ID 3214

REPORT ON APRIL 1990 TRIP 0 TO BARROW ISLAND

Dates: April 2-12

Personnel: Don Bradshaw, Phil Whithers, Chris Dickman, Keith Morris, Brian Clay (55 pers. days)

Purpose: To establish a small mammal and reptile trapping grid and to assess the efficacy of available macropod traps

RESULTS:

The Mobile Field Laboratory was transporteed by barge (MV Karinya II) from Onslow to Barrow Island on Monday April 2 and installed adjacent to the laboratory at Wapet camp the next morning. A previous reconnaissance trip in March had identified John Wayne Country as the most suitable habitat in which to establish a large rectilinear trapping grid suitable for routine capture and recapture of small mammals and reptiles.

The site chosen lies between leases S62M and S53, west of the existing road, and occupies a large swale vegetated primarily with woody shrubs (Acacia coriacea and Olearia axillaris) and spinifex (Triodia angusta and Spinifex longifolia in the north-western corner of the grid). This swale lies immediately to the north of a smaller swale where Harry Butler has trapped dasyurid marsupials in the past (Planigale maculata and Pseudantechinus macdonnellensis).

A total of 196, 20-litre pit traps, fitted with 5m drift fences were installed 20m apart in 14 rows of 14 traps aligned at 54° and 324°. Trap locations have been marked with sections of sucker rod (provided courtesy of Mr Tex Nichols) and pit sites are marked with small steel stakes.

It would be of assistance if the WAPET workforce could be apprised of the location of the grid, and requested to reduce traffic in the area to a mimumum.

A total of 84 traps (6 lines) were run between Saturday April 7 and Wednesday April 11 and cleared twice daily (420 trap nights and 336 trap days), from ca 0700-1000hr (mammals and nocturnal reptiles) and from ca 1500-1700hr (diurnal reptiles). Each pit trap was also supplemented by an Elliot trap baited with universal bait and set during the night period.

19 species of reptiles comprising 472 individuals were collected and released, with a small number of specimens being preserved to establish a voucher collection. Specimens of the larger species (all except the two Lerista species) were marked individually by toe clipping and a total of 165 individuals has been so marked. Small mammals caught and released include the Golden Bandicoot (Isoodon auratus) (174 captures with 78 individuals) and the Barrow Island Mouse (Pseudomys nanus) (14 captures with 13 individuals), almost all of which were caught in the Elliot traps. One Barrow Island Mouse was collected in a pit trap but there is evidence that bandicoots can enter and leave pits at will. No specimens of dasyurids or the Rock Rat, Zyzomys argurus were trapped however and speciemns of these species may need to be sought in other localities.

Faecal samples were collected from both mammals and reptiles and will be analysed for dietary components. Insects were collected in small pit traps over a 24 hr period and ticks were collected from both bandicoots and mice for identification.

Drift fences werre aligned randomly and lids were positioned above the pits during the day so as to cast shadow into the pit. Cover was also provided for reptiles in the form of shredded egg cartons (courtesy of kitchen staff) and mortality was consequently low. The few specimens that did succumb will be dissected to ascertain gonadal status and then offered to the WA Museum.

Overall, our reptile data compare favourably with previous collecting efforts on Barrow Island: Smith (1976) collected 29 species of lizards and 377 specimens over a one-month period and Heatwole & Butler (1981) collected a total of 14 species and 38 specimens in a study of the herpetofauna of a ?? ha grid. Full details of reptile and mammal trapping from Trip 0 are attached as appendices to this report. **(Phil and Keith please provide)**

Macropod trapping was also carried out at John Wayne Country, in the same general area as the grid, and a line of 10 Bromilow traps was set extending beyond lease S53 to the beach. These traps were further extended by the addition of another 7 Bromilows, all of which were baited with cut apple, with each Bromilow being surrounded by 2 National (Tomahawk) traps and 2 Elliots in an effort to clear bandicoots. These latter traps were baited with universal bait (Elliots) or bread laced with aniseed oil (Nationals & sundry box traps). Although Rock Wallabies (Petrogale lateralis) were sighted close to the Bromilow traps on several occasions, none was trapped, and only one Rock Wallaby was caught in a hand net.

A total of 78 bandicoots, 20 possums (Trichosurus arnhemenis) and 4 bettongs (Bettongia lesueur) were trapped over a period of 3 nights (April 7-9), attesting primarily to the abundance of bandicoots. One bandicoot marked on the adjacent small mammal grid was captured twice (in the same Bromilow) but otherwise bandicoots were not marked individually. The macropod trapping grid was extended down two tracks leading to the beach in an effort to see whether Hare Wallabies (Lagorchestes conspicillatus) could be attracted to Bromilows, but none was. Another series of box traps (baited with bread and aniseed oil) was used in an effort to trap Hare Wallabies but these were unsuccessful and are being returned to Perth for modification of the treadle mechanism.

A weighted net trap was set in the sand pit north of lease S53 and baited with apple and aniseed oil, but this was not successful in attracting either euros (Macropus robustus) or Rock Wallabies. Bandicoots and bettongs consistently took the bait with one bandicoot being trapped on April 11 (when the Bromilows were baited but not set).

Euros habitually shelter from the sun during the day under bushes and in the proximity of man-made structures and a small number of "shade-traps" have been erected in an effort to see whether these will be utilised by euros in the months before the next trip. These are located as follows: 1 on lease S67, 2 and 3 on the road between leases S62M and S53. These are oriented east-west and have been constructed from star pickets and hessian and at the moment are open. If it is found (from the accumulation of faeces) that euros are utilising these as a source of shade, trapdoors will be constructed and fitted to the traps in November.

It would be helpful if the Environmental Officers could occasionally check these "shade-traps" for euro tracks and accumulation of faeces and report their findings to us.

Preliminary trials were also made darting euros with a blowgun and hypodernic syringe containing ROMPUN and KETALAR (Ketamine hydrochloride) but, although one may approach quite closely to the euros at Biggida Creek,

a more effective delivery system will be required if darting is to prove a reliable recapturing strategy. The net trap used at John Wayne may prove more effective for capture of euros at Biggida Creek (where bandicoots appear to be less abundant) and it is proposed to establish one or two traps there in November and pre-bait them for a week in an effort to habituate the animals to their presence.

Two evenings were also spent spotlighting and although few Hare Wallabies were seen in the vicinity of the old airport, a total of 96 was counted in one circuit of the runway of the current airstrip, showing that this is a suitable site for future capturing with handnets.

Although time was limited, a small population of agamid lizards (Amphibolurus (= Ctenophorus) caudicinctus) was located living in boulders along the road to John Wayne Country, on lease S84 and north of lease T74 on West Coast Highway. Three individuals were caught by noosing, bled, marked and released and there should be no difficulty working with this species in November. 17 Amphibolurus (= Pogona) minor were also caught in pit traps on the grid and it is anticipated that active searching will reveal the presence of many more in November in the same general vicinicty as the A. caudicinctus.

CONCLUSION

The April trip has provided invaluable information on the species which are most likely to form the focus of our research programme. Species such as the two small dasyurids are clearly not common on Barrow and will require more effort in the future if they are to be retained in the programme. Both the Rock Wallaby and the Euro will need to be trained to come to traps if they are to be captured without stress and this is an essential part of our long-term research strategy. The small mammal/reptile grid has been established and is a valuable resource for the long-term study of the ecology and population dynamics of these animals.

WORK PROJECTED FOR TRIP 1

Physiological studies will focus on the following animals:

Spinifex bird
Bandicoot and Barrow Island Mouse
Larger skinks
Agamid lizards
Hare Wallaby, bettong and possum

Rates of turnover of water and sodium will be measured, where possible, on all species with the use of oxygen-18 for the determination of field metabolic rates (FMRs) being restricted to the spinifex bird, small mammals and lizards. Faeces and urine will be collected quantitatively from the macropods and possums and, in conjunction with the measurement of rates of water turnover, will enable the calculation of a complete water balance for each species. Blood samples will also be taken from the larger animals for the measurement of circulating hormone levels.

Habituation of Rock Wallabies and Euros to traps and baits will proceed throughout the trip and we may have some success in attracting them to traps during the month that we will be on the Island. Work on the significance of the warren micro-environment for the overall water economy of the bettong,

may proceed in collaboration with Jeff Short from CSIRO, depending upon the result of applications for supplementary funding.

In order to facilitate processing of animals caught on the grid, and in the immediate vicinity, it is proposed to station the Mobile Field Laboratory on lease S62M for most of Trip 1. Macropods will be processed in the laboratory at WAPET camp using the metabolism cages now installed.

A detailed schedule for Trip 1 is attached, showing the number of personnel on Barrow at any one time plus projected movements and WAPET's comments on this would be appreciated. All personnel movements to and from Barrow have been restricted to Monday, Wednesday and Friday in an effort to coordinate with WAPET's flight schedule

Our only other requirements for November is a source of unleaded fuel on the Island - for our generators and the CALM vehicle which will accompany the rig - and 2 x 100 litre drums should be adequate for our needs. About 20kg of LP gas will also be needed to replenish gas bottles on the rig during the trip.

I should like to conclude by expressing our gratitude to all WAPET personnel for contributing to the success of our April trip - and particularly to Russell Lagdon, Marilyn White and Harry Butler, who assisted us in establishing the trapping grid at John Wayne Country. Our thanks too to the catering staff who sustained us in the field in other ways!

Don Bradshaw
University of WA

BARROW ISLAND TRIP 1: November 1990 - SCHEDULE

							BARROW #
OCTOBER							
Mon	29	Perth -> Onslow 6YU: SDB+RMcN+RW CALM: KDM+PCW+Asst					
	30	!					
		▼					
Wed	31	**Barge to Barrow (6 for Islander) (FJB+CRD+CALM1 direct)**					9
NOVEMBER	1	collect rig, establish camp					
	2	set pits + macropod traps + mist nets					9
	3	PITS 1 }	]		▲	▲	9
		}	]		!	!	
	4	" 2 } CRD+PCW	]	Pre-bait	AGAMIDS	BIRDS+	9
		}	]		!	INSECTS	
	5	" 3 } KDM+CALM	]	macropod	SDB+FJB	RW+Asst	9
		}	]		+RMcN	!	
	6	" 4 } (inject)	]	traps	!	!	9
					!	!	
Wed	7	MACROPODS 1] **(CRD+CALM1 leave)**			!	!	7
		]			▼	!	
	8	" 2]				!	7
		] KDM+PCW+Asst				!	
	9	" 3]				!	7
		] SDB+FJB+RMcN				!	
	10	" 4]				!	7
		]				!	
	11	" 5]				▼	7
Mon	12	PITS R1 } **(SDB+FJB+RW leave, CALM2 arrives)**					5
		}					
	13	" R2 }					5
		} KDM+PCW+RMcN					
	14	" R3 }					5
		} Asst+CALM2					
	15	" R4 }					5
		}					
Fri	16	" R5 } **(SDB returns, CALM2 leaves)**					5
	17	MACROPOD R1]			▲		5
		]			!		
	18	" R2]			AGAMIDS		5
		] SDB+KDM+PCW			!		
	19	" R3]			recaps		5
		] RMcN+Asst			!		
	20	" R4]			SDB+RMcN		5
		]			+Asst		
	21	" R5]			▼		5
Thur	22	**Barge to Onslow**					5
Fri	23	**(Islander 4 to Onslow)**					
		!					
	24	! 6YU: SDB+RMcN CALM: KDM+PCW					TOTAL BARROW #
		!			+Asst		
	25	Perth					153
Mon	26	Examiners' Meeting					

27 Graduate Studies

28

29 Research Committtee

CALM1 = Pete Kendrick if possible
CALM2 = Steve Van Leeuwin or Bob Bromilow

SUMMARY OF PERSONNEL MOVEMENTS ON BARROW ISLAND: TRIP 1

		SDB	KDM	PCW	CRD	FJB	Asst	RW	RMcN	CALM	BARROW #
	29	!						!	!		
	30	!	!	!			!	!	!		
	31	!	!	!	!	!	!	!	!	!	9
NOV	1	!	!	!	!	!	!	!	!	!	9
	2	!	!	!	!	!	!	!	!	!	9
	3	!	!	!	!	!	!	!	!	!	9
	4	!	!	!	!	!	!	!	!	!	9
	5	!	!	!	!	!	!	!	!	!	9
	6	!	!	!	!	!	!	!	!	!	9
	7	!	!	!		!	!	!	!		7
	8	!	!	!		!	!	!	!		7
	9	!	!	!		!	!	!	!		7
	10	!	!	!		!	!	!	!		7
	11	!	!	!		!	!	!	!		7
	12		!	!			!		!	!	5
	13		!	!			!		!	!	5
	14		!	!			!		!	!	5
	15		!	!			!		!	!	5
	16	!	!	!			!		!		5
	17	!	!	!			!		!		5
	18	!	!	!			!		!		5
	19	!	!	!			!		!		5
	20	!	!	!			!		!		5
	21	!	!	!			!		!		5
	22	!	!	!			!		!		5

TOTAL BARROW DAYS 153

SUMMARY OF PERSONNEL DAYS FOR 1990:

Reconnaissance Trip	3p x 7 days =	21 p/days
April Trip 0	5p x 11d =	55
Nov Trip 1	as above	153
GRAND TOTAL		229 pers. days

IDENTIFICATION OF PERSONNEL:

SDB = Don Bradshaw (UWA)
KDM = Keith Morris (CALM)
PCW = Phil Withers (UWA)
CRD = Chris Dickman (Sydney Uni)
FJB = Felicity Bradshaw (UWA)
Asst = Field Assistant (to be appointed)
RW = Ron Wooller (Murdoch)
RMcN = Bob McNiece (UWA)
CALM = 1 or 2 as above