Return to 1616

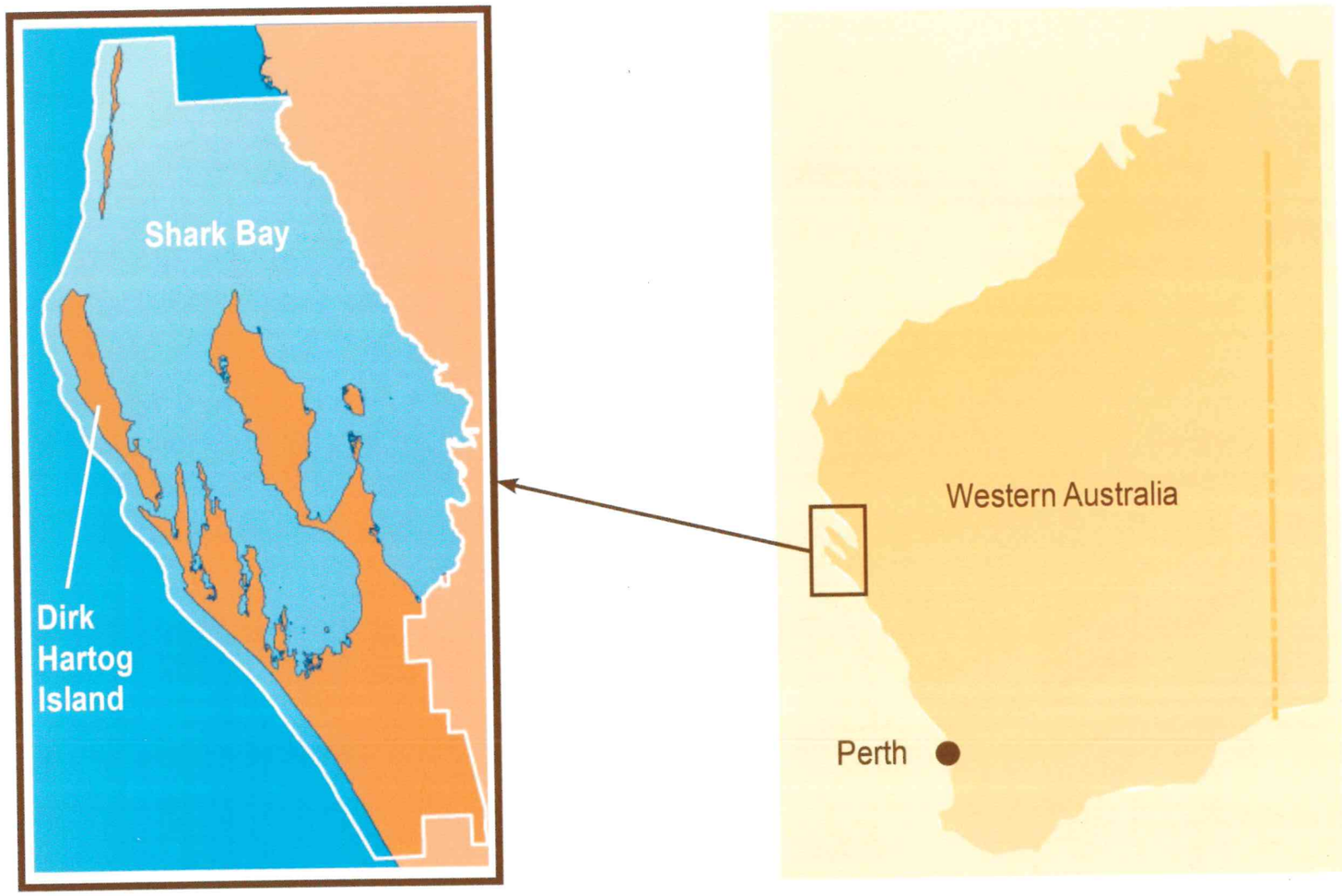
Dirk Hartog Island National Park

Ecological Restoration Project

Stage 2

Return to 1616 is a project restoring the habitats and wildlife of Dirk Hartog Island National Park to how they would have been when Dirk Hartog landed on the island in 1616.

Stage one of the project is on target to declare successful eradication of cats and goats in 2018 and preparations have begun for stage two - the translocation of native animals onto Dirk Hartog Island between 2018 and 2030.



Over 12 years from 2018 Shark Bay will once again become home to a suite of native animals whose survival is threatened by introduced predators and habitat loss caused by introduced grazing animals.

The Dirk Hartog Island National Park Ecological Restoration Project is funded by the Gorgon Barrow Island Net Conservation Benefits Fund.

For more information visit the _Return to 1616_ page on www.sharkbay.org

Photos - B&B Wells, Lochman Transparancies, Kim Branch, Parks and Wildlife Service.
Illustrations - Kristy Day, Leonie Richards, Ian Trapnell

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DIRK HARTOG ISLAND
RETURN TO 1616

Ten species of small and medium-sized mammals and a bird species that once occurred on the island will be reintroduced over 12 years, beginning in 2018. Another two mammal species that may have previously inhabited Dirk Hartog Island will also be brought there to help their species survive.

Western grasswren
Amytornis textilis

Woylie
Bettongia penicillata

Banded hare-wallaby
Lagostrophus fasciatus

Chuditch
Dasyurus geffroii

Boodie
Bettongia lesueur

Mala
Lagorchestes hirsutus

Shark Bay mouse
Pseudomys fieldi

Western barred bandicoot
Perameles bougainville

Desert mouse
Pseudomys desertor

Brush-tailed mulgara
Dasycercus blythi

Greater stick-nest rat
Leporillus conditor

Heath mouse
Pseudomys shortridgei

Dibbler
Parantechinus apicalis

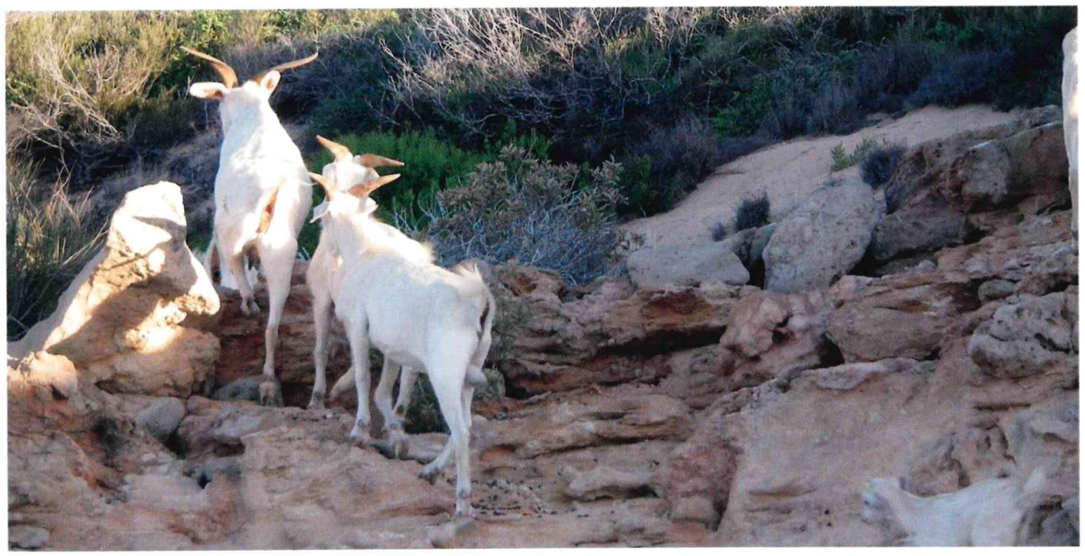
The story so far

Thousands of sheep and feral goats were removed in the lead up to the island becoming a national park in November 2009 and a pilot study was conducted to determine the effectiveness of 1080 poison baits to remove feral cats. The current intensive and systematic eradication and monitoring programs began in 2012 and are now in their final phases.

Goats

Fifteen female goats were radio-collared at the beginning of the goat eradication program so they could be tracked during aerial operations. When collared goats were located, the goats with them were removed while the collared goats were left to gather and betray another mob. The collared goats are therefore known as 'Judas' goats.

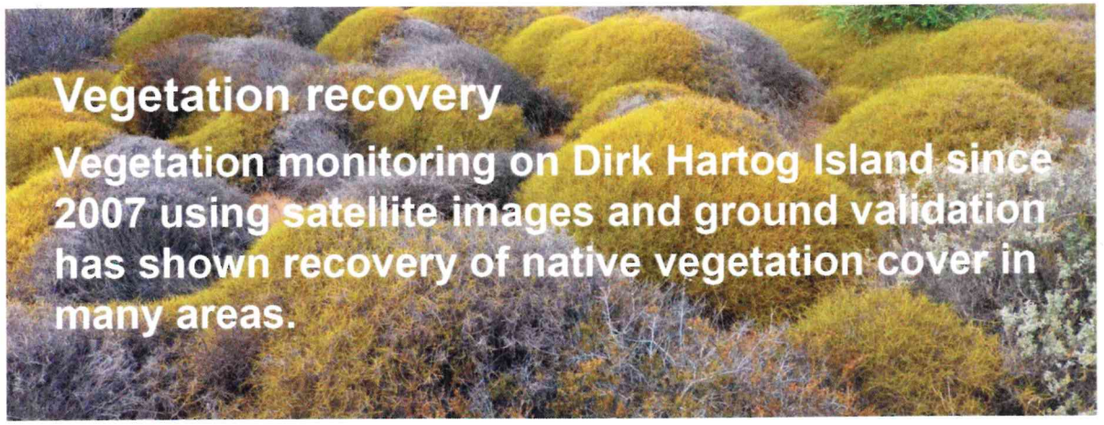
Sheep were declared eradicated in June 2016 and no goats, other than collared Judas goats, have been found during goat monitoring programs since February 2016.



Cats

A cat-proof fence was constructed to divide the island into two areas for monitoring operations. There appear to be no cats south of the cat-proof fence, and little cat sign north of the fence since August 2016.

Monitoring for feral cats will continue to mid-2018. This consists of nine seasonal surveillance periods, each comprising 20 continuous days with 10 days south of the fence followed by 10 days north of the fence. More than 160 camera traps, along with tracks and beaches, are checked during each of these surveillance operations. Detector dogs are also being used to assist with verifying the absence of cats.



Translocation framework

There are many considerations in the framework for translocating animals to Dirk Hartog Island ranging from sourcing sufficient numbers of each species, to sequencing translocations and ensuring animals are released at suitable sites.

Sequence and timing of translocations will take into account interactions between different species, including predator/prey relationships and habitat competition; conservation status of species; and availability of animals to translocate.

Interspecies relations

Boodies and woylies have similar habitat needs and may compete with each other. These two species will therefore be released at sites that are far apart and initially separated by the cat proof fence.


Woylie


Boodie


Chuditch

The prey of the chuditch includes small mammals so it will not be translocated until potential prey like the Shark Bay mouse, western barred bandicoot and greater stick-nest rat are well established.

Status

There is no evidence of the banded hare-wallaby having previously occurred on Dirk Hartog Island; however it is vulnerable to extinction and introducing this hare-wallaby to the island will help improve its conservation status. This also applies to the rufous-hare wallaby.


Banded hare-wallaby

Sourcing animals

Animals for Dirk Hartog Island will mostly come from wild populations with sufficient numbers to allow the safe removal of 40-50 founder animals. Animals will also be screened for wildlife diseases and genetic diversity to ensure that resilient and robust populations are established on Dirk Hartog Island.


Western barred bandicoot


Rufous hare-wallaby


Shark Bay mouse

Bernier and Dorre islands

Bernier and Dorre islands are potential sources for five species – the boodie, western barred bandicoot, rufous hare-wallaby, banded hare-wallaby and Shark Bay mouse.

Since 2006, surveys have collected environmental data from these islands along with a range of information about the abundance and distribution of the five species. The data is being analysed to answer questions like:

Are the populations large enough to remove animals from?

Is the genetic diversity of each species sufficient to repopulate Dirk Hartog Island from these islands alone?

What is the best time to collect animals for translocation?

How many years after good rainfall are population numbers peaking, and therefore best for removing animals?

Other sources

Additional translocation sources include other islands, wildlife sanctuaries, mainland populations and the Perth Zoo. Some of these are wild populations, others are captive breeding programs.

The chosen ones

There are two key reasons for translocating animals to Dirk Hartog Island:

- **Species conservation - to reduce the risk of extinction and help ensure the survival of a species.**
- **Fauna reconstruction - to contribute to ecological restoration through returning the digging and burrowing activities of the translocated fauna.**

Fauna reconstruction

Five species are being returned to Dirk Hartog Island for the purpose of ecological restoration.

Returning them to the island will help restore ecological processes while improving their conservation status.

Ecological processes include digging activities that affect soil profiles; pollinating plants; and spreading seeds.

Desert mouse *(Pseudomys desertor)*

Brush-tailed mulgara *(Dasycercus blythi)*

Greater stick-nest rat *(Leporillus conditor)*

Boodie *(Bettongia lesueur)*

Western grasswren *(Amytornis textilis)*

Species conservation

Eight species will be translocated to Dirk Hartog Island primarily to improve their conservation status.

Establishing these species on the island will help ensure their survival. There is evidence that all but two of these previously occurred on Dirk Hartog Island.

Chuditch *(Dasyurus geoffroii)*

Woylie *(Bettongia penicillata)*

Although there is no evidence of these two hare-wallabies occupying Dirk Hartog Island in the past, it is likely they did occur there.

Banded hare-wallaby *(Lagostrophus fasciatus)*

Dibbler *(Parantechinus apicalis)*

Heath mouse *(Pseudomys shortridgei)*

Rufous hare-wallaby *(Lagorchestes hirsutus)*

Shark Bay mouse *(Pseudomys fieldi)*

Western barred bandicoot *(Perameles bougainville)*

Rufous hare-wallaby *Lagorchestes hirsutus*

Wild populations of the rufous hare-wallaby remain only on Bernier and Dorre islands in Shark Bay.

There is also a translocated population of the central Australian form of this species on Trimouille Island in the Montebello Islands. The last wild mainland populations of the rufous hare-wallaby were extinct by 1991.

Rufous hare-wallabies are solitary animals living in low scrub and spinifex on sandy soils. They emerge to feed at dusk after sheltering during the day in squats, shallow trenches under shrubs or spinifex hummocks.

Although they only have one young at a time, a female can produce up to three young a year.

Rufous hare-wallaby stat's

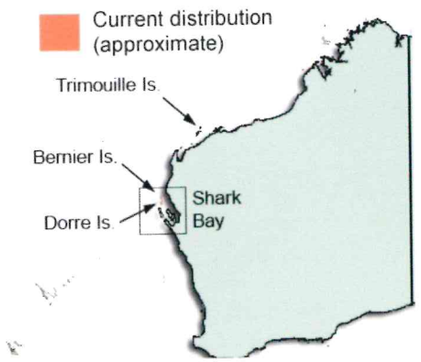
Length: Head-body 330-375mm, tail 270mm

Weight: 700g

Diet: Grasses, seeds, bulbs, insects

Breeding: From 5 months, gestation 15 weeks, weaned 5 months

Proposed for translocation: 2018/19



Endangered

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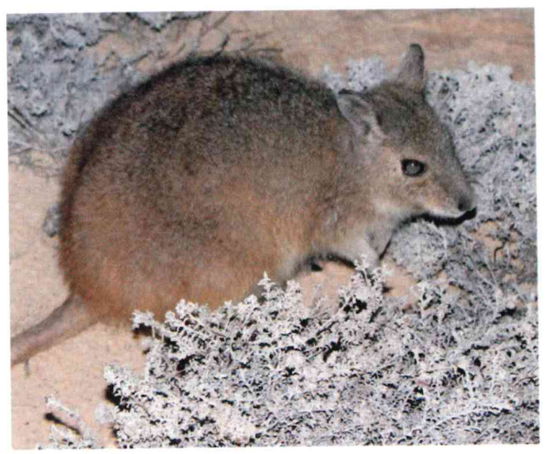


Banded hare-wallaby *Lagostrophus fasciatus*

Banded hare-wallabies once ranged across southern Australia.

The mainland subspecies of this hare-wallaby is extinct, leaving only the subspecies that occurs naturally on Bernier and Dorre islands. Animals from Bernier Island were successfully reintroduced to Faure Island in 1998.

Banded hare-wallabies form runs under dense shrubs in spinifex grassslands and sand dunes. They are territorial and male to male interactions can be aggressive.

Banded hare-wallaby stat's

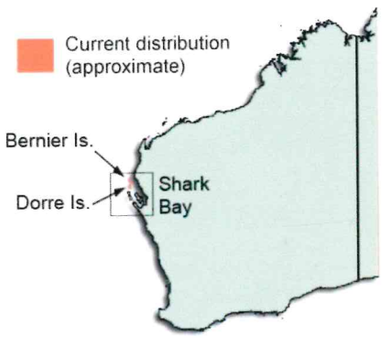
Length: Head-body 400-450mm, tail 320mm

Weight: 1600-3000g

Diet: Shrubs and grasses

Breeding: From year 2, gestation 6 months, weaned 9 months

Proposed for translocation: 2018/19



Vulnerable

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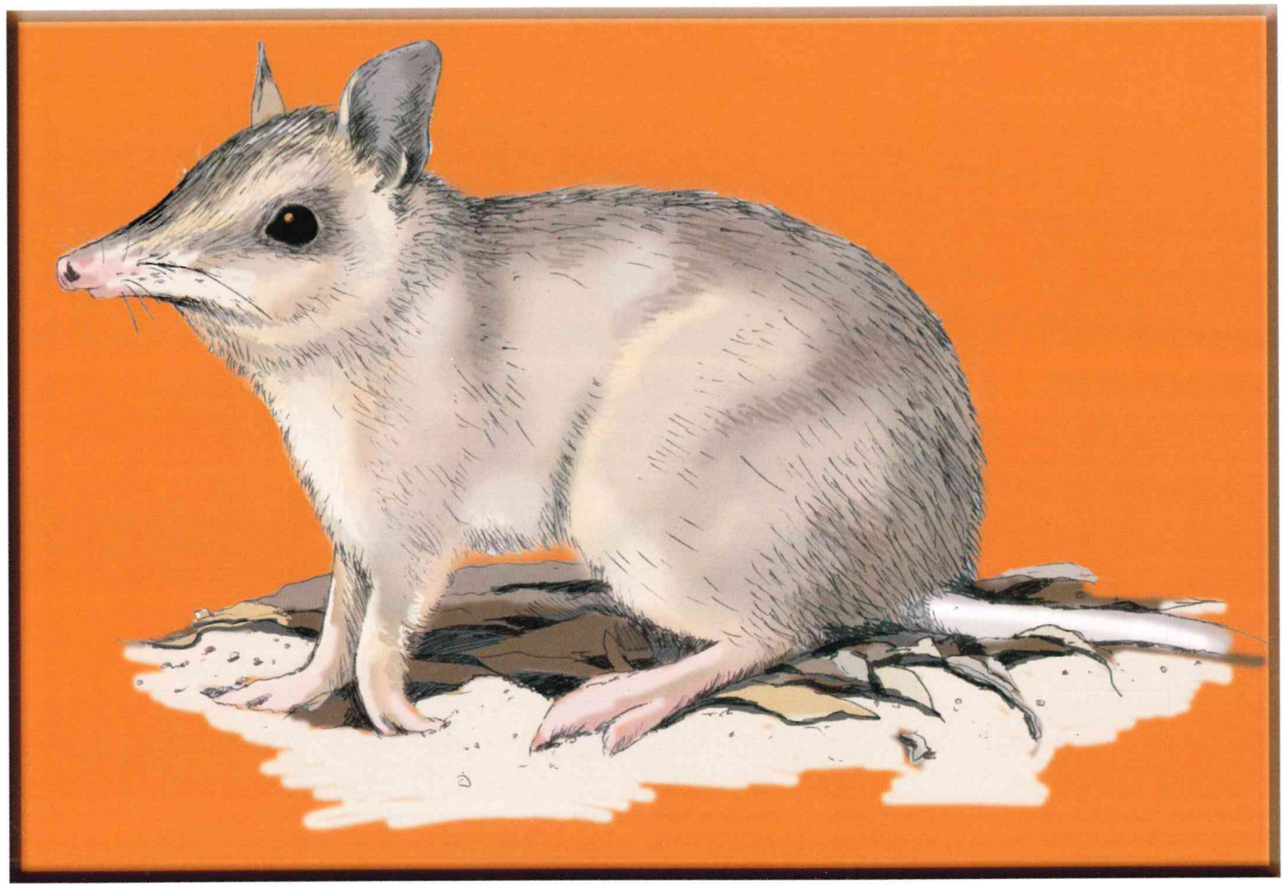
Western barred bandicoot *Perameles bougainville*

Wild populations of this bandicoot remain only on Bernier and Dorre islands in Shark Bay after mainland populations became extinct in the 1940s.

The females of this smallest bandicoot species are larger than the males. They are nocturnal and shelter by day in grassy nests hidden in hollows, or leaf litter under shrubs.

Western barred bandicoots sometimes lose parts of their tails during fights with other bandicoots.

Females carry 2-3 young in backward-facing pouches which prevent soil from entering while digging.



Western barred bandicoot stat's

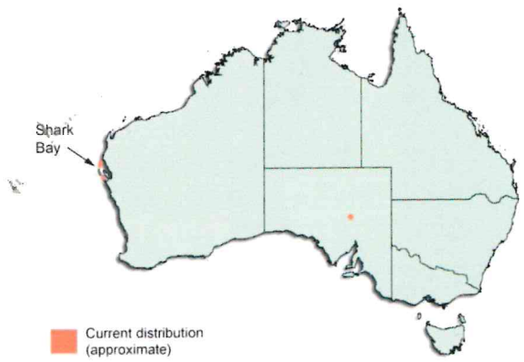
Length: Head-body 200mm, tail 90mm

Weight: 200-250g

Diet: Invertebrates, small animals, seeds, roots, herbs

Breeding: From 3-5 months, gestation 12-13 days, weaned 60-75 days

Proposed for translocation: 2019/20



Vulnerable

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Boodie (burrowing bettong) *Bettongia lesueur*

Prior to becoming extinct on the mainland in the 1960s, boodies had the largest geographic range of any Australian mammal.

Wild boodies can now only be found on a few Western Australian islands, including Bernier and Dorre islands in Shark Bay.

Boodies are the only macropod that regularly inhabit burrows, where they share nests with other boodies during the day. They emerge after sunset, moving slowly with their nose close to the ground, sniffing out food.

Boodie stat's

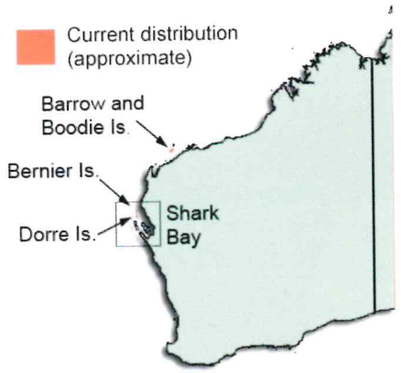
Length: Head-body 350-400mm, tail 300mm

Weight: 1500g

Diet: Fungi, bulbs, seeds, nuts, green plant parts

Breeding: Within 1 year, gestation 3 weeks, weaned 5-6 months

Proposed for translocation: 2019/20



Conservation Dependent

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Shark Bay mouse *Pseudomys fieldi*

The Shark Bay mouse became extinct on the mainland soon after European settlement.

Wild populations now only occur on islands in Shark Bay and on North West Island in the Montebellos.

Shark Bay mice live mainly in coastal dunes and sandy areas sheltered by spinifex. They build runways through piles of seagrass on beaches.

Shark Bay mouse stat's

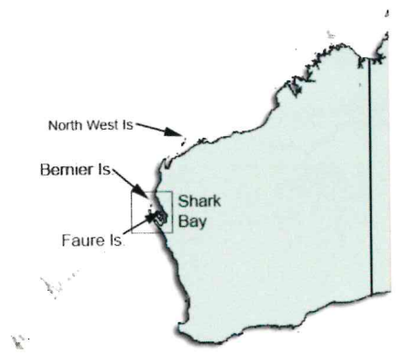
Length: Head-body 80-115mm, tail 125mm

Weight: 30-61g

Diet: flowers, leaves, insects, spiders

Breeding: From 100 days, gestation 28 days, weaned 30 days

Proposed for translocation: 2020/21



Vulnerable

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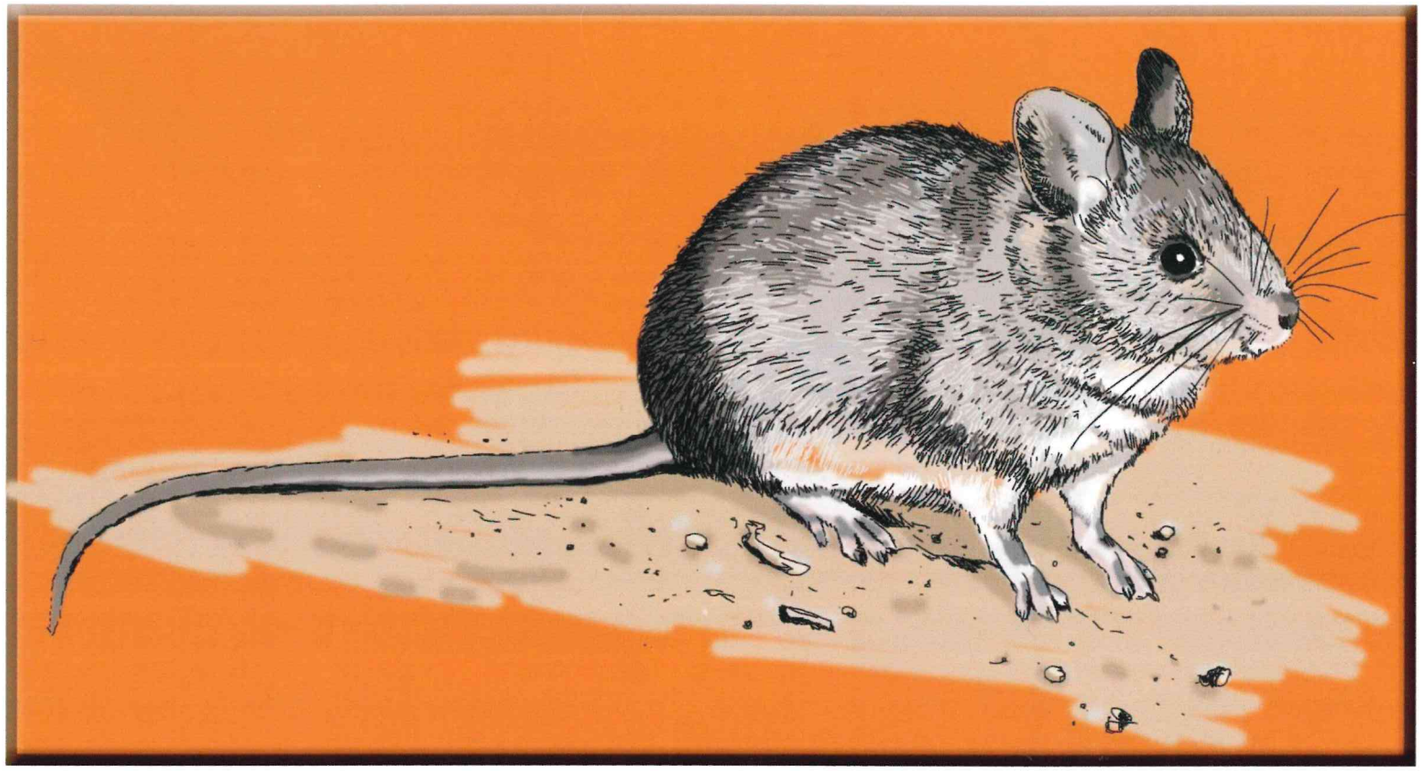
Wildlife Conservation (Specially Protected Fauna) Notice 2015

Greater stick-nest rat *Leporillus conditor*



These rats were found through arid southern and western Australia until they became extinct on the mainland in the 1930s.

Salutation Island in Shark Bay has an abundant and healthy population that originated from a wild population on the Franklin Islands in South Australia.

The name greater stick-nest rat refers to the size of their nests. Groups of 10–20 rats build and maintain communal nests up to 1m high and 1.5m wide.

Greater stick-nest rat stat's

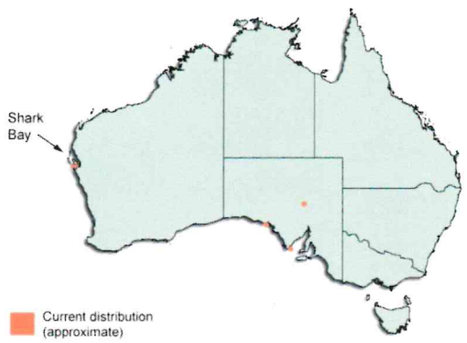
Length: Head-body 170-260mm, tail 140-180mm

Weight: 180-450g

Diet: Succulent vegetation, fruits

Breeding: Gestation 44 days, weaned 4 weeks

Proposed for translocation: 2020/21



Conservation Dependent

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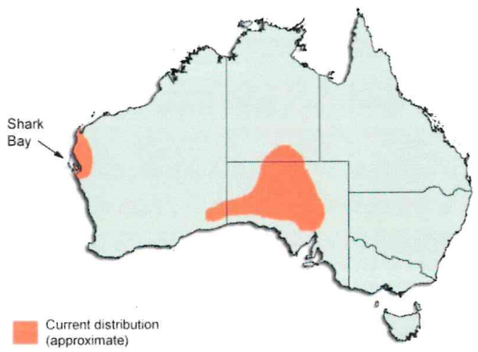
Wildlife Conservation (Specially Protected Fauna) Notice 2015

Western grasswren *Amytornis textilis*



The western grasswren was widespread in southern arid Australia but is now confined to small discrete areas.

They were previously known as thick-billed grasswrens for their heavy, seed-crushing beaks.

In Shark Bay this grasswren lives in dense wattle shrubland like that found along the Monkey Mia Road.

They hop about on the ground feeding, often in pairs or family groups. Nests are in thick scrub near the ground.

Western grasswren stat's

Length: Head-tail 170-190mm

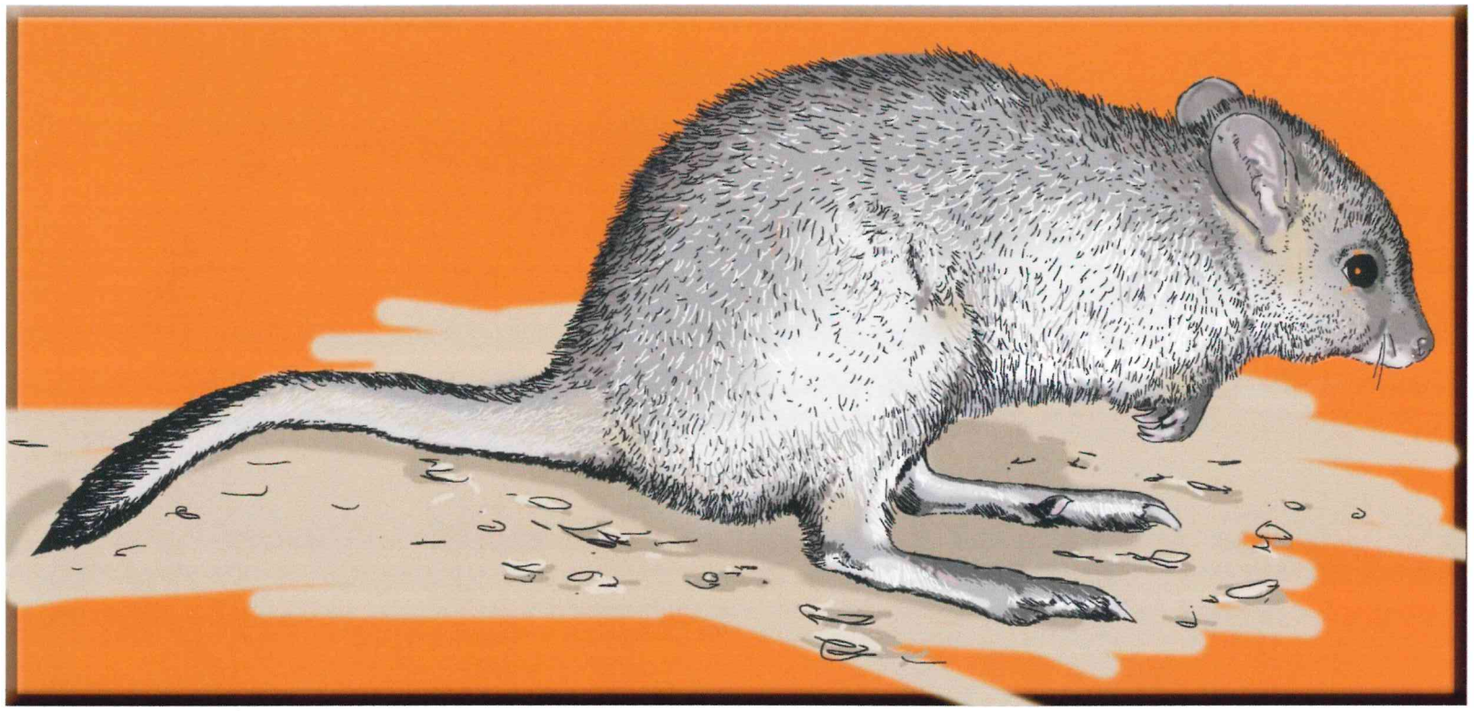
Weight: 18-23g

Diet: Seeds, insects

Breeding: 2-3 eggs incubated 15-17 days

Proposed for translocation: 2021/22

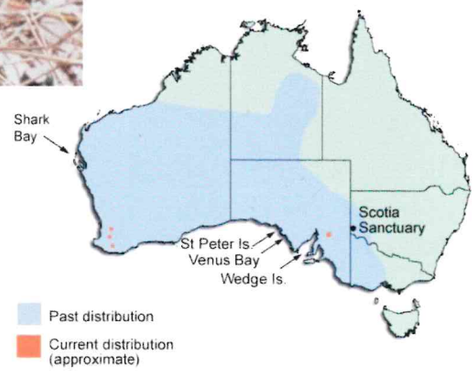
Woylie (brush-tailed bettong) *Bettongia penicillata*



After being widespread across southern and western Australia, woylies were restricted to three small areas in southwestern Australia by the 1970s.

These bettongs are nocturnal, nesting during the day in nests lined with grass or bark. They carry this nesting material with prehensile tails.

Woylies inhabit areas with dense understories, including spinifex and woody scrub. They turn over a lot of soil and spread seeds and fungi spores while foraging.



Critically Endangered

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Woylie stat's

Length: Head-body 280-360mm, tail 290-360mm

Weight: 800-1800g

Diet: Fungi, seeds, bulbs, tubers, resin, insects

Breeding: Within 6 months, gestation 21 days, weaned 3-4 months

Proposed for translocation: 2021/22

Heath mouse *Pseudomys shortridgei*

The heath mouse was thought extinct in WA until rediscovered along the south coast of WA in 1987. However, it has not been found during recent surveys of these areas.

Heath mice construct multiple shallow burrows under bushes in heath vegetation. Although generally nocturnal, they are sometimes active during the day.

Heath mouse stat's

Length:	Head-body 90-120mm, tail 80-110mm
Weight:	55-90g
Diet:	Leaves and stems, fungi, insects
Breeding:	From 10-12 months, 2-3 litters per year

Proposed for translocation: 2022/23

Vulnerable

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Desert mouse *Pseudomys desertor*

Desert mice are widespread across arid and semi-arid Australia, although their range previously extended further south.

These mostly solitary mice live in a variety of arid habitats with dense ground cover. They are noctural and spend the day sheltering in shallow burrows or underneath spinifex clumps.

Desert mice populations increase dramatically after fire and good rainfall increase vegetation cover.

Desert mouse stat's

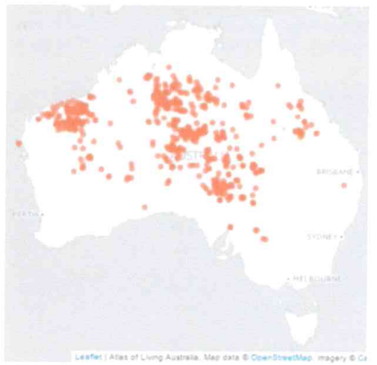
Length: Head-body 70-105mm
tail 67-105mm

Weight: 15-35g

Diet: Plant material

Breeding: From 10 weeks, 3 young, gestation 27-28 days

Proposed for translocation: 2022/23



This species is close to Vulnerable, but not listed as Conservation Dependent.

Brush-tailed mulgara *Dasycercus blythi*

The brush-tailed mulgara was only recently recognised as a different species to the crest-tailed mulgara.

Both occur in small scattered populations through arid Central and Western Australia.

They emerge from burrows at night to hunt, although they are not completely nocturnal. Mulgaras store fat in their tails, which can be thick at the base.

They may live for six or more years and keep growing throughout their lives.

Brush-tailed mulgara stat's

Length: Head-body 220mm, tail 120mm

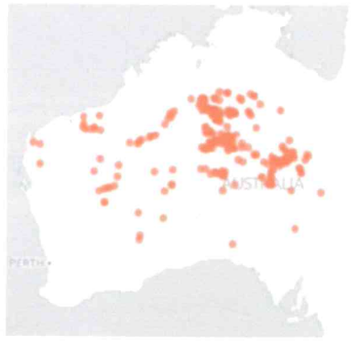
Weight: 190g

Diet: Large invertebrates, small vertebrates

Breeding: Up to 6 young, gestation 30 days, weaned 12-15 weeks

Proposed for translocation: 2023/24

The brush-tailed mulgara is a Priority 4 species that is Near Threatened.



Dibbler *Parantechinus apicalis*

Dibblers were once widespread in southwest WA but are now limited to two islands on the mid west coast and some southern coastal areas.

They were believed extinct in the early 1900s, but found in 1967 on the WA south coast and later on two islands near Jurien. New populations have also been established through captive breeding programs.

Dibblers live in heath and low dense coastal vegetation with lots of leaf litter. They are most active at dawn and dusk.

Dibbler stat's

Length: Head-body 140-145mm, tail 105-115mm

Weight: 125g

Diet: Ground-dwelling insects, other invertebrates, sometimes small vertebrates, berries and nectar

Breeding: 6-8 young, gestation 44-52 days, weaned 3-4 months

Proposed for translocation: 2018/19

Vulnerable

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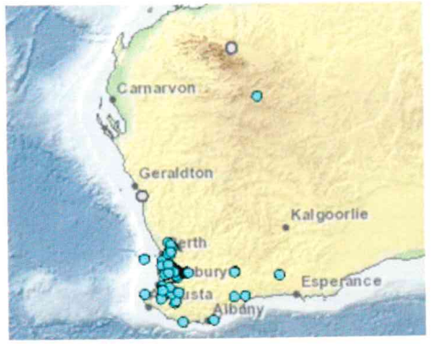
Chuditch (western quoll) *Dasyurus geffroii*

The chuditch was once widespread across much of Australia but currently only occurs naturally in in the south-west forest, wheatbelt and southern coastal areas of WA.

It is Western Australia's largest carnivorous marsupial, is solitary and has a large home range.

This excellent climber hunts on the ground at night and sleeps in hollow logs or burrows during the day.



Chuditch stat's

Length: Head-body 260-400mm, tail 210-350mm

Weight: 600-2000g

Diet: Large invertebrates, small vertebrates

Breeding: 2-6 young, gestation 17-18 days, weaned 4-5 months

Proposed for translocation: 2024/25

Vulnerable

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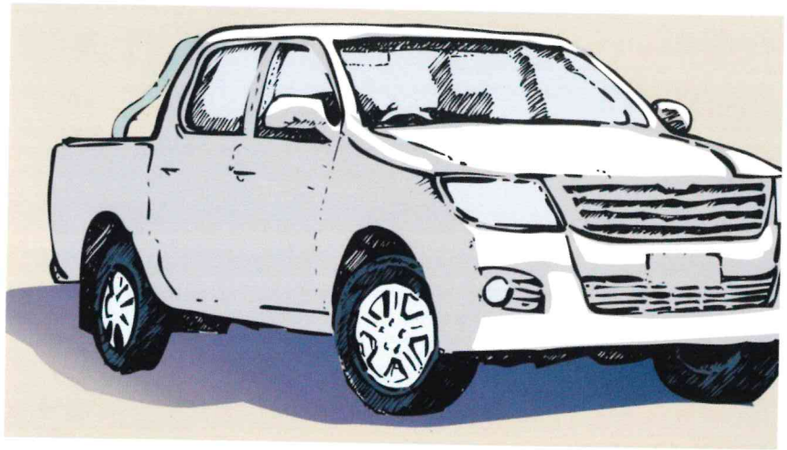
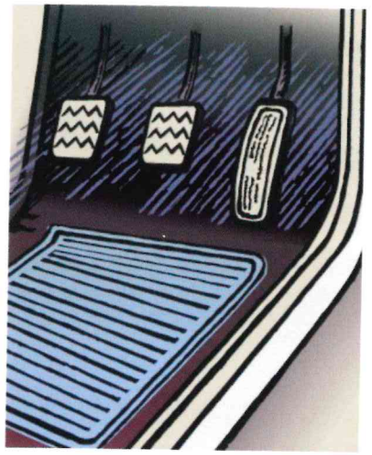
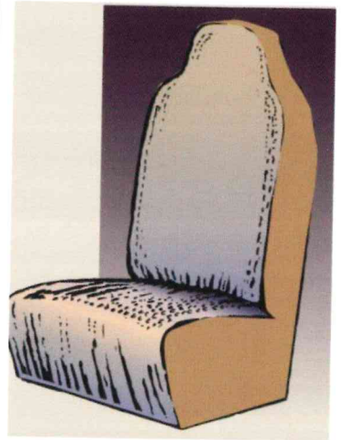
Ensuring success

You can help the successful translocation of these animals to Dirk Hartog Island by helping prevent the introduction of new pest species with their associated threats to habitats and native wildlife.

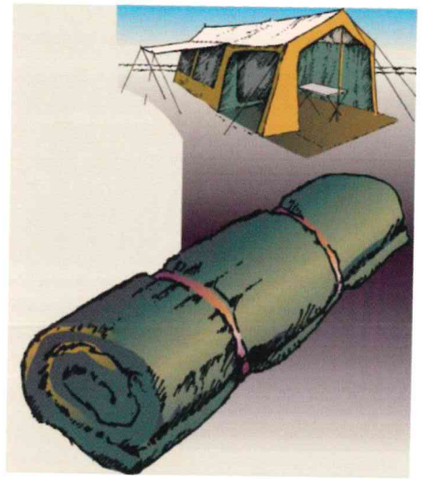
Please make sure you don't bring pest animals or plants onto Dirk Hartog Island with your vehicle, boat or gear.



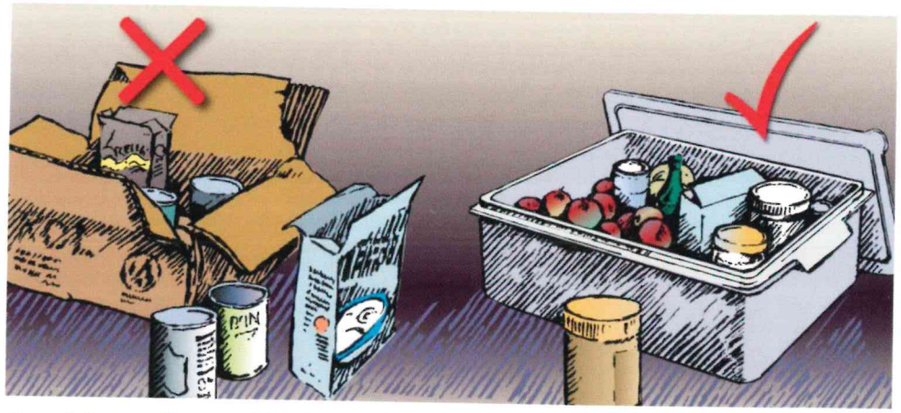




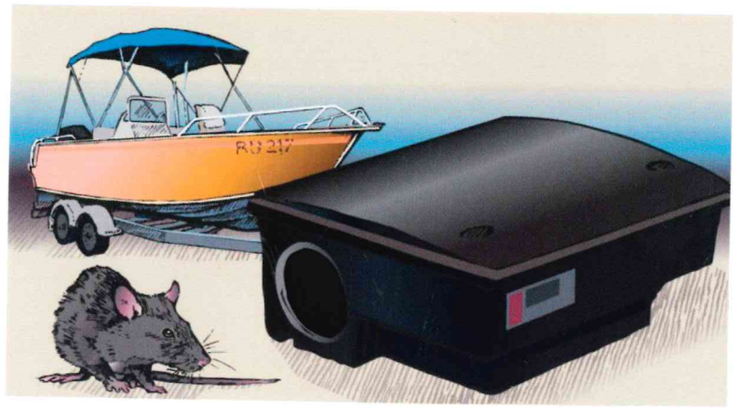
Check and clean the places in your vehicle that collect soil and seeds.



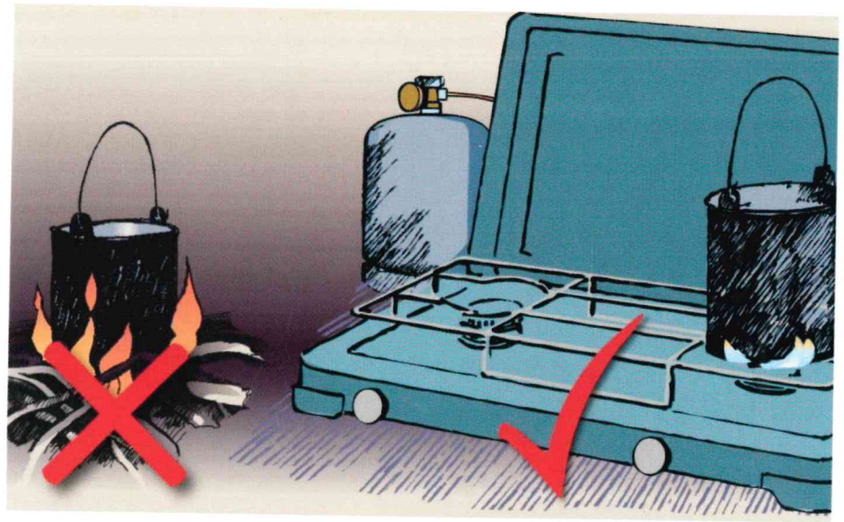
Make sure your camping gear isn't carrying unwanted hitchhikers.



Avoid cardboard boxes as they can harbour pest species.



Prevent the spread of rats by maintaining a rodent bait station on your boat.



Please do not light fires as they can cause wildfires. Collecting firewood removes essential habitats and disturbs the balance of ecosystems. Bringing firewood from elsewhere can introduce pests.

Photos – Lockman Transparancies, Babs & Bert Wells, Kim Branch, Parks and Wildlife Service
Illustrations - Kristy Day, Leonie Richards, Ian Trapnell

Information current at June 2017

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DIRK HARTOG ISLAND
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