

THE GREY SEAL, *HALICHOERUS GRYPUS* (FABRICIUS), IN ROGALAND, NORWAY

By

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ABSTRACT

WIIG, Ø., 1987. The grey seal, *Halichoerus grypus* (Fabricius), in Rogaland, Norway. *FiskDir. Skr. Ser. HavUnders.*, 18: 303–309.

Surveys of grey seals in Rogaland, southwestern Norway, are reviewed. The highest numbers of adult seals have been observed in the spring, while far less are generally observed during the breeding season in the autumn. Pupping has been recorded, but it is rare in relation to the number of seals observed in the spring. The nearest breeding site of grey seals in Norway is at Froan, about 680 km to the north. The southernmost recovery of pups tagged at Froan is about 300 km north of the pupping sites in Rogaland. There are many recoveries in western Norway of grey seal pups tagged in Great Britain. There is, however, no information suggesting that British seals are being recruited to Norwegian breeding stocks or are establishing new breeding colonies on the Norwegian coast. It is reasonable to assume that most of the grey seals found in Rogaland in the spring are British and return to Britain in the breeding season. It is not known whether the recorded breedings in Rogaland are stragglers from British colonies or relate to a local stock.

INTRODUCTION

The grey seal, *Halichoerus grypus*, and the common seal, *Phoca vitulina* L., are the only resident seals on the Norwegian coast. ØYNES (1964, 1966) surveyed the breeding colonies of both these species along the Norwegian coast and SUMMERS, BONNER, and van HAAFTEN (1978) estimated the total population of grey seals in Norway to be 2 000–3 000 seals.

A study of coastal seals and their interactions with inshore fisheries along the Norwegian coast from Stad (about 62°N) to Lofoten (about 68°N) was initiated by the Institute of Marine Research in 1974. The study was later extended to cover the larger part of the Norwegian coast. One result of this study is new information on the distribution and abundance of grey seals in Norway, summarized by WIIG (1986), who has also given a more detailed

account for Finnmark county (WIG 1987). The surveys indicate a minimum stock of 3100 grey seals in Norway.

ØYNES (1966) was unable to verify any breeding of grey seals in southern Norway. The only reported breeding locality was at Kjør in Rogaland, where a couple of pups had been reported in some years.

Recent surveys indicate that more than 100 grey seals are found in Rogaland during parts of the year, and breeding has now been verified. There is, however, a disparity between the observed numbers of seals and the very few recorded births. This disparity may be related to an immigration of grey seals from Britain, which was recently reviewed by BJØRGE and MCCONNELL (1986).

The present paper gives a detailed account of recorded observations of grey seals in Rogaland, southwestern Norway, with a discussion of the status of the stock.

METHODS

The numbers of seals have been estimated from aerial and ground surveys carried out by the Sea Mammal Section of the Institute of Marine Research. The aerial surveys were made from twin-engined fixed-wing aircraft. In addition to direct counts, seals were photographed by 35-mm hand-held reflex-cameras, using colour reversal film as recommended by VAUGHAN (1971). The ground surveys were made from 12'–15' Zodiac inflatable boats, which are well suited for rapid landings on rocky shores and skerries, enabling the seals to be visually counted. In addition, observations have been reported by local fishermen.

In 1984 a culling program for seals in Rogaland permitted the killing of 25 grey seals. In fact, 15 were killed and the lower jaw, internal genitalia and stomach of each of 11 seals were sent to the Institute of Marine Research for further analysis. The animals were aged from tooth sections of the canine of the lower jaw, and their reproductive status were classified from the internal genitalia.

Three foetuses collected at Kjør in 1984 were weighed and their standard length (nose–tail) measured. Parturition dates were estimated from the relationship in Boyd (1984).

RESULTS

Seal observations in Rogaland are recorded in Table 1, and the localities are shown in Fig. 1. Surveys have been performed in February, March, May, June, October, November and December. Most of the grey seals were observed from February to June, and the largest aggregation was found at Kjør. Few adults and no pups have been observed during the surveys in the

Table 1. Results of grey seal surveys in Rogaland by the Institute of Marine Research.

Date	Method	Number of seals observed	
		Largest aggregation	Total
20 February 1984	Aircraft	16 at Kjør	30
1 March 1983	Boat	60 at Kjør	60
12 March 1984	Aircraft	80 at Kjør	90
30–31 May 1981	Boat	36 at Utsira	36a)
1–3 June 1981	Boat	60 at Kjør	75a)
11 October 1982	Aircraft		0
7 November 1981	Aircraft		0
29 November 1982	Aircraft		0
10 December 1985	Aircraft	10 at Kjør	10b)

a) BJØRGE et al. 1982

b) BERGLØDT et al. 1985

breeding period from October to November. During the latest aerial survey (December 1985), only about 10 adult grey seals were observed at Kjør. In addition to these observations, surveys at Kjør were performed on several occasions by boat, during autumn 1985 (Table 2). Only a few adults and no pups were observed.

Most of the aged grey seals appeared to be young, and only two of eleven specimens were older than six years (Table 3). They were all shot in the autumn, but only two of the seven males were classified as mature. All four females, however, were pregnant or had given birth during the year of killing. Weight and standard length of the foetuses and the estimated parturition dates are given in Table 4.

In recent years, five white pups have been observed at Kjør (R. Roth pers. comm. to B. Bergflødt), in November/December 1983 one white pup was photographed at Higgilen near Kvitsøy (L. Reinertsen pers. comm.), one white pup was seen at Lausingen near Utsira on 22 August 1984. (O. Tørstad pers. comm. to T. Øritsland), one white pup was observed at Kjør on 13 November 1984 (T. Ølberg pers. comm.), and a large pup, with remnants of white hairs, was seen at Higgilen near on Kvitsøy 2 January 1985 (L. Reinertsen pers. comm.).

DISCUSSION

Grey seals lived in Rogaland several thousand years ago (WILG 1986). Archaeological excavations at «Vistehållå», a Stone Age site near Stavanger, have disclosed more than 200 bone remains from grey seals (OLSEN 1976), which was the second most abundant species at the site. The site has been

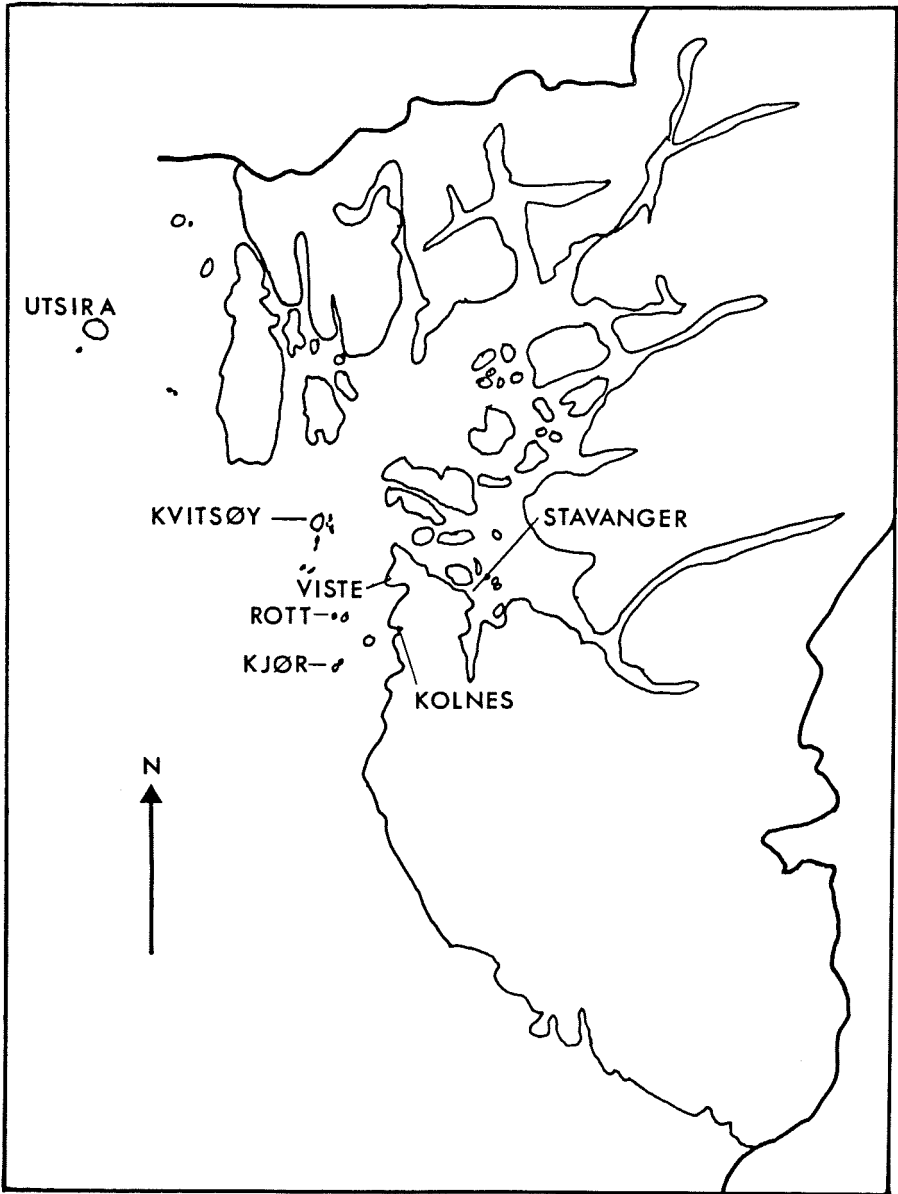


Fig. 1. Grey seal localities in Rogaland, Norway.

Table 2. Surveys of grey seals at Kjør in Rogaland in autumn 1985.

Date	Method	No. of seals observed	References
30 September	Boat	36	ELDØY pers. comm.
29 October	Boat	15	ELDØY pers. comm.
5 December	Aircraft	10	BERGFLØDT et al. 1985
9 December	Boat	11	MUNKJORDET pers. comm.

Table 3. Grey seals collected in Rogaland in 1984.

Locality	Date	Sex	Age	Mature
Rott	8 June	M	4	NO
Rott	2 September	F	4	YES (foetus)
Kjør	8 November	M	10	YES
Kolnes	13 November	F	6	YES (foetus)
Kjør	13 November	M	4	NO
Kjør	13 November	M	5	NO
Kjør	13 November	M	3	NO
Kjør	13 November	M	6	YES
Kjør	13 November	F	5	YES (foetus)
Kjør	13 November	F	17	YES
Kjør	13 November	M	4	NO

Table 4. Grey seal foetuses collected in Rogaland in 1984.

Location	Date	Weight (kg)	Length (cm)	Estimated parturition date
Rott	2 September	7.0	66	27 November
Kolnes	13 November	12.5	87	19 December
Kjør	13 November	11.5	90	13 December

dated to 8 000–6 000 B.P. by the Radiological Dating Laboratory, the Norwegian Institute of Technology, Trondheim, Norway (HUFTHAMMER pers. comm.). Pig (*Sus scrofa* L.) (49.5%) is the only species which has more abundant remains than the grey seal (13.0%). Only two other archaeological sites have grey seal remains of this abundance in Norway, these are the mesolithic sites «Kirkehelleren» at Træna and «Storbåthelleren» at Flakstadøy in Lofoten. According to DEGERBØL (1951) there is no doubt that grey seals bred in the neighbourhood of «Vistehåla». The site is situated only 2 km from Kjør, where grey seal pups have now been recorded.

The stock of grey seals in Rogaland was estimated to be 120 specimens in

1983 (ØRITSLAND 1983). A stock of that number would usually produce 20–30 pups. The few observations of pups indicate that the actual pup production is much lower.

Grey seals are not usually found at the breeding site throughout the year. After breeding they disperse and do not return until the next breeding season. Meanwhile they gather at moulting sites in the spring (e.g., HEWER 1974). Most grey seals probably return to breed at the rookery of their birth (BONNER 1981).

The nearest breeding site of grey seals on the Norwegian coast is at Froan, about 680 km north of Kjør. At this locality 576 pups were tagged in the period from 1975 to 1985. The southernmost recovery of these pups is at Florø, about 300 km north of Kjør (WIIG and ØIEN in prep.).

Since tagging of grey seals in Great Britain was initiated in 1951, a total of 61 seals have been recovered in Norwegian coastal waters (BJØRGE and MCCONNELL, 1986). Fifty-eight of these were recovered within six months of tagging. Most of the recoveries were made on the western coasts from Rogaland to Sogn og Fjordane. According to HICKLING, RASMUSSEN, and SMITH (1962) and HEWER (1974) this long distance dispersal is probably due to wind. The immigration from Great Britain is estimated to have been about 14300 seals in the period from 1960 to 1981, averaging about 650 grey seals pups per year (BJØRGE and MCCONNELL 1986). These correspond to a production of a stock of more than 2500 seals, which is more than 75% of the total Norwegian population of grey seals, according to the figures of WIIG (1986). There is, however, no information suggesting that British grey seals are being recruited to Norwegian breeding stocks or are establishing new breeding colonies on the Norwegian coast. The few records of breeding in western Norway during the last 25 years support this. It is therefore uncertain where these seals actually breed when they become mature. According to the results of Norwegian taggings, the mature grey seals seem to return to their place of birth for reproduction (WIIG and ØIEN in prep.). Some mixing between the stocks is, however, probable. This has been verified in Britain (HARWOOD et al. 1976) and in Canada (MANSFIELD and BECK 1977).

The numbers of grey seals observed in Rogaland in the spring is much higher than in the breeding season. It is reasonable, therefore, to assume that the seals found in Rogaland in the spring are British and that these return to Britain in the breeding season as also suggested by BJØRGE and MCCONNELL (1986). However, some seals evidently do breed in Rogaland, but it is uncertain whether these constitute a local stock or are just occasional young stragglers from the British stocks. The dated records of fetuses and pups suggest a pupping time in November and December in most of the cases. This is later in the year than along most of the Norwegian coast, where breeding occurs between September and November (WIIG 1986).

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