CAT CONTROL FOR PROJECT `MONTEBELLO RENEWAL'

by

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Background

The Montebello Islands comprise a group of over 100 islands off the Pilbara coast of Western Australia, located between 200 21' and 200 32' south and between 1150 31' and 1150 36' east (see Fig. 1; taken from Morris 1991). The total area of the group is approximately 2,300 ha. The largest islands in the group are: Hermite Is. (1022 ha); Trimouille Is. (522 ha); and North West Is. (135 ha).

Feral cats were first observed on the Montebello islands by Montague (1914; cited in Serventy and Marshall 1964). He attributed the extinction of the Golden Bandicoot (Isoodon auratus) on the islands to the presence of cats and predicted that the Spectacled Hare-wallaby (Lagorchestes conspicillatus) would suffer the same fate. Sheard (1950) found that the above two species had become locally extinct on the islands and that feral cats had become established on Hermite Island. Serventy and Marshall (1964) noted cat tracks were plentiful on Hermite Island. Burbidge (1971) also observed cats on Trimouille Island.

`Project Montebello Renewal' aims to eradicate feral cats (and also black rats) from the islands to allow the successful re-introduction of the above mammal species and also two species of locally extinct birds: Spinifex Bird (Eremiornis carteri) and the Black-and-White Wren (Malurus leucopterus). Trimouille Island may also be used for `marooning'; the introduction of species threatened with extinction on mainland Australia. The Rufous Hare-wallaby, (L. hirsutus), which is critically endangered and is subject to predation by feral cats, has been listed as a candidate for marooning.

I visited the islands in August 1995 (15-19th) to assess the feral cat problem and advise WATSCU on cat control options for the `Montebello Renewal Project'. Below are detailed findings from this trip and recommendations for cat control.

Findings

Methodology

Two techniques were used to assess cat activity in the area.

1. Ground searches were conducted to establish evidence of cat tracks. Extensive searches were conducted on the southern segment of Hermite Island (from Brandy Bay south; see Fig. 1). Brief area searches were also conducted across the central area of Hermite Island and on Trimouille and North West Islands.

2. Cyanide bait stations were also placed in the southern segment of Hermite Island. Cyanide bait stations have been used previously to examine bait preference by cats (Algar and Sinagra in press) and have the potential to provide a useful index of cat density. Development of a technique to measure cat density, using cyanide bait stations, is currently being researched and as part of a broader trial cats' interest in several visual attractants was examined on the island. A total of 28 stations, placed approximately 100m apart, was used in the trial. The bait stations were left in place over a three day period and checked daily.

Areas of Cat Activity

Evidence of cat activity was found on the southern segment of Hermite Island. Cat tracks were numerous above the high tide line on the sandy beaches, on the sand dunes and inter-dunal swales and around the mangrove swamps. No cat tracks were observed in sandy depressions along the coastal limestone or in inland areas where the vegetation is dominated by dense areas of spinifex, (Triodia pungens). Although it is much more difficult to observe tracks in these latter areas, it is believed the rugged nature of the habitat was not suitable for cats.

The pattern and extent of cat activity in the central area of Hermite Island was similar to that found in the southern segment. No cat tracks were found on Trimouille or North West Islands, suggesting that cats are no longer present on either island. One mummified scat was however, found on Trimouille.

Three cyanide bait stations were visited by cats although, no animals were killed. All three stations were around a mangrove and the size and location of tracks suggested it was the same cat. The lack of interest shown in bait stations may have been due to human disturbance. Bait stations were laid and checked on foot. In the majority of areas, cat tracks were present prior to laying the baits but no fresh sign was observed following bait laying. Similarly, cat tracks were present around the camp prior to our visit but, no fresh sign was seen on subsequent days.

Discussion

Evidence of cat activity suggests that cats are now only present on Hermite Island however, visits to the other main islands only allowed for brief assessment.

The use of animal tracks to determine density can be misleading. Although cat tracks were numerous on Hermite Island, fresh sign was not so abundant. Cat tracks on the island persist for a some time as they appear to be protected from weathering and erosion by the wind. Cat scats are also numerous as they become mummified. Taking the above factors into consideration I suggest that there were probably 3-4 cats on the southern segment of Hermite Island and this could be used as an area-abundace benchmark across the island.

Given an apparent abundance and variety of food resource and lack of predation, one would have expected a greater number of cats to be present on Hermite Island. Similarly, the apparent

disappearance of cats from Trimouille Island, despite having an even greater abundance of rats than Hermite Island, suggests that the Montebello Islands may be marginal habitat for cats.

Despite low numbers of cats on Hermite Island eradication is warranted if the planned relocation programmes are to be successful, recommendations to this goal are presented below.

Recommendations

1). Bait Distribution

Results from this small-scale survey suggest that cats are only present on Hermite Island however, a more thorough and detailed survey for cat activity is required on all islands in the Montebello group to allow for adequate bait distribution. The proposed rat eradication work involves placement of baits in a 50m x 50m grid across the islands, the assessment of the presence/absence of fresh cat tracks at each of these points would provide a comprehensive and accurate record of cat locations.

All personnel involved in the laying of rat baits should be trained to detect cat tracks.

Based on the above records, it would then be possible to determine which, if any, of the other islands besides Hermite need to be baited. Records of where cat tracks are recorded would also provide the pre-baiting data base for the assessment of baiting effectiveness (see Recommendation 3. Baiting Effectiveness).

2). Baiting Programme

2a). Bait type

I suggest that a kangaroo meat sausage bait be used in the baiting programme. The sausage should be approximately 30g wet-weight and 5cm x 2cm in size. The sausages should be frozen fresh (ie. not dried and injected) and transported to the Montebellos in that state. Immediately prior to use the sausages should be thawed, sun-dried on racks to harden the outer skin and then injected with 4.5 mg of 1080. Chicken "digest" should be surface coated on the sausage (5% w/w) during the sun-drying process. It is important to note that cats do not readily eat rancid meat and therefore it is advisable to prepare the baits and deliver them in the field on the same day. The number of baits required for this operation is small and therefore should pose no problem in daily delivery.

Prior to use, the bait will require registration for a `Trial Permit' (discuss with Roger Armstrong, CALM Bunbury).

At least two CALM personel, on-site, should be licenced to handle and inject baits with 1080.

2b). Baiting intensity

A baiting regime of 30 baits/km2 is recommended, this is the proposed intensity for `Project Eden' on Peron Peninsula. It is suggested that only areas/habiatat type where cat sign has been observed during the pre-bait assessment (see Recommendation 1) be baited. Thus, there may be no necessity to bait coastal limestone and inland areas of dense spinifex.

2c). Baiting timing and frequency

The timing of a baiting campaign is crucial to its success. Baits need to be laid during periods of dry weather. Moisture and/or rain will cause rapid deterioration of the bait and leaching of 1080.

Cat baits should be laid after the initial knockdown of the rats. Any reduction in the food resource available to cats can only enhance bait uptake and baiting efficiency.

Only one baiting campaign should take place, as cats that do not take baits when offered initially are unlikely to do so when offered again. However, it is suggested that the baiting programme be conducted in two stages. Half the baits should be dropped,across the area, in stage 1 and the remainder after a period of 4-5 days. This regime will maintain a high density of fresh baits in the area over a period of time and maximise the chance of cats locating a bait when they are hungry. Dividing the baiting programme in two will also reduce the affect of ant attack on bait availability.

2d). Non-target animals

The cat baits to be used are smaller and more moist than coventional fox baits and therefore may pose a risk to carrion eating animals. The problem of non-target risk should be addressed (discuss with D. King, APB).

3. Baiting Effectiveness

The effectiveness of the baiting programme must be monitored to determine whether follow-up control measures are required and if so where. The rat baiting programme involves re-baiting all sites at specific time intervals and would allow for a post-baiting cat track assessment to be conducted (as decribed in Recommendation 1). If a rat re-baiting programme was scheduled several weeks following cat baiting and fresh cat tracks were recorded, comparison of pre- and post-baiting track counts would provide an indirect measure of the effectiveness of cat control. The intervening time period would allow for cats to take baits and previous track sign to be eroded.

4. Follow-up Control Methods

Complete eradication of feral cats is unlikely to be achieved by baiting alone, a percentage of the feral cat population will not take baits. To remove these remaining individuals, other techniques, listed below, may need to be employed.

4a). Cyanide bait stations

It is suggested that the use cyanide bait stations is an inappropriate technique for the islands because of the difficult nature of the terrain and because baits would need to be laid while travelling on foot. On-going research in attractants used in the technique may however, be of value. Details of developments will be forwarded for their possible inclusion in control methods.

4b). Trapping

Following the post-baiting assessment, trapping should commence in areas where cats still persist. Victor `Soft-Catch' traps are the traps of choice. Only experienced people should set traps. Any poorly set trap resulting in the loss of an animal will only exacerbate the problem of eradication, as these animals will become trap shy. A number of decoys and attractants should be used in the trapping exercise. Details on suitable attractants will be forwarded at a later date.

4c). Employment of trackers.

If following the baiting campaign and sustained trapping effort, cats are still present, it may be necessary to employ people to track and kill the remaining individuals. This technique should only be contemplated as a last resort.

Finally, research into developing and refining techniques for feral cat control is ongoing. Information on any advances will be forwarded as it becomes available. Thus, prior to implementation of a baiting campaign decisions on current methodology can be made to ensure every possible success for `Project Montebello Renewal'.

References

Algar, D. and Sinagra, J. A. (in press). A tecnnique, using cafeteria trials, to assess feral cat bait preferences. Submitted to Wildlife Research.

Burbidge, A.A. (1971). `The Fauna and Flora of the Monte Bello Islands'. Report No. 9. Department of Fisheries and Fauna, Western Australia pp. 1-18.

Montague, P.D. (19140. A report on the fauna of the Monte Bello Islands. Proceedings of the Zoological Society London 1914, 625-52.

Morris, K.D. (1991). Management proposals for the Montebello Islands and surrounding waters. CALM Occasional Paper No. 3/91, pp 1-7.

Serventy, D.L. and Marshall, A.J. (1964). A natural history reconnaissance of Barrow and Montebello Islands, 1958. CSIRO Division of Wildlife Research Technical Paper No. 6, pp 1-23.

Sheard, K. (1950). A visit to the Monte Bello Islands. Western Australian Naturalist 2(7), 150-1.