



Department of  
Environment and Conservation

**EXOTIC RODENT ERADICATION PLANS FOR SEVERAL  
ISLANDS OFF THE WESTERN AUSTRALIAN COAST.**

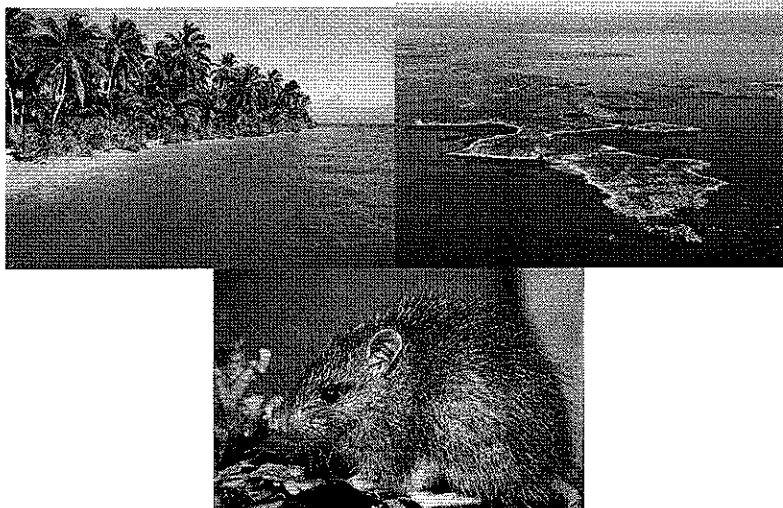
- ADELE ISLAND, LONG ISLAND AND SUNDAY ISLAND  
(WEST KIMBERLEY)
- THREE BAYS ISLAND AND FAURE ISLAND (SHARK BAY)
  - DIRECTION ISLAND (COCOS – KEELING GROUP)

**A Caring For Our Country Project**

**Keith Morris and Brent Johnson**

**DEC Science Division**

**September 2010**





## Department of Environment and Conservation

### Exotic Rodent Eradication Plan

#### ADELE ISLAND

**Prepared by:** Keith Morris, Brent Johnson and Bill Muir - Science Division, DEC.

**Island Name:** Adele Island.

**Locality:** West Kimberley (15° 30' 26", 123° 08' 55")

**Island Area:** 247 ha

**Vesting:** Nature Reserve vested in the Conservation Commission of WA.  
Managed by DEC.

**Topography:** Sand cay overlying a shallow rocky platform and reef.

**Vegetation:** Extensive areas of thick *Spinifex longifolius*.

**Buildings / structures:** Lighthouse on north-west corner.

**Exotic rodents:** Polynesian rat *Rattus exulans*, (also known as Pacific rat and Kiore) probably introduced by Indonesian fishermen (Abbott and Burbidge 1995). A failed attempt to eradicate the rats on Adele Island was undertaken in 2002 using the toxin Bromadiolone.

**Other species of interest / concerns / non-targets:** Adele Island is one of WA's most important seabird nesting site. Access for rat baiting and monitoring has the potential to disturb nesting seabirds.

**Public use:** Occasional visits by tourists and Indonesian fishers, and lighthouse service personnel.

**Bait / toxin to be used:** Brodifacoum wax blocks.

#### **Baiting strategy:**

- A helicopter reconnaissance survey will be undertaken in September 2010 to assess access options and potential logistics and implementation issues.
- A ground baiting program will be undertaken in May 2011.
  - Walking transects will be cleared through the *Spinifex longifolius* at 25 m intervals across the entire island.
  - Brodifacoum wax blocks pellets will be pinned to the ground (to prevent removal by rats) at marked locations (GPS and flag) along these transects at 25m intervals, therefore delivering a 25 m baiting grid across the island.
  - Aerial baiting is not an option because of issues associated with bird strikes and logistics.
  - Follow up baiting at all sites (same prescription) undertaken 7-10 days after initial baiting. Extra baits deployed when leaving the island.
  - Activity of Pacific rats will be monitored by track surveys and chew stick activity.
  - Warning signs will be erected on the island.

- Any dead rats found will be buried on the island to reduce the risk of non-target poisoning (birds of prey).
- Install long term monitoring chew sticks.
- Ongoing monitoring after one month, then at six month intervals and rebaiting as necessary.
- Declare rat free after three years of no bait take or chew stick activity by Pacific rats.

**Communication strategy:**

- Presentation to DEC West Kimberley District Office.
- Interview with local ABC (Broome).
- Articles in Broome and Derby local community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Information sheets available at DEC Broome office and Tourist Bureau.

**Animal Ethics Approval:** submitted for approval in October 2010.

**Personnel Safety:** Potential hazards have been identified and a JHA prepared.

Hazards identified:

- Handling of toxic baits.
- Animal bites - rats, sand flies, mosquitoes.
- Appropriate PPE – sun protection, boots, gloves.
- Adequate water supplies.
- Small boat safety.
- Walking on rough surfaces.
- Lifting.

**Relevant contacts:**

Organisation	Contact Person	Email
DEC Science	Keith Morris	<a href="mailto:keith.morris@dec.wa.gov.au">keith.morris@dec.wa.gov.au</a> 08 94055159
	Brent Johnson	<a href="mailto:brent.johnson@dec.wa.gov.au">brent.johnson@dec.wa.gov.au</a> 08 94055106
DEC Broome	Alan Byrne – District Manager	<a href="mailto:alan.byrne@dec.wa.gov.au">alan.byrne@dec.wa.gov.au</a> 08 91955500
	Sam Tonkin - NC coordinator	<a href="mailto:sam.tonkin@dec.wa.gov.au">sam.tonkin@dec.wa.gov.au</a>

**References:**

Abbott, I. and Burbidge, A.A. (1995). The occurrence of mammal species on the islands of Australia: a summary of existing knowledge. *CALMScience* 1(3): 259-324.

Figure 1. Aerial photograph of Adele Island.

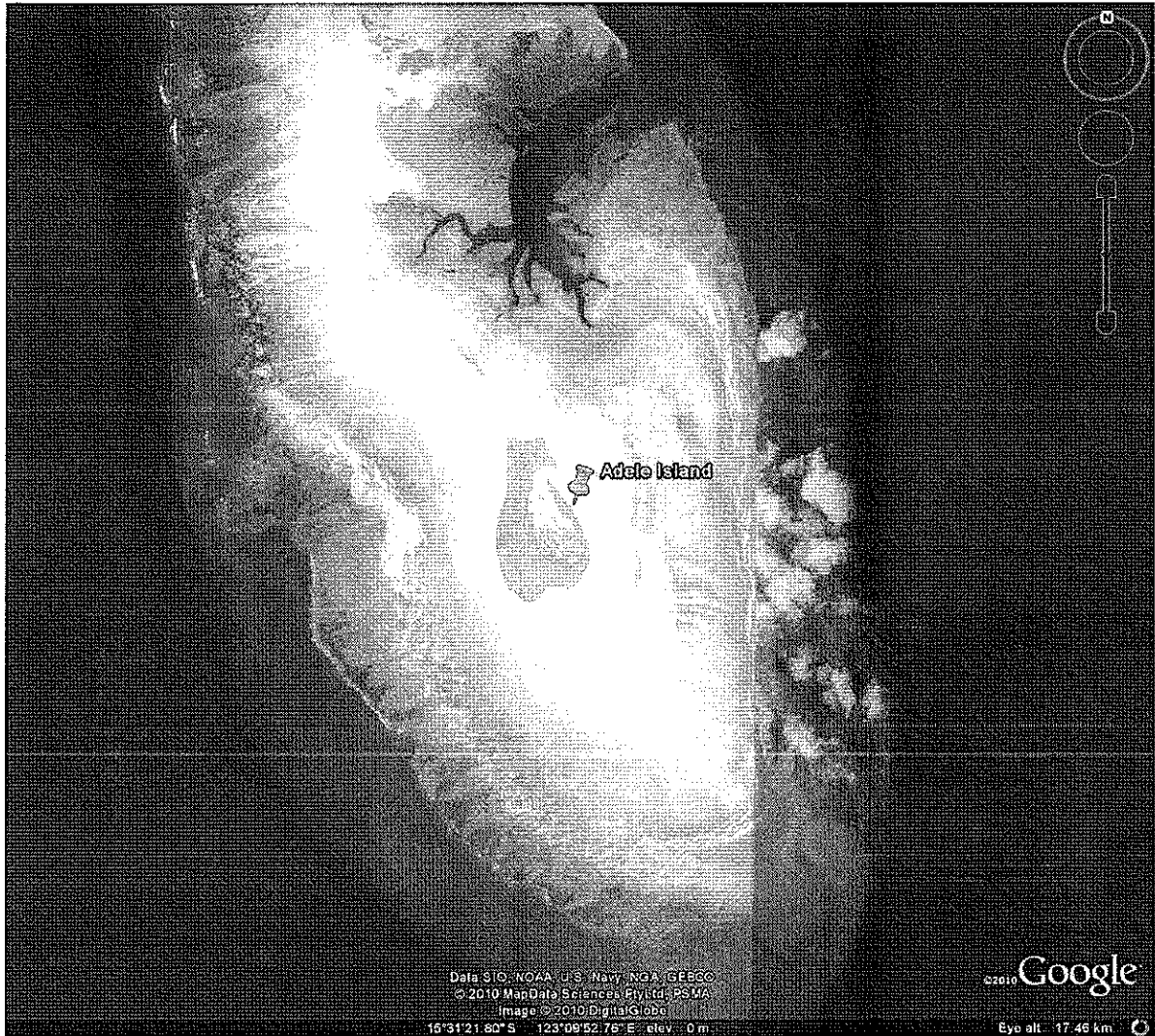
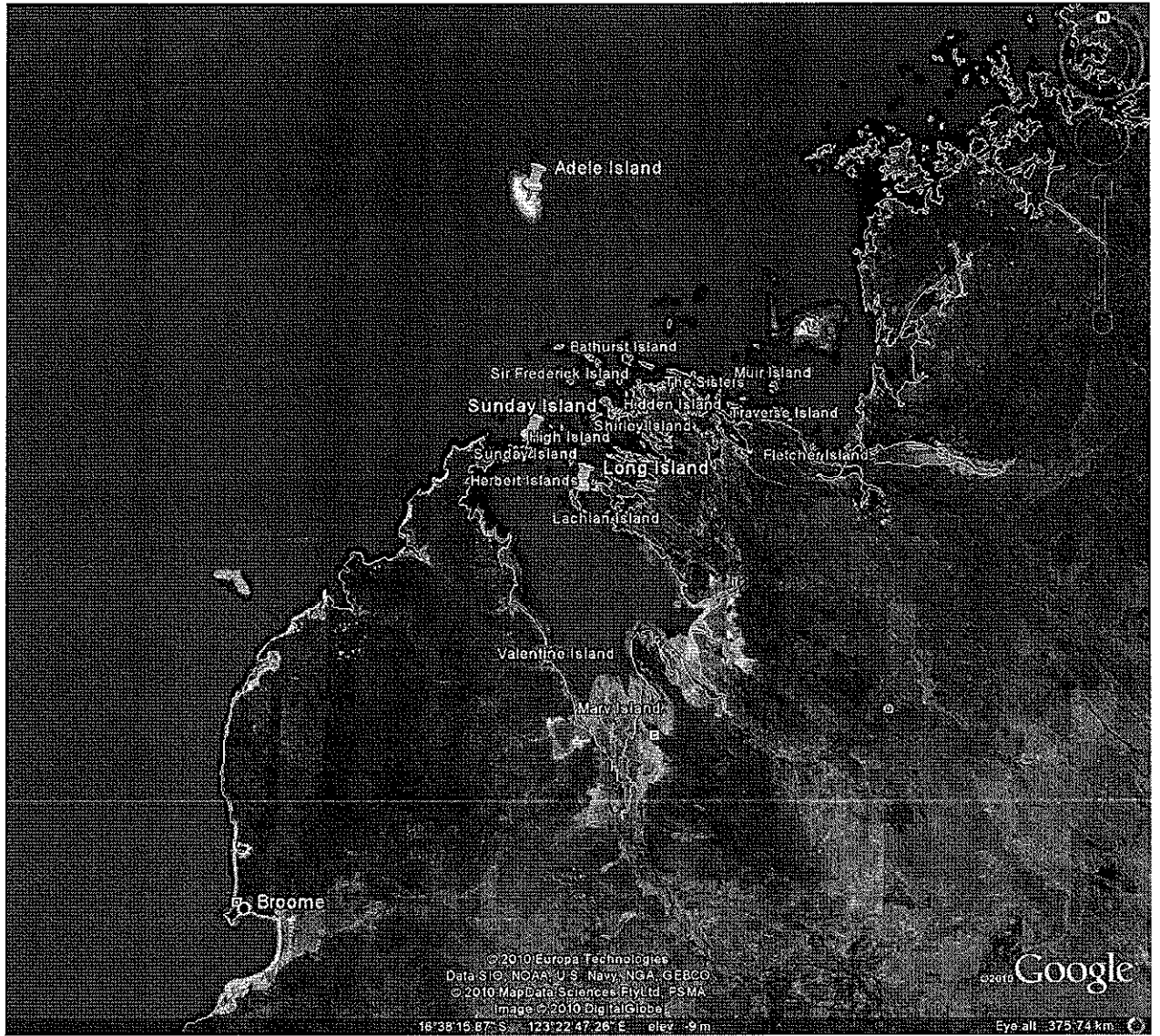


Figure 2. Location of Adele Island in relation to Sunday and Long Islands.





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### Exotic Rodent Eradication Plan

#### DIRECTION ISLAND

**Prepared by:** Keith Morris, Brent Johnson, Andrew Burbidge and Neil Thomas –  
DEC Science Division.

**Island Name:** Direction Island. Also known as Pulu Tikus (Rat Island)

**Location:** Southern atoll of the Cocos – Keeling group.

**Vesting:** Shire of Cocos (Keeling) Islands.

**Island Area:** 34 ha

**Topography:** Crescent shaped low lying coral atoll, sandy beach on leeward side,  
coral rubble on seaward side.

**Vegetation:** small grassed, cleared area on south side for recreation use,  
regenerating area of cabbage bush on north east side where old cable station  
existed, burnt?, west end of island is dense coconut forest.

**Buildings / structures:** Toilet blocks, jetty, picnic / beach shelters, water tanks,  
walkways, some ruins from Cable Station and WW11, navigation beacon.

**Exotic rodents:** Black Rat (*Rattus rattus*) introduced in 1825 from ship wreck,  
possibly House Mouse (recorded by Wood-Jones 1909). Wood-Jones (1909) refers  
to three rat types – the “original rat” confined to Direction Island, *Mus decumanus*  
which was introduced to Pulu Selma and the southern islands from an 1878  
shipwreck, and *Mus rattus* which was found on Home Island following introduction  
from stores from Singapore after 1878. Darwin, in 1854, regarded the Direction  
Island “original rat” as identical to the “English kind”, presumably *Rattus rattus*.  
Previous (ongoing) localised black rat control program undertaken by Shire using  
grain, with active Racumin (Coumatetralyl, first generation anticoagulant). Mummified  
black rat specimen collected from bait station in June 2010, live rat trapped on Home  
Island and kept as specimen.

**Other species of interest / concern:** Rabbits?, feral chickens, proposal for  
Buff Banded Rail to be reintroduced from North Keeling Island once rats are  
eradicated (Commonwealth of Australia 2005).

**Potential Non-targets:** None. Feral chickens to be eradicated. Christmas Island  
thrush observed by Wood-Jones 1906 is now locally extinct (HANZAB), (not  
observed by us).

**Public use:** Yes: jetty, regular ferry and small boats ex Home and West Islands,  
overseas yachts anchor in bay, picnic and camping area.

**Bait to be used:** Brodifacoum wax blocks and 10mm pellets, either placed in bait  
station or on ground. Some wax blocks will be fired into the tops of palm trees with  
gings.

**Baiting strategy:**

- Obtain formal approval to proceed from Shire.
- Commence publicity program.
- Undertake preliminary logistics and technique assessment trip in February 2011.
  - 3 DEC staff and Shire Ranger.
  - Assess bait station design
  - Assess bait take (pellets and blocks) by crabs
  - Check out Prison Island.
  - Elliott trapping for mice, look for rabbits.
  - Logistics of track cutting and bait laying.
  - Get rat specimen from Horsburgh?
- Enlist assistance of local Cocos – Malay community, community engagement strategy prepared.
- Prepare and erect warning signs for Direction Island picnic area (Jason Signs or Deneefe Signs in Perth).
- Ship gear to Cocos in container well in advance (purchase container?).
- Undertake baiting in September 2011, after Ramadan 2011 (1-29 August) (fasting).
- Personnel: Four from Cocos – Malay community, Shire Ranger, 3-4 DEC staff.
- Establish camp on Direction Island, barge from Home Island with equipment (\$250 per trip), Shire dingy support.
- Establish N-S cleared lines ca 1m wide at 25 m intervals over whole island – estimate 25m/hr clearing in dense vegetation.
- Baits to be laid at 3 levels – coconut palm canopy, palm trunks (1-2m height), on ground, and at approx 25m intervals.
- Gings used to launch baits into palm canopies – 2 wax blocks joined by a string. Trees to be marked.
- Bait stations to be used on palm trunks – PVC tubing, loaded with 6 wax blocks. Trees to be marked.
- Ground baiting – combination of wax blocks and pellets in plastic bags. Site to be marked.
- Baits also to be put around coast just above HWM.
- Establish permanent bait stations at north end of Home Island, on Prison Island, and south end of Direction Island.
- Monitor bait take from stations every 1-2 days.
- After 7 days, rebait baiting sites.
- Continue monitoring for another 7 days, and rebait as necessary.
- Install long term monitoring chew sticks.
- Ongoing monitoring and rebaiting as necessary.
- Declare rat free after 3 years of no bait take or chew stick activity by black rats.

**Communication strategy:**

- Presentation to Shire Council.
- School presentations (Home and West Islands).
- 6CKI radio.
- Articles in "The Atoll" community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Ownership and support of rat eradication by local community.
- Permanent bait stations established on north end of Home Island, Prison Island, south end of Direction island, and picnic area of Direction Island.
- Bait stations on Home and West Island wharfs.
- Bait stations / flour trays on ferry.
- Information available on need for rat free vessels when visiting Cocos Is.
- Support of Customs / AQIS when initially inspecting arriving vessels.

**Relevant contacts:**

Organisation	Contact Person	Email
<b>Shire of Cocos (Keeling)</b>	Peter Clark - CEO	
	Alan Clark - Director of Technical Services	91626649 Home Island, 91626740 West Island dts@shire.cc
	Jamil Ibram - Ranger	ranger@shire.cc
<b>Parks Australia (Pulu Keeling National Park)</b>	Ismail MacRae	<a href="mailto:Ismail.macrae@environment.gov.au">Ismail.macrae@environment.gov.au</a> or <a href="mailto:pulukeelingnationalpark@environment.gov.au">pulukeelingnationalpark@environment.gov.au</a>
	Trish	
<b>AQIS Christmas Island</b>	Craig Brockway 91647456	<a href="mailto:christmas.island@aqis.gov.au">christmas.island@aqis.gov.au</a>
<b>Coco Port facilities</b>		<a href="http://www.patrick.com.au">www.patrick.com.au</a>
<b>Indian Ocean Group Training Association</b>	Siti Yasene	<a href="mailto:siti@training.edu.cc">siti@training.edu.cc</a>
	Aindil Minkom	<a href="mailto:aindil@training.edu.cc">aindil@training.edu.cc</a>
<b>Barge hire (Cocos Coop)</b>	Abedin Not	<a href="mailto:marine@kampong.cc">marine@kampong.cc</a>

**References:**

Commonwealth of Australia 2005. National Recovery Plan for the buff-banded rail (Cocos (Keeling) Islands) *Gallirallus philippensis andrewsi*. Department of Environment and Heritage.

Wood-Jones, F. (1909). The fauna of the Cocos-Keeling Atoll, collected by F. Wood-Jones. *Proceedings of the Zoological Society, London* 1909: 132-159





Aerial photograph of Direction Island, Cocos (Keeling) Group.



## Department of Environment and Conservation

### Exotic Rodent Eradication Plan

#### FAURE ISLAND

**Prepared by:** Keith Morris, Brent Johnson and Bill Muir – DEC Science Division.

**Island Name:** Faure Island

**Locality:** Disappointment Reach within the Shark Bay World Heritage Area and Shark Bay Marine Park (25° 51' 02" E, 113° 53' 14" S).

**Vesting:** Pastoral Lease managed by Australian Wildlife Conservancy (AWC).

**Island Area:** 5,816 ha

**Topography:** Oval shaped, sandy island overlying Tamala limestones.

**Vegetation:** Faure Island contains a diverse range of habitats which include (a) *Acacia* shrublands over sand-plains, (b) *Spinifex longifolius* grasslands associated with beaches and dunes, (c) low shrublands associated with Birridas and saline flats and (d) mangroves surrounding tidal inlets.

**Buildings / structures:** Buildings associated with pastoral lease – homestead, sheds etc, and some fencing.

**Exotic rodents:** House mouse *Mus domesticus*. Trapped on the island in 1990 by Sanders and Harold during a search for Shark Bay mice, but probably present since the late 19<sup>th</sup> century when the pastoral lease was first established. Cats were also introduced to Faure Island at this time but were eradicated in 2001. Goats and most of the sheep have been removed from the island.

**Other species of interest / concern / non-targets:** Threatened mammals reintroduced to Faure Island by AWC - Banded hare-wallaby *Lagostrophus fasciatus*, western barred bandicoot *Perameles bougainville*, Shark Bay mouse *Pseudomys fieldi* and boodie *Bettongia lesueur*. The goanna *Varanus gouldi* is also present. Predatory avian raptors also resident (barn owl, boobook owl, white-bellied sea-eagle and kestrel).

**Public use:** Occasional unauthorised visits and landings by tourists from nearby Monkey Mia. Regular visits by AWC staff and volunteers.

**Bait to be used:** Brodifacoum impregnated wax blocks (Ex-verminator), or Pestoff pellets.

**Baiting strategy:**

- Reconnaissance to be undertaken in March/April 2011 to assess effectiveness of bait stations to prevent poison take by non-targets, particularly the threatened Shark Bay mouse.
- Providing an effective bait station is developed and AWC support a mouse eradication program, ground baiting will be undertaken in 2012. This will be based on the provision of data demonstrating the effectiveness of the bait

stations and protection of non-targets, particularly the threatened Shark Bay mouse.

- Enclosed bait stations will be set on the ground at 10 – 20 m intervals over the entire island.
  - Pinned to the ground to prevent disturbance by boobies and goannas.
  - Locations will be recorded on GPS.
- Wax blocks impregnated with brodifacoum will be used inside the bait stations.
  - All bait stations will be monitored daily and the amount of bait consumed recorded. Baits will be replaced after seven days.
- Warning signs will be erected on the island.
- Sandy areas will be monitored for house mouse activity.
- Any dead mice found will be buried on the island to reduce the risk of non-target poisoning.
- Install long term monitoring chew sticks.
- Ongoing monitoring after one month, then at six month intervals and rebaiting as necessary.
- Declare mouse free after three years of no bait take or chew stick activity by house mice.

**Communication strategy:**

- Presentation to AWC Board.
- Presentation to Shire Council if requested.
- School presentations (Denham).
- Interview with local ABC (Karratha).
- Articles in Denham local community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Inspection of vessels and aircraft that travel to Faure Island
- Information signs on Faure Island and adjacent mainland (Monkey Mia).
- Regular inspections of Faure Island.

**Animal Ethics Approval:** AEC application submitted in October 2010

**Personnel Safety:** Potential hazards have been identified and a JHA prepared.

Hazards identified:

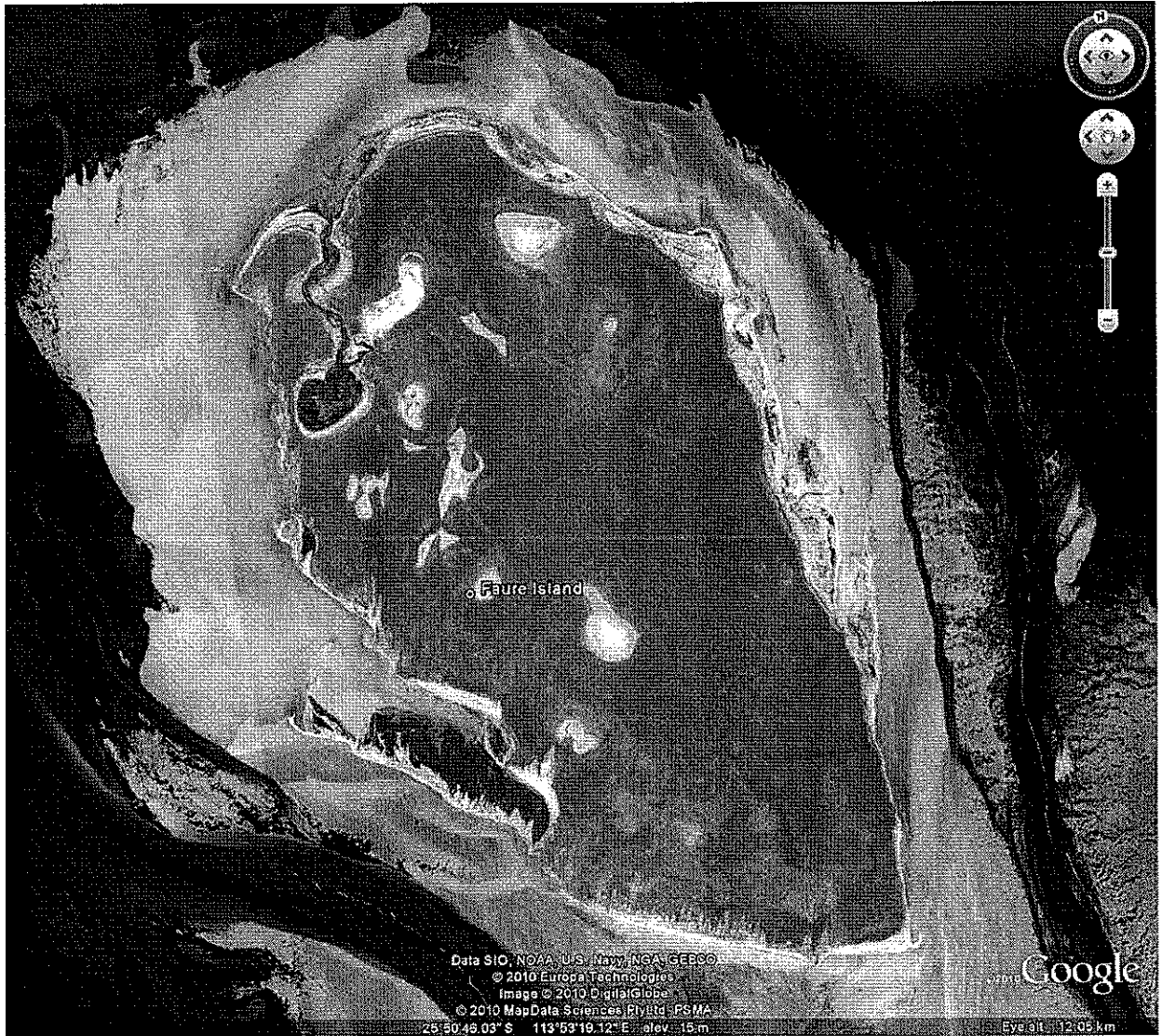
- Handling of toxic baits.
- Appropriate PPE – sun protection, boots, gloves.
- Boating safety.
- Walking on rough surfaces.
- Lifting.
- Driving hazards.

**Relevant contacts:**

Organisation	Contact Person	Email
DEC Denham	Brett Fitzgerald – District Manager	<a href="mailto:brett.fitzgerald@dec.wa.gov.au">brett.fitzgerald@dec.wa.gov.au</a> 08 99481208
Denham Shire Council		<a href="mailto:admin@sharkbay.wa.gov.au">admin@sharkbay.wa.gov.au</a> , 08 99481218
Australian Wildlife Conservancy	Dr Manda Page	<a href="mailto:manda@australianwildlife.org">manda@australianwildlife.org</a> 08 95723845

**References:**

Sanders, A. and Harold, G. (1990). A search for the Shark Bay mouse in Shark Bay, WA, 1990. Unpublished Report to World Wildlife Fund, Sydney.



**Aerial photograph of Faure Island, Shark Bay.**



Locality of Three Bays and Faure Islands, Shark Bay World Heritage Area.



## Department of Environment and Conservation

### Exotic Rodent Eradication Plan

#### LONG ISLAND

**Prepared by:** Keith Morris, Brent Johnson and Bill Muir - DEC Science Division.

**Island Name:** Long Island

**Locality:** Buccaneer Archipelago, west Kimberley (16° 34' 52", 123° 21' 51")

**Island Area:** 1356 ha

**Vesting:** Unallocated Crown Land, subject to Native Title Claim by the Mayala group.

**Topography:** Sandstone island (King Leopold sandstones) with rocky headlands and outcrops, interspersed with sandy beaches and adjacent sandplains.

#### **Vegetation:**

Coastal: Mangroves (Low dense woodlands of *Ceriops tagal*/*Rhizophora stylosa*/*Avicennia marina*/*Brugiera exaristata*/*Sonneratia alba*)

Beaches / Cliffs: *Spinifex longifolius* grassland, Vine thickets dominated by *Canarium australianum* and *Ganophyllum floribundum*

Creeklines: *Melaluca leucadendra*/*Corymbia polycarpa*/*Pandanus spiralis* woodlands  
Some rainforest patches, but burnt in 2008.

Rocky outcrops: *Acacia translucens* /*Acacia delibrata* shrubland over *Triodia bynoei* hummock grassland (mostly burnt in 2008)

Ridge summits: *Eucalyptus brachyandra* over mixed shrubland over *Triodia bynoei* hummock grassland

**Buildings / structures:** None.

**Exotic rodents:** Possibly the black rat *Rattus rattus*. First recorded in 1980s, however the specimen lodged in the WA Museum was mis-identified and is actually a native rat *Melomys burtoni*. Black rats were not recorded during a 2009 trapping survey. It is possible that black rats do not occur on Long Island.

**Other species of interest / concerns / non-targets:** The rock-wallaby *Petrogale concinna* is present on Long Island. This is not a listed threatened species and occurs on several islands in the Kimberley. If black rats are confirmed and an eradication program is undertaken, this species would potentially be at risk. Predatory avian raptors such as white-bellied sea-eagle and kestrel are also present.

**Public use:** Yes: occasional visitation by Mayala community members. The island is approximately 15 km from the One Arm Point community, the closest access point so is not visited as often as islands closer such as Sunday Island.

**Bait / toxin to be used:** Brodifacoum pellets (15mm).

**Baiting strategy:**

- Approval from the Mayala traditional owners to access Long Island will be obtained and an Agreement between DEC and the Kimberley Land Council signed.
- A reconnaissance and trapping survey will be undertaken in May 2012 to confirm the presence or absence of black rats.
- If black rats are confirmed an aerial baiting program will be undertaken in 2013.
  - A strategy to protect the grassland melomys and rock-wallaby population will be developed and agreed to by the Mayala group.
  - Brodifacoum pellets will be delivered by a helicopter borne mechanised hopper at a rate of 12 kg / ha delivered on 50m flight lines (recorded on DGPS). Any fresh water sources will be protected by a 50m no aerial baiting buffer. Rats in these areas will be eradicated by either ground baiting or trapping.
  - Follow up baiting (same prescription) undertaken 7-10 days after initial baiting.
  - Activity of black rats, grassland melomys and rock-wallabies will be monitored by trapping, track survey and chew stick activity.
  - Indigenous marine rangers will be involved in the planning, implementation and monitoring components.
- Warning signs will be erected on the island.
- Sandy areas will be monitored for rat activity.
- Any dead rats found will be removed from the island to reduce the risk of non-target poisoning.
- Install long term monitoring chew sticks.
- Ongoing monitoring after one month, then at six month intervals and rebaiting as necessary.
- Declare rat free after three years of no bait take or chew stick activity by black rats.

**Communication strategy:**

- Presentation to Mayala community and KLC.
- Interview with local ABC (Broome).
- Articles in Broome and Derby local community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Information signs on Long Island and adjacent mainland at Cape Leveque (Kooljaman) and One Arm Point.
- Information sheets available at DEC Broome office, Cape Leveque and One Arm Point.
- Regular inspections of Long Island.

**Animal Ethics Approval:** submitted for approval in October 2010.

**Personnel Safety:** Potential hazards have been identified and a JHA prepared.

Hazards identified:

- Handling of toxic baits.
- Animal bites - venomous snakes, rats, sand flies, mosquitoes.
- Appropriate PPE – sun protection, boots, gloves.
- Adequate water supplies.
- Helicopter safety.
- Walking on rough surfaces.
- Lifting.
- Driving hazards.

**Relevant contacts:**

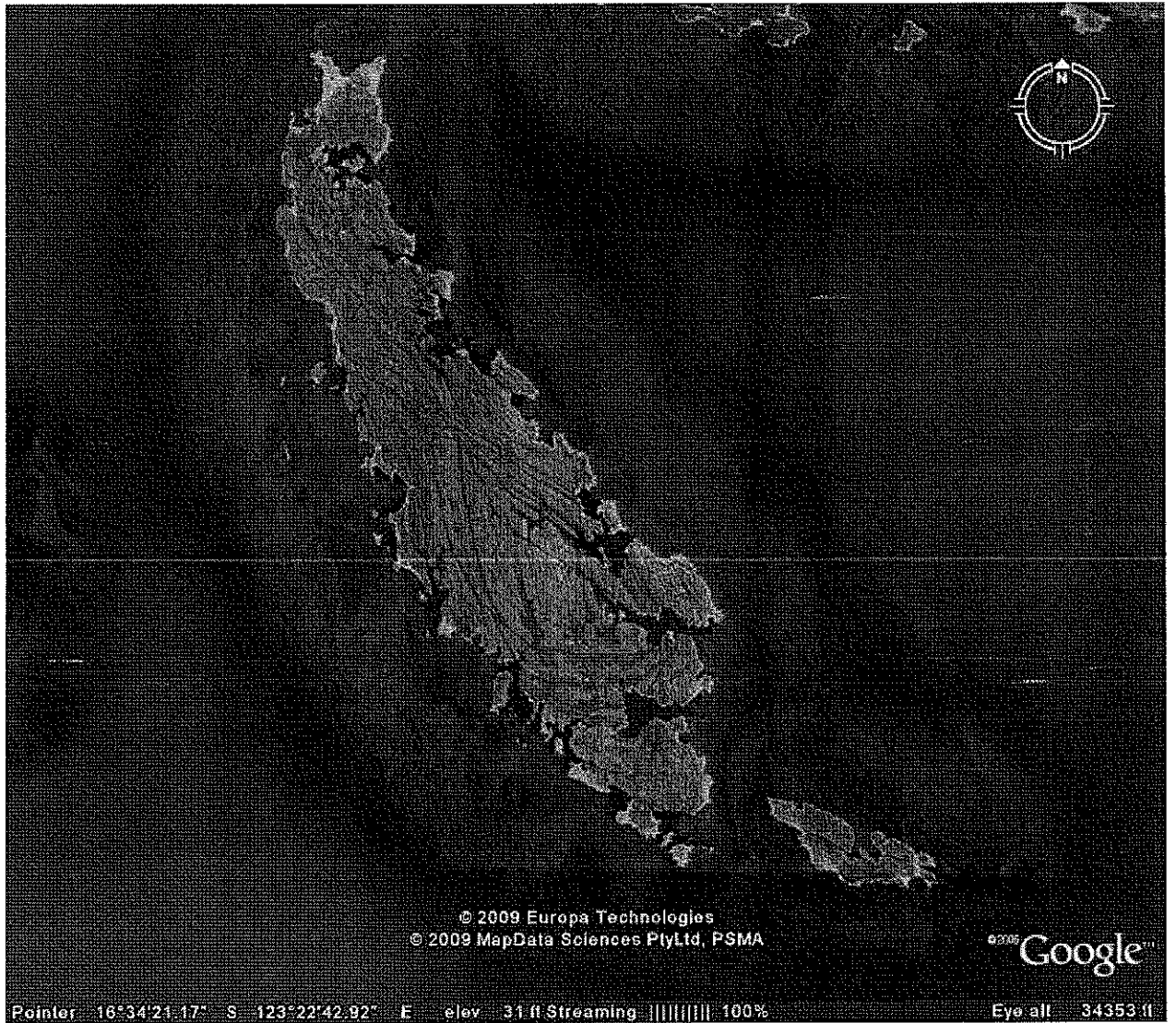
Organisation	Contact Person	Email
DEC Broome	Alan Byrne – District Manager	alan.byrne@dec.wa.gov.au
	Sam Tonkin	sam.tonkin@dec.wa.gov.au
Kimberley Lands Council	Anna Mardling	anna.mardling@klc.org.au,

**References:**

Abbott, I. and Burbidge, A.A. (1995). The occurrence of mammal species on the islands of Australia: a summary of existing knowledge. *CALMScience* 1(3): 259-324.



Aerial photograph of Long Island, Buccaneer Archipelago.





## Department of Environment and Conservation

### Exotic Rodent Eradication Plan

#### SUNDAY ISLAND

**Prepared by:** Keith Morris, Brent Johnson and Bill Muir - Science Division, DEC.

**Island Name:** Sunday Island and adjacent islands connected at low tide.

**Locality:** Buccaneer Archipelago, west Kimberley (16° 25' 23", 123° 11' 40")

**Island Area:** 1157 ha

**Vesting:** Unallocated Crown Land, subject to Native Title Claim by the Bardi Jawi group.

**Topography:** Sandstone island (King Leopold sandstones) with rocky headlands and outcrops, interspersed with sandy beaches and adjacent sandplains.

#### **Vegetation:**

Coastal: Mangroves (Low dense woodlands of *Ceriops tagal*/*Rhizophora stylosa*/*Avicennia marina*/*Brugiera exaristata*).

Beaches / cliffs: *Spinifex longifolius*/*Sorghum ecarinatum* grassland.

Creeklines: *Melauca leucadendra*/*Corymbia polycarpa*/*Pandanus spiralis* woodlands.

Gallery Rainforest: *Ficus virens*/*Celtis phillipensis*.

Rocky outcrops: *Acacia translucens* /*Acacia monticola*/*A. delibrata* shrubland over *Triodia bynoei* hummock grassland.

Settlement Valley and ridge lines: *Eucalyptus ?brachyandra* woodland over bunch grasses or *Triodia bynoei* hummock grassland.

North part of island burnt in 2008.

**Buildings / structures:** Remains of Aboriginal mission (vacated in 1970s) and outstation (used to 1980s).

**Exotic rodents:** Black rat *Rattus rattus*. First recorded in 1980s, 2 specimens in the WA Museum collected by Norm McKenzie (shot in *Ficus*), although one of these is referred to as *Rattus exulans* in Abbot and Burbidge (1995). Black rats were not recorded during a 2009 trapping survey, however access to much of the island was restricted because of cultural and heritage reasons.

**Other species of interest / concerns / non-targets:** Golden bandicoots *Isodon auratus* and rock-wallabies *Petrogale concinna* have been reported (Abbott and Burbidge 1995), but no longer persist. If an eradication program is successful, consideration should be given to reintroducing these species to Sunday Island. The only extant terrestrial native mammal, and potential non-target mammal species is the grassland melomys *Melomys burtoni* which also occurs on several other Kimberley islands. Predatory avian raptors such as white-bellied sea-eagle and kestrel are also present.

Contamination of water sources is a potential concern. Work by Fisher *et al.* (2010) indicates that fresh and marine water sources are not contaminated by brodifacoum residues.

**Public use:** Yes: occasional visitation by One Arm Point indigenous community members. The island is accessible by small dingy from nearby adjacent mainland. There are some water sources on the island that are used by indigenous visitors.

**Bait / toxin to be used:** Brodifacoum pellets (15mm).

**Baiting strategy:**

- Approval from the Bardi Jawi traditional owners to access Sunday Island will be obtained and an Agreement between DEC and the Kimberley Land Council signed.
- A reconnaissance and trapping survey will be undertaken in May 2012 to confirm the presence or absence of black rats.
- If black rats are confirmed an aerial baiting program will be undertaken in 2013.
  - Up to 40 grassland melomys will be removed from Sunday Island and taken to a secure location (another island or Perth Zoo).
  - Brodifacoum pellets will be delivered by a helicopter borne mechanised hopper at a rate of 12 kg / ha delivered on 50m flight lines (recorded on DGPS). Fresh water sources will be protected by a 50m no aerial baiting buffer. Rats in these areas will be eradicated by either ground baiting or trapping.
  - Follow up baiting (same prescription) undertaken 7-10 days after initial baiting.
  - Activity of black rats and grassland melomys will be monitored by trapping, track survey and chew stick activity.
  - Indigenous marine rangers will be involved in the planning, implementation and monitoring components.
- Warning signs will be erected on the island.
- Sandy areas will be monitored for rat activity.
- Any dead rats found will be removed from the island to reduce the risk of non-target poisoning.
- Install long term monitoring chew sticks.
- Ongoing monitoring after one month, then at six month intervals and rebaiting as necessary.
- Declare rat free after three years of no bait take or chew stick activity by black rats. Reintroduce grassland melomys.

**Communication strategy:**

- Presentation to Bardi Jawi community and KLC.
- Interview with local ABC (Broome).
- Articles in Broome and Derby local community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Information signs on Sunday Island and adjacent mainland at Cape Leveque (Kooljaman) and One Arm Point.
- Information sheets available at DEC Broome office, Cape Leveque and One Arm Point.
- Regular inspections of Sunday Island.

**Animal Ethics Approval:** submitted for approval in October 2010.

**Personnel Safety:** Potential hazards have been identified and a JHA prepared.

Hazards identified:

- Handling of toxic baits.
- Animal bites - venomous snakes, rats, sand flies, mosquitoes.
- Appropriate PPE – sun protection, boots, gloves.
- Adequate water supplies.
- Helicopter safety.
- Walking on rough surfaces.
- Lifting.
- Driving hazards.

**Relevant contacts:**

<b>Organisation</b>	<b>Contact Person</b>	<b>Email</b>
<b>DEC Broome</b>	Alan Byrne – District Manager	alan.byrne@dec.wa.gov.au
<b>Kimberley Lands Council</b>	Anna Mardling	anna.mardling@klc.org.au,

**References:**

Abbott, I. and Burbidge, A.A. (1995). The occurrence of mammal species on the islands of Australia: a summary of existing knowledge. *CALMScience* 1(3): 259-324.

Fisher, P., Griffiths, R., Speedy, C. and Broome, K. (2010). Environmental monitoring for brodifacoum residues after aerial application of baits for rodent eradication. *Island Invasives: control and management. Proceeding of Conference, Auckland, February 2010.*

Aerial photograph of Sunday Island, Buccaneer Archipelago.





## Department of Environment and Conservation

### Exotic Rodent Eradication Plan

#### THREE BAYS ISLAND

**Prepared by:** Keith Morris, Brent Johnson, and Bill Muir – DEC Science Division.

**Island Name:** Three Bays Island

**Locality:** Henri Freycinet Harbour, Shark Bay World Heritage Area

**Vesting:** Nature Reserve vested in the Conservation Commission of WA.

**Island Area:** 5 ha

**Topography:** Low lying, star-shaped, limestone island with 2 sandy beaches and some caves.

**Vegetation:** Sparse, low coastal vegetation, rocky outcrops.

**Buildings / structures:** Two DEC Nature Reserve signs.

**Exotic rodents:** House mouse *Mus domesticus*. First recorded in 1989, but probably been present for the last 50-100 years. No museum specimens.

**Other species of interest / concern / non-targets:** Nine species of small reptile, including the most northern population of the King's skink *Egernia kingii* (not a listed threatened species). Predatory avian raptors also occasional visitors (barn owl, boobook owl, white-bellied sea-eagle and kestrel).

**Public use:** Yes: occasional camping on beaches. The island is accessible by small dingy from nearby adjacent mainland (Tamala Station 500m).

**Bait to be used:** Brodifacoum impregnated wax blocks (Ex-verminator).

#### **Baiting strategy:**

- The island has been visited previously several times by the staff undertaking this baiting program, so a reconnoitre trip is not necessary.
- Baiting will be undertaken in August 2010.
- Enclosed bait stations will be set on the ground at 10m intervals over the entire island.
  - Glued to rocks if necessary.
  - Locations will be stored on GPS.
- Wax blocks impregnated with brodifacoum will be used inside the bait stations.
  - All bait stations will be monitored daily and the amount of bait consumed recorded. Baits will be replaced after seven days.
  - Wax blocks will also be distributed around the perimeter of the island where bait stations cannot be set.
- Warning signs will be erected on the island.
- Sandy areas will be monitored for mouse activity.

- Any dead mice found will be removed from the island to reduce the risk of non-target poisoning.
- Install long term monitoring chew sticks.
- Ongoing monitoring after one month, then at six month intervals and rebaiting as necessary.
- Declare mouse free after 3 years of no bait take or chew stick activity by house mice.

**Communication strategy:**

- Presentation to Shire Council if requested.
- School presentations (Denham and Useless Loop Primary Schools).
- Interview with local ABC (Karratha).
- Articles in Denham local community newsletter.
- Information flyers for AQIS and visiting vessels.

**Biosecurity strategy:**

- Information signs on Three Bays Island and adjacent mainland.
- Information sheets available at Tamala Station.
- Regular inspections of Three Bays Island.

**Animal Ethics Approval:** Yes, DEC AEC #15/2010

**Personnel Safety:** Potential hazards have been identified and a JHA prepared.

Hazards identified:

- Handling of toxic baits.
- Appropriate PPE – sun protection, boots, gloves.
- Boating safety.
- Walking on rough surfaces.
- Lifting.
- Driving hazards.

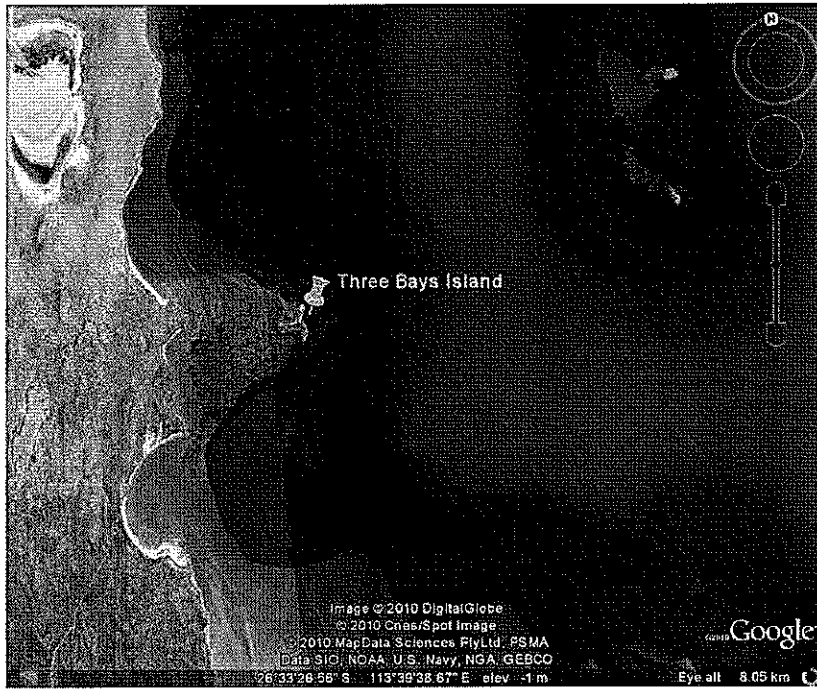
**Relevant contacts:**

Organisation	Contact Person	Email
DEC Denham	Brett Fitzgerald – District Manager	brett.fitzgerald@dec.wa.gov.au
Denham Shire Council		admin@sharkbay.wa.gov.au, 99481218
Tamala Station		99483991



Aerial photograph of Three Bays Island, Shark Bay.





Locality of Three Bays Island to mainland.