Australian Wildlife Conservancy

FAURE ISLAND SANCTUARY Jan - Dec 2006

Introduction

Faure Island Sanctuary is a 5,816 ha pastoral lease located in Shark Bay, Western Australia. It was acquired by the Australian Wildlife Conservancy (AWC) in 1999. Until AWC acquired the lease, it was previously held by the Hoult family since 1905 and was stocked with Angora Goats and Merino Sheep.

The island is characterised as having an arid climate with hot dry summers, mild winters and erratic rainfall, most of which falls in winter, though cyclonic activity may bring significant summer rainfall. There are five major plant communities on the island, *Acacia* shrubland, mallee shrubland, spinifex grassland, samphire and *Atriplex* shrubland and mangrove woodland (Keighery & Muir in prep).

The habitat on Faure Island was in relatively good condition when acquired by AWC. However, weeds such as Buffell Grass and Boxthorn, feral goats and cats, are a legacy of past use as a pastoral venture. Foxes and rabbits were not present on the island. In February 2001, feral cat eradication commenced consisting of aerial baiting, ground baiting, trapping and monitoring led by David Algar (DEC) (Algar *et al.*in prep). By winter 2001, after extensive monitoring, the island was declared cat-free (Thomas and Whisson 2001). Stock removal also commenced in 2000 with goats eradicated by 2005 and sheep currently numbering approximately 50. Stocking rates were estimated at 2000 sheep and 2000 goats in 1999 when AWC acquired the lease.

In 2002, the first of five planned translocations of threatened mammal species commenced (Table 1).

Table 1: Summary of mammal translocations to Faure Island

Species	2002	2004	2005	2006	Total	Source population
Boodie	17				**17**	Heirisson Prong (Original source Dorre Island)
Shark Bay Mouse	114				**114**	Perth Zoo (captive bred, original source Bernier Island)
Banded Hare Wallaby		7	9	10*	**26**	Peron Captive Breeding Centre (captive bred, original source Bernier Island)
Western Barred Bandicoot			20		**20**	Heirisson Prong (Original source Dorre Island)
Greater Stick-nest Rat				24*	**24**	St Peters Island, SA and Salutation Island, WA

* During this reporting period, details in tables below.

Translocations from Faure Island

Twelve Boodies were translocated from Faure Island to Heirisson Prong in October 2005. The Heirisson Prong population is managed by Jeff Short, Wildlife Research and Management, and the Useless Loop Community Biosphere Project Group.

Previous Reports
Individual reports as part of ongoing monitoring protocol between AWC and the Department of Environment and Conservation (DEC; formerly CALM) for each of the translocated species have been prepared every six months since release. After discussions with DEC and AWC staff, it was determined that these species reports be replaced with an overall report for each sanctuary reflecting population establishment and trends over time.

Methods

Current Translocations
All Translocation Proposals endorsed by DEC for threatened mammals translocated to Faure Island stipulate an intense monitoring regime in the initial month after release; this usually includes radio tracking and trapping. For the first twelve months after release the monitoring is on a quarterly basis through spotlighting and trapping. All translocated animals are then monitored annually thereafter.

Banded Hare Wallabies
Seven Banded Hare-wallabies *Lagostrophus fasciatus fasciatus*, three females and four males, were translocated to Faure Island in May 2004. A second translocation of nine Banded Hare-wallabies was carried out in May 2005 (details in previous associated reports). A third translocation of ten Banded Hare-wallabies was conducted on 11th May 2006 (Table 2).

Table 2: Details of the Banded Hare Wallabies released on Faure Island in May 2006

Date	Tag Type	Ear tag F	Trovan	Ear tag P	Sex	Age	Weight (g)	Name	Pouch
11-May-06	F/P	F0118	65853AC	P719	F	A	2175	Prudence	MPY
11-May-06	F/P	F0170	66DEBOD	P705	F	A	1455	Bugsy	EMP
11-May-06	F/P	F0168	66DFB4C	P711	F	A	1755	Lisa	MPY
11-May-06	F/P	F0124	66EOEB2	P401	F	A	1240	Persephane	EMP
11-May-06	F/P	F0166	6711EFC	P710	F	A	2055	Bethwyn	MPY
11-May-06	F/P	F0235	65904BI	P718	M	A	1755	Earnest	
11-May-06	F/P	F0241	66E2DBC	P704	M	A	1460	Charlie	
11-May-06	F/P	F0234	647E052	P715	M	A	1660	Algernon	
11-May-06	F/P	F0233	66DD916	P701	M	A	1345	Dicky-boy	
11-May-06	F/P	F0236	66DD1DO	P402	M	A	1355	William	

Trapping for Banded Hare Wallabies in 2006 included the annual survey in July and targeted trapping in January, April, May, September and October. The target trapping varied temporally and spatially, as guided by spotlighting and track counts.

Western Barred Bandicoots
As recorded in the 2005 AWC Faure Island report, 20 Western Barred Bandicoots *Perameles bougainville,* consisting of nine females and 11 males, were translocated to Faure Island on 6th October 2005, under the Translocation Proposal endorsed by CALM. Ongoing monitoring of survival and establishment of the population as well as the health, general condition and reproductive status has continued as per the Translocation Proposal. Trapping for Western Barred Bandicoots in 2006 included the annual survey in July and targeted trapping in January, April, May, September and October. The target trapping varied temporally and spatially as guided by spotlighting and track counts.

Greater Stick-nest Rats

Twenty four Greater Stick-nest Rats were translocated to Faure Island in September 2006. They were sourced from St Peters Island in South Australia and Salutation Island in Western Australia (Table 3). Figure 1 shows the location of the release site.

Table 3: Details of the Greater Stick-nest Rats release on Faure Island in 2006.

St Peters Island

Date	Tag Type	Ear tag	Trovan	Sex	Wt (g)	Head	Pes	Collar	Reprod cond	Notes
St Peters Island										
21-Sep-06		5833	981000300101757	M	216	49	44	150.340		ear tissue taken
21-Sep-06		5202	981000300104199	F	214	50	45	151.790		ear tissue taken
21-Sep-06		5201	981000300101822	M	118	43	42			dead on arrival, ear tissue taken
21-Sep-06		5203	981000300104232	M	173	45	44			ear tissue taken
21-Sep-06		5204	981000300105051	M	229	51	46			ear tissue taken
21-Sep-06		5205	981000300099497	F	229	54	46			ear tissue taken
21-Sep-06		5801	981000300177909	M	218	47	43			ear tissue taken
21-Sep-06		5802	981000300175458	F	250	53	44			ear tissue taken
21-Sep-06		5803	981000300176399	F	247	51.5	47			ear tissue taken
21-Sep-06		5804	981000300178291	F	194	49	45			ear tissue taken
21-Sep-06		5805	981000300175801	F	241	51	45			ear tissue taken
21-Sep-06		5806	981000300176966	M	201	50	44			ear tissue taken
21-Sep-06		5807	981000300173458	F	274	53	44			ear tissue taken
21-Sep-06		5226	981000300100434	F	137	46	41			dead on arrival, ear tissue taken
21-Sep-06		5227	981000300101007	M	259	56	48	150.560		ear tissue taken
21-Sep-06		5228	981000300097771	M	168	49	43	150.380		ear tissue taken
21-Sep-06		5229	981000300105383	M	240	53	45	150.330		ear tissue taken
21-Sep-06		5230	981000300173387	F	215	53	44	150.220		ear tissue taken
Salutation Island										
28-Sep-06	P	549		F	290	40.7	46.5	150.3010		ear tissue taken
28-Sep-06	P	526		M	260	53	46.8	151.7615		ear tissue taken
28-Sep-06	P	527		M	250	51.5	44.6	150.8100		ear tissue taken
28-Sep-06	W	6693		F	320			150.8090	Preg	ear tissue taken
28-Sep-06	W	6409		M	283	49.3	44.1	151.750		ear tissue taken
28-Sep-06	W	6410		F	310	50.1	44.3	151.6505	Preg	ear tissue taken

As per the Translocation Proposal, 11 rats were radio-collared with Sirtrack collars incorporating a two stage transmitter and mortality function. Attempts were made to radio-track every rat every day for the first four weeks. Further monitoring by trapping, spotlighting and track counts will be undertaken every three months for the first twelve months post release as per -other translocations to Faure Island.

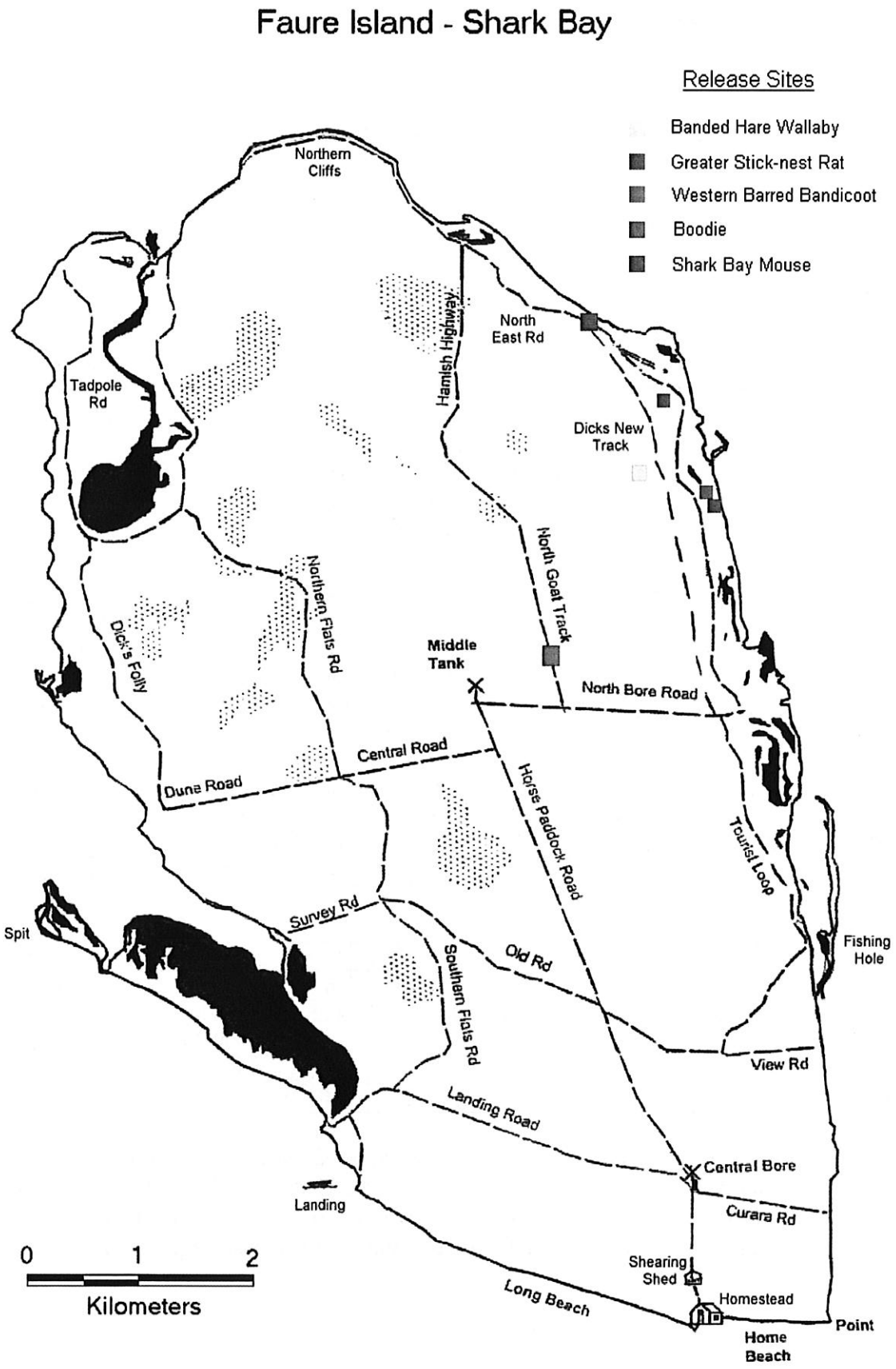

Figure 1: Location of release sites of threatened mammals translocated to Faure Island

Ongoing monitoring and annual survey.
A biological survey was conducted in July 2006 at Faure Island to monitor previously translocated species, vegetation, birds, and feral species *(regular checks for reinvasion of introduced predators occur at Faure Island via track counts and spotlighting)*. The annual survey included trapping using Sheffield wire cage traps, Elliott traps, pitfall traps, track counts and bird observations. Three hundred trap sites, each with a Sheffield and Elliott trap cover the island's road network at approximately 100 m intervals. Each transect of 300 cage and Elliott traps is trapped for three consecutive nights. There are ten pitfall sites consisting of six pits each; all were utilised during this survey. The total trapping effort for this reporting period is shown in Table 4. It includes the annual survey and targeted trapping effort (January, April, May, September and October 2006).

Table 4: Trapping effort on Faure Island in 2006

Trap Type	No. Traps	No. Nights	Total trap nights
Pit	60	3	180
Medium Elliott	Up to 100	34	2630
Large Elliott	40	3	120
Sheffield	Up to 100	28	1690
Total			**4620**

Spotlighting
The standard spotlight drive transect at Faure Island incorporates an area not thoroughly covered by trapping as the vegetation is too sparse to shelter traps. The spotlight transect was established for comparison with other AWC sanctuaries and DEC reserves. The transect is 15 km long and takes approximately one and a half hours to complete. It is conducted on three nights in July during the annual fauna survey. Other oppurtunistic spotlighting data is also presented in this report.

Opportunistic observations
Observations of interest are noted and recorded by staff during all sanctuary work. This can include unusual sightings, calls, scats, prints and breeding events that might not be detected by standardised monitoring techniques. A walk along the coastline of Faure Island, together with early morning bird observations, is included during the annual survey in July.

Vegetation
There are 23 photographic monitoring points on Faure Island consisting of three Department of Agriculture rangeland sites, which have a long monitoring history, and 20 sites established by AWC, covering different habitats, disturbed areas, weeds and regeneration of vegetation such as sandalwood. These photographs are available from AWC. A vegetation survey was conducted by Greg Keighery in May 2001, with voucher specimens taken. A field herbarium is currently being established and weed control management is in place.

Results and discussion

Banded Hare Wallabies

During 2006 there were 59 Banded Hare Wallabies captures, consisting of 18 individuals, including 13 of the 26 founders (four from 2004, six from 2005 and three from 2006), three Faure Island born and one new individual. They were all trapped in the vicinity of the release site. All individuals were in good condition. Twelve females were captured and all except one (never recorded in breeding condition on Faure Island) were recorded with pouch young or lactating.

Based on the increasing abundance of fresh Banded Hare Wallaby tracks, it was thought that higher numbers of wallabies would be captured. However increasing numbers of Boodies on Faure Island has meant that it is becoming increasingly difficult to trap Banded Hare Wallabies. Previous work

with Banded Hare Wallabies had indicated that wild-born Banded Hare Wallabies may be much more 'trap shy' than captive-bred individuals.- (Nicole Noakes, DEC Denham, pers. comm.). This was supported by the sighting of four independent young un-marked wallabies during spotlighting, none of which were trapped, despite four captive-bred lactating female wallabies -trapped in the same area in that period.

Western Barred Bandicoots

During 2006 there were 74 bandicoot captures on Faure Island, including 26 individuals consisting of nine new and 16 founders. Of the ten females captured, all but two were recorded in breeding condition.

Monitoring of Western Barred Bandicoots over the 6,000 ha island has presented a challenge in the early stages of population establishment. The annual trapping survey of 900 trap nights is unlikely to cover the home ranges of all female bandicoots residing on the island. Not all bandicoots are trapped during any one trapping session and traps are often inhabited by translocated Boodies, rendering the traps unavailable to bandicoots. Boodies are also renowned for moving and closing traps; even those firmly staked to the ground may be kicked closed.

The estimated population size using a Schnabel estimate in July 2006 was 25 Western Barred Bandicoots, which is likely to be an underestimation of the population size due to the potential reproductive output of the species and Western Barred Bandicoot tracks were recorded over a large proportion of the island. There were consistent and numerous Western Barred Bandicoot prints in areas where no bandicoots were captured. For example, there are at least two (probably more) bandicoots living near the homestead and others near the Boat Landing, however despite extensive trapping effort, none were captured at those locations.

Greater Stick Nest Rats.

Of the 24 Greater Stick Nest Rats taken to Faure Island, two small animals died in transit, two were predated (one by a bird of prey, one by a goanna), and one died of unknown causes during the first six weeks of monitoring. Three were regularly located by radio-tracking, a further two animals were occasionally radio-tracked, three of the collared rats were never successfully radio-tracked and one un-collared rat was sighted in close proximity to a collared rat. The remaining ten rats were not collared, sighted or trapped post release.

Greater Stick Nest Rat prints were recorded as far away as 8.5 km south of the release site (that is, almost as far from the release site as is possible on a 12 km long island, with the release site 2 km from the northern tip) A detailed description of each rat's fate is outlined in Table 5.

Table 5: Details of the survival and movements of Greater Stick nest Rats post-release on Faure Island.

Date	ID	Sex	Weight (g)	Collar	Survival and movements
St Peters Island					
21-Sep-06	5833	M	216	150.340	Wide ranging movements, last located 12 days after release. Visually inspected on day 4 in excellent condition, always in excellent cover.
21-Sep-06	5202	F	214	151.790	Stayed within 3 km of release site. 8 days after release found in reasonably open salt bush country having been freshly predated by a bird of prey. A Brown Falcon had been seen moments before circling very close to the dead rat. It is believed that the rat may not have had good cover and the falcon had predated the rat during the day.

21-Sep-06	5227	M	259	150.560	Despite extensive radio tracking searches no locations were recorded for this animal.
21-Sep-06	5228	M	168*	150.380	This rat was located twice. Once 1.8 km south of the release site on day 2 in good cover. Then on day 5 was found 5.8 km west of the release site lying dead in the middle of an open birrida. No sign of predation was found and the animal had an empty gut. Collar fit was excellent.
21-Sep-06	5229	M	240	150.330	Stayed with in 200 m of release site. Regularly located in excellent cover. Many attempts to trap or hand capture were not successful. Always looked healthy.
21-Sep-06	5230	F	215	150.220	Despite extensive radio tracking searches, no locations were recorded for this animal.
21-Sep-06	5201	M	118*	Not collared	Dead prior to release
21-Sep-06	5226	F	137*	Not collared	Dead prior to release
21-Sep-06	5203	M	173	Not collared	Unknown
21-Sep-06	5204	M	229	Not collared	Unknown
21-Sep-06	5205	F	229	Not collared	Unknown
21-Sep-06	5801	M	218	Not collared	Unknown
21-Sep-06	5802	F	250	Not collared	Unknown
21-Sep-06	5803	F	247	Not collared	Unknown
21-Sep-06	5804	F	194	Not collared	Unknown
21-Sep-06	5805	F	241	Not collared	Unknown
21-Sep-06	5806	M	201	Not collared	Unknown
21-Sep-06	5807	F	274	Not collared	Unknown
Salutation Island					
28-Sep-06	P549	F	290	150.301	Despite extensive radio tracking searches, no locations were recorded for this animal.
28-Sep-06	P526	M	260	151.7615	Collar found six days after release, goanna predation suspected (collar found with goanna teeth marks outside goanna burrow), however only collar found, rat may have been scavenged by goanna rather than predated.
28-Sep-06	W6693	F	320	150.809	Reasonably large movements, 4 locations recorded in the first 4 days then nothing, all locations in excellent cover.
28-Sep-06	W6409	M	283	151.750	Stayed within 300 m of release site. Regularly located in excellent cover. Attempts to trap or hand capture were not successful. Looked healthy. Was sighted in same bush as an un-collared individual.
28-Sep-06	W6410	F	310	151.6505	Stayed within 1 km of release site. Possibly had fault duty switch on collar, it seemed she was in a very similar location every other day. 7 records in 18 days, last recorded 18 days after release with very weak signal. Attempts to trap or hand capture were not successful.
28-Sep-06	P527	M	250	Not collared	Unknown

Other Monitoring Results

Trapping

The annual survey trapping results are outline in Table 6 below.

Table 6: Summary of trapping results from the July 2006 annual survey on Faure Island.

Species	No. trapped	Comments
Banded Hare Wallaby	59	Including 41 retraps
Boodie	516	Including 206 retraps
Shark Bay Mouse	251	Including 21 retraps

Western Barred Bandicoot	74	Including 48 retraps
House Mouse	36	
Ctenotus fallens	18	
Ctenotus schomburgkii	1	
Corvus bennetti	1	
Heteronotia binoei	4	
Lerista muelleri	2	
Lerista praepedita	2	
Lerista varia	1	
Morethia lineoocellata	12	
Varanus gouldii	3	
Total animals trapped	**980**	
Trap nights	**4620**	
Trap rate	**21.3%**	

Boodies

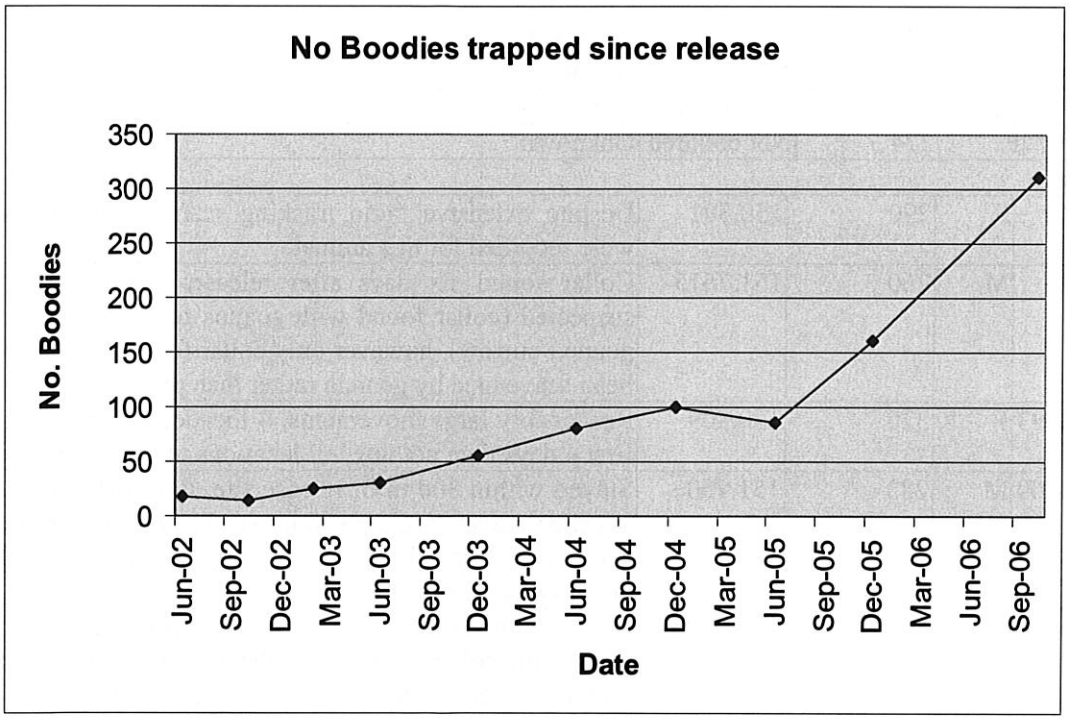

Figure 2: Number of individual Boodies trapped since release in June 2002.

Boodies have increased steadily since release in 2002 and have spread across the entire island (Figure 2). As noted in previous reports, there are a number of individuals being recorded with ear infections and growths. Colleen Sims (DEC Denham) conducted tests on three individuals with this condition which were sent to Murdoch University for analysis. The histological changes in the sections submitted are most consistent with trauma to the ear, followed by distortion of the ear cartilage during the healing process. Considering that the gender most commonly affected is the male, interspecific aggression by males is the most likely initial cause of the lesions. The inflammatory reaction was not focused primarily on the cartilage, making the autoimmune disease "auricular chondritis" an unlikely pathogenesis for this disease (Mandy O'Hare pers. comm.) The infected Boodies are usually in good condition regardless of the extent of the ear condition.

Shark Bay Mice

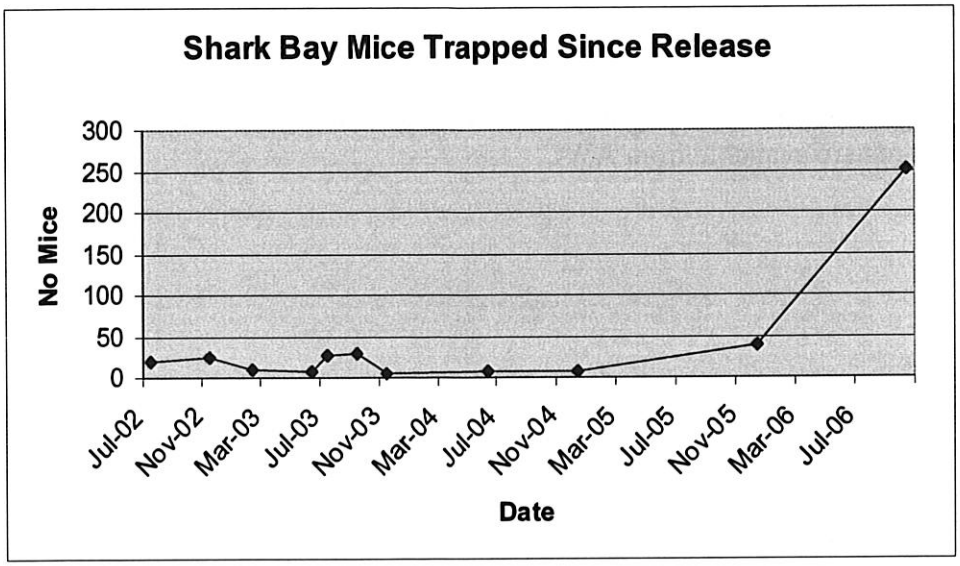

Figure 3: Capture rate of Shark Bay Mice on Faure Island since release.

The trap success of Shark Bay Mice is variable (Figure 3) and is probably not a true reflection of numbers of individuals as the species appear to be trap shy. Despite these results, tracks have been observed across the island since the release in 2002. However quite large numbers were trapped in 2006, which was a very good season for food resources, and consequently breeding was likely to be highly successful during the year. Many of the females trapped were pregnant and young mice are captured regularly in all seasons. The Shark Bay Mice population on Faure Island appears to be well established and healthy.

Spotlighting

The standardised drive transect was conducted on 17/, 21 and 25th July 2006. A total of 17 vertebrates were sighted over the three nights, including 13 Boodies, two Shark Bay Mice, a Kestrel and a juvenile Bustard. Opportunistic spotlighting is also done throughout the year. On most spotlighting occasions Shark Bay Mice and Boodies were seen regularly. Banded Hare Wallabies and Western Barred Bandicoots were also seen occasionally, depending on the spotlight route.

General Observations

Birds

A baseline bird survey was conducted by John Dell in 2000. Additional data has been collected by a number of staff and volunteers since then. This more recent data is currently being prepared for publication (Dell and Cherriman in prep.). Four new bird species were added to the bird list this year: Chiming Wedgebill, Grey Shrike Thrush, Sooty Oyster Catcher (P. Berry, pers. comm.) and Painted Button Quail. A pair of White Bellied Sea Eagles has successfully raised a young on Faure Island this winter. The nest is on the central west coast of the island. Owls are seen more regularly; this is probably due to the higher availability of prey. The Spotted Night Jar however has not been recorded on the island since 2002. The population of Emus on Faure Island continues to increase; approximately forty individuals wander into the only water trough in the south of the island each day.

Beach walk

A beach walk of the entire island (approx 45 km) was conducted as part of the annual survey in July 2006. Data on marine life, shore birds, tracks, scats, nesting sites and vegetation was collected. Of interest was five small Dolphins that had washed up on the western beaches; three of them discovered during the annual beach walk and reported to the Dolphin Research Group at Monkey

Mia. It was also noted that Boodies have been feeding on mangrove seeds, crabs and dead fish washed up on the beaches. Several species of sharks, some dugongs, dolphins and waders were also recorded. All data is available from AWC.

Vegetation

The vegetation is continuing to recover following the removal of stock and good summer rainfall in 2006. All photographic records are available from AWC.