
- Lot 20 N157423 (70.618 ha)
- Lot 131 N157491 (64.75 ha)
- Lot 129 NR456 (65.89 ha)
- Lot 43 N157359 (64.514 ha)
- Lot 290 N157480 (64.75 ha)

See Appendix B for mapping.

The northern lots (lots 1, 2, 17, 18, 19 and 22) are located on gently undulating to undulating rises dissected by steep gullies. These lots have been predominately clear of vegetation at least since the 1940s (based on aerial photo history), with a period of neglect from about the late 1980s/early 1990s to 2015, and some previously cleared areas are now characterised by advanced rainforest regrowth. There is some remnant vegetation in these lots but the majority of vegetation is mapped as non-remnant. Two recognised watercourses traverse these lots, both in the western half - Owen Creek (along the western boundary) and its tributary, Haren Creek. These are predominately rocky creeks interspersed with sandy sections.

The southern lots (lots 20, 43, 95, 129, 131 and 290) are characterised by generally gently to steeply inclined topography and remnant vegetation comprised of either rainforest or eucalypt forest. Aerial photos suggest these lots have mostly never been cleared (at least since the 1930s), although some clearing has occurred in lots 43, 95, 129 and 131 historically, and these areas were kept clear until at least 1971. These lots, which are located higher in the Owen and Haren Creek catchments than the northern lots, are dissected by a number of smaller waterways.

1.4	**Size of the development footprint or work area (hectares)**	Approximately 130 ha (overall site is 626 ha)
1.5	**Street address of the site**	112 Barnwell Rd, Kuranda, 4881, Qld

1.6 **Lot description**

The lots, all freehold and located in Mareeba Shire in a rural zone, are:

- Lot 22 N157227 (37.259 ha)
- Lot 1 RP703984 (16.187 ha)
- Lot 2 RP703984 (48.312 ha)
- Lot 17 N157227 (57.713 ha)
- Lot 18 N157227 (63.012 ha)
- Lot 19 N157452 (39.598 ha)
- Lot 95 N157452 (34.049 ha)
- Lot 20 N157423 (70.618 ha)
- Lot 131 N157491 (64.75 ha)
- Lot 129 NR456 (65.89 ha)
- Lot 43 N157359 (64.514 ha)
- Lot 290 N157480 (64.75 ha)

1.7 **Local Government Area and Council contact (if known)**

Mareeba Shire

1.8 **Time frame Table 1: Estimated project timeframes.**

Project Component	Estimated Timeframe	Description of Works
Initial Advice Statement (IAS)	April 2016	Submission of IAS & Supporting Documents to Coordinator General
	May 2016	Approval of IAS
Environmental Impact Statement (EIS)	June 2016	Draft Terms of Reference (ToR) for EIS released for Public Consultation
	July 2016	ToR released
	December 2016	Submission of EIS & Supporting Documents to Coordinator General
	January 2017	EIS Public Consultation
	March 2017	Approval of EIS
Material Change of Use (MCU) – Preliminary Approval (s242) including Development Permit for Stage 1a	April 2017	Submission of MCU and Supporting Information to Mareeba Shire Council
	September 2017	Approval of MCU
Operational Works – Stage 1	October 2017	Submission of OW and Supporting Information to Mareeba Shire Council
	December 2017	Approval of OW
Construction – Stage 1	April 2018	Construction to Commence
MCU – Development Permit (Stage 2)	June 2018	Submission of MCU and Supporting Information to Mareeba Shire Council
	September 2018	Approval of MCU
Operational Works – Stage 2	Jan 2019	Submission of OW and Supporting Information to Mareeba Shire Council
	March 2019	Approval of OW
Construction – Stage 1	April 2020	Stage 1 Complete
Construction – Stage 2	June 2021 – June 2023	Construction phase Stage 2

1.9	**Alternatives to proposed action** Were any feasible alternatives to taking the proposed action (including not taking the action) considered but are not proposed?	✓	No
			Yes, you must also complete section 2.2
1.10	**Alternative time frames etc** Does the proposed action include alternative time frames, locations or activities?	✓	No
			Yes, you must also complete Section 2.3. For each alternative, location, time frame, or activity identified, you must also complete details in Sections 1.2-1.9, 2.4-2.7 and 3.3 (where relevant).
1.11	**State assessment** Is the action subject to a state or territory environmental impact assessment?		No
		✓	Yes, you must complete Section 2.5 The project will be submitted for acceptance as a coordinated project under Section 26 of the Queensland *State Development and Public Works Organisation Act 1971*
1.12	**Component of larger action** Is the proposed action a component of a larger action?	✓	No
			Yes, you must also complete Section 2.7
1.13	**Related actions/proposals** Is the proposed action related to other actions or proposals in the region (if known)?	✓	No
			Yes, provide details:
1.14	**Australian Government funding** Has the person proposing to take the action received any Australian Government grant funding to undertake this project?	✓	No
			Yes, provide details:
1.15	**Great Barrier Reef Marine Park** Is the proposed action inside the Great Barrier Reef Marine Park?	✓	No
			Yes, you must also complete Section 3.1 (h), 3.2 (e)

2 Detailed description of proposed action

2.1 Description of proposed action

Reever & Ocean Developments Pty Ltd (the 'proponent') seeks to develop the site into a world class integrated eco-resort, known as 'KUR-World' (the proposed development). KUR-World will be a destination for both domestic and international tourists alike that focuses on four key themes: 'Luxury Eco-Tourism', 'Education and Business', 'Rejuvenation, Health and Wellbeing' and 'Adventure & Recreation'. The resort will result in an experience that will add to the marketability of not only the surrounding Atherton tablelands and Cairns region, but the whole of Tropical North Queensland as a must see, vibrant tourism hub. See **Attachment L** for the Masterplan.

The proposed development has been carefully designed following extensive site assessment and investigations which have focused on the natural environmental values of the land in conjunction with the sites past history which extends back to the late 1800's. A concept master plan has been prepared by CA Architects that acknowledges the key environmental features of the site. The development footprint has been generally restricted to cleared areas and non-remnant vegetation, and incorporates ecologically determined buffers to sensitive environmental areas. All proposed development will be accredited with Ecotourism Australia.

The master plan shows a number of precincts and land uses. While these are shown on the plan, they represent indicative positions only - the final position of all precincts, including the buildings, structures and infrastructure within them, will be better defined through the approvals process and supported by detailed design works.
The key features of the proposed development include:

- A world class 5-star resort, with luxury villa accommodation (consisting of 200 separate cabins/chalets, rejuvenation spa, restaurants and a chapel/function centre)
- An 18-hole golf course and clubhouse with restaurant/ 19th hole, spa and tennis court in a rainforest setting;
- A 3 or 4 star leisure and business resort (consisting of 270 rooms restaurants and swimming lagoon inclusive of child friendly activities)
- A retail and dining village hub comprising of a main plaza, restaurant wine bar, a small boutique retail precinct, a day spa, amphitheatre, bush tucker trail, conference, wedding and events facilities, as well as an area for weekly markets
- A choice of residential lots for 'Lifestyle' (approximately 50) or 'Premium' Villas (approximately 330) ranging in size from 600m^2 to 2,000m^2 with frontage to the golf course and natural rainforest
- A tertiary education campus, student accommodation for up to a maximum 500 persons and sports facilities
- Health and wellbeing services, including a medical retreat with approximately 50 to 60 dwellings and that will work in conjunction with the resort. The retreat may include services such as: a bioresearch facility and a clinic for providing treatment for patients with chronic illness, facial and cosmetic treatments and body and health checks
- A range of outdoor learning and adventure activities consisting of zip lines, suspended bridges (rainforest canopy experiences) and rope ladders
- A rainforest education centre
- A state-of-the-art equestrian centre and farm theme park

2.2 Alternatives to taking the proposed action

Alternative uses of the land that have been considered are:

- Livestock grazing – cattle and horses primarily
- Exclusive residential – exclusive housing development of a very limited quantity.

2.3 Alternative locations, time frames or activities that form part of the referred action

No alternatives have been considered.

2.4 Context, planning framework and state / local government requirements

Local Government

The site is located within the Mareeba Shire Council Local Government Area and is accordingly, subject to the provisions of the *Mareeba Shire Planning Scheme 2004* (MSPS). Under the MSPS, the site is within the 'Myola Zone' and includes Precinct 'A', 'C' & 'E'. The project area is also affected by the Significant Vegetation (Category A & B) & Natural and Cultural Heritage Features (Ridgelines & Scenic Areas) Overlays of the MSPS.

The Mareeba Shire Council has also drafted the Draft Mareeba Shire Planning Scheme (draft MSPS) which sets out Mareeba Shire Council's intention for future development of the Shire for the next ten (10) years. The Draft MSPS, once adopted, will replace the currently in effect MSPS. It is likely that the draft MSPS will be in effect by the time the first development application is lodged.

The first development application required to be lodged with Mareeba Shire Council will be for a Preliminary Approval (242) to vary the effect of the Planning Scheme. This application will be, in accordance with the requirements of the SPA/draft MSPC, impact assessable and require assessment against the entire draft MSPC. Subsequent Material Change of Use applications will likely be Code Assessable and subject to assessment against the following codes of the draft MCPS:

- KUR-World Development Code
- Accommodation Activities Code/Commercial Activities Code/Community Activities Code/Rural Activities/Sport & Recreation Code (one or more may be applicable depending on what uses are being applied for)
- Advertising Devices Code
- Landscaping Code
- Parking and Access Code
- Works, Services and Infrastructure Code.

State Government Legislation & Policies

Table 5 below lists the State legislation & policies that are applicable to the proposed development.

Table 5: State legislation & Policies

Legislation	Relevance to the Project
Aboriginal Cultural Heritage Act 2003	Regulates items of Aboriginal cultural heritage.
Environmental Protection Act 1994	The *Environmental Protection Act 1994* (EPA) seeks to protect Queensland's environmental while allowing for ecologically sustainable development. Approvals for Environmentally Relevant Activities including, but not being limited to, sewerage and water treatment plants, may be required for the proposal under the EPA and *Environmental Protection Regulation 2008*.
Land Act 1994	The *Land Act 1994* manages land for the benefit of the people of Queensland. An application to close the unformed road reserves located within the project area was made to the State Land Asset Management on 3 December 2015. This application is awaiting final consideration.

Nature Conservation Act 1992	The *Nature Conservation Act 1992* (NCA) provides the framework for the protection of wildlife listed under the *Nature Conservation (Wildlife) Regulation 2006*. One protected plant species, a native ginger (*Alpinia hylandii R.M.Sm*), was found on the boundary of Lots 1 and 20 during a field survey by Astrebla Ecological Services in September 2015. A protected palm species, the Myola palm (*Archontophoenix myolenis* Dowe) is believed to be growing in a creek on Lot 22. The project area is also known to be home to the Myola tree frog (*Litoria myola*) – confirmed by a field survey undertaken in Janaury 2016 by Dr Conrad Hoskin and the southern cassowary (*Casuarius casuarius*), and provides habitat for the Australia lacelid (*Litoria dayi*) and the common mistfrog frog (*Litoria rheocola*). In accordance with the requirements of the NCA, a flora survey and report will be prepared and findings presented as part of the EIS.
Vegetation Management Act 1999	Clearing of native vegetation is regulated by the *Vegetation Management Act 1999* (VMA). Clearing remnant vegetation, if not exempt works, can only be done with the approval of the Department of Natural Resources & Mines. Exemptions are found in schedule 24 of the SPR. The majority of the vegetation within the project area is non-remnant. However, it is likely that some small amounts of clearing of the mapped 'remnant vegetation' within the project area will be required, none of which is considered to qualify for an exemption. This, along with the exact amount and locations of required clearing, will be confirmed and addressed in more detail as part of the EIS process.
Sustainable Planning Act 2009	The *Sustainable Planning Act 2009* (SPA) and the *Sustainable Planning Regulation 2009* (SPR) provide the statutory framework for the making and assessment of development applications within Queensland. Due to the expected release of the new Planning Bill sometime in mid-2016, it is not expected that any future development applications for the project will be lodged under the SPA (see below).
Draft new Planning Bill	The Draft new Planning Bill is expected to be released in mid-2016. The new bill is being earmarked as an easy to understand act which will "enable better planning in Queensland". Given the new bills proximity to adoption, it is expected that all future development applications for the project will be made and assessed under the new framework contained within the new Act.
Policies	
Single State Planning Policy	The single State Planning Policy (SPP) was introduced in December 2013 and replaced the numerous previous state planning policies. Part E of the SPP list the applicable State interests that need to be considered during development assessment. A review of the SPP interactive mapping has determined that the following matters are applicable to the site: Biodiversity – Maters of State Environmental Significance (Wildlife Habitat, Regulated Vegetation & Regulated Vegetation (intersecting a watercourse); Water Quality – Climatic Regions (Stormwater management design objectives); Natural Hazards Risk & Resilience – Bushfire hazard area (Bushfire Prone Area); and Strategic Airports & Aviation Facilities – Aviation facility Note that these matters will be addressed in detail as part of the EIS process.

Commonwealth

The EPBC Act is the only known Commonwealth legislation from which this project requires approval.

2.5 Environmental impact assessments under Commonwealth, state or territory legislation

An IAS has been prepared and is to be formally submitted to assist the Coordinator-General determine whether the project will be declared a 'coordinated project' for which an environmental impact statement will be required in accordance with Section 26(1)(a) of the SDPWO.
This declaration initiates the statutory environmental impact assessment procedure of Part 4 of the

SDPWO Act which requires the proponent to prepare an EIS for the proposed development. Various pre-lodgement works have been undertaken in respect of the KUR-World project with representatives of the State and Local Governments relevant to the project.

The Project Manager from the Queensland Coordinator-General's office (Department of State Development Infrastructure and Planning) with which the project team is liaising is Mr Stephen Tarte (ph. 07 3452 7455).

2.6 Public consultation (including with Indigenous stakeholders)

No public consultation has occurred at this stage.

2.7 A staged development or component of a larger project

At this point in time, it is expected that KUR-World will be split into two or three stages. This referral covers both stages (that is, the entire project is being referred, not a single stage). See timetable in answer to question 1.8 above.

Stage 1 will be developed over the course of approximately two years, being 2018/2019 and include:

- The village centre and associated facilities
- Golf course and club house
- 5-star resort
- Residential lots (approximately 50%)
- Health/Medical & wellbeing medical retreat
- Necessary infrastructure (roads, services etc.)

Stage 2 will likely commence immediately upon the completion of Stage 1 and will as a result, likely be constructed over a two-year period from 2020-2021 and include:

- Theme park;
- Equestrian centre;
- Family resort (400 Rooms);
- Residential lots (remaining 50%);
- Eco-Tourism activities (southern precinct);
- Necessary infrastructure

3 Description of environment & likely impacts

3.1 Matters of national environmental significance

3.1 (a) World Heritage Properties

Description

The project boundary is located two kilometres west and south of the Wet Tropics of Queensland World Heritage Area (WTQWHA), and 8.5 km west of the Great Barrier Reef Marine Park World Heritage Area (GBRMPWHA) (see Attachment C). In both cases, the project is located upstream of these World Heritage properties via the Barron River and its tributaries, chiefly Owen Creek.

Nature and extent of likely impact

The WTQWHA and GBRMPWHA will not be impacted by this project because:

- The project will not be visible from any readily accessible location within the WTQWHA.
- Best practice sediment and erosion management measures will be implemented to ensure that impacts from sedimentation are not experienced downstream.

3.1 (b) National Heritage Places

Description

As for 3.1 (a)

Nature and extent of likely impact

As for 3.1 (a)

3.1 (c) Wetlands of International Importance (declared Ramsar wetlands)

There are no wetlands of international importance located within 10 km of the project, or downstream of the project

N/A

3.1 (d) Listed threatened species and ecological communities

Description

A Protected Matters Search Tool database search (Attachment D) was conducted with a five kilometre radius, which nominated 1 listed threatened ecological community, 37 threatened species and 17 migratory species that may potentially be present on or near the project area.

Of these, one species is confirmed present, two are considered 'assumed/likely to be present', and three are considered 'may occur'. The remainder are very unlikely to be present except as overfly or very occasional/rare visitors.

Confirmed present

Litoria myola (Kuranda treefrog) – endangered, confirmed present by Dr Conrad Hoskin in a survey commissioned for this project (Attachment E). *Litoria myola* was confirmed present in Owen Creek, Haren Creek (a tributary of Owen Ck) and an unnamed creek, all in the north western quarter of the project area (see map Attachment F). In all cases, it is found in the lower catchment of the creek systems it inhabits, close to the Barron River (Hoskin, 2016). Actual and predicted locations for this species are mapped in Attachment F

Likely to occur

Litoria dayi (Australian lacelid) – endangered, known to occur in the Kuranda area but not located despite targeted surveys in the 2016 wet season by Dr Hoskin (Hoskin, 2016). However, this wet season was not ideal, suitable habitat is present and the species has been recorded within a kilometre of the project area. Therefore, this species is assumed to be present, albeit probably at very low population densities. Predicted locations considered suitable for this species are mapped in Attachment G.

Archontophoenix myolensis (Myola palm) – endangered and known to occur in (and was believed to be restricted to) the Warril Ck system near its confluence with the Barron River. This palm is very similar to a common species of the same genus (*A. alexandrae*) found in this area, from which it is very difficult to split and with which it has overlapping habitat requirements. However, the Myola palm has a much more restricted habitat requirement, being recorded only from riparian rainforest (Dowe and Hodel, 1994; Dowe, 2010). Individuals of this genus are believed likely to be present in the bed and banks of a number of streams within the project area including Owen and Haren Creeks and smaller tributaries of these and of Warril Ck (see Attachment H). Identification to species level was not possible as all individuals were non-reproductive. However, Dr John Dowe thought there is a strong possibility that these may be Myola palms (Dr J. Dowe, *pers. comm.,* 21/9/15). Possible records for the Myola palm are presented in Attachment H. All potential *A. myolensis* individuals observed were located below the high bank of streams - either in the creek bed or on the bank.

May occur

Casuarius casuarius johnsonii (southern cassowary) – endangered. Essential habitat for this species is mapped over most of the remnant vegetation in the project area (see Attachment I). However, no anecdotal or physical evidence of this species occurring on the site has been recorded. During extensive surveys for threatened flora species conducted in the northern half of the project area between June 2015 and February 2016, no evidence of southern cassowaries was noted (either the bird itself or its scat, which is the most common evidence of presence when the species occurs in an area). Immature birds are known to occur from time to time in the Fairylands/Myola Heights section of the district (EPBC referral 2008/4394), and adults are known from Speewah. It is possible that this species does occur from time to time on or near the project area, and habitat suitable for the species is certainly present in remnant vegetation. Therefore, it is considered that this species may occur.

Dasyurus hallucatus (northern quoll) – endangered. Areas of remnant vegetation in the south of the project area are considered by Dr Hoskin to be potentially suitable habitat for this species (Hoskin, 2016). No direct evidence of the presence of this species has been recorded from the site, and there are no records from within a 100 km radius held by the Queensland government (see Attachment K), although it is acknowledged that a targeted mammal survey has not been undertaken within the

project lots. However, northern quolls have been caught in Elliot traps in the Nullinga Valley, in dry woodland 45 km south west of the project area (in a very different habitat type to that present at Myola) (Simon Danielsen, *pers. comm.* 26/4/2016). Therefore, it is considered that this species may occur.

Litoria rheocola (mistfrog) – endangered, generally restricted to fast-flowing rocky streams (Department of Environment, 2016) and listed as rare in the Kuranda region (Hoskin, 2007). Generally, streams suitable for this species were present in the far north west of the project area (the lower reaches of Owen Creek) in the same areas as *L. myola* was confirmed present.

Nature and extent of likely impact

Frogs

No significant impacts are expected on any of the listed frog species (*Litoria myola, L. dayi or L. rheocola*) either confirmed present or that are likely to or may occur in the project area, because:

- Habitat for these species will be confirmed and set aside from development. *Litoria rheocola* is not as wide-ranging as the other *Litoria* mentioned above – therefore, protecting habitat for those species will also protect habitat that may possibly used by *L. rheocola*.
- Water quality in the streams utilised by *L. myola* and possibly by *L. dayi* will be managed and maintained. Best practice sediment and erosion management measures will be designed in a Sediment and Erosion Management Plan to be approved by a suitably qualified engineer. An ongoing program of water quality monitoring and reporting to government authorities will be designed and instituted for the life of the project.

Myola palm

No significant impacts on the Myola palm *A. myolensis* are expected because:

- Most confirmed and potential habitat for this species is co-located within habitat (below the high bank of streams in riparian rainforest and riparian rainforest regrowth) that will be protected for *L. myola* and *L. dayi*.
- Some potential habitat for this species exists along Haren Creek – all sections of this creek will be surveyed for Myola palm and all individuals will be protected.
- Water quality in the streams utilised by the Myola palm will be protected. Best practice sediment and erosion management measures will be designed in a Sediment and Erosion Management Plan to be approved by a suitably qualified engineer. An ongoing program of water quality monitoring and reporting to government authorities will be designed and instituted for the life of the project.

Southern cassowary

No significant impacts on the southern cassowary are expected because:

- In general, cassowary essential habitat will be retained, and much of the existing rainforest regrowth vegetation in the project area will also be retained.
- Where vegetation mapped as essential habitat for the southern cassowary lies within the development footprint, clearing will be mitigated through a habitat offset that will comply with Commonwealth and Queensland government requirements.
- Cassowaries are not believed to access the site anymore and its main value in conservation of the species is in maintaining a western habitat corridor that stretches from the Windy Hollow area (approximately 1.5 km south east of the project area) north west to Kowrowa/Mantaka (see Attachment I).
- The Windy Hollow-Kowrowa corridor will be retained - it incorporates mostly lots 20, 43, 95, 129 and 131, all of which have no infrastructure proposed on them under the Masterplan. It should

be noted that there is no evidence that cassowaries actually use this corridor – it is bisected by a major impediment to cassowary movement – the Kennedy Highway – and is theoretical only.
- No dogs will be kept on the site as a result of this project.
- Fencing will be designed to be cassowary friendly.
- Traffic within the proposed entrance road from Myola Road will be speed restricted.

Northern quoll

No significant impact is expected on the northern quoll because:
- The habitat of value to this species within the project area is located in the southern lots (primarily lots 20, 129, 131 and 290),
- These lots are almost exclusively covered in remnant vegetation, and are difficult to access (rugged topography, dense vegetation and few tracks). Consequently development activity within these lots will be minimal.

3.1 (e) Listed migratory species

Description

Of the terrestrial migratory species listed in the Protected Matters search results, one species is confirmed present (*Monarcha/Symposiarchus trivirgatus* – spectacled monarch) (Hoskin, 2016). Of the remainder, two are considered likely to be present:
- *Merops ornata* (rainbow bee-eater) – a common Wet Tropics resident.
- *Rhipidura rufifrons* (rufous fantail) – a common Wet Tropics resident.

The oriental cuckoo (*Cuculus optatus*), the barn swallow (*Hirundo rustica*), the black faced monarch (*Monarcha melanopsis*) and the satin flycatcher (*Myriaga cyanoleuca*) may possibly be present from time to time. In addition, the migratory wetland species cattle egret (*Ardea ibis*) may also be present from time to time.

Nature and extent of likely impact

No significant impacts on these common species are expected because:
- The vast majority of remnant habitat within the project area, and much of the rainforest regrowth, will be retained.
- All woodland and open forest habitat (restricted to the south west lots, lots 129, 131 and 290) will be retained (the oriental cuckoo is more of a eucalypt forest resident (Nielsen, 1996).
- The cattle egret, a common Wet Tropics resident, will not be impacted at all by this project as this property has not carried cattle for some years.

3.1 (f) Commonwealth marine area

This project is not located in or within 10 km of a Commonwealth marine area, and will not have any impact on a Commonwealth marine area.

3.1 (g) Commonwealth land

This project is not located in or on Commonwealth land, and will not have any impact on Commonwealth land.

3.1 (h) The Great Barrier Reef Marine Park

See 3.1 (a) above

3.1 (i) A water resource, in relation to coal seam gas development and large coal mining development

N/A

3.2 Nuclear actions, actions taken by the Commonwealth (or Commonwealth agency), actions taken in a Commonwealth marine area, actions taken on Commonwealth land, or actions taken in the Great Barrier Reef Marine Park

3.2 (a)	**Is the proposed action a nuclear action?**	✓	No
			Yes (provide details below)

3.2 (b)	**Is the proposed action to be taken by the Commonwealth or a Commonwealth agency?**	✓	No
			Yes (provide details below)

3.2 (c)	**Is the proposed action to be taken in a Commonwealth marine area?**	✓	No
			Yes (provide details below)

3.2 (d)	**Is the proposed action to be taken on Commonwealth land?**	✓	No
			Yes (provide details below)

3.2 (e)	**Is the proposed action to be taken in the Great Barrier Reef Marine Park?**	✓	No
			Yes (provide details below)

3.3 Other important features of the environment

3.3 (a) Flora and fauna

Flora surveys conducted within the wattle regrowth vegetation in the project area (and some adjoining remnant vegetation areas) found a total of 232 species from 174 genera, in 83 families (Danielsen, 2015) (see Attachment J).

The most diverse families were:

- Elaeocarpaceae: 3 genera, 8 species
- Lauraceae: 6 genera, 14 species
- Myrtaceae: 10 genera, 15 species
- Rubiaceae: 8 genera, 8 species
- Rutaceae: 7 genera, 12 species
- Sapindaceae: 12 genera, 16 species.

The most diverse genera were:

- *Elaeocarpus* (Elaeocarpaceae): 5 species

- *Cryptocarya* (Lauraceae): 6 species
- *Ficus* (Moraceae): 5 species
- *Syzygium* (Myrtaceae): 5 species.

It should be noted that surveys were concentrated in so-called 'black wattle regrowth' because these were the habitats proposed for clearing, and that species diversity in this habitat type is typically lower than that of remnant rainforest nearby. A notable species found in remnant rainforest on lot 20 but not yet recorded elsewhere in the project area is the near threatened species (under the Queensland *Nature Conservation Act 1994*) *Alpinia hylandii*, a species of the ginger family (Zingerbaceae). This species was found in small, scattered clumps (approximately 60) within a 0.7 ha area.

Fauna surveys were conducted by Dr Conrad Hoskin in January and March 2016 (Hoskin, 2016). Dr Hoskin was targeting the endangered frog suite that is known to occur in the Myola area, however he also recorded 76 vertebrate species including:

- 6 mammal species
- 47 bird species
- 9 reptile species
- 14 frog species.

Although not recorded during the surveys, Dr Hoskin commented that the habitat within the project area, particularly the southern lots, may be suitable for the southern cassowary and the northern quoll.

3.3 (b) Hydrology, including water flows

The project area is located in the Barron River catchment, within two ecologically important local catchments.

Owen Creek

Owen Creek catchment (approximately 1, 625 ha overall) dominates the site, occupying approximately three quarters of the project area. This includes Haren Creek, which occupies the central section of the project area (Attachment F and G map and name these creeks). Owen Creek itself is located along the western boundary of the project area.

Both are predominately rocky creeks with a number of closely spaced, moderately to deeply incised tributaries in a convergent tributary channel pattern. Owen Creek becomes a third order stream when it meets Haren Creek (that is, both Haren and Owen Creeks are second order streams upstream of their confluence). The Owen Creek catchment flows north and joins the Barron River approximately 900 m from the northern boundary of the project area. Both Owen and Haren Creeks were observed to flow all year in 2015, although flow in both was reduced to a near trickle in the mid-dry season.

Warril Creek

Warril Creek catchment (approximately 505 ha overall) occupies the majority of the remaining one quarter of the project area. Warril Creek, a second order stream for most of its length, is located to the east of the eastern boundary of the project area. A first order tributary of Warril Creek drains the far north eastern corner of the project area.

Within the project area, this first order tributary is predominately a deeply incised sandy creek with a number of closely spaced drainage lines/gullies forming a convergent tributary channel pattern. It did not hold water in the dry season of 2015, and was only observed to flow in the 2015-16 wet season after rain. It converges with Warril Creek approximately two kilometres after leaving the northern project area boundary.

Unnamed creek

An unnamed, first order stream has its upper catchment extent in the centre of the northern boundary of the project area. Its total catchment area is approximately 80 ha and it flows directly into the Barron River 850 m after leaving the project area. It has a similar substrate and channel characteristics to the Warril Creek tributary to the east – it is a deeply incised, sandy creek. It crosses Barnwell Road near the northern project area boundary and was observed to run at this point (albeit at a mere trickle in the late-dry season) all year. This is surprising given its relatively short length and the lack of water in the larger stream to its east at the same time, and may represent baseflow from a local aquifer to which this stream is perhaps connected.

3.3 (c) Soil and Vegetation characteristics

Soils over the project area have not been mapped, and no publicly available mapping was located. From casual observations, the majority of the site is characterised by red-brown clays typical of the Kuranda area, with some sandier profiles in places. The entire project area is located on Barron River metamorphics (slate, phyllite, quartzite, chert, greywacke) (Bureau of Mineral Resources, Geology and Geophysics, 1962). Some local areas of sandstone have been noted.

Vegetation on the site is divided into three categories – cleared, 'black wattle regrowth' and remnant. Cleared vegetation includes areas that have been clear for many years, and are largely dominated by lantana or signal grass, and areas that have recently been cleared by the proponent.

Black wattle regrowth is generally characterised by advanced regrowth approximately 20 years old – from historical aerial photography these areas appear to have commenced re-establishing in the mid-1990s. Most of the wattles forming the canopy in this regrowth are at most 20-25 years old – black wattles older than this are rare in the regrowth vegetation, although a blazed tree known to have been marked in 1982 (and at that time described as an 'old rainforest tree') was found near the northern boundary (making it perhaps at least 50 years old – an old wattle).

This vegetation type is dominated by the wattles (often called black wattles) *Acacia celsa* and *A. cincinnata,* with the following species also well-represented in all areas of this habitat type:

- *Polyscias australiana* (Araliaceae)
- *Sloanea langii* (Elaeocarpaceae)
- *Macaranga involucrata* var. *mallotoides* (Euphorbiaceae)
- *Cryptocarya mackinnoniana* and *Litsea leefeana* (Lauraceae)
- *Hypserpa laurina* (Menispermiaceae)
- *Rhodamnia sessiliflora* and *Syzygium kuranda* (Myrtaceae)
- *Benstonea monticola* (formerly *Pandanus monticola*) (Pandanaceae)
- *Carnarvonia araliifolia* var. *araliifolia, Darlingia darlingiana* and *Placospermum coriaceum* (Proteaceae)
- *Alphitonia petriei* and *whitei* (Rhamnaceae)
- *Gardenia ovularis* (Rubiaceae)
- *Guioa acutifolia, Mischocarpus lachnocarpus, Sarcopteryx reticulata* and *Sarcotoechia serrata* (Sapindaceae)
- *Planchonella chartacea* (Sapotaceae).

Vines commonly encountered were:

- *Calamus australis* (Arecaceae)
- *Tetracera nordtiana* (Dilleniaceae)
- *Passiflora kuranda* (Passifloraceae)
- *Piper caninum* (Piperaceae)
- *Cissus penninervis* (Vitaceae).

In general, these areas were characterised by a lower species diversity and tree density – they are relatively easily traversed and species abundance is lower than in remnant mesophyll/notophyll vine forest (which is the 'climax' representation toward which this habitat type is heading – although in places ongoing natural disturbance can continue to interrupt the disputed deterministic theory of climax communities).
In places along creeks, dense 'thickets' of lantana and raspberry have taken over, to the exclusion of most other species. These thickets were generally present on alluvial flats and in the creek beds of those creeks that may have more ephemeral flows. In places the lantana and raspberry was three metres high.

The areas mapped as remnant on Queensland government regional ecosystem mapping appear to be generally real 'remnant' vegetation – that is, no historical clearing is evident in the historical aerial photo record (see Attachment M). The earliest aerial photos for the project area date to 1942, when the extent of clearing greatly exceeded contemporary extents. Clearing appeared to reach its zenith between the 1965 and 1982, with regrowth evident in the 1994 aerial.
Remnant vegetation on the site is described in 3.3 (e) below.

3.3 (d) Outstanding natural features

There are no natural features that would be described as 'outstanding' that have not already been described.

3.3 (e) Remnant native vegetation

Remnant vegetation on the site is defined as vegetation mapped as such by the Queensland Herbarium. The Herbarium has mapped six regional ecosystem types (REs) within the project area, all located on metamorphic land forms (land zone 11) (see Attachment N):

Closed forest ('rainforest')

- 7.11.1a: Mesophyll vine forest. Lowlands and foothills on metamorphics. Very wet and wet rainfall zones. Vegetation management class - least concern; biodiversity status – of concern.
- 7.11.7a: Complex notophyll vine forest (with emergent *Agathis robusta*). Foothills and uplands. Moist rainfall zone. This is the most common remnant vegetation community within the project area. Vegetation management class - least concern; biodiversity status – of concern.

Open forest

- 7.11.13: *Corymbia torelliana* (cadaghi) open forest, usually with a vine forest element. Vegetation management class - of concern; biodiversity status – endangered.
- 7.11.33: *Eucalyptus reducta* (Queensland stringybark) open forest to woodland. Vegetation management class - of concern; biodiversity status – of concern.
- 7.11.44: *Eucalyptus tereticornis* (forest red gum) open forest to woodland. Vegetation management class - of concern; biodiversity status – of concern.
- 7.11.51a: *Corymbia clarksoniana, Eucalyptus tereticornis, E. drepanophylla* woodland, low woodland to open forest with *Allocasuarina torulosa, Allocasuarina littoralis, Lophostemon suaveolens, Acacia cincinnata, A. flavescens, Banksia aquilonia, Xanthorrhoea johnsonii*. Vegetation management class - least concern; biodiversity status – of concern.

The most common community in the remnant vegetation areas is complex notophyll vine forest (RE 7.11.7), which forms a 'rainforest mosaic' with the RE 7.11.1 that dominates the central and south eastern sections of the project area. Small patches of cadaghi open forest (RE 7.11.13) occur within or on the boundary of this rainforest mosaic.
Within the south western corner (primarily lot 129 and, to a greater extent, lot 290), open forest dominated by ironbarks is most common (RE 7.11.51). This vegetation type was observed to be

thickening considerably with rainforest species such as hard milkwood (*Alstonia muelleriana*). This may be a symptom of an 'interrupted' fire regime.

3.3 (f) Gradient (or depth range if action is to be taken in a marine area)

The topography of the site is dominated by Mt Haren, a 490 m peak that is located at the far eastern point of the project area, and that is also the highest point in the Myola/Kuranda area. The lowest point on the site is 340 m elevation, where Owen Creek leaves the northern boundary of the project area. Topography on the site can be adequately predicted from the vegetation patterns. In general, the areas mapped as remnant vegetation were not cleared because the topography was unsuitable for farming/grazing – it is either steep, rugged hills (as in lots 131 and 290) or deeply dissected by closely spaced drainage lines and creeks (as on lots 20, 43, 95 and 129). More suitable terrain is found where regrowth and cleared pasture is located – here, the land is undulating to rolling and clearing has occurred along the gently sloping ridgelines. The usually steeply incised drainage lines/watercourses have not been cleared (although everything in these areas was cleared pre-1990).

In general, the cleared areas are located between 340 to 380 m elevation and the remnant vegetation sections are located between 380 and 450 m elevation, with Mt Haren rising to 490 m. The highest points (those areas above 420 m) are located along the southern boundary and the south western corner, with the only exception being Mt Haren.

3.3 (g) Current state of the environment

Remnant vegetation within the project area is generally intact and no weeds were noted. Regrowth vegetation was characterised by patches with infestations of lantana (*Lantana camara*) – other commonly weeds include guava (*Psidium guajava*), duranta (*Duranta erecta*), coffee (*Coffea liberica*) and queen palm (*Syagrus romanzoffiana*). Duranta in particular is a problem in some places. Within the cleared areas, the predominant plant is signal grass (*Urochloa decumbens*), but other exotic species commonly encountered included snake weed (*Stachytarpheta jamaicensis*), rat's tail grass (*Sporobolus* sp.) and raspberry (*Rubus alceifolius*), among others.

3.3 (h) Commonwealth Heritage Places or other places recognised as having heritage values

No sites listed on the Register of the National Estate, World Heritage list, National Heritage list or the Commonwealth Heritage List or the Queensland Heritage Register are present on the site.

3.3 (i) Indigenous heritage values

The KUR-World project site is located within Djabugay country. No indigenous heritage values have been identified on the site to date.

3.3 (j) Other important or unique values of the environment

The KUR-World project site is located two kilometres west of Barron Gorge National Park, and two kilometres south of Kuranda State Forest (both of which fall within the Wet Tropics World Heritage Area). It is located precisely on the transition zone or ecotone between the wetter rainforest communities of the Lamb and MacAlister Ranges to the east, and the drier sclerophyll dominated woodland communities to the west, with this transition evident in the south western lots of the project site (lots 131 and 290 in particular contain extensive areas of ironbark and forest red gum open forest).

Its rainforest is also contiguous with one of the Wet Tropics Heritage Area 'pinch points' – areas where the rainforest narrows considerably, constraining movement in a north-south direction by fauna that are restricted to rainforest habitats. Dr Hoskin (2007) has previously identified the central Wet Tropics area, and Kuranda in particular, as a 'suture' or contact zone between areas of historic refugia for rainforest species, where 'evolutionary novelties' (i.e. new species and phenotypic variations) can arise relatively rapidly. Therefore, he ascribes some conservation significance to this contact zone.

3.3 (k) Tenure of the action area (eg freehold, leasehold)

All lots in the Kur-World project area are freehold.

3.3 (l) Existing land / marine uses of area

Approximately two thirds of the property is currently used for a conservation purpose (ie it is undisturbed remnant vegetation). The remaining third, located in the north of the project area, is used for cattle grazing and general farming activities.

3.3 (m) Any proposed land / marine uses of area

The proposed use of the land is as per the Masterplan (Attachment L), and as outlined in Section 2 above.

4 Environmental outcomes

Proposed environmental outcomes for MNES are as follows:

Frog species *Litoria myola, L. dayi* and *L. rheocola*

- There will be no net-loss of habitat for these species as a result of this project.
- Water quality within habitat for these species will not be reduced below current baseline levels (to be identified).

Southern cassowary

- There will be no net-loss of essential habitat for the southern cassowary as a result of this project.
- Traffic will be managed to reduce the likelihood of impact on the southern cassowary.

Myola palm

- There will be no net-loss to the population of this species as a result of this project.

Northern quoll

- There will be no net-loss to habitat for the northern quoll as a result of this project.

5 Measures to avoid or reduce impacts

Measures proposed to avoid or reduce impacts are:

- Complete expert investigations into habitat for *Litoria myola, L. dayi* and *L. rheocola* to determine suitable buffers and reflect the development elements accordingly to protect that habitat from clearing.
- Design and implement best practice sediment and erosion management measures to protect water quality within the catchment.
- Undertake water quality testing to determine background (pre-project) water quality, so as to set a baseline against which future monitoring can occur.
- Design and implement a water quality monitoring program.
- Where cassowary essential habitat occurs in areas for which clearing is unavoidable (for instance, roads), offsets meeting federal and state government requirements will be provided.
- A traffic management plan will be implemented to manage the possible impact of local traffic on the southern cassowary.
- The identity of all potential Myola palms within the development footprint will be determined and their locations mapped.
- A Myola Palm Management Plan will be implemented to protect these palms from any impact during the development and operation of the KUR-World project.

6 Conclusion on the likelihood of significant impacts

6.1 Do you THINK your proposed action is a controlled action?

	No, complete section 5.2
✓	Yes, complete section 5.3

6.2 Proposed action IS NOT a controlled action.

N/A

6.3 Proposed action IS a controlled action

	Matters likely to be impacted
	World Heritage values (sections 12 and 15A)
	National Heritage places (sections 15B and 15C)
	Wetlands of international importance (sections 16 and 17B)
✓	Listed threatened species and communities (sections 18 and 18A)
	Listed migratory species (sections 20 and 20A)
	Protection of the environment from nuclear actions (sections 21 and 22A)
	Commonwealth marine environment (sections 23 and 24A)
	Great Barrier Reef Marine Park (sections 24B and 24C)
	A water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E)
	Protection of the environment from actions involving Commonwealth land (sections 26 and 27A)
	Protection of the environment from Commonwealth actions (section 28)
	Commonwealth Heritage places overseas (sections 27B and 27C)

This project is a controlled action because:

Litoria myola, L. dayi and L. rheocola

- The KUR-World site occupies approximately 13.7 ha of known *L. myola* habitat and a further 39.5 ha of suitable habitat that is contiguous with known habitat (and within which the species is likely to occur). This represents 15% of the total known occupancy of the species.
- The KUR-World site involves development that is upslope of this habitat, and a further approximately 30-35 ha of *L. myola* habitat located outside of the project area. Therefore, it is acknowledged that development actions has the potential to effect habitat quality within nearly 25% of the total known occupancy of the species through changes to water quality.
- Two other species of endangered frog, *L. dayi* and *L. rheocola*, also occupy similar habitats (there is 86 ha of potential habitat for *L. dayi* within the KUR-World site).

Casuarius casuarius johnsonii

- The KUR-World site contains large areas of mapped essential habitat for the southern cassowary, in an area where movement corridors for the species contract significantly. Some clearing of essential habitat for this species is likely.

- Traffic, a threatening process for this species, is likely to increase on local roads as a result of this project.

Archontonphoenix myolensis

- The KUR-World site contains an unmapped population of this highly restricted species in areas potentially to be affected by this project.

7 Environmental record of the responsible party

NOTE: If a decision is made that a proposal needs approval under the EPBC Act, the Environment Minister will also decide the assessment approach. The EPBC Regulations provide for the environmental history of the party proposing to take the action to be taken into account when deciding the assessment approach.

		Yes	No
7.1	**Does the party taking the action have a satisfactory record of responsible environmental management?** **Provide details** This is the proponent's first development and so there is no record of prior environmental management	✓	
7.2	**Has either (a) the party proposing to take the action, or (b) if a permit has been applied for in relation to the action, the person making the application - ever been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources?** **If yes, provide details**		✓
7.3	**If the party taking the action is a corporation, will the action be taken in accordance with the corporation's environmental policy and planning framework?** **If yes, provide details of environmental policy and planning framework** Refer to **Attachment O** – Environmental and Social Sustainability Policy	✓	
7.4	**Has the party taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?**		✓

8 Information sources and attachments

8.1 References

Bureau of Mineral Resources, Geology and Geophysics, 1962, 1:250, 000 geology mapping, Cairns mapsheet, SE55-2.
Danielsen, S., 2015, *Flora Survey Report, Barnwell Rd, Myola.* Unpublished report by Astrebla Ecological Services, commissioned by Reever and Ocean Developments Pty Ltd for this project.
Department of the Environment, 2016, *Litoria rheocola*, in Species Profile and Threats Database, Department of the Environment, Canberra. Available from: http://www.environment.gov.au/sprat. Accessed Mon, 18 Apr 2016.
Dowe, J.L., 2010, *Australian Palms. Biogeography, Ecology and Systematics*. CSIRO Publishing, Melbourne.
Dowe, J.L. and Hodel, D.R., 1994, A Revision of *Archontophoenix* H. Wendl. & Drude (Arecaceae). *Austrobaileya* 4 (2): 227-244.
Hoskin, C., 2007, Description, biology and conservation of a new species of Australian tree frog (Amphibia: Anura: Hylidae: *Litoria*) and an assessment of the remaining populations of *Litoria genimaculata* Horst, 1883: systematic and conservation implications of an unusual speciation event, *Biological Journal of the Linnean Society*, **91**, 549-563.
Hoskin, C., 2016, *Surveys for endangered frogs and other wildlife on Barnwell Road Holdings*, unpublished report commissioned by Reever and Ocean Developments Pty Ltd for this project.
Neilsen, L., 1996, *Birds of Queensland's Wet Tropics and Great Barrier Reef, Australia.* Gerard Industries Proprietary Limited, Adelaide.

8.2 Reliability and date of information

All information provided has been referenced above or in maps.
All information is contemporary and dates are provided.
All information is from reliable expert sources. General site descriptions have been provided by an ecologist.
Soil data for this area is lacking and the description provided is tentative only.

8.3 Attachments

Indicate the documents you have attached. All attachments must be less than three megabytes (3mb) so they can be published on the Department's website. Attachments larger than three megabytes (3mb) may delay the processing of your referral.

		✓ attached	Title of attachment(s)
You must attach	figures, maps or aerial photographs showing the project locality (section 1)	✓	A: Project area with coordinate locations B: Subject lots L: Masterplan M: Historic aerial photos N: Regional ecosystem mapping
	GIS file delineating the boundary of the referral area (section 1)		
	figures, maps or aerial photographs showing the location of the project in respect to any matters of national	✓	C: World Heritage Areas F: Litoria myola extent map

	environmental significance or important features of the environments (section 3)		G: Litoria dayi extent map H: Myola palm suspected locations I: Cassowary essential habitat mapping
If relevant, attach	copies of any flora and fauna investigations and surveys (section 3)	✓	E: Report by Dr Conrad Hoskin J: Flora survey report
	technical reports relevant to the assessment of impacts on protected matters that support the arguments and conclusions in the referral (section 3 and 4)	✓	D: Protected Matters search results K: Wildlife Online searches

9 Contacts, signatures and declarations

NOTE: Providing false or misleading information is an offence punishable on conviction by imprisonment and fine (s 489, EPBC Act).

Under the EPBC Act a referral can only be made by:

- the person proposing to take the action (which can include a person acting on their behalf); or
- a Commonwealth, state or territory government, or agency that is aware of a proposal by a person to take an action, and that has administrative responsibilities relating to the action[1].

Project title:

9.1 Person proposing to take action

This is the individual, government agency or company that will be principally responsible for, or who will carry out, the proposed action.

If the proposed action will be taken under a contract or other arrangement, this is:

- the person for whose benefit the action will be taken; or
- the person who procured the contract or other arrangement and who will have principal control and responsibility for the taking of the proposed action.

If the proposed action requires a permit under the Great Barrier Reef Marine Park Act[2], this is the person requiring the grant of a GBRMP permission.

The Minister may also request relevant additional information from this person.

If further assessment and approval for the action is required, any approval which may be granted will be issued to the person proposing to take the action. This person will be responsible for complying with any conditions attached to the approval.

If the Minister decides that further assessment and approval is required, the Minister must designate a person as a proponent of the action. The proponent is responsible for meeting the requirements of the EPBC Act during the assessment process. The proponent will generally be the person proposing to take the action[3].

1. Name and Title:	Mr Ken Lee
2. Organisation (if applicable):	Reever & Ocean Developments
3. EPBC Referral Number (if known):	-
4: ACN / ABN (if applicable):	N/A
5. Postal address:	C/- Urban Sync Pty Ltd, PO Box 2970, CAIRNS QLD 4870
6. Telephone:	(07) 4051 6946 / 0418 985 935
7. Email:	stuart@urbansync.com.au
8. Name of designated proponent (if not the	As above.

[1] *If the proposed action is to be taken by a Commonwealth, state or territory government or agency, section 8.1 of this form should be completed. However, if the government or agency is aware of, and has administrative responsibilities relating to, a proposed action that is to be taken by another person which has not otherwise been referred, please contact the Referrals Gateway (1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

[2] *If your referred action, or a component of it, is to be taken in the Great Barrier Reef Marine Park the Minister is required to provide a copy of your referral to the Great Barrier Reef Marine Park Authority (GBRMPA) (see section 73A,* EPBC Act*). For information about how the GBRMPA may use your information, see http://www.gbrmpa.gov.au/privacy/privacy_notice_for_permits.*

[3] *If a person other than the person proposing to take action is to be nominated as the proponent, please contact the Referrals Gateway(1800 803 772) to obtain an alternative contacts, signatures and declarations page.*

same person at item 1 above and if applicable):

9. ACN/~~ABN~~ of designated proponent (if not the same person named at item 1 above): 612 362 320

COMPLETE THIS SECTION ONLY IF YOU QUALIFY FOR EXEMPTION FROM THE FEE(S) THAT WOULD OTHERWISE BE PAYABLE

I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

☐ an individual; OR

☐ a small business entity (within the meaning given by section 328-110 (other than subsection 328-119(4)) of the *Income Tax Assessment Act 1997*); OR

☑ not applicable.

If you are small business entity you must provide the Date/Income Year that you became a small business entity:

Note: You must advise the Department within 10 business days if you cease to be a small business entity. Failure to notify the Secretary of this is an offence punishable on conviction by a fine (regulation 5.23B(3) *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth)).

COMPLETE THIS SECTION ONLY IF YOU WOULD LIKE TO APPLY FOR A WAIVER

I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations. Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made:

☑ not applicable.

Declaration

I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct.
I understand that giving false or misleading information is a serious offence.
I agree to be the proponent for this action.
I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature - (Mr Ken Lee). Date 24 - May 2016.

9.2 Person preparing the referral information (if different from 8.1)

Individual or organisation who has prepared the information contained in this referral form.

Name Mr Stuart Ricketts

Title Director – Senior Planner

Organisation Urban Sync Pty Ltd

ACN / ABN (if applicable)	ACN: 169 940 649
Postal address	PO Box 2970, CAIRNS QLD 4870
Telephone	(07) 4051 6946
Email	stuart@urbansync.com.au
Declaration	I declare that to the best of my knowledge the information I have given on, or attached to this form is complete, current and correct. I understand that giving false or misleading information is a serious offence.
Signature	 Date 9/5/2016

REFERRAL CHECKLIST

NOTE: This checklist is to help ensure that all the relevant referral information has been provided. It is not a part of the referral form and does not need to be sent to the Department.

HAVE YOU:

- ☑ Completed all required sections of the referral form?
- ☑ Included accurate coordinates (to allow the location of the proposed action to be mapped)?
- ☑ Provided a map showing the location and approximate boundaries of the project area?
- ☑ Provided a map/plan showing the location of the action in relation to any matters of NES?
- ☑ Provided a digital file (preferably ArcGIS shapefile, refer to guidelines at Attachment A) delineating the boundaries of the referral area?
- ☑ Provided complete contact details and signed the form?
- ☑ Provided copies of any documents referenced in the referral form?
- ☑ Ensured that all attachments are less than three megabytes (3mb)?
- ☑ Sent the referral to the Department (electronic and hard copy preferred)?

Attachment A

Geographic Information System (GIS) data supply guidelines

If the area is less than 5 hectares, provide the location as a point layer. If the area greater than 5 hectares, please provide as a polygon layer. If the proposed action is linear (eg. a road or pipline) please provide a polyline layer.

GIS data needs to be provided to the Department in the following manner:

- Point, Line or Polygon data types: ESRI file geodatabase feature class (preferred) or as an ESRI shapefile (.shp) zipped and attached with appropriate title
- Raster data types: Raw satellite imagery should be supplied in the vendor specific format.
- Projection as GDA94 coordinate system.

Processed products should be provided as follows:

- For data, uncompressed or lossless compressed formats is required - GeoTIFF or Imagine IMG is the first preference, then JPEG2000 lossless and other simple binary+header formats (ERS, ENVI or BIL).
- For natural/false/pseudo colour RGB imagery:
    - If the imagery is already mosaiced and is ready for display then lossy compression is suitable (JPEG2000 lossy/ECW/MrSID). Prefer 10% compression, up to 20% is acceptable.
    - If the imagery requires any sort of processing prior to display (i.e. mosaicing/colour balancing/etc) then an uncompressed or lossless compressed format is required.

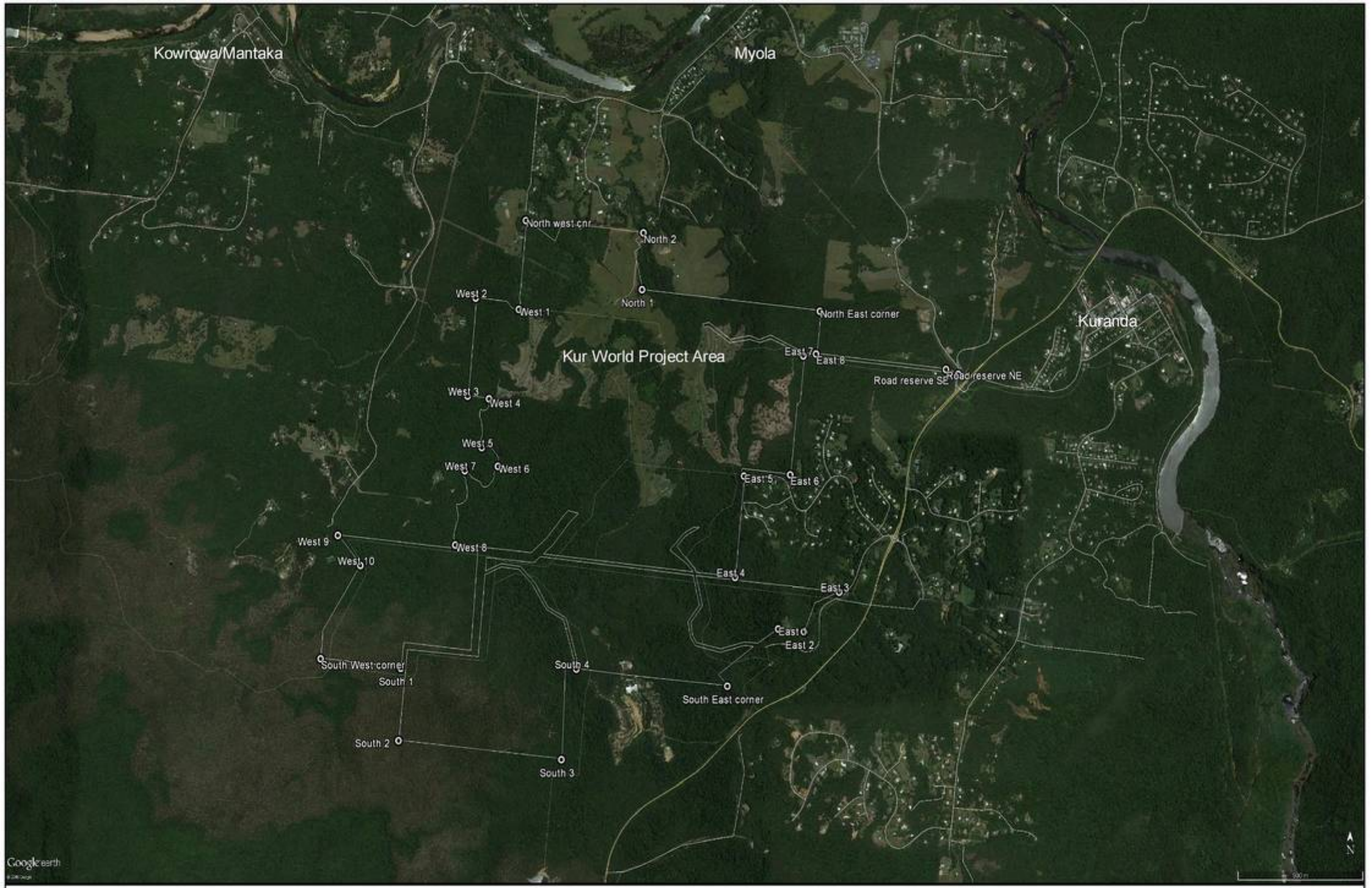
Metadata or 'information about data' will be produced for all spatial data and will be compliant with ANZLIC Metadata Profile. (http://www.anzlic.org.au/policies_guidelines#guidelines).

The Department's preferred method is using ANZMet Lite, however the Department's Service Provider may use any compliant system to generate metadata.

All data will be provide under a Creative Commons license (http://creativecommons.org/licenses/by/3.0/au/)

ATTACHMENT A:
PROJECT COORDINATES

- Astrebla Ecological Services



Project area and coordinate locations

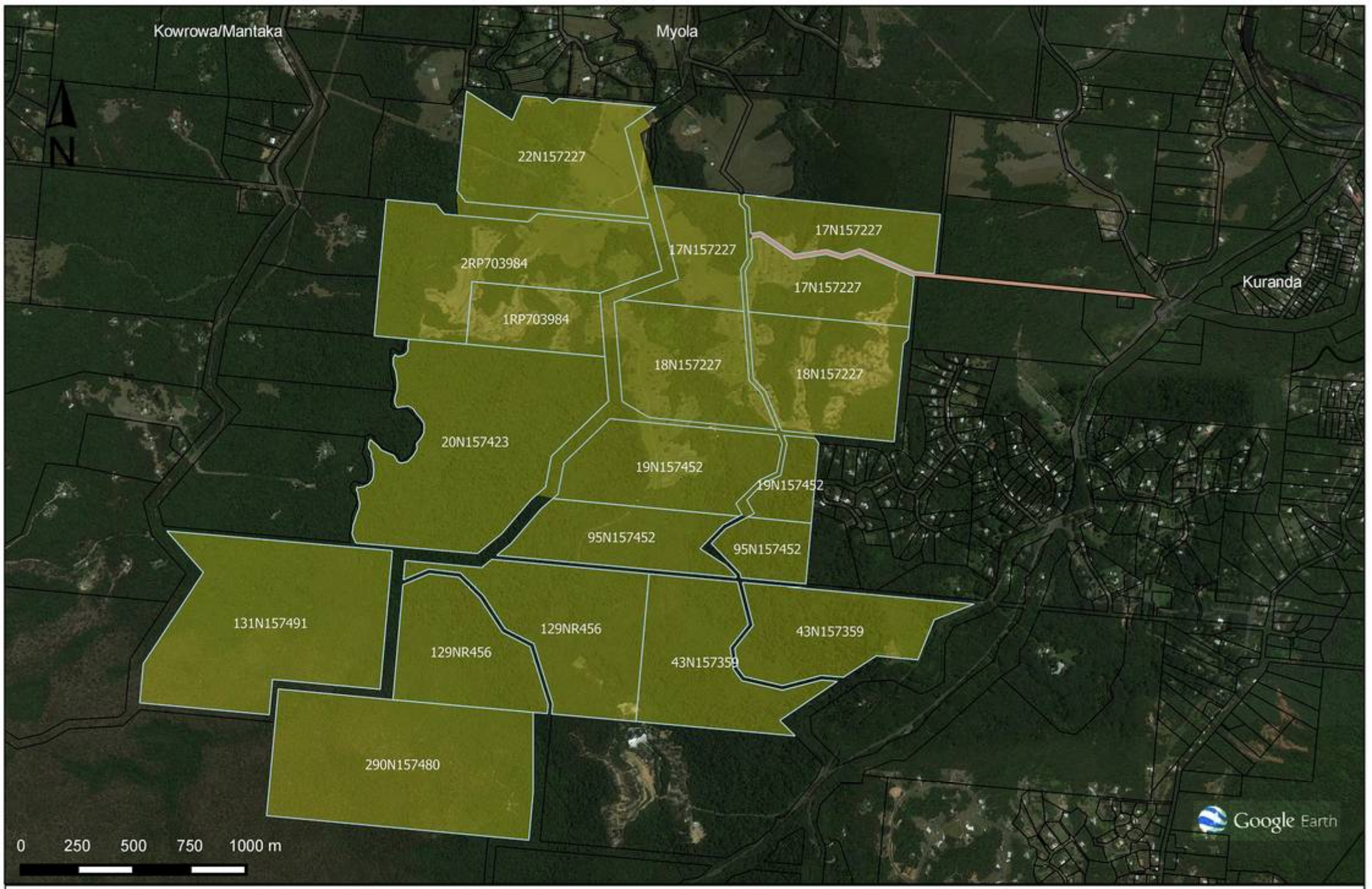
Attachment A

Imagery © Google. Taken 23/10/2015. This image reproduced at 1:15,000 when printed at A4.
Mareeba Shire DCDB © State of Queensland (Department of Natural Resources and Mines) [2015]
GIS operator Simon Danielsen, Astrebla Ecological Services, 17/04/16.

Prepared by ASTREBLA ECOLOGICAL SERVICES

ATTACHMENT B:
PROJECT AREA AND SUBJECT LOTS

- Astrebla Ecological Services



Project area and subject lots

Legend

Project Area inc. road closures | Mareeba Shire Council DCDB | Road proposed for construction

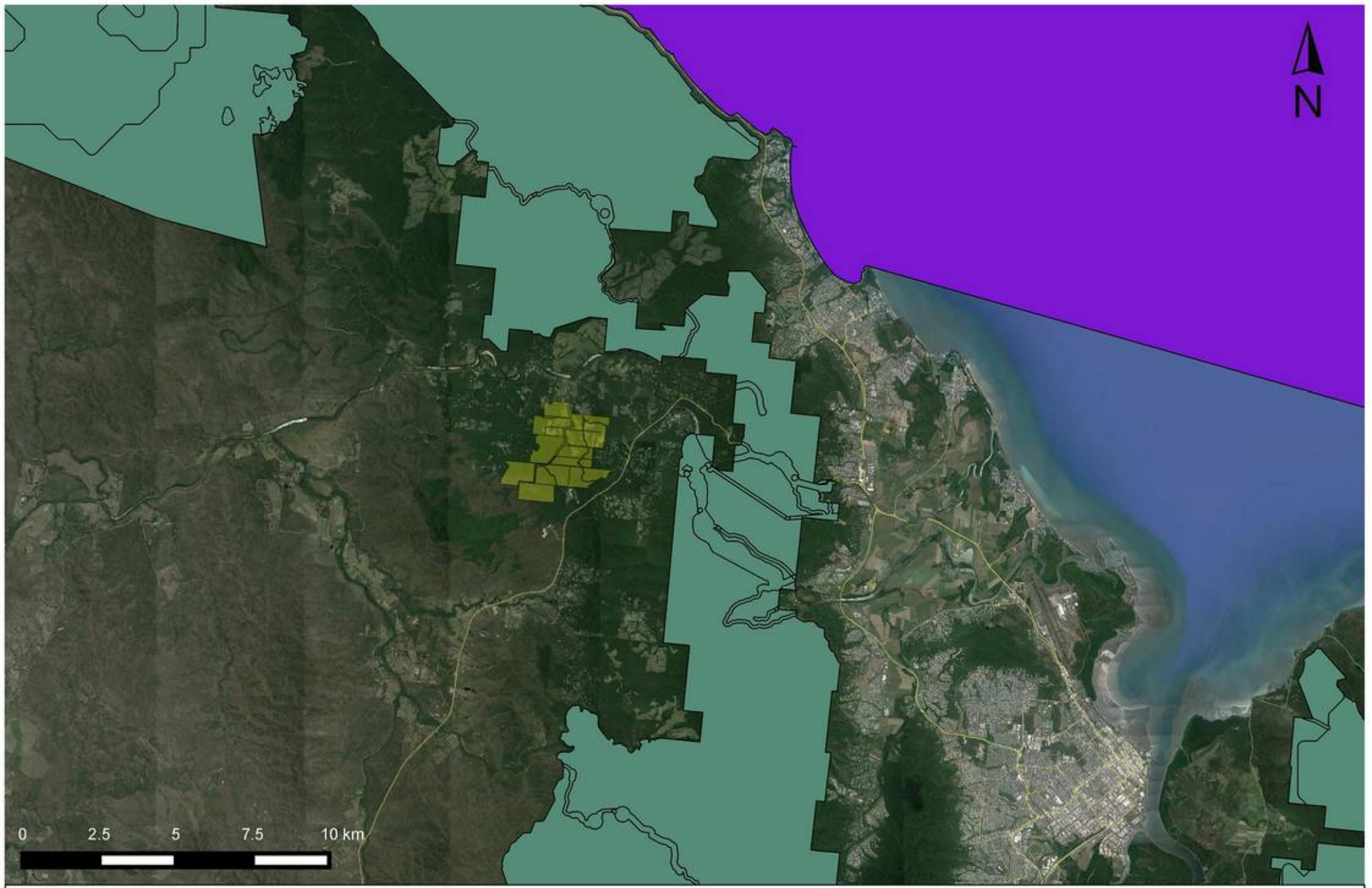
Figure 2

Imagery:© Google. Taken 23/10/2015. This image reproduced at 1:15,000 when printed at A4.
Mareeba Shire DCDB © State of Queensland (Department of Natural Resources and Mines) [2015]
GIS operator Simon Danielsen, Astrebla Ecological Services, 17/04/16.

Prepared by ASTREBLA ECOLOGICAL SERVICES

ATTACHMENT C:
WORLD HERITAGE AREAS

- Astrebla Ecological Services



World Heritage Areas

Imagery:© Google. Taken 23/10/2015. This image reproduced at 1:110,000 when printed at A4.
Wet Tropics WH boundary data © Wet Tropics World Heritage Management Authority, 2015.
Great Barrier Reef WH boundary data © Great Barrier Reef Marine Park Authority 2014. Updated data available at http://www.gbrmpa.gov.au/geoportal/.

Legend

- Project Area inc. road closures
- Great Barrier Reef World Heritage Area
- Wet Tropics World Heritage Area

Attachment C

Prepared by ASTREBLA ECOLOGICAL SERVICES

ATTACHMENT D:
EPBC PROTECTED MATTERS SEARCH

Australian Government

Department of the Environment

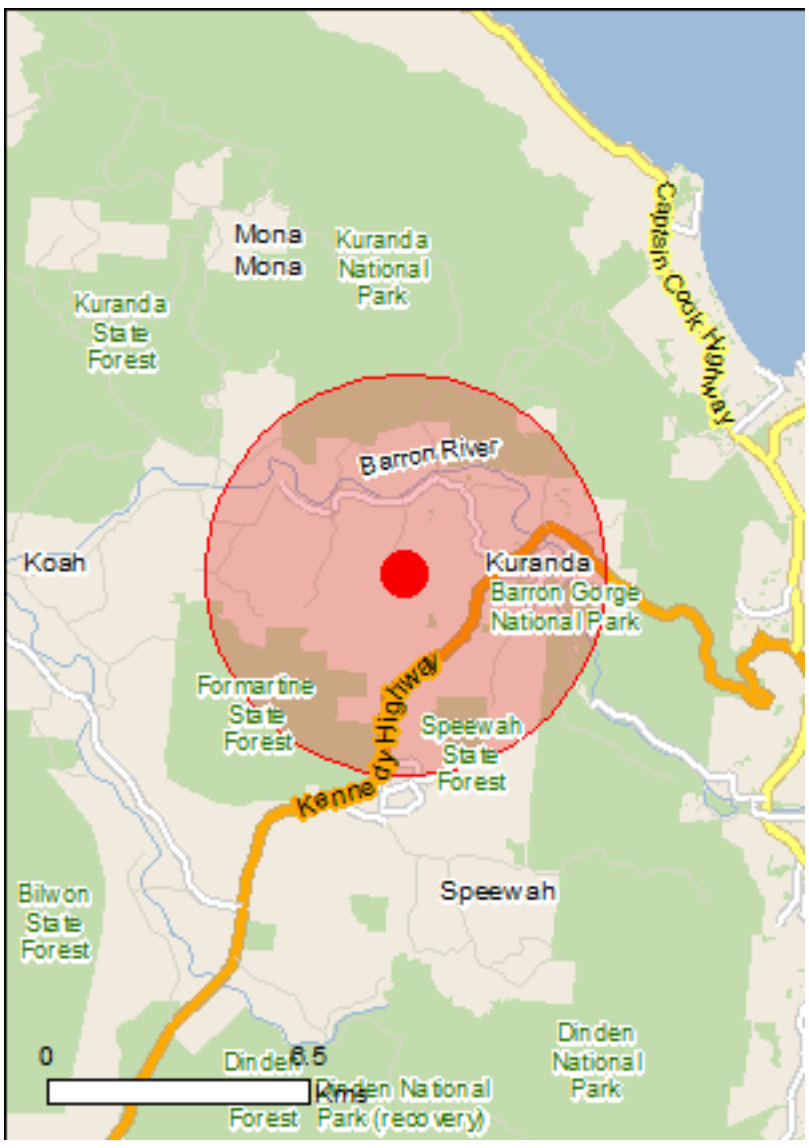
EPBC Act Protected Matters Report

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.

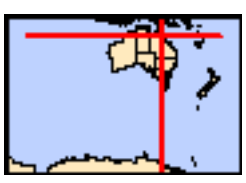
Report created: 16/04/16 18:54:29



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

Coordinates

Buffer: 5.0Km



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:	2
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	37
Listed Migratory Species:	17

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:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	4
Regional Forest Agreements:	None
Invasive Species:	30
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
Wet Tropics of Queensland	QLD	Declared property

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
Wet Tropics of Queensland	QLD	Listed place
Indigenous		
Wet Tropics World Heritage Area (Indigenous Values)	QLD	Within listed place

Listed Threatened Ecological Communities		[Resource Information]

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.

Name	Status	Type of Presence
Broad leaf tea-tree (Melaleuca viridiflora) woodlands in high rainfall coastal north Queensland	Endangered	Community may occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Casuarius casuarius johnsonii		
Southern Cassowary (Australian), Southern Cassowary [25986]	Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus		
Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Tyto novaehollandiae kimberli		
Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area
Fish		
Melanotaenia eachamensis		
Lake Eacham Rainbowfish [26185]	Endangered	Species or species habitat may occur within area
Frogs		
Litoria dayi		
Australian Lace-lid, Lace-eyed Tree Frog [86707]	Endangered	Species or species habitat likely to occur within area
Litoria myola		
Kuranda Tree Frog [82063]	Endangered	Species or species habitat known to occur within area
Litoria nannotis		
Waterfall Frog, Torrent Tree Frog [1817]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Litoria nyakalensis Mountain Mistfrog [1820]	Critically Endangered	Species or species habitat likely to occur within area
Litoria rheocola Common Mistfrog [1802]	Endangered	Species or species habitat known to occur within area
Mammals		
Dasyurus hallucatus Northern Quoll [331]	Endangered	Species or species habitat likely to occur within area
Dasyurus maculatus gracilis Spotted-tailed Quoll or Yarri (North Queensland subspecies) [64475]	Endangered	Species or species habitat likely to occur within area
Hipposideros semoni Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Endangered	Species or species habitat may occur within area
Mesembriomys gouldii rattoides Black-footed Tree-rat (north Queensland) [87620]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat may occur within area
Pteropus conspicillatus Spectacled Flying-fox [185]	Vulnerable	Species or species habitat known to occur within area
Rhinolophus robertsi Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat [87639]	Endangered	Species or species habitat known to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheathtail Bat (Qld) [66889]	Critically Endangered	Species or species habitat likely to occur within area
Plants		
Alloxylon flammeum Red Silky Oak, Queensland Waratah, Tree Waratah [56400]	Vulnerable	Species or species habitat likely to occur within area
Archontophoenix myolensis Myola Palm, Myola Archontophoenix [64500]	Endangered	Species or species habitat known to occur within area
Cajanus mareebensis [8635]	Endangered	Species or species habitat may occur within area
Canarium acutifolium [23956]	Vulnerable	Species or species habitat likely to occur within area
Crepidomanes endlicherianum Middle Filmy Fern [65889]	Endangered	Species or species habitat likely to occur within area
Dendrobium bigibbum Cooktown Orchid [10306]	Vulnerable	Species or species habitat may occur within area
Diplazium cordifolium [15585]	Vulnerable	Species or species habitat likely to occur within area
Diplazium pallidum [12764]	Endangered	Species or species habitat known to occur

Name	Status	Type of Presence
		within area
Durabaculum mirbelianum an orchid [78703]	Endangered	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Phaius pictus [22564]	Vulnerable	Species or species habitat likely to occur within area
Phalaenopsis rosenstromii Native Moth Orchid [15984]	Endangered	Species or species habitat likely to occur within area
Phlegmariurus filiformis Rat's Tail Tassel-fern [86551]	Endangered	Species or species habitat likely to occur within area
Polyscias bellendenkerensis [7237]	Vulnerable	Species or species habitat likely to occur within area
Sauropus macranthus [13189]	Vulnerable	Species or species habitat likely to occur within area
Vappodes lithocola Dwarf Butterfly Orchid, Cooktown Orchid [78893]	Endangered	Species or species habitat may occur within area
Vappodes phalaenopsis Cooktown Orchid [78894]	Vulnerable	Species or species habitat may occur within area
Zeuxine polygonoides Velvet Jewel Orchid [46794]	Vulnerable	Species or species habitat likely to occur within area
Sharks		
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely 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		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Marine Species		
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Pristis pristis Largetooth Sawfish, Freshwater Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur

Name	Threatened	Type of Presence
		within area
Hirundo rustica Barn Swallow [662]		Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Pandion haliaetus Osprey [952]		Species or species habitat 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

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		
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur

Name	Threatened	Type of Presence within area
[Ardea ibis](#) Cattle Egret [59542]		Species or species habitat may occur within area
[Cuculus saturatus](#) Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
[Haliaeetus leucogaster](#) White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
[Hirundapus caudacutus](#) White-throated Needletail [682]		Species or species habitat known to occur within area
[Hirundo rustica](#) Barn Swallow [662]		Species or species habitat likely to occur within area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area
[Monarcha trivirgatus](#) Spectacled Monarch [610]		Species or species habitat known to occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area
[Rostratula benghalensis (sensu lato)](#) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Reptiles		
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Barron Gorge	QLD
Jumrum Creek	QLD
Kuranda	QLD
Myola Palm	QLD

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 Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Plants		
Andropogon gayanus Gamba Grass [66895]		Species or species habitat likely to occur within area
Annona glabra Pond Apple, Pond-apple Tree, Alligator Apple, Bullock's Heart, Cherimoya, Monkey Apple, Bobwood, Corkwood [6311]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		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
Lepidodactylus lugubris Mourning Gecko [1712]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area

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.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

-16.82301 145.605

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
-Parks and Wildlife Commission NT, Northern Territory Government
-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, Atherton and Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-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.

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