

Quarterly Report for Quarter Ending September 30, 1975

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TO: W. M. Sackinger
OCS Coordinator
Geophysical Institute
University of Alaska

DATE: 6 October 1975

FILE NO:

TELEPHONE NO:

FROM: John J. Burns, Marine Mammals
Biologist
Alaska Department of Fish and Game
Fairbanks

SUBJECT: Quarterly Report
Task Order #9

This report covers the work conducted from June to the present on projects RU #248 and 249; "The Relationships of Marine Mammal Distributions, Densities and Activities to Sea Ice Conditions." During the period 9 to 19 June, extensive aerial surveys of ringed seals were undertaken in areas of land fast ice between Barter Island and Point Lay. These surveys were conducted through joint OCS and ADF&G funding. Procedures employed were the same as those used in 1970 (Burns and Harbo 1972, Arctic 25:279-290), and the results are directly comparable. The necessity of conducting these surveys was based on observations during the winter of 1974-75, which indicated unusually high densities of ringed seals in the Chukchi Sea and the reverse in the Beaufort Sea. Observations for the Beaufort Sea were obtained by Lentfer (personal communication).

Survey results substantiated that a major, short-term shift in density had indeed occurred. Density of seals in the Beaufort Sea was down 10 fold with a corresponding increase in the Chukchi Sea of between 10 and 15 fold.

Communications with Canadian investigators indicated that the decrease of seals in the Beaufort Sea was not restricted to the areas north of Alaska, but were also similar in the Canadian sector including Amunson Gulf.

Surveys included continuous observation and recording of both seals and sea ice conditions. In my opinion, the overriding factor affecting ringed seal distribution is the distribution of favorable sea ice conditions. From past experience it was obvious the prevailing sea ice conditions in the Beaufort Sea were, by and large, unfavorable for breeding ringed seals whereas they were excellent in the Chukchi Sea.

The distribution of ringed seals directly affected the distribution of their most significant predator, the polar bear.

One wonders how, or if, the changes in ringed seal density were or are related to the sea ice conditions which prevailed off the north coast of Alaska during the summer of 1975. Indeed, they were most unusual!

Additional marine mammal-sea ice surveys were undertaken in September. Aircraft time was funded by the U. S. Fish and Wildlife Service and logistic support at Barrow was underwritten by ADF&G, although the work

conducted was specifically part of the OCS marine mammal-sea ice study. The mixup, which did not allow for OCS funding of Burns' costs at Barrow, resulted from our failure to obtain prior approval from the OCS office at the University of Alaska.

September surveys, under the direction of Dr. James Estes, USFWS, were directed at walrus. Again, the unusual sea ice conditions resulted in a distribution of animals which was most unusual. Large numbers of walrus were present in the American sector of the Chukchi Sea, concentrated along the very narrow edge of the late summer pack ice. Very few animals were present in the Beaufort Sea and the few that were observed were in the immediate vicinity of Barrow.

Again, it appeared obvious that sea ice conditions were the single most important factor influencing distribution and density of walrus.

Other work conducted during this report period included the analysis of available satellite data and aerial photographs, under the supervision of Dr. Shapiro.

Environmental Assessment of the Alaskan Continental Shelf

July - September 1975 quarterly reports from Principal Investigators participating in a multi-year program of environmental assessment related to petroleum development on the Alaskan Continental Shelf. The program is directed by the National Oceanic and Atmospheric Administration under the sponsorship of the Bureau of Land Management.

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