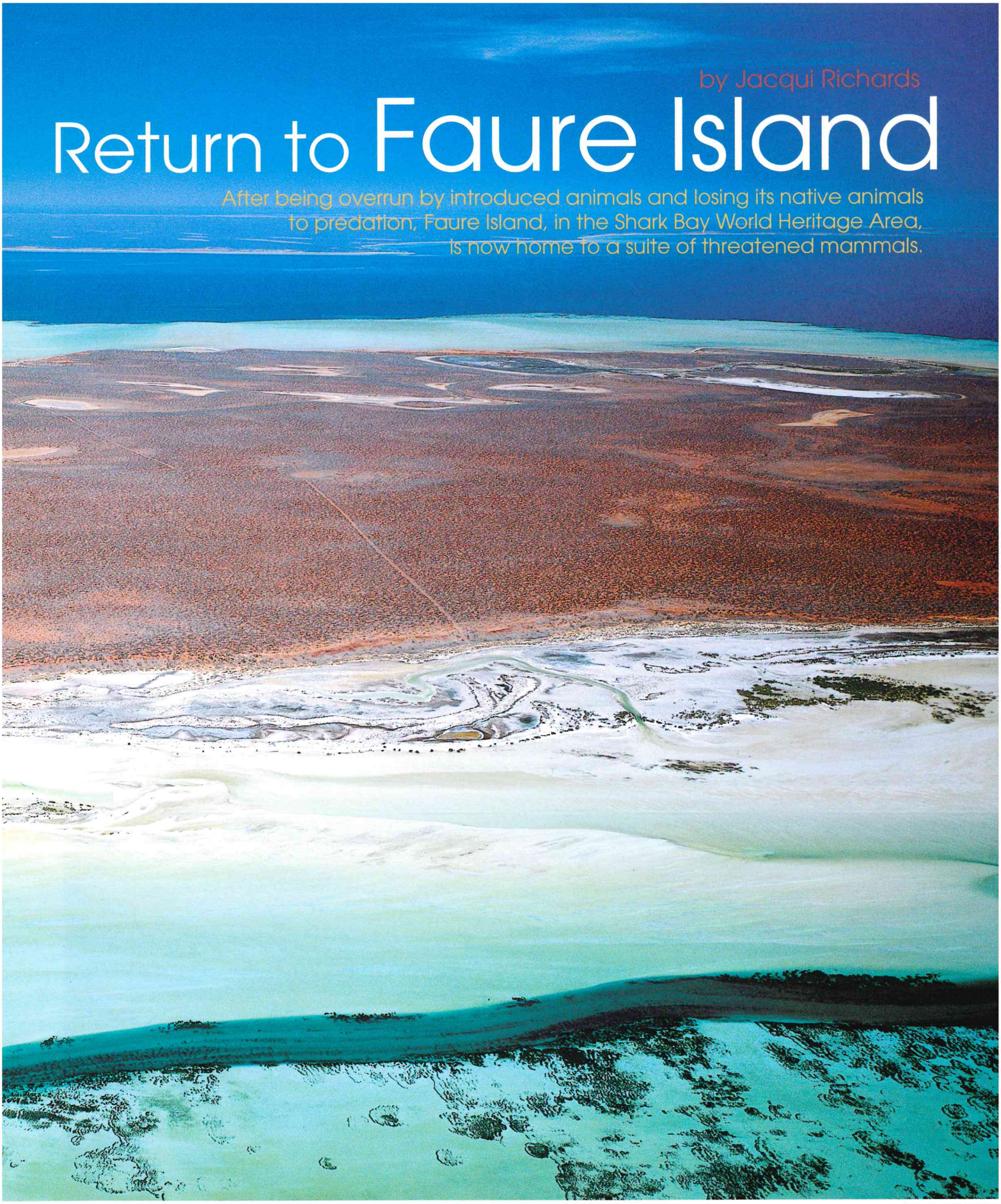
by Jacqui Richards

Return to Faure Island

After being overrun by introduced animals and losing its native animals to predation, Faure Island, in the Shark Bay World Heritage Area, is now home to a suite of threatened mammals.



Faure Island was named by French explorer Nicolas Baudin in 1801 after Pierre Faure, the geographer aboard the *Naturaliste*, who first saw and drew the island plan. The 6000-hectare island lies in Disappointment Reach, east of Peron Peninsula in Shark Bay, and is visible from the beach at Monkey Mia (see map on page 19).

Back and front pages
Main Faure Island.
Photo – David Bettini
Front insets from left Boodie.
Photo – Andrew Burbidge/DEC
Djoongari or Shark Bay mouse.
Photo – Babs and Bert Wells/DEC
Back insets from left Western barred bandicoot.
Photo – Babs and Bert Wells/DEC
Banded hare-wallaby.
Photo – Linda Reinhold/DEC
Greater stick-nest rat.
Photo – Jiri Lochman

Below Faure Island.
Photo – Marie Lochman

Pastoral history

A pastoral lease for the island was granted to Charles Broadhurst in 1873 for pearling interests, then in 1883 to WD Moore and Company, which released angora goats from South Africa on to the island. The Hoult family of Denham took over the lease in 1905, stocking the island with additional angora goats and, later, merino sheep. Stocking rates on the unusually productive island reached highs of more than 2700 sheep in 1974, well beyond its estimated capacity of 1700. More than 3400 sheep were removed in 1999 when the Hoult family sold the lease.

The Hoults spent part of each year in a tin 'homestead' at the southern end of the island that looked over the shallow turquoise waters of Hamelin Pool towards the mainland. In the early years Dick Hoult, then a lad in his twenties, remembered moving up to 1500 sheep at a time on an ex-pearling lugger to Nanga Station on the mainland, followed by six weeks of droving south along the coast to Northampton. In latter years, stock were taken to Monkey Mia by barge then trucked southwards.

Smaller lots of 40 to 50 goats were transported to Northam or the Claremont sale yards in Perth, where they fetched as much as $1000 a head. Dick also recounted the post-war years, when wool prices were high at a "pound for a pound", and leaner years through the 1960s, 1970s and 1980s, when fishing was the family's mainstay. However, despite the challenges of moving stock from the island and times of low commodity prices, the venture was profitable.

Australian Wildlife Conservancy

The Australian Wildlife Conservancy (AWC)—a non-profit organisation dedicated to conserving Australia's biodiversity—purchased Faure Island in 1999 to establish viable populations of threatened mammals on the island and initiate ecological

Top left Bones of pale field rats found on Faure Island.
Photo – Jiri Lochman

Top Faure Island.
Photo – Jacqui RIchards/DEC

Above Mangroves on Faure Island.
Photo – Jiri Lochman

research to increase the effectiveness of threatened species management in arid Australia.

The roots of AWC are firmly embedded in Western Australia, home of its Chairman and founder Martin Copley. Martin's vision, supported by Chief Executive Atticus Fleming and some 40 staff, has led to a national organisation that now manages 15 sanctuaries across Australia encompassing 1,100,000 hectares. Five are in WA: Karakamia and Paruna on the outskirts of Perth, Mount Gibson in the northern Wheatbelt, Mornington in the Kimberley and Faure Island Wildlife Sanctuary. With the aid of private and government donations, AWC has recently acquired Wongalara, a 200,000-hectare property on the southern edge of Arnhem Land in the Northern Territory. AWC's activities are helping to ensure the future of a host of threatened species and their habitats.

The habitat

Faure Island was separated from the mainland about 6000 years ago at the end of a period of deglaciation after the last ice age. It has a similar landscape to Peron Peninsula, typified by undulating red and white sandy plains and dunes with birridas or claypans in the lower lying areas. At its highest point, Faure Island is only 26 metres above sea level. Hills are almost absent. The only raised areas are the limestone and red sand cliff edges that, like nearby Peron Peninsula, make the coast so spectacular.

Most of the island is dominated by low wanu (*Acacia ramulosa*) shrubland, but four other major plant communities were identified by Department of Environment and Conservation (DEC) botanists Greg Keighery and Bill Muir during a survey in 2000: mallee shrublands, spinifex grasslands, samphire and *Atriplex* shrublands, and mangrove communities. There is a rich flora of at least 140 native species, many of which have increased in cover and shown other signs of regeneration since introduced stock were removed. Unfortunately, due to its grazing history, 21 weeds have invaded the island, the most significant of which are buffel grass (*Cenchrus ciliaris*) and African boxthorn (*Lycium ferocissimum*).

The only mammals known to inhabit Faure Island at the time of the AWC purchase were introduced house mice, goats, sheep, horses and feral cats. Neither rabbits nor foxes had ever been recorded on the island. House mice were in low numbers and goats, sheep and horses were confined to the island's southern half, near water points and the homestead.

Alex Baynes, a WA Museum research associate, uncovered an array of skeletal remains in dune blowouts on Faure Island, providing clues to its past mammal fauna. Western barred bandicoots (*Perameles bougainville*), woylies (*Bettongia penicillata*), djoongari or Shark Bay mice (*Pseudomys fieldi*) and pale field rats (*Rattus tunneyi*) had once called the island home. The Hoult family reported one 'porcupine'—the echidna (*Tachyglossus aculeatus*)—on the island in the 1930s and 1940s and had introduced another in the 1990s. Intensive surveys in 1989 and 2000 found the only native mammal still

present on Faure Island was likely to be the Hoult's lone echidna. Though it wasn't seen, fresh tracks and a 'smelly' scat were found along the eastern coastal cliffs.

Twenty two reptile species and more than 90 bird species have been recorded from Faure Island. A mangrove-lined lagoon on the northern side of the island is home to an extensive pied cormorant rookery. Excrement from the noisy gaggle of birds is so extensive that the lagoon is filled with thick green coils of algae during the breeding season, and swathes of mature mangroves are left lifeless when the fledglings leave their roost. Fortunately, the nutrient-rich environment provides for a healthy crop of young mangroves each subsequent winter.

Island preparation

During a biological survey in May 2000, staff from DEC, the WA and South Australian museums and AWC worked together to assess the island's potential conservation value and collect baseline data.

The task of preparing Faure Island for the change from production of sheep and goats to the production of threatened mammals was welcomed by all, including members of the Hoult family. All but two of the nine horses were removed in 2000, goats were eradicated in 2004 (after removing more than 2000 in three years) and, by 2006, about 80 sheep were held in a single paddock on the southern half of the island.

While removing livestock from the island was relatively straightforward, it was thought that eradicating the 40 or so feral cats would represent a greater challenge. The mostly black cats were believed to have been introduced in

Top left Pied cormorant.
Photo – Sallyanne Cousans

Centre left A feral cat on Faure Island in June 2000.
Photo – Greg Keighery/DEC

Left Western barred bandicoot.
Photo – Blair Parsons/CSIRO

Right Greater stick-nest rat.

Below Right Banded hare wallaby.
Photos – Jiri Lochman

the late 1800s by pearlers who camped at the island's northern end.

Feral cats are difficult to control due to their desire to hunt live prey. Ten thousand meat baits impregnated with 1080 poison were dropped throughout the island from the air by a team from what was then CALM, led by Senior Research Scientist David Algar in February 2001 at a time when it was hoped that cats were hungry, and therefore more likely to scavenge baits due to a lack of prey. Ninety per cent of the cats were eradicated within days of the bait drop. Despite some cat activity, particularly from kittens, around water points and the homestead immediately following the baiting, by March there were no signs of fresh tracks. After a follow-up survey in June, the island was declared free of feral cats.

This success makes Faure the third largest island in the world from which feral cats have been eradicated. The rapid removal of these introduced predators paved the way for a fauna reconstruction project of national significance.

Translocations

At a workshop in March 2001, staff from DEC, AWC, CSIRO, WA Museum and Kanyana Native Fauna Rehabilitation Centre banded together to compile a 'top five' list of native mammal species considered to be suitable for the habitat on Faure Island. The choices were also based on conservation status and the need for additional conservation efforts for a range of species.

The first native mammal to call Faure Island home—after an absence of more than 90 years—was the djoongari (or Shark Bay mouse). Like many of Australia's small-to-medium sized native mammals, it became extinct from mainland Australia following European colonisation. The only natural wild population occurs on Bernier Island in Shark Bay. Eighty six djoongari made the pilgrimage from a breeding colony at Perth Zoo, and were released in June 2002, followed by another 28 in the same year.

The boodie (*Bettongia lesueur*), not recorded from Faure Island but sharing a similar fate of extinction from the mainland, was introduced at the same time. The species is still found on Bernier and Dorre islands in Shark Bay and Barrow Island to the north. Seventeen animals made a shorter but still adventurous crossing by car, plane and boat from a population established at nearby Heirisson Prong by CSIRO and the Useless Loop community in 1992.

These new Faure Island populations were monitored for two years to ensure their prospects for survival on the island were secure. Banded hare-wallabies (*Lagostrophus fasciatus*) were the next candidates, with 26 translocated from DEC's Peron captive breeding colony in May 2004, 2005 and 2006. As the only wild populations of banded hare-wallabies occur on Bernier and Dorre islands, establishing a third population was a high priority.

The western barred bandicoot was reintroduced, also from an established population on Heirisson Prong, in October 2005. Twenty animals were flown from Useless Loop to Faure Island. The Heirisson Prong and Faure Island populations are free of a wart-like disease found in the wild Bernier Island population and a number of captive breeding populations.

The fifth species to call Faure Island home was the greater stick-nest rat. Sixteen came by boat and plane from St Peters Island in South Australia in September 2006. Another six rats arrived after a shorter boat ride and flight from Salutation Island in Shark Bay, where a population had been established by DEC in 1990.

During each translocation, several animals were radio collared to enable AWC to monitor their survival, habitat preferences and movements. As a result, we gained an intimate knowledge of the activities of the banded hare-wallabies—which had come from DEC's Peron captive breeding colony complete with breeding history and

names such as Shaggy, Stroppy, Himby and Kettle—following their release on Faure Island. Radio collars with a year's battery life, combined with their lack of movement away from the release site and ease of capture in cage traps, provided outstanding post-translocation monitoring results. The animals clearly preferred the chosen habitat at the release site, dominated by thick pockets of wanu and kurara (*Acacia tetragonophylla*) along the dune ridges.

By contrast, the radio collared but nameless djoongari moved away from their release site in the first four weeks and tracks were noted throughout the island. Radio collars typically lasted only five weeks due to weight constraints, and a number of djoongari were killed by a pair of southern boobook owls in June and by Gould's monitors (*Varanus gouldii*) in October. Nevertheless, radio tracking clearly showed djoongari preferred coastal areas dominated by beach spinifex (*Spinifex longifolius*) and completely avoided the acacia shrublands that cover most of the island.

Monitoring and population growth

AWC's last annual survey of native and translocated animals on Faure Island in July 2006 produced a boodie bonanza. The 17 founders had given rise to an estimated population of more than 400 animals in four years—a good demonstration of the capacity of our native wildlife to recolonise habitat in the absence of introduced predators! Given the chance, boodies can produce up to three young each year.

Left Faure Island Project Officer Jo Williams releasing a boodie during the animal survey.

Below AWC Director Ross Ledger and south-west manager Alison Dugand setting cat traps for western barred bandicoots after their translocation from Heirisson Prong.
Photos – Jacqui Richards

The strong growth of the boodie population, however, created a significant monitoring problem. As 41 per cent of cage traps were filled by boodies, fewer traps were available to more trap-shy species. Fifteen western barred bandicoots—five of them born on Faure Island—and only three banded hare-wallabies were captured. Fortunately, track counts, spotlighting and additional targeted trapping showed that populations of both species were likely to be in excess of 50 animals each.

The boodies also provided an opportunity to learn more about the ecology of this species in a more accessible location than the wild Bernier and Dorre island populations. Felicity Donaldson, a PhD student of the The University of Western Australia has spent the past couple of years studying the taxonomy and genetics of remnant boodie populations on Bernier, Dorre and Barrow islands and the genetic consequences of translocations to sites such as Faure Island.

Banded hare-wallabies have had more than a year's head start on the western barred bandicoots, but usually produce a single young each year, while the bandicoots can produce up to three young per litter and up to four litters per year in rapid succession.

More than 100 djoongari were trapped in July 2006, a significant increase from the 40 caught in the previous annual survey. Their tracks cover the island. It is rare to see signs of the introduced house mouse, and encouraging that the native rodents are faring much better. Its ability to produce up to five young per litter means the djoongari is likely to continue to increase and outcompete the introduced house mouse.

It is early days for the greater stick-nest rats of Faure Island, but it is hoped that their population size will follow the trend of rapid growth seen by the other four species of threatened mammals.

Weighty gains

Many Australians struggle against weight gain, but the reverse is usually true for our native animals, which compete for food in an often harsh and unforgiving environment. Boodies and

bandicoots on Faure Island appear to have bucked the trend.

The average weight of adult boodies captured on Bernier Island is 1260 grams, compared with 1310 grams on Dorre Island, 1360 grams on Heirisson Prong and 1490 grams on Faure Island. The largest boodie trapped on Bernier and Dorre islands was an 1860-gram male, while the record on Faure Island is an amazing 2390-gram female. Radio collars have had to be modified to encompass their chubbier stature and the two kilogram scales are often relegated to the bottom of the trapping kit in favour of a three kilogram model. Similarly, the average weight of western barred bandicoots is 219 grams on Bernier and Dorre islands, 230 grams on Heirisson Prong and 261 grams on Faure Island. While the latter sample is from only 13 animals born on the island, they are already visibly larger than their counterparts.

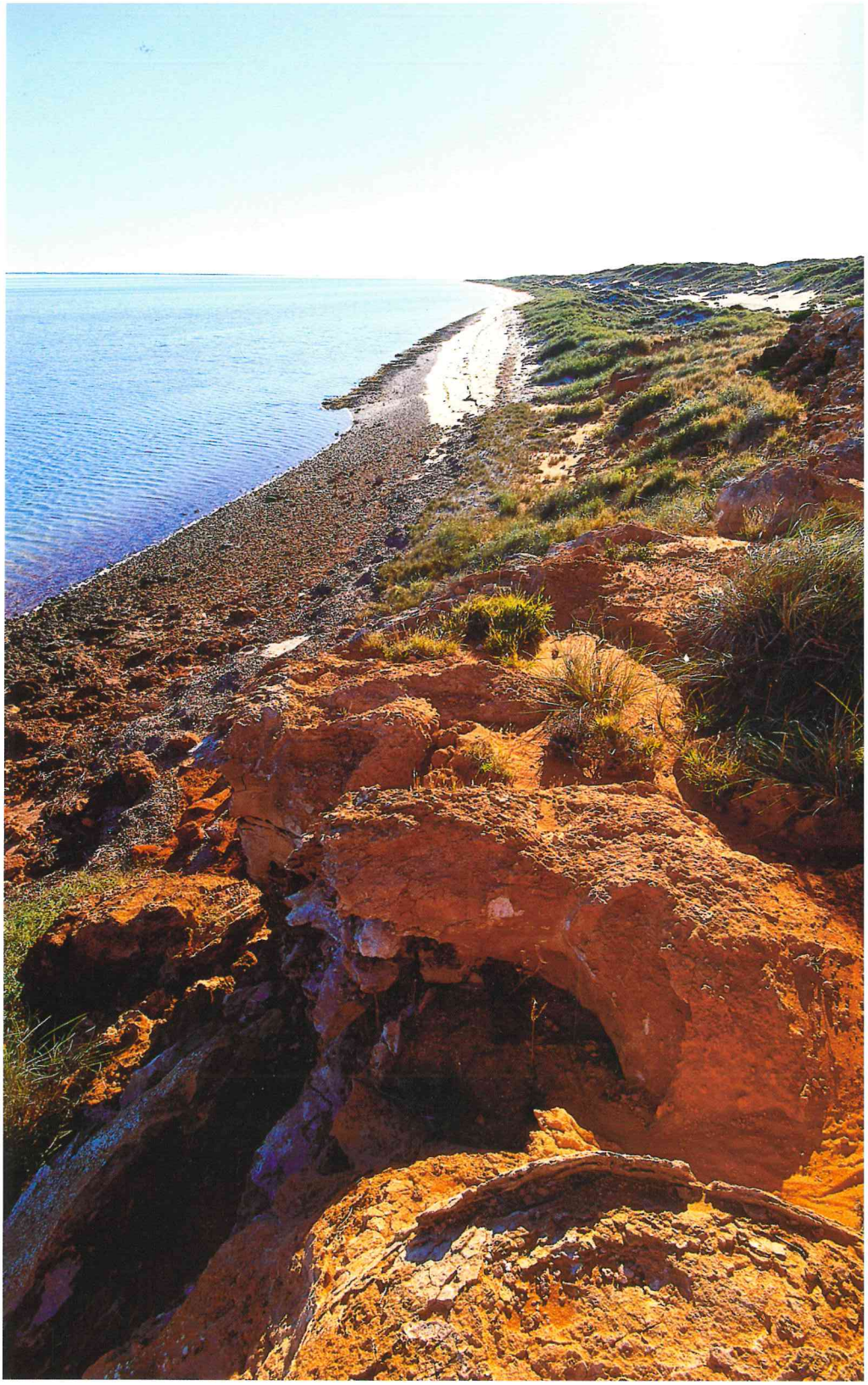
It seems that good quality habitat, abundant food and low levels of competition on Faure Island have enabled the threatened mammal populations to rapidly increase, in both body size and number.

Beyond Faure Island

Faure Island is now criss-crossed by an array of native mammal tracks. The hoof prints of the previous century have all but gone and prickly kurara shrubs have begun to cover the weedy remnants of the island's pastoral history.

The almost overnight success of Faure Island is testament to the true spirit of collaboration. DEC, a raft of conservation-minded organisations and many donors and volunteers have all contributed to AWC's mission to conserve Australia's biodiversity. As the threatened mammal populations increase on Faure Island, the opportunity to translocate animals to other Australian sites is fast becoming reality. AWC, DEC and the Invasive Animals Cooperative Research Centre are already working to control introduced feral cats, foxes and wild dogs at AWC's Mount Gibson Wildlife Sanctuary in the northern Wheatbelt, as a precursor to reintroducing threatened mammals there.

As DEC's challenge of transforming the nearby and much larger Dirk Hartog Island pastoral lease to a conservation estate unfolds over the next few years, the threatened mammals of Faure Island may prove a key component in continuing the transformation of much of the Shark Bay region from pastoral to conservation pursuits.



Above Faure Island's coastline.
Photo – Jiri Lochman

Jacqui Richards, a Regional Ecologist for the Australian Wildlife Conservancy based in Perth, has been involved in conserving threatened mammals in Shark Bay for the past decade. She can be contacted on (08) 9226 0340 or by email (jacqui@australianwildlife.org). Visit the Australian Wildlife Conservancy's website (www.australianwildlife.org) for more information about the organisation.

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