Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 835/2

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Straits Salt Pty Ltd - Yannarie Salt**

1.3. Property details

Property: E08/1397
E08/1398
E08/1399
E08/1400

Local Government Area: Shire Of Ashburton

Colloquial name: Yannarie Salt Project – geotechnical investigations

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.1		Mechanical Removal	Miscellaneous

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
GIS Database records show the broad vegetation classifications of the area as Beard Vegetation Associations 43: Low forest; thicket; mangroves; and 670: Hummock grasslands, shrub steppe; scattered shrubs over *Triodia basedowii* (GIS Database; Shepherd *et al*., 2001). According to Shepherd *et al*., (2001) there is approximately 100% of these vegetation types remaining, with 14.5% and 1.9%, respectively in reserves.	A flora survey of the proposed Yannarie Salt Project area was conducted by Biota Environmental Sciences in August 2004. A total of 192 plant species were recorded from 41 vegetation quadrats (each 50m x 50m), within the project area. Eleven vegetation types were identified, representing three broad groupings associated with different landforms: 1. Saline flats; 2. Coastal flats and dune systems; 3. Claypans. Seven vegetation types were identified within the areas proposed for preliminary geotechnical investigations: (1a) Island and coastal margins and inland saline flats. Low open heath of various Samphire species (*Halosarcia*), dominated by *H. indica*. Excellent Condition. (approx. 18% of the area applied to clear); (2a) Eroded edge of the Hinterland. *Acacia sclerosperma* over *A. stellaticeps* over *Triodia epactia* and *Cenchrus ciliaris* (Buffel Grass) on eroded slopes. Very Good to Very Poor Condition. (approx. 1% of the application area); (2b) Limestone outcroppings in coastal dunes. *Melaleuca cardiophylla* over *Triodia epactia*. Excellent Condition. (approx. 1.5%); (2c) Dune Swales and Coastal Flats. Open mixed Acacia shrubland over *Triodia epactia*. Excellent Condition apart from isolated areas of Buffel Grass. (approx. 26%); (2d) Semi-consolidated Linear and Parallel Red Sand Dunes. Open shrubland of Acacia, Grevillea, Hakea and *Scaevola* spp., over *Triodia epactia*, ephemeral herbs and	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The application is to clear up to 2.1 ha for drillsites, test pits and access tracks to facilitate preliminary geotechnical investigations for the proposed Yannarie Salt Project. The purpose of the investigations is to confirm the soil conditions underlying areas of proposed infrastructure and to identify source areas for construction materials (Straits Salt, 2005). The proposed work consists of approximately 40 bore holes (approx. 100mm diameter and 5 - 10m deep), 10 small test pits (approx. 3m x 1m), and 45 cone penetrometer tests (a 35mm probe pushed into the soil). The test pits will be located on unvegetated areas within existing clay pans. No drill pads or sumps will be required and bore holes and test pits will be backfilled on completion (Straits Salt, 2005). The area applied to clear is comprised of six separate areas, each of which is linear in shape. Approximately 10% of the total application area falls within pastoral leases (GIS Database). The two smallest application areas fall within the Koordarrie Pastoral Lease, and part of a third area falls within the Yanrey Pastoral Lease. ExistIng Pastoral tracks will be used for access wherever possible. The proposed investigative work is not expected to involve any physical clearing of vegetation (Straits Salt, 2005). However, vehicles will be driven over the vegetation in areas where there are no existing tracks. The vegetation will be damaged, and hence a clearing permit is required.

occasional Buffel Grass. Very Good to Excellent Condition. (approx. 8%);

(3a) Bare Claypans with Fringing Plant Communities. Scattered to low open woodland of *Eucalyptus victrix* and *Melaleuca leiopyxis* over mid-dense hummock grassland of *Triodia epactia*, with occasional Buffel grass. Very Good to Excellent Condition. (approx. 1%);

(4) Saline mudflats - largely devoid of vegetation, except for occasional Samphires. (approx. 44.5% of the application area). (Biota, 2005a).

Access to mangrove areas, if required, will be by helicopter, on foot, or by barge or small boat (Straits Salt, 2005). There will be no clearing of any mangroves.

Permit 835/1 has been amended to 835/2 to extend the permit date by four years. The original permit was granted on 1 June 2006, and the permit was valid from 1 July 2006 to 31 July 2007. Permit 835/2 has been amended to expire on 31 July 2011 to provide maximum flexibility during the environmental studies period of the project.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is not likely to be at variance to this Principle

The proposed geotechnical investigative work is not expected to involve any physical clearing of vegetation (Straits Salt, 2005). However, the vegetation will be damaged by vehicles driving over vegetation to access areas where no existing tracks exist. Access to mangrove areas will be by helicopter, on foot, or by barge or small boat, and no clearing will occur in mangrove habitat (Straits Salt, 2005).

Approximately 45% of the application area comprises saline mudflats (Biota, 2005a), which support minimal vegetation. Access to the mudflats will be by quad bikes which cause minimal ground disturbance (Straits Salt, 2005).

No species of flora or fauna of conservation significance have been recorded within the application area (Biota, 2005a, 2005b; GIS Database), and the areas applied to clear are unlikely to be of higher biodiversity than surrounding areas.

Considering the small size of the application area (2.1 ha) and the relatively minor nature of the proposed geotechnical investigations, the proposed vegetation disturbance is unlikely to have any impact on the biological diversity of the region.

CALM concurs with the findings of DoIR's assessment, and it would appear unlikely that this proposal would be seriously at variance to any of the relevant biodiversity principles based on the small and temporary nature of the proposed geotechnical investigation. CALM considers that the preliminary geotechnical investigation can be managed adequately under conditions imposed by the Department of Industry and Resources and commitments made by the proponent under the environmental management plan associated with this project, to ensure that the proposal does not impose an unacceptable impact on the environment. CALM notes that the majority of the potential environmental impacts associated with this proposal fall out of the scope of the vegetation clearing permit and as such the comments raised by CALM are only relevant to those factors associated with the clearing principles (CALM Advice, 2006).

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology

Biota (2005a)
Biota (2005b)
CALM Advice (2006)
Straits Salt (2005)
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05
- Threatened Fauna - CALM 30/9/05

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal is not likely to be at variance to this Principle

A fauna survey of the proposed Yannarie Salt project area was conducted by Biota Environmental Sciences between 15 August and 24 August 2005. The survey used a combination of fauna trapping and observational survey methods to record vertebrate and invertebrate fauna across the proposed project area. Twenty fauna trapping grids using pitfall traps were established across the survey area. The locations for the trapping grids were selected to represent the fauna habitat types occurring within the project area and any areas of potential conservation significance (Biota, 2005b). A total of 138 species of vertebrate fauna were recorded within the proposed project area. These included 90 bird species, 7 native and 5 introduced mammal species, 34 species of reptile, and 2 species of amphibians. A total of 915 invertebrate specimens were collected, representing 17 orders (Biota, 2005b).

Habitat specific searches were conducted looking for evidence of fauna species of conservation significance occurring within the Yannarie Salt project area (Biota, 2005b). Two fauna species of conservation significance were recorded in the survey: Australian Bustard, *Ardeotis australis* (P4) and one migratory bird; *Merops ornatus*, Rainbow Bee-eater, which is protected under the Japan-Australia Migratory Bird Agreement (JAMBA) (Biota, 2005b). *Merops ornatus* occupies a wide range and is unlikely to be affected by the proposed vegetation disturbance.

A search of relevant databases revealed twenty fauna species of conservation significance which may occur within the Yannarie Salt project area. Of these, the species considered most likely to occur within the project area are the Australian Bustard, *Ardeotis australis* (P4) and the Little North-western Mastiff Bat *Mormopterus loriae coburgiana* (P1) (Biota, 2005b).

Ardeotis australis (P4) was recorded during the fauna survey in Triodia grassland on Simpson Island, and was considered likely to occur in similar habitats throughout the project area (Biota, 2005b). This species occurs over much of Western Australia, and is unlikely to be impacted by the small amount of proposed vegetation disturbance.

Mormopterus loriae coburgiana is found along the Western Australian coastline, from Derby to Exmouth Gulf, where it is known to roost in mangroves (Biota, 2005b). As there will be no clearing of mangroves, this species is unlikely to be impacted by the proposed vegetation disturbance.

The clearing application area covers a very small area within the overall fauna survey area. Three main habitat types occur within the clearing permit application area: 1) saline flats; 2) coastal flats and dune systems; and 3) claypans (Biota, 2005a). Approximately 45% of the application area comprises saline mudflats. The mudflats are devoid of vegetation except for occasional scattered Samphires (Biota, 2005a), providing limited habitat for fauna. No fauna species of conservation significance were recorded within the clearing permit application area (Biota, 2005b).

Approximately ten percent of the application area falls within Pastoral Leases, which have a long history of disturbance from grazing (GIS Database). The diversity of vegetation and potential fauna habitats in these areas has been significantly altered by the introduction of Buffel Grass (Biota, 2005a), a pasture grass which has become an aggressive and widespread weed in the Pilbara region.

The habitat types occurring within the application area are all well represented in the region (Biota, 2005b), and the small area of vegetation disturbance proposed for the geotechnical investigations is unlikely to have a significant impact on fauna habitat in the region.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology

Biota (2005a)
Biota (2005b)
Straits Salt (2005)
GIS Database:
- Pastoral Leases - DOLA 10/01

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments

Proposal is not likely to be at variance to this Principle

Biota Environmental Sciences conducted a flora and vegetation survey of the proposed Yannarie Salt Project area, in August 2004. The vegetation within the survey area was generally in very good to excellent condition, with little ground disturbance and few weed species. However in some areas the vegetation condition was classified as Very Poor, due to severe invasions of Buffel Grass, *Cenchrus ciliaris* (Biota, 2005a).

Eleven vegetation types and 192 plant species were recorded within the project area, including 50 ephemeral species. The relatively low number of species recorded, reflects the harshness of the environment; for example, hypersaline mudflat and claypan areas and mobile sand dunes (Biota, 2005a).

A search of CALM database records conducted on behalf of the proponent revealed twenty six previous records of Priority Flora species, within a 50 km radius of the clearing permit application area. The nearest of these records was approximately 35-40 km from the application area. The majority of the species prefer habitat types not found within the application area. Only nine of these species were considered possible to occur within the application area: *Abutilon uncinatum* (P1); *Acacia ryaniana* (P2); *Acanthocarpus rupestris* (P2); *Beyeria cygnorum* (P3); *Daviesia pleurophylla* (P2); *Eremophila occidens* (P2); *Eremophila youngii* subsp *lepidota* (P4); *Stackhousia umbellata* (P3); *Verticordia serotina* (P2) (Biota, 2005a).

CALM databases have no records of any Declared Rare Flora within a 50km radius of the area applied to clear (Biota, 2005a; GIS Database). No species of Declared Rare or Priority Flora were recorded during the flora survey (Biota, 2005a).

Mangroves occur immediately adjacent to the application area (GIS Database). The mangrove species found in Western Australia are common and widespread in other parts of Australia, however mangroves are considered an important part of a coastal ecosystem (EPA, 2001). Under the conditions imposed on this clearing permit, the proponent is not permitted to clear any mangrove species, and must only access mangrove habitat by helicopter, on foot, or by barge or small boat.

The small area of the proposed vegetation disturbance is unlikely to impact on any species of Declared Rare or Priority Flora.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology Biota (2005a)
EPA (2001)
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TEC's) within the vicinity of the areas applied to clear (Biota, 2005a; GIS Database). The nearest known TEC's are the Cape Range Remipede Community, approximately 76 km southwest of the application area, and the Camerons Cave Troglobitic Community, approximately 40 km northwest of the application area, both of which are located on Cape Range which is on the opposite side of Exmouth Gulf from the application area (CALM, 2002; GIS Database).

Considering the distance of these TEC's from the application area, the proposed clearing is unlikely to have any impact on these or any other Threatened Ecological Community.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology Biota (2005a)
CALM (2002)
GIS Database:
- Threatened Ecological Communities - CALM 12/04/05

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal is not likely to be at variance to this Principle

The application area falls within the IBRA Carnarvon Bioregion and the Shire of Ashburton (GIS Database). Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in the IBRA Carnarvon Bioregion, although no specific information is available for the Shire of Ashburton. The vegetation in the application area is recorded as Beard Vegetation Associations 43: Low forest; mangroves (Kimberley) or thicket; mangroves (Pilbara); and 670: Hummock grasslands, shrub steppe; scattered shrubs over *Triodia basedowii* (GIS Database; Shepherd *et al*., 2001)). According to Shepherd *et al*., (2001) there is approximately 100% of these vegetation types remaining, with 14.5% and 1.9%, respectively in reserves. Therefore the area proposed to clear does not represent a significant remnant of native vegetation.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Carnarvon	8,523,963*	8,523,963*	~100%	Least concern	
Shire of Ashburton	No information available				
Beard vegetation associations					
- 43	194,818	194,818	~100%	Least concern	14.5%
- 670	160,295	160,295	~100%	Least concern	1.9%

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology Dept of Natural Resources and Environment (2002)
Shepherd *et al*. (2001)

GIS Database:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Pre-European Vegetation - DA 01/01

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments

Proposal may be at variance to this Principle

The largest (approx. 1.3 ha) of the six application areas falls within a nationally important wetland area included in the Directory of Important Wetlands in Australia (formerly known as ANCA Wetlands) (GIS Database). The wetland area is known as 'Exmouth Gulf East' and meets the following three criteria (out of a possible six) for inclusion in the Directory of Important Wetlands:

1. It is a good example of a wetland type occurring within a biogeographic region in Australia.
2. It is a wetland which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex.
3. It is a wetland which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail.

(DEH, 2001)

The defined wetland area covers approximately 120,000 ha and includes tidal mudflats, mangroves and coastal plains. It is located on the eastern side of Exmouth Gulf, stretching from Giralia Bay in the south to Locker Point in the north, and is bounded to the east by north-south trending sand dunes up to approximately 10m high (DEH, 2001).

The proposed clearing permit disturbance area within the wetland represents a very small percentage of the total wetland area and is therefore unlikely to have any significant impact on the wetland. However the proponent is advised to avoid any unnecessary disturbance to wetland habitats. Under the conditions imposed on this clearing permit, the proponent is not permitted to clear any mangrove species, and must only access mangrove habitat by helicopter, on foot, or by barge or small boat.

The Biodiversity Audit of Western Australia compiled by CALM in 2002 listed Buffel Grass as a potential threat to the wetland. Under the conditions imposed on this clearing permit, the proponent is required to implement weed control measures to prevent the further spread of Buffel Grass and other weeds.

Based on the above, the proposal may be at variance to this principle.

Methodology

CALM (2002)
DEH (2001)
GIS Database:
- ANCA, Wetlands - CALM 08/01
- Hydrography, Linear - DOE 1/2/04
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments

Proposal is not likely to be at variance to this Principle

The application area is comprised of saline flats, claypans, and coastal flats and dune systems (Biota, 2005a).

The proposed geotechnical investigations are not expected to require any physical clearing of vegetation, and will result in minimal ground disturbance (Straits Salt, 2005). Existing access tracks will be used wherever possible, all drill holes and test pits will be backfilled after completion, and the proposed works are unlikely to cause appreciable land degradation.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology

Biota (2005a)
Straits Salt (2005)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal may be at variance to this Principle

The application area is situated on the saline mudflats, clay pans and coastal sand dunes of the eastern side of the Exmouth Gulf. The nearest CALM managed lands are several Island Nature Reserves within Exmouth Gulf: Burnside and Simpson Island Nature Reserve, Whalebone Island Nature Reserve and Tent Island Nature Reserve (GIS Database). The nearest of these is Simpson Island approximately 2.8 km north/northeast of the northern end of the application area. The nearest mainland CALM managed land is the Sandalwood Landing

section of the Whitmore, Roberts, Doole Islands and Sandalwood Landing Nature Reserve, approximately 33km west/southwest of the southernmost section of the application area (GIS Database).

The largest of the six application areas (approx. 1.3 ha) is situated within a Redbook area, System 9.8 - 'Coastal Region, Exmouth Gulf to Mary Anne Islands'. In the Redbook Report produced in 1975, the EPA recommended that development for salt production should be restricted to the supra-tidal zone, landward of the mangrove communities, unless approved by the EPA. This recommendation was reiterated in the 1993 Red Book Status Report.

The western end of the largest application area is situated on Hope Island, which is included in the 'Islands of Exmouth Gulf and Rowley Shelf' area, registered for conservation purposes on the Register of National Estate. The 'Islands of Exmouth Gulf and Rowley Shelf' registered area covers approximately 23,000ha and includes all islands and associated rocks, mangroves and reefs in Exmouth Gulf (DEH, 2006).

However the small area and minor and temporary nature of the vegetation disturbance for the proposed geotechnical investigations is unlikely to have any significant impact on the environmental values of any conservation area.

Based on the above, the proposal may be at variance to this principle.

Methodology

DEH (2006)
EPA (1975)
EPA (1993)
GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments

Proposal is not likely to be at variance to this Principle

The application area is located on saline mudflats, clay pans and coastal sand dunes (Biota, 2005a). The mudflats are subject to tidal inundation and the groundwater is naturally saline (DEH, 2001).

The small area and minor scale of the proposed vegetation disturbance is unlikely to cause deterioration in the quality of any surface or underground water.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology

Biota (2005a)
DEH (2001)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments

Proposal is not likely to be at variance to this Principle

The climate of the application area is arid to semi arid with average annual rainfall between 200 and 300mm and potential annual evaporation between 3,000 and 3,500mm (DEH, 2001). The region is prone to seasonal cyclones and natural flooding of the coastal plain occurs during the wet season (November to March).

The small area of the proposed disturbance for geotechnical investigations is not likely to cause or exacerbate the incidence or intensity of flooding.

Based on the above, the proposal is not likely to be at variance to this principle.

Methodology

DEH (2001)

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

There are two native title claims (WC97/028 and WC99/045) over the area under application. These claims have been registered with the National Native Title Tribunal on behalf of the Gnulli and Thalanyji claimant groups respectively (GIS Database). However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993.*

There are no known Aboriginal sites of significance within the areas applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

There are no current Environmental Protection, Works Approval or Water Licences for this project (DoE Advice, 2006). It is the proponent's responsibility to liaise with the Department of Environment to determine whether any of these licences are required under the *Environmental Protection Act 1986* and the *Rights in Water and Irrigation Act 1914.*

The clearing permit application was advertised when it was received by DoIR, inviting submissions from the public. Several public submissions were received, in which the following issues were raised:

1. granting a clearing approval in advance of the EPA decision on the overall project may influence the decision of the EPA
2. preliminary work should not go ahead prior to the completion of the ERMP on the overall project, to avoid unnecessary vegetation clearing and habitat destruction in the event that the EPA reject the project proposal
3. the area is of relatively high biodiversity
4. the vegetation provides a significant habitat for native fauna
5. the mangroves provide significant habitat for bird and bat species which have a restricted distribution
6. possible habitat for stygofauna and troglofauna
7. disturbance of cyanobacterial algal mats will have an unknown impact on the ecological balance of the intertidal mudflats
8. disturbance of pristine, regionally significant mangrove systems
9. possible habitat for Rare and Priority flora
10. Directory of Important Wetlands area an important habitat for migratory birds
11. Red Book area
12. area recommended for a marine park
13. potential Fish Habitat Protection Area
14. mangrove complex important for the productivity of the Exmouth Gulf prawn fishery
15. change in the hydrology of the area may lead to ecological damage and adversely impact local fisheries

Several of the issues raised are not directly relevant to the proposed preliminary geotechnical investigations, and will be addressed in the EPA environmental impact assessment of the proposed Yannarie Salt project. Some of these issues have previously been addressed by the Appeals Convenor (see below). The remainder of the issues are addressed under the relevant clearing principles.

The clearing permit application for preliminary geotechnical investigations associated with the proposed Yannarie Salt Project was referred to the EPA by DoIR, as it triggered four referral criteria in the Memorandum of Understanding between DoIR and the EPA. The EPA determined that the results of the proposed geotechnical investigations would assist the EPA with the environmental impact assessment of the proposed Yannarie Salt project, and that the minor potential impacts of the preliminary works could be adequately managed by the Clearing Regulations under Part V of the *Environmental Protection Act 1986*. The EPA advertised the decision not to formally assess the clearing permit application, and the Minister for the Environment received an appeal against the EPA's decision. The Minister dismissed the appeal, on the basis that the proposed areas of disturbance associated with the investigative works are very small and temporary in nature, and that controls are available via both the clearing permit and the mining tenement conditions to ensure appropriate rehabilitation of associated disturbance. Given that the proposed works are very minor in scale and would not cause any significant permanent impacts, the Minister did not believe that the preliminary investigative works would compromise the environment if the Yannarie Salt development project does not proceed (Appeals Convenor, 2006).

The Yannarie Salt Project is currently under formal assessment by the Environmental Protection Authority (EPA) and assessment has been set at the Environmental Review and Management Plan (ERMP) level.

Permit 835/1 has been amended to 835/2 to extend the permit date by four years. The original permit was granted on 1 June 2006, and the permit was valid from 1 July 2006 to 31 July 2007. Permit 835/2 has been amended to expire on 31 July 2011 to provide maximum flexibility during the environmental studies period of the project.

Methodology

Appeals Convenor (2006)
DoE Advice (2006)
GIS Database:
- Aboriginal Sites of Significance - DIA 04/07/02
- Native Title Claims - DLI 19/12/04

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Comment / recommendation
Miscellaneous	Mechanical Removal	2.1	The proposal has been assessed against the Clearing Principles, and may be at variance to the following Principles: (f) watercourses or wetlands; (h) conservation areas.

However, due to the small size of the application area (2.1ha) and the minor and temporary nature of the proposed vegetation disturbance, the Assessing Officer concludes that the environmental impacts are likely to be minimal.

Consequently, the Assessing Officer recommends that the Clearing Permit be granted subject to the following conditions:

1. The Permit Holder shall not clear any Mangrove species (*Avicennia marina, Rhizophora stylosa, Ceriops tagal, Bruguiera exaristata*).
2. The Permit Holder shall only access Mangrove habitat by helicopter, on foot, or by barge or small boat.
3. The Permit Holder shall ensure that all vehicles, tools and machinery are cleaned of all soil and plant material when entering the Clearing Permit Areas (as shown on the attached Plans 835/2a and 835/2b).
4. The Permit Holder shall retain all vegetative material and topsoil removed by clearing in accordance with this Permit and shall, immediately following completion of the geotechnical investigations, use the material to backfill all boreholes and test-pits.

The proponent is advised to refer to the tenement conditions on Exploration Licences E08/1397, E08/1398, E08/1399, E08/1400 for further conditions relating to rehabilitation of ground disturbance not involving the clearing of native vegetation.

Please note: The granting of this clearing permit should not be interpreted as implying DoIR approval of the overall Yannarie Salt project, which is currently undergoing an Environmental Impact Assessment by the Environmental Protection Authority (EPA).

5. References

Appeals Convenor (2006) Appeal Decision Summary. Appeal Number 240 of 2005. Office of the Appeals Convenor, Western Australia.

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Biota (2005b) Yannarie Salt Project Fauna Survey. Fauna and Fauna Assemblage Survey. Biota Environmental Sciences, Western Australia.

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DEH (2001) A Directory of Important Wetlands in Australia. Third Edition. Environment Australia. Department of the Environment and Heritage, ACT.

DEH (2006) Australian Heritage Database: Islands Exmouth Gulf and Rowley Shelf. Department of the Environment and Heritage, ACT.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

DoE (2006) Water Allocation/Licence Advice. Department of Environment, Western Australia.

EPA (1975) Conservation Reserves for Western Australia. Systems 4,8,9,10,11,12. Protection Authority, Western Australia.

EPA (1993) Redbook Status Report on the Implementation of Reserves for Western Australia. Environmental Protection Authority, Western Australia.

EPA (2001) Guidance Statement No.1: Guidance for Protection of Tropical Arid Zone Mangroves along the Pilbara Coastline. Environmental Protection Authority, Western Australia.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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.

Straits Salt (2005) Application for Clearing Permit Supporting Information. Straits Salt Project. Straits Salt Pty Ltd, Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs

DLI	Department of Land Information, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	**Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	**Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	**Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	**Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	**Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
X	**Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

Schedule 1	**Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
Schedule 2	**Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
Schedule 3	**Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
Schedule 4	**Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	**Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
P2	**Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
P3	**Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of

conservation status before consideration can be given to declaration as threatened fauna.

P4 **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

P5 **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999)*

EX **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CR **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.