REPORT on BIOLOGICAL SURVEY, TWO PEOPLES BAY RESERVE (No. 27956) FEBRUARY 3 to 17, 1970

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1. INTRODUCTION

In 1969 the Western Australian Museum undertook to carry out a series of surveys of reserves administered by the Department of Fisheries and Fauna. The first area was Reserve No. 27956, Two Peoples Bay, of 11,460 acres, approx. 20 miles east of Albany, W.A. A period of 14 days was originally allotted for the survey in December 1969 but for various reasons work could not begin until early February 1970.

2. AIMS

The aims were to investigate mammals and reptiles, and in addition to collect insects, spiders and land molluscs as opportunities occurred.

3. PERSONNEL

J.L. Bannister	Curator of Mammals, W.A. Museum, leader
R.E. Johnstone	Technical Assistant Department of Vertebrates, W.A. Museum
L.A. Smith	Technical Assistant Department of Vertebrates, W.A. Museum
W.K. Youngson	Technical Assistant Department of Mammals, W.A. Museum.

4. GENERAL DESCRIPTION of the RESERVE

Briefly, the reserve can be divided into 2 main regions: one low and relatively flat, occupying roughly the western 2/3rds, the other, the eastern third, consisting mainly of high rugged country on a peninsula that juts south and east of the 3 mile long curving beach bordering Two Peoples Bay. (see map).

Much of the low ground to the south and east of the two lakes, apart from large areas of drift sand, is low heathland but between the two is thick swampy country, while the most extensively wooded areas, with good stands of jarrah, Eucalyptus marginata, occur to the north of Moates Lagoon. Around the Fisheries Hut, at the south end of Two Peoples Bay Beach, is a small area of mixed woodland (mainly a mixture of Bullitch Eucalyptus megacarpa, and Peppermint Agonis flexuosa). The north eastern slopes of the peninsula, rising towards Mt Gardner (1314 ft) and its subsidiary peaks are generally much less rugged than the more precipitous southern and south eastern slopes. These steeper slopes are cut by deep valleys, usually thickly wooded and opening to the sea. The north eastern, less precipitous slopes are dissected by gullies which, though shallow by comparison with the deep valleys elsewhere, frequently contain deceptively tall and dense vegetation.

The main (gravel) road into the reserve runs west-east roughly along the reserve's northern boundary. It crosses the Goodga River at the southern edge of a small area of National Park, near the point where the river drains into Moates Lagoon, and the Gardner River near its exit from Lake Gardner. There the main road turns into a series of parallel single vehicle sand tracks (the "main track") running more or less directly to the site of the old settlement at the southern corner of Two Peoples Bay Beach, where the present "Fisheries Hut" is sited. The track

continues on round the northern edge of the peninsula to Bishop's Beach, a popular fishing spot. About ½ mile west of the Fisheries Hut a fork leaves the main track, rising towards the higher ground, leading eventually to the CSIRO "Noisy Scrub Bird Research" Hut and beyond, through a saddle north of Mt Gardner, to high ground overlooking Coffin Island. Other tracks leave this track to lead to fishing spots just west of Mt Gardner and at Black Rock and Rocky Point on the long stretch of open coastline which forms the southern boundary of the reserve.

5. NARRATIVE

Bannister, accompanied by Dr A.A. Burbidge and his assistant T. Evans, Department of Fisheries and Fauna, left Perth 3/2/70 and arrived at Two Peoples Bay that evening. They were joined by Smith, Youngson and Johnstone late the next day. Over the first 2 days a reconnaissance was made of various parts of the reserve. Burbidge and Evans left on Feb. 7th. W.H. Butler joined the survey party for one night (4/2/70) on his way back to Perth from an investigation of the Cheynes Beach area approx. 15 miles east-north-east of Two Peoples Bay.

Following the 2 day recce, work was concentrated in 3 main areas, successively, as follows:

(i) Around the Fisheries Hut (1a), on high ground above Bishop's Beach (1b), and on open ground south of the main track (1c) (5/2/70 to 10/2/70).

(ii) In and near a deep valley to the south west of Point Gardner (2a, b) (10/2/1970 to 16/2/1970).

(iii) At the western end of Moates Lagoon (3a); close to the Goodga River, south of the main road (3b); and near the northern border of the lagoon (3c) (14/2/70 to 17/2/70).

See map for locations.

These areas were selected to give as wide a range of habitats as could be dealt with in the time available. Daylight and night time (spotlighting) runs were made in various other parts of the reserve, e.g. towards Black Rock and Rocky Point; along the main road between the Goodga River and the Fisheries Hut; to the west of Mt Gardner; and into the National Park bordering the Goodga River, north of the main road.

6. RESULTS

6.1 Mammals, by J.L. Bannister

20 traplines were set, using "Elliot" box traps, "break backs", "cage" traps and pit traps. Elliots and break backs were baited with "universal" bait (a mixture of 1 part peanut paste, a little chopped bacon, and 1 part chopped raisins, mixed to a doughy consistency with sufficient rolled oats). Cage traps were baited with bread spread with peanut paste. Meat (especially bird) was often used as well in cage traps, and sometimes as a substitute for universal bait in break backs.

Trap results are summarised in Table 1a. Habitat details are given in Table 1b.

14 mammal species were definitely sighted, or caught, during the survey. A further 16 were thought to be present, from unconfirmed sightings, tracks, or evidence of scats. With 32 other species reported from the area previously, both some of which were ~~undoubtedly~~ present during the survey but not definitely ~~recorded~~, a total of 23 species can be listed (Table 2).

6.1.1 Notes on the species

(1) Tachyglossus aculeatus, Echidna.

Scratchings believed to have been made by this animal near the CSIRO Hut (see map) were reported to us by N. Robinson. None were found by the survey party but it would be expected to occur on the reserve. J. Kirsch and A. Baynes sighted one on the Manypeaks track north east of L. Angove in July 1967.

(2) Antechinus flavipes, Yellow footed marsupial mouse.

Found in damp localities, being trapped in areas 1a and 2a, both habitats dense woodland. This species is a well known climber and two animals were caught in traps several feet above ground on trunks or branches. Rattus fuscipes, and sometimes Mus musculus were trapped in the same localities but there was no clear evidence of interaction between Antechinus and those two species. Antechinus seemed to enter traps at random, not, as might have been expected, only after R. fuscipes had been removed by trapping. Trap results indicate populations at ~~very~~ much lower levels of density than R. fuscipes, and in area 1a at least, at a lower level than Mus musculus, though these results may be misleading because each species is likely to react to traps differently.

(3) Sminthopsis murina, Common marsupial mouse.

No live animals were recorded by the survey party but a mandible (identified by M. Archer) was among other mammal remains recovered from a large quantity of scats (probably cat) collected from a prominent granite outcrop ("tor") beside the main track on 15/2/70. W.H. Butler trapped this species (pit trap) in February 1970 at Cheynes Beach.

(4) Cercartetus concinnus, Pigmy possum.

Several nests, possibly made by this species, were found in blackboy stumps by L.A. Smith on 5/2/70, on high ground to the west of Mt Gardner.

(5) Isoodon obesulus, Short nosed bandicoot.

A young male was trapped (trapline 4; cage trap) at the boundary of Peppermint/bullitch woodland and heath on 8/2/70. Several scats, probably of this species, were found in mixed woodland at the bottom of the deep valley to the south west of Pt Gardner. This species was said to be "common near Moates Lagoon" by a local farmer, Mr Marden. Remains were identified from fox scats collected in that area (see 17 below), and from cat scats on the tor (see 18).

(6) Trichosurus vulpecula, Brush tailed possum.

Youngson found one adult in an abandoned ringtail nest about 25 ft from the ground, up a paperbark in Paperbark/Peppermint woodland on the western side of the deep valley to the south west of Pt Gardner on 13/2/70. This was the only record of this species during the survey. Suitable over-mature eucalypts, providing adequate nesting holes, were scarce ~~or absent~~ in most areas searched.

(7) Pseudocheirus occidentalis, Ringtailed possum.

On most nights 2 or 3 individuals could be found in peppermints within a few hundred yards of the Fisheries Hut. 3 nests (one occupied) were found by Burbidge and Bannister in thick/woodland to the north west of the /mixed Hut on 5.2.70. Many nests (one holding a juvenile) were found in thick Paperbark woodland on the west side of the deep valley to the south west of Pt Gardner. This species is obviously thriving in at least these 2 localities and its presence, and abundance, were a pleasant surprise. This seems to be the furthest east record of the species in W.A.

(8) Tarsipes spenserae, Honey possum.

None were recorded by the survey party but both N. Robinson and H. Webster reported them as seen on the reserve. W.H. Butler trapped this species at Cheynes Beach in February 1970 (pit trap).

(9) Macropus fuliginosus, Grey kangaroo.

Seen frequently throughout the more open areas of the reserve. No large mobs were encountered, the largest number seen together being 6. The other 33 sightings were mostly of pairs or singles as detailed below:

No. in group	1	2	3	4	5	6
No. of groups seen	9	18	5	1		1
No. of groups with 1 young at heel		7	3	1		

A moderate proportion of the sightings (11 out of 70 animals) were young at heel. Evidence of shooters' activity came from the remains of 2 recently dead carcases, one under the bridge where the main track crosses the Gardner River, and the other near Bishop's Beach.

(10) Macropus irma, Brush wallaby.

One possible sighting was recorded at night, in casuarinas above Bishop's Beach, on 4.2.70. This species very probably occurs on the reserve, particularly in the more wooded areas north of Moates Lagoon.

(11) Setonix brachyurus, Quokka.

This species' occurrence on the reserve was first recorded in 1969 when a carcase was found by N. Robinson in thick scrub at the bottom of a shallow gully near the CSIRO Hut.

Old runs and scats were found there by the survey party but several drives, in that gully and in a neighbouring one further west, produced no records. Presumably individuals had moved to wetter areas (near Lake Gardner?) in the exceptionally dry weather of the previous few months. Runs and scats almost certainly of this species were found in thickly vegetated gullies, e.g. near the weather station above the CSIRO Hut, and in the bottom of the valley south west of Pt Gardner, especially bordering the swamp at its lower end. Runs were also found in thick swampy areas at the west end of Moates Lagoon. Several nights' trapping, with cage traps concealed beside runs under layers of vegetation gave no results but a report by Johnstone from the bottom of the valley at 2020 hrs on 13/2/70 "two pairs of small eyes in a run, accompanied by a sort of low grunt" may well have been Setonix. Scats were confirmed by Dr G.M. Storr as almost certainly from this species, being very similar to those seen by him on Bald Island.

(12) Oryctolagus cuniculus, Rabbit.

Much sign and several individuals were seen near the Fisheries Hut, and north west of the Hut beyond the Gardner River entrance on sand dunes behind the beach. Much sign was present on sand ridges near Rocky Point and on the north western end of the large blowout, i.e. close to the west end of Moates Lagoon.

(13) Rattus fuscipes, Bush rat.

By far the most commonly trapped mammal, being caught in every trapline except one (18, where only cage traps were used). It was taken occasionally in cage traps, once on kookaburra bait. From trapping evidence the densest populations were in the mixed Bullitch/Peppermint woodland habitats of area 1a. The lowest densities were in the drier parts of area 1 (subarea 1b - Casuarina woodland/open heath) and 1c open heath). Strangely, the densities in area 2a, also thickly wooded, were rather low, being much the same as in drier parts of area 1, while areas 3b and 3c (offering a variety of habitats, but not as damp or thickly wooded as 1a) gave rather higher results.

With the large numbers of animals caught in subarea 1a it has been possible to do a simple analysis of the catch in terms of sex and size to show variations in catch with time. (Once trapped, animals were removed from the area.) Fig. 1 shows that in subarea 1 there are two size groups (by weight, one at mode c.70 g, the other >100 g), the larger of which disappeared successively over 4 nights, and particularly after the second night. Both sexes seem to show this, though fewer females were taken. By the fourth night no large animals of either sex were caught and the smallest males (<60 g) appeared only then. It is unfortunate that no sex or weight data were taken for the 14 R. fuscipes obtained in area 1a on the 5th (and last) night, but there is no reason to believe that the trend would not have been continued then.

(14) Mus musculus, House mouse.

Recorded in several localities, e.g. subareas 1a, 1c (highest density, almost approaching that of R. fuscipes in that open heath area) and 2a (very low density).

(15) Hydromys chrysogaster, Western water rat.

A male was caught in a cage trap (bait - peanut paste on bread, and bird) close to swampy ground in woodland near the Fisheries Hut on 9th February. It would be expected to occur near any of the freshwater streams in the neighbourhood although this appears to be the furthest east record for the species in the south west, the nearest record in Museum data being from Oyster Harbour, 10 miles to the west.

(16) Canis familiaris, Dog.

Several sets of tracks, and eyeshine, along the main track close to the Fisheries Hut, and an animal seen on the main track near the western edge of the woodland in the same area, were considered to be dog rather than fox.

(17) Vulpes vulpes, Fox.

One animal was sighted on the blowout at the western end of Moates Lagoon in the open, during daylight, at 1630 hrs, 5/2/70. Several sets of tracks, and eyeshine, in various areas, were considered to be fox rather than dog. The fox's effect on fauna can be shown by remains found in scats picked up on the north western corner of the blowout (west end of Moates Lagoon) which contained remains of rabbit, Rattus sp., Antechinus, Isoodon and a small murid, probably Mus musculus, as well as remains of lizard, many (unidentifiable) feathers and many insects.

(18) Felis catus, Cat.

One animal, shot (by Burbidge) near the Fisheries Hut on 3/2/70 at c.2000 hrs had no animal remains, only a small amount of vegetable matter, in its stomach and large intestine - presumably it was shot before it had made its evening kill. A ginger cat was sighted at night on the granite tor beside the main track and prints were found on the blowout at the west end of Moates Lagoon. One animal was sighted on the main road near Marden's property. The effect of this introduced species on the native fauna can be judged from the constituents of a large quantity of scats (c.200g) collected from a scrape, and partly covered with soil, on the side of the granite tor. Mammal remains in them have been identified as: Rattus sp. (presumably fuscipes) - bulk of sample; Isoodon obesulus - next most frequent; Oryctolagus - remains of 1 or 2 young animals; Mus musculus - remains of 3 or 4 animals; Antechinus flavipes - remains of 1 or 2 animals; Sminthopsis murina - 1 mandible only.

(19) Bats.

Only one species was identified certainly - Eptesicus pumilus, the ~~brown~~ bat, shot over water at the Gardner River bridge and seen flying there on several other evenings. Butler reported seeing Chalinolobus gouldi while spotlighting west of the Fisheries Hut on 4/2/70. Youngson made 2 unconfirmed sightings which from their fast, low flight he thought were almost certainly Nyctophilus sp. (long-eared bats), one near the Gardner River and another along the track, between peppermints, near the Fisheries Hut.

The characteristic high-pitched squeaks of Tadarida australis were heard several times - near the Goodga River in the National Park, over the Fisheries Hut, and over cleared paddocks along the main track near Marden's Homestead, though no specimens could be obtained to confirm the sound observations.

(20) Seals.

As many as 6 seals at one time were seen on Coffin Island from high ground above the deep valley to the south west of Pt Gardner from ½ to 3/4 mile away. Animals were noticed on 6 of the 8 days spent in the area, generally in threes or fours, though sometimes only singles or pairs; usually sunning themselves on a rocky area at the north east corner of the island, but occasionally on a small low rock at the north west corner. The species could not be identified at the distance though the only two likely in Western Australia are Neophoca cinerea, the hair seal (the common seal of the west coast, which also occurs along the south coast) or Arctocephalus forsteri, the fur seal of the south coast.

6.1.2 Conclusions on the mammal fauna

From the variety of habitats available a fairly representative south western fauna would be expected. Among woodland species, the presence of possibly the furthest east populations of Pseudocheirus is important. Of those that frequent damper situations, Antechinus flavipes was expected, particularly as it has been recorded in the Waychinicup area a few miles further east. Hydromys may be close to the limit of its range here, though it should still occur further east wherever suitable freshwater river systems occur - e.g. on the Waychinicup and perhaps the upper reaches of the Gairdner and Fitzgerald Rivers. The presence of Quokkas on the reserve is quite certain - but more work will be needed to pinpoint their exact centres of concentration at various times of the year. And if Gilbert's potoroo (Potorous tridactylus) is ever to be recorded again from W.A. it might well be in one of those remote valleys beyond Mt Gardner.

It was disappointing, but not surprising, that no record of the Dibbler (Antechinus apicalis) was obtained, since no areas similar to those where this species was rediscovered at Cheynes Beach, i.e. typified by the presence of Banksia baxteri, were found by us (though the Banksia has since been found between the two lakes). Similarly, the absence of the ashy-grey mouse, Pseudomys albocinereus, an animal also found in the Cheynes Beach area, was also disappointing, though it seems generally to be an animal of drier areas. Should this animal really be absent from the reserve then there might be more of a case for considering that the reserve's mammal fauna, while predominantly south western, contains a significant element at or near the eastern limit of its range - a conclusion much more certainly reached in the case of the reptiles (see 6.2.2).

6.2 Reptiles and frogs, by G.M. Storr

6.2.1 Species recorded

GEKKONIDAE

Phyllodactylus marmoratus

PYGOPODIDAE

Pygopus lepidopodus *

SCINCIDAE

Ctenotus labillardierii
Egernia pulchra
Egernia luctuosa
Egernia kingi
Egernia nitida
Leiolepisma trilineatum
Hemiergis peroni
Lerista microtis
Morethia lineoocellata *
Tiliqua rugosa

VARANIDAE

Varanus gouldi rosenbergi

ELAPIDAE

Elapognathus minor *
Denisonia coronata (sight rec. only)

BOIDAE

Python spilotes

LEPTODACTYLIDAE

Limnodynastes dorsalis
Heleioporus eyrei
Hyla moorei
Hyla adelaidensis
Pseudophryne guentheri *
Crinia glauerti (calling - fide Burbidge)

* species recorded prior to Survey of Park but not recorded by Survey Party.

6.2.2 Comments on the herpetofauna

The fauna is clearly "south-coastal", a fauna characterised by (1) poverty in geckos and agamids, (2) richness in frogs, (3) among skinks richness in *Egernia* spp. but poverty in *Ctenotus* spp., (4) occurrence of *Egernia luctuosa*, *Lerista microtis* and *Elapognathus minor*, and absence of genera otherwise distributed throughout the State, e.g. *Lialis*, *Gehyra*, *Menetia*, *Pseudechis* and *Acanthophis*.

This fauna can be further qualified as "wet south-coastal". Two Peoples Bay is near the eastern limit of this subfauna, which is characterised less by the presence of certain species than by the absence of species that occur on the drier coasts and coastal plains immediately to the east and north-east. For example agamids are completely lacking, geckos are reduced to a single relictual species, and common subhumid zone skinks like Egernia multiscutata, Tiliqua occipitalis and Cryptoblepharus plagiocephalus appear to be absent.

From the viewpoint of conservation, the Reserve is important in providing permanent habitat for such uncommon species as Lerista microtis, Egernia luctuosa and Elapognathus minor.

6.3 Arthropods, by L.E. Koch

The arthropods collected as a result of the Two Peoples Bay Survey in February 1970 comprise

(1) insects that are common

(2) ectoparasites (fleas and ticks) of some value because of their host records, and

(3) a phalangid that is rare in the Museum collection.

The numbers of specimens and their broad classifications are:

INSECTA			
Coleoptera	: Tenebrionidae	3	
	Staphylinidae	3	
	Carabidae	1	
	Dermestidae	1	
	Curculionidae	1	
	Cerambycidae	1	
	Scarabaeidae	2	immature
Blattodea	: Blattidae	4	
Orthoptera	: Acrididae	3	
Hemiptera	: Jassidae	2	
Siphonaptera		1	(on Antechinus sp. No. TPB 104)
ARACHNIDA			
Chilopoda	: Scolopendridae	1	
Aranaeida	: Argiopidae	1	young
Acarina	: Ixodidae	several	(1 on Rattus fuscipes No. TPB 63, several on Antechinus flavipes sp. No. TPB 104, 1 on W.K. Youngson)
Phalangida (Harvestmen)		2	

6.4 Lycosid spiders, by R. J. McKay

The following were collected:

5.2.70 Lycosa sp. 2 juvenile males. On grey sand. Heathland near Fisheries Hut.

7.2.70 Lycosa pullastra ? 3 mature females. On beach near Fisheries Hut on dry surface of washed up weed. The epigyna of these specimens differs somewhat from the typical L. pullastra from Perth.

9.2.70 Lycosa sp. possibly L. immansueta juvenile. On grey sand track. Heath. High ground near Casuarina woodland on track to Bishop's Beach.

11.2.70 Lycosa sp. nov. A mature female and a few juveniles taken on sandy heath at the edge of the main track west of Fisheries Hut. A widespread species taken from Geraldton southwards and eastwards to the Fitzgerald River.

6.5 Land molluscs, by G. W. Kendrick

The following were collected:

4.2.70 Bothriembryon melo (Q. & G.)
B. kingii (Gray)
Rocky Point (between Nanarup and Mt Gardner).

5.2.70 B. melo. Blowout near Moates Lagoon.

13.2.70 B. melo. Two Peoples Bay Reserve - side of gorge/- in leaf litter below Melaleuca. / S.W. of Pt Gardner

15.2.70 B. melo. Two Peoples Bay Reserve - granite outcrop (tor).

Bothriembryon melo is the type species of the genus and is a particularly welcome addition to the W.A. Museum collection.

Table 1 Trapline Data b. Habitat details

Area	Trapline	Remarks	General statement for each subarea
1a	1	Between Fisheries Hut and Beach, along edge of swamp (with Lepidosperma) through thick scrub and open woodland	Near Fisheries Hut. 4 traplines; from beach scrub through swamp (with Lepidosperma) to mixed woodland (Bullitch/Peppermint, with Lepidosperma or kikuyu grass ground cover) out into heath (kangaroo grass with scattered Peppermint, Banksia).
	2	From Fisheries Hut through woodland (Bullitch/Peppermint) along edge of main track	
	3	Along ridge between swamps, north west of Fisheries Hut through dense woodland (Peppermint/Bullitch)	
	4	From clearing (kikuyu grass ground cover) in Bullitch/Peppermint woodland to heath (scattered Peppermint, occasional Banksia, tall seeding kangaroo grass (Evandra aristata)	
1b	5	Through Casuarina woodland	High ground (c 200') towards and above Bishop's Beach. 4 traplines covering 3 main habitats; Casuarina and Casuarina/Banksia woodland; heath with scattered mallee; shallow dry gully with dense heath at edge and dense mixed scrub in centre.
	6	Through Banksia attenuata / Casuarina woodland	
	7	Through heath with scattered mallee	
	8	Through top end of gully. Dense heath at edge, mixed Jarrah mallee, Melaleuca, Yate, blackboy in centre	
1c	17	Higher ground (c 100') - open heath, recently burnt, with tall seeding kangaroo grass	Single trapline.
2a	9	Along deep valley bottom SW of Point Gardner. Through mixed woodland (Jarrah/ Peppermint)	In deep valley to SW of Point Gardner. 4 traplines; 3 through closed Paperbark woodland to mixed woodland (Jarrah, Peppermint), one from heath to swamp through dense surrounding scrub.
	10	Up western side of valley through closed Paperbark woodland	
	11	Along valley bottom through mixed woodland into Paperbarks	
	15	Down side of valley (near opening to sea) through dense heath to thickets of Phebalium argenteum at edge of swamp, and into swamp	
2b	12	Through dense heath into low mallee	On high ground around valley edge. 4 traplines through dense heath with scattered low mallee into thick mixed scrub and Jarrah woodland.
	13	Through dense heath into stand of Banksia coccinea at valley edge	
	14	Through dense heath into dense mixed scrub of Jarrah, Yate, Banksia and Dryandra	
	16	Through low heath into edge of Jarrah woodland	
3a	18	W end Moates Lagoon. In thick swamp and through mixed scrub of Dryandra, Peppermint, "Kerosene bush".	Single trapline.
3b	19	From edge of Goodga R. From area of kangaroo grass through scattered open woodland (Banksia, Paperbark, Jarrah, Casuarina), to higher ground with heath and scattered Casuarina, Banksia and Jarrah (fairly recent burn).	Single trapline.
3c	20	N of Moates Lagoon. From Casuarina/ Banksia/Jarrah woodland to open woodland/mixed heath with Banksia coccinea, Beaufortia and Melaleuca.	Single trapline.

Table 2 Two Peoples Bay Survey February 1970 Summary of mammal records

(i) Definitely present during the survey (caught or definite sighting).

(ii) Reported by other workers; some evidence but no definite sighting during the survey.

(iii) Previously recorded by other workers but evidence not obtained on the survey.

(iv) Doubtfully present during the survey.

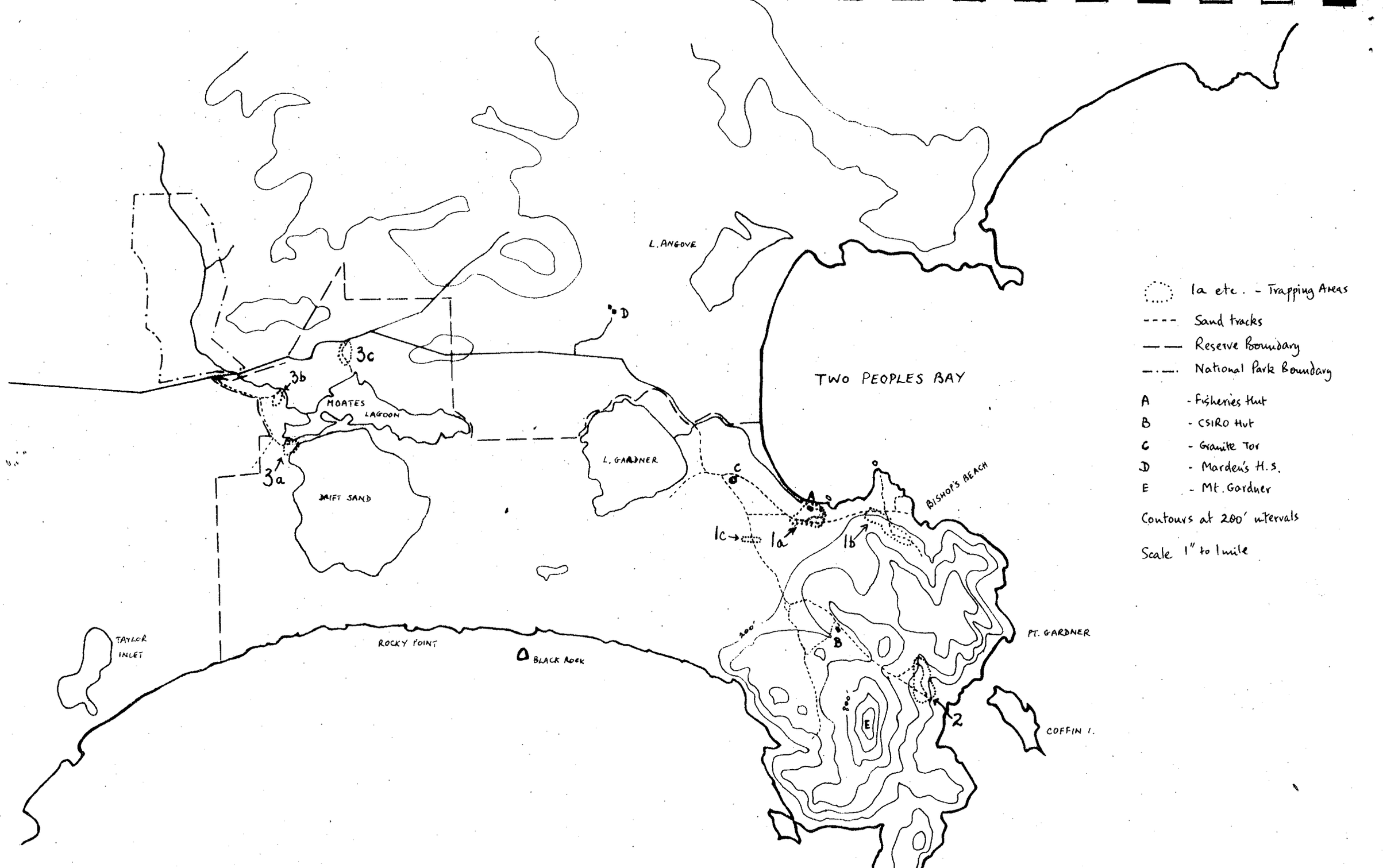
		(i)	(ii)	(iii)	(iv)
Monotremes (1) :	Tachyglossus aculeatus Echidna			/	
Marsupials Dasyurids (2) :	Antechinus flavipes Yellow footed marsupial mouse	/			
	Sminthopsis murina Common marsupial mouse	/			
Peramelids (1) :	Isoodon obesulus Short nosed bandicoot	/			
Phalangers (4) :	Trichosurus vulpecula Brushtailed possum	/			
	Pseudocheirus occidentalis Ringtailed possum	/			
	Cercartetus concinnus Pygmy possum				/
	Tarsipes spenserae Honey possum			/	
Macropods (3) :	Macropus fuliginosus Grey kangaroo	/			
	Macropus irma Brush wallaby				/
	Setonix brachyurus Quokka		/		
Placentals Lagomorphs (1) :	Oryctolagus cuniculus Rabbit	/			
Rodents (3) :	Rattus fuscipes Bush rat	/			
	Mus musculus House mouse	/			
	Hydromys chrysogaster Water rat	/			
Carnivore (3) :	Canis familiaris Dog				/
	Vulpes vulpes Fox	/			
	Felis catus Cat	/			
Pinnipedes (1) :	Seal (unidentified)	/			
Bats (4) :	Eptesicus pumilus Little bat	/			
	Tadarida australis White striped bat				/
	Nyctophilus sp. Long-eared bat				/
	Chalinolobus gouldi Gould's wattled bat				/
		14	1	2	6

23

Table 1. Two Peoples Bay Survey Feb. 1970. Trapline data

a. Catch data summaries.

	Trap type	Number set each night	Trap nights	Catch					Catch per 100 trap nights		
				Rattus fuscipes	Mus musculus	Antechinus flavipes	Other	Total	Rattus fuscipes	Mus musculus	Antechinus flavipes
Area 1a. Traplines 1-4 5/6 Feb. to 9/10 Feb.	Elliot	47-50	242	37	29	1	2	69	15.3	12.0	0.4
	Breakback	47-49	239	47	17	5	3	72	19.7	7.1	2.1
	Cage	9-11	49	1	-	-	2	3	0.2	-	-
	Pit	6	30	-	-	-	-	-	-	-	-
	Total		560	85	46	6	7	144	15.2	8.2	1.1
Area 1b. Traplines 5-8 6/7 Feb. to 9/10 Feb.	E.	47	188	3	-	-	-	3	1.6	-	-
	Bb.	47	188	13	-	-	-	13	6.9	-	-
	C	8-13	47	1	-	-	1	2	0.2	-	-
	P.	2	8	-	-	-	-	-	-	-	-
	T.		431	17	-	-	1	18	3.9	-	-
Area 1c. Trapline 17 12/13 Feb. to 16/17 Feb.	E.	12	60	-	2	-	-	2	-	3.3	-
	Bb.	13	65	7	4	-	-	11	10.8	6.2	-
	C.	-	-	-	-	-	-	-	-	-	-
	P.	-	-	-	-	-	-	-	-	-	-
	T.	25	125	7	6	-	-	13	5.6	4.8	-
Area 2a Traplines 9-11, 15 11/12 Feb. to 15/16 Feb	E.	0-12	168	8	1	3	-	12	4.8	0.6	1.8
	Bb	0-13	173	9	-	6	-	15	5.2	-	3.5
	C	1-11	158	4	-	-	-	4	2.5	-	-
	P	1	5	-	-	-	-	-	-	-	-
	T		504	21	1	9	-	31	4.2	0.2	1.8
Area 2b. Traplines 12-14, 16 11/12 Feb. to 15/16 Feb.	E.	12	180	7	-	-	-	7	3.9	-	-
	Bb	13	195	17	-	-	-	17	8.7	-	-
	C	-	-	-	-	-	-	-	-	-	-
	P	1-2	15	-	-	-	1	1	-	-	-
	T		390	24	-	-	1	25	6.2	-	-
Area 3a. Trapline 18 14/15 Feb. to 16/17 Feb.	E	-	-	-	-	-	-	-	-	-	-
	Bb	-	-	-	-	-	-	-	-	-	-
	C	5	15	-	-	-	-	-	-	-	-
	P	-	-	-	-	-	-	-	-	-	-
	T	5	15	-	-	-	-	-	-	-	-
Area 3b. Trapline 19 14/15 Feb. to 16/17 Feb	E	12	36	3	1	-	1	6	8.3	-	-
	Bb	13	39	3	-	-	-	3	7.7	-	-
	C	3	9	2	-	-	1	3	22.2	-	-
	P	-	-	-	-	-	-	-	-	-	-
	T	28	84	8	2	-	2	12	9.5	-	-
Area 3c Trapline 20 14/15 Feb. to 16/17 Feb.	E	11	33	2	-	-	-	2	6.1	-	-
	Bb	11	33	4	-	-	1	5	12.2	-	-
	C	0-5	10	-	-	-	-	-	-	-	-
	P	0-4	8	-	-	-	-	-	-	-	-


L. ANGOVE
TWO PEOPLES BAY
D
3c
3b
3a
MOATES LAGOON
L. GARDNER
DRIFT SAND
C
BISHOP'S BEACH
1c
1a
1b
TAYLOR INLET
ROCKY POINT
BLACK ROCK
PT. GARDNER
B
E
2
COFFIN I.
1a etc. - Trapping Areas
Sand tracks
Reserve Boundary
National Park Boundary
A - Fisheries Hut
B - CSIRO Hut
C - Granite Tor
D - Marden's H.S.
E - Mt. Gardner
Contours at 200' intervals
Scale 1" to 1 mile

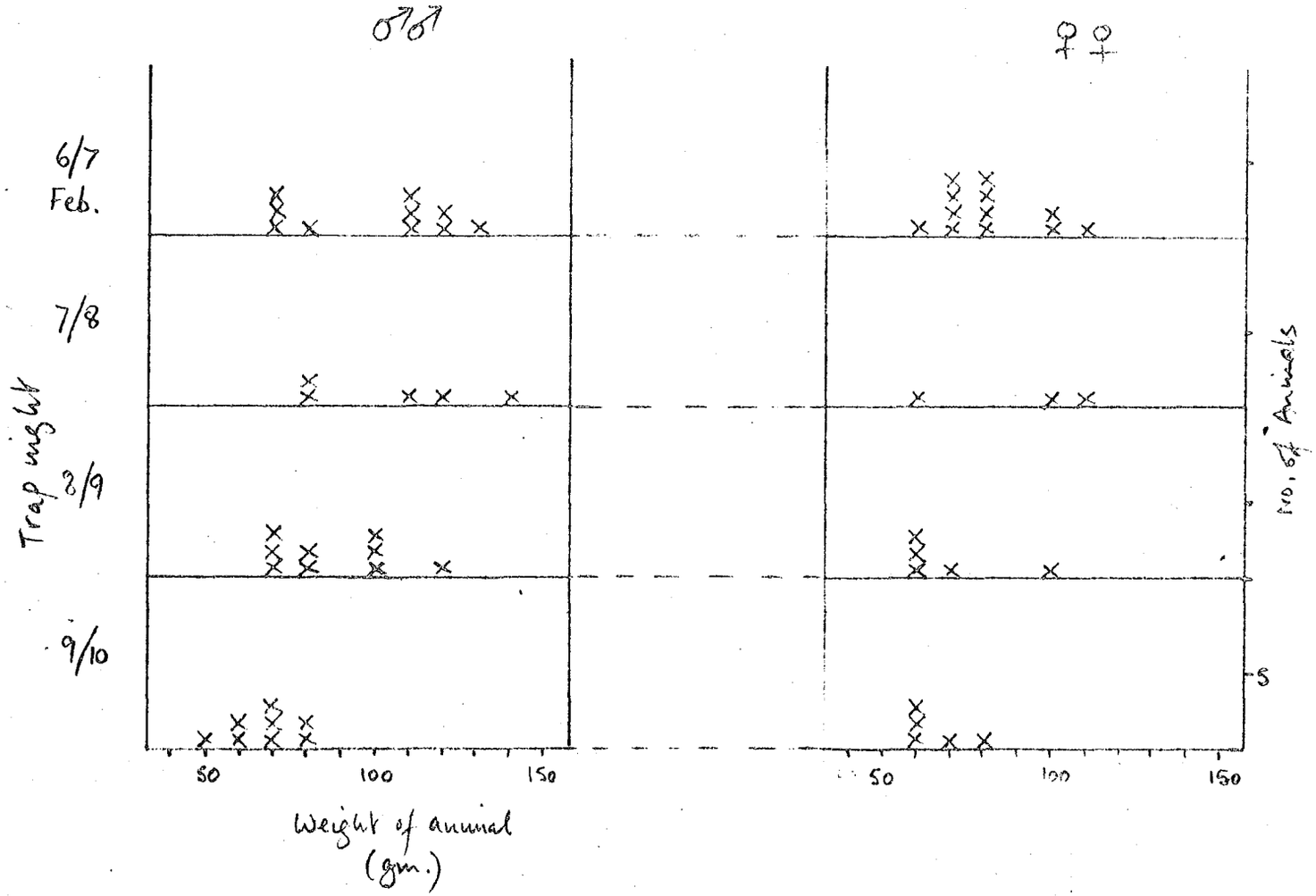


Fig. 1. Changes in size distribution with time in the catch of Rattus fusipes, area 1a. (traplines 1–4).