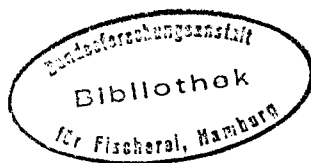


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**OCCURRENCES OF HOODED SEALS (*CYSTOPHORA CRISTATA* ERXLEBEN, 1777) IN ICELANDIC WATERS, IN THE PERIOD 1989-1994**

by

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Abstract

In this paper, are published new findings about the occurrences of hooded seals (*Cystophora cristata*), in Icelandic waters. These animals have either been entangled in fishing-gear, found dead on the shore or shot by local hunters, in the period of 1989-1994. Majority of the animals were encountered off the North-coast of Iceland, during the spring and summer. Young hooded seals' pups and one year old animals are common, but older animals occur quite frequently too, much more so than in the case of the harp seal (*Phoca groenlandica*). Males are more abundant in the catch than females. There seems to be an increase, in the occurrences of hooded seals off the coast of Iceland, from the year 1981 to 1994.

## Introduction

In this paper, are published new findings about the occurrences of hooded seals (*Cystophora cristata*), in Icelandic waters. These animals have either been entangled in gill-nets for catching lumpfishes (*Cyclopterus lumpus*) and codfishes, found dead on the shore, or shot by local hunters, in the period of 1989-94. Hooded seals are only vagrant seals in Icelandic waters. There are no records of them breeding here (Erlingur Hauksson 1986).

## Material and methods

Whole animals or samples of the lower jaws, stomachs and sex-organs, were obtained from local fishermen and seal-hunters. Together with information about date, place and catching method, these make the database this paper is based on.

Age of animals were determined by counting of growth-layers in the cementum of a thin-section (0.5-0.7 mm) of the canine tooth, which was cut transversal with a low speed saw near the base of the root, with use of binocular dissecting microscope 6X to 50X magnification and transmitted light (Laws 1962).

Sex of animals was determined by investigating the sex organs of the animals. By investigating the ovaries and testes; looking for follicular (corpora lutea and corpora albicantia) and tubular growth it was determined whether animals were mature or not.

## Results

Majority of the animals were caught off the North-Coast (Figure 1). Only thirteen animals were obtained elsewhere; three from the East-Coast, six from the West-Coast and four from the South-Coast.

Most of hooded seals were caught in May with August in second place. The months of early spring, March and April are in third place (Figure 2). Visits of hooded seals are rarer in the summer-months June and July, in the moulting period of the animals (see Reeves and Ling 1981). Hooded seals seem to be absent from Icelandic Waters during the winter.

Pups and one year old animals are frequent in the catch, but older animals are also quite common (Figure 3). Animals twenty years and older are few, but they do occur.

Males are dominating in the catch (Table 1). The proportion of males is much higher than were found for the harp seals (Erlingur Hauksson and Valur Bogason 1995).

There is a yearly variation in occurrences of hooded seals. They were caught in much higher numbers in 1992-94 than 1989-91 (Table 2).

### Discussion

The findings that are presented here are based on samples of seals from fishermen and seal hunters, as mentioned earlier. The information can therefore be biased in some respects. Of course seal can only become entangled in gill-nets when such kind of fishing is operated, and seal hunters only catch seals when weather is favourable. Hunting pressure and fishing efforts for lumpfishes and gadoids; number of gill-nets in the water, can also vary between years. The weather is seldom favourable in wintertime off the North-Coast. Visits of hooded seals during the winter could therefore be unnoticed. However, the information from this investigation is, in many respects, similar that can be obtained from old chronicles (annals), when people were on the look-out for seals, because people depended on them for subsistence. This strengthens the findings of this investigation in our opinion.

In earlier times, the hooded seal visited mainly the North-Coast of Iceland. The scientist Bjarni Sæmundsson (1932) mentions that hooded seals were never very common, in comparison with the harp seal, and visited mainly Huna-Bay, Eyjafjörður and to a lesser extent Skjálfandi. They were only rarely seen off the Northwest-Coast and the East-Coast. It was quite variable how many hooded seals visited the coast. One could relate the intensity of their visits to the density of sea-ice of the Northwest- and North-coast of Iceland. In the period 1850-1880 hooded seals seem to be rather rare, except for the winter of the year 1867, when 60 to 100 hooded seal pups were slain on Langanes (Northeast-Iceland). Many hundreds were taken in 1895 on the Northeast-Coast. In the years 1880-1900 hooded seals were common and in the year 1904 it is mentioned as being very abundant, especially in Huna-Bay (Björn Guðmundsson 1944; Lúðvík Kristjánsson 1980).

The frequency of occurrence of hooded seals in the period 1981-84 seems similar as in the period 1989-91 (Erlingur Hauksson 1986). However it seems to be increasing in the most recent years.

The result of this investigation indicates, that hooded seals arrive later to Icelandic waters than the harp seals. Some of the animals seem to arrive not earlier than in August, when most of the harp seals have left (Erlingur Hauksson and Valur Bogason 1995). This was also the case in the past, as far as can be seen in annals. The hooded seals arrived later than the harp seals (Bjarni Sæmundsson 1932). This is also in accordance to the migration pattern of the hooded seals, which breed on the ice north of Jan Mayen (see Reeves and Ling 1981). After breeding and mating is over, the animals swim towards the moulting places on the ice edge in the Greenland's Strait, where the moulting takes place in the period of June-July. Part of the stock, mostly juveniles and adult males, visits the Icelandic coast in May to feed on their way to the moulting area. They stay away during moulting in June and July, but may come again to feed in the autumn.

It is quite interesting how many sub-adults and adult males of hooded seals seem to visit the coast. This is quite different to the age- and sex-structure of the harp seals (Erlingur Hauksson and Valur Bogason 1995).

### Acknowledgements

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## Tables

Table 1. Sex-ratio of hooded seals (*Cystophora cristata*) caught off the coast of Iceland in the period 1989-94.

Sex	Number of animals	Percentage
Females	19	26.0%
Males	54	74.0%

Table 2. Occurrence of hooded seals (*Cystophora cristata*) off the coast of Iceland in different years, in the period 1989-94.

<i>Year</i>	<i>Number of hooded seals caught</i>
1989	1
1990	2
1991	5
1992	63
1993	29
1994	70

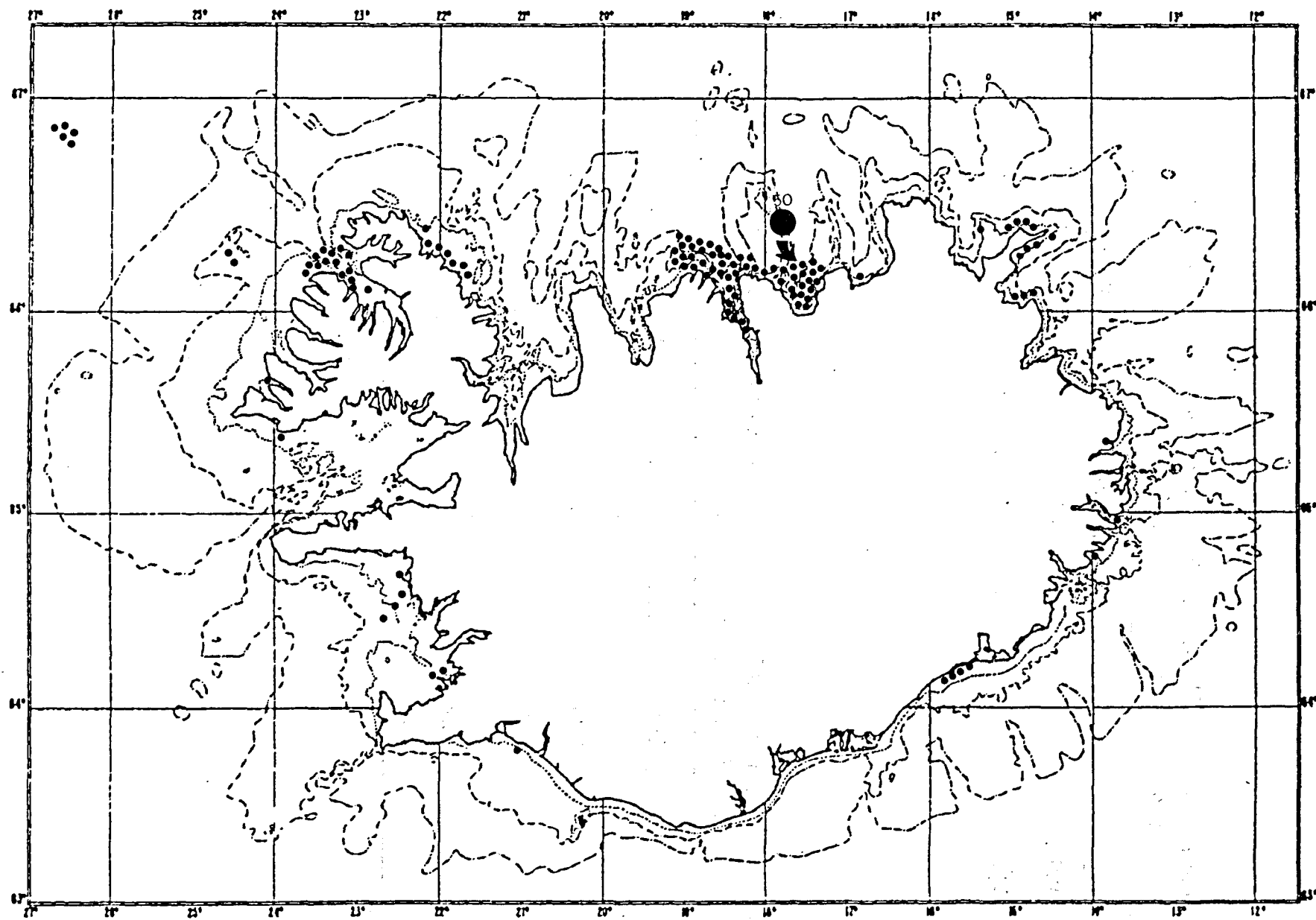


Figure 1. Distribution of the hooded seals (*Cystophora cristata*) caught off the coast of Iceland in the period 1989-94. One big dot indicates at total of 50 hooded seals, other dots indicate one animal caught.

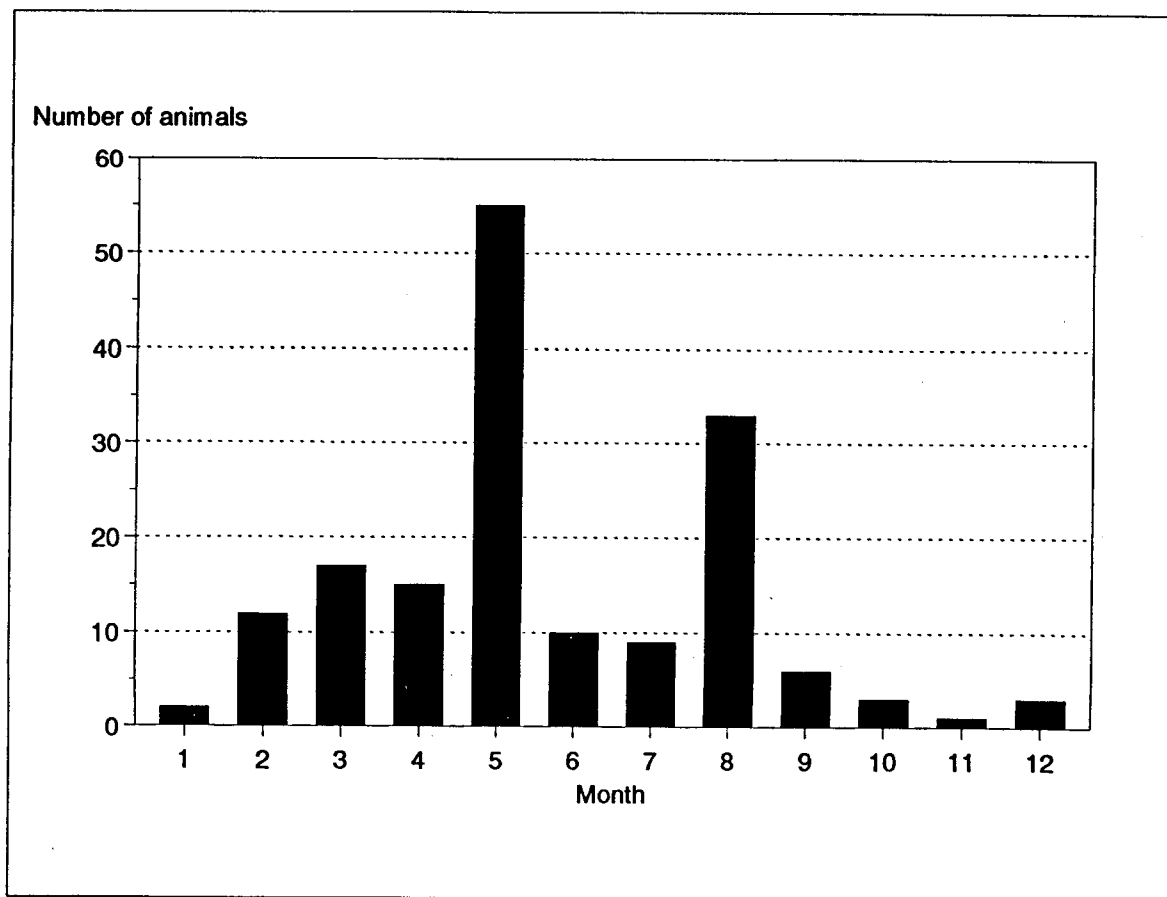


Figure 2. Month of catch, of hooded seals (*Cystophora cristata*) off the coast of Iceland, in the period of 1989-94.

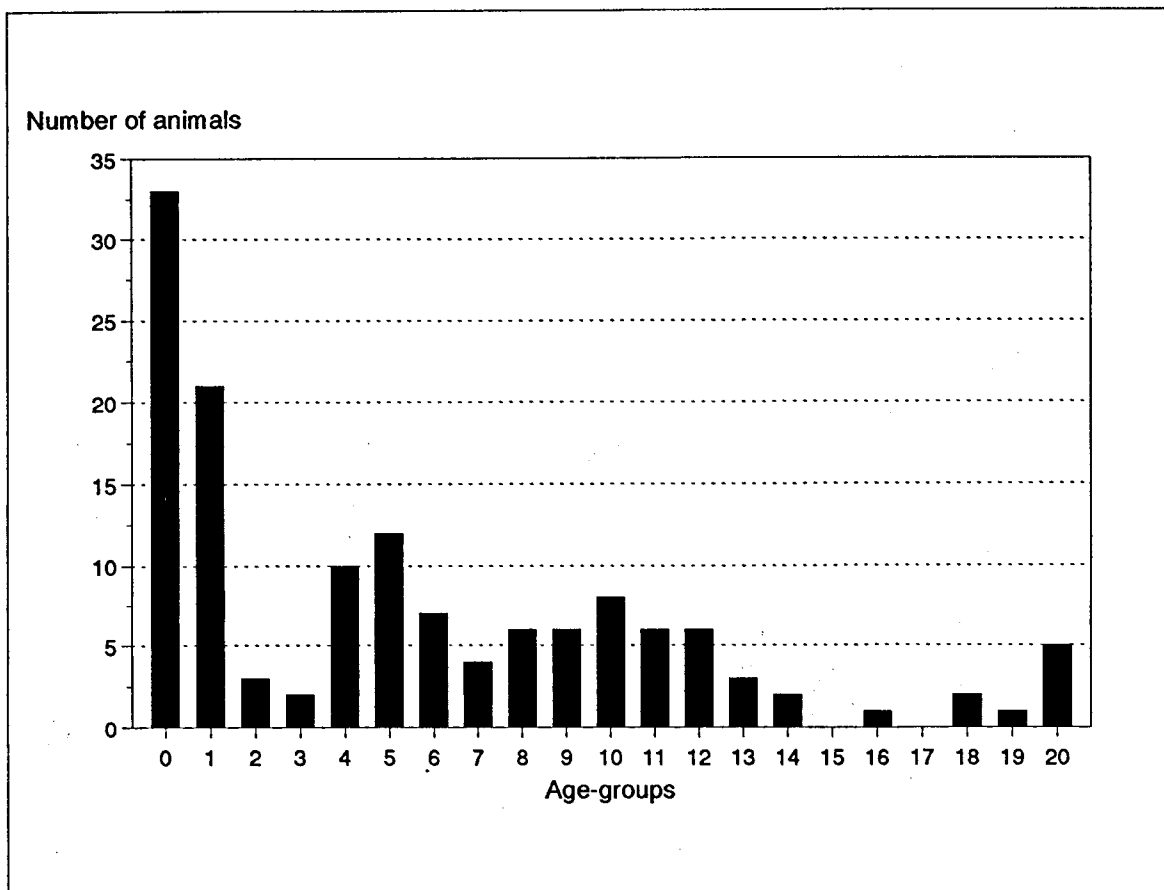


Figure 3. Age-distribution of hooded seals (*Cystophora cristata*) caught off the coast of Iceland in the period of 1989-94.