



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8414/1
Permit Holder:	WRS Bioproducts Pty Ltd
Duration of Permit:	10 June 2020 to 10 June 2025

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of aquaculture (algae farm).

2. Land on which clearing is to be done

Lot 267 On Deposited Plan 93179, Gap Ridge

Lot 300 On Deposited Plan 49873, Gap Ridge

3. Area of Clearing

The Permit Holder must not clear more than 115.39 hectares of native vegetation within the area hatched yellow on attached Plan 8414/1.

PART II – MANAGEMENT CONDITIONS

4. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

5. Weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no weed-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

6. Erosion management

The Permit Holder shall not clear native vegetation unless development commences within three months of the authorised clearing being undertaken.

PART III - RECORD KEEPING AND REPORTING

7. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) in relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the date that the area was cleared;
 - (iii) the size of the area cleared (in hectares).; and
 - (iv) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 4 of this Permit.
 - (v) actions taken to minimise the risk of the introduction and spread of *weeds* in accordance with condition 5 of this Permit.

8. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before the 31 December each year for the life of this permit, a written report of records required under condition 7 of this Permit.
- (b) Prior to 10 June 2022, the Permit Holder must provide to the *CEO* a written report of records required under condition 7 of this Permit where these records have not already been provided under condition 8(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

CEO: means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*;
or
- (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or not indigenous to the area concerned.

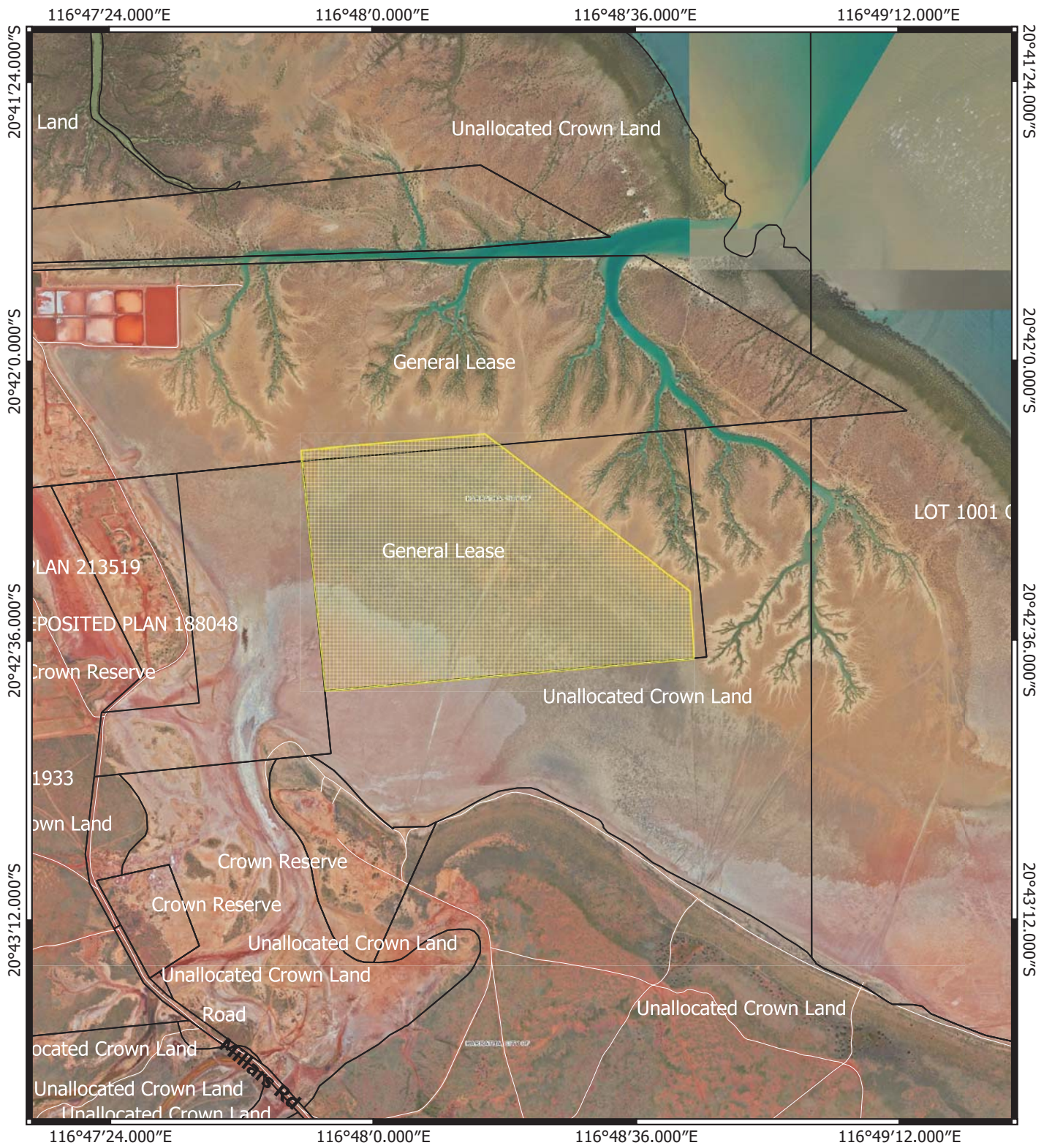


Richard Newman
DIRECTOR
NATIVE VEGETATION PROTECTION



*Officer delegated under Section 20
of the Environmental Protection Act 1986*

11 May 2020

Plan 8414/1



Legend

-  CPS areas approved to clear
-  Cadastre

base layers

Road Centrelines

Local Government Authority (LGA) Boundaries (LGATE-233)

N



0 250 500 750 1000 m




11 May 2020

Richard Newman
 Direction Native Vegetation Protection

Officer delegated under section 20 of the
 Environmental Protection Act 1986



GOVERNMENT OF
 WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 8414/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: WRS Bioproducts Pty Ltd
Application received date: 14 March 2019

1.3. Property details

Property: Lot 267 On Deposited Plan 93179
Lot 300 On Deposited Plan 49873
Local Government Authority: City of Karratha
Localities: Gap Ridge

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
115.39 hectares (originally 150.95 hectares of clearing proposed)	-	Mechanical Removal	Aquaculture (algae farm)

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 11 May 2020

Reasons for Decision:

The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is not likely to be at variance to any of the clearing principles.

Based on the assessment, the Delegated Officer determined that:

- the application area may provide suitable habitat for the Priority 3 listed fauna species Airlie Island Ctenotus (*Ctenotus angusticeps*);
- the proposed clearing may result in the spread of weeds into the surrounding vegetation; and
- the proposed clearing may cause appreciable land degradation in the form of erosion between clearing and development.

The Delegated Officer determined that the application area is unlikely to comprise significant habitat for the Airlie Island Ctenotus, given that this species occurs over a significant portion of the coastline of northern Western Australia, and the comparatively small area of clearing proposed.

To minimise the impact of erosion, a condition has been placed on the permit requiring development to commence within three months of clearing.

To minimise weed impacts, a condition has been placed on the permit requiring the implementation of weed hygiene measures.

The Delegated Officer decided to grant a clearing permit subject to weed and erosion management conditions.

2. Site Information

Clearing Description

This application is for the clearing of 115.39 hectares of native vegetation within Lot 267 on Deposited Plan 93179 and Lot 300 on Deposited Plan 49873, for the purpose of developing a commercial scale algae farming operation and the associated infrastructure. The application area is situated to the immediate west of Nickol Bay. The proposed clearing will be undertaken in two stages.

The algae farming operation consists of four parts – cultivation, harvesting, separation and processing of the algae (GHD 2019). The algae will be cultivated in shallow open ponds where the water will be maintained at a high salinity by utilising waste bitterns sourced from the existing Dampier Salt Operations (GHD 2019). After cultivation, water-containing algae will be pumped from the ponds to a harvesting plant (GHD 2019). The algae will be harvested and dried before being sent to an offsite processing facility (GHD 2019). The processed algae will be used to

create food products, dietary supplements and protein-rich animal feed for use in agriculture (GHD 2019).

This application originally proposed the clearing of 150.95 hectares of native vegetation to facilitate the establishment of the algae farming operation. The applicant agreed to reduce the application area to 115.95 hectares of clearing to prevent the proposed clearing from intercepting nearby mangrove communities.

Vegetation Description The application area is mapped as occurring within vegetation complex 127, defined as bare areas and mud flats (Shepherd et al 2001).

Vegetation Condition A review of aerial photography of the application area has determined the vegetation present in the application area meets the following condition rankings (Trudgen 1988):

- Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement; to
- Completely degraded: Areas that are completely or almost completely without native species in the structure of their vegetation.

Based on the review of aerial photography, the majority of the application area meets the 'Excellent' condition threshold, with the areas found to be in 'Completely Degraded' condition comprising small areas disturbed for the creation of access tracks.

Soil type The application area is mapped as occurring within the Littoral Land System (Department of Primary Industry and Regional Development 2017). This land system is defined as comprising bare coastal mudflats with mangroves on seaward fringes, samphire flats, sandy islands, coastal dunes and beaches (Department of Primary Industry and Regional Development 2017).

Comments The local area referred to in this report is the area within a 20 kilometre radius of the application area.

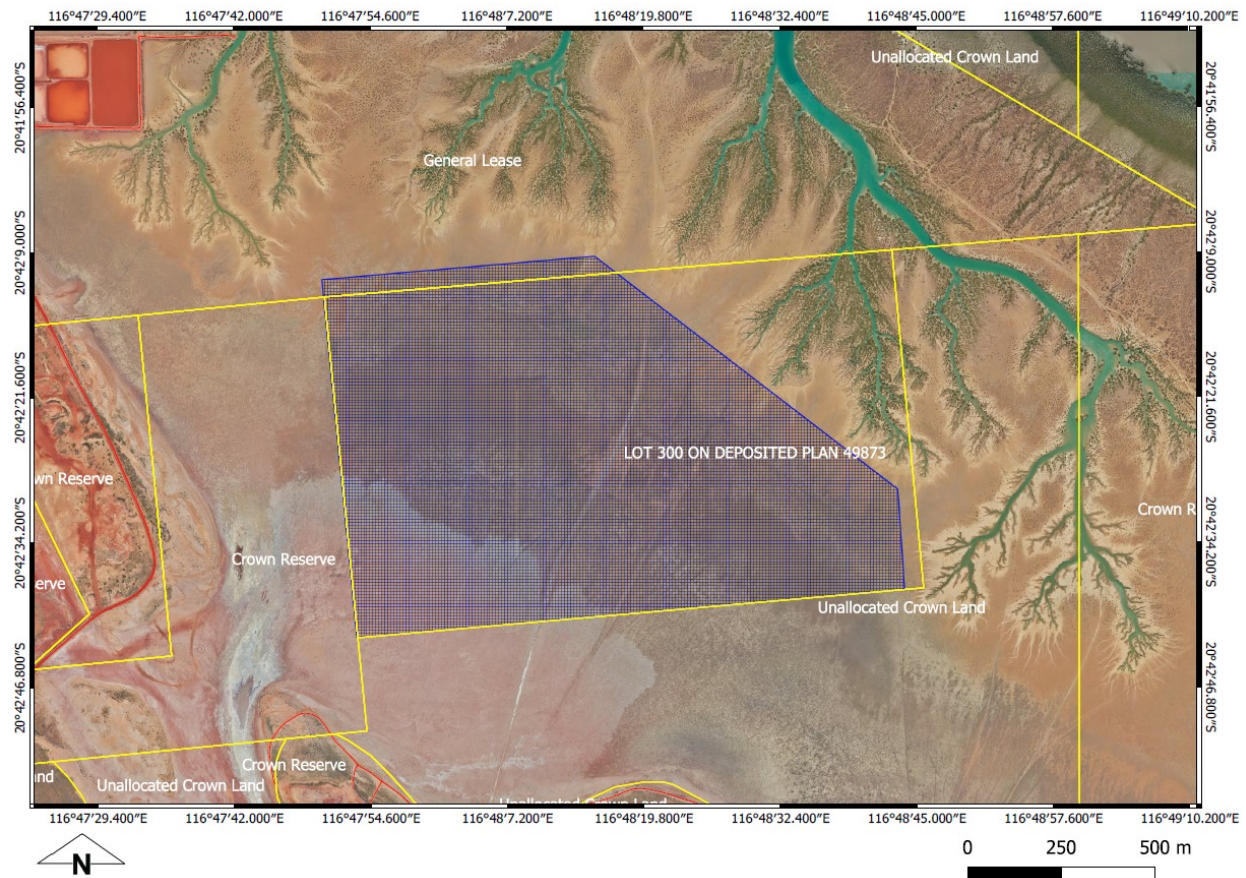


Figure 1: The application area (shown in blue) in comparison to the local lot boundaries (shown in yellow).

3. Minimisation and mitigation measures

As discussed in Section 2 of this report, the applicant reduced the extent of the application area from 150.95 hectares of clearing to 115.39 hectares of clearing to prevent the application area from intercepting nearby mangrove communities. This reduction in the extent of the application area has established a minimum buffer distance of approximately 16 metres between the application area and the tributaries which support the nearby mangrove communities.

The applicant has also acknowledged the risk of water and wind erosion impacts as a consequence of vegetation clearing (GHD 2019). The applicant will manage these impacts by only clearing the minimum amount necessary to construct the proposed algae farm and stabilising and rehabilitating cleared areas that are no longer required (GHD 2019).

4. Assessment of application against clearing principles

A review of available databases determined eight flora species of conservation significance have been recorded in the local area. These comprise seven Priority 3 flora species and one Priority 4 flora species. No occurrences of the above species have been recorded within the application area. A review of these species habitat requirements determined that the application area does not comprise suitable habitat for the flora species of conservation significance. No adverse impacts to the conservation status or distribution of any flora species of conservation significance are anticipated to result from the proposed clearing.

A review of available databases determined that 57 fauna species of conservation significance have been recorded within the local area (Department of Biodiversity, Conservation and Attractions 2007-). When marine species and species whose habitat requirements are not met by the application area are taken into consideration, the application area may provide suitable habitat for 35 fauna species of conservation significance. Of these, 34 comprise migratory and marine avifauna species which are not anticipated to be dependant on the habitats of the application area for their survival.

The application area may provide suitable habitat for the Priority 3 listed Airlie Island Ctenotus (*Ctenotus angusticeps*). A review of available databases determined this species occurs along the coastline of northern Western Australia within the boundaries of the Shire of Ashburton to the Shire of Broome, as well as occurring on offshore islands (Department of Biodiversity, Conservation and Attractions 2007-). On the mainland, this species generally inhabits the landward fringe of salt marsh communities in samphire shrubland or marine couch grassland in the intertidal zone along mangroves and mangrove margins, however, subtle differences in vegetation and topography exist among sites where the species has been recorded (Department of the Environment and Energy 2019). The Airlie Island Ctenotus is strongly associated with samphire species *Tectornia halocnemoides* subsp. *tenuis* and *Suaeda arbusculoides*, which occur on clayey soils, and mixed herb and grass cover of *Muellerolimon salicorniaceum* and *Sporobolus virginicus*, which occur on sandy soils (Department of the Environment and Energy 2019). The closest recorded occurrence of this species is situated 10.8 kilometres east south-east of the application area (Department of Biodiversity, Conservation and Attractions 2007-). When the environment of the application area is considered, the area may comprise suitable habitat for this species. The application area is however unlikely to comprise significant habitat for this species, given the knowledge that this species occurs over a significant area of the coastline of northern Western Australia, and the comparatively small area of clearing proposed.

The clearing under application has the potential to spread weeds into the surrounding vegetation with potentially adverse impacts to the habitat of flora and fauna species of conservation significance. Weed management measures should adequately mitigate this risk.

A review of available databases determined the application area is situated the following distances from recorded occurrences of ecological communities of conservation significance:

- approximately one kilometre east of a recorded occurrence of the Priority 1 'Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays (Roebourne Plains gilgai grasslands)' priority ecological community (PEC);
- approximately 1.9 kilometres north of a recorded occurrence of the Priority 3 'Horseflat Land System of the Roebourne Plains' PEC; and
- approximately 8.8 kilometres south east of a recorded occurrence of the Priority 1 'Burrup Peninsula rock pile communities' PEC.

Given the separation distances between the application area and the above ecological communities, the proposed clearing is not anticipated to result in adverse impacts to these ecological communities of conservation significance. A review of aerial photography of the local area determined the application area does not comprise part of an ecological linkage linking the above ecological communities to each other, or to other stands of remnant native vegetation. The proposed clearing is unlikely to adversely impact species diversity or recruitment in these ecological communities of conservation significance.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). The application area forms part of the 'Pilbara' IBRA region. This IBRA region retains over 99 per cent of its pre-European clearing extent (Government of Western Australia 2019). Vegetation association 127 also currently retains over 96 per cent of its pre-European clearing extent (Government of Western Australia 2019). The application area does not represent a remnant of native vegetation within an extensively cleared landscape.

A review of available databases and aerial photography of the application area has determined that no watercourses or wetlands exist within the application area. No vegetation growing in association with surface water features will be impacted by the proposed clearing.

A review of available databases determined the application area is situated within the Littoral Land System (Department of Primary Industry and Regional Development 2017). The information provided in support of this clearing permit application by

GHD (2019) advised that the application area is located within an area with a high to moderate risk of acid sulphate soils occurring within 3 metres of the natural surface. These soils could be disturbed by most land development activities (GHD 2019). However, the project will involve the construction of walls and the filling of the site to create the proposed algae cultivation ponds (GHD 2019). Therefore, minimal to no disturbance of the acid sulphate soils profiles is expected (GHD 2019). In addition, the majority of the application area's extent will comprise the algae cultivation ponds (GHD 2019) and therefore the majority of the application area will be under water once the algae farm is operational. This will limit the availability of oxygen to any acid sulphate soil profiles present in the application area and consequently, it is anticipated that these conditions will inhibit the acidification of soils within the application area.

Advice received from the Office of the Commissioner of Soil and Land Conservation (CSLC) states that approximately 70 per cent of the Littoral Land System is tidal flats which support no vegetation (Department of Primary Industry and Regional Development 2019). The coastal dunes are highly susceptible to erosion if plant cover is lost through disturbance and the mangrove communities are significant habitats (Department of Primary Industry and Regional Development 2019). The advice received from the CSLC also noted that the proposed clearing will be kept to the minimum necessary and concluded that the proposed clearing is not likely to result in any significant land degradation impacts (Department of Primary Industry and Regional Development 2019). To ensure land degradation impacts do not result from the proposed clearing activities, the construction of the algae farm infrastructure should commence shortly after the completion of the clearing to minimise potential erosion impacts.

Given the absence of surface water features within the application area and the knowledge the application area will be utilised to accommodate algae pond infrastructure which will prevent surface water flows through the cleared area, the proposed clearing is not anticipated to result in adverse impacts to the quality of surface water flows. A review of available databases determined the groundwater resources underlying the application area have a total dissolved solids content of 1,000 to 3,000 milligrams per litre. Given the knowledge that the Pilbara IBRA Region retains over 99 per cent of its pre-European clearing extent and in consideration of the comparatively small extent of the application area, the proposed clearing is unlikely to adversely impact the water quality found in local groundwater resources.

A review of available databases determined a number of conservation reserves are situated within the local area, with the closest conservation reserve to the application area being the Murujuga National Park situated approximately 3.5 kilometres north-west of the application area. Given the separation distances between the application area and conservation reserves, the proposed clearing is not anticipated to result in adverse impacts to any conservation reserve. A review of aerial photography of the local area determined the application area does not comprise part of an ecological linkage linking conservation reserves to each other, or other stands of remnant vegetation. The proposed clearing is not anticipated to adversely impact species diversity or recruitment within any conservation reserve.

A review of available databases determined the application area is situated within the Port Hedland Coast Catchment. This catchment has an area of approximately 7,443 square kilometres. A review of local topographic contours determined the application area is situated within an environment of consistent elevation. When the topography of the application area and its surrounds is considered alongside the absence of surface water features within the application area, the proposed clearing is unlikely to alter surface water flows into the application area or its immediate surrounds. When the above is considered, the proposed clearing is not anticipated to adversely impact the flooding regime of the local area.

Given the above, the proposed clearing is not likely to be at variance to any of the clearing principles.

Planning instruments and other relevant matters

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 3 May 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

On 8 July 2016 the Department of Environment Regulation's (DER) (now the Department of Water and Environment Regulation) Contaminated Sites Team provided a Basic Summary of Records report for Lot 267 on Deposited Plan 93179. This summary advised the above Lot was reported to the DER as per reporting obligations under Section 11 of the *Contaminated Sites Act 2003* (the Act) and was first classified under Section 13 of this Act based on information submitted to DER in February 2009. The above Lot has been classified again under Section 13 of the Act to reflect additional technical information submitted to DER in April 2015. The Lot was reported under this Act to reflect its long term use as a purpose built evaporation facility for solar salt manufacturing, which includes areas such as landfills, workshops, fuel farms, plant and support facilities and effluent disposal areas. A series of contamination assessments were carried out between April 2009 and February 2015. The assessments described several potential areas of concern, described as 'Area 1' to 'Area 30'. The majority of these areas are collectively known as the 'Main Salt Production Facility', located on the mainland between Dampier and Karratha.

The Basic Summary of Records report notes that a disposal channel for bitterns (a waste product from salt disposal, typically rich in metal salts) is present in the area and discharges into Nickol Creek. Surface water investigations carried out in 2010 did not identify evidence of contamination in this area, but further sampling was recommended and had not yet been carried out at the time of this report's publication. No sediment sampling has been carried out in this area and the quality of sediments remains unknown at the time of the Basic Summary of Records report publication.

The Basic Summary of Records report recommended that the site management plan dated February 2015 be applied to Lot 267. Hydrocarbons are known to be present in the groundwater at locations within this Lot. Groundwater abstraction is not permitted other than for analytical testing or remediation. No new buildings should be constructed without assessment for potential vapour intrusion risks and it was recommended that a site-specific health and safety plan be developed for any intrusive excavations. In all other areas, in accordance with Department of Health advice, if groundwater is being or is proposed

to be abstracted, the DER recommended that analytical testing should be carried out to determine whether the groundwater is suitable for its intended use.

Concentrations of contaminants have been found to exceed adopted assessment levels at Lot 267. A tier 1 screening risk assessment has therefore indicated that further investigation is required to determine the risk to the environment and environmental values. Based on the information provided, the site appears suitable for continued commercial and industrial use, but may not be suitable for more sensitive land uses (such as residential housing). As there are grounds to indicate possible contamination of the site and surface water, sediment and groundwater contamination have not been fully investigated, Lot 267 is classified as 'possibly contaminated - investigation required'.

On 23 May 2019 the City of Karratha (the City) advised that an application for development approval for this project had been received by the City and that DWER had been consulted regarding this development approval application. In relation to this clearing permit application, the City noted that the application area includes mangrove communities and riparian corridors cross the western entry over Lot 267. The City requested that the impact on mangrove communities within the application area be avoided wherever possible, and that the impact on riparian corridors that cross the application area be minimised. The City also articulated its expectation that this application will be referred to the Department of Biodiversity, Conservation and Attractions (DBCA) to consider the environmental impacts of the proposed clearing. A review of available databases undertaken during the course of this clearing permit assessment determined that no surface water features or their associated riparian corridors pass through the amended application area. As discussed in Section 3 of this report, the reduction to the application area will prevent the proposed clearing from intercepting the nearby mangrove communities. The Department considers that sufficient information was available to support its assessment of the proposed clearing and no further advice is required from the DBCA to support this assessment.

On 17 April 2020, the applicant provided DWER the granted Development Approval from City of Karratha to commence or carry out the development (WRS Bioproducts, 2020).

The application area is located within the Pilbara Ground Water Area and the Pilbara Surface Water Area, as proclaimed under the *Rights in Water and Irrigation Act 1914*. Any groundwater abstraction in this proclaimed area is subject to licensing by the Department, other than the supply from the shallow water table (superficial aquifer) for domestic and non-intensive stock watering purposes. Any taking or diversion of surface water in this proclaimed area (whether by direct pumping, construction of a dam, or excavation) can be subject to licensing. Any interference with watercourses (such as the construction of a dam or crossing, or excavation of the watercourse) may also require a permit to interfere with the watercourses bed or banks from the Department. The availability of water resources can be viewed at the Department's public water register at <https://maps.water.wa.gov.au/#/webmap/register>. The applicant is advised to contact the Department's Joondalup Office to determine any licensing and permit requirements.

5. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Biodiversity, Conservation and Attractions (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>.
- Department of the Environment and Energy (2019) *Ctenotus angusticeps* — Northwestern Coastal Ctenotus, Airlie Island Ctenotus. Species Profile and Threats Database. Available from: http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=25937.
- Department of Primary Industry and Regional Development (2017). NRInfo Digital Mapping. Department of Primary industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/>.
- Department of Primary Industry and Regional Development (2019) CPS 8414/1 – WRS Bioproducts Pty Ltd – Application to clear native vegetation within Lot 267 on Deposited Plan 93179 and Lot 300 on Deposited Plan 49873, Gap Ridge, City of Karratha. Maintained on DWER's digital archive system (A1788858).
- GHD (2019) WRS Bioproducts Pty Ltd. WRS Clearing Permit application, Clearing Permit Supporting Report. Prepared in March 2019.
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics (formerly the CAR Reserve Analysis): Full Report. Remote Sensing and Spatial Analysis Program. Biodiversity and Conservation Science. Department of Biodiversity, Conservation and Attractions (DBCA). Published March 2019.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Trudgen, M.E. (1988). A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.
- Western Australian Herbarium (1998-) FloraBase—the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/>.
- WRS Bioproducts Pty Ltd (2020) Correspondence regarding granted Development Approval from City of Karratha. DWER ref. A1885558.

GIS Databases:

- Aboriginal Sites of Significance;
- Department of Biodiversity, Conservation and Attractions, Managed Tenure;
- Geomorphic Wetlands Management Category;
- Hydrography Linear – Linear;
- Hydrography WA 250K – Surface Water Lines;
- Pre-European Vegetation dataset;
- SAC bio datasets;
- Topographic Contours – Statewide;
- TPFL July 2019;
- WA Herb Data July 2019; and
- WA TEC PEC Boundaries.