

# Fur seals *Arctocephalus gazella* and leopard seals *Hydrurga leptonyx* at the Courbet Peninsula, Kerguelen

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*Non-breeding population size and composition of Arctocephalus gazella on the Courbet Peninsula of Kerguelen were determined during January 1980. The approximately 589 individuals, concentrated on the leeward east coast, is a marked increase over 1968 and provides a baseline value to assess likely future changes. The possibility exists that A. gazella breeds elsewhere on the archipelago, and that Hydrurga leptonyx occurs year round.*

*Nie-telende bevolkingsgrootte en samestelling van Arctocephalus gazella is bepaal op die kus van die Courbet skiereiland van Kerguelen gedurende Januarie 1980. Die ongeveer 589 individue, gekonsentreer op die lywaartse ooskus, is 'n opvallende toename sedert 1968, en voorsien 'n basislyn waarde om moontlike toekomstige veranderinge te beraam. Die moontlikheid bestaan dat A. gazella elders op die argipel teel, en dat Hydrurga leptonyx dwarsdeur die jaar voorkom.*

## Introduction

The Kerguelen fur seal *Arctocephalus gazella* occurs on islands between the Antarctic Convergence and 60°S latitude (Bonner 1976), a notable exception being the Prince Edward islands just to the north of the Convergence where they breed together with the Amsterdam Island fur seal *A. tropicalis* (Condy 1978). Initially classified as subspecies (King 1959), they are now accorded species status based on cranial and dental characteristics (Repenning, Peterson & Hubbs 1971) showing external features distinct from each other (Condy 1978). The fur seals, abundant at Kerguelen in the nineteenth century, were practically exterminated by 1929 through sealing (cf. Budd & Downes 1969), and their status there was unknown (Bonner 1976). Since 1951 very few fur seals were recorded, only 143 being seen since 1965 (Tollu 1967), and a further 12 on the Courbet Peninsula in 1968 (R. Lésel *in litt.*), while no births were recorded, although black pups have been seen since then (M. Pascal *in litt.*).

The leopard seal *Hydrurga leptonyx* which occurs predominantly in the Antarctic pack ice, is a solitary species breeding during the austral spring. However, leopard seals are regular visitors to sub-Antarctic islands during winter when they migrate towards the northern part of their range (Hofman, Reichle, Siniff & Müller-Schwarze 1977). Peak winter density occurs from July to September at Kerguelen, and leopard seals have only been recorded from May to November (Paulian 1952) with two exceptions – one in March 1952 (Angot 1954) and the other in December 1964 (R. Lésel *in litt.*).

The present paper gives current population figures for *A. gazella* on the Courbet Peninsula of Kerguelen, this area being included in all previous seal surveys (Paulian 1952, Angot 1954, Tollu 1967). This well defined and accessible area could be monitored in future and population sizes compared to the present baseline figure as population data

from this area probably reflect the population trend for the whole archipelago. In addition, new information on the presence and distribution of leopard seals, outside the winter season, is provided.

## Study Area

The Kerguelen archipelago (49°15'S, 69°30'E) lies on the Antarctic Convergence in the South Indian Ocean, the main island and associated islets having a combined area of 7 215 km<sup>2</sup> with a coastline of 3 000 km. Mean annual air temperature is 4.4°C, westerly winds predominate, and rainfall is evenly distributed over 250 to 300 days of the year. A description of the main study area – the Courbet Peninsula – which has a 267 km coastline, appears in Angot (1954).

## Methods

From 14 October to 23 December 1979 the southern and southeastern beaches of the Courbet Peninsula, from Point Molloy to Cap Digby, were regularly searched by two observers on foot. The entire Courbet coastline, excluding small stretches in the south and northwest (Fig. 1), was similarly searched from 2 to 13 January 1980, except the section from Port-aux-Francais to Isthme du Lac which was scanned from close inshore with binoculars. All the fur seals counted were allocated to the following categories: adult males (AM), adult females (AF) and immatures of both sexes. Age and sex classification were based on pelage colouration and size criteria following Bonner (1968).

## Results

During October only three fur seals (1 AM, 2 unsexed immatures) were seen, with 50 being sighted by mid-December from Cap Digby to Point Morne (Fig. 1), concentrated at Cap Digby. Twenty-five of these were remarkably small one-year-olds, four were adult males and the rest immatures of both sexes.

During January, 589 fur seals were counted on the Courbet Peninsula (Table 1). They were concentrated on the leeward northeast and southeast coasts and absent from the northwestern, Morbihan Gulf and Norvégienne Bay coastlines (Fig. 1), with the Cap Digby concentration showing an 8.5 fold increase over the mid-December count. The fur seals favoured the vegetated slopes and flat vegetated areas behind the rocky or sandy beaches, the majority being found here, but very seldom ventured onto the top of the slopes.

Two age/sex classes predominated; 23.9 per cent were adult males and 75.7 per cent immatures of both sexes. Only two adult females were seen, and no births were recorded. Approximately 93 per cent of the immatures (n = 416) were less than about four years old, the majority (n = 340) at most two years of age. The few remaining immatures were older (larger) males.

Some fur seals were moulting, and adult males at Point

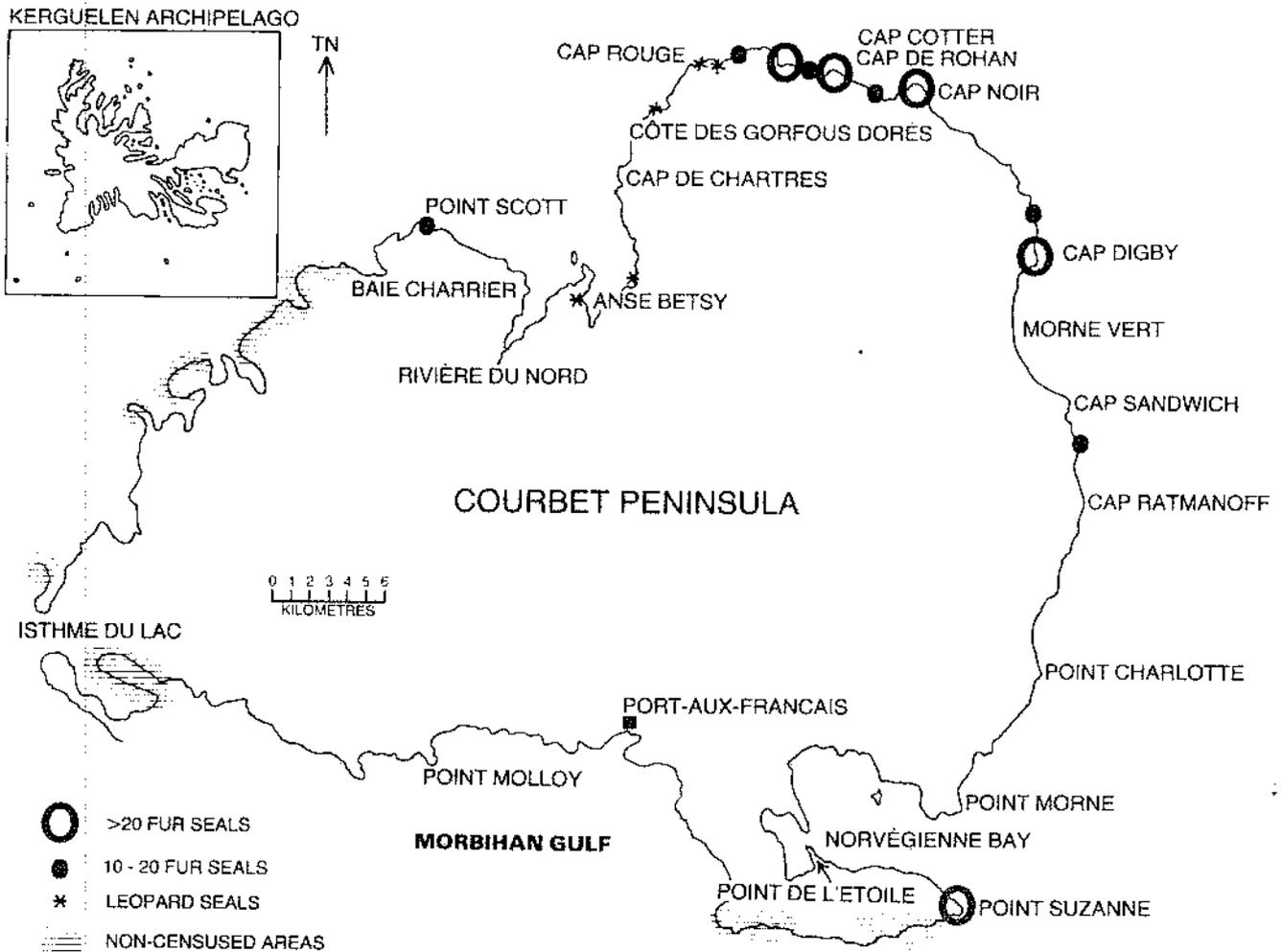


Fig 1. The distribution of fur seals and leopard seals on the Courbet Peninsula during January 1980.

Table 1  
Results of a census of *A. gazella* during January 1980 at the Courbet Kerguelen (AM=adult males, AF=adult females).

Date	Locality	Imma- tures Total			
		AM	AF		
8.01.80	Baie Charrier-Point Scott	11	0	3	14
9.01.80	Point Scott-Rivière du Nord	11	0	1	12
9.01.80	Rivière du Nord-Anse Betsy	3	0	2	5
10.01.80	Anse Betsy-Cap de Chartres	2	0	1	3
10.01.80	Cap de Chartres-Cap Rouge	6	0	5	11
11.01.80	Cap Rouge-Cap Cotter	14	0	13	27
11.01.80	Cap Cotter-Cap de Rohan	44	1	115	160
11.01.80	Cap de Rohan-Cap Noir	21	0	77	98
12.01.80	Cap Noir-Cap Digby	8	1	26	35
12.01.80	Cap Digby-Cap Sandwich	15	0	137	152
12.01.80	Cap Sandwich-Cap Ratmanoff	3	0	19	22
13.01.80	Cap Ratmanoff-Point Charlotte	0	0	8	8
13.01.80	Point Charlotte-Point Morne	1	0	15	16
3.01.80	Point de l'Etoile-Point Suzanne	2	0	24	26
	<b>Total</b>	<b>141</b>	<b>2</b>	<b>446</b>	<b>589</b>

Scott (one at Morne Vert during mid-December) had fresh wounds, typical of those sustained in territorial conflicts (Bonner 1968) although no territories were being maintained and no breeding was taking place.

Ten large, presumably adult, leopard seals of both sexes were seen between Anse Betsy and Cap Cotter (8 to 11 January), four together on a small sandy beach, the remainder occurring singly on low rocky platforms and dense kelp beds (*Durvillea* sp.) in front of the large macaroni penguin *Eudyptes chrysolophus* colonies along the Côte des Gorfous Dorés (Fig. 1).

## Discussion

As on Heard Island (53°00'S, 73°30'E) the summer non-breeding population of *A. gazella* on the Courbet Peninsula at Kerguelen is increasing, and the presence of three black pups and six adult females at Point Suzanne in November 1976 and 1977 (M. Pascal *in litt.*) may indicate the start of a similar small indigenous breeding population although none occurred in the present study.

*A. gazella* populations at high latitude islands in the South Indian Ocean (Heard Island, McDonald islands and Kerguelen - this study), appear to favour sheltered beaches on the leeward east side of the islands, avoiding, to a large extent, rocky ground as well as otherwise favourable vegetated areas

on the windward side (Budd 1970, 1972). As the majority of fur seals on the Courbet Peninsula were immature and born elsewhere, it seems that the non-breeding Courbet Peninsula population forms part of a greater "Kerguelen Archipelago" population with an, as yet, unfound breeding colony site. With injured adult males occurring in the northwestern sector, presumably injured through intrasexual fighting and possibly evicted from a nearby breeding colony site(s), and a small concentration of fur seals persistently occurring at Port Christmas (northern tip of the northwestern sector of the Main island, Fig. 1) in previous years (Tollu 1967, R. Lésel *in litt.*), a breeding colony site may be situated in the lee of the northwestern sector of Kerguelen.

The *A. gazella* populations at Heard and McDonald islands within the range of these winter dispersing seals (Payne 1979a, Bester 1979) may contribute to the immature segment of the Courbet summer population. It is interesting to note that small immatures, tending to disperse more widely than adults and underrepresented on breeding colony sites during the breeding season (Bonner 1968), are practically absent from the 3 000 strong population at Heard Island at a concomitant time (Budd 1972). The small one-year-olds in the present study were not pathological specimens, but were estimated to be below and at the low end of normal body size and weight variation for this age group at South Georgia (Payne 1979b).

In contrast to previous reports, leopard seals were observed at Kerguelen during mid-summer. Since leopard seals occur during December (R. Lésel *in litt.*), January (this study) and March (Angot 1954) at Kerguelen, and therefore presumably in February and May too, a year round presence at Kerguelen, similar to Heard Island (Ingham 1960) is indicated. Their presence during summer, and close to penguin breeding colonies, is probably related to feeding, leopard seals being commonly found in association with penguins (Hofman *et al.* 1977).

#### Acknowledgements

This study formed part of a co-operative mammal research programme centred on pinnipeds in the Southern Ocean between French and South African researchers working under the auspices of the Director of Scientific Laboratories of Terres Australes et Antarctiques Françaises (TAAF) and the South African Scientific Committee for Antarctic Research (SASCAR) respectively. I am grateful to TAAF for logistical support and SASCAR for financial support. The assistance of Mr P.-Y. Lengliart, of Montpellier University, and members of the 29th Mission to Kerguelen are gratefully acknowledged.

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