

Quarterly Report

Contract #03-5-022-53

Research Unit #230

Reporting Period: 1 October-31 December 1978

Number of Pages: 3

The Natural History and Ecology of the Bearded Seal
(Erignathus barbatus) and the Ringed Seal (Phoca hispida)

Principal Investigators:

John J. Burns and Kathryn J. Frost
Marine Mammals Biologists
Alaska Department of Fish and Game
1300 College Road
Fairbanks, Alaska 99701

Assisted by: Lloyd Lowry, Pam Fields, Larry Miller, Dan Strickland,
Richard Tremaine and Glenn Seaman

31 December 1978

I. Task Objectives

1. Summarization and evaluation of existing literature and available unpublished data on reproduction, distribution, abundance, food habits and human dependence on bearded and ringed seals in the Bering, Chukchi and Beaufort Seas.
2. Acquisition of large amounts of specimen material required for an understanding of productivity, growth rates and mortality in these two species.
3. Acquisition of baseline data on mortality (including parasitology, diseases, predation and human harvest) of ringed and bearded seals.
4. Determination of population structure of bearded and ringed seals as indicated by composition of harvest taken by Eskimo subsistence hunters.
5. Initial assessment of regional differences in density and distribution of ringed and bearded seals in relation to geographic areas and, to a lesser extent, in relation to major habitat condition.
6. Acquisition of additional information on seasonal migrations.

II. Field and Laboratory Activities

Primary emphasis of this research unit during the first quarter of FY 79 was on processing age and reproductive specimens. Personnel were engaged in sectioning, staining and "reading" seal teeth and reading seal claws to determine age structure of the populations. Analysis of reproductive tracts from seals collected during 1978 was begun. In addition, 42 seals collected in the Beaufort Sea in November were processed.

Field work was minimal during this quarter. An attempt to obtain a November collection of seals at Nome was unsuccessful due to stormy weather. Successful November collecting trips were made in the Beaufort Sea, at Prudhoe Bay and at Barrow with the aid of a chartered Bell 206 and a NOAA UH1H helicopter. These trips were part of a larger scale Beaufort Sea Winter Studies program.

Extensive data analysis was begun this quarter with the aid of a newly acquired DEC VT 78 microcomputer. Software was written for data entry, checking, transfer of data to and from the University of Alaska Honeywell computer and for analyses of male reproductive parameters and population age structure. Data management of age data consumed large blocks of time.

Project PI's spent a week in October preparing for and attending the OCSEAP Vertebrate Consumer Workshop.

Table 1 provides a complete listing of field and laboratory activities during the past quarter. Dates and personnel are included.

Table 1. Field and laboratory activities, 1 October-31 December 1978.

Activity	Dates	Personnel
Specimen collections:		
Nome	2-9 November	K. Frost
Prudhoe Bay	5-11 November	J. Burns
Barrow	13-16 November	L. Lowry
Vertebrate Consumer Workshop	17-19 October	J. Burns, K. Frost
Laboratory processing and interpretation of age material	continuous	K. Frost, J. Burns, P. Fields, D. Strickland
Laboratory processing and interpretation of reproductive material	intermittent	J. Burns, K. Frost, D. Tremaine
Data management	continuous	K. Frost, P. Fields
Data analysis, software preparation	continuous	L. Lowry, L. Miller, K. Frost

Methods

For a discussion of methods, refer to RU #230 Annual Report, 1 April 1978.

Data Collected or Analyzed

A total of 42 seals was collected during our November Beaufort Sea sampling effort. Twenty-two ringed seals were obtained in the vicinity of Prudhoe Bay. Nineteen ringed seals and one bearded seal were collected east of Point Barrow. Effort in the Prudhoe Bay collection was directed specifically toward the proposed lease area.

All male reproductive tracts collected to date have been processed. All female reproductive tracts collected through 1977 have been processed, as well as part of the 1978 collections. Processing of teeth and claws from all 1978 and 1977 collections is almost complete.

Great progress has been made in setting up our DEC microcomputer and preparing software for data entry and analysis. To date software has been written for data transfer from the University of Alaska Honeywell computer, for entry and checking of physical data and age data, for analyses of male and female reproductive data and for preliminary analysis of age data. The acquisition of the DEC microcomputer and the hiring of Larry Miller as a full-time computer programmer have greatly expedited data entry and analysis.

III. and IV. Results and Preliminary Interpretation

A detailed presentation and discussion of results will be presented in the upcoming 1 April 1979 Annual Report.

V. Problems Encountered/Recommended Changes

None.

VI. Estimate of Funds Expended

As of 31 December we have expended approximately the following amounts during FY 79:

Salaries and benefits	\$15,600
Travel and per diem	2,000
Contractual services	1,000
Commodities	1,500
Equipment	--
Total Expenditures	<u>\$20,100</u>