



# Environmental Protection Authority

EPA REFERRAL FORM  
PROPONENT

## Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the Environmental Protection Act.

### PURPOSE OF THIS FORM

Section 38(1) of the *Environmental Protection Act 1986* (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPA's *General Guide on Referral of Proposals* [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats – hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

### CHECKLIST

Before you submit this form, have you

	Yes	No
Completed all the questions in Part A (essential)	✓	
Completed all applicable questions in Part B	✓	
Included Attachment 1 – location maps	✓	
Included Attachment 2 – additional document the proponent wishes to provide (if applicable)	✓	
Included Attachment 3 – confidential information (if applicable)		✓
Enclosed the CD of all referral information, including spatial data and contextual mapping but excluding confidential information.	✓	

Following a review of the information presented in this form, please consider the following question. (A response is Optional)

Office of the Environmental Protection Authority		18 APR 2013	
File: OEP2013/000245		For Information	<input type="checkbox"/>
A: 621857	For Discussion	<input type="checkbox"/>	
For:	For Action	<input type="checkbox"/>	
Officers:	Response please:		
<input type="checkbox"/> Dir. AC	<input type="checkbox"/> GM Signature	<input type="checkbox"/>	
<input type="checkbox"/> Dir. Bus. Ops	<input type="checkbox"/> Dir for GM (copy to GM)	<input type="checkbox"/>	
<input type="checkbox"/> Dir. SRRD	<input type="checkbox"/> Dir Signature (copy to GM)	<input type="checkbox"/>	
<input type="checkbox"/> Dir. Strat. Sup	<input type="checkbox"/> Mgr Direct (copy to GM)	<input type="checkbox"/>	

DO YOU CONSIDER THE PROPOSAL REQUIRES FORMAL ENVIRONMENTAL IMPACT ASSESSMENT?

YES                       NO                       NOT SURE

IF YES, WHAT LEVEL OF ASSESSMENT?

ASSESSMENT ON PROPONENT INFORMATION

PUBLIC ENVIRONMENTAL REVIEW (API level may be appropriate if the Horrocks site is selected)

**PROPONENT DECLARATION** (To be completed by the proponent)

I, STUART JOHN SMITH....., (*full name*) declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature 	Name (print) Stuart Smith
Position Director General	Company Department of Fisheries
Date 16/4/13	

## PART A - PROPONENT AND PROPOSAL INFORMATION

(All fields of this Part must be completed for this document to be treated as a referral)

### 1.1 PROPONENT

Name	Department of Fisheries
Joint Venture parties (if applicable)	
Postal Address	Locked Bag 39 Cloisters Square WA 6850 Australia
Key proponent contact for the proposal <ul style="list-style-type: none"> <li>• Name</li> <li>• Address</li> <li>• Phone</li> <li>• Email</li> </ul>	John Eyres Locked Bag 39 Cloisters Square WA 6850 Australia john.eyres@fish.wa.gov.au
Consultant for the proposal (if applicable) <ul style="list-style-type: none"> <li>• Name</li> <li>• Address</li> <li>• Phone</li> <li>• Email</li> </ul>	Not applicable

### 1.2 PROPOSAL

Title		Mid West Aquaculture Zone
Description	Life of project	Ongoing
	Location	<p>The preferred study area (4,600 ha near Pelsaert Group) within Abrolhos Fish Habitat Protection area is bounded by the coordinates:</p> <p>Northern corner 28° 47.541°S and 113° 56.022' E  South to 28° 51.977' S and 113° 55.129' E  West to 28° 50.937' S and 113° 49.576' E  North to 28° 49.405' S and 113° 49.999' E  Then North-east to join with the first point.</p> <p>Two alternative areas of interest have been identified, in case the primary area of interest is found to be unsuitable.</p> <p>An alternative study area within Abrolhos Fish Habitat Protection area is bounded by the coordinates:</p> <p>Northern extent 28° 30.000' S and 113° 53.610' E  South to 28° 33.652' S and 113° 54.565' E  South-west to 28° 39.599' S and 113° 50.033' E  North to 28° 35.000' S and 113° 50.000' E  Then North-east to join with the first point.</p> <p>An alternative study area within State waters adjacent the town of Horrocks is bounded by the coordinates:</p> <p>Northern extent 28° 15.551' S and 114° 16.580' E  South-east to 28° 21.447' S and 114° 22.616' E  South-east to 28° 24.216' S and 114° 24.494' E  South-west to 28° 24.931' S and 114° 22.952' E  Then Northwest to join with the first point.</p>

		The Department of Fisheries propose to investigate other potential locations within the State Waters of the Mid West Region, should new information arise suggesting the primary area of interest is unsuitable.
	Species to be cultured	Marine finfish species that naturally occur within the Mid West bioregion of WA
	Size of aquaculture zone	Approximately 3000 ha (refer attachment 1)
	Waste produced	Faecal material Uneaten fish feed Dissolved nutrients
Extent (area) of proposed ground disturbance		To be determined through modelling
Timeframe in which the activity or development is proposed to occur. (Include start and finish dates where applicable)		Technical environmental study could start as early as July 2013 and the project may finish as late as July 2015
Details of any staging of the proposal		Will not be staged
Is the proposal a strategic proposal?		Yes
Is the proponent requesting a declaration that the proposal is a derived proposal? If so, provide the following information on the strategic assessment within which the referred proposal was identified - <ul style="list-style-type: none"> <li>Title of the strategic assessment</li> <li>Ministerial Statement number</li> </ul>		No
Indicate whether, and in what way, the proposal is related to other proposals in the region.		Existing finfish aquaculture lease (800 ha) North of Gunn Island (Pelsaert Group of Houtman Abrolhos Islands) is contained within the boundary of the primary area of interest (study area).
Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?		Marine based proposal in State waters
What is the current land use on the property, and the extent (area in hectares) of the property?		An existing aquaculture lease held by Pelsaert (WA) Pty Ltd & WTN Nominees Pty Ltd (authorised by Aquaculture Licence No. 1615) covers 800 ha of the proposed area.

### 1.3 LOCATION

Name of the Shire in which the proposal is located	Waters adjacent to the Shire of Northampton
For urban areas – <ul style="list-style-type: none"> <li>street address</li> <li>lot number</li> <li>suburb</li> <li>nearest road intersection</li> </ul>	Not applicable
For remote localities –	Houtman Abrolhos Islands, Shire of

<ul style="list-style-type: none"> <li>• nearest town</li> <li>• distance and direction from that town to the proposal site</li> </ul>	Northampton, Western Australia, ~80 km west of Geraldton.
Electronic spatial data - GIS or CAD on CD, geo-referenced and conforming to the following parameters: <ul style="list-style-type: none"> <li>• GIS: polygons representing all activities and named</li> <li>• format: Arcview shapefile</li> </ul>	Enclosed: Yes

#### 1.4 CONFIDENTIAL INFORMATION

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	No
If yes, is confidential information attached as a separate document in hard copy.	Not applicable

#### 1.5 GOVERNMENT APPROVALS

Is rezoning of any land required before the proposal can be implemented? If Yes, provide details.		No	
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, complete the table below -		Yes Note: DEC approval has been delegated to DoF in accordance with 2011 Memorandum of Understanding	
Agency/Authority	Approval Required	Application lodged Yes / No	Agency/Local Authority contact/s for proposal
SEWPaC	EPBC approval	No	To be advised

## PART B - ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

### 2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, through the questions below:

- (i) flora and vegetation #;
- (ii) fauna #;
- (iii) rivers, creeks, wetlands and estuaries;
- (iv) significant areas and/ or land features;
- (v) coastal zone areas;
- (vi) marine areas and biota #;
- (vii) water supply and drainage catchments;
- (viii) pollution;
- (ix) greenhouse gas emissions;
- (x) contamination; and
- (xi) social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

- (a) the source of the information; and
- (b) the currency of the information.

#### 2.1 Flora and Vegetation

- \* Do you propose to clear any native flora and vegetation as a part of this proposal?

(A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act (*Environmental Protection (Clearing of Native Vegetation) Regulations 2004*). Please contact the Department of Environment and Conservation (DEC) for more information.

(please tick)       Yes      ***If yes, complete the rest of this section***

No      ***If no, go to the next section***

- How much vegetation are you proposing to clear (in hectares)?

- \* Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

Yes       No      ***If yes, on what date and to which office was the application submitted of the DEC?***

- Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

Yes       No      **If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey/s. (If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.)

\* Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site? #

Yes       No      If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

\* Are there any known occurrences of rare or priority flora or threatened ecological communities on the site? #

Yes       No      **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

\* If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site? (You will need to contact the Bush Forever Office, at the Department for Planning and Infrastructure)

Yes       No      **If yes**, please indicate which Bush Forever site is affected (site number and name of site where appropriate).

What is the condition of the vegetation at the site?

## 2.2 Fauna

\* Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick)       Yes      ***If yes, complete the rest of this section***

No      ***If no, go to the next section***

Describe the nature and extent of the expected impact.

*Potential impacts include:*

- *Disease introduction or transfer*
- *Genetic diversity – escape risk*

- *Entanglement marine fauna*
- *Organic enrichment of the water column and, or benthos*
- *Additional food source through waste feed*
- *Provision of artificial habitat*
- *Attraction of predators*

These impacts would be managed and mitigated and extent would be limited to the area directly surrounding the cage sites.

- Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

Yes       No      **If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey/s. (If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.)

- \* Has a search of DEC records for known occurrences of Specially Protected (Threatened) fauna been conducted for the site?

Yes       No      (please tick)

*NatureMap (DEC website) search conducted 24/01/2013*

- \* Are there any known occurrences of Specially Protected (Threatened) fauna on the site? #

Yes       No      **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

*A search on the DEC website - NatureMap ([www.naturemap.dec.wa.gov.au](http://www.naturemap.dec.wa.gov.au)) resulted in a list identifying 8 threatened species and 20 migratory species within a 20 km radius of the coordinates 113°59' 00" E, 28°46' 55" S. The gazetted list of specially protected fauna was cross-referenced for additional species of fauna that potentially exist in the area. This resulted in the addition of 16 threatened species and 5 migratory species to the list below. A large proportion of these species have not been sighted at the location, however could exist in the general area.*

SPECIES	COMMON NAME	STATUS (Wildlife Conservation Act)	NATIONALLY PROTECTED
<i>Actitis hypoleucos</i>	Common Sandpiper	IA	EPBC
<i>Anous stolidus</i>	Common Noddy	IA	EPBC
<i>Anous stolidus subsp. Pileatus</i>	Common Noddy	IA	EPBC
<i>Anous tenuirostris subsp. Melanops</i>	Australian Lesser Noddy	T	EPBC
<i>Ardea sacra (Egretta sacra)</i>	Eastern Reef Egret, Eastern Reef Heron	IA	EPBC
<i>Arctocephalus forsteri</i>	New Zealand Fur-seal	S	EPBC

<i>Arenaria interpres</i>	Ruddy Turnstone	IA	EPBC
<i>Balaenoptera musculus</i>	Blue Whale	T	EpBC
<i>Calidris canutus</i>	Red Knot	IA	EPBC
<i>Calidris ruficollis</i>	Red-necked Stint	IA	EPBC
<i>Calidris tenuirostris</i>	Great Knot	IA	EPBC
<i>Calonectris leucomelas</i>	Streaked Shearwater	IA	EPBC
<i>Charadrius leschenaultii</i>	Greater Sand Plover	IA	EPBC
<i>Charadrius leschenaultii</i> <i>subsp. Leschenaultii</i>	Greater Sand Plover	IA	EPBC
<i>Chelonia mydas</i>	Green Turtle	T	EPBC
<i>Carcharias taurus</i>	Grey Nurse Shark	T	EPBC
<i>Carcharodon carcharias</i>	Great White Shark	T	EPBC
<i>Caretta caretta</i>	Loggerhead Turtle	T	EPBC
<i>Dermochelys coriacea</i>	Leathery Turtle	T	EPBC
<i>Diomedea dabbenena</i> <i>(Diomedea exulans exulans)</i>	Tristan Albatross	T	EPBC
<i>Diomedea chlororhynchos</i> <i>(Thalassarche chlororhynchos)</i>	Atlantic Yellow-nosed Albatross	T	EPBC
<i>Diomedea chlororhynchos</i> <i>subsp. Carteri (Thalassarche carteri)</i>	Indian Yellow-nosed Albatross	T	EPBC
<i>Eubalaena australis</i>	Southern Right Whale	T	EPBC
<i>Thalassarche cauta</i>	Shy Albatross	T	EPBC
<i>Diomedea chrysostoma</i> <i>(Thalassarche chrysostoma)</i>	Grey-headed Albatross	T	EPBC
<i>Diomedea melanophris subsp. melanophris</i> <i>(Thalassarche melanophris)</i>	Black-browed Albatross	T	EPBC
<i>Dugong dugon</i>	Dugong	S	EPBC
<i>Egretta sacra</i>	Eastern Reef Egret	IA	EPBC
<i>Eubalaena australis</i>	Southern Right Whale	T	EPBC
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	IA	EPBC
<i>Limosa lapponica</i>	Bar-tailed Godwit	IA	EPBC
<i>Macronectes giganteus</i>	Southern Giant Petrel	T	EPBC
<i>Megaptera novaeangliae</i>	Humpback Whale	T	EPBC
<i>Natator depressus</i>	Flatback Turtle	T	EPBC
<i>Neophoca cinerea</i>	Australian Sea Lion	S	EPBC
<i>Pluvialis squatarola</i>	Grey Plover	IA	EPBC
<i>Puffinus huttoni</i>	Hutton's Shearwater	T	EPBC
<i>Puffinus carneipes</i>	Fleshy-footed Shearwater	IA	EPBC
<i>Puffinus pacificus</i>	Wedge-tailed Shearwater	IA	EPBC

<i>Stercorarius parasiticus</i>	Arctic Jaeger, Arctic Skua	IA	EPBC
<i>Stercorarius pomarinus</i>	Pomarine Jaeger, Pomarine Skua	IA	EPBC
<i>Sterna caspia</i>	Caspian Tern	IA	EPBC
<i>Sterna dougallii</i>	Roseate Tern	IA	EPBC
<i>Sterna dougallii subsp. gracilis</i>	Roseate Tern	IA	EPBC
<i>Sterna hirundo</i>	Common turn	IA	EPBC
<i>Sterna nereis subsp. nereis</i>	Fairy Tern	T	EPBC
<i>Sula leucogaster</i>	Brown Booby	IA	EPBC
<i>Turnix varia acintillans</i>	Abrolhos painted Button- quail	T	
<i>Tringa brevipes (Heteroscelus brevipes)</i>	Grey-tailed Tattler	IA	EPBC

Conservation Status	
Rare or likely to become extinct	<b>T</b>
Presumed extinct	<b>X</b>
Protected under international agreement	<b>IA</b>
Other specially protected fauna	<b>S</b>
Priority 1	<b>1</b>
Priority 2	<b>2</b>
Priority 3	<b>3</b>
Priority 4	<b>4</b>
Priority 5	<b>5</b>

Migratory Species or species habitat may occur within area

### 2.3 Rivers, Creeks, Wetlands and Estuaries

- \* Will the development occur within 200m of a river, creek, wetland or estuary?  
(please tick)  Yes ***If yes, complete the rest of this section***  
 No ***If no, go to the next section***
- \* Will the development result in the clearing of vegetation within the 200 m zone?  
 Yes  No ***If yes, please describe the extent of the expected impact.***
- \* Will the development result in the filling or excavation of a river, creek, wetland or estuary?  
 Yes  No ***If yes, please describe the extent of the expected impact.***
- \* Will the development result in the impoundment of a river, creek, wetland or estuary?

Yes       No      **If yes**, please describe the extent of the expected impact.

\* Will the development result in draining to a river, creek, wetland or estuary?

Yes       No      **If yes**, please describe the extent of the expected impact.

\* Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories? (please tick)

Conservation Category Wetland	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Perth's Bush Forever site	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
The management area as defined in s4(1) of the Swan River Trust Act 1988/	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA) #	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure

## 2.4 Significant Areas and/ or Land Features

\* Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

Yes       No      **If yes**, please provide details.

The study area for the project is near the Houtman Abrolhos Nature Reserve No. A20253 vested with the Minister for Fisheries under the Western Australian Land Administration Act 1997. The reserve includes the land and intertidal zone to the low water mark of the Abrolhos Islands.

The study area for the project is within State Territorial Waters that were gazetted in 1999 as a Fish Habitat Protection Area, which is vested with the Minister for Fisheries under the *Fish Resources Management Act 1994*.

\* Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

Yes       No      **If yes**, please provide details.

\* Are you aware of any significant natural land features (e.g. caves, ranges etc) that will be impacted by the proposed development?



- Yes       No      **If yes**, please describe the extent of the expected impact.

*The area of the proposed zone is part of the Houtman Abrolhos, which is described in the report, 'A Representative Marine Reserve System for Western Australia, CALM, 1994 (A Representative Marine Reserve System for Western Australia)'. In this report it was recommended that, "the whole area of State Territorial Waters at the Abrolhos should be reserved as Marine Park, noting that present legislation would not preclude commercial fishing within the park."*

*The report also recommended that, "In keeping with the high scientific, historic recreational and conservation values of the Abrolhos islands and reef complexes, and the high value of the rock lobster fishery and other fisheries, the entire area to the limit of State Territorial Waters should be reserved and managed as a multiple-use area."*

- \* Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

- Yes       No      **If yes**, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

*The aquaculture zone will contain infrastructure such as sea cage systems, including grids to support multiple cages, in the water column and mooring blocks on the seafloor. While the zones will not prevent access for fishing activities, aquaculture infrastructure will need to be avoided. Initial consultation with the peak representative bodies for commercial and recreational fishing activities, WAFIC and Recfishwest, respectively did not suggest that the zone would cause significant impact to the commercial and recreational fishing communities.*

## 2.7 Water Supply and Drainage Catchments

- \* Are you in a proclaimed or proposed groundwater or surface water protection area?

(You may need to contact the Department of Water (DoW) for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

- Yes       No      **If yes**, please describe what category of area.

- \* Are you in an existing or proposed Underground Water Supply and Pollution Control area?

(You may need to contact the DoW for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

- Yes       No      **If yes**, please describe what category of area.

- \* Are you in a Public Drinking Water Supply Area (PDWSA)?

(You may need to contact the DoW for more information or refer to the DoW website. A proposal to clear vegetation within a PDWSA requires approval from DoW.)

- Yes       No      **If yes**, please describe what category of area.

- \* Is there sufficient water available for the proposal?  
(Please consult with the DoW as to whether approvals are required to source water as you propose. Where necessary, please provide a letter of intent from the DoW)

Yes       No      (please tick)

*Intention is to move to barge based operations with minimal staff. Water could be supplied to barges using desalination or transported from Geraldton. No fish processing beyond preliminary postharvest activities, such as icing, will be allowed on site.*

- \* Will the proposal require drainage of the land?

Yes       No      **If yes**, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

- \* Is there a water requirement for the construction and/ or operation of this proposal?

(please tick)       Yes      ***If yes, complete the rest of this section***

No      ***If no, go to the next section***

- What is the water requirement for the construction and operation of this proposal, in kl/year?

- \* What is the proposed source of water for the proposal? (eg dam, bore, surface water etc.) *Short term – Turtle Island*

*On expansion - Desalination*

## 2.8 Pollution

- \* Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

(please tick)       Yes      ***If yes, complete the rest of this section***

No      ***If no, go to the next section***

- \* Is the proposal a prescribed premise, under the Environmental Protection Regulations?

(Refer to the EPA *General Guide for Referral of Proposals to the EPA under section 38(1) of the EP Act 1986* for more information)

Yes       No      **If yes**, please describe what category of prescribed premise.

*Aquaculture facilities removed from list under 2011 MOU between Department of Environment and Conservation and the Department of Fisheries.*

\* Will the proposal result in gaseous emissions to air?

Yes       No      **If yes**, please briefly describe.

\* Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

Yes       No      **If yes**, please briefly describe.

\* Will the proposal result in liquid effluent discharge?

Yes       No      **If yes**, please briefly describe the nature, concentrations and receiving environment.

*The primary sources of discharge will be effluent from uneaten food and fish faeces at the cage sites. Concentrations will vary considerably depending on stocking densities, species and cage location. Modelling the movement of waste to allow the accurate prediction of nutrient concentrations is currently being scoped and will be included in support of the environmental assessment of this proposal.*

\* If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

Yes       No      **If yes**, please describe.

*The movement of biodeposition associated with aquaculture will be modelled to provide an accurate prediction of nutrient concentrations in the marine environment. The results of the modelling will be included in support of the environmental assessment of this proposal.*

\* Will the proposal produce or result in solid wastes?

Yes       No      **If yes**, please briefly describe the nature, concentrations and disposal location/ method.

*Rubbish generated on site will include staff domestic waste (including food scraps and packaging) and operations waste (including empty feed bags, old ropes and nets). Dead fish carcasses will also be a source of waste.*

*All waste will be collected and transported to Geraldton for disposal. Perishable waste will be stored in sealed containers prior to and during transport. Fish will be transported to Geraldton for re-use or disposal.*

\* Will the proposal result in significant off-site noise emissions?

Yes       No      **If yes**, please briefly describe.

- \* Will the development be subject to the Environmental Protection (Noise) Regulations?  
 Yes       No      **If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations?  
Please attach the analysis.

- \* Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other "sensitive premises" such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?  
 Yes       No      **If yes**, please describe and provide the distance to residences and other "sensitive premises".

- \* If the proposal has a residential component or involves "sensitive premises", is it located near a land use that may discharge a pollutant?  
 Yes       No       Not Applicable      **If yes**, please describe and provide the distance to the potential pollution source

## 2.9 Greenhouse Gas Emissions

- \* Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?  
 Yes       No      **If yes**, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.
- \* Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

## 2.10 Contamination

- \* Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?  
 Yes       No       Unsure      **If yes**, please describe.
- \* Has any assessment been done for soil or groundwater contamination on the site?  
 Yes       No      **If yes**, please describe.
- \* Has the site been registered as a contaminated site under the Contaminated Sites Act 2003? (on finalisation of the CS Regulations and proclamation of the CS Act)  
 Yes       No      **If yes**, please describe.

## 2.11 Social Surroundings

- \* Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?  
 Yes       No       Unsure      **If yes, please describe.**

- \* Is the proposal on a property which contains or is near a site of high public interest (for example, a major recreation area or natural scenic feature)?  
 Yes       No      **If yes, please describe.**

The Houtman Abrolhos Islands is an iconic area of the Mid West of Western Australia, being of high conservation, social, cultural and economic value.

- \* Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?  
 Yes       No      **If yes, please describe.**

## 3. PROPOSED MANAGEMENT

### 3.1 Principles of Environmental Protection

- Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA web.)
- |  |   |                             |
|--|---|-----------------------------|
| 1. The precautionary principle.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. The principle of intergenerational equity.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. The principle of the conservation of biological diversity and ecological integrity. | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Principles relating to improved valuation, pricing and incentive mechanisms.        | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 5. The principle of waste minimisation.  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
- Is the proposal consistent with the EPA's Environmental Protection Bulletins/Position Statements and Environmental Assessment Guidelines / Guidance Statements (available on the EPA web)?  
 Yes       No

### 3.2 Consultation

- Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

Yes

No

**If yes**, please list those consulted and attach comments or summarise response on a separate sheet.

<b>Stakeholder list</b>
<b>Organisation</b>
Abrolhos Islands Body Corporate <ul style="list-style-type: none"> <li>• North Group</li> <li>• Easter Group</li> <li>• Wallaby Group</li> <li>• Southern Group</li> </ul>
Abrolhos Islands Management Advisory Committee
Aquaculture Council of Western Australia (ACWA) <ul style="list-style-type: none"> <li>• Abrolhos Pearls</li> <li>• Pearl Producer's Association</li> <li>• all other regional aquaculture operators</li> </ul>
AMWING
Australian Marine Conservation Society
Batavia Coast Maritime Institute (TAFE)
Chamber of Minerals and Energy
City of Greater Geraldton
Conservation Council of Western Australia
Department of Environment and Conservation
Department of Indigenous Affairs
Department of Mines and Petroleum
Department of Planning
Department of Premier and Cabinet
Department of Regional Development and Lands
Department of State Development
Department of Sustainability, Environment, Water, Population and Communities (Commonwealth)
Department of Tourism
Department of Transport
Geraldton Port Authority
Geraldton Tourist Bureau
Landcorp
Mid West Chamber of Commerce and Industry
Mid West Development Commission
Northern Agricultural Catchment Council
Office of Environmental Protection Authority
Recfishwest
Shire of Carnamah
Shire of Chapman Valley
Shire of Irwin (Dongara and Port Denison)
Shire of Northampton

Western Australian Fishing Industry Council (WAFIC) including:

- Abrolhos Islands & Midwest Trawl fishers
- Developmental Octopus industry
- Marine Aquarium industry
- Specimen Shell industry
- Roei Abalone industry
- WA Demersal Gillnet and Demersal Long-line industry
- West Coast Demersal Scalefish industry
- West Coast Deep Sea Crustacean industry
- Western Rock Lobster industry
- Aquaculture industry (ACWA)

Western Australian Planning Commission

Wilderness Society WA

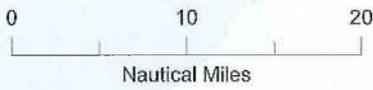
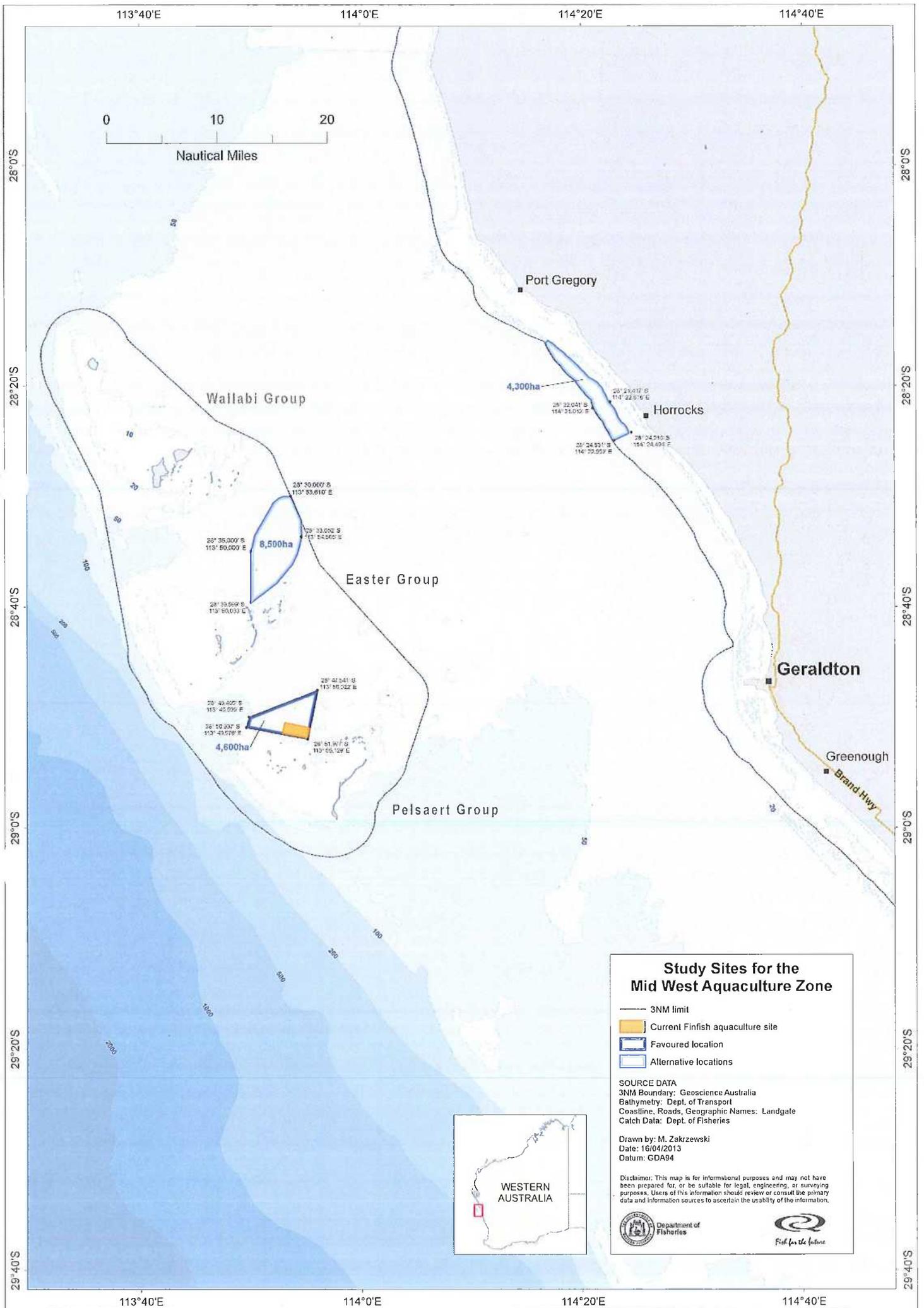
World Wildlife Fund (WWF)

## Summary consultation plan

Date	Details
February - March 2013	<b>Phase 1 - Initial notification (project briefings and site selection process)</b> <ul style="list-style-type: none"> <li>○ Scope and purpose</li> <li>○ Key issues</li> <li>○ Consultation process</li> <li>○ Site selection process</li> <li>○ DoF's role as proponent</li> <li>○ Potential sites</li> <li>○ Approval process</li> <li>○ Timeline and important dates</li> </ul>
July - October 2013	<b>Phase 2 - Project updates and discussion of management approach</b> <ul style="list-style-type: none"> <li>○ Update on status / preliminary field results</li> <li>○ Key issues</li> <li>○ Management approach</li> <li>○ Timeline and important dates</li> </ul>
October 2014	<b>Phase 3 - Dissemination of results of modelling and field studies</b> <ul style="list-style-type: none"> <li>○ Purpose of the model</li> <li>○ Management issues</li> <li>○ EIA approval process</li> <li>○ Timeline and important dates</li> </ul>
Late 2014	<b>Phase 4 - Public comment period (4 weeks)</b>
Early - mid 2015	<b>Phase 5 - Launch of zone</b> <ul style="list-style-type: none"> <li>○ Roll out of management plan</li> <li>○ Education and extension to stakeholders regarding the new zone</li> </ul>

Ongoing communication throughout life of project:

- Newsletter updates
- Website
- Update meeting with key stakeholders



Wallabi Group

Port Gregory

4,300ha

Horrocks

8,500ha

Easter Group

Geraldton

4,600ha

Pelsaert Group

Greenough

Brand Hwy

### Study Sites for the Mid West Aquaculture Zone

- 3NM limit
- Current Finfish aquaculture site
- Favoured location
- Alternative locations

SOURCE DATA  
 3NM Boundary: Geoscience Australia  
 Bathymetry: Dept. of Transport  
 Coastline, Roads, Geographic Names: Landgate  
 Catch Data: Dept. of Fisheries

Drawn by: M. Zakrzewski  
 Date: 16/04/2013  
 Datum: GDA94

Disclaimer: This map is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



# NatureMap Species Report

Created By Guest user on 24/01/2013

Current Names Only Yes  
Core Datasets Only Yes  
Method 'By Circle'  
Centre 113°59' 00" E,28°46' 55" S  
Buffer 20km

Area (ha)	125663.71
Taxa: Naturalised	30
Native	407
Endemics:	11
Families:	160
Genera:	328
Conservation Status:	
3	1
4	2
5	1
IA	20
S	1
T	7
-	405
MS Status: -	437
Rank:	
forma	1
subsp.	21
var.	5
-	410

## Top Ten Families

	Species	Records
1. Laridae	15	608
2. Accipitridae	3	165
3. Procellariidae	8	146
4. Scincidae	11	115
5. Lycosidae	2	51
6. Gekkonidae	2	51
7. Gobiidae	10	47
8. Pomacentridae	12	39
9. Poaceae	15	39
10. Hydrobatidae	2	37

## Top Ten Genera

	Species	Records
1. <i>Sterna</i>	8	323
2. <i>Larus</i>	3	184
3. <i>Puffinus</i>	4	141
4. <i>Pandion</i>	2	116
5. <i>Anous</i>	4	101
6. <i>Egernia</i>	2	56
7. <i>Haliaeetus</i>	1	49
8. <i>Lycosa</i>	1	47
9. <i>Christinus</i>	1	37
10. <i>Oceanites</i>	2	37

## Endemic To Query Area

Name ID	Species	Conservation Status
1827	<i>Callophycus serratus</i>	
48638	<i>Chaetodermis mccullochi (invalid)</i>	
11625	<i>Chrysomenia kaernbachii</i>	
11626	<i>Chrysomenia ornata</i>	
46583	<i>Crossorhombus valderostratus</i>	
49366	<i>Cryptoblephurus plagiocephalus</i>	
17389	<i>Dudresnaya capricornica</i>	
47504	<i>Lotella rhacinus?</i>	
45551	<i>Paxton concilians</i>	
45940	<i>Pteragogus sp.</i>	
46817	<i>Thunnus albacares</i>	

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

- 1 - Priority 1
- 2 - Priority 2
- 3 - Priority 3
- 4 - Priority 4
- 5 - Priority 5

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



# NatureMap Species Report

Created By Guest user on 24/01/2013

Current Names Only Yes

Core Datasets Only Yes

Method 'By Circle'

Centre 113°59' 00" E, 28°46' 55" S

Buffer 20km

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
1.	-15316 ??			
2.	-16743 <i>Abudefduf sexfasciatus</i>			
3.	-18673 <i>Acanthistius pardalotus</i>			
4.	-16999 <i>Acanthopagrus butcheri</i>			
5.	26440 <i>Acanthophora dendroides</i>			
6.	26446 <i>Acrosymphylon taylorii</i>			
7.	41323 <i>Actitis hypoleucos</i> (Common Sandpiper)		IA	
8.	-16581 <i>Amblygobius phalaena</i>			
9.	26456 <i>Amphiplexia hymenocladoides</i>			
10.	-16416 <i>Amphiprion clarkii</i>			
11.	-15596 <i>Anampses geographicus</i>			
12.	26469 <i>Anotrichium tenue</i>			
13.	25634 <i>Anous stolidus</i> (Common Noddy)		IA	
14.	24505 <i>Anous stolidus</i> subsp. <i>pileatus</i> (Common Noddy)		IA	
15.	25635 <i>Anous tenuirostris</i> (Lesser Noddy)			
16.	24506 <i>Anous tenuirostris</i> subsp. <i>melanops</i> (Australian Lesser Noddy)		T	
17.	-16427 <i>Antennarius nummifer</i>			
18.	-16893 <i>Apogon aureus</i>			
19.	-18336 <i>Apogon doederleini</i>			
20.	-16558 <i>Apogon rueppellii</i>			
21.	25560 <i>Ardea sacra</i> (Eastern Reef Egret, Eastern Reef Heron)		IA	
22.	25736 <i>Arenaria interpres</i> (Ruddy Turnstone)		IA	
23.	-18645 <i>Arothron hispidus</i>			
24.	26485 <i>Asparagopsis armata</i>			
25.	26486 <i>Asparagopsis taxiformis</i>			
26.	36140 <i>Asteromenia exanimans</i>			
27.	-15687 <i>Asteropteryx semipunctatus</i>			
28.	2452 <i>Atriplex cinerea</i> (Grey Saltbush)			
29.	-16451 <i>Atrosalaria fuscus</i>			
30.	-16871 <i>Aulohalaeturus labiosus</i>			
31.	-16510 <i>Austrolabrus maculatus</i>			
32.	233 <i>Avena barbata</i> (Bearded Oat)	Y		
33.	234 <i>Avena fatua</i> (Wild Oat)	Y		
34.	235 <i>Avena sativa</i> (Common Oat)	Y		
35.	6828 <i>Avicennia marina</i> (White Mangrove)			
36.	24047 <i>Balaenoptera edeni</i> (Bryde's Whale)			
37.	-16330 <i>Banjos banjos</i>			
38.	-16373 <i>Bathygobius fuscus</i>			
39.	-16760 <i>Batrachomoeus rubricephalus</i>			
40.	-16896 <i>Belonepterygion fasciolatum</i>			
41.	26503 <i>Betaphycus speciosum</i>			
42.	-16751 <i>Bodianus frenchii</i>			
43.	26508 <i>Boodlea composita</i>			
44.	247 <i>Bromus arenarius</i> (Sand Brome)			
45.	249 <i>Bromus diandrus</i> (Great Brome)	Y		
46.	26524 <i>Bryopsis minor</i>			
47.	1366 <i>Bulbine semibarbata</i> (Leek Lily)			
48.	3002 <i>Cakile maritima</i> (Sea Rocket)	Y		
49.	25738 <i>Calidris canutus</i> (Red Knot)		IA	
50.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)		IA	
51.	24790 <i>Calidris tenuirostris</i> (Great Knot)		IA	
52.	-16970 <i>Callogobius mucosus</i>			
53.	-18483 <i>Callogobius</i> sp.			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
54.	26535 <i>Callophycus harveyanus</i>			
55.	26536 <i>Callophycus oppositifolius</i>			
56.	26537 <i>Callophycus serratus</i>			Y
57.	11670 <i>Capparis spinosa</i> var. <i>nummularia</i> (Coastal Caper)			
58.	2798 <i>Carpobrotus virescens</i> (Coastal Pigface)			
59.	26557 <i>Caulerpa cliffonii</i>			
60.	27381 <i>Caulerpa lanuginosa</i> var. <i>delicatula</i>			
61.	26568 <i>Caulerpa lentillifera</i>			
62.	26573 <i>Caulerpa racemosa</i>			
63.	27387 <i>Caulerpa racemosa</i> var. <i>turbinata</i>			
64.	27388 <i>Caulerpa sedoides</i> forma <i>geminata</i>			
65.	26576 <i>Caulerpa serrulata</i>			
66.	26579 <i>Caulerpa taxifolia</i>			
67.	26584 <i>Caulerpa webbiana</i>			
68.	26586 <i>Caulocystis uvifera</i>			
69.	-15805 <i>Centropogon australis</i>			
70.	-17102 <i>Cephalopholis cyanostigma</i>			
71.	-15862 <i>Cephalopholis miniata</i>			
72.	26593 <i>Ceramium filicula</i>			
73.	2889 <i>Cerastium glomeratum</i> (Mouse Ear Chickweed)	Y		
74.	26606 <i>Ceratodictyon spongiosum</i>			
75.	-17879 <i>Chaetodermis mccullochi</i> (invalid)			Y
76.	-16407 <i>Chaetodermis penicilligera</i>			
77.	-18232 <i>Chaetodon assarius</i>			
78.	-18121 <i>Chaetodon auriga</i>			
79.	-16440 <i>Chaetodon lunula</i>			
80.	-17008 <i>Chaetodon lunulatus</i>			
81.	-15911 <i>Chaetodon plebeius</i>			
82.	-15800 <i>Chaetodon speculum</i>			
83.	-18014 <i>Chaetodon trifascialis</i>			
84.	26619 <i>Champia stipitata</i>			
85.	25575 <i>Charadrius leschenaultii</i> (Greater Sand Plover)		IA	
86.	24372 <i>Charadrius leschenaultii</i> subsp. <i>leschenaultii</i> (Greater Sand Plover)		IA	
87.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
88.	26622 <i>Chauvinella coriifolia</i>			
89.	-16645 <i>Cheilodipterus quinquelineatus</i>			
90.	-17028 <i>Cheilopogon</i> sp.			
91.	-16404 <i>Chelmonops curiosus</i>			
92.	2494 <i>Chenopodium murale</i> (Nettle-leaf Goosefoot)	Y		
93.	26633 <i>Chondria dangeardii</i>			
94.	24980 <i>Christinus marmoratus</i> (Marbled Gecko)			
95.	-18239 <i>Chromis westaustralis</i>			
96.	26646 <i>Chrysomenia kaernbachii</i>			Y
97.	26647 <i>Chrysomenia ornata</i>			Y
98.	-16643 <i>Cirripectes hutchinsi</i>			
99.	26654 <i>Cladophora lehmanniana</i>			
100.	26680 <i>Cladophoropsis herpestica</i>			
101.	26685 <i>Coelarthrum cliffonii</i>			
102.	26691 <i>Coelothrix irregularis</i>			
103.	-18013 <i>Coris auricularis</i>			
104.	-18045 <i>Coryphaena hippurus</i>			
105.	11563 <i>Crassula colorata</i> var. <i>colorata</i>			
106.	3139 <i>Crassula exserta</i>			
107.	24918 <i>Crenadactylus ocellatus</i> subsp. <i>ocellatus</i>			
108.	-16441 <i>Cristiceps aurantiacus</i>			
109.	-16649 <i>Cristiceps australis</i>			
110.	-16543 <i>Crossorhombus valderostratus</i>			Y
111.	25020 <i>Cryptoblepharus plagiocephalus</i>			
112.	-19637 <i>Cryptoblepharus plagiocephalus</i>			Y
113.	25039 <i>Ctenotus fallens</i>			
114.	26712 <i>Curdiea obesa</i>			
115.	26713 <i>Cullenia kraftii</i>			
116.	26731 <i>Cystoseira trinodis</i>			
117.	-18719 <i>Dascyllus aruanus</i>			
118.	26751 <i>Dasyclonium flaccidum</i>			
119.	26752 <i>Dasyclonium incisum</i>			
120.	6218 <i>Daucus glochidiatus</i> (Australian Carrot)			
121.	24995 <i>Delma australis</i>			
122.	-18213 <i>Dendrochirus brachypterus</i>			
123.	29616 <i>Dichotomaria marginata</i>			

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
124.	29615 <i>Dichotomaria obtusata</i>			
125.	26767 <i>Dictyopteris plagiogramma</i>			
126.	26769 <i>Dictyosphaeria cavernosa</i>			
127.	26771 <i>Dictyosphaeria versluisii</i>			
128.	26775 <i>Dictyota ciliolata</i>			
129.	26776 <i>Dictyota dichotoma</i>			
130.	30908 <i>Diomedea chlororhynchos</i> (Yellow-nosed Albatross)		T	
131.	30907 <i>Diomedea chlororhynchos</i> subsp. <i>carteri</i> (Indian Yellow-nosed Albatross)		T	
132.	24468 <i>Diomedea chrysostoma</i> (Grey-headed Albatross)		T	
133.	24469 <i>Diomedea melanophris</i> subsp. <i>melanophris</i> (Black-browed Albatross)		T	
134.	-15471 <i>Dipulus caecus</i>			
135.	11681 <i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>			
136.	26795 <i>Doxodasya bolbochaete</i>			
137.	26797 <i>Drewiana nitella</i>			
138.	26799 <i>Dudresnaya capricornica</i>			Y
139.	25096 <i>Egernia kingii</i> (King's Skink)			
140.	25106 <i>Egernia stokesii</i> subsp. <i>stokesii</i> (Houtman Abrolhos Is. Spiny-tailed Skink, Gidgee Skink, Stokes' Skink)		P4	
141.	349 <i>Ehrharta longiflora</i> (Annual Veldt Grass)	Y		
142.	2511 <i>Enchylaena tomentosa</i> (Barrier Saltbush)			
143.	26811 <i>Endosiphonia spinulosa</i>			
144.	-18266 <i>Engyprosopon grandisquama</i>			
145.	-15641 <i>Enneapterygius larsonae</i>			
146.	-17012 <i>Enneapterygius</i> sp.			
147.	-17362 <i>Epinephelus homosinensis</i> (invalid)			
148.	-15667 <i>Epinephelus rivulatus</i>			
149.	-15692 <i>Epinephelus tauvina</i>			
150.	26818 <i>Epiphloea bullosa</i>			
151.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
152.	7215 <i>Eremophila glabra</i> (Tar Bush)			
153.	4333 <i>Erodium cicutarium</i> (Common Storksbill)	Y		
154.	26823 <i>Erythroclonium sonderi</i>			
155.	-18049 <i>Eubalichthys caeruleoguttatus</i>			
156.	26827 <i>Eucheuma denticulatum</i>			
157.	4626 <i>Euphorbia drummondii</i> (Caustic Weed)			
158.	26830 <i>Euptilota articulata</i>			
159.	-16426 <i>Eviota bimaculata</i>			
160.	-17895 <i>Eviota</i> sp.			
161.	-16885 <i>Fowleria variegata</i>			
162.	5209 <i>Frankenia pauciflora</i> (Seaheath)			
163.	24688 <i>Fulmarus glacialis</i> (Southern Fulmar)			
164.	24959 <i>Gehyra variegata</i>			
165.	26858 <i>Glaphyromenia pustulosa</i>			
166.	26860 <i>Gloiocladia halymenioides</i>			
167.	26864 <i>Gloiosaccion brownii</i>			
168.	26865 <i>Gloiolirichus fractalis</i>			
169.	7983 <i>Gnaphalium indutum</i> (Tiny Cudweed)			
170.	-17954 <i>Gnatholepis cauerensis</i>			
171.	-18441 <i>Gomphosus varius</i>			
172.	26874 <i>Gracilaria textoni</i>			
173.	1956 <i>Grevillea argyrophylla</i> (Silvery-leaved Grevillea)			
174.	-15571 <i>Gymnothorax undulatus</i>			
175.	-17945 <i>Gymnothorax woodwardi</i>			
176.	25627 <i>Haematopus fuliginosus</i> (Sooty Oystercatcher)			
177.	24487 <i>Haematopus longirostris</i> (Pied Oystercatcher)			
178.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)		IA	
179.	-17942 <i>Halichoeres brownfieldi</i>			
180.	26890 <i>Halimeda cuneata</i>			
181.	-15453 <i>Halophryne ocellatus</i>			
182.	35863 <i>Haloplegma duperreyi</i>			
183.	-16604 <i>Helcogramma decurrens</i>			
184.	29594 <i>Helichrysum luteoalbum</i> (Jersey Cudweed)			
185.	26915 <i>Hennedya crispa</i>			
186.	26925 <i>Heterocladia caudata</i>			
187.	-18144 <i>Heteroclinus</i> sp.			
188.	-15394 <i>Heterodontus portusjacksoni</i>			
189.	26927 <i>Heterodoxia denticulata</i>			
190.	-16492 <i>Hippocampus elongatus</i>			
191.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
192.	-16419 <i>Histrio histrio</i>			

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
193.	449 <i>Hordeum leporinum</i> (Barley Grass)	Y		
194.	26946 <i>Hormophya cuneiformis</i>			
195.	18137 <i>Hornungia procumbens</i>	Y		
196.	6229 <i>Hydrocolyle diantha</i>			
197.	-18353 <i>Hypoaetherina terminckii</i>			
198.	-15885 <i>Hypoplectrodes cardinalis</i>			
199.	-15914 <i>Hypoplectrodes wilsoni</i>			
200.	-15409 <i>Hypopterus macropterus</i>			
201.	-16439 <i>Hyporhamphus melanochir</i>			
202.	-18163 <i>Inimicus sinensis</i>			
203.	-15407 <i>Kyphosus cornelii</i>			
204.	-15387 <i>Labracinus lineatus</i>			
205.	-18046 <i>Lactoria concatenatus</i>			
206.	25637 <i>Larus novaehollandiae</i> (Silver Gull)			
207.	24511 <i>Larus novaehollandiae</i> subsp. <i>novaehollandiae</i>			
208.	25638 <i>Larus pacificus</i> (Pacific Gull)			
209.	26998 <i>Laurencia brongniartii</i>			
210.	27005 <i>Laurencia majuscula</i>			
211.	27011 <i>Lenormandia latifolia</i>			
212.	3030 <i>Lepidium tyratogynum</i>			
213.	3043 <i>Lepidium puberulum</i>		P4	
214.	-15615 <i>Lepidoligula spinosa</i>			
215.	25133 <i>Lerista elegans</i>			
216.	-19509 <i>Lerista lineopunctulata</i>			
217.	25148 <i>Lerista lineopunctulata</i>			
218.	25165 <i>Lerista praepedita</i>			
219.	-18003 <i>Lethrinus</i> sp.			
220.	27020 <i>Liagora australasica</i>			
221.	30932 <i>Limosa lapponica</i> (Bar-tailed Godwit)		IA	
222.	27043 <i>Lobophora variegata</i>			
223.	8682 <i>Lolium loliaceum</i> (Stiff Ryegrass)	Y		
224.	479 <i>Lolium temulentum</i> (Drake)	Y		
225.	27048 <i>Lomentaria monochlamydea</i>			
226.	-17143 <i>Lotella fuliginosa</i>			
227.	-19306 <i>Lotella rhacinos?</i>			Y
228.	-16656 <i>Lutjanus quinquelineatus</i>			
229.	6968 <i>Lycium ferocissimum</i> (African Boxthorn)	Y		
230.	-14788 <i>Lycosa corallina</i>			
231.	24690 <i>Macronektes giganteus</i> (Southern Giant Petrel)		T	
232.	24131 <i>Macropus eugenii</i> subsp. <i>derbianus</i> (Tammam Wallaby (WA subsp))		P5	
233.	4961 <i>Malva parviflora</i> (Marshmallow)	Y		
234.	31351 <i>Malva preissiana</i>			
235.	-16687 <i>Maxillcosta lopholepis</i>			
236.	-17955 <i>Meiacanthus grammistes</i>			
237.	4085 <i>Melilotus indicus</i>	Y		
238.	25184 <i>Menetia greyii</i>			
239.	27062 <i>Meristotheca papulosa</i>			
240.	2813 <i>Mesembryanthemum crystallinum</i> (Iceplant)	Y		
241.	27070 <i>Metamastophora flabellata</i>			
242.	-16890 <i>Microcanthus strigalus</i>			
243.	-15458 <i>Monacanthus chinensis</i>			
244.	25192 <i>Morethia obscura</i>			
245.	6490 <i>Muellerolimon salicorniaceum</i>			
246.	-15523 <i>Mugil cephalus</i>			
247.	-16515 <i>Muraenichthys</i> sp.			
248.	-18149 <i>Mustelus antarcticus</i>			
249.	7291 <i>Myoporum insulare</i> (Blueberry Tree)			
250.	-17312 <i>Myrichthys colubrinus</i>			
251.	27090 <i>Myriodesma quercifolium</i>			
252.	-16847 <i>Neatypus obliquus</i>			
253.	-18306 <i>Nectamia fusca</i>			
254.	24210 <i>Neophoca cinerea</i> (Australian Sea Lion)		S	
255.	-18769 <i>Neosebastes bougainvillii</i>			
256.	30941 <i>Nephurus millii</i> (Barking Gecko)			
257.	27100 <i>Neurymenia fraxinifolia</i>			
258.	11327 <i>Nicotiana occidentalis</i> subsp. <i>hesperis</i>			
259.	4366 <i>Nitraria billardierei</i> (Nitrate Bush)			
260.	-15462 <i>Norfolkia brachylepis</i>			
261.	-15385 <i>Notolabrus parilus</i>			
262.	25631 <i>Oceanites marinus</i> (White-faced Storm Petrel)			

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
263.	24495 <i>Oceanites marinus</i> subsp. <i>dulciae</i>			
264.	-18012 <i>Omobranchus germaini</i>			
265.	-18259 <i>Omobranchus</i> sp.			
266.	-16926 <i>Onigocia pedimacula?</i>			
267.	-15400 <i>Ophiclinus gracilis</i>			
268.	-16887 <i>Orectolobus hutchinsi</i>			
269.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
270.	24693 <i>Pachyptila desolata</i> (Antarctic Prion)			
271.	25543 <i>Pandion haliaetus</i> (Osprey)			
272.	24299 <i>Pandion haliaetus</i> subsp. <i>cristatus</i>			
273.	-16092 <i>Paracaesio xanthura</i>			
274.	-15468 <i>Parachaetodon ocellatus</i>			
275.	-16479 <i>Paramonacanthus choirocephalus</i>			
276.	-16842 <i>Parapercis haackei</i>			
277.	-16894 <i>Parapercis nebulosa</i>			
278.	516 <i>Parapholis incurva</i> (Coast Barbgrass)	Y		
279.	-18300 <i>Paraplesiops meleagris</i>			
280.	-16442 <i>Paraplotosus albilabris</i>			
281.	-15854 <i>Paraplerois heterurus</i>			
282.	-18256 <i>Parquula melbournensis</i>			
283.	12670 <i>Parietaria cardiostegia</i>			
284.	-16840 <i>Parma mccullochi</i>			
285.	-18426 <i>Parma occidentalis</i>			
286.	-16844 <i>Parma</i> sp.			
287.	-18374 <i>Parupeneus spilurus</i>			
288.	-17978 <i>Paxton concilians</i>			Y
289.	-15658 <i>Pegasus volitans</i>			
290.	-17233 <i>Pempheris analis</i>			
291.	-18265 <i>Pempheris klunzingeri</i>			
292.	-15454 <i>Pempheris n.sp</i>			
293.	-16512 <i>Pentapodus vitta</i>			
294.	-16864 <i>Pervagor janthinosoma</i>			
295.	-16623 <i>Petroscirtes mitralus</i>			
296.	27127 <i>Peyssonnelia capensis</i>			
297.	27135 <i>Phacelocarpus sessilis</i>			
298.	24663 <i>Phaethon rubricauda</i> (Red-tailed Tropicbird)			
299.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
300.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
301.	24668 <i>Phalacrocorax varius</i> subsp. <i>hypoleucos</i>			
302.	551 <i>Phalaris minor</i> (Lesser Canary Grass)	Y		
303.	27141 <i>Phylodictyon anastomosans</i>			
304.	27144 <i>Platoma cyclocolpum</i>			
305.	-17147 <i>Platycephalus endrachtensis</i>			
306.	-18274 <i>Platycephalus longispinis</i>			
307.	-15408 <i>Platycephalus</i> sp.			
308.	-15549 <i>Plectroglyphidodon leucozonus</i>			
309.	27157 <i>Plocamium preissianum</i>			
310.	-16865 <i>Plotosus lineatus</i>			
311.	24383 <i>Pluvialis squatarola</i> (Grey Plover)		IA	
312.	2905 <i>Polycarpon tetraphyllum</i> (Fourleaf Allseed)	Y		
313.	-18260 <i>Pomacentrid</i> sp.			
314.	-17883 <i>Pomacentrus milleri</i>			
315.	-16641 <i>Pomacentrus</i> sp.			
316.	24771 <i>Porzana tabuensis</i> (Spotless Crane)			
317.	15425 <i>Prasophyllum calcicola</i>			
318.	27188 <i>Predaea laciniosa</i>			
319.	27189 <i>Predaea weldii</i>			
320.	-16477 <i>Priacanthus hamrur</i>			
321.	-15649 <i>Pristotis obtusirostris</i>			
322.	-17885 <i>Pseudochromis wilsoni</i>			
323.	-16456 <i>Pseudogobius</i> sp.			
324.	-17116 <i>Pseudorhombus quinquocellatus</i>			
325.	28000 <i>Psora decipiens</i>			
326.	-18984 <i>Pteragogus</i> sp.			Y
327.	27195 <i>Pterocladia lucida</i>			
328.	25710 <i>Pterodroma macroptera</i> (Great-winged Petrel)			
329.	-17952 <i>Pterois volitans</i>			
330.	25712 <i>Puffinus assimilis</i> (Little Shearwater)			
331.	24711 <i>Puffinus assimilis</i> subsp. <i>assimilis</i>			
332.	24712 <i>Puffinus carneipes</i> (Fleshy-footed Shearwater)		IA	

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
333.	24716 <i>Puffinus pacificus</i> (Wedge-tailed Shearwater)		IA	
334.	-13867 <i>Pycnothea flynni</i>			
335.	28017 <i>Pyxine cocoes</i>			
336.	28020 <i>Pyxine pelricola</i>			
337.	3061 <i>Raphanus raphanistrum</i> (Wild Radish)	Y		
338.	3062 <i>Raphanus sativus</i> (Radish)	Y		
339.	8197 <i>Reichardia lingitana</i> (False Sowthistle)	Y		
340.	-16732 <i>Rhabdosargus sarba</i>			
341.	27226 <i>Roservingea orientalis</i>			
342.	10970 <i>Rostraria cristata</i>	Y		
343.	2593 <i>Sarcocornia quinqueflora</i> (Beaded Samphire)			
344.	27229 <i>Sarcomenia delesserioides</i>			
345.	13006 <i>Sarcostemma viminalis</i> subsp. australe			
346.	27236 <i>Sargassum decurrens</i>			
347.	27238 <i>Sargassum distichum</i>			
348.	27239 <i>Sargassum fallax</i>			
349.	27246 <i>Sargassum lacerifolium</i>			
350.	27248 <i>Sargassum ligulatum</i>			
351.	27253 <i>Sargassum peronii</i>			
352.	27258 <i>Sargassum spinuligerum</i>			
353.	-15761 <i>Scarus schlegeli</i>			
354.	-17094 <i>Scarus</i> sp.			
355.	41660 <i>Schenkia australis</i>			
356.	27267 <i>Schizothrix mexicana</i>			
357.	27270 <i>Scinaia tsinglanensis</i>			
358.	-17902 <i>Scobirichthys granulatus</i>			
359.	-16877 <i>Scorpaena panda</i>			
360.	-18192 <i>Scorpaena sumptuosa</i>			
361.	-15492 <i>Scorpaenodes guamensis</i>			
362.	-18175 <i>Scorpaenodes littoralis</i>			
363.	-17267 <i>Scorpaenodes steenei</i>			
364.	27274 <i>Sebdenia flabellata</i>			
365.	20161 <i>Senecio pinnatifolius</i>			
366.	25883 <i>Senecio pinnatifolius</i> var. <i>pinnatifolius</i>			
367.	606 <i>Setaria dielsii</i> (Diels' Pigeon Grass)			
368.	-18090 <i>Sillago analis</i>			
369.	-15782 <i>Siphania cuneiceps</i>			
370.	3070 <i>Sisymbrium irio</i> (London Rocket)	Y		
371.	3072 <i>Sisymbrium orientale</i> (Indian Hedge Mustard)	Y		
372.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
373.	-16849 <i>Solegnathus lelliensis</i>			
374.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
375.	-18043 <i>Sorosichthys ananassa</i>			
376.	18111 <i>Spergularia nesophila</i>		P3	
377.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
378.	27304 <i>Sporochnus comosus</i>			
379.	-16436 <i>Spratelloides robustus</i>			
380.	-15358 <i>Stephanolepis</i> sp.			
381.	24520 <i>Sterna anaethetus</i> subsp. <i>anaethetus</i>			
382.	24522 <i>Sterna bergii</i> (Crested Tern)			
383.	24523 <i>Sterna caspia</i> (Caspian Tern)		IA	
384.	25640 <i>Sterna dougallii</i> (Roseate Tern)		IA	
385.	24524 <i>Sterna dougallii</i> subsp. <i>gracilis</i> (Roseate Tern)		IA	
386.	25641 <i>Sterna fuscata</i> (Sooty Tern)			
387.	24525 <i>Sterna fuscata</i> subsp. <i>nubilosa</i>			
388.	24530 <i>Sterna nereis</i> subsp. <i>nereis</i> (Fairy Tern)		T	
389.	-16388 <i>Stelthojulis bandanensis</i>			
390.	-16505 <i>Stelthojulis strigiventer</i>			
391.	27320 <i>Styppodium australasicum</i>			
392.	2639 <i>Suaeda australis</i> (Seablite)			
393.	25754 <i>Sula leucogaster</i> (Brown Booby)		IA	
394.	30841 <i>Sula serrator</i> (Australasian Gannet)			
395.	13592 <i>Swainsona calcicola</i>			
396.	-18682 <i>Synchiropus rameus</i>			
397.	-16588 <i>Tathicarpus butleri</i>			
398.	33236 <i>Telectornia halocnemoides</i> (Shrubby Samphire)			
399.	-14199 <i>Tetralycosa oraria</i>			
400.	-17292 <i>Tetraodontid</i> sp.			
401.	-15372 <i>Thalassoma lunare</i>			
402.	-15512 <i>Thalassoma lutescens</i>			

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403.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
404.	-17187 <i>Thunnus albacares</i>			Y
405.	27334 <i>Titanophora weberae</i>			
406.	29601 <i>Titanophycus validus</i>			
407.	27336 <i>Tolyptocladia glomerulata</i>			
408.	-16371 <i>Torquigener pallimaculatus</i>			
409.	-18102 <i>Torquigener paxtoni</i>			
410.	-18282 <i>Torquigener pleurogramma</i>			
411.	-15670 <i>Torquigener sp.</i>			
412.	-15823 <i>Torquigener vicinus</i>			
413.	-17935 <i>Trachinops brauni</i>			
414.	27339 <i>Trichogloea requienii</i>			
415.	27340 <i>Tricleocarpa cylindrica</i>			
416.	147 <i>Triglochlin mucronata</i>			
417.	152 <i>Triglochlin trichophora</i>			
418.	24803 <i>Tringa brevipes</i> (Grey-tailed Tattler)		IA	
419.	27345 <i>Turbinaria gracilis</i>			
420.	27346 <i>Turbinaria ornata</i>			
421.	24069 <i>Tursiops truncatus</i> (Bottlenose Dolphin)			
422.	27347 <i>Tylotus obtusatus</i>			
423.	27352 <i>Ulva lactuca</i>			
424.	-16662 <i>Upeneichthys lineatus</i>			
425.	-15357 <i>Upeneichthys stolti</i>			
426.	8254 <i>Urospermum picroides</i> (False Hawkbit)	Y		
427.	27356 <i>Valonia macrophysa</i>			
428.	-16612 <i>Vanderhorstia sp.</i>			
429.	-15629 <i>Vincentia badia</i>			
430.	27362 <i>Webervanbossea splachnoides</i>			
431.	27368 <i>Wrangelia plumosa</i>			
432.	30455 <i>Xanthoria elixii</i>			
433.	27370 <i>Yamadaella caenomyce</i>			
434.	-16704 <i>Zebrias cancellatus</i>			
435.	-16480 <i>Zephyrichthys barryi</i>			
436.	25765 <i>Zosterops lateralis</i> (Grey-breasted White-eye)			
437.	24856 <i>Zosterops lateralis subsp. gouldi</i>			

**Conservation Codes**

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

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