QUARTERLY REPORT

January, February, and March 1950

Alaska Fur Seal Investigations

Wildlife Research Station

Seattle, Washington

Victor B. Scheffer,

Project Leader

31 March 1950

Personnel.--Victor B. Scheffer, Biologist-Supervisor; annual leave 14 hours; sick leave 16 hours.

Karl W. Kenyon, Wildlife Research Biologist; annual leave 80 hours; sick leave 0; military leave 80 hours.

Patricia D. Campau, Clerk-Stenographer; annual leave 16 hours; sick leave 16 hours.

Public contacts.--Scheffer and Kenyon gave about ten illustrated talks on the fur seal industry to local audiences, including the Audubon Society and the Pacific Northwest Bird and Mammal Society. They published several popular-science articles (see under publications during the quarter). Scheffer attended the 15th North American Wildlife Conference in San Francisco where he gave a report on "The Food of the Alaska Fur Seals".

Progress on regular assignments.--The biologists continued their laboratory studies of fur seal specimens and statistics gathered during the field season of 1949 on the Pribilof Islands.

They measured the annular rings on the teeth of several dozen known-age seals and set up a table of standards. They then proceeded to analyze various lots of teeth, totalling 1,060, of unknown-age seals, males and females, collected on the Pribilofs in 1949. The studies, when supported by similar ones to be made in 1950, will help to give an understanding of the average age of females dying on land, of bachelors killed, etc.

They recovered 21 tagged yearlings, winter killed on the Washington-Oregon coast, and are preparing a report on mortality.

They continued correspondence with Dr. E. W. Price, Bureau of Animal Industry, with regard to work plans for the summer of 1950 on fur seal parasites.

They made further progress toward an arrangement to hire Dr. Z. William Birnbaum as a statistical consultant.

They spent a day on aerial reconnaissance of wintering fur seals along the Washington-Oregon coast, by the courtesy of the Coast Guard.

Kenyon devoted full time to completing a population study of the fur seal herd. On 11 March he left by air for Sitka, Alaska, arriving the same day. His aim is to collect 100 fur seal carcasses from Indian hunters. His main studies will be of stomach contents (food habits) and reproductive tracts (percentage of non-pregnant females).

The biologists helped Ford Wilke pack and ship his field equipment to Japan in February.

They studied a collection of sea otter skulls from Amchitka Island and packed 103 of them for shipment to the Biological Surveys Collection.

Reports and manuscripts submitted, and publications during the quarter.--

Scheffer; "Measurements of Sea Otters from Western Alaska"; 12 pages; to Editor, Jour. Mammal., 6 February 1950

Scheffer; "Growth Ridges on the Teeth of Pinnipedia as an Indication of Age"; 9 pages; to Editor, Science, 15 March 1950.

Scheffer; "Reflections on the Skull of a Sea Otter"; published in Nature Mag., vol. 43, pp. 151-152; March 1950

Scheffer; "Probing the Life Secrets of the Fur Seal"; 11 pages; to Director for approval, 23 March 1950.

Scheffer and Kenyon; "Observations of Fur Seals along the Washington-Oregon Coast in Mid-Winter"; 2 pages; to Director, 10 February 1950.

Scheffer and Kenyon; "Preliminary Report on an Experimental Kill of 100 Female Fur Seals on St. Paul Island, Alaska, 27 October 1949"; 14 pages; to Director, 17 February 1950.

Scheffer and Wilke; "Validity of the Subspecies, Enhydra lutris nereis, the Southern Sea Otter"; 10 pages; to Director for approval, 16 March 1950.

Kenyon; "Population Estimates of the Alaska Fur Seal Herd in 1949"; 62 pages; to Director, 10 March 1950.

Kenyon; "Sea Parrots"; published in Natural History, vol. 59, pp. 114-119; March 1950.

Kenyon [Kodachrome plate, showing fur seals, on cover of "Alaska Sportsman" for February 1950].

Proposed work.--Kenyon will return from Sitka in late April and will spend six weeks analyzing his collection, writing his report, and acting in charge of the Seattle office. About 13 June he will leave for the Pribilof Islands via Penguin. Mrs. Campau will be in charge of the office from 10 June until the return of Scheffer in August.

Scheffer will attempt to finish reports on certain aspects of the 1949 sealing season. Tentative titles are: "A method of estimating ages of seals killed in the course of commercial sealing operations on the Pribilof Islands." The age composition will be estimated through the use of body length, weight of green skins, length of baculum, and markings on the right upper canine tooth.

"Significance of the count of seals of estimated age 4 years, rejected from sealing drives in 1949". The tables made by two elderly natives have not yet been studied.

"Growth of the Alaska fur seal." A long-time project involving body and skull measurements in seals of known age, a joint study with Ford Wilke.

"Possibility of a cross between fur seal and sea-lion." Study will be made of about four cryptorchids ("big cows" in local parlance) to determine whether blended characters are present.

Finally, the job of writing a pamphlet on seals and seal-like animals of the North Pacific, by Scheffer and Kenyon, is yet unfinished. Work on the manuscript has been postponed in favor of management research on the seal herd.

To Washington:

Division of Wildlife Research
Division of Alaska Fisheries
Regional Director, Juneau

Seattle:

Project Leader

Victor B. Scheffer, Project Leader

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QUARTERLY REPORT

April, May, and June 1950

Alaska Fur Seal Investigations

Wildlife Research Station

Seattle, Washington

Victor B. Scheffer,

Project Leader

Submitted by:
Karl W. Kenyon

12 June 1950

QUARTERLY REPORT

APRIL, MAY, AND JUNE 1950

Personnel.--Victor B. Scheffer, Biologist-Supervisor; annual leave - 23 hours; sick leave - none.

Karl W. Kenyon, Wildlife Research Biologist; annual leave - 6 hours; sick leave - 2 hours.

Patricia D. Campau, Clerk-Stenographer; annual leave - 6 hours; sick leave - 27 hours.

Public contacts.--Scheffer and Kenyon gave several illustrated talks on fur seals and other Pribilof wildlife to local audiences. We mailed out several copies of Wildlife Leaflet 323, "Old Man of the Pribilofs" in answer to requests for fur seal information.

Progress on regular assignments.--We corresponded with Dr. Oliver P. Pearson of the University of California and formulated plans for cooperative research on certain aspects of fur seal reproductive anatomy. Dr. Pearson, who once worked under Dr. Robert K. Enders, will supplement the work now being done at Swarthmore by Dr. Enders.

On 13 April Kenyon returned from his stay of one month at Sitka.

On 28 April Scheffer departed for the Pribilof Islands aboard the M.S. Penguin. He arrived on 11 May, and spent several weeks unpacking supplies and preparing for island research operations

during the coming sealing season.

Genital tracts of the fur seals taken at Sitka were sent to Dr. Robert K. Enders at Swarthmore College.

Stomachs of Sitka taken seals are being held in Seattle awaiting analysis.

Dr. Birnbaum was contacted on 7 June at the University of Washington. He expressed his enthusiasm to participate in our work as a statistical consultant under the system proposed by Mr. Ashbrook.

Kenyon completed a study of the pregnancy of Sitka taken seals, and submitted a report on findings. He also substituted for Scheffer in the Seattle office.

Reports and manuscripts submitted and publications during the quarter.--Scheffer, "Experiments in the Marking of Seals and Sea Lions", Special Scientific Report: Wildlife No. 4, 33 pages, 15 illustrations.

Scheffer, "Cryptorchid Fur Seals", submitted to editors of American Midland Naturalist.

Scheffer, "Winter Injury to Young Fur Seals on the Northwest Coast", accepted for publication by California Fish and Game.

Scheffer, "Growth Ridges on the Teeth of Pinnipedia as an Indication of Age", accepted for publication by editors of Science, 15 May 1950.

Scheffer, "Work Plan for Field Season of 1950", completed 20 April 1950.

Kenyon, "Distribution of Albatrosses in the North Pacific and Adjacent Waters", published in The Condor, Vol. 52:3, pages 97-103, 4 illustrations.

Kenyon and Scheffer, "Preliminary Report on the Aboriginal Take of 41 Female Fur Seals from the Sitka Area, Alaska, 24 March to 1 April 1950", completed 29 May 1950.

Proposed work.--Kenyon will leave Seattle for the Pribilof Islands the middle of June to join Scheffer in carrying out the summer program as detailed in Scheffer's outline "Work Plan for Field Season of 1950".

To Washington:
Division of Wildlife Research ✓
Division of Alaska Fisheries
Regional Director, Juneau

St. Paul Island:
Project Leader

For Victor B. Scheffer,
Project Leader

By Karl W. Kenyon, Biologist

QUARTERLY REPORT

July, August, and September 1950

Alaska Fur Seal Investigations

Wildlife Research Station

Seattle, Washington

Victor B. Scheffer

(Note: The project leader wrote this report without benefit of consultation with his fellow biologists, and for this reason it may contain errors. Kenyon was on the Pribilof Islands at the time of writing, and Wilke was confined to his home by illness during the final week of the quarter.)

30 September 1950

QUARTERLY REPORT

Personnel.--Victor B. Scheffer, Project Leader, in Alaska 1 July to 24 August; annual leave 2 days; sick leave 1 day.

Ford Wilke, Biologist, in Washington, D. C., from 1 July to 3 July; moved his family to Seattle and began work in office on 14 July; annual leave 6-3/4 days; sick leave 5-1/2 days.

Karl W. Kenyon, Biologist, in Alaska throughout the quarter; no annual or sick leave taken.

Patricia D. Campau, Clerk-Stenographer, annual leave 11-3/4 days; sick leave 1-1/2 days.

Public contacts.--Biologists Scheffer and Kenyon took several groups of Reeve Aleutian Airways tourists on the Pribilof Islands to visit the seal rookeries.

Areas studied.--The Pribilof Islands.

Progress on regular assignments.--1. The biologists examined all seals killed on St. Paul Island in 1950. They recovered about 1500 tagged 3-year males and 200 tagged 2-year males. The recoveries will shed light on 1) the number of pups born in 1947 and 2) the mortality rate during the first three years of life.

2. They counted live and dead pups on all rookeries on St. Paul Island, live pups on all rookeries on St. George Island, and dead

7 rookeries

actual counts of dead pups St. Paul Island taken from Kenyon notes

53,428 + 5% = 56,099

pups on one rookery on St. George Island.

3. They sampled the daily kill on St. Paul Island in order to estimate the ages of the seals. To do so, they removed the right upper fang of each of 20 seals selected at random daily. In the winter of 1950-51 they will count annular rings on these teeth.

4. They carried out an experimental kill of 100 female seals in late September on St. Paul Island as a check on a similar kill made in 1949. The purpose si to determine the percentage of non-bearing adults.

5. They studied the females accidentally killed during the sealing season, a group consisting of about 200 animals of various ages. They saved the right upper fang and the ovaries or genital tracts of each; subsequently forwarding the tracts to Dr. Oliver P. Pearson, University of California, for examination.

6. They investigated the sex ratio in 1000 seal pups and found 505 males to 495 females. The result is reassurance that a ratio of 1:1 can safely be used in population computations.

7. They preserved the testes of 40 known-age 3-year-olds in order to settle the question of whether or not the 3-year-old is capable of breeding. Prepared sections of the testes will show the presence or absence of sperms.

8. They took photographs at five or ten day intervals between May and September from a camera station on Kitovi rookery for the purpose of demonstrating the distribution pattern of seals during the breeding season. The question had been raised as to the optimum time for counting bulls.

9. They recovered about 10 tagged females of the critical ages 2- and 3-years in order to study the reproductive picture. They also saved measurements, skins, and skulls toward the writing of a report on "The Fur Seal from One to Ten".

10. They spent a little time on the study of fur seal diseases, admitting though that a great deal more should be done by a trained parasitologist. They collected 100 seal hearts to be explored for Dirofilaria, 100 diaphragms to be explored for Trichinella, and assorted samples of rookery soil and seal viscera to be explored for Uncinaria.

11. They completed the analysis of 41 seal stomach-contents collected at Sitka in the spring of 1950.

12. They progressed on analysis of about 450 stomach-contents collected in Japanese waters in the spring of 1950.

Publications during the quarter.--Scheffer, Victor B., Neva L. Karrick, and F. Bruce Sanford. 1950. Vitamin A in selected, pale-colored livers of Alaska fur seals, 1948. USFWS, Spec. Sci. Rept.:

Fish. 32, 8 pp., 3 figs., processed.

Scheffer, Victor B. 1950. Grizzly bear killed in Washington. Murrelet, v. 31, no. 1, p. 15.

Scheffer, Victor B. 1950. Porpoises assembling in the North Pacific Ocean. Murrelet, v. 31, no. 1, p. 16.

Scheffer, Victor B., and Ford Wilke. 1950. Validity of the subspecies, Enhydra lutris nereis, the southern sea otter. Jour. Wash. Acad. Sci., v. 40, no. 8, pp. 269-272, 1 fig.

Scheffer, Victor B. 1950. Probing the life secrets of the Alaska fur seal. Pacific Discovery, v. 3, no. 5, pp. 23-30, 20 photos.

Scheffer, Victor B. 1950. Growth layers on the teeth of Pinnipedia as an indication of age. Science, v. 112, no. 2907, pp. 309-311, 3 figs.

Wilke, Ford (see item 4, above).

Wilke, Ford (Oliver L. Austin and). 1950. Japanese fur sealing. GHQ, SCAP, NRS [Tokyo] Rept. 129; 91 pp., 15 figs., processed.

Kenyon, Karl W. (W. Woodbridge Williams and). 1950. "Seven Seas" to Cedros / Part III: Conclusion / The turtle hunters of Scammon Lagoon. Pacific Discovery, v. 3, no. 4; pp. 4-16, 16 photos, 1 map.

Proposed work.--

Laboratory

1. Analysis of seal counts and tag recoveries, Pribilof Islands, 1950.

2. Analysis of several hundred Japanese seal stomach-contents.

3. Weighing and measuring of several hundred Japanese seal fetuses.

4. Comparison of pelage, Japanese and Alaskan seal skins.

5. Cleaning and measuring several hundred Japanese seal skulls; counting annular rings on teeth.

6. Comparison of skulls, Japanese and Alaskan seals.

7. Counting annular rings on 900 Pribilof bachelor seal teeth from sample of June-July 1950.

8. Ditto, from accidentally killed females.

9. Handling specimens from the September 1950 kill of 100 females, including teeth, genital tracts, and measurements.

10. Ditto, for proposed kill of 30 females spread over months of December, January, and February.

11. Miscellaneous lab work on specimens of lesser importance collected in 1950.

Writing

1. Reexamination of the size of the Alaska fur seal herd, a report on studies from 1940 to 1950, in collaboration with the University of Washington Laboratory of Statistical Research.

2. Results of the 1950 Japanese fur-sealing expedition: food habits, migration, distribution by age and sex components, reproductive status, and comparison with seals in American waters.

3. (Perhaps) Brief reports on certain aspects of the reproduction of the fur seal. The biologists are at present uncertain whether to incorporate recent findings in the field with the population report (see item 1) or to publish them separately.

4. Growth and measurements of the Alaska fur seal from birth to age ten.

Victor B. Scheffer,
Biologist

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QUARTERLY REPORT

October, November, and December 1950

Alaska Fur Seal Investigations

Wildlife Research Station

Seattle, Washington

Victor B. Scheffer

4 January 1951

QUARTERLY REPORT

Personnel.--Victor B. Scheffer, Project Leader, in office, annual leave 3-1/2 days, sick leave 3 hours.

Ford Wilke, Biologist, in office, annual leave 1 day, sick leave 21-3/4 days.

Karl W. Kenyon, Biologist, on Pribilof Islands in early part of quarter, arrived Seattle 21 October; annual leave 6 days, no sick leave taken.

Patricia D. Campau, Clerk-Stenographer, annual leave 5-1/4 days, sick leave 1-1/2 days.

Public contacts.--Kenyon and Scheffer gave several talks on wildlife to Boy Scouts and church groups, and to the University of Washington College of Fisheries.

Areas studied.--The Pribilof Islands.

Progress on regular assignments.--In general, Kenyon and Scheffer continued work on their report on fur seal population studies, while Wilke continued work on his report of investigations in Japan in 1950.

1. Kenyon supervised the killing of 100 female seals on St. Paul Island, 3 October 1950. He preserved measurements, genital tracts, and tooth samples.

2. The biologists arranged for cooperative research, as follows:

a. A contract was signed by the University of Washington on 20 December to provide the part-time services of a statistician, Dr. Douglas G. Chapman, who is now examining critically the source materials for the fur seal population report.

b. Genital tracts of 100 female fur seals were sent to Drs. Oliver P. and Anita K. Pearson, University of California, who will prepare a two-part report. The first part will describe the breeding status of each tract. The second part will outline a field and laboratory method for reading the reproductive history of female fur seals.

c. The testes of about 150 known-age seals were delivered to Dr. Richard G. Blandau, University of Washington. His assistant prepared slides of each testis. Dr. Blandau submitted on 29 December 1950 a report on the spermatogenetic activity of the testes and suggested future research needs in this connection.

d. Bacula of known-age seals were sectioned and prepared by Dr. C. E. Nyberg, Providence Hospital. He was unable to find annular growth rings or marks of any kind.

3. Wilke continued work on the analysis of about 450 seal stomachs collected in Japan in 1950, and completed 41 collected (by Kenyon) at Sitka in 1950.

4. Wilke started to write a report on certain Japanese porpoises;

description, hunting, and utilization.

5. Scheffer and Kenyon wrote a story on research among the fur seals to be submitted to the editor of the National Geographic Magazine. (Sentto Washington Office on 3 January 1951.)

6. Scheffer completed a report on a camera-station study of the attendance of fur seals on Kitovi rookery, St. Paul Island.

7. The biologists analyzed (by means of tooth-ridge counts) the age composition of certain samples of fur seals, namely:

a. 800 bachelors representing the St. Paul Island kill in 1950.

b. 120 cows killed accidentally on St. Paul Island in 1950.

c. 100 cows killed deliberately on St. Paul Island on 3 October 1950.

d. 451 seals collected by Wilke near Japan in 1950.

8. Scheffer started an analysis of the reindeer populations of the Pribilof Islands, 1911-1950.

9. The biologists conferred with Robert D. Jones, refuge manager of the Aleutian Islands, who spent several days in Seattle making preparations to transplant sea otters.

Publications during the quarter.--Scheffer, Victor B. Winter injury to young fur seals on the northwest coast. Calif. Fish and Game,

36 (4): 378-379, 1 fig., 20 November.

Scheffer, Victor B. Rodents practice sustained yield. Nature Mag., 43 (10): 538-540, 6 photos. 25 November.

- - - - -. Growth of the testes and baculum in the fur seal, Callorhinus ursinus. Jour. Mamm., 31 (4): 384-394, 3 figs., 3 pls. 1 December.

- - - - -. Notes on the raccoon in southwest Washington. Jour. Mamm., 31 (4): 444-448, 2 figs. 1 December.

Proposed work.--The biologists will spend the spring quarter writing on the reports which have just been described. Kenyon or Wilke may perhaps make a quick trip to Sitka in January to get seal specimens from Indian hunters. Skulls of adult females are needed for comparison with Japanese material. A decision on this trip awaits news from the fisheries agent at Sitka.

Scheffer will visit the Washington Office in mid-February.

Victor B. Scheffer,
Biologist