# *BIBLIOGRAPHY OF*

# *SOCKEYE SALMON RESEARCH*

# *KARLUK RIVER SYSTEM, ALASKA*

A supplement to

**A History of Sockeye Salmon Research**
**Karluk River System, Alaska, 1880-2010**

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# Glossary of Bibliographic Acronyms

| | |
|---|---|
| ABL | Auke Bay Laboratory |
| ADF | Alaska Department of Fisheries |
| ADFG | Alaska Department of Fish and Game |
| APA | Alaska Packers Association |
| ARLIS | Alaska Resources Library and Information Services |
| ASA | Alaska State Archives |
| BCF | Bureau of Commercial Fisheries |
| BSFW | Bureau of Sport Fisheries and Wildlife |
| ca. | circa |
| FRED | Fisheries Rehabilitation, Enhancement and Development Division, ADFG |
| FRI | Fisheries Research Institute |
| FWS | Fish and Wildlife Service (1940-1955) |
| NARA | National Archives and Records Administration |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| RG | Record Group |
| UAF | University of Alaska, Fairbanks |
| U.S. | United States |
| USBF | U.S. Bureau of Fisheries |
| USFWS | U. S. Fish and Wildlife Service (1956-present) |

# INTRODUCTION

In compiling this bibliography of references on Karluk's sockeye salmon, we found a full continuum of published and unpublished references, from formal papers published in peer-reviewed scientific journals to casual handwritten notes or observations. Because these varied sources contained valuable insights into the Karluk River ecosystem, we have included this full range of information in the Karluk Sockeye Salmon Bibliography. Besides the many sources of information, we also examined a broad range of topics beyond our specific focus on sockeye salmon since these fishes interact with many other species in the dynamic Karluk environment. Thus, this bibliography includes citations to many other biological, physical, and historical topics of the Karluk River and Lake.

To organize the wide diversity of references, we divided the Karluk Sockeye Salmon Bibliography into four sections: (1) Published References, (2) Unpublished Reports, (3) Field Notebooks, and (4) Correspondence. Most references fell distinctly into one of the four categories, but occasionally the correct placement was unclear. As described below, the citations in each of the four bibliographic categories had different formats.

The bibliographic section "Published References" comprised more than just peer-reviewed papers published in scientific journals. This category also included the reports, mainly from governmental agencies and other institutions, that were produced as multiple bound copies for distribution to individuals, libraries, and other institutions. These reports, though not receiving the full critical scrutiny of peer-reviewed papers, were often part of a numbered series that sometimes were cited in formally published papers. The production and distribution of multiple report copies suggested that a definite conclusion or annual summary had been reached in an investigation. In the "Published References" section, each citation was followed by a short summary of its content and importance, followed by keywords placed in brackets.

The bibliographic section "Unpublished Reports" included those items that normally existed as a single document or, at most, as a few typed copies. These might be reports prepared as administrative reviews or initial drafts of planned formal publications that for various reasons were abandoned in progress. Most often, unpublished reports were found in office or archive files mixed in with related data and materials. Only rarely were unpublished reports found as catalogued items in a library collection. The quality of the unpublished reports varied greatly, but some contained important data, ideas, or conclusions relevant to current research. In the "Unpublished Reports" section, each citation was followed by its location (in parentheses), an annotation, and keywords. When unpublished reports lacked dates, we gave them an approximate date.

The category "Field Notebooks" included bound handwritten notebooks, originally used in the field to record fisheries data or daily observations. These primary data sources were located in archive or personal collections. Most notebooks in this bibliography were kept by federal biologists who worked at Karluk during 1920-70. Field notebooks provided exceptional detail about past fishery studies. Each "Field Notebooks" citation was followed by the location information in brackets.

The bibliographic section "Correspondence" included the normal exchange of letters, memoranda, and telegrams that occurred between fishery biologists and officials involved in the research projects at Karluk. Most correspondence was located in archive or agency files; the largest mass of these primary sources came from the National Archives in Anchorage and

documented the federal research at Karluk during 1910-70. Correspondence was organized chronologically in the bibliography. Each entry gave the sending and receiving persons, and their positions and organizations. Location information was placed in brackets, followed by a brief statement about the document's content.

The search for literature on Karluk's sockeye salmon required substantial time and effort. Some information was easily accessed, but other material was difficult to find. Within the two-year time constraints of this project we amassed a large bibliography, but all sources, agencies, libraries, and archives that hold information about Karluk were not investigated. The institutions that we visited, at least briefly, during our search for information included the following:

1. Seattle Area, WA
    - Fisheries Research Institute, Archives
    - National Marine Fisheries Service, Montlake Laboratory Library
    - University of Washington, Fisheries Library
    - University of Washington, Manuscripts and University Archives
    - U.S. Fish and Wildlife Service
2. Juneau Area, AK
    - Auke Bay Laboratory, Files
    - Auke Bay Laboratory, Library
    - Alaska Department of Fish and Game, Juneau
    - Alaska Department of Fish and Game Library, Douglas (this resource has been transferred to ARLIS, Anchorage)
    - Alaska State Library, Historical Collection
    - Alaska State Archives
    - University of Alaska – Southeast, Egan Library
3. Anchorage Area, AK
    - Alaska Department of Fish and Game, Limnology Laboratory, Soldotna
    - Alaska Resources Library
    - Arctic Environmental Information and Data Center, Library
    - National Archives and Records Administration
4. Kodiak Area, AK
    - Alaska Department of Fish and Game
    - Alutiiq Museum
    - Kodiak National Wildlife Refuge
    - Kodiak Historical Museum
5. Other
    - University of California, Shields Library, Davis, CA
    - California Academy of Sciences, San Francisco, CA

We made a fairly complete search of the published and unpublished literature on Karluk's sockeye salmon at the National Archives and Records Administration, Anchorage, AK; National Marine Fisheries Service, Auke Bay Laboratory, Auke Bay, AK; Fisheries Research Institute Archives, Seattle, WA; and the Alaska State Library, Juneau, AK. The National Archives in Anchorage was an especially important source since it holds the federal records of sockeye research done at Karluk during 1910-70. We only briefly visited the Kodiak offices of the Alaska

Department of Fish and Game and the USFWS Kodiak National Wildlife Refuge, both agencies having extensive information about Karluk's sockeye salmon and ecosystem. The numerous reports of the ADFG, Kodiak, were helpful in understanding the studies of Karluk's sockeye since 1960.

During our search for Karluk literature, we learned of, but did not visit, several institutions that hold important records of Karluk's fishes and ecosystem. For the benefit of future researchers, we list a few of these sources:

1. National Archives and Records Administration, Washington, DC
   This source holds an extensive collection of historical records and photographs from the U.S. Treasury Department, U.S. Fish Commission, U.S. Bureau of Fisheries, and U.S. Fish and Wildlife Service. These agencies administered the Karluk River salmon management and research programs, especially during the late 1800s and early 1900s. Their records from this era are more complete than those at their Anchorage branch.
2. Smithsonian Institution, Washington, DC
   This source holds the personal papers of Albert Mann, Frederick M. Chamberlain, William Healey Dall, and Ira Noel Gabrielson, all of whom had some association with Karluk and its fauna and flora.
3. Stanford University Library Archives, Palo Alto, CA
   This source holds the personal papers of Charles H. Gilbert, including his field notebooks from the 1920s that contain observations of Karluk's sockeye salmon. The earth sciences library also holds a list of Karluk's aquatic plants prepared by Willis H. Rich in the 1920s.
4. J. Porter Shaw Library, San Francisco Maritime Museum, San Francisco, CA
   This source holds records of the Alaska Packers Association and historic information and photographs of the cannery ships and salmon canning labels.
5. Center for Pacific Northwest Studies, Western Washington University, Bellingham, WA
   This source holds records of the Alaska Packers Association.
6. University of Washington Library, Special Collections, Seattle, WA
   This source holds historic photographs of Karluk and the personal papers of several fishery biologists associated with past Karluk studies and management, including John N. Cobb, William F. Thompson, and Donald E. Bevan.

# PUBLISHED REFERENCES

Adkison, Milo D., and Bruce P. Finney. 2003. The long-term outlook for salmon returns to Alaska. Alaska Fishery Research Bulletin 10(2):83-94. (Available at: http://www.adfg.alaska.gov/static/home/library/PDFs/afrb/adkiv10n2.pdf; accessed 28 July 2011)

Discussion of recent and prehistoric population variations of Pacific salmon, including Karluk's sockeye salmon over the past 300 years; influence of long-term and widespread environmental (climatic) variations on salmon abundance; influence of salmon-carcass nutrients to lake productivity; difficulty in forecasting salmon returns; climatic fluctuations appear to regulate the abundance of Alaskan salmon; threats to salmon abundance; fishery and management implications.
[SOCKEYE, CLIMATE, LIMNOLOGY, MANAGEMENT]

Alaska Department of Fish and Game. ca. 1988. Proceedings of the 1988 Alaska Sockeye Culture Workshop, Ketchikan, Alaska, July 12-13, 1988. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement, and Development, Juneau, AK.

Workshop discussions about sockeye salmon culture, including a summary of ADFG's rehabilitation work on Thumb River sockeye salmon; comments on possible influence of pink salmon carcass nutrients in Karluk Lake on fry survival; attempts to determine Karluk smolt population.
[SOCKEYE, HATCHERY, LIMNOLOGY, SMOLT]

1995. Kodiak Management Area annual salmon management report 1986 and 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K95-5.

Comprehensive summary report on the 1986 and 1987 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the five salmon species; commercial fishing; escapements; forecasts; stream surveys.
[SOCKEYE, CHINOOK, COHO, PINK, CHUM]

1998. 1996-1998 Cook Inlet, Kodiak, and Chignik Areas Commercial Fishing Regulations. Alaska Department of Fish and Game, Anchorage, AK. 90 p.

Summary of commercial fishing regulations in Cook Inlet, Kodiak, and Chignik areas.
[COMMERCIAL FISHING REGULATIONS, COOK INLET, KODIAK, CHIGNIK]

**Alaska Department of Fisheries.** 1957. Sport Fish, Kodiak Area Discussion. Alaska Department of Fisheries, Juneau, AK, 1957 Annual Report, 9:106-113.

Brief summary of 1957 steelhead egg take from the Karluk River; 954,657 eggs taken by Kodiak Conservation Club for incubation at Devil's Creek hatchery in Kodiak; average female egg fecundity = 4,700; location of 1957 egg shipments; 1953-1957 Karluk steelhead egg plants in Buskin River; 1957 Karluk River steelhead plants along Kodiak road system; photograph of Karluk River steelhead egg taking operation. [STEELHEAD, HATCHERY]

1958. Sport Fish, Kodiak Area Discussion. Alaska Department of Fisheries, Juneau, AK, 1958 Annual Report, 10:79-84.

Brief summary of 1958 steelhead egg take from the Karluk River; 967.062 eggs taken by Kodiak Conservation Club for incubation at Devil's Creek hatchery in Kodiak; average female egg fecundity = 4,985; 1958 Karluk River steelhead plants along Kodiak road system; photographs of Karluk River steelhead egg taking operation. -- [STEELHEAD, HATCHERY]

1959. Sport Fish, Kodiak Conservation Club hatchery. Alaska Department of Fisheries, Juneau, AK, 1959 Annual Report, Number 11: 78.

Brief summary of 1959 steelhead egg take from the Karluk River; 1,100,000 eggs taken by Kodiak Conservation Club for incubation at Devil's Creek hatchery in Kodiak; location of 1959 egg shipments; 335,000 fry from Karluk River steelhead planted in Kodiak area. -- [STEELHEAD, HATCHERY]

**Alaska Fisherman.** 1979. State-investor clash over egg implanter. Alaska Fisherman (February, 1979).

Brief article on 1978 rehabilitation efforts of the Thumb River sockeye salmon by ADFG; 3,800,000 sockeye eggs planted; hydraulic egg implanter used. -- [SOCKEYE, HATCHERY]

**Alaska Territorial Legislature.** 1949. House Memorial Number 3. Territory of Alaska Session, Laws, Resolutions, and Memorials passed by the 19th regular session of the Territorial Legislature. Territory of Alaska, Juneau. 622pp.

Chronicle of the proceedings of the 1949 Alaska Territorial Legislature, including a general discussion of Kodiak brown bear predation on sockeye salmon. -- [SOCKEYE, BEARS, PREDATION]

**Alaska Territorial Legislature.** 1951. House Memorial Number 6. Territory of Alaska, Session Laws, Resolutions, and Memorials passed by the 20th regular session of the Territorial Legislature. Territory of Alaska, Juneau. 693pp.

Chronicle of the proceedings of the 1951 Alaska Territorial Legislature, including a general discussion of Kodiak brown bear predation on sockeye salmon. -- [SOCKEYE, BEARS, PREDATION]

**Alaska Weekly.** 1953. Fish and Wildlife offers active program to help Alaska sport fishermen. Alaska Weekly (June 12, 1953), Seattle, WA: 5.

Brief article about the opening of the Kodiak Conservation Club hatchery on Devil's Creek, people involved, and Karluk River steelhead egg take in 1953. -- [STEELHEAD, HATCHERY]

**Alaska Weekly.** 1953. Massive trout stocking job undertaken to insure sport fisheries in Alaskan waters. Alaska Weekly (August 28, 1953), Seattle, WA.

Report on the 1953 planting of Karluk River steelhead fry from the Kodiak Conservation Club hatchery, history of the Kodiak Conservation Club, and people involved. -- [STEELHEAD, HATCHERY]

**Alaska Weekly.** 1954. Kodiak steelhead hatchery first in Alaska, now running. Alaska Weekly (June 4, 1954), Seattle, WA.

Brief discussion of the 1954 Kodiak Conservation Club hatchery operations at Devil's Creek, the people involved, and Karluk River steelhead egg take. -- [STEELHEAD, HATCHERY]

**Anchorage Times.** 1978. State plans rehabilitation of Kodiak's Karluk Lake. Anchorage Times (October 12, 1978), Anchorage, AK.

Brief article on 1978 rehabilitation efforts of the Thumb River sockeye salmon by ADFG; egg planting. -- [SOCKEYE]

**Andrews,** Clarence L. 1916. Alaska under the Russians -- industry, trade and social life. Washington Historical Quarterly 7(4): 278-295.

Brief mention of amount of dried salmon prepared annually (172,400 kg) from the Karluk River during the Russian period. -- [SOCKEYE, HARVEST]

**Andrews,** Clarence L. 1918. The salmon of Alaska. Washington Historical Quarterly 9(4): 243-254.

Brief comments on the historical use of Karluk River salmon; Karluk River salmon used in 1784 by Gregory Shelikof; 500,000 fish annually harvested during the Russian occupation; development of hatcheries. -- [SOCKEYE, HARVEST]

**Atkinson,** ca. E., J.H. Rose & T.O. Duncan. 1967. Salmon of the North Pacific Ocean - Part IV. Spawning populations of North Pacific salmon. 4. Pacific salmon in the United States. International North Pacific Fisheries Commission, Bulletin Number 23 (Document 863): 43-223.

Extensive survey of the locations of spawning populations of Pacific salmon, including the Karluk River system; Karluk River hatchery operation dates; Karluk River weir escapements. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, WEIR, HATCHERY]

**Atwell,** Gerry. 1975. Karluk Lake breakup. Alaska 41(5): 47.

Brief description of the breakup of ice cover on Karluk Lake, including the unusual phenomenon of wind-driven ice pushed a short distance inland along the shoreline. -- [PHYSICAL]

**Balon,** Eugene K. 1982. Mark Morton and his 'dolly varden – victim of piscatorial prejudice.' Environmental Biology of Fishes 7 (1): 3-5.

Brief memories of BOF and FWS biologist William M. Morton about his 3 years work (1939-1941) at Karluk on Dolly Varden and Arctic charr; discovery of two charr species; charr food habits; efforts to publish his charr food habits data. -- [SOCKEYE, DOLLY VARDEN, ARCTIC CHARR, PREDATION]

**Baltzo,** ca. Howard. 1981. Karluk River steelhead, pound for pound ... PFFT. Alaska 47(10): 34-36.

Description of sport fishing at the Karluk River Portage in October. -- [STEELHEAD, SPORT FISHING]

**Barnaby,** Joseph Thomas. 1932. The growth of the red-salmon (*Oncorhynchus nerka*, Walbaum) of the Karluk River and the growth of its scales. Master of Arts Thesis, Department of Zoology, Leland Stanford Junior University, Stanford, California. 50 p.

Detailed study of the curvilinear relation between Karluk River sockeye salmon length and scale size; data from 1,159 fish collected 1926-1931; summary of life history; scales first formed at about 36 mm length; time of annuli formation; comparison of freshwater and ocean growth rates; adult size determined by time of ocean residence, not by age. -- [SOCKEYE, GROWTH, SCALES]

**Barnaby,** Joseph T. 1944. Fluctuations in abundance of red salmon, *Oncorhynchus nerka*, (Walbaum), of the Karluk Lake, Alaska. Fishery Bulletin 50(39): 237-295. (Available at: https://spo.nmfs.noaa.gov/content/fluctuations-abundance-red-salmon-oncorhynchus-nerka-walbaum-karluk-river-alaska)

Important multi-year study of Karluk River sockeye salmon; smolt migrations; high smolt-to-adult survival rates; adult returns from known escapements; age composition of mature sockeye salmon; catch and escapement statistics to 1936; sex ratios; chemical analyses of Karluk Lake and tributary streams. -- [SOCKEYE, AGE, SMOLT, MIGRATION, LIMNOLOGY]

**Barnes,** Victor G., Jr. 1990. The influence of salmon availability on movements and range of brown bears on southwest Kodiak Island. International Conference on Bear Research and Management 8: 305-313.

Important study of brown bear use of salmon in southwest Kodiak Island, including the Karluk River and Lake watershed, 1983-1987; bear use of Karluk sockeye extended from late June to mid-December, but was less intense after berries ripened in August; Karluk coho were used by bear in autumn months, but steelhead only incidentally used; discussion of allocating part of salmon escapement for bear predation. -- [SOCKEYE, BEARS, PREDATION, COHO, STEELHEAD]

**Barr,** Claude H. 1931. Karluk Kodiaks. Outdoor Life 67(3): 11-13, 84-87.

Description of a May 1930 bear hunt at Karluk Lake by Claude H. Barr and his wife (guides Charles Madsen and J. W. Walker; packers Ewan Moses and Metrokin; base camp on Camp Island); they shot two bears (a large male and a large female), these specimens were given to the State of Illinois Museum in Springfield for display in their Mammal Hall; still photographs and movies of Karluk Lake and the bear hunt. -- [BEARS]

**Barr,** Claude H. 1936. The courage of the Kodiaks. The Alaska Sportsman 2(5): 6-7, 19, 23-25.

Description of a May 1930 bear hunt at Karluk Lake by Claude H. Barr and his wife to obtain specimens for the State of Illinois Museum in Springfield. -- [BEARS]

**Barrett,** Bruce M. 1989. North Shelikof Strait 1988 sockeye catch -- distribution, timing, and stock composition. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K88-6 (March, 1989). 38pp.

Detailed analysis of the 1988 North Shelikof Strait sockeye salmon catch to determine its stock composition; most were Upper Cook Inlet fish and few were Karluk River fish; Karluk River sockeye salmon age composition and run timing in 1988. -- [SOCKEYE, AGE, RUN TIMING]

**Barrett,** Bruce M., Charles O. Swanton & Patricia A. Roche. 1990. An estimate of the 1989 Kodiak Management Area salmon catch, escapement, and run numbers had there been a normal fishery without the *Exxon Valdez* oil spill. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K90-35 (September, 1990). 150pp.

Detailed analysis of salmon catch, escapement, and total run in the Kodiak area in 1989, assuming there was a normal fishery; Karluk River escapement and stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Barrett,** Bruce M., and Charles O. Swanton. 1991. Origins of sockeye salmon in the Kodiak Management Area North Shelikof Strait fishery, 6 July through 25 July, 1990. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K91-3 (January, 1991). 64pp.

Detailed analysis of the contribution of Karluk River and other stocks to the North Shelikof Strait sockeye salmon fishery in 1990; Karluk sockeye didn't contribute in 1990 because fishery occurred between early and late runs; Karluk early and late sockeye age composition in 1990. -- [SOCKEYE, AGE, RUN TIMING]

**Barrett,** Bruce M., and Charles O. Swanton. 1992. Estimations of the major sockeye salmon stocks contributing to the North Shelikof Strait fishery of July 6-25, 1988-1992. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K92-43 (December, 1992). 38pp.
Detailed analysis of the contribution of Karluk River and other stocks to the North Shelikof Strait sockeye salmon fishery in 1988-1992; Karluk late run sockeye were harvested in some years; Karluk sockeye age and length. -- [SOCKEYE, AGE, LENGTH, RUN TIMING]

**Barrett,** Bruce M., and Patricia A. Nelson. 1994. Estimated run timing of selected sockeye salmon stocks on the west and east sides of Kodiak Island. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report 4K94-6. 53pp.

Detailed analysis of sockeye salmon run timing to many Kodiak Island rivers, including the early and late Karluk River sockeye runs. -- [SOCKEYE, RUN TIMING]

**Barrett,** Bruce M., and Patricia A. Nelson. 1995. Estimation of Karluk Lake early and late run sockeye returns based on scale age data, 1985-1994. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report 4K95-44 (November, 1995). 46pp.

Detailed analysis of Karluk River sockeye salmon returns for 1985-1994; sockeye age composition. -- [SOCKEYE, AGE]

**Baxter,** Dow V. 1956. *Saprolegnia* on Kodiak. Michigan Alumnus Quarterly Review (May 26, 1956) 62 (18): 242-245.

Brief discussion of the idea that Kodiak brown bears at Karluk Lake enhance the survival of salmon eggs by removing dead and dying adult salmon covered with *Saprolegnia* fungus. -- [SOCKEYE, BEARS, EGGS, DISEASE]

**Bean,** Tarleton H. 1887. The fishery resources and fishing-grounds of Alaska (pp. 81-115). *In:* G. B. Goode, The fisheries and fishery industries of the United States, Section III, The fishing grounds of North America. US Commission of Fish and Fisheries, Government Printing Office, Washington, DC. (Available at: http://celebrating200years.noaa.gov/rarebooks/fisheries/gallery.html; accessed 31 July 2011)

Important 1880 description of salmon harvests on Kodiak Island, including the preparation of salted and dried sockeye salmon from the Karluk River by two companies prior to establishment of commercial canneries on Karluk Spit; comments on sockeye salmon run timing in the Karluk River; observations of fish species present around Kodiak Island. -- [SOCKEYE, HISTORY, SUBSISTENCE, RUN TIMING]

**Bean,** Tarleton H. 1889. Bears, birds and fishes. Forest and Stream 33 (18 & 19): 348, 368.

Description of a visit to Karluk, Larsen Bay, and Karluk Lake, 16-19 August 1889; observations of fish and wildlife at Karluk Lake. -- [SOCKEYE, BEARS, BIRDS, SCULPINS]

**Bean,** Tarleton, H. 1890. The Alaskan salmon and their allies. Transactions of the American Fisheries Society 1890: 49-66.

General discussion of Alaska's salmon and other fishes, including comments about Karluk River Chinook, pink, and sockeye salmon; brief mention of Karluk canneries and fishing methods; recommended regulations and hatcheries to protect salmon runs. -- [SOCKEYE, CHINOOK, PINK, CANNERIES]

**Bean,** Tarleton H. 1891. Report on the salmon and salmon rivers of Alaska, with notes on the conditions, methods, and needs of the salmon fisheries. Bulletin of the US Fish Commission, Volume 9, for 1889: 165-208. (Available at: http://docs.lib.noaa.gov/rescue/Fish_Commission_Bulletins/BFC1889-v9.pdf; accessed 28 July 2011)

Important early report on the Karluk River sockeye salmon fishery based on field studies in August-September, 1889; physical description of the Karluk River region; observations on Karluk River salmon habits and movements; field trip to Karluk Lake 15-21 August and observations of spawning habitats; many photographs of Karluk Spit, Lagoon, River, and Lake; two important maps of Karluk Lake, Lagoon, and Spit showing location of cannery buildings; natural history of all 5 salmon species, steelhead, and Dolly Varden; description of cannery operations. -- [SOCKEYE, CANNERIES, CHINOOK, COHO, PINK, CHUM, DOLLY VARDEN]

**Bean,** Tarleton H. 1894. Life history of the salmon (pp. 21-38). *In:* Marshall McDonald, Report on the salmon fisheries of Alaska. Bulletin of the US Fish Commission, Volume 12, for 1892: 1-49. The Miscellaneous Documents (No. 122) of the House of Representatives for the Second Session of the Fifty-Third Congress, 1893-1894. Volume 18. (Available at: http://fisherybulletin.nmfs.noaa.gov/12-1/mcdonald.pdf; accessed 1 August 2011)

Important early report on the natural history of all 5 salmon species and Dolly Varden, with many observations made at Karluk River and Lake in 1880 and 1889; much information in this report is very similar to that in Bean 1891. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, DOLLY VARDEN]

**Bean,** Tarleton H. 1894. Bibliography of the Salmonidae of Alaska and adjacent regions (pp. 39-49). *In:* Marshall McDonald, Report on the salmon fisheries of Alaska. Bulletin of the US Fish Commission, Volume 12, for 1892: 1-49. The Miscellaneous Documents (No. 122) of the House of Representatives for the Second Session of the Fifty-Third Congress, 1893-1894. Volume 18.

Reference list of early Alaskan salmonid publications, 1811-1892. -- [SOCKEYE]

**Bean,** Tarleton H. 1896. The Pacific salmon with notes on the habits of the young. Transactions of the New York Academy of Sciences 15 (1895-1896): 182-188.

Brief comments by H. J. Barling, cannery superintendent for the Alaska Improvement Company at Karluk, that small-sized salmon (apparently 6" long) entered the river in early spring with the returning sockeye adults; it was unclear if these were sockeye grilse or smolts; 1880 observation of a Chinook salmon weighing 100 pounds. -- [SOCKEYE, JUVENILES, CHINOOK]

**Bean,** Tarleton H. 1902. A naturalist's adventures (pp. 241-266). *In:* Rudolf Kersting, The white world: Life and adventures within the Arctic Circle portrayed by famous living explorers. Issued under the auspices of the Arctic Club. Lewis, Scribner & Co., New York. 386pp.

Personal journal description of the northernmost part (11 August-17 September) of Bean's 1880 voyage to Alaska on the schooner *Yukon*; during this trip he collected 77 species of birds, 84 species of fish, and 110 species of lichen, including some from Kodiak. – [HISTORY]

**Beatty,** David Delmar. 1964. A study of the succession of visual pigments in Pacific salmon (*Oncorhynchus*). Ph.D. Dissertation, University of Oregon, Department of Biology, Eugene, OR. 69pp.

Not examined, but presumed to contain the same Karluk River salmon information as in Beatty (1966). -- [SOCKEYE, CHINOOK, PHYSIOLOGY]

**Beatty,** David Delmar. 1966. A study of the succession of visual pigments in Pacific salmon (*Oncorhynchus*). Canadian Journal of Zoology 44: 429-455.

Detailed analysis of the visual pigments in all 5 species of Pacific salmon, including samples from Karluk River sockeye and Chinook salmon; variation of visual pigments with environment and spawning condition. -- [SOCKEYE, CHINOOK, PHYSIOLOGY]

**Becker,** Ethel A. 1969. A treasury of Alaskana. Superior Publishing Company, Seattle. 183pp.

A few comments on use of Karluk River salmon by the Natives and Russians. -- [HISTORY]

**Beecher,** Cookson. 1999. Egg planting "jump starts" salmon recovery. Capital Press (9 April 1999).

Brief article about rehabilitation of the sockeye salmon run in the Thumb River; use of the hydraulic egg planter; number of eggs planted. -- [SOCKEYE, EGGS]

**Begich,** Robert N. 1992. Karluk River steelhead assessment. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 92-56 (December, 1992). 52pp.

Detailed study of 1991-1992 Karluk River steelhead; harvest numbers by commercial, subsistence, and sport fisheries; estimation of Karluk steelhead spawning population; age, sex, and length in sport harvest, spawning population, and emigrating kelts; abundance and emigration timing of kelt steelhead; sex ratio; effect of Karluk River weir on migration. -- [STEELHEAD, AGE, SIZE, SPORT FISHING, SUBSISTENCE, COMMERCIAL FISHING, WEIR]

**Begich,** Robert N. 1993. Assessment of the 1992 return of steelhead to the Karluk River, Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 93-56 (December, 1993). 51pp.

Detailed study of 1992-1993 Karluk steelhead; harvest numbers by commercial, subsistence, and sport fisheries; estimation of Karluk steelhead spawning population; age, sex, and length in sport harvest, spawning population, and emigrating kelts; abundance of kelt steelhead; sex ratio. -- [STEELHEAD, AGE, SIZE, SPORT FISHING, SUBSISTENCE, COMMERCIAL FISHING]

**Begich,** Robert N. 1995. Assessment of the 1993 return of steelhead to the Karluk River, Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 95-1 (February, 1995). 47pp.

Detailed study of 1993-1994 Karluk steelhead; harvest numbers by commercial, subsistence, and sport fisheries; estimation of Karluk steelhead spawning population; age, sex, and length in sport harvest, spawning population, and emigrating kelts; abundance of kelt steelhead; sex ratio. -- [STEELHEAD, AGE, SIZE, SPORT FISHING, SUBSISTENCE, COMMERCIAL FISHING]

**Begich,** Robert N. 1995. Assessment of the 1994 return of steelhead to the Karluk River, Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 95-41 (December, 1995). 63pp.

Detailed study of 1994-1995 Karluk steelhead; harvest numbers by commercial, subsistence, and sport fisheries; estimation of Karluk steelhead spawning population; age, sex, and length in sport harvest, spawning population, and emigrating kelts; abundance and emigration timing of kelts; sex ratio; effect of Karluk River weir on migration. -- [STEELHEAD, AGE, SIZE, SPORT FISHING, SUBSISTENCE, COMMERCIAL FISHING, WEIR]

**Begich,** Robert N. 1997. Assessment of the 1995 return of steelhead to the Karluk River, Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 97-6 (February, 1997). 47pp.

Detailed study of 1995-1996 Karluk steelhead; harvest numbers in the commercial and sport fisheries; estimation of Karluk steelhead spawning population and survival; age, sex, and length in spawning population and emigrating kelts; abundance and emigration timing of kelts; sex ratio; tagging recoveries. -- [STEELHEAD, AGE, SIZE, SEX, SPORT FISHING, COMMERCIAL FISHING, WEIR]

**Bellon,** Walter. 1936. Bear on the mountain. The Alaska Sportsman 2(12): 13-16, 23-25.

Description of a May 1931 bear hunt at Karluk Lake by Walter Bellon and Walter Bellon, Jr, of San Diego, CA, guided by Charles Madsen, John W. Walker, Eli Metrokin and Moses Malutin. -- [BEARS]

**Berns,** Vernon D., Gerry ca. Atwell & Daniel L. Boone. 1980. Brown bear movements and habitat use at Karluk Lake, Kodiak Island. Bear Biology Association Conference Series 3, International Conference on Bear Research and Management 4: 293-296.

Study of brown bear habitat use in the Karluk Lake watershed; bears move to streams in July to feed on salmon, but less so when berries ripen in August; in late September and October bears feed on salmon along lake shores and outlet tributaries. -- [SOCKEYE, BEARS, PREDATION]

**Bevan,** Donald E. 1950. Time of occurrence of the Kodiak Island pink salmon runs. University of Washington, Fisheries Research Institute, Circular No. 6, Kodiak Island Memorandum No. 1 (October 26, 1950). 2pp.

Brief discussion of the timing of odd-year and even-year pink salmon runs at Kodiak Island streams based on 16 years of weekly cannery case packs; timing of even-year runs variable (late-July to early-August); timing of odd-year runs more predictable (1st or 2nd week of August). -- [PINK]

**Bevan,** Donald E. 1953. Karluk Lake stream surveys, 1952. University of Washington, Fisheries Research Institute, Circular No. 43, Kodiak Island Memorandum No. 8 (February 23, 1953). 27pp.

Counts of sockeye salmon in Karluk Lake tributary streams in 1952, determined by periodic stream surveys; limnology of Karluk Lake (water levels, water temperature profiles with depth, Secchi disc depths); Karluk Lake weather conditions. -- [SOCKEYE, SPAWNING SURVEYS, LIMNOLOGY, WEATHER]

**Bevan,** Donald E. 1953. Stream surveys in the Kodiak area, 1952. University of Washington, Fisheries Research Institute, Circular No. 44 (March 12, 1953). 26pp.

Five surveys of the Karluk River in 1952, primarily for pink salmon, but sockeye salmon numbers also noted; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1953. Catch statistics - Broken Point to Outlet Cape. University of Washington, Fisheries Research Institute, Circular No. 54, Kodiak Island Memorandum No. 10 (November 23, 1953). 30pp.

Summary tables and graphs showing sockeye salmon catch, escapement, and total run in the Karluk District 1946-1953. -- [SOCKEYE, COMMERCIAL CATCH, ESCAPEMENT]

**Bevan,** Donald E. 1954. Stream surveys in the Kodiak area, 1953. University of Washington, Fisheries Research Institute, Circular No. 60 (February 1, 1954). 5pp.

Four surveys of the Karluk River in 1953, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1954. Stream surveys in the Kodiak Island area, 1954. University of Washington, Fisheries Research Institute, Circular No. 74 (December 27, 1954). 32pp.

Five surveys of the Karluk River in 1954, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir; evaluation of 1954 flooding on Karluk River basin spawning streams. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1956. Stream surveys in the Kodiak area, 1955. University of Washington, Fisheries Research Institute, Circular No. 85 (April 25, 1956). 43pp.

Karluk River not surveyed in 1955 because odd-year pink salmon runs were very small; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1956. Kodiak area catch statistics. University of Washington, Fisheries Research Institute, Circular No. 39 (revised December 14, 1956). 18pp.

Summary table and figure of Karluk District sockeye salmon escapement, catch, and total run for 1921-1956. -- [SOCKEYE, COMMERCIAL CATCH, ESCAPEMENT]

**Bevan,** Donald E. 1957. Stream surveys in the Kodiak Island area, 1956. University of Washington, Fisheries Research Institute, Circular No. 89 (June 24, 1957). 41pp.

Eight surveys of the Karluk River in 1956, primarily for pink salmon; 1954 floods did not appear to affect 1956 run; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1958. Stream surveys in the Kodiak Island area, 1957. University of Washington, Fisheries Research Institute, Circular No. 93 (June 25, 1958). 38pp.

Karluk River not surveyed in 1957 because odd-year pink salmon runs were very small; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E. 1959. Tagging experiments in Kodiak Island area with reference to the estimations of salmon (*Oncorhynchus*) populations. Ph.D. Thesis, University of Washington, Seattle, Washington. 173pp.

Important study of sockeye salmon migrations along the northwest coast of Kodiak Island and their movement into streams, including many into the Karluk River; study based on 1948-1949 field work; number of sockeye salmon tagged was 3,925 in 1948 and 7,277 in 1949; conclude that the sockeye salmon along the northwest coast were a distinct unit, having little exchange with other areas of Alaska. -- [SOCKEYE, MIGRATION, TAGGING]

**Bevan,** Donald E. 1962. Estimation by tagging of the size of migrating salmon populations in coastal waters (pp. 377-449). *In:* T.S.Y. Koo (ed.), Studies of Alaska red salmon, University of Washington Publications in Fisheries, New Series 1. 449pp.

Detailed study of sockeye salmon migrations along the west coast of Kodiak Island and movement into streams, including many into the Karluk River. -- [SOCKEYE, MIGRATION, TAGGING]

**Bevan,** Donald E., and Charles E. Walker. 1954. Karluk Lake stream surveys, 1953. University of Washington, Fisheries Research Institute, Circular No. 59, Kodiak Memorandum No. 11 (February 1, 1954). 41pp.

Detailed summary report of weekly stream surveys made at Karluk Lake and its tributaries in 1953; number of live and dead sockeye salmon present in the different spawning sites; water temperatures of spawning sites; Karluk River weir sockeye salmon counts; weather data; Karluk Lake limnology (water temperature profiles, Secchi disk depths, lake water level). -- [SOCKEYE, WEIR, SPAWNING SURVEYS, WEATHER, LIMNOLOGY]

**Bevan,** Donald E., and Charles E. Walker. 1955. Karluk Lake observations, 1954. University of Washington, Fisheries Research Institute, Circular No. 78, Kodiak Memorandum No. 14 (January, 1955). 47pp.

Detailed summary report of weekly stream surveys made at Karluk Lake and its tributaries in 1954; number of live and dead sockeye salmon present at the different spawning sites; water temperatures of spawning sites; Karluk River weir sockeye salmon counts; weather data and notes on extreme August flooding; Karluk Lake limnology (water temperature profiles, Secchi disk depths, lake water level); Karluk River discharge at different lake levels; 1954 bear sightings at Karluk Lake. -- [SOCKEYE, WEIR, SPAWNING SURVEYS, WEATHER, LIMNOLOGY, BEARS]

**Bevan,** Donald E., and Dexter F. Lall. 1965. Stream surveys in the Kodiak area, 1963. University of Washington, Fisheries Research Institute, Circular No. 244 (November 12, 1965). 34pp.

Karluk River not surveyed in 1963 because odd-year pink salmon runs were very small; weekly sockeye, Chinook, pink, and coho salmon escapements at Karluk River weir. -- [PINK, SOCKEYE, CHINOOK, COHO]

**Bevan,** Donald E., and Dexter F. Lall. 1967. Timing, escapement distribution, and catch, Kodiak Island salmon, 1964. University of Washington, Fisheries Research Institute, Circular No. 67-13 (August 31, 1967). 60pp.

Fifteen surveys of the Karluk River in 1964, primarily for pink salmon, but numbers of sockeye, Chinook, and chum salmon were also noted; weekly sockeye, Chinook, pink, and coho salmon escapements at Karluk River weir. -- [PINK, SOCKEYE, CHINOOK, COHO, CHUM]

**Bevan,** Donald E., and Jack Lechner. 1970. Timing, escapement distribution, and catch of Kodiak Island salmon, 1968. University of Washington, Fisheries Research Institute, Circular No. 70-6 (June 11, 1970). 98pp.

Thirteen surveys of the Karluk River in 1968, primarily for pink salmon, but numbers of sockeye and Chinook salmon were also noted; weekly sockeye, Chinook, pink, and coho salmon escapements at Karluk River weir. -- [PINK, SOCKEYE, CHINOOK, COHO]

**Bevan,** Donald E., Jack Lechner & Martin F. Eaton. 1971. Timing, escapement distribution, and catch of Kodiak Island salmon, 1969. University of Washington, Fisheries Research Institute, Circular No. 71-6 (August 30, 1971). 51pp.

Six surveys of the Karluk River in 1969, primarily for pink salmon, but none were observed; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Jack Lechner & Martin F. Eaton. 1972. Timing, escapement distribution, and catch of Kodiak Island salmon, 1970. University of Washington, Fisheries Research Institute, Circular No. 72-8 (June 26, 1972). 71pp.

Nine surveys of the Karluk River in 1970, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Jack Lechner & Martin F. Eaton. 1973. Timing, escapement distribution, and catch of Kodiak Island salmon, 1971. University of Washington, Fisheries Research Institute, Circular No. 73-2 (June 12, 1973). 52pp.

One survey of the Karluk River in 1971, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Jack Lechner & Martin F. Eaton. 1974. Timing, escapement distribution, and catch of Kodiak Island salmon, 1972. University of Washington, Fisheries Research Institute, Circular No. 74-3 (June 28, 1974). 72pp.

Nine surveys of the Karluk River in 1972, primarily for pink salmon, but 80,000 sockeye salmon were noted spawning below the weir; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen & Ken R. Manthey. 1975. Timing, escapement distribution, and catch of Kodiak Island salmon, 1973. University of Washington, Fisheries Research Institute, Circular No. 75-4 (June 16, 1975). 60pp.

Five surveys of the Karluk River in 1973, primarily for pink salmon, but none were noted; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & Lawrence M. Malloy. 1976. Timing, escapement distribution, and catch of Kodiak Island salmon, 1974. University of Washington, Fisheries Research Institute, Circular No. 76-2 (June 30, 1976). 71pp.

Seven surveys of the Karluk River in 1974, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir; 7,500 sockeye salmon estimated spawning below weir on October 12. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & Lawrence M. Malloy. 1980. Timing, escapement distribution, and catch of Kodiak Island salmon, 1976. University of Washington, Fisheries Research Institute, Circular No, 80-1(June, 1980). 68pp.

Two surveys of the Karluk River in 1976, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir; about 11,000 sockeye salmon spawned in the river below the weir and in the upper portion of the lagoon. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & Lawrence M. Malloy. 1980. Timing, escapement distribution, and catch of Kodiak Island salmon, 1978. University of Washington, Fisheries Research Institute, Circular No. 80-2 (June, 1980). 89pp.

Two surveys of the Karluk River in 1978, primarily for pink salmon; large pink salmon run; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & Lawrence M. Malloy. 1981. Timing, escapement distribution, and catch of Kodiak Island salmon, 1979. University of Washington, Fisheries Research Institute, Circular No. 81-5 (June 18, 1981). 89pp.

Three surveys of the Karluk River in 1979, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir; about 6,000 sockeye salmon spawned in the river below the weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey, Lawrence M. Malloy & David Prokopowich. 1982. Timing, escapement distribution, and catch of Kodiak Island salmon, 1980. University of Washington, Fisheries Research Institute, Circular No. 82-1 (June 11, 1982). 84pp.

Six surveys of the Karluk River in 1980, primarily for pink salmon; pink salmon weir counts >2,000,000; weekly sockeye salmon escapements at Karluk River weir; sockeye salmon counts affected by washout of weir and uncounted lagoon spawners. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & David Prokopowich. 1983. Timing, escapement distribution, and catch of Kodiak Island salmon, 1981. University of Washington, Fisheries Research Institute, Circular 83-2 (June 18, 1983). 67pp.

Surveys of the Karluk River in 1981, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey, Lawrence M. Malloy & David Prokopowich. 1984. Timing, escapement distribution, and catch of Kodiak Island salmon, 1982. University of Washington, Fisheries Research Institute, Circular 84-3 (June, 1984). 66pp.

Surveys of the Karluk River in 1982, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bevan,** Donald E., Paul ca. Pedersen, Kenneth R. Manthey & David Prokopowich. 1985. Timing, escapement distribution, and catch of Kodiak Island salmon, 1983. University of Washington, Fisheries Research Institute, Circular 85-2 (July 12, 1985). 93pp.

Surveys of the Karluk River in 1983, primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Bilton,** H. T., and H. B. Messinger. 1975. Identification of major British Columbia and Alaska runs of age 1.2 and 1.3 sockeye from their scale characters. International North Pacific Fisheries Commission, Bulletin Number 32: 109-129.

Analysis of scales from two age groups to identify origins of Canadian and Alaskan sockeye, with some samples from the Karluk River. -- [SOCKEYE, SCALES]

**Birge,** E. A., and W. H. Rich. 1927. Observations on Karluk Lake, Alaska. Ecology 8(3): 384.

Brief comments on Karluk Lake limnology, including lake morphology and heat budget, based upon the 1926 data collected by Willis H. Rich. -- [LIMNOLOGY]

**Black,** Charles Spurgeon. 1929. Chemical analyses of lake deposits. Transactions, Wisconsin Academy of Sciences, Arts and Letters 24: 127-133.

Limited data on the chemical composition of lake bottom deposits at Karluk, Thumb, and O'Malley Lakes in 1927. -- [LIMNOLOGY]

**Blackburn,** Chris. 1986. Lake fertilization proposed for Karluk. Alaska Fisherman's Journal (March): 45.

Brief article on the proposed fertilization of Karluk Lake with nitrogen and phosphorus for 5 years, 1986-1990. --[SOCKEYE, FERTILIZATION]

**Blackett,** Roger F. 1968. Kodiak Island sockeye salmon investigations. Alaska Department of Fish and Game, Annual Progress Report, Anadromous Fish Project (AFC-8-1). 9pp.

Report not examined, but presumed to contain information on Karluk Lake limnology and sockeye salmon run characteristics. -- [SOCKEYE, LIMNOLOGY]

**Blackett,** Roger F. 1973. Kodiak sockeye rehabilitation, 1971 and 1972 field seasons. Alaska Department of Fish and Game, Juneau, Completion Report, Anadromous Fish Project AFC-27 (May, 1973). 148pp.

Summary report on the sockeye salmon rehabilitation activities at Kodiak Island during the 1971 and 1972 field seasons, including the Thumb River system at Karluk Lake; fry migrations in the Thumb River drainage; fry length and weight; observations of mass stickleback migration in 1971; weir installed on Thumb River in 1971 and 1972; age, sex, length, and weight of Thumb River sockeye; spawning ground usage; water temperature, chemistry, and plankton of Thumb Lake. -- [SOCKEYE, FRY, STICKLEBACK, AGE, SEX, SIZE, RUN TIMING, SPAWNING, LIMNOLOGY]

**Blackett,** Roger F. 1979. Establishment of sockeye (*Oncorhynchus nerka*) and chinook (*O. tshawytscha*) salmon runs at Frazer Lake, Kodiak Island, Alaska. Journal of the Fisheries Research Board of Canada 36: 1265-1277.

Several million sockeye salmon eggs from Karluk Lake were planted at Frazer Lake in 1951-1956 to establish a new salmon run. -- [SOCKEYE, EGGS]

**Blackett,** Roger F. 1987. Karluk Lake sockeye project successful. Kodiak Daily Mirror, Weekend, Kodiak, July 31-August 2, 1987: 6-7.

Brief summary of sockeye salmon rehabilitation efforts at Karluk Lake from 1977 to 1987 by ADFG, including the Upper Thumb River hatchery and Karluk Lake fertilization project. -- [SOCKEYE, HATCHERY, FERTILIZATION]

**Blackett,** Roger F., and M. F. Eaton. 1968. Kodiak Island sockeye salmon investigations. Alaska Department of Fish and Game, Annual Technical Report, Anadromous Fish Project (AFC-8-1). 61pp.

Report not examined, but presumed to contain information on Karluk Lake limnology and sockeye salmon run characteristics. -- [SOCKEYE, LIMNOLGY]

**Blackett,** Roger F., Robert ca. Lebida & Louis A. Gwartney. 1969. Kodiak Island sockeye salmon investigations, 1968 field season. Alaska Department of Fish and Game, Annual Technical Report, Anadromous Fish Project (AFC-8-2). 104pp.

Summary report on the sockeye salmon investigations at Kodiak Island during the 1968 field season, including those at Karluk Lake; water temperatures, chemistry (pH, carbon dioxide, dissolved oxygen, alkalinity), and zooplankton collected from Karluk Lake in 1967 and 1968; rotifers most abundant in zooplankton; seasonal run distribution; adult sockeye age, sex, and length composition in 1967 and 1968; many unspawned dead sockeye found on the weir. -- [SOCKEYE, LIMNOLOGY, AGE, SEX, SIZE, RUN TIMING, DISEASE]

**Blackett,** Roger F., R. Alan Davis & P. A. Russell. 1970. Kodiak Island sockeye salmon investigations, 1969 field season. Alaska Department of Fish and Game, Annual Technical Report, Anadromous Fish Project (AFC-8-3). 194pp.

Report not examined, but presumed to contain 1969 information on Karluk Lake limnology and sockeye salmon run characteristics. -- [SOCKEYE, LIMNOLGY]

**Blackett,** Roger F., and Alan Davis. 1971. Kodiak sockeye rehabilitation, 1970 field season. Alaska Department of Fish and Game, Juneau, Annual Technical Report, Anadromous Fish Project (AFC-27). 123pp.

Summary report on the sockeye salmon rehabilitation activities at Kodiak Island during the 1970 field season, including those at Karluk Lake; age, sex, length, and weight of 1,054 Karluk sockeye adults; spawning ground usage; potential egg deposition. -- [SOCKEYE, SIZE, AGE, SEX, RUN TIMING, SPAWNING, EGG]

**Bower,** Ward T. 1912. Fish culture in Alaska (pp. 66-88). *In:* Barton Warren Evermann, Alaska fisheries and fur industries in 1911. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 766. 99pp.

Detailed description of Karluk hatchery buildings, facilities, and operations; eggs taken, fry liberated, and tax rebates at Karluk hatchery; search for hatchery site at Karluk Lake; observations of spawning sockeye. -- [SOCKEYE, HATCHERY, EGGS, FRY]

**Bower,** Ward T. 1921. Alaska fishery and fur-seal industries in 1920. US Department of Commerce, Bureau of Fisheries, Appendix VI to the Report of the US Commissioner of Fisheries for 1921, Bureau of Fisheries Document No. 909.

Brief mention of the stream watchman at Karluk in 1920. -- [SOCKEYE]

**Bower,** Ward T. 1922. Alaska fishery and fur-seal industries in 1921. US Department of Commerce, Bureau of Fisheries, Appendix X to the Report of the US Commissioner of Fisheries for 1922, Bureau of Fisheries Document No. 933.

Discussion of the Karluk sockeye investigations which were initiated in 1921; description and photo of the first Karluk weir; sockeye smolt and Dolly Varden observations. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1923. Alaska fishery and fur-seal industries in 1922. US Department of Commerce, Bureau of Fisheries, Appendix IV to the Report of the US Commissioner of Fisheries for 1923, Bureau of Fisheries Document No. 951.

Brief comments on operation of the Karluk weir in 1922; many Dolly Varden captured and destroyed, escapements of sockeye and Chinook salmon. -- [SOCKEYE, CHINOOK, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1925. Alaska fishery and fur-seal industries in 1923. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1924, Bureau of Fisheries Document No. 973.

Brief comments on operation of the Karluk weir in 1923; tagging studies along Alaska Peninsula showed a few returns at Karluk; escapements of sockeye, Chinook, and coho salmon, and steelhead. -- [SOCKEYE, CHINOOK, COHO, STEELHEAD, MIGRATION, WEIR]

**Bower,** Ward T. 1925. Alaska fishery and fur-seal industries in 1924. US Department of Commerce, Bureau of Fisheries, Appendix IV to the Report of the US Commissioner of Fisheries for 1925, Bureau of Fisheries Document No. 992.

Brief mention of the operations of the Karluk River weir in 1924; problems with pink salmon carcasses. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1926. Alaska fishery and fur-seal industries in 1925. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1926, Bureau of Fisheries Document No. 1008.

Brief summary of operations at the Karluk River weir in 1925; 30,221 Dolly Varden caught in traps and destroyed; Charles H. Gilbert collected sockeye scales at Karluk River. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1927. Alaska fishery and fur-seal industries in 1926. US Department of Commerce, Bureau of Fisheries, Appendix IV to the Report of the US Commissioner of Fisheries for 1927, Bureau of Fisheries Document No. 1023.

Brief summary of operations at the Karluk River weir in 1926; 47,000 smolt marked; Charles H. Gilbert, Willis H. Rich, and Seymour P. Smith made thorough survey of Karluk Lake. -- [SOCKEYE, SMOLT, WEIR]

**Bower,** Ward T. 1928. Alaska fishery and fur-seal industries in 1927. US Department of Commerce, Bureau of Fisheries, Appendix IV to the Report of the US Commissioner of Fisheries for 1928, Bureau of Fisheries Document No. 1040.

Brief summary of operations at the Karluk River weir in 1927; Charles H. Gilbert, Willis H. Rich, and Seymour P. Smith study Karluk River sockeye salmon; stomach contents study; Henry O'Malley visited Karluk weir July 13. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1929. Alaska fishery and fur-seal industries in 1928. US Department of Commerce, Bureau of Fisheries, Appendix VI to Report of Commissioner of Fisheries for the fiscal year 1929, Bureau of Fisheries Document No. 1064.

Brief summary of operations at the Karluk River weir in 1928; 50,000 sockeye smolt marked; Dolly Varden destroyed; Willis H. Rich and Seymour P. Smith study Karluk River sockeye salmon. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1930. Alaska fishery and fur-seal industries in 1929. US Department of Commerce, Bureau of Fisheries, Appendix X to Report of Commissioner of Fisheries for the fiscal year 1930, Bureau of Fisheries Document No. 1086.

Brief summary of operations at the Karluk River weir in 1929; 50,000 sockeye smolt marked; Dolly Varden destroyed; Willis H. Rich and Merrill W. Brown study Karluk River sockeye salmon. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1931. Alaska fishery and fur-seal industries in 1930. US Department of Commerce, Bureau of Fisheries, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1931.

Brief summary of operations at the Karluk River weir in 1930; 50,000 sockeye smolt marked; Dolly Varden destroyed; Willis H. Rich and J. Thomas Barnaby study Karluk River sockeye salmon. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1932. Alaska fishery and fur-seal industries in 1931. US Department of Commerce, Bureau of Fisheries, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1932.

Brief summary of operations at the Karluk River weir in 1931; 50,000 sockeye smolt marked; Dolly Varden destroyed; Willis H. Rich and J. Thomas Barnaby study Karluk River sockeye salmon. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1933. Alaska fishery and fur-seal industries in 1932. US Department of Commerce, Bureau of Fisheries, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1933.

Brief summary of operations at the Karluk River weir in 1932; J. Thomas Barnaby studies Karluk River sockeye salmon. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1934. Alaska fishery and fur-seal industries in 1933. US Department of Commerce, Bureau of Fisheries, Appendix II to Report of Commissioner of Fisheries for the fiscal year 1934.

Brief summary of operations at the Karluk River weir in 1933; 40,000 sockeye smolt marked; J. Thomas Barnaby studies Karluk River sockeye salmon. -- [SOCKEYE, SMOLT, WEIR]

**Bower,** Ward T. 1935. Alaska fishery and fur-seal industries in 1934. US Department of Commerce, Bureau of Fisheries, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1935.

Brief summary of operations at the Karluk River weir in 1934; 50,000 sockeye smolt marked; problems with pink salmon carcasses against weir. -- [SOCKEYE, SMOLT, PINK, WEIR]

**Bower,** Ward T. 1936. Alaska fishery and fur-seal industries in 1935. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 23, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1936.

Brief summary of operations at the Karluk River weir in 1936; 49,000 sockeye smolt marked. -- [SOCKEYE, SMOLT, WEIR]

**Bower,** Ward T. 1937. Alaska fishery and fur-seal industries in 1936. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 28, Appendix II to Report of Commissioner of Fisheries for the fiscal year 1937.

Brief summary of operations at the Karluk River weir in 1936; 49,000 sockeye smolt marked. -- [SOCKEYE, SMOLT, WEIR]

**Bower,** Ward T. 1938. Alaska fishery and fur-seal industries in 1937. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 31, Appendix II to Report of Commissioner of Fisheries for the fiscal year 1938.

Brief summary of operations at the Karluk River weir in 1937; Dolly Varden migration study. -- [SOCKEYE, DOLLY VARDEN, WEIR, MIGRATION]

**Bower,** Ward T. 1940. Alaska fishery and fur-seal industries in 1938. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 36, Appendix II to Report of Commissioner of Fisheries for the fiscal year 1939.

Brief summary of operations at the Karluk River weir in 1938; Dolly Varden migration study. -- [SOCKEYE, DOLLY VARDEN, WEIR, MIGRATION]

**Bower,** Ward T. 1941. Alaska fishery and fur-seal industries in 1939. US Department of the Interior, Bureau of Fisheries, Administrative Report No. 40, Appendix II to Report of Commissioner of Fisheries for the fiscal year 1939.

Brief summary of operations at the Karluk River weir in 1939; Dolly Varden migration study. -- [SOCKEYE, DOLLY VARDEN, WEIR, MIGRATION]

**Bower,** Ward T. 1942. Alaska fishery and fur seal industries: 1940. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 2.

Brief summary of operations at the Karluk River weir in 1940; Dolly Varden study. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1943. Alaska fishery and fur seal industries: 1941. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 5.

Brief summary of operations at the Karluk River weir in 1941; Dolly Varden bounties discontinued; Dolly Varden study. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1944. Alaska fishery and fur seal industries: 1942. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 8. 52pp.

Brief summary of operations at the Karluk River weir in 1942; Dolly Varden study. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Bower,** Ward T. 1944. Alaska fishery and fur seal industries: 1943. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 10. 57pp.

Brief summary of operations at the Karluk River weir in 1943. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1946. Alaska fishery and fur seal industries: 1944. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 13. 79pp.

Brief summary of operations at the Karluk River weir in 1944. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1948. Alaska fishery and fur-seal industries: 1945. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 15.

Brief summary of operations at the Karluk River weir in 1945. -- [SOCKEYE, WEIR]

**Bower,** Ward T. 1948. Alaska fishery and fur-seal industries: 1946. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 17.

Brief summary of operations at the Karluk River weir in 1946. -- [SOCKEYE, WEIR]

**Bower,** Ward T., and Henry D. Aller. 1915. Alaska fisheries and fur industries in 1914. US Department of Commerce, Bureau of Fisheries, Appendix IX to the Report of the US Commissioner of Fisheries for 1914, Bureau of Fisheries Document No. 819. 89pp.

Brief comments about Karluk River hatchery, number of fry liberated, and tax rebates; fecundity of hatchery females was 2,542 eggs; expresses doubts about liberating fry into Karluk Lagoon and thinks hatchery will be moved to the Karluk Lake; 7,400,000 pink eggs taken for Afognak hatchery, 5,000,000 of these for shipment to Maine in 1914. -- [SOCKEYE, PINK, HATCHERY, EGGS]

**Bower,** Ward T., and Henry D. Aller. 1917. Alaska fisheries and fur industries in 1915. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1915, Bureau of Fisheries Document No. 834. 140pp.

Brief comments about Karluk River hatchery, number of fry liberated, and tax rebates; fecundity of hatchery females was 2,620 eggs; 8,050,000 pink eggs taken for Afognak hatchery in 1914, 5,000,000 of these taken for shipment to Maine, from the remaining eggs 1,049,610 fry liberated; comments on salmon egg predation by gulls and terns. -- [SOCKEYE, PINK, HATCHERY, EGGS, BIRDS]

**Bower,** Ward T., and Henry D. Aller. 1917. Alaska fisheries and fur industries in 1916. US Department of Commerce, Bureau of Fisheries, Appendix II to the Report of the US Commissioner of Fisheries for 1917, Bureau of Fisheries Document No. 838. 118pp.

Brief comments on closure of Karluk River hatchery June 30, 1916; mention of hatchery fry liberated and tax rebates; remaining Karluk hatchery eggs (1,016,000) transferred to Afognak hatchery; during 1896-1916 Karluk hatchery took 627,000,000 sockeye eggs and released 515,000,000 fry; comments on salmon fry and egg predation by gulls and terns. -- [SOCKEYE, HATCHERY, BIRDS]

**Bower,** Ward T., and Henry D. Aller. 1918. Alaska fisheries and fur industries in 1917. US Department of Commerce, Bureau of Fisheries, Appendix II to the Report of the US Commissioner of Fisheries for 1917, Bureau of Fisheries Document No. 847. 123pp.

Hearing notice and order closing Karluk River and Lagoon to salmon fishing, except for Native subsistence; 1917 Karluk River sockeye salmon run large. -- [SOCKEYE]

**Bradford,** Michael J. 1995. Comparative review of Pacific salmon survival rates. Canadian Journal of Fisheries and Aquatic Science 52: 1327-1338.

Comprehensive study of Pacific salmon survival rates from many populations, including data for egg-fry, egg-smolt, and fry-smolt for Karluk River sockeye salmon. -- [SOCKEYE, JUVENILE, SURVIVAL RATE]

**Bradley,** J. Chester. 1908. Notes on two amphipods of the genus *Corophium* from the Pacific Coast. University of California Publications in Zoology 4(4): 227-252.

Taxonomic description of the amphipod *Corophium salmonis* from samples collected by the BOF (probably by Cloudsley Rutter) from the stomachs of juvenile sockeye (102-145 mm), coho (71-79 mm), and Chinook (132 mm) salmon at Karluk beach and estuary in June and July 1903. – [SOCKEYE, COHO, CHINOOK, INVERTEBRATES]

**Brennan,** Kevin. 1995. Kodiak management area commercial salmon annual management report, 1993. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K95-3.

Comprehensive summary report on the 1993 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin. 1998. Kodiak Management Area commercial salmon annual management report, 1996. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K98-35 (June, 1998).

Comprehensive summary report on the 1996 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan**, Kevin. 2000. Kodiak Management Area commercial salmon annual management report, 1997. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K00-27.

Comprehensive summary report on the 1997 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin. 2001. Kodiak Management Area commercial salmon annual management report, 2001. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K01-62 (December 2001).

Comprehensive summary report on the 2001 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin. 2004. Commercial salmon fisheries of the Kodiak Management Area: A report to the Alaska Board of Fisheries, January 2005. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 04-14 (December 2004).

Comprehensive summary report on the 2002-2004 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, Larry Malloy, Dave Prokopowich & Dennis Gretsch. 1992. Kodiak Management Area annual salmon management report, 1989. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K92-30 (August, 1992). 262pp.

Comprehensive summary report on the 1989 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, David Prokopowich & Dennis Gretsch. 1993. Kodiak Management Area commercial salmon annual management report, 1992. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K93-28 (October, 1993). 278pp.

Comprehensive summary report on the 1992 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, David Prokopowich & Dennis Gretsch. 1994. An overview of the Kodiak Management Area commercial salmon fisheries, a report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K94-8 (February, 1994).

Comprehensive summary report on the 1993 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, Dave Prokopowich & Dennis Gretsch. 1996. Kodiak Management Area commercial salmon annual management report, 1994. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K96-38 (July, 1996). 277pp.

Comprehensive summary report on the 1994 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, Dave Prokopowich & Dennis Gretsch. 1997. Kodiak management area commercial salmon annual management report, 1995. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K97-30 (April 1997). 202pp.

Comprehensive summary report on the 1995 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Brennan,** Kevin, Dennis Gretsch & Jeff Wadle. 2003. Kodiak Management Area harvest strategy for the 2003 commercial salmon fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K03-24 (May 2003). 31pp.

Discussion of harvest plans for the 2003 commercial salmon fishing season, including the plans for Karluk sockeye salmon; plan to curtail the very early returns of Karluk sockeye salmon; summary of 2002 harvest and 2003 projection for Karluk sockeye. -- [SOCKEYE, MANAGEMENT]

**Brennan,** Kevin, Jeff Wadle & Dennis Gretsch. 2004. Kodiak Management Area harvest strategy for the 2004 commercial salmon fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K04-19.

Discussion of harvest plans for the 2004 commercial salmon fishing season, including the plans for Karluk sockeye salmon; plan to curtail the very early returns of Karluk sockeye salmon; summary of 2003 harvest and 2004 projection for Karluk sockeye. -- [SOCKEYE, MANAGEMENT]

**Brennan,** Kevin, Jeff Wadle & Dennis Gretsch. 2005. Kodiak Management Area harvest strategy for the 2005 commercial salmon fishery. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 05-32 (May 2005). 30pp.

Discussion of harvest plans for the 2005 commercial salmon fishing season, including the plans for Karluk sockeye salmon; plan to curtail the very early returns of Karluk sockeye salmon; summary of 2004 harvest and 2005 projection for Karluk sockeye; release of Chinook salmon. -- [SOCKEYE, CHINOOK, MANAGEMENT]

**Brodie,** Joan. 1991. Kodiak Management Area salmon escapement counts for fish-weirs accumulative daily counts 1982-1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K91-27 (October, 1991). 221pp.

Detailed daily cumulative counts at the Karluk River weir 1982-1991 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Brodie,** Joan R. 1993. Kodiak Management Area salmon escapement cumulative counts for fish-weirs, 1984-1993. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K93-31 (December, 1993). 217pp.

Detailed daily cumulative counts at the Karluk River weir 1984-1993 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead; description of Karluk weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Brodie,** Joan R. 1996. Kodiak Management Area salmon escapement cumulative counts for fish-weirs, 1987-1996. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K96-51 (November, 1996). 175pp.

Detailed daily cumulative counts at the Karluk River weir 1987-1996 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead; description of Karluk weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Brodie,** Joan R. 1999. Kodiak Management Area salmon escapement cumulative counts for fish-weirs, 1989-1998. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K99-54.

Detailed daily cumulative counts at the Karluk River weir 1989-1998 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead; description of Karluk weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Brodie,** Joan R., and Dennis R. Gretsch. 1993. Kodiak Management Area salmon escapement cumulative counts for fish-weirs, 1983-1992. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K93-18 (April, 1993). 177pp.

Detailed daily cumulative counts at the Karluk River weir 1983-1992 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead; description of Karluk River weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Brodie,** Joan R., Kevin R. Brennan & Larry Malloy. 1997. Kodiak Management Area annual commercial and subsistence salmon management report, 1990. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K97-5 (January 1997). 191pp.

Comprehensive summary report on the 1990 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Bruce,** Miner W. 1895. Alaska: Its history and resources, gold fields, routes and scenery. Lowman & Hanford Stationery and Printing Co., Seattle, WA. 128pp.

Brief mention of the abundant runs of sockeye salmon in the Karluk River; Karluk River labeled the "River of Life"; comments on the canneries and their operations; photograph of the Karluk Spit canneries. – [SOCKEYE, CANNERIES]

**Buck,** Eugene H., William J. Wilson, Larry S. Lau, Caedmon Liburd & Harold W. Searby. 1975. Kadyak: a background for living. Arctic Environmental Information and Data Center, University of Alaska, Anchorage. 326pp.

A comprehensive overview of Kodiak Island, its history, climate, geology, natural disasters, and resources, including salmon fisheries. Limited mention of Karluk Lake and River, and the Karluk River salmon fisheries. -- [GENERAL, HISTORY, SOCKEYE]

**Buckley,** Mark. 1991. Sport fishing paradise, Karluk has it all. Kodiak Daily Mirror (September 27, 1991): 210, Kodiak, AK.

Brief description of two current sport fishing lodges on Karluk Lagoon. -- [SPORT FISHING]

**Buckley,** Mark. 1991. Filling the smoker; Karluk-style subsistence fishing. Kodiak Daily Mirror (September 27, 1991): 21, Kodiak, AK.

Brief description of present day subsistence fishing in Karluk Lagoon. -- [SUBSISTENCE]

**Burger,** Carl V. 1987. Thermal adaptations in Alaskan chinook and sockeye salmon (p. 553). *In:* Michael J. Dadswell, Ronald J. Klauda, Christine M. Moffitt, Richard L. Saunders, Roger A. Rulifson & John E. Cooper (eds.), Common strategies of anadromous and catadromous fishes, American Fisheries Society Symposium 1, Bethesda, MD.

Brief discussion of Chinook and sockeye salmon adaptations to different thermal regimes within several Alaskan watersheds, including the Karluk; spawning times and locations influenced by water temperatures; upstream lakes modify downstream water temperatures and sockeye salmon spawning. -- [SOCKEYE, CHINOOK, SPAWNING]

**Burger,** Carl V., Kim T. Scribner, William J. Spearman, Charles O. Swanton & Donald E. Campton. 2000. Genetic contribution of three introduced life history forms of sockeye salmon to colonization of Frazer Lake, Alaska**.** Canadian Journal of Fisheries and Aquatic Science 57(10): 2096-2111.

Detailed genetic analysis of sockeye salmon from 7 spawning sites in Frazer Lake and 3 donor populations, including late-run lake shoreline spawners from Karluk Lake (east of O'Malley Beach); two shoreline-spawning populations in Frazer Lake were most similar to the Karluk Lake donors; Karluk Lake donor sockeye also contributed genetically to two tributary-spawning populations; fertilized eggs (200,000-1,092,000) from Karluk Lake sockeye were introduced to Frazer Lake annually in 1951-1955; Frazer Lake sockeye run bimodal. -- [SOCKEYE, GENETICS, SUBPOPULATIONS]

**Burger,** Irving L. 1980. An annotated bibliography of the salmonid fish and fisheries of Kodiak Island, Alaska. US Fish and Wildlife Service, National Fisheries Research Center, Seattle, WA (September 18, 1980).

Useful annotated salmonid bibliography for the Kodiak Island area, with many Karluk Lake and River references. -- [SOCKEYE]

**Burgner,** Robert L., Charles J. Di Costanzo, Robert J. Ellis, George Y. Harry, Jr., Wilbur L. Hartman, Orra E. Kerns, Jr., Ole A. Mathisen & William F. Royce. 1969. Biological studies and estimates of optimum escapements of sockeye salmon in the major river systems in Southwestern Alaska. Fishery Bulletin 67(2): 405-459. (Available at: http://fishbull.noaa.gov/67-2/burgner.pdf; accessed 28 July 2011)

Important comparative study of many sockeye salmon river systems in southwestern Alaska, including Karluk, to determine optimum escapements by examining run statistics and capacities of spawning and nursery areas; physical, chemical, and biological characteristics of Karluk Lake; escapement characteristics; Karluk spawning area = 34.9 hectares, possibly a limiting factor; potential redd sites = 174,000; Karluk nursery area; competitors and predators; smolts. -- [SOCKEYE, LIMNOLOGY, SPAWNING, FRY, SMOLT]

**Burgner,** Robert L. 1991. Life history of sockeye salmon (*Oncorhynchus nerka*) (pp. 1-117). *In:* ca. Groot & L. Margolis (eds.). 1991. Pacific salmon life histories. University of British Columbia Press, Vancouver, BC. 564pp.

Important summary of current knowledge about sockeye salmon from throughout the species range, including information about the Karluk River sockeye salmon placed in perspective to other sockeye salmon populations. -- [SOCKEYE]

**Burke,** J., and Daniel Mulcahy. 1983. Retention of infectious haematopoietic necrosis virus infectivity in fish tissue homogenates and fluids stored at three temperatures. Journal of Fish Diseases 6: 543-547.

Study of how temperature affects the infectivity of IHN virus in stored fish samples; IHN virus was taken from serum of Karluk River female Chinook salmon. -- [CHINOOK, DISEASE]

**Burkett,** R. D., and J. P. Koenings. 1986. Karluk Lake: The Rubic's Cube for aquatic scientists. Alaska Fish and Game, May-June, 1986: 15-16.

Important discussion of the reasons for the historic decline in the Karluk River sockeye salmon runs; summary of life history aspects; spawning times and locations; Karluk Lake limnology and changes in lake fertility; salmon carcass nutrient contribution to Karluk Lake; historic changes in sockeye smolt sizes and abundance; juvenile growth in Karluk Lake; recommendations to (1) fertilize Karluk Lake to synchronize food production and fry emergence, and (2) change commercial harvests to give greater protection to the early runs and less to the later runs. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, SPAWNING, GROWTH, SMOLT, THEORIES OF DECLINE]

**Burns,** Fox. 1965. Hunting the Kodiak with Nick. Alaska Sportsman 31(12): 49-52.

Description of a bear hunt at Karluk Lake by Fox Burns and guide Nick Malutin in the 1960s. -- [BEARS]

**Caldentey,** Iris O. 2007. Kodiak commercial fisheries salmon management field camp and weir operational plan, 2008. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 4K08-01 (December 2007), Kodiak. 43pp.

Description of the goals, methods, and duties of installing and operating a salmon counting weir in the Kodiak area, including that at the Karluk River; protocols for counting migrants, collecting salmon biological data, and reporting information; data sheets and records; guidelines for field camp operations, organization, maintenance, and safety; equipment list; camp closing tasks; specific procedures for operating the Karluk River weir; instructions on using the communication and electrical equipment. -- [WEIR, SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD]

**Caldentey,** Iris O. 2007. Kodiak Management Area salmon daily and cumulative escapement counts for river systems with fish weirs, 1998-2007. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 07-57 (December 2007), Anchorage. 186pp.

Detailed daily and cumulative counts at the Karluk River weir 1998-2007 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead (upstream and downstream); weir installation and removal dates, 1998-2007; weir operations, location, and problems, brief history and photograph of the 101 m Karluk River weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Caldentey,** Iris O. 2009. Kodiak Management Area salmon daily and cumulative escapement counts for river systems with fish weirs, 1999-2008. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 09-18 (April 2009), Anchorage. 198pp.

Detailed daily and cumulative counts at the Karluk River weir 1999-2008 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead (upstream and downstream); weir installation and removal dates, 1999-2008; weir operations, location, and problems, brief history and photograph of the 101 m Karluk River weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Caldentey,** Iris O. 2009. Kodiak commercial fisheries salmon management field camp and weir operational plan, 2009. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Regional Information Report No. 4K09-08 (June 2009), Kodiak. 56pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.2009.08.pdf; accessed 28 July 2011)

Description of the goals, methods, and duties of installing and operating a salmon counting weir in the Kodiak area, including that at the Karluk River; protocols for counting migrants, collecting salmon biological data, and reporting information; data sheets and records; guidelines for field camp operations, organization, maintenance, and safety; equipment list; camp closing tasks; specific procedures for operating the Karluk River weir; instructions on using the communication and electrical equipment; key and drawings for identifying juvenile salmonid fishes. -- [WEIR, SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD]

**Capps,** Stephen R. 1937. Kodiak and adjacent islands, Alaska (pp. 111-184). *In:* Mineral resources of Alaska, 1935, US Geological Survey, Bulletin 880-C.

Detailed description of the geography and geology of Kodiak Island, including the geographic relief, coastline, drainages, climate, vegetation, wildlife, human population, routes of travel, and geologic characteristics. -- [PHYSICAL]

**Chaffin,** Yule, Trisha Hampton Krieger & Michael Rostad. 1983. Alaska's Konyag country. Pratt Publishing, [Anchorage, AK?]. 269pp.

Brief historical summary of Karluk Village from early times to 1982. -- [GENERAL, HISTORY]

**Chamberlain,** F. M. 1907. Some observations on salmon and trout in Alaska. US Department of Commerce and Labor, Bureau of Fisheries Report Comm. Fish. for the fiscal year 1906 and special papers. Bureau of Fisheries Document No. 627 (December 18, 1907). 112pp.

Important early observations on Karluk River sockeye, Chinook, coho, chum, and pink salmon, steelhead and charr, based upon Cloudsley L. Rutter's 1903 field studies; fry movements and food habits; smolt size and

food; adult migrations; home stream; spawning habitats and times; predators. -- [SOCKEYE, CHINOOK, COHO, CHUM, PINK, FRY, SMOLT, FOOD, SPAWNING, PREDATION]

**Chatto,** Tony. 1990. Kodiak National Wildlife Refuge, Fishery Management Plan. US Department of Interior, Fish and Wildlife Service, Region 7, Kodiak National Wildlife Refuge, Kodiak (August, 1990). 63pp.

Management report on the fishes of Kodiak National Wildlife Refuge, including Karluk Lake and River. -- [SOCKEYE]

**Chrest,** Howard R. 1964. Nesting of the bald eagle in the Karluk Lake drainage on Kodiak Island, Alaska. Master of Science Thesis, Colorado State University, Fort Collins, Colorado. 75pp.

Report on the field studies of nesting bald eagles at Karluk Lake in 1959-1962; the study included location of bald eagle nests in cottonwood trees and periodic monitoring through the nesting season; nesting density, nesting behaviors, number and condition of eggs and eaglets; determination of bald eagle territories (12-15); also collected weekly growth rates of bald eagle young, but this data not included in thesis; leg banding of eaglets. -- [BIRDS]

**Clapsadl,** Mark. 2002. Age composition and spawning escapement of chinook salmon in the Karluk, Ayakulik, and Chignik rivers, Alaska, 1997 and 1998. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 02-02 (March, 2002). 64pp.

Detailed study of Karluk River Chinook salmon in 1997-1998; age, sex, and length for Chinook salmon (215 fish in 1997, 179 in 1998) at the weir and sport-caught fish; sport fishing effort, harvest, and catch of Chinook salmon; daily Chinook salmon weir counts 1997-1998; commercial and subsistence harvests of Karluk River Chinook salmon; sport harvest and catch of Karluk steelhead, sockeye salmon, and Dolly Varden); Chinook run mostly completed by 15 July. -- [CHINOOK, AGE, SEX, LENGTH, SCALES, WEIR SPORT FISHING, SUBSISTENCE, STEELHEAD, SOCKEYE, DOLLY VARDEN]

**Clark,** John H., Andrew McGregor, Robert D. Mecum, Paul Krasnowski & Amy M. Carroll. 2006. The commercial salmon fishery in Alaska. Alaska Fishery Research Bulletin 12(1): 1-146. (Available at: http://www.adfg.alaska.gov/static/home/library/PDFs/afrb/clarv12n1.pdf; accessed 28 July 2011)

Comprehensive historical and current review of the commercial fishery in Alaska, including data on Karluk's sockeye and Chinook salmon; history of fisheries regulatory authority and management in Alaska; salmon hatcheries; ADFG funding; salmon harvests, users, methods, and economic values; detailed discussion of each of 11 major Alaskan salmon fisheries (historic catches, values, escapements, gear type, management, fiscal budget), including the Kodiak area; 1976-2005 escapements of Karluk Chinook and sockeye (early and late runs) salmon; biological escapement goal for Karluk sockeye = 100,000-210,000 early run and 170,000-380,000 late run; . – [SOCKEYE, CHINOOK, HISTORY, FISHERY, MANAGEMENT]

**Clark,** Robert, Mark Willette, Steve Fleischman & Doug Eggers. 2007. Biological and fishery-related aspects of overescapement in Alaskan sockeye salmon *Oncorhynchus nerka.* Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Special Publication No. 07-17 (December 2007). 113pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/Sp07-17.pdf; accessed 1 August 2011)

Detailed analysis and discussion of overescapement in Alaskan sockeye salmon; biological and fishery related effects of overescapement; analysis of 40 sockeye stocks, including Karluk's early- and late-run; most of the 40 sockeye stocks had overescapement; biological escapement goals for Karluk's early-run (100,000-210,000) and late-run (170,000-380,000); stock-recruitment analysis and fishery performance of Karluk's early- and late-run sockeye for brood years 1981-1996 and run years 1985-2003; maximum sustainable yield = 334,193 (Karluk early-run) and 768,279 (Karluk late-run); escapement at maximum sustainable yield = 148,289 (Karluk early-run) and 273,255 (Karluk late-run); escapement at carrying capacity = 401,757 (Karluk early-run) and 770,164 (Karluk late-run); exploitation rate at MSY = .69 (Karluk early-run) and .74 (Karluk late-run); observed exploitation rate = .46 (Karluk early-run) and .48 (Karluk late-run). – [SOCKEYE, FISHERY, MANAGEMENT]

**Clark,** Webster K. 1957. Seasonal food habits of the Kodiak bear. Transactions of the North American Wildlife Conference 22: 145-149.

Description of Kodiak brown bear food habits, much of the data from the Karluk Lake drainage; salmon are important food items in mid-summer; vegetation and berries important food; claim that the acidity of high bush

cranberry may help bears dislodge *Diphyllobothrium* tapeworm acquired during the consumption of sockeye salmon. -- [SOCKEYE, BEARS, PARASITES]

**Clark,** W. K. 1957. The electric fence as a deterrent to use of salmon streams by Kodiak bear (pp. 24-26). *In:* A.W. Johnson (ed.), Science in Alaska, 1957, Proceedings, Eighth Alaska Science Conference, Alaska Division, American Association for the Advancement of Science, Anchorage, Alaska, September 10 to 13, 1957.

Short description of using 4 types of electric fence on Karluk Lake tributaries to deter brown bears from entering streams with spawning sockeye salmon; differences in bear predation on sockeye salmon. -- [SOCKEYE, BEARS, PREDATION]

**Clark,** Webster K. 1959. Kodiak bear-red salmon relationships at Karluk Lake, Alaska. Transactions of the North American Wildlife Conference 24: 337-345.

Observations and studies of Kodiak brown bear feeding behavior on sockeye salmon in Karluk Lake tributaries; sockeye salmon spawning behavior in small streams; bears feed less on salmon after berries ripen; bear predation on unspawned sockeye varied from 1% to 30%; claim that removal of salmon carcasses from small streams by bears benefits the salmon by improving water quality and decreasing fungal levels. -- [SOCKEYE, BEARS, PREDATION, SPAWNING]

**Clark,** Webster K. 1965. Bear study - Karluk Lake, 1955. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F 10. 41pp.

Summary report on the 1955 field studies and observations at Karluk Lake, mainly of brown bears; bear population estimates, age composition, weights, movements, food habits, parasites, and sport hunter harvest; use of electric fences and firecrackers to keep bears from salmon spawning streams; bear predation on sockeye salmon low in Halfway Creek; sockeye tagging study showed spawning occurred soon after adults enter small creeks; food contents of 109 Dolly Varden (and/or Arctic charr); food found at bald eagle nests; July-October daily bird lists; cestode cysts found in sockeye carcasses; Karluk Lake water temperatures. -- [SOCKEYE, BEARS, PREDATION, SPAWNING, DOLLY VARDEN, BIRDS, PARASITES, LIMNOLOGY]

**Cobb,** John N. 1907. Report on the fisheries of Alaska (pp. 1-24). *In:* The fisheries of Alaska in 1906. US Department of Commerce and Labor, Bureau of Fisheries Document No. 618.

Brief mention of the Karluk River hatchery, eggs taken, and fry liberated; experiments of feeding sockeye fry cannery trimmings. -- [SOCKEYE, HATCHERY]

**Cobb,** John N. 1911. The salmon fisheries of the Pacific Coast. US Department of Commerce and Labor, Bureau of Fisheries Document No. 751.

Brief mention of the Karluk River salmon canneries and hatchery; description of laws mandating hatcheries in 1900 and 1902; summary of yearly sockeye salmon egg takes and fry released, 1897-1910. -- [SOCKEYE, CANNERIES, HATCHERY]

**Cobb,** John N. 1930. Pacific salmon fisheries. US Department of Commerce, Bureau of Fisheries, Appendix XIII to the Report of the Commissioner of Fisheries for 1930, Bureau of Fisheries Document No. 1092: 409-704.

Brief physical description of the Karluk River, Lagoon, and Spit; history of the early Karluk River sockeye salmon fishery and various canneries, 1867-1928. -- [SOCKEYE, PHYSICAL, CANNERIES]

**Coker,** R.E. 1923. Progress in biological inquiries, 1922. Report of the Division of Scientific Inquiry for the fiscal year 1922. US Department of Commerce, Bureau of Fisheries, Appendix XIII to the Report of the US Commissioner of Fisheries for 1922, Bureau of Fisheries Document No. 936.

Brief comments on Karluk River weir and sockeye salmon studies by Charles H. Gilbert and Henry O'Malley in 1921; 1,000,000 sockeye salmon observed on spawning grounds. -- [SOCKEYE, WEIR]

**Conkle,** Charles Y., Robert F. Raleigh & John B. Owen. 1959. Salmon survival investigations. Sockeye salmon survival studies at Karluk Lake, Kodiak Island, 1958. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region, Manuscript Report - File, MR-F 23 (June 11, 1959). 82pp.

Summary report on the 1958 field season at Karluk and Bare Lakes; upstream migration of newly emerged fry in upper Karluk River; attempts to measure smolt migration; operation of counting tower; fecundity of sockeye; potential egg deposition; spawning habitat types and seasonal use; spawning behavior; diurnal use of spawning streams; spawner length of life; egg survival; spawning pen study; limnology of Karluk Lake and tributary streams; juvenile sockeye length frequencies; limited Bare Lake post-fertilization studies. -- [SOCKEYE, FECUNDITY, EGGS, SPAWNING, JUVENILES, SMOLT, WEIR, LIMNOLOGY, PHYSICAL]

**Connelly,** Dolly. 1969. Mighty hunter. The Blade, Sunday Magazine, Toledo, Ohio (8 June 1969): 30-31, 34-39.

Description of a November 1967 brown bear hunt at Karluk Lake by King Mahendra and Queen Ratna of Nepal; guided by Al Burnett; hunting party used BOF facilities at Camp Island; controversy because bear killed in area closed to hunting. -- [BEARS]

**Conrad,** Robert Harvey. 1984. Scale pattern analysis as a method for identifying the origins of sockeye salmon (*Oncorhynchus nerka)* in the waters surrounding the Kodiak Archipelago. Alaska Department of Fish and Game, Information Leaflet Number 241. 49 p.

Use of scale pattern analysis to identify the different stocks of sockeye salmon in the Kodiak Island area during 1981, including fish from the Karluk River; scale characteristics of 1.3 and 2.2 fish; width and number of circuli in first and second freshwater zones; width and number of circuli in first marine zone; linear discriminant functions. -- [SOCKEYE, SCALES]

**Cordova Daily Times.** 1927. Two Stanford scientists are on way north; Leave Bellingham for Kodiak Island to continue their annual study of salmon habits. Cordova Daily Times (May 19, 1927), Cordova, AK.

Brief article on the travels of Charles H. Gilbert and Willis H. Rich to Karluk to continue their sockeye salmon studies. -- [SOCKEYE]

**Couch,** Andy. 1987. Karluk steelhead. Alaska Outdoors (December): 10-13.

Brief article about fall sport fishing on the lower Karluk River. -- [STEELHEAD, SPORT FISHING]

**Croasdale,** Hannah T. 1958. Freshwater algae of Alaska. 2. Some new forms from the plankton of Karluk Lake. Transactions of the American Microscopical Society 77(1): 31-35.

Descriptions of new species of desmid algae from Karluk Lake. -- [LIMNOLOGY, PLANTS]

**Crowell,** Aron L., Amy F. Steffian & Gordon L. Pullar (Editors). 2001. Looking both ways: heritage and identity of the Alutiiq people. University of Alaska Press, Fairbanks. 265pp.

Discussion of the prehistory, history, ethnography, archaeology, and cultural identity and traditions of the Alutiiq people, including those at Karluk; illustrations of ethnographic objects; photographs of Karluk Village, Lagoon, and Spit. – [PREHISTORY, HISTORY, SUBSISTENCE]

**Crozier,** S. Neal. 1989. Excavation at a late prehistoric dwelling structure on Kodiak Island, Alaska. Arctic Anthropology 26(2): 78-95.

Analysis of an excavated prehistoric (640-1500 AD) dwelling site at the head of Larsen Bay near Karluk River Portage trail; artifacts found included fishhooks, stone net sinkers & harpoon darts; 2,000 years ago Native population depended on marine resources. -- [PREHISTORY, NATIVE FISH USE]

**Cushing,** D. H. 1971. The dependence of recruitment on parent stock in different groups of fishes. Journal du Conseil International pour L' Exploration de la Mer 33(3): 340-362.

Detailed analysis of stock and recruitment data for many groups of fishes, including Pacific salmon; Karluk River sockeye and pink salmon data are analyzed. -- [SOCKEYE, PINK]

**Cutler,** John (ed.). 1899. Reports of patent, design, trade mark, and other cases. Together with a digest of the cases reported in 1899. Illustrated Official Journal (Patents), Patent Office, London, England, Volume 16 (23). 654pp.

Description of an 1899 English lawsuit by APA against Robert Crooks & Co. of Liverpool for infringement of their “Moosehead Brand” sockeye salmon can label (from Nushagak); Crooks marketed canned red salmon

under a similar "Deerhead Brand" packed by Pacific Steam Whaling Company at Karluk; England was a large market for Alaskan canned salmon during the early fishery. – [SOCKEYE, CANNERIES]

**Daily Alaska Empire.** 1930. Failure cause is not known, says Dr. Rich. Bureau of Fisheries in dark as to failure of red run at Karluk. Daily Alaska Empire (18 August 1930), Juneau, AK.

Brief article on the failure of the 1930 sockeye salmon run at the Karluk River and some possible causes. -- [SOCKEYE]

**Daily Alaska Empire.** 1954. Sailors at Kodiak Navy Station raise 'em, plant 'em eat 'em. Daily Alaska Empire (August 18, 1954), Juneau, AK.

Brief article on 1954 Kodiak Conservation Club hatchery operations and Karluk River steelhead egg take; discovery of a two-headed fry and a three-eyed fry. -- [STEELHEAD]

**Davydov,** G.I. 1977. Two voyages to Russian America, 1802-1808. Translated by Colin Bearne. Edited by Richard A. Pierce. Materials for the Study of Alaska History No. 10, The Limestone Press, Kingston, Ontario. 257pp.

Important report on the Koniag culture and fish use in 1803; the Karluk River was used as a source of dried salmon; description of fishing methods using weirs and brief comments on the salmon run timing. -- [SOCKEYE, SUBSISTENCE]

**DeLacy,** Allan Clark. 1941. Contributions to the life histories of two Alaskan charrs, *Salvelinus malma* (Walbaum) and *Salvelinus alpinus* (Linnaeus). Ph.D. thesis, University of Washington, Seattle, Washington. 114pp.

Comprehensive study of Dolly Varden and Arctic charr life histories at Karluk Lake in 1935-1940; tagging and migration; growth; age; food habits; length-weight; spawning. -- [DOLLY VARDEN, ARCTIC CHARR, MIGRATION, GROWTH, AGE, FOOD, SIZE, SPAWNING]

**DeLacy,** Allan ca., and W. Markham Morton. 1943. Taxonomy and habits of the charrs, *Salvelinus malma* and *Salvelinus alpinus, of* the Karluk drainage system. Transactions of the American Fisheries Society 72: 79-91.

Detailed study of taxonomic and other differences between Dolly Varden and Arctic charr in the Karluk River drainage basin. -- [DOLLY VARDEN, ARCTIC CHARR]

**DeMuth,** P., and M. Sullivan. 1983. A guide to the Alaska Packers Association records, 1891-1970 in the Alaska Historical Library. Alaska Department of Education, Division of State Libraries and Museums, Juneau. 67pp.

Reference guide to APA records, including cannery operations on Karluk Spit; correspondence, reports, and company summaries of yearly operations. -- [SOCKEYE, CANNERIES, HISTORY]

**DeMuth,** P. 1984. Inventories of Alaska fish hatchery records, 1903-1982 (MS 79) and the US National Marine Fisheries Service, Alaska Map Collection, 1889-1928 (MS 80) in the Alaska Historical Library. Alaska Department of Education, Division of State Libraries and Museums, Juneau. 13pp.

Reference guide to material collected by Patricia Roppel on Alaska's hatcheries (including Karluk) and deposited in the Alaska Historical Library; guide to fisheries-related maps (including Karluk) donated by NMFS. -- [SOCKEYE, HATCHERY, PHYSICAL]

**Denning,** D.G. 1951. Records and descriptions of Nearctic caddisflies. Journal of Kansas Entomological Society 24(4): 157-162.

Collection record of the caddisfly *Ecclisomyia conspera* found by William M. Morton in a Dolly Varden stomach from Karluk Lake. -- [INVERTEBRATES]

**Dinnocenzo,** Joe. 2006. Kodiak Management Area commercial salmon annual management report, 2004. Alaska Department of Fish and Game, Fishery Management Report No. 06-14 (March 2006), Anchorage. 194pp

Comprehensive summary report on the 2004 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests and escapements; commercial fishing; subsistence and sport fishery harvests; harvest gear and value; fishing times; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**Dinnocenzo,** Joe, Geoff Spalinger & Jeff Wadle. 2006. Kodiak Management Area commercial salmon fishery annual management report, 2005. Alaska Department of Fish and Game, Fishery Management Report No. 06-53 (October 2006), Anchorage. 197pp.

Comprehensive summary report on the 2005 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests and escapements; commercial fishing; harvest gear and value; fishing times; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**Dinnocenzo,** Joe, Geoff Spalinger & Jeff Wadle. 2007. Kodiak Management Area commercial salmon fishery annual management report, 2006. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 07-25 (April 2007), Anchorage. 188pp.

Comprehensive summary report on the 2006 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests, escapements, and escapement goals; commercial fishing; harvest gear and value; fishing times; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY, MANAGEMENT]

**Dinnocenzo,** Joe & Iris O. Caldentey. 2008. Kodiak Management Area commercial salmon fishery annual management report, 2007. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 08-45 (September 2008), Anchorage. 178pp.

Comprehensive summary report on the 2007 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests, escapements, and escapement goals; commercial fishing; harvest gear and value; fishing times; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY, MANAGEMENT]

**Dinnocenzo,** Joe. 2010. Kodiak Management Area commercial salmon fishery annual management report, 2008. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 10-02 (February 2010), Anchorage. 182pp.

Comprehensive summary report on the 2008 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests, escapements, and escapement goals; commercial fishing; harvest gear and value; fishing times; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY, MANAGEMENT]

**Dinnocenzo,** Joe, Geoff Spalinger & Iris O. Caldentey. 2010. Kodiak Management Area commercial salmon fishery annual management report, 2009. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 10-22 (May 2010), Anchorage. 188pp.

Comprehensive summary report on the 2009 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests, escapements, and escapement goals; commercial fishing; harvest gear and value; fishing times; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY, MANAGEMENT]

**Dmytryshyn,** Basil & E. A. P. Crownhard-Vaughan. 1976. Colonial Russian America, Kyrill T. Khlebnikov's Reports, 1817-1832. Oregon Historical Society, Portland, OR.

Summary of Native population numbers on Kodiak Island, 1792-1825; brief mention that some dried salmon supplies used at Sitka came from Kodiak Island. -- [RUSSIAN HISTORY]

**Dmytryshyn,** Basil & E. A. P. Crownhard-Vaughan. 1979. The end of Russian America, Captain P.N. Golovin's last report, 1862. Oregon Historical Society, Portland, OR. 249pp.

Detailed report on the conditions of the colonies in Russian America in 1861, including comments on the use of fresh, salted, and dried fishes by the Russian-American Company and Natives; Native population of Kodiak Island in 1861; facilities at Karluk Village; description of Russian-American Company plans to increase the harvest of Karluk River salmon to produce salted fish. -- [SOCKEYE, RUSSIAN HISTORY, NATIVE FISH USE]

**Dodge,** Harry B., III. 2004. Kodiak Island and its bears: A history of bear/human interaction on Alaska's Kodiak Archipelago. Great Northwest Publishing and Distributing Company Inc., Anchorage, AK. 352pp.

Detailed history of brown bear hunting and bear guides on Kodiak Island, including many references to bear hunts in the Karluk Lake area; photographs of bears, guides, and hunters at Karluk Lake; photo of FWS biologist Roy Lindsley in 1952. -- [BEARS, HISTORY]

**Dole,** Nathan Haskell. 1910. Our northern domain. Alaska. Picturesque, historic and commercial. Dana Estes and Company Publishers, Boston, MA. 237pp.

Brief description of operations of the Karluk River sockeye salmon canneries and hatchery. -- [SOCKEYE, CANNERIES, HATCHERY]

**Donnelly,** Robert F., Kenneth R. Johnson, William K. Hershberger & Donald E. Bevan. 1977. A biochemical investigation of Kodiak Island pink salmon gene frequencies. University of Washington, Fisheries Research Institute, Final Report for the period February 1, 1977 to August 31, 1977, FRI-UW-7728 (September, 1977). 27pp.

Detailed study of genetic variation in Kodiak Island pink salmon, including samples from the Karluk River. -- [PINK, GENETICS]

**Donnelly,** Robert F., Kenneth R. Johnson, William K. Hershberger & Donald E. Bevan. 1979. Identification of Kodiak Island pink salmon populations based on biochemical genetic variation. University of Washington, Fisheries Research Institute, Final Report, FRI-UW-7908 (October, 1979). 51pp.

Detailed study of genetic variation in Kodiak Island pink salmon, including samples from the Karluk River. -- [PINK, GENETICS]

**Drucker,** Benson. 1968. Red salmon studies at Karluk Lake, 1967. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1968, MR 68-7 (May 1, 1968). 36pp.

Summary report on the BCF fisheries research completed at Karluk Lake during the 1967 field season. -- [SOCKEYE]

**Drucker,** Benson. 1970. Red salmon studies at Karluk Lake, 1968. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1970, MR 70-1 (March 10, 1970). 55pp.

Summary report on the BCF fisheries research completed at Karluk Lake during the 1968 field season. -- [SOCKEYE]

**Drucker,** B. 1971. Bibliography of biological and related studies carried out at Karluk and Bare Lakes, Kodiak Island, Alaska -- 1891 to 1970. National Marine Fisheries Service, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F No. 89 (May 10, 1971). 16pp.

Bibliography of published and unpublished reports on biological studies done at Karluk and Bare Lakes to 1970. -- [SOCKEYE]

**Drucker,** Benson. 1972. Some life history characteristics of coho salmon of the Karluk River System, Kodiak Island, Alaska. Fishery Bulletin 70(1): 79-94. (Available at: http://fishbull.noaa.gov/70-1/drucker.pdf; accessed 28 July 2011)

Detailed study of Karluk River coho salmon (1956-1966); adult age and length; fecundity and egg size; smolt age, size, and migration; juvenile freshwater residence prolonged. -- [COHO, AGE, FECUNDITY, SIZE, SMOLT, MIGRATIONS]

**Drucker,** Benson & Richard Gard. 1967. Red salmon studies at Karluk Lake, 1966. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1967, MR 67-5 (March 15, 1967). 31pp.

Summary report on the BCF fisheries research completed at Karluk Lake during the 1966 field season. -- [SOCKEYE]

**Dufresne,** Frank. 1951. Is Alaska's Kodiak doomed ? Field & Stream (June, 1951) 56(2): 30-31, 112-113.

Popular article discussing Kodiak brown bear predation on sockeye salmon and cattle, including the politics involved. -- [SOCKEYE, BEARS, PREDATION]

**Dunn,** J. Richard. 1996. Charles Henry Gilbert (1859-1928): An early fishery biologist and his contributions to knowledge of Pacific salmon (*Oncorhynchus* spp.). Reviews in Fishery Science 4(2): 133-184.

Information on Charles Henry Gilbert, Professor, Stanford University, and his studies of Pacific salmon, with mention of his field trips to Karluk Lake and River to study its sockeye salmon. -- [SOCKEYE, HISTORY]

**Dunn,** J. Richard. 1997. Charles Henry Gilbert (1859-1928): Pioneer ichthyologist of the American west (pp. 265-278). *In:* T. W. Pietsch and W. D. Anderson, Jr. (eds.), Collection building in ichthyology and herpetology. American Society of Ichthyology and Herpetology, Special Publication 3.

Information on Charles Henry Gilbert, Professor, Stanford University, with emphasis on his years before 1909 when he collected and described hundreds of fishes with David Starr Jordan. -- [SOCKEYE, HISTORY]

**Dunn,** J. Richard. 2001a. William Francis Thompson (1888-1965): a preeminent fishery biologist of the early and mid twentieth century. Marine Fisheries Review 63(2): 1-4.

Biographical information on William Francis Thompson, Research Professor and Director of the FRI, University of Washington; history of FRI's creation and research focus on Alaska's salmon. -- [SOCKEYE, HISTORY]

**Earle,** F. S. 1904. Proceedings of the Club, Tuesday, December 8, 1903. Torreya 4(1): 12-15.

Summary of a paper presented by William Titus Horne to The Torrey Botanical Club in 1903 about the vegetation of the Karluk area from his observations and collections in 1901-1902, including aquatic macrophytes and algae in the lower Karluk River and nearby streams and bogs; 2 species of *Potamogeton* inhabit the lower Karluk River. – [PLANTS]

**Eaton,** Hank. 1977. As I recall. Kadiak Times (March 17, 1977): 20-21.

Brief historical comments on Karluk River salmon canneries. -- [CANNERIES]

**Edfelt,** Larry. 1973. Statistical history of Alaska salmon catches. Alaska Department of Fish and Game, Juneau, Technical Data Report No. 9. 103pp.

Detailed summary of Alaskan salmon catches, 1878-1971, including those from the Kodiak region; catch statistics for all 5 species of Alaskan salmon. -- [SOCKEYE, COMMERCIAL FISHING]

**Edmundson,** Jim A. 1997. Growth patterns of juvenile sockeye salmon in different thermal environments of Alaskan lakes. Master of Science Thesis, University of Alaska, Fairbanks, Alaska. 79pp.

Analysis of zooplankton biomass, water temperature, and sockeye salmon fry density to predict smolt size in Alaskan lakes, including Karluk Lake; morphometry and summer heat budgets of Karluk Lake. -- [SOCKEYE, JUVENILES, SMOLT, LIMNOLOGY]

**Eicher,** George .J., Jr., and George A. Rounsefell. 1957. Effects of lake fertilization by volcanic activity on abundance of salmon. Limnology and Oceanography 2: 70-76.

Analysis of the possible effects of volcanic ash falls on lake productivity and abundance of sockeye salmon in the vicinity of Kodiak Island, Alaska Peninsula, and Bristol Bay. -- [SOCKEYE, PHYSICAL, LIMNOLOGY, FERTILIZATION]

**Eifert,** Virginia S. (ed.). 1941. The bears of Kodiak. The Living Museum 3(6): 42.

Brief description of the Karluk Lake region, Kodiak Island, and a May 1929 [1930?] bear hunt at Karluk Lake by Mr. and Mrs. Claude H. Barr of Springfield, IL; they shot 4 bears that were then fully mounted and given to the Illinois State Museum in Springfield for display in a diorama of this Kodiak Island habitat; the magazine's cover page is a photograph of the bear diorama as it existed in 1941. -- [BEARS]

**Elliott,** Charles P. 1900. Salmon fishing grounds and canneries (pp. 738-741). *In:* Compilation of narratives of explorations in Alaska, Government Printing Office, Washington, DC 856pp.

Brief observations of salmon fishing and cannery operations at Karluk River Spit in 1899; many observations of illegal fishing; recommended stricter enforcement of fishing laws and the need for independent vessels for government officers. -- [SOCKEYE, CANNERIES]

**Elliott,** Henry W. 1886. Our Arctic province: Alaska and the Seal Islands. Charles Scribner's Sons, New York. 473pp.

Brief mention of the Karluk River and its importance from early times as a source of salted, dried, and canned sockeye salmon. -- [HISTORY]

**Ellis,** Robert J. 1963. The abundance and distribution of juvenile red salmon and associated species in lakes of the Naknek River system and Karluk Lake. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report 1963, MR 63-2 (March, 1963). 80pp.

Summary report on the 1961 sampling of juvenile sockeye salmon in Karluk Lake using tow nets and beach seines; variation in catch per unit effort, length frequency, and condition factors from July to September in each of the 3 lake basins; abundance of sticklebacks in tow and seine collections; also captured charr, coho, sculpin, and rainbow trout. -- [SOCKEYE, JUVENILES, SIZE, STICKLEBACK]

**Erickson,** Robert ca., and Donald E. Bevan. 1964. Stream surveys in the Kodiak Island area - 1962. University of Washington, Fisheries Research Institute, Circular No. 214 (June 10, 1964). 45pp.

Six surveys of the Karluk River in 1962, primarily for pink salmon, but also the abundance of sockeye salmon was noted; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Erskine,** Wilson Fiske. 1960. White water, an Alaskan adventure. Abelard-Schuman, London. 256pp.

Brief comments about Karluk River salmon cannery operations. -- [CANNERIES]

**Evans,** Robley D. 1901. A sailor's log: Recollections of forty years of naval life. Smith, Elder and Company, London. 467pp.

Brief comments about a visit to Karluk on 15 June 1892; observed a seine haul of 15,000 salmon; claims that 7 canneries each harvest 600,000 fish each year; marveled at the huge abundance of salmon. – [SOCKEYE, CANNERIES]

**Evermann,** Barton Warren. 1912. Alaska fisheries and fur industries in 1911. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 766.

Brief mention of Alaska Packers Association closing their canneries on Karluk Spit for a single cannery at Larsen Bay. -- [SOCKEYE, CANNERIES]

**Evermann,** Barton Warren. 1913. Alaska fisheries and fur industries in 1912. US Department of Commerce, Bureau of Fisheries, Document No. 780.

Brief comments about Karluk River hatchery and number of sockeye fry released in 1911-1912; mention of loss of yearling salmon in the beach seine and trap operations. -- [SOCKEYE, HATCHERY]

**Evermann,** Barton Warren. 1914. Alaska fisheries and fur industries in 1913. US Department of Commerce, Bureau of Fisheries, Appendix II to the Report of the US Commissioner of Fisheries for 1913, Bureau of Fisheries Document No. 797. 172pp.

Brief comments about Karluk River hatchery, number of fry liberated, and tax rebates; fecundity of hatchery females was 3,109 eggs; description of June, 1912, Katmai volcanic eruption and impacts on salmon spawning habitat. -- [SOCKEYE, HATCHERY, EGGS]

**Evermann,** Barton Warren & Edmund Lee Goldsborough. 1907. The fishes of Alaska. Bulletin of the Bureau of Fisheries, Volume 26, 1906, Bureau of Fisheries Document No. 624: 219-360. (Available at: http://fisherybulletin.nmfs.noaa.gov/26-1/evermann1.pdf; accessed 1 August 2011)

Detailed early review of Alaska's fishes, including some data for Karluk River sockeye, Chinook, and coho salmon, and sticklebacks (both threespine and ninespine); Karluk River area commercial fishing dates in 1900-1906; length and weight of 200 Karluk River sockeye salmon. -- [SOCKEYE, CHINOOK, COHO, STICLEBACK, CANNERIES]

**Fall,** James A., and Robert J. Walker. 1993. Subsistence harvests in six Kodiak Island Borough communities, 1986. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 193. 96pp.

Detailed study of subsistence practices at Karluk Village in 1986; sockeye salmon accounted for 86 kg per capita (161 kg per capita in 1983). -- [SOCKEYE, SUBSISTENCE]

**Fassett,** H. ca. 1902. The Karluk hatchery (pp. 331-348). *In:* J. F. Moser, Alaska salmon investigations in 1900 and 1901. Bulletin of the US Fish Commission 21: 173-398. (Available at: http://fisherybulletin.nmfs.noaa.gov/21-1/moser.pdf; accessed 1 August 2011)

Important detailed description of the facilities and operation of the Karluk River hatchery in 1900; sockeye salmon egg development times as influenced by water temperatures; egg differences between the spring and fall runs; maps and photographs of hatchery. -- [SOCKEYE, HATCHERY, EGGS]

**Faustini,** Mary. ca. 1998. Age and size statistics of rainbow trout from selected drainages on the Kodiak National Wildlife Refuge, Alaska, 1997. US Fish and Wildlife Service, Region 7, Alaska Fisheries Technical Report Series.

Report on the age and length characteristics of resident rainbow trout from the Karluk and Ayakulik River drainages in 1997. -- [RAINBOW TROUT]

**Feuer,** Robert ca. 1958. Mammals collected in the Karluk Lake region, Kodiak Island, Alaska. Murrelet 39(1): 37-39.

Report on the mammals collected at Karluk Lake in 1958; measurements of morphology; vole, weasel, river otter, and bats. -- [MAMMALS]

**Finney,** Bruce P. 1998. Long-term variability of Alaska sockeye salmon abundance determined by analysis of sediment cores. North Pacific Anadromous Fish Commission, Bulletin Number 1: 388-395. (Available at: http://www.npafc.org/new/publications/Bulletin/Bulletin%20No.%201/page%20388-395(Finney).PDF; accessed 1 August 2011)

Important analysis of the variation of stable nitrogen isotopes in two sediment cores from Karluk Lake (1994-1995) extending back 500 years; correlation between marine derived nitrogen in sediment layers and past salmon escapements; sediment record indicates average escapement before commercial fishing was 1,000,000; major variations in marine derived nitrogen (and salmon escapements) have cycles of 50-100 years; variations in marine derived nitrogen (and escapements) are not well correlated with sea surface temperatures in the Gulf of Alaska; large decline in marine derived nitrogen (and escapements) during 1900s may have been caused by removal of salmon carcass nutrients to Karluk Lake by the commercial fishery; 1,000,000 sockeye escapement brings in more nitrogen to Karluk Lake than arrives in stream water or rain; suggested a positive feedback mechanism may exist at Karluk Lake between escapement size, nutrient input, juvenile production. -- [SOCKEYE, LIMNOLOGY]

**Finney,** Bruce P., Irene Gregory-Eaves, Jon Sweetman, Marianne S. V. Douglas & John P. Smol. 2000. Impacts of climate change and fishing on Pacific salmon abundance over the past 300 years. Science 290: 795-799.

Important analysis of Karluk Lake sediment cores using marine-derived nitrogen isotopes to infer escapements to the lake for the past 300 years; analysis and correlation of diatom and cladoceran microfossils with past escapements; influence of ocean climate and commercial fishing on sockeye salmon abundance; low escapements in early-1700s and early-1800s occurred at low ocean water temperatures; low escapements in mid- to late-1900s attributable to commercial fishing; Karluk Lake productivity highly dependent on salmon-carcass nutrient inputs; similar marine-derived nitrogen profiles exist in other Kodiak Island and Bristol Bay sockeye nursery lakes. -- [SOCKEYE, LIMNOLOGY]

**Finney,** Bruce P., Irene Gregory-Eaves, Marianne S. V. Douglas & John P. Smol. 2002. Fisheries productivity in the northeastern Pacific Ocean over the past 2,200 years. Nature 118: 729-733.

Important analysis of Karluk Lake sediment cores using marine-derived nitrogen isotopes to infer escapements to the lake over the past 2,200 years; analysis and correlation of diatom and cladoceran microfossils with past

escapements; salmon-derived nutrients varied substantially over the 2,200 years, some changes extending over many centuries; variations in salmon-derived nutrients caused by climate-related factors; a similar profile of salmon-derived nutrients found in Akalura Lake; long-term abundance comparisons of Karluk's sockeye salmon, Northern anchovies, and Pacific sardines; influence of sockeye salmon abundance on the archaeological phases of Kodiak Island's indigenous people. -- [SOCKEYE, LIMNOLOGY]

**Fisher,** William J. 1884. Statement of the catch of the several companies engaged in the salmon fisheries in Kadiak District, Alaska Territory, during the year 1883. Bulletin of the US Fish Commission, Volume 4, for 1884.

Brief statistics that 3,250 barrels and 13,500 cases of sockeye salmon were prepared in 1883 by the Karluk Fishing and Packing Company; two vessels were used, the schooner *Marion* and schooner *Callistoga*; numbers of employees were 50 natives, 60 Chinese, 16 whites. -- [SOCKEYE, CANNERIES]

**Fisheries Research Institute.** 1951. Catch and escapement figures by weeks; Karluk District, 1941-1950, inclusive, and Red River District, 1942-1950, inclusive. University of Washington, Fisheries Research Institute, Circular No. 17, Kodiak Island Memorandum No. 2 (September 28, 1951). 4pp.

Data tables of weekly catch and escapement for Karluk District, 1941-1950. -- [SOCKEYE, COMMERCIAL CATCH, WEIR]

**Fisheries Research Institute.** 1953. Kodiak Island red salmon weir counts; 1953 daily counts from US Fish and Wildlife Service. University of Washington, Fisheries Research Institute, Circular No. 55, Kodiak Island Memorandum No. 9. 19pp.

Daily weir counts of sockeye salmon at the Karluk River, 1953. -- [SOCKEYE, WEIR]

**Foerster,** R. E. 1968. The sockeye salmon, *Oncorhynchus nerka*. Fisheries Research Board of Canada Bulletin 162. 422 p.

Extensive review of sockeye salmon knowledge based upon research from throughout the entire range of the sockeye salmon; Karluk River sockeye salmon knowledge placed in context with other systems. -- [SOCKEYE]

**Forest and Stream.** 1889. Abundance of humpback salmon. Forest and Stream 33(14): 269.

Important brief description of the very large run of Karluk River pink salmon in 1880. -- [PINK]

**Foster,** M. B. 2004. Kodiak Management Area salmon escapement and catch sampling results, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 4K04-31 (July 2004), Kodiak. 110pp.

Detailed analysis of the 2003 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 824,617 early and 1,592,340 late; ages of early-run sockeye 2.2 (64.4%), 2.3 (16.0%), 3.2 (7.7%); ages of late-run sockeye 2.2 (58.0%), 2.3 (16.9%), 3.2 (14.8%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. B. 2005. Kodiak Management Area salmon escapement and catch sampling results, 2004. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 05-47 (August 2005), Anchorage. 103pp.

Detailed analysis of the 2004 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 789,556 early and 658,930 late; ages of early-run sockeye 2.2 (54.7%), 2.3 (21.3%), 3.2 (13.2%); ages of late-run sockeye 2.2 (61.2%), 2.3 (11.8%), 3.2 (21.8%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2006. Kodiak Management Area salmon escapement and catch sampling results, 2005. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 06-38 (July 2006), Anchorage. 98pp.

Detailed analysis of the 2005 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 529,660 early and 921,675 late; ages of early-run sockeye 2.2 (42.1%), 2.3 (36.3%), 3.2 (15.2%); ages of late-run sockeye 2.2 (57.6%), 2.3 (16.8%), 3.2 (22.9%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2007. Kodiak Management Area salmon escapement and catch sampling results, 2006. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 07-14 (April 2007), Anchorage. 91pp.

Detailed analysis of the 2006 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 474,903 early and 570,450 late; ages of early-run sockeye 2.2 (45.5%), 2.3 (23.0%), 3.2 (16.4%), 3.3 (10.2%); ages of late-run sockeye 2.2 (23.2%), 2.3 (51.3%), 3.2 (9.6%), 3.3 (11.5%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2007. Kodiak Management Area sockeye salmon catch and escapement operational plan, 2007. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No.4K07-7 (May 2007), Kodiak. 31pp.

Protocol and rationale for collecting age (scales), length, and sex data from escapement and commercial catch of Karluk's early and late sockeye runs in 2007; weekly sample size = 240 sockeye in escapement and 400 in commercial catch; 2007 sampling plans for Karluk Lake's limnology (zooplankton, light, dissolved oxygen, water temperatures, Secchi disc). -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT, LIMNOLOGY]

**Foster,** M. Birch. 2008. Kodiak Management Area salmon escapement and catch sampling results, 2007. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 08-37 (June 2008), Anchorage. 104pp.

Detailed analysis of the 2007 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 493,094 early and 721,610 late; analysis of historical trends in Karluk's sockeye (1985-2007 changes in freshwater and saltwater age 2 and 3, size); discussion of climate effects on sockeye salmon; ages of early-run sockeye 2.2 (14.2%), 2.3 (55.7%), 3.2 (10.4%), 3.3 (15.1%); ages of late-run sockeye 2.2 (25.4%), 2.3 (42.3%), 3.2 (15.8%), 3.3 (14.0%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2009. Kodiak management area salmon escapement and catch sampling results, 2008. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 9-24 (June 2009). 100pp.

Detailed analysis of the 2008 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 152,942 early and 294,886 late, both lower than normal; analysis of historical trends in Karluk's sockeye (1985-2008 changes in freshwater and saltwater age 2 and 3, size); early-run freshwater age 3 have increased for last 5 years; late-run saltwater age 3 have increased in recent years; size of saltwater age 2 fish have been declining since 1989; discussion of

climate effects on sockeye salmon; ages of early-run sockeye 2.2 (20.2%), 2.3 (38.8%), 3.2 (7.9%), 3.3 (27.8%); ages of late-run sockeye 2.2 (14.0%), 2.3 (54.6%), 3.2 (8.8%), 3.3 (13.0%); escapement of early- and late-run (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2010. Kodiak management area salmon escapement and catch sampling results, 2009. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 10-28 (June 2010). 96pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/fmr10-28.pdf. accessed 1 August 2011)

Detailed analysis of the 2009 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 68,852 early and 329, 783 late, both near historic lows; analysis of historical trends in Karluk's sockeye (1985-2009 changes in freshwater and saltwater age 2 and 3, size); early-run freshwater age 3 have increased for last 6 years; freshwater age 3 composed 90% of late-run; early- and late-run saltwater age 3 decreased in 2009; size of saltwater age 2 fish increased in 2009; ages of early-run sockeye 2.2 (24.8%), 2.3 (23.0%), 3.2 (23.1%), 3.3 (7.1%), 1.2 (8.8%); ages of late-run sockeye 2.2 (4.6%), 2.3 (4.7%), 3.2 (81.7%), 3.3 (4.5%); age class 2.5 first found in 2009; escapement of early- and late-run (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; 1985-2009 length variations for age 2.2 and 2.3 sockeye salmon; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch. 2011. Kodiak management area salmon escapement and catch sampling results, 2010. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 11-30 (May 2011). 97pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/FMR11-30.pdf; accessed 1 August 2011)

Detailed analysis of the 2010 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 81,361 early and 315, 996 late, both near historic lows; analysis of historical trends in Karluk's sockeye (1985-2010 changes in freshwater and saltwater age 2 and 3, size); early-run freshwater age 3 have increased for last 7 years; freshwater age 3 composed 73% of late-run; early- and late-run saltwater age 3 were at unusually low levels in 2010; size of saltwater age 2 fish; ages of early-run sockeye 2.2 (17.3%), 2.3 (6.3%), 3.2 (39.4%), 3.3 (1.8%), 1.2 (18.6%); ages of late-run sockeye 2.2 (20.1%), 2.3 (2.2%), 3.2 (70.7%), 3.3 (1.8%), 4.2 (3.3%); escapement of early- and late-run (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; 1985-2010 length variations for age 2.2 and 2.3 sockeye salmon; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. B., and Mark J. Witteveen 2003. Kodiak Management Area salmon escapement and catch sampling results, 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 4K03-43 (August 2003), Kodiak. 112pp.

Detailed analysis of the 2002 escapement, catch, and total run of early- and late-run Karluk sockeye salmon; 240 sockeye per week in escapement and 400 per week in commercial catch sampled for age (scales), length, and sex; age marker (3.) used to estimate Karluk's sockeye catch; total run = 623,880 early and 866,019 late; ages of early-run sockeye 2.2 (37.5%), 2.3 (34.5%), 3.2 (13.5%); ages of late-run sockeye 2.2 (57.0%), 2.3 (17.3%), 3.2 (16.1%); escapement (1) age composition by week, (2) length composition by age and sex, (3) sex composition by week; commercial catch by Kodiak Management Area district, section, and salmon species; estimated early- and late-run sockeye catch by area and age class; early- and late-run brood tables and return per spawner. -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT]

**Foster,** M. Birch, Switgard Duesterloh, Steven Thomson, Robert T. Baer, Greg Watchers & Steve Schrof. 2008. Salmon research operational plans for the Kodiak area, 2008. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No.4K08-5 (June 2008).

Protocol and rationale for collecting age (scales), length, and sex data from escapement and commercial catch of Karluk's early and late sockeye runs in 2008; weekly sample size = 240 sockeye in escapement and 400 in

commercial catch; 2008 sampling plans for Karluk Lake's limnology (zooplankton, light, dissolved oxygen, water temperatures, Secchi disc). -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT, LIMNOLOGY]

**Foster,** M. Birch, Robert T. Baer, Steven E. Thomson, & Steve T. Schrof. 2009. Salmon research operational plans for the Kodiak area, 2009. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No.4K09-3 (April 2009).

Protocol and rationale for collecting age (scales), length, and sex data from escapement and commercial catch of Karluk's early and late sockeye runs in 2009; weekly sample size = 240 sockeye in escapement and 400 in commercial catch; 2009 sampling plans for Karluk Lake's limnology (zooplankton, light, dissolved oxygen, water temperatures, Secchi disc). -- [SOCKEYE, AGE, LENGTH, SEX, SCALES, MANAGEMENT, LIMNOLOGY]

**Fredin,** R.A. 1964. Ocean mortality and maturity schedules of Karluk River sockeye salmon and some comparisons of marine growth and mortality rates. Fishery Bulletin 63(3): 551-574.

Detailed analysis of ocean mortality and maturity of Karluk River sockeye salmon using data (1929-1933) from Thomas Barnaby and 4 different population models. -- [SOCKEYE, MORTALITY, GROWTH]

**Friedmann,** Herbert. 1935a. Avian bones from prehistoric ruins on Kodiak Island, Alaska. Journal of the Washington Academy of Sciences 25(1): 44-51.

List of bird species identified from prehistoric bones excavated by Ales Hrdlicka on Kodiak Island, apparently just outside of the Karluk River watershed. – [BIRDS]

**Friedmann,** Herbert. 1935b. The birds of Kodiak Island, Alaska. Bulletin of the Chicago Academy of Sciences 5(3): 13-54.

Annotated list of the birds of Kodiak Island, based on museum collections and historic references, including records of birds from Karluk (collected by Bean, Rutter, Gilbert, and Turner); history of bird collections on Kodiak Island. – [BIRDS]

**Fukuhara,** Francis M., Sueto Murai, John J. LaLanne & Arporna Sribhibhadh. 1962. Continental origin of red salmon as determined from morphological characters. International North Pacific Fisheries Commission, Bulletin Number 8 (Doc. 397): 15-109.

Comprehensive analysis of many morphological characters used to determine sockeye salmon origins, including numerous samples of Karluk River sockeye salmon collected in 1955-1957. -- [SOCKEYE]

**Gard,** Richard. 1971. Brown bear predation on sockeye salmon at Karluk Lake, Alaska. Journal of Wildlife Management 35(2): 193-204.

Detailed study of Kodiak brown bear predation on sockeye salmon at Karluk Lake; bear exclusion experiments using electric wires. -- [SOCKEYE, BEARS]

**Gard,** Richard. 1973. Travel time and influencing factors for migrating adult sockeye salmon in Karluk River, Alaska. Transactions of the American Fisheries Society 102 (4): 723-727.

Detailed study of length of time for sockeye salmon adults to migrate up the Karluk River; travel time was most influenced by time of season, then by number of fish and rainfall; travel time was 7 and 10 days for the spring and fall runs. -- [SOCKEYE, MIGRATION]

**Gard,** Richard & Benson Drucker. 1963. Red salmon studies at Karluk Lake, 1962. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1963, MR 63-7 (May, 1963). 44pp.

Summary report of BCF fisheries research conducted at Karluk Lake during the 1962 field season. -- [SOCKEYE]

**Gard,** Richard & Benson Drucker. 1965. Red salmon studies at Karluk Lake, 1963. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1965, MR 65-2 (April, 1965). 50pp.

Summary report of BCF fisheries research conducted at Karluk Lake during the 1963 field season. -- [SOCKEYE]

**Gard,** Richard & Benson Drucker. 1966. Red salmon studies at Karluk Lake, 1964. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1966, MR 66-1 (May 13, 1966). 34pp.

Summary report of BCF fisheries research conducted at Karluk Lake during the 1964 field season. -- [SOCKEYE]

**Gard,** Richard & Benson Drucker. 1966. Red salmon studies at Karluk Lake, 1965. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report 1966, MR 66-3 (September 20, 1966). 45pp

Summary report of BCF fisheries research conducted at Karluk Lake during the 1965 field season. -- [SOCKEYE]

**Gard,** R., and B. Drucker. 1985. Differentiation of subpopulations of sockeye salmon in the Karluk River system. Annual Report of the School of Fisheries and Sciences, University of Alaska, Juneau, 1983-1984: 7.

Brief article showing that Karluk River sockeye salmon are differentiated into subpopulations on the basis of age, length, and fecundity of spawners and in length and direction of migrating fry; concluded that overfishing of midseason subpopulations caused the initial decline in the sockeye salmon run. -- [SOCKEYE, SUBPOPULATIONS, FECUNDITY, FISHERY]

**Gard,** R., and B. Drucker. 1986. Catch and escapement patterns in the Karluk River system. Annual Report of the School of Fisheries and Sciences, University of Alaska, Juneau, 1984-1985: 9.

Brief article showing the development of the bimodal distribution of the Karluk River sockeye salmon run; demonstrated overfishing of midseason subpopulations in 1922-1936, followed by a modest harvest reduction from midseason closures in 1962-1965, and overfishing in 1976-1983 when midseason closures were largely ended. -- [SOCKEYE, HARVEST RATES, FISHERY]

**Gard,** Richard, Benson Drucker & Robert Fagen. 1987. Differentiation of subpopulations of sockeye salmon (*Oncorhynchus nerka*), Karluk River system, Alaska, (pp. 408-418). *In:* H. D. Smith, L. Margolis, and C.C. Wood (eds.). Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Canadian Special Publication of Fisheries and Aquatic Sciences 96.

Important detailed study of Karluk River sockeye salmon demonstrating distinct subpopulations; migration and spawning timing; adult age and length; fecundity; fry size and migration. -- [SOCKEYE, AGE, FECUNDITY, FRY, MIGRATIONS, SUBPOPULATIONS]

**Gharrett,** Anthony J., Akira Goto & Fumio Yamazaki. 1991. A preliminary study of the genetic structure of Alaskan Dolly Varden (*Salvelinus malma*) (pp. 13-24). *In:* Fumio Yamazaki (ed., Hokkaido University, Japan), Reproductive biology and population genetics of Dolly Varden (Salmonidae), Report of oversea work supported by Grant-in-aid for Overseas Scientific Surrvey of the Ministry of Education, Science and Culture of Japan, during 1987-1990.

Detailed analysis of genetic variation in Dolly Varden from 7 locations in Alaska, including the Karluk River. -- [DOLLY VARDEN, GENETICS]

**Gharrett,** Anthony J., Akira Goto & Fumio Yamazaki. 1991. A note on the genetic contrast of sympatric Dolly Varden (*Salvelinus malma*) and Arctic charr (*S. alpinus*) in the Karluk River system, Alaska (pp. 37-48). *In:* Fumio Yamazaki (ed., Hokkaido University, Japan), Reproductive biology and population genetics of Dolly Varden (Salmonidae), Report of oversea work supported by Grant-in-aid for Overseas Scientific Surrvey of the Ministry of Education, Science and Culture of Japan, during 1987-1990.

Detailed analysis of genetic variation in Dolly Varden and Arctic charr collected in 1987 and 1989 from Thumb Lake, Karluk River system; both species share similar alleles, but frequencies were statistically different. -- [DOLLY VARDEN, ARCTIC CHARR, GENETICS]

**Gharrett,** Anthony J., Andrew K. Gray & Vladimir Brykov. 2001. Phylogeographic analysis of mitochondrial DNA variation in Alaskan coho salmon, *Oncorhynchus kisutch.* Fishery Bulletin 99: 528-544.

Analysis of mitrochondrial DNA of coho salmon populations from sites draining to the North Pacific Ocean and Bearing Sea, including the Karluk River; two monophyletic clades existed; Karluk coho salmon clustered with those from the Bering sea, while the other group included Gulf of Alaska drainages; discussion of coho salmon evolution. -- [COHO, GENETICS]

**Gibbs,** Rafe G. 1953. Bringing back the red salmon. Popular Mechanics 100(3): 81-85, 242, 244 (September 1953).

Description of the lake fertilization experiment at Bare Lake in the 1950s; fertilizer added twice a year to increase food supply of juvenile sockeye; phytoplankton productivity and smolt length/weight increased; Kodiak Chapter of United Fishermen of Alaska contributed $1,000 annually to the project; expect more sockeye adults to return to Bare Lake; fertilization may benefit Karluk Lake; 11 photographs of the biological studies at Bare and Karluk lakes. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, GROWTH, SMOLT]

**Gilbert,** Charles H. 1922. Kamchatka sea eagle at Kodiak, Alaska. Condor 24: 66.

Brief note about collecting a Steller's Sea Eagle at the upper end of Karluk Lake in 1921. -- [BIRDS]

**Gilbert,** Charles H., and Henry O'Malley. 1920. Special investigation of salmon fishery in central and western Alaska (pp. 143-160). *In:* Ward T. Bower, Alaska fisheries and fur industries in 1919. Appendix IX to the Report of the US Commissioner of Fisheries for 1919, Bureau of Fisheries Document Number 891.

Discussion of condition of Karluk River sockeye salmon in 1919; observations of sockeye and their spawning habitats at Karluk Lake and River on July 25-26, 1919; concluded that sockeye salmon spawning areas were poor at Karluk Lake and its tributaries; discussed the benefits of a hatchery at Karluk Lake; recommended further study of Karluk River sockeye salmon. -- [SOCKEYE, SPAWNING, HATCHERY]

**Gilbert,** Charles H., and Willis H. Rich. 1927. Investigations concerning the red-salmon runs to the Karluk River, Alaska. Bulletin of the US Bureau of Fisheries, Volume 43, Part 2, Document No. 1021. 69 p. (Available at: http://fishbull.noaa.gov/43-2/gilbert.pdf; accessed 28 July 2011)

Important detailed study of Karluk River sockeye salmon; catch and escapement statistics to 1926; spawning ground observations; description of Karluk River and Lake watershed; map of Karluk Lake and tributaries; historical review of past Karluk observations and fisheries studies; sockeye fecundity in 1926; migrations; scale characteristics; age and length composition of sockeye run. -- [SOCKEYE, AGE, MIGRATIONS, SCALES, FECUNDITY, PHYSICAL]

**Goto,** Akira, Tohru Mitsuboshi, Anthony J. Gharrett & Fumio Yamazaki. 1991. Genetic differentiation of the Dolly Varden *Salvelinus malma* in Hokkaido, with special reference to their genetic relationship with some Alaskan populations (pp. 25-36). *In:* Fumio Yamazaki (ed., Hokkaido University, Japan), Reproductive biology and population genetics of Dolly Varden (Salmonidae), Report of oversea work supported by Grant-in-aid for Overseas Scientific Surrvey of the Ministry of Education, Science and Culture of Japan, during 1987-1990.

Comparison of genetic variation in Dolly Varden from Japanese and Alaskan populations, including those from the Thumb River, Karluk River system; Japanese and Alaskan populations genetically distinct. -- [DOLLY VARDEN, GENETICS]

**Graham,** Richard. 2003. The Karluk Lake Kodiak. Sports Afield (September).

Short description of the 1952 hunt at Karluk Lake that took the world record brown bear. – [BEARS]

**Grantham,** Anjuli. 2011. Fishing at Karluk: Nature, technology, and the creation of the Karluk Reservation in Territorial Alaska. Master of Arts Thesis, University of South Carolina, Columbia, South Carolina. 62 p.

Important analysis of salmon fishing at Karluk and the primacy of fishing gear and technologies in controlling access to prime fishing grounds; racial segregation of access to fishing sites; Alutiiq fishermen excluded from prime sites; domination of salmon fishing at Karluk Spit by Alaska Packers Association; conflicts and competition between beach and purse seiners; 1943 establishment by Secretary of the Interior Ickes of the Karluk Reservation for the Alutiiq people (Public Land Order 128), including 35,000 acres of land and water near Karluk Spit; 1949 US Supreme Court case (*Hynes v. Grimes Packing Co et al* -- 337 US 86) ruled (1)

Secretary of Interior was authorized to establish the Karluk Reservation and (2) Karluk inhabitants could not bar access to the waters and fish within the reservation; fisheries common never existed at Karluk because of fishing technologies. -- [SALMON FISHERY, CANNERIES, FISHING GEAR, REGULATIONS]

**Greely,** A.W. 1914. Handbook of Alaska, its resources, products, and attractions. Charles Scribner's Sons, New York. 280pp.

Brief comments on Karluk River canneries and hatchery. -- [CANNERY, HATCHERY]

**Greenbank,** John. 1957. Aggregational behavior in a freshwater sculpin. Copeia 1957 (2): 157.

Brief observation of a dense clump (100-125) of sculpins in a 0.2 $m^2$ area in Karluk Lake during the summer of 1956. -- [SCULPIN]

**Greenbank,** John 1966. Notes on the life history of the sculpin, *Cottus aleuticus* Gilbert, in Karluk Lake, Alaska. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F 29 (March, 1966). 22pp.

Important report on sculpin life history in Karluk Lake, River, and tributaries based on field work done in the summer of 1957; sculpin habitats, movements, and aggregations; age, growth and reproduction; food habits in June-September. -- [SCULPIN, AGE, GROWTH, FOOD]

**Greenbank,** John & Philip R. Nelson. 1959. Life history of the threespine stickleback *Gasterosteus aculeatus* Linnaeus in Karluk Lake and Bare Lake Kodiak Island, Alaska. US Fish and Wildlife Service, Fishery Bulletin 59 (153): 537-559. (Available at: http://fishbull.noaa.gov/59-1/greenbank.pdf; accessed 28 July 2011)

Detailed life history study of the threespine stickleback in Karluk and Bare Lakes; morphological variation; abundance; habitat; age, size, growth; migrations; hermaphroditic reproduction; parasites; food habits; predators; interactions with sockeye salmon juveniles. -- [STICKLEBACK, AGE, SIZE, MIGRATIONS, REPRODUCTION, PARASITES, FOOD, PREDATION, COMPETITION, SOCKEYE]

**Gregory-Eaves**, I. 2002. Tracking past sockeye salmon (Oncorhynchus nerka) population dynamics in Alaska using paleolimnology. PhD. Dissertation. Queen's University, Kingston, Ontario.

Not examine this reference, but presume it contains a detailed analysis of the diatoms in Karluk Lake sediment cores extending back 2,200 years. -- [SOCKEYE, LIMNOLOGY, PLANTS]

**Gregory-Eaves,** Irene, John P. Smol, Marianne S. V. Douglas & Bruce P. Finney. 2003. Diatoms and sockeye salmon (*Oncorhynchus nerka*) population dynamics: Reconstructions of salmon-derived nutrients over the past 2,200 years in two lakes from Kodiak Island, Alaska. Journal of Paleolimnology 30(1): 35-53.

Important analysis of the abundance variations in Karluk's sockeye salmon over the past 2,200 years using diatom microfossils from lake sediment cores; certain diatom species varied directly with salmon-derived nutrient loading, while others varied inversely, as the lake shifted between oligotrophic and eutrophic states; diatoms revealed large changes in sockeye salmon abundance in both decadal and multi-century timescales; total phosphorus levels were reconstructed over the past 2,200 years, these closely tracking the nutrient and diatom indicators; Karluk Lake's sediment record was compared with that in Frazer Lake. -- [SOCKEYE, LIMNOLOGY, PLANTS]

**Gretsch,** Dennis, Kevin Brennan & Dave Prokopowich. 1992. Kodiak Management Area annual finfish management report, 1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K92-37 (October, 1992). 171pp.

Comprehensive summary report on the 1991 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Grinnell,** Joseph. 1901. Record of Alaskan birds in the collection of the Leland Stanford junior University. The Condor 3(1): 19-23.

Summary of Alaskan birds in the Stanford University museum, including about 19 species collected by Cloudsley Rutter at Karluk in 1896-1897; mentions that the magpie feeds on dead fish. -- [BIRDS]

**Grischkowsky,** Roger S., & Donald F. Amend. 1976. Infectious hematopoietic necrosis virus: prevalence in certain Alaskan sockeye salmon, *Oncorhynchus nerka*. Journal of the Fisheries Research Board of Canada 33(1): 186-188.

Survey of IHN virus in many Alaskan sockeye salmon populations, including samples from Karluk Lake, O'Malley River, and Meadow Creek. -- [SOCKEYE, DISEASE]

**Grogan,** Frank. 1969. Bear-salmon study, Karluk Lake, 1953. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F No. 71 (October, 1969) [Also Titled "1953 Summer Report"]. 17pp.

Report on the number of sockeye salmon taken by Kodiak brown bears in the summer of 1953 at Halfway Creek; few salmon were taken in 1953 by bears, which fed mainly on berries and grasses; 115 bears estimated in Karluk Lake drainage in 1953; field study included a weir, electric fence, and escape pond on Halfway Creek; bear fecal examinations. -- [SOCKEYE, BEARS]

**Grubb,** Teryl G. 1976. Nesting bald eagles attack researcher. Auk 93(4): 842-843.

Brief description of nest-defense behavior by a pair of bald eagles against a wildlife researcher as he climbed toward a nest in a cottonwood tree near the Karluk River weir on 10 July 1968. – [BIRDS]

**Haas,** Gordon R., and J. D. McPhail. 1991. Systematics and distributions of Dolly Varden (*Salvelinus malma*) and bull trout (*Salvelinus confluentus*) in North America. Canadian Journal of Fisheries and Aquatic Sciences 48: 2191-2211.

Detailed analysis of the ability to discriminate Dolly Varden and bull trout using morphometric and meristic characters in many North American populations, including Dolly Varden specimens from the Karluk River drainage; North American distribution of Dolly Varden and bull trout. -- [DOLLY VARDEN]

**Hansen,** Jeffrey A. (ed.). 1985. FRED 1984 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 42 (January, 1985). 76pp.

Brief comments on the Karluk River sockeye salmon restoration program; Upper Thumb River sockeye returns increased; 15,300,000 eggs were taken and 12,300,000 eyed eggs were planted in the Upper Thumb River in 1984 (Karluk streamside incubation project); estimated sockeye returns in 1984 from Karluk enhancement projects; half-length microwire tags placed into emergent sockeye fry at Karluk. -- [SOCKEYE, HATCHERY]

**Hansen,** Jeffrey A. (ed.). 1986. FRED 1985 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 59 (January, 1986). 91pp.

Brief comments on the Karluk River sockeye salmon restoration program; Upper Thumb River sockeye returns increased to 30,000; 21,000,000 eggs were taken and 18,800,000 eyed eggs were planted in the Upper Thumb River in 1985; estimated sockeye returns in 1985 because of Karluk enhancement projects. -- [SOCKEYE, HATCHERY]

**Hansen,** Jeffrey A. (ed.). 1987. FRED 1986 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, Alaska. FRED Report Number 70 (January, 1987). 99pp.

Brief comments on the Karluk River sockeye salmon restoration program; fertilizer was added to Karluk Lake in 1986; Upper Thumb River sockeye returns increased to 31,400; 23,400,000 eggs were taken and 19,800,000 eyed eggs were planted in the Upper Thumb River in 1986; estimated sockeye returns in 1986 because of Karluk enhancement projects. -- [SOCKEYE, HATCHERY, FERTILIZATION]

**Harris,** A. ca. 1897. Alaska and the Klondike gold fields, containing a full account of the discovery of gold; enormous deposits of the precious metal; routes traversed by miners; how to find gold; camp life at Klondike. Monroe Book Company, Chicago, IL. 556pp.

Brief comments on Karluk River salmon fisheries and canneries in 1897. -- [SOCKEYE, CANNERIES]

**Harry,** George, Y., Jr., Charles J. Di Costanzo, Wilbur L. Hartman, Robert J. Ellis, William F. Royce, Robert L. Burgner, & Ole A. Mathisen. 1964. Summary report of studies on the optimum escapement of sockeye salmon in Southwestern Alaska,

1961-1962. US Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report No. MR 64-2. 119pp.

Summary report of the 1961-1962 comparative field studies to determine optimum escapements of many sockeye salmon systems in Southwestern Alaska, including the Karluk River; field studies by BCF and FRI, in cooperation with ADFG; spawning escapements; determination of amount of spawning area for adult sockeye salmon; quality of lake nursery habitat for sockeye salmon juveniles; collection of juveniles in lake habitat; juvenile sizes; measurements of water chemistry, primary production, and Secchi disk depths; water temperatures and solar radiation. This two-year study was eventually formally published by Burgner et al. (1969). -- [SOCKEYE, SPAWNING, JUVENILES, SMOLT, LIMNOLOGY]

**Hartman,** Wilbur L., and Charles Y. Conkle. 1960. Fecundity of red salmon at Brooks and Karluk lakes, Alaska. Fishery Bulletin 61(180): 53-60. (Available at: http://fisherybulletin.nmfs.noaa.gov/61-1/hartman.pdf; accessed 28 July 2011)

Discussion of fecundity of sockeye salmon in Brooks and Karluk Lakes in 1958; apparent decreases in fecundity and size occurred in Karluk Lake sockeye salmon; average fecundity 2,762; left ovaries contained more eggs than those on the right. -- [SOCKEYE, FECUNDITY]

**Hartman,** Wilbur L., and Robert F. Raleigh. 1964. Tributary homing of sockeye salmon at Brooks and Karluk lakes, Alaska. Journal of the Fisheries Research Board of Canada 21(3): 485-504.

Detailed study of adult sockeye salmon homing behavior at Brooks and Karluk Lakes in 1960-1961; experiments tested adult fidelity to a specific spawning stream; concluded that sockeye adults home to specific tributaries of Karluk Lake. -- [SOCKEYE, ADULTS, MIGRATIONS]

**Hartman,** Wilbur L., Theodore R. Merrell & Richard Painter. 1964. Mass spawning behavior of sockeye salmon in Brooks River, Alaska. Copeia 1964(2): 362-368.

Discussion of spawning behavior of sockeye salmon in the Brooks River, plus comments and data on Karluk's sockeye salmon spawning areas in several lateral creeks (redd area < 1 $m^2$); stream substrate topography allows closer redd sites in Karluk's lateral streams. -- [SOCKEYE, SPAWNING]

**Hartman,** W. L., W. R. Heard & B. Drucker. 1967. Migratory behavior of sockeye salmon fry and smolts. Journal of the Fisheries Research Board of Canada 24(10): 2069-2099.

Comparative discussion of sockeye fry and smolt migratory behavior from many freshwater systems, including Karluk River and Lake; seasonal and diel timing of fry migrations to Karluk Lake in 1961-1963; seasonal and diel timing of smolt migrations in 1961-1963; underwater observations of smolt night migrating behavior; smolt schooling behavior; active downstream migration; Dolly Varden predation on smolt heavy near Karluk Lake outlet. -- [SOCKEYE, FRY, SMOLT, MIGRATIONS]

**Hartman,** W. L., and R. L. Burgner. 1972. Limnology and fish ecology of sockeye salmon nursery lakes of the world. Journal of the Fisheries Research Board of Canada 29: 699-715.

Comparative discussion of the limnology and fish ecology of many sockeye salmon systems in British Columbia, Kamchatka, and Alaska, including the Karluk River and Lake; physical and chemical characteristics; coexisting fishes; nutrient additions from adult salmon carcasses; nursery habitats. -- [SOCKEYE, FRY, LIMNOLOGY]

**Harvey,** Lola. 1991. Derevnia's daughters. Saga of an Alaskan village. Sunflower University Press, Manhattan, KS. 489pp.

Memories about life and conditions at the Karluk Spit canneries during its early years (1889-1903); conflicts between beach seine crews. -- [CANNERIES]

**Hennick,** Daniel P., and Donald E. Bevan. 1970. Kodiak Island area salmon catch statistics. University of Washington, Fisheries Research Institute, Circular No. 70-12 (Supersedes Circular 39, published in 1956) (October 27, 1970). 21pp.

Summary table and graph of Karluk District escapement, catch, and total run for 1921-1968. -- [SOCKEYE]

**Hensel,** Richard J., and Willard A. Troyer. 1964. Nesting studies of the Bald Eagle in Alaska. Condor 66(4): 282-286.

Report on bald eagle territories and nesting success in 1959, 1961 & 1962 at Karluk Lake. -- [BIRDS]

**Hensleigh,** Jay E., and Andrew P. Hendry. 1998. Rheotactic response of fry from beach-spawning populations of sockeye salmon: evolution after selection is relaxed. Canadian Journal of Zoology 76: 2186-2193.

Analysis of fry movements in relation to the current for tributary and beach spawning sockeye subpopulations in Lake Washington, WA; comparison of results with those from Karluk Lake. -- [SOCKEYE, FRY, MIGRATIONS, SUBPOPULATIONS]

**Hershberger,** William K., Donald E. Bevan, Robert F. Donnelly & Kenneth R. Johnson. 1977. A biochemical investigation of Kodiak Island pink salmon gene frequencies. University of Washington, Fisheries Research Institute, Interim Report for the period February 1, 1977 to May 15, 1977, FRI-UW-7717 (May, 1977). 16pp.

Preliminary report on gene frequency variations found in pink salmon adults and fry from 27 spawning streams around Kodiak Island in 1976-1977, including samples from Karluk Lagoon and River. -- [PINK, GENETICS]

**Higgins,** Elmer. 1927. Progress in biological inquiries, 1926, including the Proceedings of the Divisional Conference, January 4 to 7, 1927. US Department of Commerce, Bureau of Fisheries, Appendix VII to the Report of the US Commissioner of Fisheries for 1927, Bureau of Fisheries Document Number 1029.

Summary of Karluk River sockeye studies by the BOF in 1926; attempts to determine sockeye salmon returns from known escapements; study of freshwater life history of Karluk Lake sockeye salmon by Willis H. Rich and Seymour P. Smith; 47,000 sockeye smolts marked; Karluk Lake mapped and sounded; spawning stream surveys; proceedings of BOF Division of Scientific Inquiry conference, with Charles H. Gilbert paper discussing Karluk's sockeye salmon studies. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1928. Progress in biological inquiries, 1927. US Department of Commerce, Bureau of Fisheries, Appendix VI to the Report of the US Commissioner of Fisheries for 1928, Bureau of Fisheries Document Number 1044.

Summary of Karluk River sockeye salmon studies by the BOF in 1927; attempts to determine sockeye salmon returns from known escapements; statistical studies by Willis H. Rich and Edward M. Ball; 50,000 sockeye smolts marked; Karluk Lake water temperatures; George I. Kemmerer studies Karluk Lake water chemistry; Willis Rich and Seymour P. Smith study sockeye salmon freshwater life history. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1929. Progress in biological inquiries, 1928, including extracts from the Proceedings of the Divisional Conference, January 2 to 5, 1929. US Department of Commerce, Bureau of Fisheries, Appendix X to the Report of the US Commissioner of Fisheries for 1929, Bureau of Fisheries Document Number 1068.

Summary of Karluk River sockeye studies by the BOF in 1928; attempts to determine sockeye returns from known escapements; statistical studies by Willis H. Rich and Edward M. Ball; 50,000 sockeye smolts marked; Seymour P. Smith and Alan ca. Taft survey Karluk Lake spawning streams and collect limnological data; discovery that smolt-adult ocean survival higher than expected. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1930. Progress in biological inquiries, 1929. US Department of Commerce, Bureau of Fisheries, Appendix XV to the Report of the US Commissioner of Fisheries for 1930, Bureau of Fisheries Document Number 1096.

Summary of Karluk River sockeye studies by the BOF in 1929; attempts to determine sockeye returns from known escapements; statistical studies by Willis H. Rich and Edward M. Ball; 50,000 sockeye smolts marked; Willis H. Rich and Merrill Brown survey Karluk Lake spawning streams and collect limnological data. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1931. Progress in biological inquiries, 1930. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1931.

Summary of Karluk River sockeye studies by the BOF in 1930; attempts to determine sockeye returns from known escapements; statistical studies by Willis H. Rich and Edward M. Ball; 55,000 sockeye smolts marked; Willis H. Rich and J. Thomas Barnaby survey Karluk Lake spawning streams and collect limnological data. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1932. Progress in biological inquiries, 1931. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1932.

BOF transferred from Stanford University to a Seattle laboratory; summary of Karluk River sockeye studies by BOF in 1931; attempts to determine sockeye returns from known escapements; 55,000 sockeye smolts marked; survey Karluk Lake spawning streams and collect limnological data. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1933. Progress in biological inquiries, 1932. US Department of Commerce, Bureau of Fisheries, Appendix II to the Report of the US Commissioner of Fisheries for 1933.

Summary of Karluk River sockeye studies by the BOF in 1932; attempts to determine sockeye returns from known escapements; 59,000 sockeye smolts marked; smolt age and size variation; survey Karluk Lake spawning streams and collect limnological data. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1934. Progress in biological inquiries, 1933. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1934.

Summary of Karluk River sockeye studies by the BOF in 1933 by Thomas Barnaby; attempts to determine sockeye returns from known escapements; variation in age composition of adults; 40,000 sockeye smolts marked; survey Karluk Lake spawning streams and collect limnological data; effect of Karluk pink salmon on sockeye salmon. -- [SOCKEYE, AGE, LIMNOLOGY, SMOLT, PINK]

**Higgins,** Elmer. 1935. Progress in biological inquiries, 1934. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 21, Appendix III to the Report of the US Commissioner of Fisheries for 1935.

Summary of Karluk River sockeye studies by the BOF in 1934 by Thomas Barnaby and Larry Townsend; attempts to determine sockeye returns from known escapements; ocean mortality fairly constant; 50,000 sockeye smolts marked; survey Karluk Lake spawning streams and collect limnological data; future studies to focus on freshwater life stages. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Higgins,** Elmer. 1937. Progress in biological inquiries, 1935. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 26, Appendix IV to the Report of the US Commissioner of Fisheries for 1936.

Summary of Karluk River sockeye studies by the BOF in 1935 by Thomas Barnaby, Larry Townsend and John Hart; attempts to determine sockeye returns from known escapements; 49,092 sockeye smolts marked; egg-smolt mortality high; survey Karluk Lake spawning streams and collect limnological data; phosphorus and silicon limiting factors; predation and competition factors on sockeye survival. -- [SOCKEYE, LIMNOLOGY, SMOLT, FRY, DOLLY VARDEN, STICKLEBACKS]

**Higgins,** E. 1938. Progress in biological inquiries, 1936. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 29, Appendix III to Report of Commissioner of Fisheries for the fiscal year 1937.

Summary of Karluk River sockeye studies by the BOF in 1936 by Thomas Barnaby; no correlation between size of escapement and return; 53,400 sockeye smolts marked; larger smolts have higher survival; survey Karluk Lake spawning streams and collect limnological data; phosphorus and silicon limiting factors; most phosphorus derived from salmon carcasses; escapement size may influence plankton growth; suggest fertilizing Karluk Lake; fry-to-smolt mortality hard to determine; low predation on fingerlings by Dolly Varden and birds. -- [SOCKEYE, LIMNOLOGY, SMOLT, FRY, DOLLY VARDEN]

**Higgins,** Elmer 1938. Progress in biological inquiries, 1937. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 30, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1938.

Summary of Karluk River sockeye studies by the BOF in 1937 by Thomas Barnaby and Allan DeLacy; ocean mortality constant; age of adults; escapement-return variations due to freshwater survival; survey of Karluk Lake spawning streams and collect limnological data; phosphorus and silicon limiting factors; detailed studies of Dolly Varden predation and migration. -- [SOCKEYE, AGE, LIMNOLOGY, DOLLY VARDEN]

**Higgins,** Elmer. 1939. Progress in biological inquiries, 1938. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 35, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1939.

Summary of Karluk River sockeye studies by the BOF in 1938 by Thomas Barnaby and Allan DeLacy; ocean mortality constant; age of adults; eggs collected for fecundity comparison with 1926; problems at weir because of pink salmon carcasses; age and length of smolts; detailed studies of Dolly Varden growth and migration;

meteorological station installed at Karluk. -- [SOCKEYE, AGE, FECUNDITY, WEIR, SMOLT, DOLLY VARDEN, PHYSICAL]

**Higgins,** Elmer. 1940. Progress in biological inquiries, 1939. US Department of Commerce, Bureau of Fisheries, Administrative Report No. 39, Appendix I to Report of Commissioner of Fisheries for the fiscal year 1940.

Summary of Karluk River sockeye salmon studies by the BOF in 1939 by Allan DeLacy and William M. Morton; sockeye runs fluctuated greatly 1921-1939; ocean mortality constant; freshwater mortality from spawning ground conditions, lake fertility, and predation; age and length of smolts; morphometric data collected to see if spring and fall runs are racially distinct; eggs collected for fecundity comparison with 1926; detailed studies of Dolly Varden migration. -- [SOCKEYE, AGE, FECUNDITY, SMOLT, DOLLY VARDEN]

**Higginson,** Ella. 1910. Alaska, the great country. The Macmillan Company, New York. 537pp.

Description of the Karluk Spit and Lagoon landscape, canneries, society, and a detailed tour of the Karluk River hatchery in about 1908. -- [GENERAL, CANNERIES, HATCHERY]

**Hilliard,** Douglas K. 1959. Notes on the phytoplankton of Karluk Lake, Kodiak Island, Alaska. The Canadian Field-Naturalist 73(3): 135-143.

Important year-round study of the phytoplankton of Karluk Lake in 1956-1957; discovery of abundant plankton in winter months; 255 phytoplankton species, mostly diatoms. -- [LIMNOLOGY, PLANTS]

**Hilliard,** Douglas K. 1959. The effects of low temperatures on larval cestodes and other helminths in fish. Journal of Parasitology 45(3): 291-294.

Low temperature survival times of larval cestodes from sockeye salmon hosts, probably from Karluk Lake. -- [SOCKEYE, PARASITES]

**Hilliard,** Douglas K. 1960. Studies on the helminth fauna of Alaska. XXXVIII. The taxonomic significance of eggs and coracidia of some diphyllobothriid cestodes. Journal of Parasitology 46: 703-716.

Descriptions of eggs and coracidia of a cestode from Karluk Lake brown bear and glaucous-winged gull, sockeye salmon being an intermediate host; effect of hydrostatic pressure and light on cestode egg hatching success at Karluk Lake. -- [SOCKEYE, PARASITES, BEARS, BIRDS]

**Hilliard,** Douglas K. 1969. Studies on Chrysophyceae from some ponds and lakes in Alaska III. New or unusual chrysophytes from Pinguicula Lake, Kodiak Island, Alaska (Chapter 6, p. 104-120). *In:* T.N.V. Karlstrom., and G. E. Ball (eds.), The Kodiak Island refugium: its geology, flora, fauna and history. The Boreal Institute, University of Alberta, Calgary. The Ryerson Press. 262pp.

Summary of chrysophyte algae collected and descriptions of new species from Pinguicula Lake, which is tributary to the Karluk River. -- [LIMNOLOGY, PLANTS]

**Hobbie,** John E. 1997. History of limnology in Alaska: Expeditions and major projects (Chapter 2, p. 45-60). *In:* Alexander M. Milner and Mark W. Oswood (eds.), Freshwaters of Alaska: Ecological syntheses, Ecological Studies 119, Springer-Verlag, New York, NY. 369pp.

Historical review of Alaskan limnology, including comments on the importance of early studies at Karluk and Bare Lakes. -- [LIMNOLOGY]

**Holland,** Johnny S. (ed.). 1988. FRED 1987 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 81 (January, 1988). 98pp.

Brief comments on Karluk sockeye salmon restoration program; 87,272 kg of fertilizer was added to Karluk Lake in 1987; Upper Thumb River sockeye returns increased to 57,800 and the streamside hatchery facility was closed; tagging study of Upper Thumb River sockeye salmon; estimated sockeye returns in 1988 from Karluk enhancement projects; sockeye smolt emigration very large in 1987. -- [SOCKEYE, FERTILIZATION, SMOLT]

**Holland,** J.S. (ed.). 1989. FRED 1988 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 89 (January, 1989). 110pp.

Brief comments on Karluk River sockeye salmon restoration program; 87,272 kg of fertilizer was added to Karluk Lake in 1988; Upper Thumb River sockeye salmon returns increased to 49,884; estimated sockeye returns in 1989 from Karluk enhancement projects; water quality analysis of Karluk Lake samples. -- [SOCKEYE, FERTILIZATION, LIMNOLOGY]

**Holland,** J.S. (ed.). 1990. FRED 1989 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 101 (January, 1990). 132pp.

Brief comments on Karluk River sockeye salmon restoration program; Karluk Lake fertilized in 1989; Upper Thumb River sockeye salmon returns increased to 35,000; study using half-length coded-wire tags in Karluk sockeye; *Exxon Valdez* oil spill closed fishing except for inner Karluk Lagoon; estimated sockeye returns in 1990 from Karluk enhancement projects; water quality analysis of Karluk Lake samples. -- [SOCKEYE, FERTILIZATION, LIMNOLOGY]

**Holland,** J.S., and Marianne McKean (eds.). 1992. FRED 1991 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 117 (January, 1992). 150pp.

Brief mention of Karluk River sockeye salmon restoration program and post-fertilization studies; conclude that Karluk Lake sockeye salmon run now restored; 4,700,000 sockeye smolt emigrated 1991; large sockeye runs; estimated sockeye returns from Karluk enhancement projects in 1992; water quality analysis of Karluk Lake samples. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Holmes,** Harlan B. 1934. Natural propagation of salmon in Alaska. 1933 Proceedings of the Fifth Pacific Science Congress 5: 3585-3592. University of Toronto Press.

Discussion of attempts to determine the relation between returns from known escapements for Karluk River and Chignik sockeye salmon; methods for determining sockeye smolt numbers; migratory behavior of juveniles; theories on sockeye salmon abundance variability. -- [SOCKEYE, SMOLT, MIGRATION]

**Holmes,** Patrick B. 1988. Salmon catch and escapement statistics, Kodiak Management Area, 1986. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K88-37 (December, 1988). 248pp.

Summary report of 1986 salmon catch, escapement and total run statistics for the Kodiak Management Area, including the Karluk River early and late runs of sockeye salmon, and the Chinook, coho, pink, and chum salmon runs; composition of age, sex, and length. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, AGE, SEX, LENGTH]

**Holmes,** Patrick B. 1990. Kodiak Management Area salmon catch and escapement, 1986. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Technical Fishery Report 90-04 (March, 1990). 64pp.

Summary report of 1986 salmon catch, escapement and total run statistics for the Kodiak Management Area, including the Karluk River early and late runs of sockeye salmon, and the Chinook, coho, pink, and chum salmon runs; composition of age, sex, and length. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, AGE, SEX, LENGTH]

**Holmes,** Patrick B. 1991. Kodiak Management Area salmon catch and escapement, 1987. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Technical Fishery Report 91-14 (September, 1991). 72pp.

Summary report of 1987 salmon catch, escapement and total run statistics for the Kodiak Management Area, including Karluk River coho salmon and the early and late runs of sockeye salmon; age composition, sex, and length. -- [SOCKEYE, COHO, AGE, LENGTH]

**Holmes,** Patrick B., and Barbara E. Monkiewicz. 1988. Kodiak Management Area sockeye and coho salmon catch and escapement statistics, 1985. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K88-9 (February, 1988). 346pp.

Summary report of 1985 salmon catch, escapement and total run statistics for the Kodiak Management Area, including the Karluk River early and late runs of sockeye salmon, and the coho salmon run; composition of age, sex, and length. -- [SOCKEYE, COHO, AGE, SEX, LENGTH]

**Holmes,** Patrick B., and Barbara E. Monkiewicz. 1988. Catch and escapement statistics for Kodiak Management Area sockeye and coho salmon, 1985. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Technical Fishery Report 88-09 (June, 1988). 48pp.

Summary report of 1985 salmon catch, escapement and total run statistics for the Kodiak Management Area, including the Karluk River early and late runs of sockeye salmon, and the coho salmon run; composition of age, sex, and length. -- [SOCKEYE, COHO, AGE, SEX, LENGTH]

**Honnold,** Steven G., Mark J. Witteveen, Matt Birch Foster, Ivan Vining & James J. Hasbrouck. 2007. Review of salmon escapement goals for salmon stocks in the Kodiak Management Area, Alaska. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Manuscript No. 07-10 (December 2007), Anchorage. 97pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/fms07-10.pdf; accessed 1 August 2011)

Important detailed review of salmon escapement goals for the Kodiak Island area, including those for the Karluk River (sockeye and Chinook); recommended increasing the biological escapement goal for early run Karluk sockeye from 100,000-210,000 to 110,000-250,000, based on updated spawner-recruit data, but the goal for late run Karluk sockeye was left unchanged at 170,000-380,000; brood tables for early- and late-run Karluk sockeye salmon; Ricker spawner-recruit analysis for early- and late-run Karluk sockeye (1981-1999); escapement goal for Karluk's Chinook salmon (3,600-7,300) was left unchanged; previous escapement goals for coho, pink, and chum salmon were left unchanged. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, ESCAPEMENT, MANAGEMENT]

**Hoopes,** David Townsend. 1962. Ecological distribution of spawning sockeye salmon in three lateral streams, Brooks Lake, Alaska. Doctor of Philosophy Dissertation, Iowa State University of Science and Technology, Ames. 235pp.

Comparison of spawning gravel composition in two Karluk Lake tributaries (Meadow and Grassy Point Creeks) with those in the Brooks River system; Karluk Lake tributaries have coarser salmon spawning substrates. -- [SOCKEYE, SPAWNING, PHYSICAL]

**Howe,** Allen L., Gary Fidler & Michael J. Mills. 1995. Harvest, catch, and participation in Alaska sport fisheries during 1994. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 95-24 (October, 1995). 212pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1994, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Howe,** Allen L., Gary Fidler, Allen E. Bingham & Michael J. Mills. 1996. Harvest, catch, and participation in Alaska sport fisheries during 1995. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 96-32 (October, 1996). 212pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1995, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Howell,** Kenneth E. 2002. A brownie got me. 24 Hour Campfire.com.

Description of trapping bears at Karluk Lake by FWS refuge wildlife biologists (Will Troyer, Earl Fleming, & Kenneth Howell) in 1958 and of being hit by a large bear that escaped a trap at Salmon Creek on 4 August 1958.-- [BEARS]

**Hsu,** Ya-Li, H. Mark Engelking & Joann ca. Leong. 1986. Occurrence of different types of Infectious Haemotopoietic Necrosis virus in fish. Applied and Environmental Microbiology 52(6): 1353-1361.

Classification of IHN virus isolates of salmonid fishes from Alaska, California, Oregon, Washington, Idaho, and Canada, including sockeye and Chinook salmon from the Karluk River; the IHN virus from the Karluk salmonids was Type 5, first isolated in 1978 and 1979. -- [SOCKEYE, CHINOOK, DISEASE]

**Hubbs,** Carl L. 1941. Predator control in relation to fish management in Alaska. American Wildlife Institute, Transactions of the Fifth North American Wildlife Conference (March 18-20, 1940): 153-162.

Discussion of predator control efforts in Alaska to increase salmon runs, including control of Dolly Varden, eagles, gulls, terns, and bears; abuses in Dolly Varden bounty program; effects of Dolly Varden control at Karluk Lake were complex because sculpins and stickleback also serve as prey; discussion largely based upon Hubbs's tour of Alaska in 1939. -- [SOCKEYE, DOLLY VARDEN, BIRDS, BEARS, PREDATION]

**Ida,** Hitoshi. 1991. Mode of meristic variation in fishes of the family Salmonidae (pp. 49-55). *In:* Fumio Yamazaki (ed., Hokkaido University, Japan), Reproductive biology and population genetics of Dolly Varden (Salmonidae), Report of oversea work supported by Grant-in-aid for Overseas Scientific Survey of the Ministry of Education, Science and Culture of Japan, during 1987-1990.

Detailed analysis of meristic variation in the Salmonidae, including Dolly Varden and Arctic charr from the Karluk River system (Karluk Lake, Moraine Creek, Thumb River) in 1987 and 1989. -- [DOLLY VARDEN, ARCTIC CHARR]

**Ingersoll,** Ernest. 1897. Gold fields of the Klondike and the wonders of Alaska. Edgewood Publishing Company. 487pp.

Brief comments on the Karluk River salmon fishery. -- [CANNERY]

**Inkersley,** Arthur. 1893. Alaskan days. The Californian Illustrated Magazine 4: 216-227.

Brief note that in 1890 Karluk was the largest cannery on Kodiak Island and employed 1,100 fishermen and packers; 1890 photograph of Karluk village showing many barabaras and the Russian Orthodox Church. – [CANNERY, HISTORY]

**International North Pacific Fisheries Commission.** 1962. The exploitation, scientific investigation, and management of salmon (genus *Oncorhynchus*) stocks on the Pacific Coast of the United States in relation to the abstention provisions of the North Pacific Fisheries Convention. International North Pacific Fisheries Commission, Bulletin 10. 160 p.

Analysis of Pacific salmon statistics from many stocks, including the Karluk River, for the North Pacific Fisheries Convention; Karluk River sockeye salmon age composition, 1934-1955; returns from known escapements at Karluk River, 1887-1948; rate of exploitation of Karluk River salmon. -- [SOCKEYE, AGE]

**Jackson,** James**,** Joe Dinnocenzo & Geoff Spalinger. 2010. Kodiak Management Area commercial salmon fishery annual management report, 2010. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 10-47 (December 2010), Anchorage. 184pp (Available at: http://www.adfg.alaska.gov/FedAidPDFs/FMR10-47.pdf; accessed 28 July 2011)

Comprehensive summary report on the 2010 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; early- and late-run sockeye harvests, escapements, and escapement goals; commercial fishing; harvest gear and value; fishing times; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY, MANAGEMENT]

**Jennings,** Mark R. 1987. Faces from the past: Frederic Morton Chamberlain (1867-1921), pioneer fishery biologist of the American West. Fisheries 12(6): 22-29.

Detailed discussion of the life and accomplishments of fishery biologist Frederic M. Chamberlain, who published the 1903 data on Karluk River sockeye salmon collected by Cloudsley L. Rutter. -- [SOCKEYE, HISTORY]

**Johnson,** Kenneth Ralph. 1979. Genetic variation in populations of pink salmon (*Oncorhynchus nerka*) from Kodiak Island, Alaska. Master of Science Thesis, University of Washington, Seattle, Washington. 94pp.

Detailed study of genetic variation in Kodiak Island pink salmon, including samples from the Karluk River. -- [PINK, GENETICS]

**Jones,** E. Lester. 1915. Report of Alaska investigations in 1914 (December 31, 1914). Department of Commerce, Bureau of Fisheries, Government Printing Office, Washington, DC. 155 p. (Available at: http://www.archive.org/stream/reportofalaskain00unitrich#page/n5/mode/2up; accessed 1 August 2011)

Summary report of field investigation in Alaska in May-October 1914, including those at Karluk; discussion of enemies of salmon (bears, wolves, eagles, gulls, terns, mergansers, hair seals, trout, and sculpins); commercial value of Dolly Varden; brief mention and photographs of Karluk hatchery; disregard for fisheries laws; need for BOF vessels to enforce fisheries regulations; fishery recommendations. -- [SOCKEYE, DOLLY VARDEN, FISHERY, BEARS, HATCHERY, BIRDS]

**Jordan,** David Starr. 1903. The parent-stream theory of the return of salmon. The Popular Science Monthly (November) 64: 48-52.

Brief general discussion of the idea that salmon return to their natal stream; 1903 tagging data collected by Cloudsley L. Rutter and Milo H. Spaulding on Karluk's sockeye salmon were used as contrary evidence of homing to a natal stream. -- [SOCKEYE, MIGRATION]

**Jordan,** David Starr. 1903. The salmon and salmon streams of Alaska. The Popular Science Monthly (December) 64: 165-172.

Brief general discussion of the 5 Pacific salmon species and their typical spawning streams, including mention of sockeye salmon grilse in the Karluk River. -- [SOCKEYE]

**Jordan,** David Starr & Barton Warren Evermann. 1904. Preliminary report of the Alaska Salmon Commission. 58th Congress, 2d Session, House of Representatives, Document No. 477: 3-37.

Discussion of the status of salmon populations throughout Alaska based upon field work completed in 1903 by many biologists, including the studies of Cloudsley L. Rutter and Milo H. Spaulding at Karluk River and Lake; Alaska Salmon Commission formed because of declining salmon abundance; discussion of operations of commercial fishery and attempts by the government to regulate salmon fisheries; proposed changes in regulations governing Alaskan salmon fisheries; proposed government salmon hatchery at Karluk Lake. -- [SOCKEYE, HATCHERY, CANNERIES]

**Jordan,** David Starr. 1922. The days of a man. Being memories of a naturalist, teacher and minor prophet of democracy. Volume one, 1851-1899. World Book Company, Yonkers-on-Hudson, NY.

Brief description of a conflict between the Alaska Packers' Association and Pacific Steam Whaling Company for beach seining rights on Karluk Spit in July 1897. – [SOCKEYE, CANNERIES]

**Juday,** C., Willis H. Rich, G. I. Kemmerer & Albert Mann. 1932. Limnological studies of Karluk Lake, Alaska, 1926-1930. US Bureau of Fisheries Bulletin 47 (12): 407-436. (Available at: http://fishbull.noaa.gov/47-1/juday.pdf; accessed 28 July 2011)

Important early study of Karluk Lake's limnology in 1926-1930; water chemistry, water temperature, bottom deposits; plankton; suggestion that salmon carcasses affect the productivity of Karluk Lake and the growth of juvenile sockeye salmon. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Karlstrom,** Thor N.V., and George E. Ball (eds.). 1969. The Kodiak Island refugium: its geology, flora, fauna and history. The Boreal Institute, University of Alberta, Calgary. The Ryerson Press. 262pp.

Description of the Kodiak Island refugium, an ice-free area during the last period of glaciation located to the west of Karluk Lake; plant and animal collections mainly from June, 1962, were analyzed by several specialists for evidence of this refugium, including several sites within the Karluk River drainage basin; some Karluk River and Lake data for fishes (especially Arctic charr), aquatic invertebrates, aquatic macrophytes, bryophytes, and algae -- [ARCTIC CHARR, INVERTEBRATES, LIMNOLOGY, GENERAL]

**Ketchikan Miner**. 1912. We have the largest salmon hatchery in the world. Ketchikan Miner (August 2, 1912), Ketchikan, AK.

Primarily an article about Fortmann hatchery, but also mentions Karluk River hatchery operated by Alaska Packers Association, costs involved, and controversy about tax rebates for hatchery operations. -- [SOCKEYE, HATCHERY]

**Khlebnikov,** Kiril Timofeevich. 1994. Notes on Russian America. Part I: Novo-Arkhangel'sk. Richard Pierce (ed.), Alaska History No. 43, The Limestone Press, Kingston, Ontario.

Brief note on the number of Russians present (3) at Karluk Village in 1821-1825, facilities and livestock present, and the use of traps to catch fish. -- [SOCKEYE, HISTORY, SUBSISTENCE]

**Khlebnikov,** Kiril Timofeevich. 1994. Notes on Russian America. Parts II-V: Kad'iak, Unalashka, Atkha, the Pribylovs. Richard Pierce (ed.), Alaska History No. 42, The Limestone Press, Kingston, Ontario.

Important record of 204,000 salmon caught for drying at Karluk River in 1824 by the Russian-American Company for use by sea otter hunters and for distribution to other locations; construction of a wooden fish weir on the Karluk River in 1825 to help capture salmon; sockeye and pink salmon were dried for food; seasonal timing of salmon run in 1825, with an early run starting in April or May, then larger run in early to mid-July; run continued until mid-October; 1825 human population on Kodiak Island. -- [SOCKEYE, SUBSISTENCE, RUN TIMING, HISTORY]

**Kline,** Thomas C., Jr. 1991. The significance of marine-derived biogenic nitrogen in anadromous Pacific salmon freshwater food webs. Ph.D. Thesis, University of Alaska, Fairbanks, Alaska. 114pp.

This reference was not examined, but it apparently contains information on the levels of marine derived nitrogen in sockeye salmon from Karluk Lake.. -- [SOCKEYE, LIMNOLOGY]

**Kline,** Thomas ca. 1992. Nitrogen isotope technique provides direct evidence for fertilization of sockeye nursery lakes by salmon carcasses. University of Fairbanks, School of Fisheries and Ocean Sciences, SFOS Highlights RH92-1 (January, 1992): 1-4.

Brief summary report on the use of nitrogen isotopes to study the contribution of sockeye salmon carcass nutrients to the productivity of Iliamna and Karluk Lakes; marine-derived nitrogen transported into Karluk Lake by returning adults becomes reused through the food chain by phytoplankton, zooplankton, and juvenile sockeye salmon; most nitrogen in the bodies of Karluk's sockeye salmon fry is of marine origin; percent marine nitrogen in the fry are directly related to adult escapements; Karluk Lake production appears to be dependent on salmon carcass nutrients. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Kline,** Thomas ca. 1993. Stable isotope ecology of Alaskan sockeye salmon lakes (pp. 89-94). *In:* John N. Heine and Nicole L. Crane (eds.), Diving for Science … 1993, Proceedings of the American Academy of Underwater Sciences, Thirteenth Annual Scientific Diving Symposium, Asilomar Conference Center, Pacific Grove, CA, 19-22 September 1993.

Important short report discussing the use of nitrogen and carbon isotopes to trace food webs and assess the importance of sockeye salmon carcass nutrients on the productivity of several Alaskan lakes, including Karluk Lake; fry from Karluk Lake had high percentages of marine derived nitrogen directly related to adult escapements; an apparent dietary change occurred between the Karluk Lake fry and smolt life stages, suggesting a shift from zooplankton to cannibalism; juvenile growth increased rapidly during the dietary change. -- [SOCKEYE, JUVENILES, FOOD, LIMNOLOGY, FERTILIZATION]

**Kline,** Thomas C., Jr. 2003. Trophic level implications when using natural stable isotope abundance to determine effects of salmon-derived nutrients on juvenile sockeye salmon ecology (pp. 229-236). *In:* John G. Stockner (ed.), Nutrients in salmonid ecosystems: sustaining production and biodiversity. American Fisheries Society, Symposium 34, Bethesda, Maryland.

Important discussion of the trophic levels and abundance of stable isotopes coming from sockeye salmon-carcass nutrients, including $\delta^{15}N$ and $\delta^{13}C$ data from Karluk Lake zooplankton (1988-1990) and sockeye fry (1986-1991) and smolts (1988-1992); $\delta^{15}N$ values of Karluk's fry, smolt, and zooplankton increased during the study years, while $\delta^{13}C$ values decreased; sockeye smolt $\delta^{15}N$ values were higher than in fry; smolts may have fed at a higher trophic level than did the fry; the large sockeye escapements in 1989 (because the *Exxon Valdez* oil spill halted fishing) likely increased marine-derived nitrogen at Karluk Lake; the food chain length leading to juvenile sockeye at Karluk was longer than in some other Alaskan lakes; comparison with the Kvichak system. -- [SOCKEYE, JUVENILES, FOOD, LIMNOLOGY]

**Kline,** Thomas C., John J. Goering, Ole A. Mathisen, & Jeffery P. Koenings. 1990. Recycling of elements transported upstream by run of Pacific salmon (returns) (pp. 10-11). *In:* Research on Pacific Salmon Biology, Mini-Symposium Abstracts, August 6, 1990. Report No. AK-SG-90-08, Juneau Center for Fisheries and Ocean Sciences, Juneau, AK, and Alaska Sea Grant College Program, Fairbanks, AK.

Brief research abstract on the importance of adult salmon-carcass nutrients to the productivity of several Alaskan lake and river systems, including Karluk Lake; most nitrogen in juvenile sockeye salmon bodies is of

marine origin; possible productivity link between the spring and fall runs of Karluk's sockeye salmon from the effect of carcass nutrients on seasonal abundance of phytoplankton and zooplankton. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Kline,** Thomas ca., and J.J. Goering. 1993. Stable isotope analysis of juvenile sockeye salmon. Final Report RSA # RS1131076/EN1132116, Institute of Marine Science, School of Fisheries and Ocean Sciences, University of Alaska, Fairbanks, AK. 21 p.

Report not examined, but it apparently contains information on the levels of marine derived nitrogen in sockeye salmon fry and smolt from Karluk Lake. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Kline,** Thomas C., Jr., John J. Goering, Ole A. Mathisen, Patrick H. Poe, Patrick L. Parker, and Richard S. Scalan. 1993. Recycling of elements transported upstream by runs of Pacific salmon: II. d15N and d13C evidence in the Kvichak River watershed, southwestern Alaska. Canadian Journal of Fisheries and Aquatic Sciences 50: 2350-2365.

Detailed analysis of the contribution of adult sockeye salmon carcass nutrients to different trophic levels in the biota of the Kvichak River watershed; limited data on nitrogen and carbon isotopes from 1988 Karluk River adult sockeye salmon; suggestion that Karluk Lake sockeye fry, and the systems productivity, are highly dependent upon marine-derived nitrogen supplied by salmon carcasses; there exists a nutrient feedback loop between sockeye salmon adult escapement and juvenile production. -- [SOCKEYE, LIMNOLOGY]

**Kline,** Thomas C., Jr., John J. Goering, Vera Alexander, and J. J. Kelley. 1993. The importance of marine-derived nitrogen in subarctic sockeye salmon lakes. Proceedings of the Eighth International Symposium on Sea Ice and the Okhotsk Sea, 1-4 February 1993, Mobetsu, Hokaido, Japan.

This reference not examined, but it apparently contains information on the levels of marine derived nitrogen in sockeye salmon from Karluk Lake.. -- [SOCKEYE, LIMNOLOGY]

**Kline,** Thomas C., Jr., John J. Goering & Robert J. Piorkowski. 1997. The effect of salmon carcasses on Alaskan freshwaters (Chapter 7, p. 179-204). *In:* Alexander M. Milner and Mark W. Oswood (eds.), Freshwaters of Alaska: Ecological syntheses, Ecological Studies 119, Springer-Verlag, New York, NY. 369pp.

Important discussion of the effect of salmon-carcass nutrients on freshwater production of sockeye salmon juveniles, including limited data from Karluk Lake relating escapement size to marine-derived nitrogen levels in fry; use of stable isotopes to study food webs and contribution of marine-derived nutrients to freshwater ecosystems; macroinvertebrate use of salmon carcasses. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, INVERTEBRATES]

**Knecht,** Richard Arden. 1995. The late prehistory of the Alutiiq people: culture change on the Kodiak Archipelago from 1200-1750 AD. Ph.D. Thesis, Bryn Mawr College, Bryn Mawr, Pennsylvania. 771pp.

Detailed analysis of an archaeological excavation at Karluk Village showing numerous fishing related artifacts from prehistoric times (1200 AD); important discussion of a cultural shift at Karluk to greater reliance on fish resources during the Little Ice Age. -- [SOCKEYE, SUBSISTENCE, PREHISTORIC FISH USE]

**Knecht,** Richard A., and Richard H. Jordan. 1985. Nunakakhnak: an historic period Koniag village in Karluk, Kodiak Island, Alaska. Arctic Anthropology 22(2): 17-35.

Detailed report of an archaeological excavation of an historic (c. 1840-1880) Koniag dwelling at Karluk Lagoon; discussion of the numerous archaeological sites in the Karluk River region because of its abundant salmon resources; Karluk was an important provisioning post during the Russian era, supplying dried salmon for the sea otter hunters and other settlements. -- [SOCKEYE, RUSSIAN HISTORY, SUBSISTENCE]

**Kociolek,** John P., and E.F. Stoermer. 1987. Geographic distribution and variability of the diatom (Bacillariophyceae) *Gomphonema ventricosum* Gregory. Nova Hedwigia 45: 223-236.

Taxonomic investigation of *Gomphonema ventricosum*, including the Manguin specimens from Karluk Lake; "*Gomphonema ventricosum*" from Karluk Lake may in fact be in the *Gomphoneis eriense* species complex; 6 microphotographs of "*Gomphonema ventricosum"* specimens from Karluk Lake. -- [LIMNOLOGY, PLANTS]

**Kociolek,** John P., and Bruno de Reviers. 1996. The diatom types of Emile Manguin. I. Validating descriptions and designation of iconotypes for the Lake Karluk species. Cryptogamie: Algologie 17: 175-191.

Formal descriptions of the Karluk Lake diatoms previously described by Emile Maguin in 1960; original diatom slides apparently lost; diatom descriptions based on Manguin's illustrations and photographs. -- [LIMNOLOGY, PLANTS]

**Kodiak Mirror.** 1956. Biologist assumes management of Naval Station fish hatchery. Kodiak Mirror (April 7, 1956), Kodiak, AK.

Summary article about the Karluk River steelhead egg take and Kodiak Conservation Club hatchery during 1953-1955; operations transferred from US Fish and Wildlife Service to Alaska Department of Fisheries. -- [STEELHEAD, HATCHERY]

**Kodiak Mirror.** 1957. Annual gathering of fish eggs counted 910,000 this year. Kodiak Mirror (July 13, 1957), Kodiak, AK.

Summary article of 1957 Karluk River steelhead egg take; Devils Canyon hatchery operations and distribution of eggs. -- [STEELHEAD, HATCHERY]

**Kodiak Mirror.** 1978. Karluk gets salmon eggs. Kodiak Mirror (October 18, 1978), Kodiak, AK.

Brief article on 1978 rehabilitation efforts of the Thumb River sockeye salmon run by the ADFG; 4,000,000 sockeye eggs planted in Upper Thumb River; eggs incubated at Devil's Creek and Kitoi Hatcheries. -- [SOCKEYE, REHABILITATION, HATCHERY]

**Koenings,** J. P., R. D. Burkett, Gary B. Kyle, Jim A. Edmundson & John M. Edmundson. 1986. Trophic level responses to glacial meltwater intrusion in Alaskan lakes (pp. 179-194). *In:* Douglas L. Kane (ed.), Proceedings of the symposium: Cold regions hydrology, University of Alaska-Fairbanks, Fairbanks, AK. American Water Resources Association, Bethesda, MD. 612pp.

Comparative limnological analysis of glacially turbid and clear water Alaskan lakes and their ability to rear sockeye salmon juveniles, including data from Karluk Lake (volume, surface area, water residence time, light compensation depth, euphotic volume, macrozooplankton density and types, July rearing water temperatures, length and weight of age 1 and 2 sockeye smolt); Karluk Lake macrozooplankton mainly *Bosmina, Daphnia, Cyclops,* and *Diaptomus*. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Koenings,** J.P., and R.D. Burkett. 1987. Population characteristics of sockeye salmon (*Oncorhynchus nerka*) smolts relative to temperature regimes, euphotic volume, fry density, and forage base within Alaskan lakes (pp. 216-234). *In:* H.D. Smith, L. Margolis, and C.C. Wood (eds.). Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Canadian Special Publication of Fisheries and Aquatic Sciences 96.

Important analysis of factors influencing sockeye salmon smolt production in Alaskan lakes, including Karluk Lake. -- [SOCKEYE, SMOLT, FRY, FOOD, PHYSICAL]

**Koenings,** J. P., and R. D. Burkett. 1987. An aquatic Rubic's cube: Restoration of the Karluk Lake sockeye salmon (*Oncorhynchus nerka*) (pp. 419-434). *In:* H. D. Smith, L. Margolis, and C.C. Wood (eds.). Sockeye salmon (*Oncorhynchus nerka*) population biology and future management. Canadian Special Publication of Fisheries and Aquatic Sciences 96.

Important analysis and discussion of the causes for the historic decline of Karluk River sockeye salmon; characteristics of the different spawning groups; emergence of fry in relation to seasonal changes in zooplankton abundance and water temperatures; importance of salmon carcasses to nutrient levels in Karluk Lake; historic reduction in lake fertility and decline in smolt size and numbers; recommendation to fertilize Karluk Lake and manipulate escapements. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, FRY, SMOLT, SPAWNING]

**Koenings,** J. P., Jim A. Edmundson, Gary B. Kyle & John M. Edmundson. 1987. Limnology field and laboratory manual: methods for assessing aquatic production. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 71 (February, 1987). 212pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/fred.071.pdf; accessed 28 July 2011)

Reference manual of limnological methods used by the ADFG to assess Alaskan lakes, including Karluk Lake. -- [LIMNOLOGY]

**Koenings,** J. P., and R. D. Burkett. 1988. Karluk Lake sockeye salmon investigations. Section B : Limnological trends at Karluk Lake, Alaska, 1985-1987. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, Federal Aid in Anadromous Fish Conservation Project (1 July 1987-30 June 1988), Project AFS-52, Segment 3 (December, 1988). 23pp.

Summary report of the ADFG's sockeye salmon rehabilitation efforts at Karluk Lake by adding fertilizer (1986-1987); water quality; plankton biomass; abundance of juvenile sockeye. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Koenings,** Jeffery P., Harold J. Geiger & James J. Hasbrouck. 1993. Smolt-to-adult survival patterns of sockeye salmon (*Oncorhynchus nerka*): effects of smolt length and geographic latitude when entering the sea. Canadian Journal of Fisheries and Aquatic Sciences 50: 600-611.

Detailed analysis of sockeye salmon survival characteristics during the smolt-to-adult life stages for many Alaskan populations, including Karluk Lake; variation in latitude and smolt size. -- [SOCKEYE, SMOLT]

**Koenings,** Jeffery P., and G. B. Kyle. 1997. Consequences to juvenile sockeye salmon and the zooplankton community resulting from intense predation. Alaska Fishery Research Bulletin 4(2): 120-135.

Detailed analysis of the interactions between sockeye salmon juveniles and zooplankton in 4 Alaskan lakes; data on smolt biomass and seasonal mean zooplankton biomass for Karluk Lake. -- [SOCKEYE, LIMNOLOGY]

**Konovalov,** S. M. 1967. Differentiation of local stocks of sockeye salmon, *Oncorhynchus nerka* (Walbaum), by a composite method based upon indicator parasites and peculiarities of the scale structure. Fisheries Research Board of Canada, Translation Series No. 853. 33pp.

Detailed study using the combination of parasites and scale characteristics to identify the origin of mixed stocks of adult sockeye salmon, including samples from the Karluk River. -- [SOCKEYE, PARASITES, SCALES]

**Konovalov,** S. M. 1975. Differentiation of local populations of sockeye salmon *Oncorhynchus nerka* (Walbaum). University of Washington, Publications in Fisheries, New Series 6. 290pp.

Detailed study using the combination of parasites and scale characteristics from mixed stocks of adult sockeye salmon to identify their origin, including samples from the Karluk River; seasonal distribution of Karluk River sockeye salmon in the high seas of the Pacific Ocean and Bering Sea. -- [SOCKEYE, PARASITES, SCALES, OCEAN MIGRATION]

**Kransnowski,** Paul V., and Michael L. Bathe. 1978. Stock separation studies of Alaskan salmon based on scale pattern analysis. Alaska Department of Fish and Game, Informational Leaflet No. 175. 37pp.

Comments on the ability to distinguish Karluk River sockeye salmon scales from other sockeye stocks. -- [SOCKEYE, SCALES]

**Krümmel,** E. M., R. W. Macdonald, L. E. Kimpe, I.Gregory-Eaves, M. J. Demers, J. P. Smol, B. Finney, J.M. Blais. 2003. Delivery of pollutants by spawning salmon. Nature 425: 255-256.

Sockeye salmon accumulated PCB's in their body tissues during their ocean growth and transported this pollutant into freshwater ecosystems during their spawning migration, where it was released into the environment as adult salmon carcasses decayed, including data for Karluk Lake. -- [SOCKEYE, POLLUTANT]

**Kuriscak,** P. 2004. Kodiak Management Area salmon escapement daily cumulative counts for fish-weirs, 1993-2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K04-38.

Detailed daily cumulative counts at the Karluk River weir 1993-2002 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead; description of Karluk weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Kutchin,** Howard M. 1898. Report on the salmon fisheries of Alaska, 1897. US Treasury Department, Office of Special Agent, Document No. 2010. 39pp.

Comments on conflicts between rival canneries for Karluk River sockeye salmon; history of the canneries and their operation; lack of enough sockeye to satisfy cannery demands; suggestion that huge 1892 catch resulted in small 1897 run; long commercial seines and power winches used to harvest salmon; concern that few fish escape to spawning grounds; sockeye catch for Karluk canneries in 1897; suggest closing Karluk River to commercial fishing; description of Karluk River hatchery and large loss of spawning adults at this facility. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1899. Report on the salmon fisheries of Alaska, 1898. US Treasury Department, Office of Special Agent, Document No. 2095. 61pp.

Comments on Karluk River and other fisheries in 1898; suggest locating an assistant at Karluk Spit during fishing season; the order closing Karluk River to commercial fishing, except for hatchery breeding stock and natives subsistence, not satisfactory; natives want to sell their catch to canneries; suggests moving seines 91 m from river mouth; catch statistics for Karluk Spit canneries; some Chignik sockeye salmon packed at Karluk canneries. -- [SOCKEYE, CANNERIES]

**Kutchin,** Howard M. 1900. Report of the special agent for the protection of the Alaska salmon fisheries. US Treasury Department, Office of Special Agent, 56th Congress, 1st Session, Senate Document No. 153.

Discussion of a visit to Karluk Spit canneries and the hatchery on July 17, 1899; number of sockeye salmon caught by Karluk Spit canneries. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1901. Report on the salmon fisheries of Alaska, 1900. US Treasury Department, Office of Special Agent, 56th Congress, 2d Session, Senate Document No. 168. 85pp.

Comments on Karluk River and other fisheries in 1900; increased returns from Karluk River hatchery expected; sockeye salmon age at maturity claimed to be either 4 or 7 years; catch statistics for Karluk Spit canneries in 1900; some Red River sockeye salmon packed at Karluk Spit canneries; report of Karluk River hatchery operations in 1900. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1902. Report on the salmon fisheries of Alaska, 1901. US Treasury Department, Office of Special Agent, 57th Congress, 1st Session, Senate Document No. 138. 95pp.

Comments on Karluk River and other fisheries in 1901; fall sockeye very large; discussion of causes of large fall run; catch statistics for Karluk Spit canneries in 1901; other canneries packed some Karluk sockeye salmon; report of Karluk River hatchery operations in 1901. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1903. Report on the salmon fisheries of Alaska, 1902. US Treasury Department, Office of Special Agent, 57th Congress, 2d Session, Senate Document No. 113. 63pp.

Comments on Karluk River and other fisheries in 1902; catch statistics for Karluk Spit canneries in 1902; brief mention of Karluk River hatchery releases in 1902. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1904. Report on the salmon fisheries of Alaska, 1903. US Department of Commerce and Labor, Office of Special Agent at Alaska Salmon Fisheries, Document Number 12. 47pp.

Comments on Karluk River and other fisheries in 1903; migration of tagged sockeye salmon adults from Karluk Lake to Red River; catch statistics for Karluk Spit canneries in 1903; report of Karluk River hatchery operations in 1903, including doubling its size. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1905. Report on the salmon fisheries of Alaska, 1904. US Department of Commerce and Labor, Division of Alaskan Fisheries, Document Number 35. 49pp.

Comments on Karluk River and other fisheries in 1904; sockeye salmon from Alitak and Chignik packed at Karluk Spit in 1904; catch statistics for Karluk Spit canneries in 1904; report of Karluk River hatchery operations in 1904. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kutchin,** Howard M. 1906. Report on the salmon fisheries of Alaska, 1905. US Department of Commerce and Labor, Division of Alaskan Fisheries, Document Number 53. 32pp.

Comments on Karluk River and other fisheries in 1905; some Karluk sockeye salmon packed at Uyak cannery in 1905; catch statistics for Karluk area canneries in 1905; report of Karluk River hatchery operations in 1905; attempts to cross sockeye and Chinook salmon. -- [SOCKEYE, CANNERIES, HATCHERY, GENETICS]

**Kutchin,** Howard M. 1907. Report on inspection of the salmon fisheries (pp. 25-44). *In:* The fisheries of Alaska in 1906. Department of Commerce and Labor, Bureau of Fisheries, Document Number 618.

Comments on Karluk River and other fisheries in 1906; some Karluk River sockeye salmon packed at Alitak and Chignik canneries in 1906; brief mention of Karluk River hatchery operations in 1906. -- [SOCKEYE, CANNERIES, HATCHERY]

**Kyle,** G. B. 1990. Summary of acoustically-derived population estimates and distributions of juvenile sockeye salmon (*Oncorhynchus nerka*) in 17 lakes of southcentral Alaska, 1982-1987. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 104 (June, 1990). 47pp.

Summary report on studies to determine juvenile sockeye salmon populations and distributions (horizontal and vertical) using acoustical methods in many Alaskan lakes, including Karluk Lake, 1982-1987. -- [SOCKEYE, JUVENILES]

**Kyle,** Gary B., Jeffrey P. Koenings & Jim A. Edmundson. 1997. An overview of Alaska lake-rearing salmon enhancement strategy: Nutrient enrichment and juvenile stocking (Chapter 8, p. 205-227). *In:* Alexander M. Milner and Mark W. Oswood (eds.), Freshwaters of Alaska: Ecological syntheses, Ecological Studies 119, Springer-Verlag, New York, NY. 369pp.

Discussion of the ADFG's strategy to enhance salmon production in lakes by using fertilization and fish plants; additions of phosphorus and nitrogen nutrients usually increased phytoplankton, zooplankton, and juvenile sockeye salmon; pre-enrichment limnological data and nutrient loading rates are given for Karluk Lake; 34,463,000 sockeye salmon juveniles were released into the Karluk Lake system in 1979-1986 from the Upper Thumb River hatchery. -- [SOCKEYE, COHO, LIMNOLOGY, FERTILIZATION, JUVENILES, HATCHERY]

**Landrum,** Betty J., and Thomas A. Dark. 1968. The distribution of mature western Alaskan and Kamchatkan sockeye salmon (*Oncorhynchus nerka*) in the North Pacific Ocean and Bering Sea. International North Pacific Fisheries Commission, Bulletin 24 (Document 870): 1-110.

Comprehensive study of the origin and distribution of sockeye salmon on the high seas by using meristic characters from many Russian and Alaskan populations, including Karluk sockeye salmon. -- [SOCKEYE]

**Lindroth,** C.H., and G. E. Ball. 1969. An annotated list of invertebrates of the Kodiak Island refugium (Chap. 7, p. 122-155). *In:* T.N.V. Karlstrom & G. E. Ball (eds.), The Kodiak Island refugium: its geology, flora, fauna and history. The Boreal Institute, Univ. Alberta. The Ryerson Press. 262pp.

List of invertebrates known from the Kodiak Island refugium, including collection records of aquatic insects from the Karluk River watershed. -- [INVERTEBRATES]

**Lindsley,** Roy R. 1978. How I killed the world's largest bear. Alaska Magazine 44(1): A26-A30 (in Alaska-Yukon section).

Description of the 23 May 1952 bear hunt at Karluk Lake by Roy R. Lindsley and employees of the Los Angeles County Natural History Museum; Lindsley killed a large male bear for eventual display in a diorama at the museum; the bear was ranked as the #1 world record Alaskan brown bear based on its skull size; the Alaska-Yukon magazine insert with Lindsley's article was only included for Alaska and Yukon subscribers. -- [BEARS]

**Lisiansky,** Urey. 1814. A Voyage Round the World in the Years 1803, 4, 5, and 6, Performed by Order of His Imperial Majesty Alexander the First, Emperor of Russia in the Ship *Neva*. London: Printed for J. Booth. 388pp.

Early map of Kodiak Island showing the location of Karluk Lake and River; the information for the map was gathered in 1805. -- [LIMNOLOGY, PHYSICAL]

**Luttrell,** Paul S. 1898. Report of Special Agent Luttrell for the year 1893. Condensation and rearrangement of data embodied in Annual Report of Paul S. Luttrell, Special Agent for the Salmon Fisheries in Alaska, year 1893 (pp. 397-403). *In:* Salmon Fisheries of Alaska, Reports of Special Agents Pracht, Luttrell, and Murray for the years 1892, 1893, 1894, 1895. Seal and Salmon Fisheries and General Resources of Alaska, Volume II, Government Printing Office, Washington, DC.

Discussion of the need for a sockeye salmon hatchery on the Karluk River in 1893; recommendation that the US Government operate the existing hatchery facilities at Karluk Lagoon; recommendation to prohibit salmon fishing in the Karluk River, except for subsistence; concern for declining Karluk River sockeye salmon runs. -- [SOCKEYE, CANNERIES, HATCHERY]

**MacDonald,** Lewis G. 1951. Chronological history of salmon canneries in central Alaska. Alaska Department of Fisheries, Juneau, 1951 Annual Report, Report No. 3: 71-84.

Brief history of salmon canneries in central Alaska, including those at Karluk Spit and other Kodiak Island locations; names of salmon cannery companies and dates of operation. -- [SOCKEYE, CANNERIES]

**MacDonald,** R.M.E. 1921. An analytical subject bibliography of the publications of the Bureau of Fisheries, 1871-1920. US Department of Commerce, Bureau of Fisheries Document No. 899, Appendix V to the Report of the US Commissioner of Fisheries for 1920.

Reference report listing the older fisheries publications of the US Bureau of Fisheries, including salmonid references for Alaska and the Karluk River. -- [SOCKEYE]

**Malloy,** Larry. 1988. Interception of Cook Inlet-bound sockeye in the 1988 Kodiak commercial salmon fishery. An in-season management perspective. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K88-7 (December, 1988). 40pp.

Discussion of Cook Inlet sockeye salmon being caught in the 1988 Kodiak Island fishery. -- [SOCKEYE]

**Malloy,** Larry, Dave Prokopowich & Kevin Brennan. 1990. 1990 harvest strategy Kodiak area commercial salmon fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K90-24 (June, 1990).

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1990, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Malloy,** Lawrence M., and David L. Prokopowich. 1992. Kodiak Management Area annual finfish management report, 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K92-7 (February, 1992). 269pp.

Comprehensive summary report on the 1988 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Manguin,** Emile. 1960. Contribution a la flore diatomique de l'Alaska: Lac Karluk, especes critiques ou nouvelles. Revue algologique, N.S., 5(4): 266-288.

Taxonomic study (in French) of Karluk Lake diatoms; drawings and microphotographs of Karluk Lake diatoms. -- [LIMNOLOGY, PLANTS]

**Mann,** Daniel H., Aron L. Crowell, Thomas D. Hamilton & Bruce P. Finney. 1998. Holocene geologic and climatic history around the Gulf of Alaska. Arctic Anthropology 35(1): 112-131.

Discussion of geologic events (sea level changes, earthquakes, tsunamis, and volcanism) and climatic history around the Gulf of Alaska over last 10,000 years, including the effects of climate on salmon; variation of sockeye salmon abundance at Karluk and Red lakes over the past 500 years; periods of low abundance often coincided with cool intervals as shown by tree ring records; sockeye abundance determined by sediment core analysis. -- [SOCKEYE, LIMNOLOGY, CLIMATE]

**Mannix,** Daniel P. 1947. King of the flesh eaters. True, The Man's Magazine. December 1947: 40-43, 142-149.

Description of hunting Kodiak brown bears at Karluk Lake in spring 1947 by Daniel P. Mannix, W. H. Fawcett Jr, George Petty & 3 guides (Ted Hersee, Guy Waddell & Fred Cowgill); photographs of Karluk Lake, Camp Island, bears, and red fox -- [BEARS ]

**Manthey,** Kenneth R. 1971. Forecast of the 1971 Kodiak area pink salmon run. Alaska Department of Fish and Game, Informational Leaflet 150 (March 26, 1971). 19pp.

Few surveys of pre-emergent pink salmon fry densities in the Karluk River in 1967 and 1969. -- [PINK]

**Manthey,** Kenneth R. 1972. Forecast of the 1972 Kodiak area pink salmon run. Alaska Department of Fish and Game, Informational Leaflet 156 (March 17, 1972). 25pp.

Few surveys of pre-emergent pink salmon fry densities in the Karluk River in 1971. -- [PINK]

**Margolis,** Leo. 1963. Parasites as indicators of the geographical origin or sockeye salmon, *Oncorhynchus nerka* (Walbaum), occurring in the North Pacific Ocean and adjacent seas. International North Pacific Fisheries Commission, Bulletin Number 11 (Document 466): 101-156.

Comprehensive analysis of the parasites of sockeye salmon in the North Pacific Ocean, including specimens of Karluk River adults collected in 1957; list of parasites on Karluk's sockeye salmon; use of parasites to determine origin of salmon stocks. -- [SOCKEYE, PARASITES]

**Marriott,** Richard A. 1966. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1965 to June 30, 1966), Project F-5-R-7, Job 6-A, Volume 7: 43-58.

Limited limnological data collected August 1965 from Karluk Lake (pH, calcium carbonate, zooplankton); observations on Karluk River steelhead (population size, past subsistence harvest, tagging, scale analysis, egg takes); estimates of Karluk River Chinook salmon harvests and population size. -- [LIMNOLOGY, STEELHEAD, CHINOOK]

**Marriott,** Richard A. 1967. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1966 to June 30, 1967), Project F-5-R-8, Job 6-A, Volume 8: 57-71.

Summary of 1966 float and aerial surveys of the Karluk River, mainly for Chinook salmon and steelhead, but Dolly Varden, and sockeye, coho, and pink salmon also were noted; no steelhead egg takes in 1966. -- [STEELHEAD, CHINOOK, SPORT FISHING]

**Marriott,** Richard A. 1968. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1967 to June 30, 1968), Project F-5-R-9, Job 6-A, Volume 9: 81-93.

Summary of aerial and floating surveys for Karluk steelhead and Chinook salmon; estimate Karluk River steelhead population at 200 fish; age, sex, length, and weight of 19 Karluk River Chinook salmon. -- [STEELHEAD, CHINOOK, AGE, SIZE]

**Marriott,** Richard A. 1969. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1968 to June 30, 1969), Project F-9-1, Job 6-A, Volume 10: 93-109.

Brief observations on Karluk River steelhead; conclude that aerial survey is a poor method to census the Karluk River steelhead population; steelhead sport catch at Karluk River Portage; aerial survey of Karluk River Chinook salmon. -- [STEELHEAD, CHINOOK, SPORT FISHING]

**Marsh,** Ken. 1994. Drifters and kings. Alaska 60(1): 64-67.

Description of a sport fishing float trip down the Karluk River in June. -- [SPORT FISHING]

**Marsh,** Millard ca., and John N. Cobb. 1908. The fisheries of Alaska in 1907. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 632.

Brief comments on Karluk River canneries and hatchery; number of sockeye salmon eggs taken for the hatchery. -- [SOCKEYE, CANNERIES, HATCHERY]

**Marsh,** Millard ca., and John N. Cobb. 1909. The fisheries of Alaska in 1908. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 645.

Brief comments on Karluk River canneries and hatchery; number of sockeye salmon eggs taken for the hatchery. -- [SOCKEYE, CANNERIES, HATCHERY]

**Marsh,** Millard ca., and John N. Cobb. 1910. The fisheries of Alaska in 1909. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 730.

Brief comments on the Karluk River hatchery fry liberated and tax rebates. -- [SOCKEYE, HATCHERY]

**Marsh,** Millard ca., and John N. Cobb. 1911. The fisheries of Alaska in 1910. US Department of Commerce and Labor, Bureau of Fisheries, Document No. 746.

Brief comments on Karluk River canneries and hatchery; construction of Larsen Bay cannery in progress since 1909; number of sockeye salmon eggs taken and fry liberated by the hatchery. -- [SOCKEYE, CANNERIES, HATCHERY]

**Martinson,** Ellen ca. 2004. Influence of three North Pacific Ocean regime shifts on the early marine growth and survival of sockeye salmon *Oncorhynchus nerka* from Karluk Lake, Alaska. Master of Science Thesis, University of Idaho, Moscow, Idaho. 152pp.

Detailed study of ocean growth and survival of Karluk River sockeye salmon in 1925-1995. -- [SOCKEYE]

**Martinson,** Ellen C., John H. Helle, Dennis L. Scarnecchia & Houston H. Stokes. 2008. Density-dependent growth of Alaska sockeye salmon in relation to climate–oceanic regimes, population abundance, and body size, 1925 to 1998. Marine Ecology Progress Series 370: 1-18.

Important detailed analysis of the marine growth of Karluk River sockeye salmon based on scale studies of age 2.2 fish in 1925-1998; North Pacific climate had 2 warm regimes (1925-1946 & 1977-1998) and one cool regime (1947-1976); 3 marine life stages studied (1st year juvenile, 2nd year immature, 3rd year mature); density-dependent growth varied with ocean climate, population abundance, and body size; intra-specific density-dependent growth occurred (1) in all marine life stages, (2) during the cool regime, (3) at lower abundance levels, & (4) at smaller sizes at the start of the juvenile stage. -- [SOCKEYE, SCALES, MARINE GROWTH]

**Martinson,** Ellen C., John H. Helle, Dennis L. Scarnecchia, and Houston H. Stokes. 2009a. Alaska sockeye salmon scale patterns as indicators of climatic and oceanic shifts in the North Pacific Ocean, 1922–2000. North Pacific Anadromous Fish Commission Bulletin 5:177–182. (Available at: http://www.npafc.org/new/publications/Bulletin/Bulletin%20No.%205/NPAFC_Bull_5_177-182(Martinson).pdf; accessed 28 July 2011)

Important detailed analysis of age 2.2 early-run Karluk sockeye salmon scales (1924-2000) to reflect oceanic-climatic shifts in North Pacific Ocean; sockeye scales used to infer 4 growth stages (smolt, 1st marine annulus, 2nd marine annulus, mature adult); scale patterns reflected 2 ocean regime shifts (+ shift 1957-1958, - shift 1989); early 1970s scale patterns of marine life stages preceded the + shift in 1976-1977; scale patterns have some value to predict major ocean changes. – [SOCKEYE, SCALES, MARINE GROWTH, OCEAN ENVIRONMENT]

**Martinson,** Ellen C., John H. Helle, Dennis L. Scarnecchia, and Houston H. Stokes. 2009b. Growth and survival of sockeye salmon (*Oncorhynchus nerka*) from Karluk Lake and River, Alaska, in relation to climatic and oceanic regimes and indices, 1922-2000. Fishery Bulletin 107:488–500. (Available at: http://fishbull.noaa.gov/1074/martinson.pdf; accessed 28 July 2011)

Important detailed analysis of age 2.2 early-run Karluk sockeye salmon scales (1924-2000) to determine the effect of the ocean-climate environment on salmon growth and survival; study period had 2 warm regimes (1927-1946 & 1977-2000) and 1 cool regime (1947-1976); salmon survival was higher during warm regimes & lower during cool regimes; salmon growth not correlated with survival; growth of juvenile & immature salmon were correlated with some ocean-climate indexes; survival of salmon were correlated with indices of sea surface temperatures, coastal precipitation, & atmospheric circulation in the eastern North Pacific. – [SOCKEYE, SCALES, MARINE GROWTH, SURVIVAL, OCEAN ENVIRONMENT]

**Marvich,** E. S., A. H. McRea & R. J. Simon. 1956. Sport Fish, Kodiak Area. Alaska Department of Fisheries, Juneau, AK, 1956 Annual Report, Number 8: 72-80.

Brief summary of 1956 steelhead egg take from the Karluk River; 1,100,000 eggs taken by Kodiak Conservation Club for incubation at Devil's Creek hatchery in Kodiak; 1956 Karluk River steelhead plants along Kodiak road system; photographs of steelhead egg taking operation; photograph of screening lake outlets to retain steelhead plants in the lake. -- [STEELHEAD, HATCHERY]

**Mason,** Rachel & James A. Fall. 1995. Karluk (Chapter XIV). *In:* James A. Fall & Charles J. Utermohle (eds.), An investigation of the sociocultural consequences of Outer Continental Shelf development in Alaska. IV. Kodiak Island Alaska Department of Fish and Game, Division of Subsistence, Technical Report No. 160 (March, 1995).

Detailed study of subsistence practices at Karluk Village in 1992; sockeye salmon use was 61 kg per capita. -- [SOCKEYE, SUBSISTENCE]

**McDonald,** Lucile. 1955. Now they use fertilizer to grow salmon. The Seattle Times, Magazine Section (January 9, 1955), Seattle: 10-11.

Summary article about the fertilization experiment at Bare Lake; history of Karluk River salmon fishery. -- [SOCKEYE, FERTILIZATION, CANNERIES]

**McDonald,** Marshall. 1889. Communications from Commissioner Marshall McDonald (Appendix B). *In:* Investigation of the fur-seal and other fisheries of Alaska, Report from the Committee on Merchant Marine and Fisheries of the House of Representatives, Government Printing Office, Washington, DC.

Important description of a wire netting barricade that completely blocked the upstream ascent of Karluk River salmon in May-October, 1888. -- [SOCKEYE, CANNERIES]

**McDonald,** Marshall. 1894. Report on the salmon fisheries of Alaska. Bulletin of the US Fish Commission, Volume 12, for 1892: 1-49. The Miscellaneous Documents (No. 122) of the House of Representatives for the Second Session of the Fifty-Third Congress, 1893-1894. Volume 18. (Available at: http://fisherybulletin.nmfs.noaa.gov/12-1/mcdonald.pdf; accessed 1 August 2011)

Early report on Alaskan salmon fisheries, including mention of the sockeye salmon harvest at the Karluk River and the 1891 agreements of several Karluk Spit canneries to divide the salmon pack; copy of Livingston Stone's paper on "A National Salmon Park"; recommendations for regulating and conserving Alaskan salmon. -- [SOCKEYE, CANNERIES]

**McGregor,** Richard ca. 1901. New Alaskan birds. The Condor 3: 8.\

Brief description of two Alaskan birds, including *Leucosticte kadiaka* collected by Cloudsley Rutter at Karluk in 1897. -- [BIRDS]

**McIntyre,** John D. Reginald R. Reisenbichler, John M. Emlen, Richard L. Wilmot & James E. Finn. 1988. Predation of Karluk River sockeye salmon by coho salmon and char. Fishery Bulletin 86(3): 611-616. (Available at: http://fishbull.noaa.gov/863/mcintyre.pdf; accessed 28 July 2011)

Analysis and discussion of the effects of coho, Dolly Varden, and Arctic charr predation on juvenile sockeye salmon at Karluk; suggest two levels for Karluk stock-recruitment curve; charr predation rates did not increase with sockeye numbers, but coho salmon predation rates did; suggest limiting exploitation rate to less than 35%. -- [SOCKEYE, COHO, DOLLY VARDEN, ARCTIC CHARR, PREDATION]

**McKean,** Marianne. (ed.). 1991. FRED 1990 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 109 (January, 1991). 167pp.

Brief mention of Karluk's sockeye salmon restoration program; Karluk Lake fertilized in 1990; first sockeye returns from Karluk Lake fertilization were large; estimated sockeye returns in 1991 from Karluk enhancement projects; water quality and zooplankton analysis of Karluk Lake samples. -- [SOCKEYE, FERTILIZATION]

**McKeown,** Martha Ferguson. 1960. The trail led north. Mont Hawthorne's story. Binfords & Mort, Publishers, Portland, OR. 222pp.

Personal memories of working at a Karluk Spit cannery in 1890; cannery operations and problems; the abundance of Karluk River salmon; conflicts between competing canneries and beach seine crews; lack of governmental fishery regulations; self regulation by agreement to close fishing each Saturday; social interactions at Karluk. -- [SOCKEYE, CANNERIES]

**McLain,** John Scudder. 1905. Alaska and the Kondike. McClure, Phillips & Company, New York, NY. 330pp.

Chronicle of a trip through Alaska in 1903 as part of a US senatorial delegation investigating conditions in the territories, including a brief visit to Karluk in mid August 1903; description and photograph of beach seining on Karluk Spit, with sockeye catches of 12,000 to 17,000 fish; sockeye lengths = 381-610 mm; description of cannery processing and canning operations; mention that some salmon are salted and packed in barrels for export; brief discussion of the life history of sockeye salmon and admission that little is known; discussion of need for hatcheries. -- [SOCKEYE, CANNERIES, HATCHERY]

**McMullen,** John C., Jeffrey A. Hansen & Mark W. Kissel (eds.). 1983. FRED 1982 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Series No. 2 (February, 1983). 106pp.

Brief comments on Karluk's sockeye salmon restoration program; 13,633,300 eggs taken for the Karluk streamside incubation project in 1982. -- [SOCKEYE, HATCHERY]

**McMullen,** John ca., and Jeffrey A. Hansen (eds.). 1984. FRED 1983 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 22 (January, 1984). 85pp.

Brief comments on Karluk's sockeye salmon restoration program; 15,255,000 eggs taken and 12,284,000 eyed eggs planted in the Upper Thumb River in 1983 (Karluk streamside incubation project); estimated sockeye returns in 1983 from Karluk enhancement projects. -- [SOCKEYE, HATCHERY]

**McNair,** Marianne. 1995. Alaska fisheries enhancement program 1994 annual report. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Regional Information Report 5J95-06 (February, 1995). 50pp.

Estimated sockeye salmon returns to Karluk Lake enhancement projects in 1995; mention of another possible enhancement project, the Karluk fish pass. -- [SOCKEYE]

**McNair,** Marianne. 1996. Alaska fisheries enhancement program 1995 annual report. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Regional Information Report 5J96-08 (March, 1996). 43pp.

Brief mention of modifying escapement levels of early and late run sockeye salmon to Karluk Lake based on marine nitrogen studies; mention of a Karluk fish pass. -- [SOCKEYE, LIMNOLOGY]

**McNair,** Marianne & J.S. Holland (eds.). 1993. FRED 1992 annual report to the Alaska State Legislature. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 127 (January, 1993). 102pp.

Brief mention of Karluk Lake post-fertilization studies; conclude that Karluk Lake sockeye salmon run now restored; 3,700,000 sockeye smolt emigrated; estimated sockeye returns from Karluk enhancement projects in 1991, 1992 and 1993; water quality analysis of Karluk Lake samples. -- [SOCKEYE, LIMNOLOGY]

**McNair,** Marianne & J.S. Holland (eds.). 1994. Alaska fisheries enhancement program 1993 annual report. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau (January, 1994). 43pp.

Brief mention of Karluk Lake fertilization project; estimated sockeye salmon returns from Karluk Lake enhancement projects in 1994; mentions a Karluk fish pass. -- [SOCKEYE]

**McNeil,** Susan L. 1997. The paleoproductivity of sockeye salmon: assessment by sediment core analysis. Master of Science Thesis, University of Alaska, Fairbanks, Alaska. 83pp.

Important analysis using marine nitrogen in Karluk Lake sediment cores to predict past sockeye salmon escapements. -- [SOCKEYE, LIMNOLOGY]

**McPhail,** J. D. 1961. A systematic study of the *Salvelinus alpinus* complex in North America. Journal of the Fisheries Research Board of Canada 18(5): 793-816.

Detailed morphological comparison of Dolly Varden and Arctic charr from Karluk Lake; showed that each was a distinct species; meristic data on Karluk Lake specimens. -- [DOLLY VARDEN, ARCTIC CHARR]

**McPhail,** J. Donald. 1969. The fishes of the Kodiak Island refugium (Chapter 10, p. 211-215). *In:* T.N.V. Karlstrom & G. E. Ball (eds.), The Kodiak Island refugium: its geology, flora, fauna and history. The Boreal Institute, Univ. Alberta. The Ryerson Press. 262pp.

Summary of fishes in the Kodiak Island refugium, including those in Karluk and Frazer Lakes; analysis of two races of Arctic charr. -- [ARCTIC CHARR]

**Mills,** Michael J. 1983. Alaska statewide sport fish harvest studies, 1982 data. Alaska Department of Fish and Game, Division of Sport Fish, Juneau, Federal Aid in Fish Restoration, Annual Performance Report, 1982-1983, Project F-9-15 (SW-I-A) Volume 24. 118pp.

Summary of sport fishing effort and harvest in Alaska in 1982, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1984. Alaska statewide sport fish harvest studies, 1983 data. Alaska Department of Fish and Game, Division of Sport Fish, Juneau, Federal Aid in Fish Restoration, Annual Performance Report, 1983-1984, Project F-9-16 (SW-I-A) Volume 25. 122pp.

Summary of sport fishing effort and harvest in Alaska in 1983, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1985. Alaska statewide sport fish harvest studies, 1984 data. Alaska Department of Fish and Game, Division of Sport Fish, Juneau, Federal Aid in Fish Restoration, Annual Performance Report, 1984-1985, Project F-9-17 (SW-I-A) Volume 26. 135pp.

Summary of sport fishing effort and harvest in Alaska in 1984, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1986. Alaska statewide sport fish harvest studies, 1985 data. Alaska Department of Fish and Game, Division of Sport Fish, Juneau, Federal Aid in Fish Restoration, Annual Performance Report, 1985-1986, Project F-10-1 (RT-2) Volume 27. 137pp.

Summary of sport fishing effort and harvest in Alaska in 1985, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1989. Alaska statewide sport fisheries harvest report, 1988. Alaska Department of Fish and Game, Division of Sport Fish, Juneau, Fishery Data Series No. 122 (September, 1989). 142pp.

Summary of sport fishing effort and harvest in Alaska in 1988, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1990. Harvest and participation in Alaska sport fisheries during 1989. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 90-44 (September, 1990). 152pp.

Summary of sport fishing effort and harvest in Alaska in 1989, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1991. Harvest, catch, and participation in Alaska sport fisheries during 1990. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 91-58 (October, 1991). 183pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1990, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1992. Harvest, catch, and participation in Alaska sport fisheries during 1991. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 92-40 (September, 1992). 190pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1991, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1993. Harvest, catch, and participation in Alaska sport fisheries during 1992. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 93-42 (October, 1993). 228pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1992, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mills,** Michael J. 1994. Harvest, catch, and participation in Alaska sport fisheries during 1993. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 94-28 (September, 1994). 226pp.

Summary of sport fishing effort, catch, and harvest in Alaska in 1993, including the Karluk River and Lagoon for Chinook, coho, sockeye, pink, and chum salmon, and Dolly Varden and steelhead. -- [CHINOOK, COHO, SOCKEYE, PINK, CHUM, DOLLY VARDEN, STEELHEAD, SPORT FISHING]

**Mishler,** Craig & Janet Cohen. ca. 1990. Subsistence uses in six Kodiak Island Borough communities in 1989, the year of the Exxon Valdez oil spill. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 201.

Subsistence use of fisheries at 6 Kodiak communities in 1989, including Karluk, Akhiok, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions; comparison of 1989 subsistence use with that in two pre-spill years, 1982-1983 and 1986; lower subsistence use in 1989 attributed to the possibility of oil-contaminated food sources. -- [SOCKEYE, SUBSISTENCE]

**Moberly,** S.A. 1983. A review of Alaska's fisheries rehabilitation, enhancement and development (FRED) program, 1971-1982. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, FRED Report Number 3 (October, 1983). 41pp.

Brief comments on rehabilitation of Karluk's River sockeye salmon by expanding the streamside incubation project on the Upper Thumb River. -- [SOCKEYE, HATCHERY]

**Moles,** Adam & Kathleen Jensen. 1999. Prevalence of the sockeye salmon brain parasite *Myxobolus arcticus* in selected Alaska streams. Alaska Fishery Research Bulletin 6(2): 85-93.

Survey of many Alaskan streams for the sockeye salmon brain parasite, *Myxobolus arcticus,* including fish from the Karluk and Thumb rivers; brain parasite found in 100% of Karluk River sockeye and 0% of Thumb River sockeye; parasite obtained in freshwater persists for life; intermediate hosts may be aquatic oligochaetes -- [SOCKEYE, PARASITES, INVERTEBRATES]

**Moore,** J. Percy & Marvin ca. Meyer. 1951. Leeches (Hirudinea) from Alaskan and adjacent waters. The Wasmann Journal of Biology 9(1):11-77.

Collection records of two leech species *Glossiphonia complanata* and *Erpobdella punctata* from Thumb Lake by William M. Morton in 1949. -- [INVERTEBRATES]

**Moore,** Michelle L., and M. Birch Foster. 2011. Karluk Lake sockeye salmon smolt study operational plan, 2011. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K11-09 (July 2011). 26pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.2011.09.pdf; accessed 1 August 2011)

Description and protocol for a study of Karluk sockeye salmon smolt; smolt outmigration to be measured for age, size, condition, and isotopic signature for 3 years (2011-2013); weak runs in 2008-2010 triggered this smolt study; 1985-2005 over-escapements may have caused recent weak runs; that is, over-escapements may have produced abundant juveniles in the lake, which reduced the lake forage base, increased lake residence times, and caused poor condition; a detailed protocol is given for conducting the smolt study; Canadian fan trap (125m below lake outlet) and fyke net will capture smolts 25 May-12 June. – [SOCKEYE, SMOLT, AGE, LENGTH, WEIGHT, LIMNOLOGY]

**Morning Oregonian.** 1927. Salmon declared wasteful of eggs; only three of 2200 attain status as fish. Morning Oregonian (March 18, 1927), Portland, OR.

Brief comments on the survival rate of Karluk River sockeye salmon; fecundity = 2,200 eggs. -- [SOCKEYE, EGGS]

**Morton,** William Markham. 1942. The ecology of two Alaskan charrs as shown by their parasites. Masters of Science Thesis, University of Washington, Seattle, Washington. 31 p.

Detailed study of parasites of Dolly Varden and Arctic charr from Karluk Lake and River; Arctic charr were more heavily parasitized and had different parasites than Dolly Varden. -- [DOLLY VARDEN, ARCTIC CHARR, PARASITES]

**Morton,** William Markham. 1975. The Dolly Varden is innocent. Alaska 41(5): 14-15, 62-63.

Discussion of program to destroy Dolly Varden at the Karluk River weir in 1939-1940; food habit study showed little predation on young salmon; discovery of Arctic charr in Karluk Lake. -- [DOLLY VARDEN, ARCTIC CHARR]

**Morton,** William Markham. 1980a. Goodbye Dolly. Fisheries 5(3): 17-21.

Branchiostegal ray counts for Karluk Lake Dolly Varden; a few general comments about Karluk Lake and River research in the 1940s. -- [DOLLY VARDEN]

**Morton,** William Markham. 1980b. A collection of thumbnail autobiographies of former Pacific fisheries biologists I have known (15 December 1980). Pacific Fishery Biologist Memoirs, II-More Montlake Fishery Biologists in Review, 1(2): 1-89.

Short autobiography of Joseph Thomas Barnaby, Karluk biologist in the 1930s. -- [HISTORY]

**Morton,** William Markham. 1982. Comparative catches and food habits of Dolly Varden and Arctic charrs, *Salvelinus malma* and *Salvelinus alpinus*, at Karluk, Alaska, in 1939-1941. Environmental Biology of Fishes 7 (1): 7-28.

Intensive study of Dolly Varden and Arctic charr food habits in Karluk Lake and River; few charr preyed on sockeye salmon juveniles. -- [SOCKEYE, DOLLY VARDEN, ARCTIC CHARR, PREDATION]

**Morton,** William Markham & Ralph P. Silliman. 1979. Biographical sketches of retired fish hatchery personnel from Region 1, US Fish and Wildlife Service. Federal Fish Hatchery Memoirs (February 15, 1979) 2(1).

Brief biographies and memories of several fisheries biologists working at Karluk Lake and River in the 1920s-1940s, including Harry Baer, J. Thomas Barnaby, Marcus Meyer, and William M. Morton. -- [STEELHEAD, DOLLY VARDEN, HATCHERY]

**Moser,** Jefferson F. 1899. The salmon and salmon fisheries of Alaska. Report of the operations of the US Fish Commission steamer Albatross for the year ending June 30, 1898. Bulletin of the US Fish Commission, Volume 18, for 1898: 1-178. (Available at: http://docs.lib.noaa.gov/rescue/Fish_Commission_Bulletins/BFC1898-v18.pdf; accessed 28 July 2011)

Important early report on Alaskan salmon fisheries, including detailed information on the Karluk River sockeye salmon fisheries and canneries in 1897; cannery output statistics 1878-1897; some Karluk sockeye salmon packed at Chignik in 1896; methods of beach seining at Karluk Spit and use of steam power; descriptions of Karluk River and Lake; size of Karluk River sockeye salmon in the case pack; timing of sockeye salmon runs; Karluk River hatchery operations; many Karluk area photographs. -- [SOCKEYE, CANNERIES, HATCHERY]

**Moser,** Jefferson F. 1902. Salmon investigations of the steamer Albatross in the summer of 1900 (pp. 175-348). *In:* Jefferson F. Moser, Alaska salmon investigations in 1900 and 1901. Bulletin of the US Fish Commission, Volume 21, for 1901: 173-398. (Available at: http://docs.lib.noaa.gov/rescue/Fish_Commission_Bulletins/BFC1901-v21.pdf; accessed 28 July 2011)

Important early report on Alaskan salmon fisheries, including detailed information on the Karluk River sockeye salmon fisheries and canneries in 1900; cannery output statistics 1878-1900; some sockeye salmon from other areas were packed at Karluk Spit canneries; Karluk Spit cannery vessels and labor employed; detailed report on the Karluk River hatchery operations; sockeye salmon egg development times; recognition of spring and fall sockeye salmon runs in the Karluk River; many Karluk area photographs. -- [SOCKEYE, CANNERIES, EGGS, HATCHERY]

**Mosher,** Kenneth H. 1963. Racial analysis of red salmon by means of scales. International North Pacific Fisheries Commission, Bulletin Number 11 (Document 395): 31-56.

Extensive study of sockeye salmon scale characteristics from many populations, including samples from the Karluk River; use of scale characteristics to identify sockeye salmon on the high seas. -- [SOCKEYE, SCALES]

**Mosher,** Kenneth H. 1969. Photographic atlas of sockeye salmon scales. Fishery Bulletin 67(2): 243-280.

Study of sockeye salmon scale characteristics from many areas, including some unique features of Karluk's sockeye salmon scales; numerous scale photographs; freshwater and ocean scale growth characteristics. -- [SOCKEYE, SCALES]

**Mosher,** Kenneth H. 1972. Scale features of sockeye salmon from Asian and North American coastal regions. Fishery Bulletin 70(1): 141-183. (Available at: http://fishbull.noaa.gov/70-1/mosher.pdf; accessed 28 July 2011)

Extensive analysis of scale characteristics from many different sockeye salmon populations in Asia and North American, including those from the Karluk River; data on freshwater age composition of Karluk River sockeye salmon; scale circuli characteristics for the freshwater (age-1, -2, and -3) and 1st year of ocean growth of Karluk sockeye; photographs of Karluk sockeye scales; discussion of unusual characteristics of Karluk sockeye scales. -- [SOCKEYE, SCALES]

**Motis,** T. 1997. Age composition and spawning escapement of chinook salmon in the Karluk, Ayakulik, and Chignik rivers, Alaska, 1995 and 1996. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 97-40.

Detailed study of Karluk River Chinook salmon in 1995-1996; age, sex, and length for Chinook salmon (215 fish in 1997, 179 in 1998) at the weir and sport-caught fish; sport fishing effort, harvest and catch of Chinook salmon; daily Chinook salmon weir counts 1997-1998; commercial and subsistence harvests of Karluk River Chinook salmon; sport harvest and catch of Karluk steelhead, sockeye salmon, and Dolly Varden; Chinook run mostly completed by 15 July. -- [CHINOOK, AGE, SEX, LENGTH, SCALES, WEIR SPORT FISHING, SUBSISTENCE, STEELHEAD, SOCKEYE, DOLLY VARDEN]

**Mulcahy,** D., R. J. Pascho & ca. K. Jenes. 1983. Titre distribution patterns of infectious haematopoietic necrosis virus in ovarian fluids of hatchery and feral salmon populations. Journal of Fish Diseases 6: 183-188.

Survey of the prevalence of IHN virus in ovarian fluids of several North American salmon populations, including sockeye salmon collected in 1978-1980 from the Lower Thumb River, a Karluk Lake tributary. -- [SOCKEYE, DISEASE]

**Mulcahy,** D., R. Pascho & ca. K. Jenes. 1984. Comparison of in vitro growth characteristics of ten isolates of infectious haematopoietic necrosis virus. Journal of General Virology 65(12): 2199-2207.

Growth characteristics of IHN virus taken from sockeye salmon ovarian fluid from Lower Thumb River, Karluk Lake, in 1979. -- [SOCKEYE, DISEASE]

**Mulcahy,** Dan M., and Ron J. Pascho. 1986. Sequential tests for infectious hematopoietic necrosis virus in individuals and populations of sockeye salmon (*Oncorhynchus nerka*). Canadian Journal of Fisheries and Aquatic Science 43(12): 2515-2519.

Analysis of the incidence and titre distribution of IHN virus in cavity fluids of spent female sockeye salmon from Lower Thumb River, Karluk Lake, in 1978; were similar on different days. -- [SOCKEYE, DISEASE]

**Murray,** John B. 1982. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1981 to June 30, 1982), Project F-9-14, Job G-1-B, Volume 23: 1-44.

Summary of 1981 fish counts through Karluk River weir, including steelhead, and sockeye, Chinook, coho, pink, and chum salmon; age, sex, and length of 60 angler-caught Chinook salmon. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, AGE, SIZE, SPORT FISHING]

**Murray,** John B. 1983. Inventory and research of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1982 to June 30, 1983), Project F-9-15, Job G-1-B, Volume 24: 1-26.

Summary of 1982 creel census data from Karluk River Portage, Lagoon and Lodge for steelhead, Dolly Varden, and coho, Chinook, sockeye, and pink salmon; summary of 1982 fish counts through Karluk River weir for steelhead, and sockeye, Chinook, coho, pink, and chum salmon; age, sex, and length of 136 angler-caught Chinook salmon and 94 kelt steelhead. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, AGE, SIZE, SPORT FISHING]

**Murray,** John B. 1984. Kodiak area angler use and stock assessment studies. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1983 to June 30, 1984), Project F-9-16, Job G-1-B, Volume 25: 1-38.

Summary of 1983 fish counts through Karluk River weir for steelhead, Dolly Varden, and sockeye, Chinook, coho, pink, and chum salmon; age, sex, and length of 109 angler-caught Chinook salmon. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, AGE, SIZE, SPORT FISHING]

**Murray,** John B. 1985a. Kodiak area angler use and stock assessment studies. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1984 to June 30, 1985), Project F-9-17, Job G-1-B, Volume 26: 1-37.

Summary of 1984 creel census data from Karluk Lagoon for steelhead, Dolly Varden, and coho, Chinook, sockeye, and pink salmon; summary of 1984 fish counts through Karluk River weir. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, SPORT FISHING]

**Murray,** John B., and Frank Van Hulle. 1974. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1973 to June 30, 1974), Project F-9-6, Job G-1-B, Volume 15: 1-21.

Summary of 1973 Chinook salmon and steelhead harvest from Karluk River; attempts to lease land for weir near Karluk Lagoon. -- [STEELHEAD, CHINOOK, WEIR, SPORT FISHING].

**Murray,** John B., and Frank Van Hulle. 1979. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1978 to June 30, 1979), Project F-9-11, Job G-1-B, Volume 20: 1-47.

Summary of 1978 creel census data from Karluk Lagoon, Portage, and Lodge for steelhead, Dolly Varden, and coho, Chinook, sockeye, and pink salmon; summary of 1978 fish counts through Karluk River weir for steelhead, and sockeye, Chinook, coho, pink, and chum salmon; age, sex, and length of 231 angler caught Chinook salmon and 54 steelhead; tagging recoveries of returning steelhead; photographs of steelhead scales. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, TAGGING, SCALES, AGE, SIZE, SPORT FISHING].

**Murray,** John B., and Frank Van Hulle. 1980. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1979 to June 30, 1980), Project F-9-12, Job G-1-B, Volume 21: 1-58.

Summary of 1979 creel census data from Karluk Lagoon for steelhead, Dolly Varden, and coho, Chinook, and sockeye salmon; summary of 1979 fish counts through Karluk River weir for steelhead, and sockeye, Chinook, coho, pink, and chum salmon; age, sex, and length of 217 angler caught Chinook salmon and 351steelhead; kelt steelhead tagging; errors in previous steelhead aging data. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, WEIR, TAGGING, AGE, SIZE, SPORT FISHING].

**Murray,** Joseph. 1896. Report on the salmon fisheries in Alaska, 1894. US Treasury Department, Office of Special Agent, Government Printing Office, Washington, DC 34pp. (Note: This report was republished in 1898 as Report of Special Agent Murray on the salmon fisheries in Alaska for the year 1894 (pp. 404-435). *In:* Salmon Fisheries of Alaska, Reports of Special Agents Pracht, Luttrell, and Murray for the years 1892, 1893, 1894, 1895. Seal and Salmon Fisheries and General Resources of Alaska, Volume II, Government Printing Office, Washington, DC)

Report on the Karluk River canneries and sockeye salmon catch, 1889-1894; record of many conflicts between Karluk River cannery rivals; Native complaints of being excluded from the fishing grounds; concern about declining Karluk River sockeye salmon runs and suggestions to reverse decline; discussion of needed legislation to protect Alaska's salmon resources; recommendations to tax cannery production, prohibit fishing in Karluk River and 91 m from mouth, and require a weekly fishing closure. -- [SOCKEYE, CANNERIES]

**Murray,** Joseph. 1898. Report of Special Agent Joseph Murray, Special Treasury Agent, for the year 1895 (pp. 436-459). *In:* Salmon Fisheries of Alaska, Reports of Special Agents Pracht, Luttrell, and Murray for the years 1892, 1893, 1894, 1895. Seal and Salmon Fisheries and General Resources of Alaska, Volume II, Government Printing Office, Washington, DC)

Report on the Alaskan salmon canneries, including those at the Karluk River; sockeye salmon catch in 1895 from the Karluk River; observation of fishing violations in the Karluk River; recommendation for protective legislation. -- [SOCKEYE, CANNERIES]

**Naiman**, Robert J., Robert E. Bilby, Daniel E. Schindler & James M. Helfield. 2002. Pacific salmon, nutrients, and the dynamics of freshwater and riparian ecosystems. Ecosystems 5: 399-417.

Important review of Pacific salmon, marine-derived nutrients, and ecosystem dynamics, including comments on recent research on Karluk Lake and its sockeye salmon; caution advised in interpreting current studies; new research topics. -- [SOCKEYE, LIMNOLOGY]

**National Fisherman.** 1978. Frazer Lake 'planting' technique to be used in Karluk Lake system. National Fisherman (December, 1978).

Brief article on 1978 rehabilitation efforts on the Thumb River sockeye salmon run by ADFG; 4,000,000 sockeye eggs planted in Upper Thumb River; eggs incubated at Devil's Creek and Kitoi Hatcheries. -- [SOCKEYE, REHABILITATION, HATCHERY]

**Needham,** James G., and J. T. Lloyd. 1916. The life of inland waters. Comstock Publishing Company, Ithaca, New York. 438pp.

Early textbook of limnology used by Dr. Willis H. Rich during the time he formulated the idea that salmon-carcass nutrients influenced Karluk Lake's productivity and growth of sockeye salmon juveniles. -- [LIMNOLOGY, FERTILIZATION]

**Nelson,** Patricia A., and Charles O. Swanton. 1996. Summary of salmon catch, estimated escapement, and run numbers, and biological attributes of selected salmon catches and escapements, Kodiak Management Area, 1995. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K96-40 (August, 1996). 161pp.

Detailed summary report of salmon statistics for the Kodiak Island area in 1995, including those for the Karluk River; escapements and catches; sockeye salmon age, sex, and length composition in 1995. -- [SOCKEYE, AGE, SEX, LENGTH, CHINOOK, COHO, PINK, CHUM]

**Nelson,** Patricia A., and D. Lloyd. 2001. Escapement goals for Pacific salmon in the Kodiak, Chignik, and Alaska Peninsula/Aleutian Islands areas of Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K01-66. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.2001.66.pdf; accessed 28 July 2011)

Detailed review of salmon escapement goals for the Kodiak Island area and beyond, including those for the Karluk River. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Nelson,** Patricia A., Mark J. Witteveen, Steve G. Honnold, Ivan Vining & James J. Hasbrouck. 2005. Review of salmon escapement goals in the Kodiak Management Area. Alaska Department of Fish and Game, Fishery Manuscript No. 05-05 (September 2005), Anchorage. 333pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/fms05-05.pdf; accessed 28 July 2011)

Important detailed review of salmon escapement goals for the Kodiak Island area, including those for the Karluk River (sockeye, Chinook, and coho); analyses using Ricker spawner-recruit model, euphotic volume model, and zooplankton biomass model; recommended escapement goal for early run Karluk sockeye decreased from 150,000-250,000 to 100,000-210,000 and for late run Karluk sockeye decreased from 400,000-550,000 to 170,000-380,000; Karluk's sockeye salmon are currently not rearing limited; escapement goal unchanged for Karluk's Chinook salmon (3,600-7,300), but eliminated for coho salmon. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, ESCAPEMENT, MANAGEMENT]

**Nelson,** Philip R. 1958. Relationship between rate of photosynthesis and growth of juvenile red salmon. Science 128 (3317): 205-206.

Detailed study of the effects of 7 years (1950-1956) of nitrate and phosphate fertilization of Bare Lake on phytoplankton production and growth of sockeye salmon juveniles; phytoplankton production and juvenile growth increased during the fertilization period at Bare Lake; no growth increases were observed during the same period in Karluk Lake sockeye juveniles. -- [SOCKEYE, JUVENILES, SMOLT, GROWTH, FERTILIZATION]

**Nelson,** Philip R. 1959. Effects of fertilizing Bare Lake, Alaska, on growth and production of red salmon (*O. nerka*). Fishery Bulletin 60 (159): 59-86. (Available at: http://fisherybulletin.nmfs.noaa.gov/60-1/nelson.pdf; accessed 28 July 2011)

Detailed scientific report showing increased growth and ocean survival of sockeye salmon smolt following 7 years (1950-1956) of nitrate and phosphate fertilization of Bare Lake, Kodiak Island, Alaska. -- [SOCKEYE, FERTILIZATION, GROWTH, SMOLT]

**Nelson,** Philip R., and Carl E. Abegglen. 1955. Survival and spawning of gill-net-marked red salmon. US Fish and Wildlife Service, Research Report 40. 19pp.

Detailed study of the effect of gill-net injuries on the survival and spawning ability of Karluk Lake sockeye salmon; mortality varied with the degree of injuries; migration times of injured salmon did not differ from uninjured controls. -- [SOCKEYE, MORTALITY, MIGRATION]

**Nelson,** Philip R., and W. T. Edmondson. 1955. Limnological effects of fertilizing Bare Lake, Alaska. US Fish and Wildlife Service, Fishery Bulletin 56 (102): 415-436. (Available at: http://fisherybulletin.nmfs.noaa.gov/56-1/nelson.pdf; accessed 28 July 2011)

Detailed scientific study showing increased photosynthetic rate and phytoplankton populations after 4 years (1950-1953) of nitrate and phosphate fertilizations of Bare Lake, Kodiak Island, Alaska. -- [FERTILIZATION, LIMNOLOGY]

**Nelson,** Philip R., Richard F. Shuman, Webster K. Clark & Russell R. Hoffman. 1963. Brown bear predation on spawning salmon, 1948-1953, Kodiak Island, Alaska. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F 5 (July, 1963). 29pp. (Original report date was 1961. This publication originated from the unpublished report of Richard F. Shuman and Philip R. Nelson, ca. 1950, "Further studies of bear depredations on red salmon spawning populations in the Karluk River system, 1948")

Summary report on several FWS studies of bear predation on sockeye salmon at various Kodiak and Afognak Island locations, including Karluk Lake; studies at Karluk included Moraine and Halfway Creeks in 1948, 1952, and 1953; use of electric fence to repel bear predation on sockeye salmon; review of bear predation literature; list of other salmon predators, including fox, river otter, bald eagle, gulls, seals, and sea lions; description of bear predation behavior on salmon; percentage of unspawned salmon killed by bears varied considerably by spawning stream and year. -- [SOCKEYE, BEARS, PREDATION]

**Nelson,** Robert E., and Richard H. Jordan. 1988. A postglacial pollen record from western Kodiak Island, Alaska. Arctic 41(1): 59-63.

Pollen analysis from an excavation near Karluk Village showing changes in vegetation in the past 4,000 years; the excavation uncovered 8 volcanic ash layers dated at more than 1,500 years. -- [PHYSICAL]

**Nemeth,** Matthew J., Mark J. Witteveen, Matt Birch Foster, Heather Finkle, Jack W. Erickson, Julia S. Schmidt, Steve J. Fleischman & Donn Tracy. 2010. Review of escapement goals in 2010 for salmon stocks in the Kodiak Management Area, Alaska. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Manuscript Series No. 10-09 (December 2010), Anchorage. 153pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/FMS10-09.pdf; accessed 28 July 2011)

Important detailed review of salmon escapement goals for the Kodiak Island area (previous review in 2007), including those for the Karluk River (sockeye and Chinook); recommended keeping the existing biological escapement goal for early run Karluk sockeye at 110,000-250,000 and late run Karluk sockeye at 170,000-380,000; brood tables for early- and late-run Karluk sockeye salmon; Ricker spawner-recruit analysis for early- and late-run Karluk sockeye (1981-2002); the biological escapement goal for Karluk's Chinook salmon was lowered from 3,600-7,300 to 3,000-6,000. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, ESCAPEMENT, MANAGEMENT]

**Noerenberg,** Wallace H. 1959. Stream surveys in the Kodiak area, 1959. University of Washington, Fisheries Research Institute, Circular No. 111 (November 25, 1959). 41pp.

Five surveys of the Karluk River in 1959, mainly for pink salmon, but sockeye salmon were also noted; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Northeast Gulf Science.** 1977. No Title (Memorial to George A. Rounsefell). Northeast Gulf Science 1(1): 1-7.

A summary of George A. Rounsefell's fisheries career, including memories by Robert L. Shipp, Gordon Gunter, and Charles H. Lyles; summary of Rounsefell's career experience; list of lifetime publications, including his 1958 Karluk River sockeye salmon paper. -- [SOCKEYE, HISTORY]

**Overturf,** J. H. 1984. Regional subsistence bibliography, Southcentral Alaska. Volume IV, Number 1. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 97. 146pp.

List of subsistence references from southcentral Alaska, including a few from Karluk. -- [SUBSISTENCE]

**Owen,** John B., ca. Y. Conkle & R. F. Raleigh. 1960. Distribution of sockeye salmon spawners on the spawning grounds of the Karluk system in 1958 (pp. 87-88). *In:* Albert W. Johnson (ed.), Science in Alaska, 1959, Proceedings, Tenth Alaska Science Conference, Alaska Division, American Association for the Advancement of Science, Juneau (August 25-28, 1959). 162pp.

Brief abstract of research ideas on Karluk's sockeye salmon; size, fecundity, sex ratio, and potential egg deposition were related to age composition of the sockeye run. -- [SOCKEYE, AGE, SEX, FECUNDITY]

**Owen,** John B., Charles Y. Conkle & Robert F. Raleigh. 1962. Factors possibly affecting production of sockeye salmon in Karluk River, Alaska. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report 1962, MR 62-8 (August, 1962). 57pp.

Important study and summary report on Karluk's sockeye salmon; spawning habitats and seasonal use by adult sockeye; adult age composition; migration timing; growth, fecundity, and sex ratios; freshwater environment; changes in racial composition and reproduction. -- [SOCKEYE, AGE, MIGRATION, GROWTH, FECUNDITY, LIMNOLOGY]

**Pacific Fisherman.** 1921. Plan to count spawning salmon. Pacific Fisherman 19(7): 9.

Brief comments on the first installation of a counting weir on the Karluk River in 1921. -- [WEIR]

**Pacific Fisherman.** 1921. Alaska salmon investigations. Pacific Fisherman 19(10): 15.

Brief comments on inspection of Karluk River weir; survey of Karluk Lake and its tributaries by Henry O'Malley and Charles Gilbert in 1921. -- [WEIR]

**Painter,** Richard Earl. 1962. Relationship of fish length and mate selection in the sockeye salmon, *Oncorhynchus nerka* Walbaum. Master of Science Thesis, University of Michigan, Ann Arbor, Michigan. 32pp.

Detailed study of the relation between size and mate selection for adult sockeye salmon in Grassy Point and Meadow Creeks, both Karluk Lake tributaries; lengths of male and female spawning pairs increased together. -- [SOCKEYE, SPAWNING]

**Palin,** Michael. 1997. Full circle (5 videocassettes and a book). Public Broadcasting Service, Alexandria, VA.

Descriptions of travel around the Pacific Rim, including a visit to Karluk Lake. -- [PHYSICAL]

**Parker,** Robert R. 1962. Estimations of ocean mortality rates for Pacific salmon (*Oncorhynchus*). Journal of the Fisheries Research Board of Canada 19(4): 561-589.

Detailed analysis of salmon mortality in the ocean from different stocks, including sockeye salmon from Karluk using data from Thomas Barnaby; concluded that ocean mortality is relatively constant. -- [SOCKEYE, MORTALITY]

**Pedersen,** Paul C., Kenneth R. Manthey, Lawrence M. Malloy & Donald E. Bevan. 1979. Timing, escapement distribution, and catch of Kodiak Island salmon, 1975. University of Washington, Fisheries Research Institute, Circular No. 79-4 (June 15, 1979). 78pp.

A survey of the Karluk River in 1975, mainly for pink salmon; weekly sockeye escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Pedersen,** Paul C., Kenneth R. Manthey, Lawrence M. Malloy & Donald E. Bevan. 1979. Timing, escapement distribution, and catch of Kodiak Island salmon, 1977. University of Washington, Fisheries Research Institute, Circular No. 79-5 (June 21, 1979). 85pp.

Two surveys of the Karluk River in 1977, mainly for pink salmon; weekly sockeye escapements at Karluk River weir; about 4,006 sockeye spawned in the lower river below the weir and in the upper portion of Karluk Lagoon. -- [PINK, SOCKEYE, SPAWNING]

**Petroff,** Ivan. 1884. Report on the population, industries, and resources of Alaska. US Department of Interior, Census Office, Volume 8, 10th Census. 189pp. [Note: Petroff's report was republished in 1898 in Seal and Salmon Fisheries and General Resources of Alaska, Volume IV, Government Printing Office, Washington, DC] (Available at: http://www.census.gov/prod/www/abs/decennial/1880.html; accessed 2 August 2011)

Important early report on human population numbers at Karluk Village in 1880 and in prior years under Russian control; information on the numbers of Karluk River salmon used for subsistence and by two commercial companies in their salmon salting and drying operations in the early 1880s. -- [SOCKEYE, SUBSISTENCE]

**Pierce,** Richard A. (ed.). 1978. The Russian Orthodox religious mission in America, 1794-1837, with material concerning the life and works of the Monk German, and ethnographic notes by the Hieromonk Gedeon. Translated by Colin Bearne. Materials for the Study of Alaska History No. 11, The Limestone Press, Kingston, Ontario. 186pp.

Description of the Russian facilities and food storage at Karluk Village in 1804, including the record that 300,000 dried salmon were prepared in the summer. -- [SOCKEYE, HISTORY, SUBSISTENCE]

**Pierce,** Richard A. (ed.). 1980. Siberia and Northwestern America, 1788-1792. The journal of Carl Heinrich Merck, Naturalist with the Russian Scientific Expedition led by Captains Joseph Billings and Gavriil Sarychev. Translated by Fritz Jaensch. Materials for the Study of Alaska History No. 17, The Limestone Press, Kingston, Ontario. 215pp.

Report of Carl Heinrich Merck's scientific travels in Alaska in 1790, including descriptions of the Alutiiq culture on Kodiak Island and their use of fish resources; salmon were caught in nets made of sinew; salmon were present in the streams from May to September. -- [SOCKEYE, HISTORY, SUBSISTENCE]

**Pierce,** Richard A. (ed.). 1989. The round the world voyage of Hieromonk Gideon, 1803-1809. Translated with an introduction and notes by Lydia T. Black. Alaska History No. 32 and Alaska State Library Historical Monograph No. 9. The Limestone Press, Kingston, Ontario. 183pp.

Description of the Russian facilities and food storage at Karluk Village in 1804, including the record that 300,000 dried salmon were prepared each summer; description of use of weirs, traps, and seines to capture salmon in Kodiak streams in 1804. -- [SOCKEYE, HISTORY, SUBSISTENCE]

**Plotnick,** Michael & Douglas M. Eggers. 2004. Run forecasts and harvest projections for 2004 Alaska salmon fisheries and review of the 2003 season. Alaska Department of Fish and Game, Regional Information Report No. 5J04-01.

Forecast estimate of 2004 Karluk sockeye salmon run (early & late); 2004 escapement goal for Karluk sockeye (150,000-250,000 early run, 400,000-550,000 late run); summary of the 2003 salmon harvest in the Kodiak Management Area, including Karluk River salmon. -- [SOCKEYE, CHINOOK, MANAGEMENT]

**Poe,** P. H., and O. A. Mathisen. 1981. Distances from sea and elevation of important sockeye salmon spawning grounds. University of Washington, Fisheries Research Institute, Circular No. 81-1 (January, 1981). 23 p.

Summary report on the distance from the sea and elevation of sockeye salmon spawning grounds throughout their entire range, including data for the Karluk system (distance = 39 km, elevation = 106 m). -- [SOCKEYE, PHYSICAL]

**Porter,** Robert P. 1893. Report on population and resources of Alaska at the Eleventh Census: 1890. US Department of Interior, Census Office, Volume 8. 282pp. (Available at: http://www.census.gov/prod/www/abs/decennial/1890.html; accessed 2 August 2011)

Important early report on the human population size of Karluk Village in 1890, including a short history of the Karluk River salmon fishery (1793-1890) for subsistence, salting and canning; descriptions of cannery facilities, operations, and number of employees; shipments of Karluk River canned and salted salmon in 1890. -- [SOCKEYE, CANNERIES, SUBSISTENCE]

**Pracht,** Max. 1898. Report of Special Agent Pracht for the year 1892 (pp. 385-396). *In:* Salmon Fisheries of Alaska, Reports of Special Agents Pracht, Luttrell, and Murray for the years 1892, 1893, 1894, 1895. Seal and Salmon Fisheries and General Resources of Alaska, Volume II, Government Printing Office, Washington, DC.

Report on the Karluk River canneries and their salmon pack for 1892; general discussion of the use of stream barricades to block upstream salmon movements; general discussion of salmon predators. -- [SOCKEYE, CANNERIES, PREDATION]

**Pratt,** Keith M. 1988. Historic Alaskan sockeye hatcheries, 1891 to 1935. A fish culturist's viewpoint. *In:* IHNV Workshop, June 4 & 5, 1987, Big Lake, Alaska. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement, and Development.

Historical summary of Alaska's hatcheries; 628,107,000 sockeye eggs taken at Karluk River hatchery in 1891-1916; 488,753,807 sockeye fry released at Karluk in 1891-1916. -- [SOCKEYE, HATCHERIES]

**Progressive Fish-Culturist.** 1953. Use of three anesthetics on juvenile salmon and trout. Progressive Fish-Culturist 15(2): 74.

Brief comments on the use of anesthetics on juvenile sockeye and coho salmon and Dolly Varden at Bare Lake. -- [SOCKEYE, COHO, DOLLY VARDEN]

**Prokopowich,** Dave L. 2000. Kodiak Management Area commercial salmon annual management report, 1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K00-2.

Comprehensive summary report on the 1998 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1991. 1991 harvest strategy Kodiak area commercial salmon fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K91-15 (May, 1991). 34pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1991, including the Karluk River; harvest projections; fishing periods; regulations; management plans. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1992. 1992 harvest strategy Kodiak area commercial salmon fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K92-24 (May, 1992). 35pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1992, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** David, & Kevin Brennan. 1992. 1992 Kodiak Management Area commercial salmon fishery management report to the Alaska State Board of Fisheries. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K92-42 (December, 1992). 127pp.

Summary report of 1992 commercial salmon fishery in the Kodiak Island area, including the Karluk River; status of sockeye, Chinook, coho, pink, and chum salmon; Karluk River catches and escapements. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1993. Kodiak area commercial salmon fishery harvest strategy, 1993. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K93-21 (May, 1993). 47pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1993, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1994 Kodiak area commercial salmon fishery harvest strategy, 1994. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K94-21 (June, 1994). 47pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1994, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1996. Kodiak area commercial salmon fishery harvest strategy, 1996. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K96-35 (May, 1996). 43pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1996, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Prokopowich,** Dave, Kevin Brennan & Dennis Gretsch. 1998. Kodiak area commercial salmon fishery harvest strategy, 1998. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K98-26 (May, 1998). 54pp.

Summary report of the ADFG's commercial salmon fishery harvest strategy for the Kodiak Island area in 1998, including the Karluk River; harvest projections; fishing periods; regulations; management plans; escapement goals. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM]

**Raleigh,** Robert F. 1959. A review of the Karluk Lake red salmon runs and present research aims (pp. 49). *In:* Science in Alaska, 1958, Proceedings, Ninth Alaska Science Conference, Alaska Division, American Association for the Advancement of Science, College (September 2-5, 1958). 173pp.

Brief abstract of the idea that Karluk's sockeye salmon decline was caused by overfishing on discrete parts of the run; summary of current fisheries research at Karluk Lake. -- [SOCKEYE, THEORIES OF DECLINE]

**Raleigh,** Robert Franklin. 1960. The composition, abundance, and depth distribution of the 1957 summer net zooplankton of Bare Lake, Alaska. Master of Science Thesis, Utah State University, Logan, Utah. 30pp.

Detailed analysis of Bare Lake zooplankton in 1957 after 7 years of phosphate and nitrate fertilization, 1950-1956; zooplankton abundance was 3 times higher in 1957 than in 1952. -- [LIMNOLOGY]

**Raleigh,** Robert F. 1963. The composition, abundance, and depth distribution of the 1957 summer net zooplankton of Bare Lake, Alaska, after fertilization. US Fish and Wildlife Service, Special Scientific Report – Fisheries No. 423. 14pp.

Detailed analysis of Bare Lake zooplankton in 1957 after 7 years of phosphate and nitrate fertilization, 1950-1956; zooplankton abundance was 3 times higher in 1957 than in 1952. -- [LIMNOLOGY]

**Raleigh,** Robert F. 1967. Genetic control in the lakeward migrations of sockeye salmon (*Oncorhynchus nerka*) fry. Journal of the Fisheries Research Board of Canada 24(12): 2613-2622.

Important detailed study of migration direction of newly emerged sockeye salmon fry from Karluk Lake tributaries and the upper Karluk River; most fry from tributaries moved downstream at night; a greater proportion of river outlet fry moved upstream in both day and night; the observed behaviors were thought to be genetically controlled. -- [SOCKEYE, FRY, MIGRATION, GENETICS]

**Raleigh,** Robert F. 1969. Genetic control in lakeward migrations of sockeye salmon (*Oncorhynchus nerka*) fry. Ph.D. Dissertation, University of Idaho. 66 p.

Important detailed study of migration direction of newly emerged sockeye salmon fry from Karluk Lake tributaries and the upper Karluk River; most fry from tributaries moved downstream at night; a greater proportion of river outlet fry moved upstream in both day and night; the observed behaviors were thought to be genetically controlled. -- [SOCKEYE, FRY, MIGRATION, GENETICS]

**Rathbun,** Richard. 1893. Report upon the inquiry respecting food-fishes and the fishing-grounds (pp 97-171). *In:* United States Commission of Fish and Fisheries, Report of the Commissioner for 1889 to 1891, Part XVII, Government Printing Office, Washington, D. C.

Brief comments about Tarleton H. Bean's visit to Karluk in 1889 to investigate the fishery and cannery operations; prediction that sockeye salmon abundance will soon decline from overfishing. -- [SOCKEYE]

**Rausch,** Robert. 1954. Studies on the helminth fauna of Alaska. XXI. Taxonomy, morphological variation, and ecology of *Diphyllobothrium ursi* n. sp. provis. on Kodiak Island. Journal of Parasitology 40: 540-563.

Description of a new species of cestode parasite from Kodiak brown bear at Karluk Lake; nearly all sockeye salmon from Karluk Lake tributaries contained cestode larvae encysted in the stomach; life history and hosts (copepods, sockeye, bears) of this cestode at Karluk Lake; lack of this cestode in other Karluk Lake fishes. -- [SOCKEYE, PARASITES, BEARS, STEELHEAD, DOLLY VARDEN, COHO, PINK, CHINOOK, STICKLEBACK, SCULPIN]

**Rausch,** R.L., and D.K. Hilliard. 1970. Studies on the helminth fauna of Alaska. XLIX. The occurrence of *Diphyllobothrium latum* (Linnaeus, 1758) (Cestoda: Diphyllobothriidae) in Alaska, with notes on other species. Canadian Journal of Zoology 48: 1201-1219.

Discovery of cestode parasite from a man at Karluk Village; all sockeye salmon smolts and most spawning adults at Karluk were infected with the cestode parasite. -- [SOCKEYE, PARASITES]

**Rich,** W.H. 1924. Progress in biological inquires, 1923, Report of the Division of Scientific Inquiry for the fiscal year 1923. US Department of Commerce, Bureau of Fisheries, Appendix VII to the Report of the US Commissioner of Fisheries for 1923, Bureau of Fisheries Document Number 956.

Brief comments on the smaller sockeye salmon run at Karluk River in 1922; Charles H. Gilbert and Willis H. Rich survey spawning grounds at Karluk Lake. -- [SOCKEYE]

**Rich,** W.H. 1925. Progress in biological inquires, fiscal year 1924. US Department of Commerce, Bureau of Fisheries, Appendix II to the Report of the US Commissioner of Fisheries for 1924, Bureau of Fisheries Document Number 971.

Brief comments on a tagging study by Charles H. Gilbert, Willis H. Rich, and William P. Studdert along the south Alaska Peninsula; few of these tagged fish were found at Kodiak Island; counts of salmon continued at Karluk River weir. -- [SOCKEYE, MIGRATION, WEIR]

**Rich,** W.H. 1926. Progress in biological inquires, July 1 to December 31, 1924. US Department of Commerce, Bureau of Fisheries, Appendix III to the Report of the US Commissioner of Fisheries for 1925, Bureau of Fisheries Document Number 990.

Summary of sockeye salmon studies done by the BOF in 1924; age and length data collected; plans for future Karluk Lake sockeye salmon studies; Karluk sockeye salmon age at maturity = 3-7 years. -- [SOCKEYE, AGE, SIZE]

**Rich,** W.H. 1926. Progress in biological inquires, 1925. US Department of Commerce, Bureau of Fisheries, Appendix I to the Report of the US Commissioner of Fisheries for 1926, Bureau of Fisheries Document Number 1003.

Summary of Karluk River sockeye salmon studies by Charles H. Gilbert and Willis H. Rich; attempts to determine sockeye returns from known escapements. -- [SOCKEYE]

**Rich,** W.H. 1963. Notes from the diary of Willis H. Rich 1922-1933. US Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory. Manuscript Report -- File, MR-F No. 1.

Typed copies of the Alaskan field notes of Willis H. Rich, 1922-1933, describing his field seasons spent at Karluk Lake and River studying sockeye salmon. -- [SOCKEYE]

**Rich,** Willis H., and Frederick G. Morton. 1930. Salmon-tagging experiments in Alaska, 1927 and 1928. Bulletin of the US Bureau of Fisheries, Volume 45, 1929, Bureau of Fisheries Document No. 1057: 1-23. (Available at: http://fishbull.noaa.gov/45-1/rich.pdf; accessed 28 July 2011)

Report on salmon tagging in Alaska during 1927-1928, including sockeye salmon tagged at Uganik Bay in 1927; most Uganik tagged fish originated from the Karluk River; tagging of sockeye salmon at Nicholaski Spit in 1928 revealed some eastward migration to Chignik and Kodiak Island streams. -- [SOCKEYE, MIGRATION]

**Rich,** Willis H., and Edward M. Ball. 1931. Statistical review of the Alaska salmon fisheries, Part II: Chignik to Resurrection Bay. Bulletin of the US Bureau of Fisheries, Volume 46, 1930, Bureau of Fisheries Document No. 1102: 643-712. (Available at: http://fishbull.noaa.gov/46-1/rich.pdf; accessed 28 July 2011)

Important detailed analysis of historic salmon catch statistics for the Kodiak Island, Chignik, and Cook Inlet areas, including discussion of the historic data for the Karluk River District sockeye, Chinook, coho, and pink salmon, using the earliest data available to 1927; discussion of accuracy of early catch records; interception of Karluk River sockeye salmon; transportation of sockeye salmon from other areas to Karluk River canneries. -- [SOCKEYE, CHINOOK, COHO, PINK, COMMERCIAL FISHING]

**Ricker,** William E. 1940. On the origin of kokanee, a fresh-water type of sockeye salmon. Transactions of the Royal Society of Canada, Section V, Biological Sciences, Third Series, Volume 34: 121-135.

Discussion of kokanee, residual sockeye, and anadromous sockeye of the North Pacific region, including the report of a few residual sockeye from Karluk Lake by Thomas Barnaby. -- [SOCKEYE]

**Ricker,** William E. 1954. Stock and recruitment. Journal of the Fisheries Research Board of Canada 11(5): 559-623.

Detailed discussion of stock and recruitment in fishes, with many examples of different reproduction curves, including those for Karluk River sockeye (1922-1929) and pink (1922-1939) salmon; Karluk River sockeye salmon return maximum when escapement = 1,000,000-1,500,000. -- [SOCKEYE, PINK]

**Ricker,** William E. 1959. Evidence for environmental and genetic influence on certain characters which distinguish stocks of the Pacific salmons and steelhead trout. Fisheries Research Board of Canada, M. S. Report 695: 1-103.

Discussion of Pacific salmon stocks and the roles of environment and genetics in determining specific characteristics, including data for Karluk's sockeye salmon; ideas on whether Karluk's sockeye salmon are a single population or represent two or more stocks; sockeye smolt size, age, and migration. -- [SOCKEYE, GENETICS, SUBPOPULATIONS, SMOLT]

**Ricker,** William E. 1962. Comparison of ocean growth and mortality of sockeye salmon during their last two years. Journal of the Fisheries Research Board of Canada 19(4): 531-560.

Detailed analysis of sockeye salmon growth and mortality in the ocean from different stocks, including fish from the Karluk River and Bare Lake; length and weight; effect of high seas fishery. -- [SOCKEYE, GROWTH, MORTALITY, SMOLT]

**Ricker,** William E. 1972. Hereditary and environmental factors affecting certain salmonid populations (pp. 19-160). *In:* Raymond ca. Simon and Peter A. Larkin (eds.). The stock concept in Pacific salmon. H.R. MacMillan Lectures in Fisheries, University of British Columbia, Vancouver, BC. 231pp.

Comprehensive discussion of the relative influence of heredity and environmental factors in affecting salmonid populations, including those from the Karluk River; evidence for many sockeye salmon subpopulations at Karluk; historic changes in smolt ages and sizes; migration direction of newly emerged fry; mention of residual sockeye salmon in Karluk Lake; this 1972 report is a continuation of Ricker (1959). -- [SOCKEYE, SUBPOPULATIONS, SMOLT, JUVENILES, GENETICS]

**Ridgway,** George J., George W. Klontz & Charles Matsumoto. 1962. Intraspecific differences in serum antigens of red salmon demonstrated by immunochemical methods. International North Pacific Fisheries Commission, Bulletin Number 8 (Doc. 396): 1-13.

Detailed study of variation in sockeye salmon blood antigens from many Asian and American populations, including samples from Karluk in 1955-1958. -- [SOCKEYE, GENETICS]

**Rigby,** Phil, John McConnaughey & Herman Savikko. 1991. Alaska commercial salmon catches, 1878-1991. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, Regional Information Report No. 5J91-16 (December, 1991). 88pp.

Detailed summary of Alaskan salmon catches, 1878-1991, including those from the Kodiak region; catch statistics for all 5 species of Alaskan salmon. -- [SOCKEYE, COMMERCIAL FISHING]

**Rigg,** George B. 1915. The kelp beds of western Alaska (Part V, p. 105-122). *In:* Frank K. Cameron, Potash from kelp, United States Department of Agriculture, Report No. 100, Government Printing Office, Washington, D.C.

Summary report on the 1913 survey of kelp beds in western Alaska, including those at Karluk and many sites around Kodiak Island in June-July; 3 large kelp beds of *Alaria fistulosa* measured at Karluk and Cape Karluk; kelp beds persisted at Karluk despite attempts for 17 years to permanently remove them from the salmon fishing grounds; observations on the volcanic ash deposited in 1912. -- [PLANTS, FISHERY]

**Rogers,** Ronnie Harold. 1990. Determination of recent shoreline changes at Karluk Lagoon, Kodiak Island, Alaska (1952-1988) using an analytical photogrammetric approach. Master of Arts Thesis, University of Georgia, Athens, Georgia. 185pp.

Detailed study of shoreline changes in Karluk Lagoon between 1952 and 1988. -- [PHYSICAL]

**Roppel,** Patricia. 1982. Alaska's salmon hatcheries, 1891-1959. Alaska Historical Commission Studies in History No. 20, National Marine Fisheries Service, Auke Bay Fisheries Laboratory. 299pp.

Important historical review of Alaska’s hatcheries, including detailed information on the two sockeye salmon hatcheries operated by the APA at Karluk Lagoon in 1891 and 1896-1916. -- [SOCKEYE, HATCHERY]

**Roppel,** Patricia. 1986. Salmon from Kodiak: an history of the salmon fishery of Kodiak Island, Alaska. Alaska Historical Commission Studies in History No. 216, Anchorage. 355pp.

Important historical review of the commercial salmon fishery of Kodiak Island and its canneries, including detailed information on the salmon canneries located at Karluk Spit and nearby areas. -- [SOCKEYE, CANNERIES]

**Roppel,** Patricia. 1993. Alaska's salmon and trout hatchery programs 1891-1959: an annotated bibliography. National Marine Fisheries Service, Auke Bay Fisheries Laboratory, Manuscript Report -- File, MR-F No. 175 (November, 1993). 139pp.

Important bibliography on Alaska’s hatcheries, including many references to the sockeye salmon hatchery at Karluk in 1891 and 1896-1916. -- [SOCKEYE, HATCHERY]

**Roppel,** Patricia. 2004. The Steamer *Albatross* and early Pacific salmon, *Oncorhynchus* spp., research in Alaska. Marine Fisheries Review 66(3): 21-31.

Historical review of early Pacific salmon research in Alaska, including the early biological studies and official investigations of sockeye salmon at Karluk by Bean, Moser, Fassett, Alexander, Rutter, and Chamberlain; much of this salmon research was made possible by the US Fish Commission Steamer *Albatross*. – [SOCKEYE, HISTORY]

**Rounsefell,** George A. 1957. Fecundity of North American Salmonidae. Fishery Bulletin 57(122): 451-468. (Available at: http://fisherybulletin.nmfs.noaa.gov/57-1/rounsefell1.pdf; accessed 28 July 2011)

Discussion of egg fecundity in salmon, trout, and charr in North America, including data (1926, 1938-1941, and 1943) from Karluk's sockeye salmon; left ovary fecundity greater than right; effect of ocean age on fecundity; average fecundity of Karluk River sockeye salmon for different ages, lengths, and sample year. -- [SOCKEYE, EGGS, FECUNDITY]

**Rounsefell,** George A. 1958. Factors causing decline in sockeye salmon of Karluk River, Alaska. Fishery Bulletin 58(130): 83-169. (Available at: http://fisherybulletin.nmfs.noaa.gov/58-1/rounsefell.pdf; accessed 28 July 2011)

Important detailed study of Karluk's sockeye salmon and the reasons for their decline in abundance; climatic effects; catch and escapement statistics; age composition of sockeye run; migration timing; smolt abundance and migrations; adult returns from known escapements; effects of predation and competition; Karluk Lake fertility. -- [SOCKEYE, AGE, MIGRATIONS, SMOLT, PREDATION, COMPETITION, LIMNOLOGY, THEORIES OF DECLINE]

**Rounsefell,** George A. 1973. Comments on "Evaluation of causes for the decline of the Karluk sockeye salmon runs and recommendations for rehabilitation", by R. Van Cleve & D. E. Bevan. Fishery Bulletin 71(3): 651-659.

George A. Rounsefell's critique of Van Cleve and Bevan's 1973 paper on Karluk's sockeye salmon. -- [SOCKEYE, THEORIES OF DECLINE]

**Rozell,** Ned. 1996. Looking at salmon runs in the days of Columbus. Fairbanks Daily News-Miner, Sunday Heartland Magazine (July 28, 1996), Fairbanks, AK. [This article is also available at University of Alaska, Fairbanks, Geophysical Institute, Alaska Science Forum, Article #1294 (July 18, 1996), or on the Internet (http://www.gi.alaska.edu:80/ScienceForum/ASF12/1294.htm)]

Brief article on using marine nitrogen in lake sediment core samples to predict past escapements of sockeye salmon at Karluk Lake. -- [SOCKEYE, LIMNOLOGY]

**Rozell,** Ned. 1996. Nitrogen counts centuries of fish. Kodiak Daily Mirror (July 26, 1996), Kodiak.

Brief article on using marine nitrogen in lake sediment core samples to predict past escapements of sockeye salmon at Karluk Lake. -- [SOCKEYE, LIMNOLOGY]

**Rutter,** Cloudsley. 1899. Notes on a collection of tide-pool fishes from Kadiak Island in Alaska. Bulletin of the United States Fish Commission, Volume 18 (for 1898): 189-192.

Brief taxonomic notes on threespine sticklebacks and sculpins collected from Karluk Lagoon, River, and Lake; sculpin body measurements from Karluk Lake. -- [STICKLEBACK, SCULPIN]

**Rutter,** Cloudsley. 1903. Natural history of the quinnat salmon. A report of investigations in the Sacramento River, 1896-1901. Bulletin of the United States Fish Commission, Volume 22 (for 1902): 65-141.

Brief comments about Karluk's sockeye salmon; observations of young sockeye in the ocean off Karluk Spit; photograph of a lamprey scar on the operculum of an adult sockeye salmon from Karluk; comments upon Karluk sockeye returning to their home stream. -- [SOCKEYE, JUVENILES, PARASITES, MIGRATION]

**Rutter,** Cloudsley. 1903. The eagles of Karluk Lake. Western Field 3(4): 671-674.

Early report on bald eagle nesting and food habits on salmon at Karluk Lake based on his 1903 field work. -- [SOCKEYE, BIRDS]

**Rutter,** Cloudsley. 1903. The Pacific salmons. Country Life in America 4 (June 1903): 124-127.

Brief mention of the number of adult sockeye salmon caught at Karluk in the commercial beach seines (over 800 m long); 10,000-25,000 fish per haul common; occasionally 50,000 fish per haul; record haul made in 1896 of estimated 100,000 fish: photographs of juvenile and adult salmon; definition of terms used for early life stags of salmon (alevin, fry, parr).

**Rutter,** Cloudsley. 1904. Artificial propagation of salmon in the Sacramento River (Appendix, p. 103-107). *In:* W. W. Van Arsdale, W. E. Gerber & Chas. A. Vogelsang, Eighteenth Biennial Report of the State Board of Fish Commissioners of the State of California, for the years 1903-1904, Sacramento, CA. [reprinted from San Francisco Trade Journal].

Brief mention of spawning conditions at Karluk Lake in 1903; estimated number of eggs spawned at Karluk Lake; potential of artificial propagation. -- [SOCKEYE, SPAWNING]

**Sagalkin**, N.H., and P.A. Nelson. 2000. Postseason sockeye and chinook salmon escapement estimates for the Karluk and Ayakulik Rivers and Dog Salmon Creek, 1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K00-45.

Estimates of sockeye and Chinook salmon escapements in 1998; high water in the Karluk River prevented weir operations early in year -- [SOCKEYE, CHINOOK, ESCAPEMENTS, WEIR]

**Saneyoshi,** Mineo. 1991. Biochemical characterizations of Dolly Varden charr, *Salvelinus malma* in Alaska state. Part I. Comparison of purine nucleoside phosphorylase activities in the liver of Dolly Varden charr from the rivers of various locations in Alaska (pp. 57-61). *In:* Fumio Yamazaki (ed., Hokkaido University, Japan), Reproductive biology and population genetics of Dolly Varden (Salmonidae), Report of oversea work supported by Grant-in-aid for Overseas Scientific Surrvey of the Ministry of Education, Science and Culture of Japan, during 1987-1990.

Detailed analysis of genetic variation in anadromous and land-locked Dolly Varden from 8 locations in Alaska, including the Thumb River in 1989. -- [DOLLY VARDEN, GENETICS]

**Schmidt,** D. C., G. B. Kyle, S. R. Carlson, H. J. Geiger & B. Finney. 1997. Alaska's sockeye salmon fishery management: can we learn from success? (pp. 687-695). *In:* D. A. Hancock, D. ca. Sminth, A. Grant & J. P. Beumerm (ed.), Developing and Sustaining World Fisheries Resources: The State of Science and Management. Second World Fisheries Congress Proceedings, CSIRO, Collingwood, VIC, Australia.

Important discussion of Alaska's management of sockeye salmon, using Karluk as an example; salmon carcasses were especially important to Karluk Lake's production of juvenile sockeye; carcass-dependent lakes are rare; limnological data were important in setting escapement goals; traditional stock-recruitment analysis may give incorrect escapement goals; advantages of using a fixed escapement goal rather than a fixed harvest rate (50%) or quota; high escapements to Karluk Lake resulted in high production. -- [SOCKEYE, LIMNOLOGY, MANAGEMENT]

**Schmidt,** Dana C., Stan R. Carlson, Gary B. Kyle & Bruce P. Finney. 1998. Influence of carcass-derived nutrients on sockeye salmon productivity of Karluk Lake, Alaska: Importance in the assessment of an escapement goal. North American Journal of Fisheries Management. 18(4): 743-763.

Important detailed analysis of spawner-recruit and limnological data to determine an escapement goal for Karluk's sockeye salmon; carcass nutrients important to sockeye productivity; recommended an annual escapement goal of 800,000-1,000,000 sockeye, equally divided between the early and late runs. -- [SOCKEYE, LIMNOLOGY, ESCAPEMENT, MANAGEMENT]

**Schrof**, Stephen T., Steven G. Honnold, Christian J. Hicks & Jeff A. Wadle. 2000. A summary of salmon enhancement, rehabilitation, evaluation, and monitoring efforts conducted in the Kodiak Management Area through 1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 4K00-57.

Important summary of Karluk Lake's limnology and juvenile sockeye; water chemistry, 1985-1994; zooplankton density, biomass, and size, 1980-1997; sockeye juvenile populations; sockeye-stickleback relative abundance; sockeye juvenile age, length, weight, and condition coefficient, 1990-1997; sockeye smolt populations, 1961-1992; sockeye smolt age, length, weight, condition coefficient, 1925-1997; daily sockeye salmon escapements, 1989-1998. -- [SOCKEYE, JUVENILES, SMOLT, LIMNOLOGY, STICKLEBACKS]

**Schrof**, Stephen T., and Steven G. Honnold. 2003. Salmon enhancement, rehabilitation, evaluation, and monitoring efforts conducted in the Kodiak Management Area through 2001. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K03-41 (August 2003). 337pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/rir.4k.2003.41.pdf; accessed 28 July 2011)

Important summary of Karluk Lake's limnology and juvenile sockeye; comparison of Karluk Lake with other Kodiak area lakes in 2001; limnological methods; Karluk Lake morphometrics, light penetration, temperature; fertilization history, 1986-1990; water chemistry, 1985-1994; zooplankton density, biomass, and size, 1980-

1997, 1999-2001; sockeye juvenile populations from townet and hydroacoustics, 1983-1997; sockeye-stickleback relative abundance; sockeye juvenile age, length, weight, and condition coefficient, 1990-1997; sockeye smolt populations, 1961-2001; sockeye smolt age, length, weight, condition coefficient, 1925-2001; sockeye salmon harvest by statistical area, 2001. -- [SOCKEYE, JUVENILES, SMOLT, LIMNOLOGY, STICKLEBACKS]

**Schwarz,** Len. 1992. Area management report for the recreational fisheries of the Kodiak and Alaska Peninsula/Aleutian Islands regulatory areas. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage (December, 1992). 132pp.

Detailed sport fishing management report for 1992, including comprehensive summaries of the Karluk River steelhead and Chinook and sockeye salmon sport fisheries; descriptions of sport fisheries research and objectives at the Karluk River; 1992 sport fishing effort, catch, and harvest in the Karluk River system. -- [STEELHEAD, CHINOOK, SOCKEYE, SPORT FISHING]

**Schwarz,** Len. 1994. 1993 area management report for the recreational fisheries of the Kodiak and Alaska Peninsula/Aleutian Islands area. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Management Report No. 94-5 (July, 1994). 175pp.

Detailed sport fishing management report for 1993, including comprehensive summaries of the Karluk River steelhead and Chinook and sockeye salmon sport fisheries; descriptions of sport fisheries research and objectives at the Karluk River; sport fishing effort and harvest for the Karluk River system 1982-1992. -- [STEELHEAD, CHINOOK, SOCKEYE, SPORT FISHING]

**Schwarz,** Len. 1995. 1994 area management report for the recreational fisheries of the Kodiak and Alaska Peninsula/Aleutian Islands regulatory areas. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Management Report No. 95-3. 185pp.

Detailed sport fishing management report for 1994, including comprehensive summaries of the Karluk River steelhead and Chinook and sockeye salmon sport fisheries; descriptions of sport fisheries research and objectives at the Karluk River; sport fishing effort and harvest for the Karluk River system. -- [STEELHEAD, CHINOOK, SOCKEYE, SPORT FISHING]

**Schwarz,** Len. 1996. Area management report for the recreational fisheries of the Kodiak and Alaska Peninsula/Aleutian Islands regulatory areas, 1995. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Management Report No. 96-3 (July, 1996). 179pp.

Detailed sport fishing management report for 1995, including comprehensive summaries of the Karluk River steelhead and Chinook and sockeye salmon sport fisheries; descriptions of sport fisheries research and objectives at the Karluk River; sport fishing effort and harvest for the Karluk River system. -- [STEELHEAD, CHINOOK, SOCKEYE, SPORT FISHING]

**Schwarz,** Len. 1996. Age composition and spawning escapement of chinook salmon in the Karluk, Ayakulik, and Chignik Rivers, Alaska, 1993 and 1994. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 96-6 (March, 1996). 88pp.

Detailed study of Karluk River Chinook salmon in 1993 and 1994; sport fishing effort, harvest and catch of Chinook salmon determined at the Karluk River Portage, Lagoon, Spit, and weir; age, sex, and length for Chinook salmon (295 fish in 1993, 258 in 1994) at the weir and for sport-caught fish; daily Chinook salmon weir counts 1984-1994; commercial and subsistence harvests of Karluk River Chinook salmon 1985-1994; sport harvest and catch of Karluk steelhead, sockeye salmon, and Dolly Varden. -- [CHINOOK, AGE, SIZE, SPORT FISHING, SUBSISTENCE, STEELHEAD, SOCKEYE, DOLLY VARDEN]

**Schwarz,** Len, Donn Tracy & Suzanne Schmidt. 2003. Karluk River visitor use census, 2002. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Fishery Data Series No. 03-17. 19pp.

Visitor census between Karluk Lake and Karluk River weir on 10 June-15 July 2002; guided and un-guided visitor use; sport catch and harvest of Chinook salmon; sport harvest and release of Chinook, sockeye, Dolly Varden, and steelhead. -- [MANAGEMENT, CHINOOK, SOCKEYE, DOLLY VARDEN, STEELHEAD]

**Scidmore,** Eliza Ruhamah. 1893. Appleton's guide-book to Alaska and the northwest coast: including the shores of Washington, British Columbia, southeastern Alaska, the Aleutian and the Seal Islands, the Bering and the Arctic coasts. D. Appleton and Company, New York. 156pp.

Brief comments about the early Karluk River salmon fishery; 1,100 cannery employees in 1890; canneries operate without governmental oversight; called Karluk "the greatest salmon stream in the world". -- [CANNERIES]

**Seale,** Alvin. 1898. Notes on Alaskan water birds. Proceedings of the Academy of Natural Sciences of Philadelphia: 126-140.

Observations and collections of birds in Arctic Alaska in 1896, including a list of 9 bird species collected by Cloudsley Rutter on Kodiak Island. -- [BIRDS]

**Setchell,** William Albert & Nathaniel Lyon Gardner. 1903. Algae of northwestern America. University of California Publications in Botany 1: 165-418.

Extensive summary of the algal species (mainly marine, but some freshwater) that inhabit the northwestern coast of North America from Washington to Kotzebue Sound in northern Alaska, including many specimens from Karluk, Uyak, and Kodiak; collections made at Karluk in the summer of 1899 by a University of California expedition; specimens deposited in the herbarium, University of California, Berkeley. – [PLANTS]

**Sexsmith,** Jeremy ca. 1963. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July, 1962 to June, 1963), Project F-5-R-4, Job 5-A, Volume 4: 129-143.

Brief comments on Karluk River fish populations; annual Karluk River steelhead angler harvest estimated at 1,000 fish. -- [STEELHEAD]

**Sharp,** Creig. 1978. I was mauled by a brown bear. Alaska 44(4): 36-37, 94.

Description of hunting and being mauled by a Kodiak brown bear at Karluk Lake in late April 1977. -- [BEARS]

**Shelikhov,** Grigorii I. 1981. A voyage to America, 1783-1786. Translated by Marina Ramsay. Edited with an introduction by Richard A. Pierce. Alaska History No. 19, The Limestone Press, Kingston, Ontario. 161pp.

Important historical report on the establishment of the first permanent Russian settlement on Kodiak Island in 1784 and the use of Karluk Village to over-winter in 1785-1786; descriptions of Alutiiq culture; use of rock weirs and spears to capture sockeye salmon; preparation of dried salmon for food. -- [SOCKEYE, RUSSIAN HISTORY, SUBSISTENCE]

**Shostrom,** O. E., R. W. Clough & E. D. Clark. 1924. A chemical study of canned salmon. I. Variations in composition of the Pacific Coast salmons and steelhead trout as influenced by species and locality where caught. Industrial and Engineering Chemistry 16(3): 283-289.

Analysis of salmon chemical composition (bone, moisture, fat, ash, protein, & calories) from many Pacific Coast locations, including salmon from the Karluk River. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FOOD VALUE]

**Shuman,** Richard F. 1950. Bear depredations on red salmon spawning populations in the Karluk River system, 1947. Journal of Wildlife Management 14(1): 1-9.

Discussion and analysis of Kodiak brown bear predation on sockeye salmon in Moraine Creek, a Karluk Lake tributary, 1947; concluded that predation levels were high and suggested control of bear population to protect depleted sockeye salmon runs. -- [SOCKEYE, BEARS, PREDATION]

**Shuman,** Richard F. 1963. Bear depredations on sockeye spawning populations in the Karluk River system, 1947. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory. Manuscript Report - File, MR-F 4 (July, 1963). 14pp.

Discussion and analysis of Kodiak brown bear predation on sockeye salmon in Moraine Creek, a Karluk Lake tributary, 1947. -- [SOCKEYE, BEARS, PREDATION]

**Simpson**, R. R. 1982. Biological research at Auke Bay (pp. 47-54). *In:* R. R. Mitsuoka, R. E. Pearson, L.J. Rutledge & S. Waterman (eds.), Fifty years of cooperation and commitment: 1931-1981. The Northwest and Alaska Fisheries Center. US Department of Commerce, NOAA Technical Memorandum NMFS F/NWC-34. 294pp.

Brief historical comments on the sockeye salmon research program at Karluk Lake. -- [SOCKEYE]

**Skud,** Bernard E., and W. Harry Everhart. 1977. George A. Rounsefell. Fisheries (February, 1977): 35-36.

Obituary for George A. Rounsefell (1905-1976), the biologist who analyzed the decline of Karluk's sockeye salmon. -- [SOCKEYE, HISTORY]

**Spalinger,** Geoff. 2006. Kodiak Management Area salmon daily and cumulative escapement counts for river systems with fish weirs, 1996-2005. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 06-06 (March 2006), Anchorage. 144pp.

Detailed daily and cumulative counts at the Karluk River weir 1996-2005 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead (upstream and downstream); weir installation and removal dates, 1996-2005; weir operational problems. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Spalinger,** G., P. Kuriscak & ca. L. Bond. 2005. Kodiak Management Area salmon daily and cumulative escapement counts for river systems with weirs, 1995-2004. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 05-62, Anchorage.

Detailed daily and cumulative counts at the Karluk River weir 1995-2004 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead (upstream and downstream); weir installation and removal dates. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Stearns,** Bob. 1987. Saltwater Fishing: The ultimate estuary. Field and Stream 92(3): 100, 104 (July 1987).

Brief description of sport fly fishing for coho salmon and steelhead in Karluk Lagoon; based from Rob Sikes's Karluk Lodge. -- [COHO, STEELHEAD, SPORT FISHING]

**Steffian,** Amy F. 1996. Archaeological salvage at Karluk One: report from the 1995 field season. Alutiiq Museum and Archaeological Repository, Kodiak, Alaska (July, 1996). 80pp.

Report on the archaeological excavation and artifacts found at Karluk Village in 1995, including some salmon fishing tools (1,100 AD). -- [SOCKEYE]

**Stephens,** ca. A. 1897. At a salmon pool (pp. 16-20). *In:* Selections from The Youth's Companion, arranged for supplementary reading in schools. No. 10. In Alaska. Perry Mason & Company, Boston, Massachusetts. 64pp.

A single photograph of the Karluk Spit canneries in the 1890s – [SOCKEYE, CANNERIES]

**Stevens,** Gary. 1986. Karluk and salmon -- fishing begins on 'river of life'. Kodiak Daily Mirror (February 27, 1986, p. 2, 14), Kodiak, AK.

Historical summary of the Karluk River salmon canneries. -- [SOCKEYE, CANNERIES]

**Stickney,** Robert R. 1989. Flagship. A history of fisheries at the University of Washington. University of Washington, School of Fisheries, Publications in Fisheries. Kendall/Hunt Publishing Company, Dubuque, Iowa. 153pp.

History of fisheries at the University of Washington, including origin, biologists, and research programs of the Fisheries Research Institute, which studied Karluk's sockeye salmon in 1948-1958. -- [HISTORY]

**Stockley,** Clinton, et al. 1951. Spawning program. Preliminary surveys of other potential projects in the Kodiak District. Alaska Department of Fisheries, Juneau, AK, 1951 Annual Report, Report Number 3: 50-52.

Comments about the potential for diverting Falls Creek back into its old channel to create new spawning area for Karluk's sockeye salmon; 107,000 green eggs from Karluk Lake sockeye salmon were incubated to the eyed stage and then planted into upper Gretchen Creek on Afognak Island. -- [SOCKEYE, PHYSICAL, HATCHERY]

**Stockley,** Clinton & Detrick Cooter. 1952. Watershed management, Kodiak area. Alaska Department of Fisheries, Juneau, AK, 1952 Annual Report, Report Number 4: 55-61.

Brief comments on the Falls Creek channel alteration in the 1940s and potential to restore the channel for spawning sockeye salmon; green eggs from Karluk Lake sockeye salmon planted in a Frazer Lake tributary in 1951 (200,000) and 1952 (313,000). -- [SOCKEYE, PHYSICAL, HATCHERY]

**Stockley,** Clinton, Leo M. Thompsen, Stanley D. Swanson & Paul Garceau. 1953. Watershed management, Kodiak area. Alaska Department of Fisheries, Juneau, AK, 1953 Annual Report, Report Number 5: 67-72.

Short description of diverting Falls Creek back into its original channel and increasing the spawning area for Karluk's sockeye salmon; photograph and map of Falls Creek diversion; 1,000,000 greens eggs from Karluk Lake sockeye salmon planted in Frazer Lake in 1953. -- [SOCKEYE, PHYSICAL, HATCHERY]

**Stockley,** Clinton, et al. 1954. Watershed management, Kodiak area. Alaska Department of Fisheries, Juneau, AK, 1954 Annual Report, Report Number 6: 72-75.

Brief mention that green eggs from Karluk Lake sockeye salmon were planted in Frazer Lake in 1954; few brood stock in Karluk Lake reduced the number of eggs available for transplanting. -- [SOCKEYE, HATCHERY]

**Stockley,** Clinton, et al. 1955. Watershed management, Kodiak District. Alaska Department of Fisheries, Juneau, AK, 1955 Annual Report, Report Number 7: 125-131.

Brief mention of eyed eggs from Karluk Lake sockeye salmon were planted in Frazer Lake in 1955, but fewer were planted because few spawners were available in Karluk Lake; 106,000 eyed eggs from Karluk Lake sockeye salmon were planted in 1951 in Gretchen Creek, Afognak Island; photograph of beach seining in Karluk Lake for sockeye salmon brood fish for Frazer Lake; photograph of beach seining at Karluk Spit. -- [SOCKEYE, HATCHERY]

**Stoermer,** E.F., Qi Yu-Zao & T. B. Ladewski. 1986. A quantitative investigation of shape variation in *Didymosphenia* (Lyngbye) M. Schmidt (Bacillariophyta). Phycologia 25(4): 494-502.

Study of shape variation in *Didymosphenia*, a genus of diatoms, including specimens collected from Karluk Lake in July 1959; photomicrographs of diatoms. -- [LIMNOLOGY, PLANTS]

**Stone,** Livingston. 1894. A National Salmon Park (pp. 14-19). *In:* M. McDonald, Report on the salmon fisheries of Alaska. Bulletin of the US Fish Commission 12, for 1892: 1-49. The Miscellaneous Documents (No. 122) of the House of Representatives for the Second Session of the Fifty-Third Congress, 1893-1894. Volume 18. (Originally published 16 June 1892 in Forest and Stream).

Discussion of creating a preserve for salmon in Alaska; description of an August 1889 trip to Karluk Lake and observations of the number of sockeye salmon on the spawning grounds; recommended Afognak Island be set aside as a salmon preserve. -- [SOCKEYE, SPAWNING]

**Straty,** Richard R. 1962. Collection of salmon samples for racial studies, 1961. US Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report No. MR 62-3. 13pp.

Brief report on the 1961 collection of Alaskan salmon for the BCF (Seattle Laboratory) racial studies, including sockeye scale and blood samples taken from Karluk's sockeye salmon on 23 July 1961. -- [SOCKEYE, SCALES, SUBPOPULATIONS]

**Swanton,** Charles O., and Patricia A. Nelson. 1993. Kodiak Management Area, salmon catch, escapement, and run statistics, 1988. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K93-27 (October, 1993). 113pp.

Summary report of 1988 salmon catch, escapement, and total run statistics for the Kodiak Management Area, including Karluk's early and late run sockeye salmon escapements; age, sex, and length of Karluk's sockeye salmon. -- [SOCKEYE, AGE, SEX, LENGTH]

**Swanton,** Charles O., and Patricia A. Nelson. 1994. Kodiak Management Area salmon catch, escapement, and run statistics, 1988. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Technical Fishery Report 94-22 (December, 1994). 38pp.

Summary report of 1988 salmon catch, escapement, and total run statistics for the Kodiak Management Area, including Karluk's early and late run sockeye salmon escapements; age, sex, and length of Karluk's sockeye salmon. -- [SOCKEYE, AGE, SEX, LENGTH]

**Swanton,** Charles O., and Patricia A. Nelson. 1994. Contributions of Karluk and Upper Station late run sockeye salmon to the Sitkalidak, Katmai, and Alinchak sections July fisheries, 1992-1993. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K94-3 (February, 1994). 55pp.

Detailed analysis of the 1992-1993 contribution of Karluk's late run sockeye salmon to other fisheries in the Kodiak Island area. -- [SOCKEYE, MANAGEMENT]

**Swanton,** Charles O., and Patricia A. Nelson. 1994. Kodiak Management Area, salmon catch, escapement, and run statistics, 1989. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K94-30 (August, 1994). 85pp.

Summary report of 1989 salmon catch, escapement, and total run statistics for the Kodiak Management Area, including Karluk's early and late run sockeye salmon escapements; age, sex, and length of Karluk's sockeye salmon. -- [SOCKEYE, AGE, SEX, LENGTH]

**Swanton,** Charles O., and Patricia A. Nelson. 1995. Kodiak Management Area salmon catch, escapement, and run statistics, 1989. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Juneau, Technical Fishery Report 95-10 (December, 1995). 39pp.

Summary report of 1989 salmon catch, escapement and total run statistics for the Kodiak Management Area, including Karluk's early and late run sockeye salmon escapements; age, sex, and length of Karluk's sockeye salmon; *Exxon Valdez* oil spill affected salmon fishery in 1989. -- [SOCKEYE, AGE, SEX, LENGTH]

**Sweetman,** Jon N. 2001. Factors influencing zooplankton populations in Alaskan sockeye salmon (*Oncorhynchus nerka*) nursery lakes: Insights from limnological and paleolimnological analyses. Masters of Science Thesis, University of Alaska, Fairbanks, Alaska. 81pp.

Size and abundance of zooplankton populations in 23 lakes of southern Alaska, including Karluk Lake; changes in zooplankter *Bosmina* size and abundance over past 500 years in Karluk Lake; *Bosmina* size affected by *Cyclops* abundance; salmon-derived nutrients important to Karluk Lake. -- [SOCKEYE, LIMNOLOGY]

**Sweetman,** Jon N., and Bruce P. Finney. 2003. Differential responses of zooplankton populations (*Bosmina longirostris*) to fish predation and nutrient-loading in an introduced and a natural sockeye salmon nursery lake on Kodiak Island, Alaska, USA. Journal of Paleolimnology 30(2): 183-193.

Important detailed analysis of the abundance and morphology of the cladoceran *Bosmina longirostris* in a Karluk Lake sediment core that extended back 500 years; abundance of *Bosmina* in the sediments varied directly with salmon-derived nutrients (sockeye salmon abundance); changes in *Bosmina* carapace length, antennule length, and mucro length along the sediment record suggested this cladoceran was not controlled by juvenile sockeye predation, but appeared to be preyed upon by copepod (*Cyclops*); salmon-derived nutrient loading is more important than predation pressure in determining zooplankton structure in Karluk Lake; *Bosmina* abundance and morphology studied in a 300 year sediment core from Frazer Lake. -- [SOCKEYE, LIMNOLOGY]

**Swineford,** A. P. 1898. Alaska, its history, climate and natural resources. Rand, McNally & Company, Chicago. 256pp.

Brief comments on Karluk River salmon canneries; subsistence use of salmon at Karluk by 150 families with annual use of 400 pounds of dried fish per family, this equivalent to 4,000 pounds of live fish; barabara construction. -- [CANNERY, SUBSISTENCE]

**Taft,** Alan ca. 1930. The growth of salmon (pp. 253-259). *In:* Contributions to Marine Biology. Stanford University Press, Stanford, CA. (Lectures and symposia of meeting of Western Society of Naturalist, December 20-21, 1929)

Discussion of the growth of Karluk's sockeye salmon in freshwater and salt water using data from 1926-1928; changes in sockeye smolt size with migration; adult size and age. -- [SOCKEYE, GROWTH, AGE, SMOLT, SCALES]

**Taylor,** John P. 1964. Eighteen months at the Karluk hatchery. Alaska Sportsman 30 (1): 36.

Description of the Karluk River hatchery operations in 1909; Dolly Varden were seined in the lagoon before hatchery sockeye fry were released. -- [SOCKEYE, HATCHERY, DOLLY VARDEN]

**Terrell,** Terry T. 1987. The diatom flora (Bacillariophyta) in Karluk Lake, Alaska as determined from sediment cores. Nova Hedwigia 45(3-4): 415-422.

Analysis of the diatoms present in 3 sediment cores taken from Karluk Lake in 1981-1982; 98 taxa of diatoms were identified; diatom list was compared with past studies in 1932 and 1959-1960. -- [SOCKEYE, LIMNOLOGY, PLANTS]

**Thompson,** Seton H. 1950. Alaska fishery and fur-seal industries: 1947. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 20.

Brief summary of operations at the Karluk River weir in 1947. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1952. Alaska fishery and fur-seal industries: 1948. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 23.

Brief summary of operations at the Karluk River weir in 1948. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1952. Alaska fishery and fur-seal industries: 1949. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 26.

Brief summary of operations at the Karluk River weir in 1949; research on Karluk's sockeye salmon. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1953. Alaska fishery and fur-seal industries: 1950. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 29.

Brief summary of operations at the Karluk River weir in 1950. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1954. Alaska fishery and fur-seal industries: 1951. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 31.

Brief summary of operations at the Karluk River weir in 1951. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1954. Alaska fishery and fur-seal industries: 1952. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 33.

Brief summary of operations at the Karluk River weir in 1952. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1955. Alaska fishery and fur-seal industries: 1953. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 35.

Brief summary of operations at the Karluk River weir in 1953. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1956. Alaska fishery and fur-seal industries: 1954. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 37.

Brief summary of operations at the Karluk River weir in 1954. -- [SOCKEYE, WEIR]

**Thompson,** Seton H. 1957. Alaska fishery and fur-seal industries, 1955. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 40.

Brief summary of operations at the Karluk River weir in 1955. -- [SOCKEYE, WEIR]

**Thompson,** Seton H., and Donald W. Erickson. 1960. Alaska fishery and fur-seal industries, 1956. US Department of the Interior, Fish and Wildlife Service, Statistical Digest No. 45.

Brief mention of the 1956 Karluk River weir and escapements. -- [SOCKEYE, WEIR]

**Thompson,** William Francis. 1950. Some salmon research problems in Alaska. University of Washington, Fisheries Research Institute, Circular No. 11 (November 9, 1950). A talk prepared for the Meeting held by the National Research Council, on scientific research in Alaska, Alaska Science Conference, Nov. 9-11, 1950, Washington, DC 20pp.

Important discussion of the Karluk's sockeye salmon run and the possibility that the commercial fishery altered the original seasonal run distribution from unimodal to bimodal by removing the productive midseason fish; existence of subpopulations. -- [SOCKEYE, RUN DISTRIBUTION, SUBPOPULATIONS]

**Thompson,** William Francis. 1951. An outline for salmon research in Alaska. University of Washington, Fisheries Research Institute, Circular No. 18 (October, 1951). A talk prepared for the Meeting of the International Council for the Exploration of the Sea at Amsterdam, October 1-9, 1951. 49pp.

Important discussion of the Karluk's sockeye salmon run and the possibility that the commercial fishery altered the original seasonal run distribution from unimodal to bimodal by removing the productive midseason fish; existence of subpopulations. -- [SOCKEYE, RUN DISTRIBUTION, SUBPOPULATIONS]

**Thompson,** William F., Donald E. Bevan & Fredrik V. Thorsteinson. 1954. The present regulatory quota system for Karluk and Chignik. University of Washington, Fisheries Research Institute, Circular No. 71, Kodiak Island Memorandum No. 12 (November 16, 1954). 4pp.

Criticism of the regulatory quota system used to govern the harvest of Karluk's sockeye salmon. -- [SOCKEYE, MANAGEMENT]

**Thompson,** W. F., and D. E. Bevan. 1955. A proposal for experimental regulation of the Karluk fishery. University of Washington, Fisheries Research Institute, Circular No. 72 revised, Kodiak Island Memorandum No. 13 (November 16, 1954, revised October 12, 1955). 10 p.

Proposal to experiment with sockeye salmon fishery regulations at Karluk; use different regulations in odd and even years; need to restore midseason runs at Karluk, rather than the early run. -- [SOCKEYE, REGULATIONS]

**Tiernan,** Aaron R. 2011. Kodiak Management Area weir descriptions and salmon escapement report, 2010. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries, Fishery Management Report No. 11-08 (March 2011), Anchorage. 138pp. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/FMR11-08.pdf; accessed 28 July 2011)

Detailed daily and cumulative counts at the Karluk River weir 2001-2010 for sockeye, Chinook, coho, pink, and chum salmon, and steelhead (upstream and downstream); weir installation and removal dates, 2001-2010; weir operations, location, and problems, brief history and photograph of the 101 m Karluk River weir. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, STEELHEAD, WEIR]

**Tikhmenev,** P. A. 1978. A history of the Russian-American Company. University of Washington Press, Seattle. 522pp.

Detailed historical account of the Russian-American Company; data on the human population (300) at Karluk Village in the 1830s; salmon harvests of 100,000-150,000 at Karluk for drying. -- [SOCKEYE, RUSSIAN HISTORY, SUBSISTENCE]

**Tingle,** George R. 1897. Report on the salmon fisheries of Alaska, 1896. US Treasury Department, Division of Special Agents, Document No. 1925. 27pp.

Report of the Inspector of Salmon Fisheries for 1896; letters concerning conflict over placement of a salmon trap; spoilage of Karluk River salmon shipped to Chignik; conflicts between canneries; obstruction of Karluk River at the hatchery; discussion of Karluk River hatchery; sockeye salmon caught by Karluk Spit canneries in 1896. -- [SOCKEYE, CANNERIES, HATCHERY]

**Troyer,** Will. 2005. Into brown bear country. University of Alaska Press, Fairbanks. 130pp.

Descriptions of the biology, life cycle, and behavior of the coastal brown bear in Alaska; memories from Troyer's career as a wildlife biologist, including his years of study on Kodiak Island and at Karluk Lake (1955-1963); documented age of a female bear from Karluk Lake at 35 years; controversy over bears as salmon predators; bear live-trapping in the Karluk region in the 1950s; photographs of Karluk, Thumb, and O'Malley lakes. – [BEARS]

**Troyer,** Willard A., and Richard J. Hensel. 1964. Structure and distribution of a Kodiak bear population. Journal of Wildlife Management 28(4): 769-772.

Study of the population structure and distribution of Kodiak brown bears in the Karluk Lake drainage, 1954-1962; population estimates, litter size, age, and sex ratios; bear distribution related to salmon availability and berries. -- [SOCKEYE, BEARS]

**Tuck,** Margaret L. 1984. Karluk River: private property, anglers welcome. Alaska Outdoors, September/October: 12-14, 17.

Brief article on transfer of ownership of the Karluk River in 1978 to the Native corporation, Koniag Inc., under the Alaska Native Claims Settlement Act; start of a $50 per day fishing and camping fee; review of Karluk River sport fishing. -- [SPORT FISHING]

**Turner,** L. M. 1886. Contributions to the natural history of Alaska. Results of investigations made chiefly in the Yukon District and the Aleutian Islands; conducted under the auspices of the Signal Service, United States Army, extending from May, 1874, to August, 1881. No. II, Arctic Series of Publications Issued in Connection with the Signal Service, US Army. Government Printing Office, Washington, DC. 226pp.

Brief comments based a visit to Karluk in early August 1881; 3,000 barrels of Karluk River sockeye salmon were salted and packed in 1881 by two companies (Alaska Commercial Company and Western Fur & Trading Company); many Dolly Varden (average weight = 1.1 kg each) were preserved in salt and sold in San Francisco markets; observation of shark concentrations at the Karluk River mouth in mid July; observations of western glaucous gulls, magpies, golden-crowned sparrows, and Oregon juncos at Karluk. -- [SOCKEYE, DOLLY VARDEN, SHARK, BIRDS]

**Tyler,** Richard W. 1961. Stream surveys in the Kodiak area, 1960. University of Washington, Fisheries Research Institute, Circular No. 133 (January 20, 1961). 38pp.

Five surveys of the Karluk River in 1960 primarily for pink salmon; weekly sockeye salmon escapements at Karluk River weir. -- [PINK, SOCKEYE]

**Tyler,** Richard W., Larry Malloy, David Prokopowich & Kenneth Manthey. 1986. Migration of sockeye salmon in the Kodiak Archipelago, 1981. Alaska Department of Fish and Game, Juneau, Informational Leaflet Number 254 (February, 1986). 59 p. (Available at: http://www.adfg.alaska.gov/FedAidPDFs/afrbil.254.pdf; accessed 28 July 2011)

Important summary report of a 1981 study of sockeye salmon ocean migration along the west coast of Kodiak Island; many recoveries were made at Karluk River; Karluk River sockeye mainly approach the river from the north. -- [SOCKEYE, MIGRATION]

**US Fish and Wildlife Service.** 1993. Public use management plan and environmental assessment for public use regulations. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak, AK, Report I 1.98:K 81/4.

Brief description of the time of year when the Karluk River is used by sockeye, Chinook, coho, and pink salmon, Arctic charr, Dolly Varden, steelhead, and rainbow trout. -- [SOCKEYE, CHINOOK, COHO, PINK, ARCTIC CHARR, DOLLY VARDEN, STEELHEAD, RAINBOW TROUT]

**US Geological Survey.** 1974-1982. Water resources data for Alaska. US Geological Survey, Water Data Reports, Water Years 1974-1982 (issued annually). These data also are available on the internet (http://www-h2o-ak.usgs.gov/).

Stream discharge and water temperature records for several rivers and creeks in the Karluk River drainage basin (Karluk River 1975-1982, Canyon Creek 1974-1976, Falls Creek 1974-1975, Thumb River 1979-1982, Upper Thumb River 1974-1982, and East Fork Upper Thumb River 1979-1982). -- [PHYSICAL]

**US Senate.** 1912. Alaska fisheries. Hearings before the subcommittee of the committee on fisheries. United States Senate. Sixty-second Congress, second session on S. 5856, a bill to amend an act for the protection and regulation of the fisheries of Alaska. Government Printing Office, Washington, D.C.

Detailed discussion and testimony on the costs, operations, and effectiveness of the APA hatchery at Karluk Lagoon in 1912; conclusion that a hatchery at Karluk Lake would be more productive; discussion of taxes on canneries and rebates given for hatchery operations and release of sockeye fry; discussion of fish traps and purse seines; ship wrecks at Karluk; length and weight of 200 Karluk sockeye in 1903. – [SOCKEYE, SIZE, HATCHERY, REGULATIONS, FISHERY]

**Van Cleave,** Harley J., and James E. Lynch. 1950. The circumpolar distribution of *Neoechinorhynchus rutili*, an acanthocephalan parasite of fresh-water fishes. Transactions of the American Microscopical Society 69 (2): 156-171.

Analysis and discussion of the acanthocephalan parasite *Neoechinorhynchus rutili*, including specimens collected at Karluk Lake by William M. Morton from Arctic charr; figures showing Karluk Lake specimens. -- [PARASITES, ARCTIC CHARR]

**Van Cleve,** Richard & Donald E. Bevan. 1973. Evaluation of causes for the decline of the Karluk sockeye salmon runs and recommendations for rehabilitation. Fishery Bulletin 71(3): 627-649. (Available at: http://fishbull.noaa.gov/71-3/vancleve.pdf; accessed 28 July)

Important analysis of Karluk's sockeye salmon and the reasons for their decline in abundance; fry migrations; influence of Karluk River weir on adult and fry movements; Karluk River spawning habitat. -- [SOCKEYE, FRY, MIGRATIONS, THEORIES OF DECLINE, WEIR, SPAWNING]

**Van Cleve,** Richard & Donald E. Bevan. 1973. Reply to Rounsefell's "Comments on 'Evaluation of causes for the decline of the Karluk sockeye salmon runs and recommendations for rehabilitation', by R. Van Cleve and D. E. Bevan". Fishery Bulletin 71(3): 661-663.

Van Cleve and Bevan's response to George A. Rounsefell's critique of their 1973 paper. -- [SOCKEYE, THEORIES OF DECLINE]

**Van Daele,** Larry. 2003. The history of bears on the Kodiak Archipelago. Alaska Natural History Association, Anchorage, AK. 88pp.

A complete history of the brown bears (*Ursus arctos middendorfi*) on Kodiak Island, including bears around Karluk Lake; early evolution and arrival of bears on Kodiak Island after retreat of Pleistocene glaciers; Alutiiq people-bear interactions; Russian commercial bear harvests, 1780s-1867; interactions of humans and bears after 1867, including commercial hunting, bounties, salmon canneries, cattle industry, sport hunting, guiding, conservation, Mount Katmai eruption, World War II, management plans, regulations and permits, Kodiak National Wildlife Refuge, biological research, Native land claims, oil spill settlement, Terror Lake hydroelectric project, deer hunter conflicts, bear viewing and photography, and education for co-existence. -- [BEARS, SOCKEYE, MANAGEMENT]

**Van Hulle,** Frank D. 1970. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1969 to June 30, 1970), Project F-9-2, Job 6-A, Volume 11: 47-63.

Summary of an aerial survey of the Karluk River for Chinook salmon in 1969. -- [CHINOOK]

**Van Hulle,** F. D. 1971. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Progress Report (July 1, 1970 to June 30, 1971), Project F-9-3, Job G-1-B, Volume 12: 29-51.

Summary of 1969 and 1970 steelhead observations (age and length data, entry times of immigrants) based on 70 seine and sport caught fish at Karluk Lagoon and Portage; concluded that Karluk River steelhead population is in good condition; aerial survey of Karluk River for Chinook salmon. -- [STEELHEAD, CHINOOK, SPORT FISHING]

**Van Hulle,** Frank D., and J.B. Murray. 1972. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Report of Progress (July 1, 1971 to June 30, 1972), Project F-9-4, Job G-1-B, Volume 13: 17-41.

Karluk River float survey from the Portage to Lagoon for Chinook salmon abundance; 1971 creel census of Karluk River Portage steelhead, coho salmon, and Dolly Varden; age, sex, length, and weight of 155 Karluk River steelhead. -- [CHINOOK, STEELHEAD, COHO, DOLLY VARDEN, SPORT FISHING]

**Van Hulle,** Frank & John B. Murray. 1973. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Progress Report (July 1, 1972 to June 30, 1973), Project F-9-5, Job G-1-B, Volume 14: 1-28.

Summary of 1972 Karluk River steelhead harvest in the sport and subsistence fishery; age, sex, and length of steelhead in May-June and October; Chinook salmon counts at Karluk River weir and tagging in Karluk Lagoon in 1972; age, sex, length, and weight of 95 Chinook salmon in Karluk Lagoon; 1972 creel census of Karluk River for Chinook, pink, and sockeye salmon, and steelhead and Dolly Varden; field surveys by air and float trip for Chinook salmon. -- [STEELHEAD, CHINOOK, DOLLY VARDEN, COHO, SOCKEYE, PINK, AGE, TAGGING, SPORT FISHING].

**Van Hulle,** Frank & John B. Murray. 1975. Inventory and cataloging of the sport fish and sport fish waters in Southwest Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1974 to June 30, 1975), Project F-9-7, Job G-1-B, Volume 16: 1-26.

Summary of 1974 Chinook salmon and steelhead harvest from the Karluk River Portage; 1974 float survey of the Karluk River for Chinook salmon; age, sex, and length of steelhead in May and October. -- [STEELHEAD, CHINOOK, AGE, SPORT FISHING].

**Van Hulle,** Frank & John B. Murray. 1976. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1975 to June 30, 1976), Project F-9-8, Job G-1-B, Volume 17: 1-34.

Summary of 1975 creel census data from Karluk Lagoon, Portage, and Lake for steelhead, Dolly Varden, and coho, Chinook, and sockeye salmon; 1975 Chinook salmon counts at Karluk River weir; age, sex, and length of 92 Chinook salmon and 29 steelhead. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, WEIR, AGE, SPORT FISHING].

**Van Hulle,** Frank & John B. Murray. 1977. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1976 to June 30, 1977), Project F-9-9, Job G-1-B, Volume 18: 1-27.

Summary of 1976 creel census data from Karluk Lagoon for steelhead, Dolly Varden, and coho, Chinook, and sockeye salmon; summary of 1976 fish counts at Karluk River weir (steelhead, Chinook and coho salmon); age, sex, and length of Chinook salmon and steelhead; condition factors for spawned and unspawned steelhead. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, WEIR, AGE, SPORT FISHING].

**Van Hulle,** Frank & John B. Murray. 1978. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1977 to June 30, 1978), Project F-9-10, Job G-1-B, Volume 19: 1-41.

Summary of 1977 creel census data from Karluk Lagoon and Portage for steelhead, Dolly Varden, and coho, Chinook, and sockeye salmon; summary of 1977 fish counts at Karluk River weir (steelhead, Chinook and coho salmon); age, sex, and length of 245 Chinook salmon and 355 steelhead; kelt steelhead tagged. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, WEIR, TAGGING, AGE, SPORT FISHING].

**Van Hulle,** Frank & John B. Murray. 1981. Inventory and cataloging of the sport fish and sport fish waters in Southwestern Alaska. Alaska Department of Fish and Game, Division of Sport Fish, Federal Aid in Fish Restoration, Annual Performance Report (July 1, 1980 to June 30, 1981), Project F-9-13, Job G-1-B, Volume 22: 1-32.

Summary of 1980 fish counts at Karluk River weir (steelhead, and sockeye, Chinook, coho, pink, and chum salmon); summary of 1980 creel census at Karluk Lagoon and Lodge (steelhead, Dolly Varden, and sockeye, Chinook, coho, and pink salmon); age, sex, and length data of 80 angler-caught Chinook salmon and 43 steelhead. -- [SOCKEYE, STEELHEAD, DOLLY VARDEN, COHO, CHINOOK, PINK, CHUM, AGE, SPORT FISHING]

**Varanasi,** Usha, Donald W. Brown, Tom Hom, Douglas G. Burrows, Catherine A. Sloan, L. Jay Field, John E. Stein, Karen L. Tilbury, Bruce B. McCain & Sin-Lam Chan. 1993. Volume I: Survey of Alaskan subsistence fish, marine mammal, and invertebrate samples collected 1989-91 for exposure to oil spilled from the *Exxon Valdez*. US Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-12. 110pp.

Analysis of fish, invertebrates, and marine mammals for exposure to *Exxon Valdez* spilled oil, including data from Karluk River sockeye salmon, other salmon species, and invertebrates in 1989-1990. -- [SOCKEYE, POLLUTION, INVERTEBRATES, PINK, COHO, DOLLY VARDEN]

**Varanasi,** Usha, Donald W. Brown, Tom Hom, Douglas G. Burrows, Catherine A. Sloan, L. Jay Field, John E. Stein, Karen L. Tilbury, Bruce B. McCain & Sin-Lam Chan. 1993. Volume II: Supplemental information concerning a survey of Alaskan subsistence fish, marine mammal, and invertebrate samples collected 1989-91 for exposure to oil spilled from the Exxon Valdez. US Department of Commerce, NOAA Technical Memorandum NMFS-NWFSC-13. 173pp.

Analysis of fish, invertebrates, and marine mammals for exposure to *Exxon Valdez* spilled oil, including data from Karluk River sockeye salmon, other salmon species, and invertebrates in 1989-1990. -- [SOCKEYE, POLLUTION, INVERTEBRATES, PINK, COHO, DOLLY VARDEN]

**Varnavskaya,** Nataly V., Chris ca. Wood & Rebecca J. Everett. 1994. Genetic variation in sockeye salmon *(Oncorhynchus nerka*) populations of Asia and North America. Canadian Journal of Fisheries and Aquatic Sciences 51 (Suppl. 1): 132-146.

Extensive analysis of genetic variation in 71 sockeye salmon populations from throughout its entire range, including data from Karluk's sockeye salmon. -- [SOCKEYE, GENETICS]

**Varnavskaya,** Nataly V., Chris ca. Wood, Rebecca J. Everett, Richard L. Wilmot, Vladimir S. Varnavsky, Victoria V. Midanaya & T. P. Quinn. 1994. Genetic differentiation of subpopulations of sockeye salmon (*Oncorhynchus nerka*) within lakes of Alaska, British Columbia, and Kamchatka, Russia. Canadian Journal of Fisheries and Aquatic Sciences 51 (Suppl. 1): 147-157.

Analysis of genetic variation in 163 sockeye salmon samples from 9 lake systems in Kamchatka, Alaska, and Canada, including data from Karluk's sockeye salmon spawning in 3 different locations or times; genetically distinct subpopulations occur within a lake system. -- [SOCKEYE, GENETICS, SUBPOPULATIONS]

**Vining,** Ivan W., and Patricia A. Nelson. 1996. Length-weight relationships of selected sockeye salmon stocks in the Kodiak Archipelago, 1995. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Kodiak, Regional Information Report No. 4K96-41 (August, 1996). 21pp.

Detailed analysis of length and weight for several sockeye salmon stocks in the Kodiak Island area, including the Karluk's early and late runs. -- [SOCKEYE, LENGTH, WEIGHT]

**Welander,** Arthur D. 1940. Notes on the dissemination of shad, *Alosa sapidissima* (Wilson), along the Pacific Coast of North America. Copeia 1940 (4): 221-223.

Brief report on the spread of shad along the Pacific Coast between 1871 and 1937, including collection of specimens from Karluk in 1926 and from Uyak in 1937; report unclear if Karluk shad was collected from the river or ocean. -- [SHAD]

**Wadle**, J.A. 2001. Kodiak Management Area commercial salmon annual management report, 2000. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K01-40.

Comprehensive summary report on the 2000 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**Wadle**, J.A. 2004. Kodiak Management Area commercial salmon annual management report, 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K04-01.

Comprehensive summary report on the 2002 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**Wadle**, J.A. 2005. Kodiak Management Area commercial salmon annual management report, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K05-??.

Comprehensive summary report on the 2003 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**Wadle,** Jeff. 2006. Kodiak Management Area harvest strategy for the 2006 commercial salmon fishery. Alaska Department of Fish and Game, Fishery Management Report No. 06-26 (April 2006). 29pp.

Discussion of harvest plans for the 2006 commercial salmon fishing season, including the plans for Karluk sockeye salmon; plan to curtail the very early returns of Karluk sockeye salmon; summary of 2005 harvest and 2006 projection for Karluk sockeye; release of Chinook salmon. -- [SOCKEYE, CHINOOK, MANAGEMENT]

**Wadle**, J.A. and K. Brennan. 2001. Kodiak Management Area commercial salmon annual management report, 1999. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report No. 4K01-5.

Comprehensive summary report on the 1999 management of commercial salmon in the Kodiak Island area, including the Karluk River; status of the 5 salmon species; commercial fishing; escapements; forecasts; stream surveys. -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, FISHERY]

**White,** Lorne E. 1980. Evaluation of a new planting device for salmon eggs. Progressive Fish-Culturist 42(3): 177-180.

Descriptive report of a new device to implant sockeye salmon eggs into the gravels of Upper Thumb River, Spring Creek, and the Karluk River; comparison of the fry produced by different techniques. -- [SOCKEYE, EGG, FRY]

**White,** Lorne E. 1985. Karluk Lake sockeye rehabilitation, 1984. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, Federal Aid in Anadromous Fish Conservation (April 1, 1984-March 31, 1985), Project AFS-52, Segment 1 (May, 1985). 45pp.

Summary report on the ADFG sockeye rehabilitation work at Karluk Lake for the 1984 field season; sockeye salmon egg takes and plants in the Upper Thumb River; estimates of fry survival from egg plants; use of half length coded wire tags; estimate of 1984 smolt migration and age composition; 1984 zooplankton densities and composition in Karluk and Thumb Lakes; adult sockeye salmon escapements, catches, and age composition. -- [SOCKEYE, EGGS, HATCHERY, JUVENILES, SMOLTS, LIMNOLOGY, AGE]

**White,** L.E. 1986. Sockeye salmon rehabilitation at Upper Thumb River, Karluk Lake, Alaska 1978 to 1984. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement, and Development, Juneau, FRED Report Number 69 (December, 1986). 58pp.

Summary report on the ADFG sockeye rehabilitation efforts at Karluk Lake using a streamside incubation hatchery on the Upper Thumb River, 1978-1984; egg plant to fry survival; sockeye smolt migration; zooplankton studies. -- [SOCKEYE, HATCHERY, FRY, SMOLT, LIMNOLOGY]

**White,** Lorne E. 1986. Successful rehabilitation of a sockeye salmon stock utilizing an egg planting device (November, 1986). *In:* Proceedings of the 1988 Alaska Sockeye Culture Workshop, July 12-13, 1988, Ketchikan, AK. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement, and Development, Juneau.

Summary report on the 1978-1986 efforts by the ADFG to rehabilitate the Upper Thumb River sockeye salmon run by operating a streamside hatchery and planting eyed eggs into the river; egg plant to fry survival; fry marking studies; adult returns. -- [SOCKEYE, FRY, HATCHERY]

**White,** Lorne E. 1988. Karluk Lake sockeye salmon investigations. Section A: Annual Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau, Federal Aid in Anadromous Fish Conservation (1 July 1987-30 June 1988), Project AFS-52, Segment 3 (December, 1988). 37pp.

Summary report on the ADFG sockeye rehabilitation efforts at Karluk Lake using a streamside incubation hatchery and lake fertilization; sockeye smolt migration; adult tagging study; stream surveys. -- [SOCKEYE, FRY, FERTILIZATION, LIMNOLOGY, SMOLT]

**White,** L.E. 1988. Karluk Lake sockeye salmon investigations. Section C: Successful rehabilitation of Upper Thumb River sockeye salmon stock. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Federal Aid in Anadromous Fish Conservation (1 July 1987-30 June 1988), Project AFS-52, Segment 3 (December, 1988). 28pp.

Summary report on the ADFG sockeye rehabilitation efforts on the Upper Thumb River using a streamside incubation hatchery and replanting eyed eggs into the river; egg to fry survival; fry marking; adult sockeye returns. -- [SOCKEYE, HATCHERY, FRY]

**Whitesel,** Timothy A. 1992. Plasma thyroid hormone levels in migratory and lake-resident coho salmon juveniles from the Karluk River system, Alaska. Transactions of the American Fisheries Society 121(2): 199-205.

Detailed study of thyroid levels ($T_4$ and $T_3$) in Karluk River coho salmon smolts and fry in 1985; thyroid hormone was more variable in smolts than fry; smolt $T_4$ higher than in fry, but $T_3$ levels similar. -- [COHO, SMOLT, FRY, PHYSIOLOGY]

**Wilmot,** Richard L., and Carl V. Burger. 1985. Genetic differences among populations of Alaskan sockeye salmon. Transactions of the American Fisheries Society 114(2): 236-243.

Important detailed study of genetic variation in sockeye salmon from two Alaskan streams, including the Karluk River system; early and late sockeye runs at Karluk were genetically distinct. -- [SOCKEYE, GENETICS, SUBPOPULATIONS]

**Wilson,** Charles Branch. 1909. North American parasitic copepods: a list of those found upon the fishes of the Pacific Coast, with descriptions of new genera and species. Proceedings of the United States National Museum 35: 431-481.

Descriptions of parasitic copepods found on Pacific Coast fishes, including those from Karluk; the parasitic copepod *Lepeophtheirus salmonis* was found on sockeye and pink salmon and Dolly Varden collected at Karluk by T. H. Bean in 1889. -- [INVERTEBRATE, PARASITE, SOCKEYE, PINK, DOLLY VARDEN]

**Witten,** James W. 1904. Report on the agricultural prospects, natives, salmon fisheries, coal prospects and development, and timber and lumber interests of Alaska, 1903. Government Printing Office, Washington, DC 95pp.

Comments on Alaskan cannery operations in about 1902, including those at Karluk Spit; discussion of cannery employment practices; APA Karluk River salmon case pack for 1893-1902; many interviews of people concerning the salmon cannery operations; comments on the fairness of the mandatory hatchery regulation. -- [SOCKEYE, CANNERIES, HATCHERIES]

**Witteveen,** Mark J., M. B. Foster, Nicholas H. Sagalkin, Kenneth A. Bouwens, Robert T. Baer & Steve Schrof. 2005. Westward Region salmon run reconstruction estimates for 2003 and 2004 forecasts. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak, Regional Information Report 4K05-2 (February, 2005). 102pp.

Detailed analysis and description of salmon run reconstruction in the Westward Region in 2003 and forecasts for 2004, including the early- and late-run sockeye salmon at Karluk; methods used to reconstruct runs from mixed-stock fisheries, prepare brood tables, and make forecasts; Karluk sockeye escapement goals = 150,000-250,000 (early-run) and 400,000-550,000 (late-run); commercial harvests prior to 16 July from Uyak Bay (254-10,20,30,40), Uganik Bay (253-11,12,13,14), Viekoda Bay (253-31,32,33,35), Sturgeon (256-40), and Inner (255-10) and Outer Karluk (255-20) sections were used to reconstruct the Karluk sockeye early run by using an age 3. scale marker; the same analysis was applied to commercial harvests after 15 July for late run sockeye; 18-19 age classes in late- and early-run Karluk sockeye; oldest returning sockeye were 8-9 years; early-run harvest = 372,761, total run = 824,617, return/spawner = 2.4; late-run harvest = 965,486, total run = 1,592,340, return/spawner = 1.9; catch and escapement data for 1985-2003 for Karluk sockeye early- and late-run; 2004 Karluk sockeye forecast = 660,000 (early-run) and 881,000 (late-run). -- [SOCKEYE, AGE, SCALES, MANAGEMENT]

**Wolfe,** Art. 1978. Staying in the cabin at Karluk. Alaska 44(1): 54-59, 90.

Description of a short visit and nature observations at the south end of Karluk Lake in August 1977. -- [BEARS, BIRDS]

**Woodworth,** Jim. 1958. The Kodiak bear. The Stackpole Company, Harrisburg, PA. 204pp.

Descriptions of hunting the Kodiak brown bear at various location around Kodiak Island, including at Karluk Lake; brief comments on the salmon and steelhead of the Karluk River. -- [BEARS]

**Yesner,** David R. 1989. Osteological remains from Larsen Bay, Kodiak Island, Alaska. Arctic Anthropology 26(2): 96-106.

Analysis of bones excavated from a prehistoric (640-1,500 AD) dwelling site at the head of Larsen Bay; many salmon bones were collected, some being from Karluk River Chinook salmon; the Alutiiq population was highly dependent on fish resources. -- [CHINOOK, PREHISTORIC FISH USE]

# UNPUBLISHED REPORTS

**Abegglen,** C. E. 1956. Index of the files, Karluk red salmon investigations. Unpublished Report (April, 1956).
(Copy 1: File "A0826", Box 125, RG 370, NARA, Anchorage, AK. --- Copy 2: ABL Office Files, Auke Bay, AK)

Outline index to the Karluk Lake sockeye salmon files (to 1956) of the US Fish and Wildlife Service; most files are now located at the National Archives, Anchorage, AK. -- [SOCKEYE]

**Alaska Department of Fish and Game.** 1997. Fish disease histories for Karluk River sockeye salmon. ADFG Fish Pathology Laboratory, Juneau and Anchorage, AK. Unpublished Data (June, 1997).
(Computer printout of Fish Disease Histories from ADFG Fish Pathology Laboratory, Juneau, AK)

Computer summary table of 59 fish disease histories for adult and fry sockeye salmon (wild fish and hatchery brood stock) from Karluk Lake, River, and tributaries, 1974-1992; most fish were tested for IHN virus, but some were tested for various bacterial diseases. -- [SOCKEYE, DISEASE]

**Alaska Packers Association.** early 1900s. Development of the egg at Alaska Packers Association's Karluk salmon hatchery. Unpublished Data. 6pp.
(Fisheries Research Institute Archives, University of Washington, Seattle, WA)

Sockeye salmon egg development times recorded (1903-1905) by James A. Richardson, Superintendent of the Karluk River hatchery. -- [SOCKEYE, EGGS]

**Alaska Packers Association.** 1903-1905. Karluk hatchery egg development times. Unpublished Data. 3pp.
(File "Karluk Hatchery, 1903-1954, egg development", Box 39, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary data sheets of sockeye salmon egg development times for many developmental stages (from egg taking to hatching and absorption of egg sac) at the Karluk River hatchery in 1903-1905; details of embryo development; water temperatures. -- [SOCKEYE, EGGS, FRY, HATCHERY]

**Alaska Packers Association.** 1906. Reconnaissance from Karluk Lake to Larsens Bay. Map.
(Original Map: Folder 3 "General Location Cannery Surveys and Miscellaneous Maps, 1892-1943. Alaska Peninsula and Kodiak Island", Box 103, Alaska Packers Association Records, 1891-1970, Alaska State Library, Historical Collection, Juneau, AK. --- Copy: File ?, Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Large map (61 x 76 cm vellum) of the valley landscape between Larsen Bay and Karluk Lake, and between the Karluk River and mountains to the east; elevation profile from Larsen Bay to Karluk Lake; location of small streams, marshy areas, and thick brush; depth soundings (in fathoms) at the north end of Karluk Lake; location of Cloudsley L. Rutter's 1903 camp, fish trap, and spawning basket study. -- [PHYSICAL]

**Alaska Packers Association.** 1906-1916. Karluk hatchery yearly reports. Unpublished Data. 3pp.
(File "Karluk Hatchery, 1903-1954, egg development", Box 39, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary data sheets of Karluk River hatchery operations in 1906-1916; water temperatures; number of sockeye salmon adults taken; number of males and females spawned; fecundity of females; number of fry released; release locations in Karluk Lagoon or River; number of adults lost before spawning. -- [SOCKEYE, FECUNDITY, EGGS, HATCHERY]

**Alaska Packers Association.** 1912-1916. Karluk hatchery monthly reports. Unpublished Data.
(File "Karluk Hatchery, 1903-1954, egg development", Box 39, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary data sheets (July, 1912 to June, 1916) of Karluk River hatchery operations, including numbers of sockeye salmon spawned, on hand, hatched eggs, fry released, and mortality. -- [SOCKEYE, EGGS, FRY, HATCHERY]

**Alaska Packers Association.** 1912-1916. Karluk hatchery water temperatures. Unpublished Data. 12pp.
(File "Karluk Hatchery, 1903-1954, egg development", Box 39, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary data sheets (July 1, 1912 to June 30, 1916) of daily maximum and minimum water temperatures at the Karluk River hatchery; water temperature range, 0-12.8°C (32-55°F). -- [SOCKEYE, HATCHERY, PHYSICAL]

**Amorosi,** Thomas. 1987. The Karluk and Uyak Bay archaeofaunas: An approach towards the paleoeconomy of Kodiak Island, Alaska. Paper presented at the Society for American Archaeology, 52nd Annual Meeting, Symposium: The archaeology of south Alaska, substantive and theoretical contributions, Toronto, Canada, May 6-10, 1987. Unpublished Report. 94pp.
(Copy from Thomas Amorosi, Bioarchaeological Laboratory, Department of Anthropology, Hunter College (CUNY), New York, NY)

Detailed analysis of faunal remains from excavations at Kodiak Island, including those from Karluk Lake and River; mollusks, marine mammals, land mammals, birds, and fishes. -- [PREHISTORIC FISH USE]

**Ball,** E. M. 1916. Report of operations, July 21, 1916. Unpublished Report. 1pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief description of a trip from Larsen Bay to the Karluk River on 21 July 1916; observations of sockeye salmon and their spawning conditions; comments on the APA Karluk River hatchery. -- [SOCKEYE, SPAWNING, HATCHERY]

**Ball,** E. M. 1917. Extract semi-monthly report of Mr. E. M. Ball, season of 1917. Unpublished Report. 1pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief description of a visit to Karluk Lake and a float trip descent of the Karluk River to its mouth (12-15 September 1917); observations of spawning salmon in Karluk Lake tributaries. -- [SOCKEYE, SPAWNING]

**Ball,** E. M. 1918. Extract from report of Mr. E. M. Ball, season of 1918. Unpublished Report. 1pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief comments on the smaller run of sockeye salmon at the Karluk River in 1918; few pink salmon returned to the Karluk River in 1918. -- [SOCKEYE, PINK]

**Ball,** E. M. 1919. Extract from report of Mr. E. M. Ball, season of 1919. Unpublished Report. 3pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of natural spawning of sockeye salmon in the Karluk River system in comparison to artificial propagation in hatcheries; recommendation that the Karluk River system be set aside as a National Fisheries Reservation. -- [SOCKEYE, SPAWNING, HATCHERY]

**Barnaby,** J. Thomas. 1933. Work contemplated during the fiscal year 1933. Karluk red salmon investigation, fiscal year, 1933. Unpublished Report. 2pp.
(File "Research Program Karluk 1933-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK).

Brief outline of field work planned for 1933 on Karluk's sockeye salmon; Karluk Lake limnological sampling. -- [SOCKEYE, LIMNOLOGY]

**Barnaby,** J. Thomas. c. 1935. Investigations concerning the red-salmon runs to the Karluk River, Alaska. Unpublished Report. 66pp.
(File "Investigations concerning the red salmon runs to the Karluk River -- Barnaby", Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Important detailed study of the research data collected through 1934 on Karluk's sockeye salmon; this report is an earlier version of the paper published by Barnaby (1944); statistical history of the fishery; scale samples

of adults; escapements and total runs; return from known escapements; observations on the spawning grounds; observations on Karluk Lake; smolt migrations; predictions of future runs. -- [SOCKEYE, AGE, SMOLT, MIGRATION, LIMNOLOGY]

**Bevan,** Donald E. 1951. Karluk Lake stream surveys, 1948-1951. Kodiak Island Research Group, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report. 45pp.
(KP F4.B46 1951, Accession Number 411, FRI Archives, University of Washington, Seattle, WA)

Detailed summary report of stream surveys conducted in 1948-1951 by FRI biologists at Karluk River, Lake and tributaries; physical description of each sockeye salmon spawning stream or beach, number of sockeye salmon observed during surveys; water temperatures; clear description of spring and fall use of lateral and terminal streams, lake beaches, and upper Karluk River. -- [SOCKEYE, SPAWNING, PHYSICAL]

**Bevan,** Donald E. 1952. Karluk Lake plankton. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report.
(KP F4.B4 1952, Accession Number 492, FRI Archives, University of Washington, Seattle, WA)

List of phytoplankton and zooplankton, Secchi disc readings, and water temperatures of Karluk Lake, 1952. -- [LIMNOLOGY]

**Bevan,** Donald E. 1953. The effect of red salmon catches from nearby streams on the Karluk pack. *In:* Rae Duncan, Karluk, Packs of red salmon, 1895-1930. Fisheries Research Institute, University of Washington, Seattle, WA (April 21, 1953). Unpublished Report. 26pp.
(KP S4.D9 1950, Accession Number 268, FRI Archives, University of Washington, Seattle, WA)

Important historical analysis of the numbers (and case pack) of sockeye salmon that were transported daily and weekly to the APA Karluk canneries from catches made at Red River, Little River, and Uganik Bay in 1899-1900, and 1906-1913; seasonal distributions of corrected APA Karluk case pack outputs were distinctly bimodal; outside fish were mainly transported to Karluk canneries early in the season (mid-June to mid-July); transfers from Chignik and Alitak to Karluk canneries were minor. -- [SOCKEYE, RUN DISTRIBUTION]

**Bevan,** Donald E. c. 1956. Karluk red run, 1952-1956, age composition, sampling, weekly occurrence of age groups. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(4169-2, Box 8 of 8, C10566, Donald E. Bevan papers, Manuscripts and University Archives Division, University of Washington Libraries, Seattle, WA)

Data tables and graphs of age composition of Karluk's sockeye salmon catch and escapement, 1952-1956; seasonal variation of age composition. -- [SOCKEYE, AGE]

**Bevan,** Donald E. c. 1957. Research activities from 1948 to 1957 inclusive. Kodiak Island Research Fund, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report. 2pp.
(Donald E. Bevan papers, Manuscripts and University Archives Division, University of Washington Libraries, Seattle, WA)

Summary report of FRI salmon research activities in the Kodiak area, 1948-1957; research included 7 Karluk sockeye salmon topics – (1) tagging, (2) catch and escapement statistics, (3) juvenile age and growth, (4) spawning ground studies, (5) smolt enumeration, (6) tower site exploration, and (7) cannery measurements. -- [SOCKEYE, MIGRATION, COMMERCIAL CATCH, JUVENILES, SPAWNING, SMOLT, WEIR, AGE, SIZE, SEX]

**Blackett,** Roger F. 1970. Kodiak sockeye rehabilitation, project proposal and budget FY 71-72. Alaska Department of Fish and Game, Kodiak (September 30,1970). Unpublished Report. 42pp.
(FRED papers, ADFG Library, Douglas, AK)

ADFG proposal and budget for fiscal year 1971-1972 for rehabilitation projects of Kodiak Island sockeye salmon, including those at Thumb Lake; physical and limnological features of Thumb Lake; bathymetric map; water chemistry; spawning areas in Thumb River basin; proposed rehabilitation treatments. -- [SOCKEYE, LIMNOLOGY, SPAWNING, REHABILITATION]

**Blackett,** Roger F. 1970. Kodiak sockeye rehabilitation, project proposal and budget FY 71-72. Alaska Department of Fish and Game, Kodiak (December 15, 1970). Unpublished Report. 21pp.
(FRED papers, ADFG Library, Douglas, AK)

ADFG proposal and budget for fiscal year 1971-1972 for rehabilitation projects of Kodiak Island sockeye salmon, including those at Thumb Lake; physical and limnological features of Thumb Lake; bathymetric map; water chemistry; spawning areas in Thumb River basin; proposed rehabilitation treatments and management controls on spring fishery. -- [SOCKEYE, LIMNOLOGY, SPAWNING, REHABILITATION]

**Boucher,** Vincent J. 1927. Report of stream guard, Karluk, 1927. Unpublished Report. 1pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA Anchorage, AK)

Brief summary report of activities of the Karluk stream guard in 1927; collection of adult sockeye salmon scales; study of adult food habits of Karluk's sockeye salmon; assistance at Karluk River weir; collection of a shad. -- [SOCKEYE, SCALES, ADULT FOOD, WEIR]

**Bureau of Commercial Fisheries.** 1957. Alaska commercial fisheries annual report, Kodiak area, 1957. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 20pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1957, including Karluk's sockeye salmon runs; 1957 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Bureau of Commercial Fisheries.** c. 1957. Microfilm records of Karluk River salmon escapement and catch numbers. US Fish and Wildlife Service, Auke Bay Fisheries Laboratory, Auke Bay, AK. Unpublished Data.
(Microfilm Reels #5 and #7, ABL Library, Auke Bay, AK)

Yearly summaries of escapement and catch for Karluk's sockeye salmon, 1921-1957; daily summaries of escapement for Karluk River sockeye, Chinook and coho salmon, 1931-1943; summaries of sockeye, Chinook, coho, pink, and chum salmon trap catches in 1934-1955 by Pacific American Fisheries (Chief Point Trap No. 1 and Long Beach Trap No. 2), Kadiak Fisheries (Trap Nos. 3, 4, 5, 6 and 9), Alaska Packers Association (Karluk Station Trap No. 4 and 7), Uganik Fisheries (Trap No. 5, 6, and 7), and San Juan Fishing and Packing Company (Uganik Trap No. 1 and 3). -- [SOCKEYE, CHINOOK, COHO, PINK, CHUM, ESCAPEMENT, CATCH]

**Bureau of Commercial Fisheries.** c. 1958. Fish counts at Karluk Lake. Unpublished Report. 13pp.
(File "Tower Weir Counts, 1958-1959", Box 96, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed discussion of the salmon counting tower operations in 1958 on the Karluk River; many attempts to modify tower system to obtain accurate counts and solve unforeseen problems. -- [SOCKEYE, WEIR]

**Bureau of Commercial Fisheries.** 1958-1960. Monthly research report. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region. Unpublished Reports.
(ABL Office Files, Auke Bay, AK)

Monthly summaries of all research activities of the Alaska Region, reports, visitors, and significant events, including the sockeye salmon research at Karluk Lake. -- [SOCKEYE]

**Bureau of Commercial Fisheries.** c. 1959. Justification for replacement of Karluk Tower operation with weir. Unpublished Report. 6pp.
(File "Tower Weir Counts, 1958-1959", Box 96, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed discussion of the salmon counting tower operations in 1958-1959 on the Karluk River; comparison of the advantages and disadvantages of the counting towers versus the picket weir; recommend using a picket weir. -- [SOCKEYE, WEIR]

**Bureau of Commercial Fisheries.** c. 1959. FWS biologist urges elimination of fish killers in Kodiak area. Unknown Newspaper Article.
(File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary article of George A. Rounsefell's suggestions to rehabilitate Karluk's sockeye run, including (1) elimination of predators on juveniles and adults, (2) increase middle part of run, (3) restore cyclic nature of run, (4) fertilize Karluk Lake, and (5) improve spawning beds. -- [SOCKEYE, PREDATORS, FERTILIZATION]

**Bureau of Commercial Fisheries.** 1960-1969. Monthly research report. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, Alaska. Unpublished Reports.
(ABL Office Files, Auke Bay, AK)

Monthly summaries of all research activities of the Auke Bay Biological Laboratory, reports, visitors, and significant events, including the sockeye salmon research at Karluk Lake. -- [SOCKEYE]

**Bureau of Commercial Fisheries.** 1961-1962. Climatology records at Karluk Lake, 1961-1962. Unpublished Data.
(File "Karluk and Brooks weather, 1961-1962", Box 105, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of air and water temperatures (maximum, minimum, and mean), precipitation, wind, and solar radiation at the Karluk River weir, 1961-1962. -- [WEATHER]

**Bureau of Commercial Fisheries.** 1962. Karluk Lake Project Reports. Unpublished Reports.
(File "Monthly and Quarterly Reports, 1962", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief monthly and quarterly reports of research on Karluk's sockeye salmon in 1962. -- [SOCKEYE, FRY, SMOLT, WEIR, LIMNOLOGY]

**Bureau of Commercial Fisheries.** 1962. Smolt observations by snorkeling - 1962. US Fish and Wildlife Service, Auke Bay Biological Laboratory, Auke Bay, AK. Unpublished Report. 5pp.
(File "Smolt Observations by Snorkeling", Box 73, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief summaries of 7 underwater observations of sockeye smolt behavior in the Karluk River near the weir and at the Lake's outlet (Hours 2030-2345, May 14-June 12, 1962); smolt orientation with current; smolt behavior during their downstream passage of the weir; smolt behavior when inside fyke net; smolt interactions with Dolly Varden; effects of underwater night light on smolt behavior. -- [SOCKEYE, SMOLT]

**Bureau of Commercial Fisheries.** 1962-1965. Recording Pyrheliometer charts, 1962-1965. Unpublished Data.
(File "Pyrheliometer Charts, 1962-65", Box 90, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of solar radiation at Karluk Lake, 1962-1965. -- [WEATHER]

**Bureau of Commercial Fisheries.** 1963-1969. Karluk Lake monthly research report. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, Alaska. Unpublished Reports.
(File "Monthly research reports, Karluk Lake copies", Box 106, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Monthly summaries of Karluk's sockeye salmon research, personnel, and visitors. Most of this information also was included in the Monthly Research Reports of all activities of the Auke Bay Biological Laboratory. -- [SOCKEYE]

**Bureau of Commercial Fisheries.** 1966. Recording Pyrheliometer charts, 1966. Unpublished Data. 10 charts.
(File "1966 Pyrheliometer Sheets", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of solar radiation at Karluk Lake, 18 April-11 July 1966. -- [WEATHER]

**Bureau of Commercial Fisheries.** 1967. Recording Pyrheliometer charts, 1967. Unpublished Data.
(File "Pyrheliometer Charts, 1967", Box 90, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of solar radiation at Karluk Lake, 1967. -- [WEATHER]

**Bureau of Commercial Fisheries.** 1968. Recording Pyrheliometer charts, 1968. Unpublished Data.
(File "Pyrheliometer Charts, 1968", Box 90, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of solar radiation at Karluk Lake, 1968. -- [WEATHER]

**Bureau of Commercial Fisheries.** 1967-1969. Air and water temperatures at Karluk River weir, 1967-1969. Unpublished Data.
(File "Thermograph Recordings, 1967-1969", Box 100, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Continuous recording thermograph charts (weekly) of air and water temperatures at Karluk River weir, 1967-1969; charts show distinct diurnal temperature variations. -- [WEATHER, LIMNOLOGY]

**Bureau of Fisheries.** 1914. Karluk River scales. Unpublished Data. 7pp.
(File "Karluk 1914, 1916, 1919, 1921", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Data tables showing the age, sex, and length of about 400 sockeye salmon from Karluk, plus a few chum, coho, and Chinook salmon. -- [SOCKEYE, AGE, SEX, SIZE, SCALES, COHO, CHUM, CHINOOK]

**Bureau of Fisheries.** 1921-1940. Air and water temperatures at Karluk Lagoon weir site, 1921-1940. Unpublished Data.
(File "Temperature Air - Water Karluk Weir - Lagoon", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of air and water temperatures at the Karluk River weir site, 1921-1940. -- [PHYSICAL]

**Bureau of Fisheries.** 1924. Karluk, 1924. Unpublished handwritten report. 3pp.
(File "Karluk Field Notes Prior to 1925", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Description of the Karluk River weir operations in July-August, 1924, during a very large run of pink salmon; counting methods used during the large runs; pink salmon carcasses threatened weir; large mortality of fish life in the Karluk River. -- [SOCKEYE, PINK, WEIR]

**Bureau of Fisheries.** 1927-1950. Karluk weir - Camp Island water levels. Unpublished Data.
(File "Karluk Weir - Camp Island Water Levels", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Measurements of fluctuations in Karluk Lake water levels, 1927-1950; Karluk River discharges. -- [PHYSICAL]

**Bureau of Fisheries.** 1928. Marking experiments with seaward migrants. Unpublished Report. 5pp.
(File "Karluk 1928", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of the methods used to estimate sockeye smolt production from Karluk Lake in 1926 and 1927 by clipping various fins on the smolts and then counting the number of marked adults found in the commercial fishery in subsequent years; 46,700 sockeye smolts marked in 1926, 50,000 in 1927. -- [SOCKEYE, SMOLT]

**Bureau of Fisheries.** c. 1920s-1930s. Karluk reds, notes on scale reading. Unpublished Report. 2pp.
(File "Scale Mounting and Reading Data", Box 78, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief guidelines on the procedures used to read the ages of Karluk's sockeye scales. -- [SOCKEYE, SCALES]

**Bureau of Fisheries.** 1930-1938. Karluk weir, 1930-1938. 9 Unpublished Reports.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary reports of the research, personnel, and operations at the Karluk River weir in the 1930-1938 field seasons. -- [SOCKEYE, WEIR]

**Bureau of Fisheries.** c. 1935. Catch of red salmon in the Karluk area, and meteorological conditions. Unpublished Data. 2pp.
(File "Karluk Accumulative Runs", Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary table of Karluk's sockeye catch, average precipitation, average temperature, and winter temperatures for 1882-1935. -- [SOCKEYE, WEATHER]

**Bureau of Fisheries.** 1937-1948. Air and water temperatures at Karluk Lake Outlet weir site, 1937-1948. Unpublished Data. 30 pp.
(File "Temperature Air - Water Karluk Weir (Outlet)", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Air and water temperatures at the Karluk Lake outlet weir, 1937-1948. -- [WEATHER, LIMNOLOGY]

**Bureau of Fisheries.** 1938-1943. Air and water temperatures at Karluk River weir, 1938-1943. Unpublished Data.
(File "Thermograph Recordings, 1938-1943", Box 99, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Continuous recording thermograph charts (weekly) of air and water temperatures at Karluk River weir, 1938-1943; charts show distinct diurnal temperature variations. -- [WEATHER, LIMNOLOGY]

**Bureau of Fisheries.** 1938-1943. Monthly report of activities, 1938-1943. US Fisheries Biological Station, Fish and Wildlife Service Biological Station, and Section of Alaska Fishery Investigations, Seattle, WA. Unpublished Reports.
(File "Monthly Reports, 1937-1943", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief monthly reports of the Karluk sockeye salmon studies, 1938-1943. -- [SOCKEYE, SCALES, AGE, FECUNDITY, SMOLT, SUBPOPULATIONS, WEIR, DOLLY VARDEN]

**Bureau of Fisheries.** c. 1930s. Marking experiments. Unpublished Report. 2pp.
(File "Charts", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief statement listing 4 purposes of the sockeye salmon smolt marking experiments started in 1926 at the Karluk River – (1) to check age determinations made with scales, (2) to calculate the total smolt populations, (3) to determine ocean mortality, and (4) to determine freshwater mortality; discussion on the proportion of fish naturally missing fins and how this affects the marking experiment. -- [SOCKEYE, SMOLT]

**Carlson,** F. T. & C. Y. Conkle. 1956. A comparison of the patterns of movement of spawning red salmon on two streams of the Karluk Lake system (6 August 1956). Unpublished Report. 2pp.
(Copy 1: File "Karluk Lake Immature Tests, 1956", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Biological Correspondence, 1937-1959", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK).

Brief summary report on the diurnal movements (Hours 0715-2015) of sockeye salmon adults to and from two lateral streams (Grassy Point and Cottonwood creeks) at Karluk Lake on 22 July 1956. -- [SOCKEYE, MIGRATION, SPAWNING]

**Chalk,** Kenneth H. 1983. Fishery resources program annual report, 1983. US Fish and Wildlife Service, Alaska Region, Anchorage, AK. Unpublished Report.
(SH222.A4F577 1983, ARLIS, Anchorage, AK)

Not examine this report; contains a research report entitled, "Limiting factors for salmonids in Alaska – Karluk Lake study". -- [SOCKEYE]

**Chatto,** Tony. 1984. Karluk Lake sockeye smolt enumeration, 1983. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak. Unpublished Report. 20pp.
(US Fish and Wildlife Service Files, Kodiak National Wildlife Refuge, Kodiak, AK)

Summary report on the 1983 smolt migration; total smolt migration = 941,550; age 2+ smolts made up 86% of the outmigration; Canadian fan trap operated 14 May-16 June 1983 just downstream from Karluk Lake's outlet; mark and recapture; peak migration in late May. -- [SOCKEYE, SMOLT, MIGRATION, AGE, SIZE]

**Chatto,** Tony. 1985. Instream movements and distribution of fall-run steelhead in the Karluk River (Appendix D, pp. 109-123). In: Frank D. Van Hulle (ed.), Alaska steelhead workshop, 1985. Alaska Department of Fish and Game, Division of Sport Fish, Juneau (April 25, 1985). Unpublished Report. 124pp.
(ADFG, Division of Sport Fish, Juneau, AK)

Detailed study of the movements of 23 adult steelhead in the Karluk River during 1982-1984 using radio telemetry methods; steelhead entered Karluk River in fall, over-wintered in upper river in deep glide habitats, and then spawned in mid April or May in pool-riffle habitats of the lower river. -- [STEELHEAD, SPAWNING, MIGRATION, SIZE]

**Chatto**, Tony. 1987. Instream movements and distribution of fall run steelhead in the Karluk River, 1982-1984. Final Report. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak (January, 1987). Unpublished Report.
(US Fish and Wildlife Service Files, Kodiak National Wildlife Refuge, Kodiak, AK)

Detailed study of the movements of 23 adult steelhead in the Karluk River during 1982-1984 using radio telemetry methods; steelhead entered Karluk River in fall, over-wintered in upper river in deep glide habitats, and then spawned in mid April or May in pool-riffle habitats of the lower river; estimated 52% survival rate to emigration; few steelhead over-wintered in Karluk Lake; estimated population of Karluk River steelhead = 3,800 (range 1,700-8,100). -- [STEELHEAD, SPAWNING, MIGRATION, SIZE]

**Clark,** Webster K. 1952. Bear – salmon study, Karluk Lake, 1952. US Department of the Interior, Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 65pp.
(ARLIS, Anchorage, AK)

Not examine this report. -- [SOCKEYE, BEARS]

**Clark,** Webster K. 1954. Bear study, Karluk Lake, 1954. US Department of the Interior, Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report.
(ARLIS, Anchorage, AK)

Not examine this report. -- [BEARS]

**Clark,** Webster K. 1955. Bear study, Karluk Lake, 1955. US Department of the Interior, Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 41pp.
(ARLIS, Anchorage, AK. Also published in 1965 as Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report - File, MR-F 10)

Summary report on the 1955 field studies and observations at Karluk Lake, mainly of brown bears; bear population estimates, age composition, weights, movements, food habits, parasites, and sport hunter harvest; use of electric fences and firecrackers to keep bears from salmon spawning streams; bear predation on sockeye salmon low in Halfway Creek; sockeye tagging study showed spawning occurred soon after adults enter small creeks; food contents of 109 Dolly Varden (and/or Arctic charr); food found at bald eagle nests; July-October daily bird lists; cestode cysts found in sockeye carcasses; Karluk Lake water temperatures. -- [SOCKEYE, BEARS, PREDATION, SPAWNING, DOLLY VARDEN, BIRDS, PARASITES, LIMNOLOGY]

**Clark,** Webster K. 1956. Bear study, Karluk Lake, 1956. US Department of the Interior, Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 40pp.
(ARLIS, Anchorage, AK)

Not examine this report. -- [BEARS]

**Conkle,** Charles Y. 1956. A comparison of migrant trap catches with metal panels and also with wooden pickets. Unpublished Report (14 June 1956). 1pp.
(File " Karluk Lake Immature Tests, 1956", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief comparison of movement of sockeye and coho smolts through wooden and metal pickets at the Karluk River weir; larger individuals more readily pass through metal pickets. -- [SOCKEYE, COHO, SMOLT]

**Conkle,** Charles Y. 1957. Procedure for sampling of sockeye downstream migrants, Karluk weir, 1957 (2 July 1957). Unpublished Report. 3pp.
(File "Karluk Migrants, 1957", Box 75, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Description of the sampling methods used in 1957 to collect Karluk river sockeye smolts, take scales, and measure lengths and weights. -- [SOCKEYE, SMOLT, AGE, SIZE]

**Conkle,** Charles Y. 1958. Karluk Lake field reports (27 April-21 June 1958). US Fish and Wildlife Service, Karluk Lake, AK. 3 Unpublished Reports.
(File "Karluk Weekly Reports, 1957-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief summary of field research activities at Karluk Lake for the period 27 April-21 June 1958; 8 sockeye salmon smolt traps were placed in Karluk River; operational problems with smolt traps; operation of Karluk River counting tower; sockeye salmon spawning pen studies. -- [SOCKEYE, SMOLT, SPAWNING, WEIR]

**Conkle,** Charles Y., Robert F. Raleigh & John B. Owen. 1959. Salmon survival investigations. Plan of operations, May through October, 1959. Kodiak Island red salmon investigations. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region (26 June 1959). Unpublished Report. 15pp.
(Copy 1: ABL Office Files, Auke Bay, AK. --- Copy 2: File " 1960 Operations Plan", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Plan for the sockeye salmon studies at Karluk and Bare Lakes in the 1959 field season; counting tower; seasonal use of spawning habitats; subpopulation studies; tributary weirs on Grassy Point Creek and Upper Thumb River; egg deposition; smolt run composition; SCUBA observations. -- [SOCKEYE, WEIR, SPAWNING, EGGS, SMOLT, SUBPOPULATIONS]

**Conkle,** Charles Y. & Robert F. Raleigh. 1960. Red salmon investigations. Field operations report, 1959. Sockeye salmon survival studies at Karluk Lake, Kodiak Island. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region (April 27, 1960). Unpublished Report. 20pp.
(ABL Office Files, Auke Bay, AK)

Summary report on the 1959 field research activities at Karluk and Bare Lakes; SCUBA observations of smolt migration behavior; operation of the salmon counting tower; spawning habitat surveys to determine seasonal pattern of use; operation of weirs on Grassy Point Creek and Upper Thumb River to compare fry production in lateral and terminal streams; measurements of egg deposition; analysis of sockeye length and age data from 7 different spawning habitats for the existence of subpopulations; Bare Lake post-fertilization studies. -- [SOCKEYE, SMOLT, WEIR, SPAWNING, FRY, EGGS, SUBPOPULATIONS, FERTILIZATION]

**Connelley,** Charles F., Jr. 1958. Alaska commercial fisheries annual report, Kodiak area, 1958. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 29pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of Kodiak Island fisheries in 1958, including Karluk's sockeye salmon runs; 1958 counting tower operations; Dolly Varden control. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Connelley,** Charles F., Jr. 1959. Alaska commercial fisheries annual report, Kodiak area, 1959. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 37pp.
(Copy 1: ABL Library Files, Auke Bay, AK. --- Copy 2: Folder 17, Box 7191, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report on Kodiak Island fisheries in 1959, including Karluk's sockeye salmon runs; 1959 counting tower operations; Karluk FWS employees. -- [SOCKEYE, WEIR]

**Culbertson,** J. Steele. 1937. Kodiak-Afognak District, 1937, Report of fishery operations. Department of Commerce, Bureau of Fisheries. Unpublished Report. 22pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report on Kodiak Island fisheries in 1937, including Karluk's sockeye salmon; Dolly Varden tagging study; Karluk BOF employees; 1937 weir operations. -- [SOCKEYE, DOLLY VARDEN, MIGRATION, WEIR]

**Culbertson,** J. Steele. 1938. Kodiak -- Afognak District, 1938, Report of fishery operations. Department of Commerce, Bureau of Fisheries. Unpublished Report. 44pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report on Kodiak Island fisheries in 1938, including Karluk's sockeye salmon; Dolly Varden tagging study; Karluk BOF employees; 1938 weir operations. -- [SOCKEYE, DOLLY VARDEN, MIGRATION, WEIR]

**Davidson,** G. 1867. Plan reki Karluka = River Karluk, west coast Kodiak. Unpublished Map.
(Bancroft Library, University of California, Berkeley, CA)

This citation was not examined, but apparently is a map of Karluk Lagoon in 1867; map features (scale 1:7,000, size 83x65cm, pen & ink & pencil, relief by hachures, depth by soundings). -- [PHYSICAL]

**DeLacy,** Allen C. 1941. The Dolly Varden as a red salmon predator. Unpublished Report prepared for the 9th Annual Salmon Cutting, Olympic Hotel (6 March 1941). 10pp.
(File "Predators Karluk Area", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report on the interaction between Dolly Varden, Arctic charr, and sockeye salmon in the Karluk River watershed based on 6 years (1935-1940) of study; charr feeding on sockeye salmon eggs; little evidence of charr predation on sockeye salmon fry or fingerlings; charr predation on sticklebacks and sculpins may benefit sockeye; control of Dolly Varden and Arctic charr not recommended at Karluk Lake and River. -- [SOCKEYE, DOLLY VARDEN, ARCTIC CHARR, STICKLEBACK, SCULPIN, PREDATION]

**DeLacy,** Allen C. 1942. Merganser food study, Karluk, 1942. Unpublished Data. 1pp.
(File "Predators Karluk Area", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Data table of stomach contents for 20 mergansers and one kittiwake collected 18 May-10 August 1942 from various locations around Karluk Lake, River and tributaries; many stomachs were empty; several stomachs had sticklebacks and sculpins, while one had 35 (silver?) salmon juveniles about 38 mm long. -- [SOCKEYE, COHO, BIRDS, PREDATION]

**DeLacy,** Allen C. c. 1942. Karluk scale samples (Collection of). Unpublished Report. 5pp.
(File "Racial Data -- Methods & Results", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Description of the methods used to collect scales from Karluk's sockeye salmon at the canneries, beach seines, and spawning locations in 1939-1942; comments on Karluk's sockeye salmon races. -- [SOCKEYE, SCALES, SUBPOPULATIONS]

**Di Costanzo,** Charles J. 1972. Comments by Charles J. Di Costanzo on the manuscript: "Evaluation of causes for the decline of the Karluk sockeye and recommendations for rehabilitation" by Drs. R. Van Cleve and D. E. Bevan. National Marine Fisheries Service, Auke Bay Fisheries Laboratory, Auke Bay, Alaska. Unpublished Report. 39pp.
(ABL Office Files, Auke Bay, AK)

Important review of Van Cleve and Bevan's 1973 paper and a further discussion of the theories of decline of Karluk's sockeye salmon; discussion of the timing of fry recruitment and the plankton bloom in Karluk Lake; reduction in midseason spawning fish. -- [SOCKEYE, WEIR, JUVENILES, LIMNOLOGY, THORIES OF DECLINE]

**Drucker,** Benson. 1962. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April through October, 1962. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (April 18, 1962). Unpublished Report. 6pp.
(ABL Office Files, Auke Bay, AK)

Plan of the sockeye salmon studies at Karluk Lake for the 1962 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, FECUNDITY, JUVENILES, SMOLT, LIMNOLOGY, PHYSICAL]

**Drucker,** Benson. c. 1965. Age, size, abundance and distribution of juvenile sockeye salmon (*Oncorhynchus nerka*) at Karluk Lake, Alaska, 1961-1962 (Original title: "Juvenile sockeye salmon resident studies at Karluk Lake, Kodiak, Alaska,

1961-1962"). US Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Fisheries Laboratory, Auke Bay, Alaska. Unpublished Report. 30pp.
(File A0830, Box 126, Fisheries Research Data, c. 1921-1994, RG 370, NARA, Anchorage, AK)

Unfinished manuscript describing the abundance, distribution, age, and size of juvenile sockeye salmon collected from the littoral and limnetic zones of Karluk Lake in 1961-1962; maximum abundance in littoral in June-July; shift in abundance of newly emerged fry by Karluk Lake basins; length-frequency and ages of sockeye salmon juveniles; brief discussion of abundance of other fish species associated with sockeye salmon juveniles; some of the 1961-1962 data were included in the published paper by Burgner et al. (1969). -- [SOCKEYE, JUVENILES, AGE, SIZE, STICKLEBACKS, COHO]

**Drucker,** Benson. 1967. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April 1967 to April 1968. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (March 16, 1967). Unpublished Report. 5pp.
(ABL Office Files, Auke Bay, AK)

Plan of the sockeye salmon studies at Karluk Lake for the 1967 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, FECUNDITY, EGGS, SMOLT, LIMNOLOGY]

**Drucker,** Benson. 1968. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April 1968 to April 1969. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (May 7, 1968). Unpublished Report. 5pp.
(ABL Office Files, Auke Bay, AK)

Plan of the sockeye salmon studies at Karluk Lake for the 1968 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, FECUNDITY, EGGS, SMOLT, LIMNOLOGY, PHYSICAL]

**Drucker,** Benson. 1969. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April 1969 to April 1970. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (May 2, 1969). Unpublished Report. 4pp.
(ABL Office Files, Auke Bay, AK)

Plan of the sockeye salmon studies at Karluk Lake for the 1969 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, FECUNDITY, EGGS, SMOLT, LIMNOLOGY, PHYSICAL]

**Drucker,** Benson. c. 1969. Length frequency distribution by major age group for male and female sockeye salmon in spring, fall, and total escapements to Karluk Lake, 1956-1969. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK. 27 Unpublished Tables.
(Copy in the personal papers of Richard Gard, Juneau, AK)

Many summary tables of length-frequency distributions by age compositions of male and female sockeye salmon at Karluk, 1956-1969; lengths of 350-650 mm. -- [SOCKEYE, AGE, LENGTH]

**Drucker,** Benson. 1973. Determining the effect of bear predation on spawning sockeye salmon on the basis of rate of disappearance of tagged salmon. (Original 1970 Title: "Extreme bear predation on sockeye salmon spawners at Grassy Point Creek, Karluk Lake, Kodiak, Alaska"). US Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Fisheries Laboratory, Auke Bay. Unpublished Report. 46pp.
(Copy in the personal papers of Richard Gard, Juneau, AK)

Detailed study of bear predation on sockeye salmon in Grassy Point Creek, Karluk Lake, in 1966-1968; 39-79% of sockeye salmon were killed before spawning; bear predation not selective by salmon sex. -- [SOCKEYE, BEAR PREDATION]

**Drucker,** Benson & Robert F. Raleigh. 1961. Kodiak red salmon investigations. Plan of operations, April through October, 1961. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (April 4, 1961). Unpublished Report. 9pp.
(ABL Office Files, Auke Bay, AK)

Plan of the sockeye salmon studies at Karluk and Bare Lakes for the 1961 field season; fry survival and migration in lateral and terminal streams; total migration of smolts; seasonal use of spawning habitats; study of subpopulations; sockeye juveniles resident in Karluk Lake. -- [SOCKEYE, MIGRATIONS, SMOLT, SPAWNING, SUBPOPULATIONS, JUVENILES]

**Duncan,** Rae E. 1951. Karluk; packs of red salmon, 1895-1930. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S4.D9 1950, Accession Number 268, FRI Archives, University of Washington, Seattle, WA)

Tables and graphs of case pack data from canneries that harvested Karluk's sockeye salmon, 1895-1930; most case pack data were from APA records; seasonal variation in case pack; included with these data is Bevan's 1953 unpublished report. -- [SOCKEYE, COMMERCIAL CATCH, CANNERIES]

**Erickson,** R. C. & J. Wickstrom. mid 1950s. Formaldehyde shrinkage of juvenile residents. Unpublished Data.
(File " Formaldehyde Shrinkage of Juvenile Residents", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Many data tables recording changes in length and weight of Karluk's juvenile sockeye when stored in formaldehyde. -- [SOCKEYE, JUVENILES, SIZE]

**Erickson,** R. C. c. 1960. Kodiak area stream survey reports; compilation of figures and tables; even year cycles from 1952. Unpublished Data.
(FRI Archives, University of Washington, Seattle, WA)

Tables and graphs of pink salmon observed during stream surveys of the Karluk River during even years. -- [PINK]

**Fassett,** H. C. 1910. Report on the salmon hatchery operated by the Alaska Packers Association on Karluk Lagoon, Kadiak Island, Alaska. Unpublished BOF Report. 25pp.
(File 4-3 "Karluk Hatchery," Box 3, Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK)

Detailed report on all aspects of the Karluk River hatchery from a visit on 1-8 September 1910; description of facilities, water supply, and operations; condition of hatchery; loss of adult brood stock; liberation of fry and their movements in Lagoon; fry predators; comments on smolt migration through Lagoon; Karluk Lake notes. -- [SOCKEYE, HATCHERY]

**Ferrandini,** Ralph A. 1939. Kodiak -- Afognak District, 1939, Report of fishery operations. US Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of Kodiak Island fisheries in 1939, including Karluk's sockeye salmon run; Dolly Varden study; Karluk BOF employees; 1939 weir operations. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Ferrandini,** Ralph A. 1940. Kodiak-Afognak Report, 1940, Alaska fishery operations. US Department of Commerce, Bureau of Fisheries. Unpublished Report. 45pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of Kodiak Island fisheries in 1940, including Karluk's sockeye salmon run; Dolly Varden study; Karluk FWS employees; 1940 weir operations. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Ferrandini,** Ralph A. 1941. Kodiak-Afognak Report, 1941, Alaska fishery operations. US Department of Commerce, Bureau of Fisheries. Unpublished Report. 41pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of Kodiak Island fisheries in 1941, including Karluk's sockeye salmon run; Dolly Varden study; Karluk FWS employees; 1941 weir operations. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Fish and Wildlife Service.** 1940-1943. Air and water temperatures at Thumb River (Lake), 1940-1943. Unpublished Data. 30pp.
(File "Temperature Air-Water Thumb River (Lake)", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Air and water temperatures at Thumb River and Lake, 1940-1943. -- [WEATHER, LIMNOLOGY]

**Fish and Wildlife Service.** c. 1941. Operation of the Karluk River weir. Unpublished Report. 6pp.
(File "Proposed Research", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of proposed changes in operation and location of Karluk River weir; suggest weir be operated until 10 October to count late-running sockeye salmon; move weir location to Karluk River Portage. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1941-1943. Air and water temperatures at Karluk River Portage weir site, 1941-1943. Unpublished Data. 20 pp.
(File "Temperature Air-Water Karluk Weir (Portage)", Box 89, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Air and water temperatures at the Karluk River Portage weir, 1941-1943. -- [WEATHER, LIMNOLOGY]

**Fish and Wildlife Service.** 1942. Salmon tagging experiments at Karluk Lake – 1942. Unpublished Handwritten Report. 5pp.
(File "Tagging in Karluk Lake-1942", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Description of 3 sockeye salmon homing experiments in Karluk Lake in 1942; fish from Thumb River beach were moved to different lake locations; at least some fish returned to Thumb River beach to spawn; this experiment was likely done by FWS biologist Allan C. DeLacy. -- [SOCKEYE, MIGRATION, SUBPOPULATIONS]]

**Fish and Wildlife Service.** 1943. Karluk Investigations, status of projects as of March 1, 1943. Unpublished Report. 3pp.
(File "Research Program, Karluk, 1933-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Outline summary of data available and status of sockeye salmon research at Karluk; Dolly Varden studies. -- [SOCKEYE, EGG, DOLLY VARDEN, MIGRATION]

**Fish and Wildlife Service.** 1943. Karluk weir, 1943 (Portage Trail Site). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River Portage weir in the 1943 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1943-1952. Monthly Reports of the Alaska Fishery Investigations. Unpublished Reports.
(File "Monthly Reports, 1942-1952", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief monthly reports of research on Karluk's sockeye salmon; most reports by E. H. Dahlgren and L. N. Kolleen. -- [SOCKEYE, SMOLT, WEIR, TRAVEL TIME, FERTILIZATION]

**Fish and Wildlife Service.** 1944. Karluk weir, 1944 (Portage Trail Site). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River Portage weir in the 1944 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1945. Karluk weir, 1945 (Outlet of Lake). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1945 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1945. Investigation of salmon populations of the Karluk River, Kodiak Island. Unpublished Report. 3pp.
(File "Age Composition – Method of Sampling", Box 94, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Description of a 1944 study to determine the statistically correct number and frequency of scales to be collected from Karluk's sockeye salmon run to accurately describe its age composition; 7,500 scale samples collected in 1944; recommended 30 readable scales for each fishing day. -- [SOCKEYE, AGE, SCALES]

**Fish and Wildlife Service.** 1946. Biological investigations in relation to the management of the Karluk sockeye salmon fishery. Unpublished Report. 5pp. [Note: this report is very similar to another report, "Proposed expansion of biological studies of Karluk River sockeye salmon." 6pp.]
(Copy 1: File "Research Program Karluk 1933-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Proposed Research", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of condition of Karluk's sockeye salmon runs and proposed research to determine the survival of its different life stages; proposed installation of a two-way weir on the Karluk River and 4 tributaries to Karluk Lake; proposed facilities and equipment need to carry out research program; small hatchery proposed for Moraine Creek; road proposed from Larsen Bay to Karluk Lake. -- [SOCKEYE, EGGS, FRY, WEIR, LIMNOLOGY, HATCHERY]

**Fish and Wildlife Service.** 1946. Karluk weir, 1946 (Outlet of Lake). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1946 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1946-1953. Air and water temperatures at Karluk River weir, 1946-1953. Unpublished Data.
(File "Thermograph Recordings, 1946-1953", Box 100, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Continuous recording thermograph charts (weekly) of air and water temperatures at Karluk River weir, 1946-1953; charts show distinct diurnal temperature variations. -- [WEATHER, LIMNOLOGY]

**Fish and Wildlife Service.** 1947. Karluk weir, 1947 (Outlet of Lake). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1947 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1947. Karluk weir, 1921-1947. Unpublished Report. 1pp.
(Copy 1: File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Summary of Karluk River weir operational dates, 1921-1947; person in charge of weir. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1948. Karluk weir, 1948 (Outlet of Lake). Unpublished Report. 1pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1948 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1948. Karluk Salmon Investigations. Unpublished Report. 9pp.
(File "Proposed Research", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed discussion of the depleted condition of Karluk's sockeye salmon run and the current thinking on its causes; proposed research to determine causes of sockeye salmon decline; possible fertilization of Karluk Lake. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, THEORIES OF DECLINE]

**Fish and Wildlife Service.** 1949. Karluk weir, 1949 (Outlet of Lake). Unpublished Report. 2pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1949 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1949. Drawings of Karluk two-way weir. Unpublished Drawings.
(File "Drawings of Karluk Two-Way Weir", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Formal set of engineering drawings of the proposed Karluk River two-way weir (designed by SHB, 26 May 1949), including construction details, fish ladder on right bank, and detailed topographic map (contour interval = 0.61 m) of the weir site based on 24-26 July 1948 stadia survey. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1950. Karluk Lake plants. Unpublished Plant Collection.
(File "Fauna and Flora – Karluk Lake", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Collection of 15 pressed plants from the Karluk River weir and Karluk Lake tributaries, including several aquatic macrophytes – *Potamogeton Richardsonii, Potamogeton palustris, Ranunculus, Fontinalis, Mimulus guttatus, Veronica americana,* and some sedges and rushes. -- [PLANTS]

**Fish and Wildlife Service.** 1950. Karluk weir, 1950 (Outlet of Lake). Unpublished Report. 2pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1950 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** c. 1950. Karluk red salmon migrants, mean and standard deviation of lengths during each week of migration. Unpublished Data. 4pp.
(File "Smolt Data, 1922-1950", Box 73, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary tables of Karluk's sockeye smolt lengths (age 2, 3, 4, and 5 years) for each week during migration (May 25-July 12) in 1922-1950; mean smolt lengths appear to decrease between 1925 and 1950. -- [SOCKEYE, SMOLT]

**Fish and Wildlife Service.** 1951. Karluk weir, 1951 (Outlet of Lake). Unpublished Report. 3pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1951 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1951. Karluk adult scale study, 1951. Salt-water age from spawning-ground scales. Unpublished Report. 1pp.
(Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Brief conclusions on the amount of scale absorption in early and late run sockeye salmon at Karluk; difficult to determine salt water age using spawning-ground scales after the third week in July. -- [SOCKEYE, SCALES]

**Fish and Wildlife Service.** 1952. Karluk weir, 1952. Unpublished Report. 3pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1952 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1952-1958. Karluk bald eagle studies. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Narrative Reports, September-December. Unpublished Reports.
(Not locate these reports, but likely present at the FWS, Kodiak National Wildlife Refuge, Kodiak, AK)

Not examine these reports, but apparently the results of annual studies of Karluk Lake bald eagles. -- [BIRDS]

**Fish and Wildlife Service.** 1953. Karluk weir, 1953. Unpublished Report. 3pp.

(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1953 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1953. Results of egg cartridge experiments 1953, Karluk Lake. Unpublished Report. 3pp.
(File "Egg Cartridge Experiments", Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Study results from burying cartridges (July-September 1953) containing fertilized sockeye salmon eggs in the substrate of 8 Karluk spawning sites and their subsequent recovery (May 1954); egg-to-fry survival; round worms and leeches occurred in many egg cartridges. -- [SOCKEYE, EGG, FRY, INVERTEBRTES]

**Fish and Wildlife Service.** c. 1954. Egg cartridges as a means of measuring mortality during development of red salmon eggs (Abstract). Unpublished Partial Report. 1pp.
(File "Egg Cartridge Experiments", Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief abstract of sockeye salmon egg cartridge studies at Karluk (1952-1954); 19-26 % hatching in Moraine Creek. -- [SOCKEYE, EGG]

**Fish and Wildlife Service.** c. 1954. Measurement of red salmon egg deposition – Karluk watershed. Unpublished Report. 2pp.
(File "Research Program Karluk, 1933-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed instructions on how to collect sockeye salmon eggs buried in the substrate at Karluk. -- [SOCKEYE, EGG]

**Fish and Wildlife Service.** 1954. Annual report, Kodiak area, 1954. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report on Kodiak Island fisheries in 1954, including the Karluk River sockeye salmon runs; 1954 Karluk River weir operations; August 1954 floods at Karluk Lake. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1954. Karluk weir, 1954. Unpublished Report. 3pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1954 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1954-1955, 1963-1966. Air and water temperatures at Karluk River weir, 1954-1955, 1963-1966. Unpublished Data.
(File "Thermograph Recordings, 1954-1955, 1963-1966", Box 100, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Continuous recording thermograph charts (weekly) of air and water temperatures at Karluk River weir, 1954-1955, 1963-1966; charts show distinct diurnal temperature variations. -- [WEATHER, LIMNOLOGY]

**Fish and Wildlife Service.** 1955. Karluk weir, 1955. Unpublished Report. 3pp.
(File "Karluk Weir Historical Record to Date", Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the research, personnel, and operations at the Karluk River weir in the 1955 field season. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** 1955. Annual report, Kodiak area, 1955. U .S. Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 24pp.

(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1955, including the Karluk River sockeye salmon runs; 1955 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** c. 1955. Karluk scale samples, red salmon. Unpublished Report. 3pp.
(File "Samples Collected, Record", Box 104, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Chronological listing of collected scale samples (number of scale books) taken from adult and juvenile Karluk sockeye salmon, 1914-1955, including samples from the fishery, spawning grounds, grilse, and smolts. -- [SOCKEYE, SCALES, SMOLT]

**Fish and Wildlife Service.** 1956. Kodiak Island Red Salmon Investigations, Plan of Operations for 1956 Field Season. Unpublished Report. 2pp.
(File "Karluk-Bare Lake Program 1956", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of proposed 1956 field work to be done on Karluk's sockeye salmon; adult weir counts, length, sex, and scales; protocol for measuring sockeye smolt migration. -- [SOCKEYE, AGE, SMOLT]

**Fish and Wildlife Service.** 1956. Alaska commercial fisheries annual report, Kodiak area, 1956. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 20pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1956, including the Karluk River sockeye salmon runs; 1956 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Fish and Wildlife Service.** No Date. Parks Trail, Karluk Lake to Ugak [Uyak] Bay. Unpublished Report. 2pp.
(File "Charts", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Directions for hiking from Karluk Lake to Parks Cannery on Uyak Bay in 3-5 hours. -- [PHYSICAL]

**Fish and Wildlife Service.** No Date. Maps of Karluk Lake and River. Maps.
(File "Karluk Pictures and Maps", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Several maps of Karluk Lake and River. -- [PHYSICAL]

**Fisheries Research Institute.** 1948. Kodiak Stream Survey. Kodiak Research Committee, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Handwritten Notes and Maps.
(KP F1 1948, Accession Number 137, FRI Archives, University of Washington, Seattle, WA)

Detailed handwritten notes and maps of Kodiak Island stream surveys done in 1948, including many from the Karluk River basin (Karluk Lake and River, O'Malley Lake and River, Thumb Lake and River, and Salmon, Falls, Moraine, Canyon, Cascade, and Spring Creeks); numbers of spawning sockeye salmon observed and tags recovered; Karluk Lake water levels (17 July-22 September 1948); physical descriptions and maps of each spawning stream (width, depth, discharge, velocity, gradient, substrate composition, location of physical barriers to fish migration); limited data on Chinook and pink salmon in the Karluk River; notes by Donald E. Bevan, Allan C. Hartt, Edward S. Iversen, and Wallace H. Norenberg. -- [SOCKEYE, SPAWNING, PHYSICAL, CHINOOK, PINK]

**Fisheries Research Institute.** 1949. Measurements, 1948-1956. Kodiak Research Committee, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP A2 1948-1956, Accession Number 304, FRI Archives, University of Washington, Seattle, WA)

Tables summarizing thousands of salmon measurements (length, sex, and scales) taken by FRI biologists from the Kodiak Island area over 9 years (1948-1956), including measurements from Karluk's sockeye salmon taken

in the fishery and on the spawning grounds; tables include data on location, sampling gear, date, salmon species, number measured, sex ratio, number of scales, and collector; few measurements of Karluk River pink salmon; measurements made by tape, machine, and calipers. -- [SOCKEYE, SIZE, AGE, SEX, PINK]

**Fisheries Research Institute.** 1949. Spawning ground measurements, red salmon, pink salmon, 1948. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP F2 1948, Accession Number 115, FRI Archives, University of Washington, Seattle, WA)

Raw data sheets tabulating lengths (middle of eye to fork of tail and middle of eye to hypural plate) and sex for about 1,500 dead and alive adult sockeye salmon collected at various spawning sites in the Karluk River basin in 1948 (4-19 September); scale samples taken from some fish; pink salmon lengths from Thumb River, 1948. --[SOCKEYE, PINK, SIZE]

**Fisheries Research Institute.** 1949. Cannery measurements, red salmon, pink salmon, 1948. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S2 1948, Accession Number 112, FRI Archives, University of Washington, Seattle, WA)

Tables of raw data summarizing thousands of measurements (length, sex, and scales) taken by FRI biologists from the Kodiak Island commercial salmon catch during 1948, including measurements from Karluk's sockeye salmon; tables include data on location, date, salmon species, number measured, sex, number of scales, scale card, and collector; length measurements using tape or machine were made from middle of eye to fork of tail and to hypural plate; measurements made at canneries, on tenders, at beach seine sites, and at fish traps. -- [SOCKEYE, SIZE, AGE, SEX]

**Fisheries Research Institute.** 1949. Cannery graphs, red salmon, pink salmon, 1948, 1953. Kodiak Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S3 1948, Accession Number 113, FRI Archives, University of Washington, Seattle, WA)

Many length-frequency graphs of adult sockeye salmon caught in the commercial fishery at different times within the Karluk District in 1948 and 1953. -- [SOCKEYE, SIZE]

**Fisheries Research Institute.** 1949. Spawning ground graphs, red salmon, pink salmon, 1948, 1949, 1950, 1951, 1952 (includes weir escapement). Kodiak Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP F3 1948, FRI Archives, University of Washington, Seattle, WA)

Many length-frequency graphs of adult sockeye salmon collected at different times and locations in Karluk River, Lake and its tributaries in 1948-1952; size variations of sockeye salmon subpopulations migrating to different spawning habitats and at different times; few length-frequency graphs for Karluk River pink salmon. --[SOCKEYE, SIZE, PINK]

**Fisheries Research Institute.** 1949. Conversion factors, Kodiak. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data and Report.
(K A4 1948-1950, Accession Number 309, FRI Archives, University of Washington, Seattle, WA)

Conversion factors for interchanging Karluk's sockeye salmon lengths between (1) middle of eye to fork of tail, and (2) middle of eye to hypural plate; discussion of field methods for measuring length using a tape and a measuring machine; sources of error; measurement variation between personnel. -- [SOCKEYE, SIZE]

**Fisheries Research Institute.** 1950. Cannery graphs, red salmon, 1949-1954. Kodiak Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S3 1949, Accession Number 313, FRI Archives, University of Washington, Seattle, WA)

Many length-frequency graphs of adult sockeye salmon caught in the commercial fishery (traps, purse seine, beach seine) at different times within the Karluk District in 1949-1954; length-frequency graphs by sex, single dates, grouped dates, and season; variation in adult size through the run season, with larger fish occurring later in the run; few length-frequency graphs for pink salmon caught in Karluk Spit beach seines. -- [SOCKEYE, SIZE, PINK]

**Fisheries Research Institute.** 1953. Weather data, 1950-1953. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP A2a 1950, Accession Number 497, FRI Archives, University of Washington, Seattle, WA)

Karluk Lake weather data for 1950-1953 (maximum-minimum air temperatures, precipitation, wind direction and speed, sky conditions); Karluk Lake water levels (33-54 cm summer variation); water temperatures of Karluk Lake, tributaries, and river. -- [WEATHER, LIMNOLOGY]

**Fisheries Research Institute.** 1954. Weather data, 1954-1959. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP A2a 1954-1960, Accession Number 702, FRI Archives, University of Washington, Seattle, WA)

Karluk Lake weather data for 1954 (maximum/minimum air temperature, precipitation, wind direction and speed, sky conditions); Karluk Lake water levels (70 cm summer variation); Karluk River water temperatures; description of the heavy rainfall and flooding in August 1954. -- [WEATHER, LIMNOLOGY]

**Fisheries Research Institute.** 1954. Spawning ground measurements, 1950. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data. 107pp.
(KP F2 1950, Accession Number 652, FRI Archives, University of Washington, Seattle, WA)

Raw data sheets tabulating lengths (middle of eye to fork of tail and middle of eye to hypural plate) and sex of thousands of dead and live adult sockeye salmon collected at various spawning sites in the Karluk River basin in 1950 (11 July-15 October); lengths taken with a measuring machine and results stored on Fish Tape Rolls #501-5013; scale samples taken from some fish; pink salmon lengths at Karluk River weir, 1950. -- [SOCKEYE, PINK, SIZE]

**Fisheries Research Institute.** 1954. Spawning ground measurements, 1951-1956. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP F2 1951, Accession Number 622, FRI Archives, University of Washington, Seattle, WA)

Raw data sheets tabulating lengths (middle of eye to fork of tail and middle of eye to hypural plate) and sex of thousands of dead and live adult sockeye salmon collected at various spawning sites in the Karluk River basin in 1951-1956; lengths taken with a measuring machine and results stored on Fish Tape Rolls; scale samples taken from some fish. -- [SOCKEYE, SIZE]

**Fisheries Research Institute.** 1954. Cannery measurements, 1949. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S2 1949, Accession Number 656, FRI Archives, University of Washington, Seattle, WA)

Raw data tables summarizing thousands of measurements (length, sex, and scales) taken by FRI biologists from the Kodiak Island commercial salmon catch during 1949, including measurements of Karluk's sockeye salmon; tables include data on location, date, salmon species, number measured, sex, number of scales, scale card, and collector; length measurements were made from middle of eye to fork of tail and to hypural plate; measurements made at canneries, on tenders, at beach seine sites, and at fish traps; measurements also taken of hundreds of sockeye salmon from Karluk Lake's tributaries. -- [SOCKEYE, SIZE, AGE, SEX]

**Fisheries Research Institute.** 1954. Cannery measurements, 1950. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S2 1950, FRI Archives, University of Washington, Seattle, WA)

Raw data tables summarizing thousands of measurements (length, sex, and scales) taken by FRI biologists from Kodiak Island commercial salmon catch during 1950, including measurements from Karluk's sockeye salmon; tables include data on location, date, gear, salmon species, number measured, sex, number of scales, scale card, and collector; length measurements were made from middle of eye to fork of tail and to hypural plate; measurements taken from beach and purse seine catches. -- [SOCKEYE, SIZE, AGE, SEX]

**Fisheries Research Institute.** 1954. Cannery measurements, 1951-1955, 1957, 1959. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S2 1951, Accession Number 623, FRI Archives, University of Washington, Seattle, WA)

Tables summarizing thousands of measurements (length, sex, and scales) taken by FRI biologists from Kodiak Island commercial salmon catch during 1951-1955, 1957, and 1959, including measurements from Karluk's sockeye salmon; tables include data on location, sampling gear, date, salmon species, number measured, sex ratio, number of scales, scale card, and collector; length measurements were made from middle of eye to fork of tail and to hypural plate. -- [SOCKEYE, SIZE, AGE, SEX]

**Fisheries Research Institute.** 1954. Catch records, red, Karluk District, 1946-1953. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S5a 1946-1953, Accession Number 719, FRI Archives, University of Washington, Seattle, WA)

Detailed records of the commercial catch of sockeye salmon in the Karluk District using beach seines and traps, 1946-1953; daily catches for the different fishing companies. -- [SOCKEYE, COMMERCIAL CATCH]

**Fisheries Research Institute.** 1955. Weir counts, 1937-1949. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(FRI Archives, University of Washington, Seattle, WA)

Tables of daily weir counts for sockeye, Chinook, coho, and pink salmon at the Karluk River weir, 1937-1949; tables also show person in charge of weir, operation dates, river conditions, steelhead and Dolly Varden movements, weather, dead fish on weir, eagle-marked fish, and fishing closure times; this data is also stored on FRI Microfilm Roll #98. -- [SOCKEYE, CHINOOK, PINK, COHO, WEIR]

**Fisheries Research Institute.** c. 1957. Unpublished material on file in FRI Library -- Red salmon. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Typed Manuscript. 2pp.
(Donald E. Bevan papers, Manuscripts and University Archives Division, University of Washington Libraries, Seattle, WA)

Summary list of unpublished reports, field notebooks, raw data, and graphs present in the FRI library, primarily concerning Karluk's sockeye salmon, 1948-1957; material on spawning stream surveys, Karluk Lake's limnology, adult size and age, migration and tagging, commercial catch, juvenile biology, scale analysis, regulations, field work, and bear sightings. -- [SOCKEYE, SPAWNING, LIMNOLOGY, SIZE, AGE, MIGRATIONS, COMMERCIAL CATCH, JUVENILES, SCALES, BEARS]

**Fisheries Research Institute.** c. 1958. Data on hand -- Kodiak Island. Unpublished Report. 3pp.
(Donald E. Bevan papers, Manuscripts and University Archives Division, University of Washington Libraries, Seattle, WA)

Summary of Kodiak Island fisheries data available at the Fisheries Research Institute, including data on Karluk's sockeye, coho, and chum salmon, and sticklebacks, 1948-1958; sockeye salmon data includes adult size and age, migration and tagging, history of run, and juvenile emergence and growth; samples from coho and chum salmon juveniles, and sticklebacks; physical data from Karluk River and Lake (river discharge, plankton, lake levels, water temperatures, Secchi depths); bear sightings. -- [SOCKEYE, COHO, CHUM, STICKLEBACK, PHYSICAL, LIMNOLOGY, BEARS]

**Fisheries Research Institute.** c. 1958. Karluk red salmon. Miscellaneous graphs, tables. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(FRI Archives, University of Washington, Seattle, WA)

Unorganized collection of graphs and tables with biological data on Karluk's sockeye salmon, primarily related to the work of FRI biologist, Charles E. Walker; juvenile sockeye biology (seine hauls and fyke nets, ratio of sockeye to sticklebacks, length-weight relationship, length-scale size relationship, length-circuli number relationship); adult biology (escapements 1942-1955, odd year vs. even year escapements, variation in fish size and seasonal use of spawning habitats); Karluk Lake and River 1954 limnological data. -- [SOCKEYE, JUVENILE, GROWTH, SPAWNING SURVEYS, LIMNOLOGY]

**Fisheries Research Institute.** c. 1958. Weir counts, 1937-1958. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(FRI Archives, University of Washington, Seattle, WA)

Tables of daily weir counts for sockeye salmon at the Karluk River weir, 1937-1958; some commercial catch data for Karluk's sockeye salmon. -- [SOCKEYE, WEIR]

**Fisheries Research Institute.** c. 1950s. Microfilm records of Karluk River salmon escapement and catch statistics. Fisheries Research Institute, University of Washington, Seattle, WA (Note: FRI Archives has a card catalogue for the microfilm records). Unpublished Data.
(Microfilm Rolls, FRI Archives, University of Washington, Seattle, WA)

Many microfilm rolls containing historical records of catches, case pack, and weir escapements of Karluk's sockeye salmon; cannery records (1895-1958); trap catches (1924-1947); APA Superintendent's annual reports; Karluk River hatchery records of operations (1901-1917), sockeye salmon eggs taken, egg development times, fry released, and weather records (1912-1916); FWS Fishery Management Agent annual reports (1924-1956); trap catches; stream surveys (1922-1956); sockeye salmon tagging data (1948-1949). -- [SOCKEYE, ESCAPEMENT, COMMERCIAL CATCH, HATCHERY, SPAWNING]

**Fisheries Research Institute.** 1948-1957. Karluk River sockeye salmon adult scales. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(Sockeye salmon scales, FRI Archives, University of Washington, Seattle, WA)

Many adult sockeye salmon scales collected from Karluk's commercial fishery and the spawning ground, 1954-1957. -- [SOCKEYE, SCALES]

**Fisheries Research Institute.** 1949-1955. Karluk River sockeye salmon juvenile scales. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(Sockeye salmon scales, FRI Archives, University of Washington, Seattle, WA)

Many juvenile sockeye salmon scales collected from Karluk Lake, 1949-1955; mounted on glass slides. -- [SOCKEYE, SCALES]

**Fisheries Research Institute.** 1954-1958. Fish tapes of Karluk River sockeye salmon lengths. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(Fish Tapes, FRI Archives, University of Washington, Seattle, WA)

Many fish tapes that record lengths of sockeye salmon collected from Karluk Lake, tributaries, and Spit, 1954-1958. -- [SOCKEYE, SIZE]

**Fisheries Research Institute.** c. 1962. Fish measurements, scale samples, and tagging, Kodiak, 1948-1959, 1962. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(Donald E. Bevan papers, Manuscripts and University Archives Division, University of Washington Libraries, Seattle, WA)

Summary tables, text, and raw data on the numbers and location of salmon sampled for length, sex, and scales in the Kodiak Island area, including Karluk's sockeye salmon from the commercial fishery and spawning grounds, 1948-1957. -- [SOCKEYE, SIZE, AGE, SEX]

**Fisheries Research Institute.** 1964. Cannery measurements, 1964. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP S2 1964, Accession Number 2069, FRI Archives, University of Washington, Seattle, WA)

Summary tables of measurements (length, sex, and scales) taken by FRI biologists from Karluk River coho salmon; length-weight data for 47 coho salmon. -- [COHO, SIZE, AGE, SEX]

**Freeman,** Arthur. 1949. Alaska brown bear and its relationship to society. Stanford University, Palo Alto, CA. Unpublished Report. 14pp.
(Copy in personal papers of Arthur Freeman, Indianapolis, IN)

Overview discussion of the beneficial and detrimental aspects of the brown bear in Alaska, with special reference to Kodiak Island and Karluk Lake in the late 1940s; summary of life history; bear myths; interactions with livestock; bear predation on sockeye salmon at Karluk Lake (loss of salmon to bears about 10%); values of sport hunting for bears; regulation and conservation of brown bears. -- [BEARS, SOCKEYE]

**Freeman,** Arthur. 1951. Observations of the Karluk red salmon. Ohio State University, Columbus, OH. Unpublished Report and Photographs. 13pp.
(Copy in personal papers of Arthur Freeman, Indianapolis, IN)

General description and photographs of the Karluk River and Lake ecosystem, the salmon fishery, and sockeye salmon life history based upon his field experiences as a FWS Biological Aide at Karluk Lake in 1947-1948. -- [SOCKEYE]

**Gard,** Richard. 1963. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April through October, 1963. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (March 20, 1963). Unpublished Report. 5pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1963 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, MIGRATION, SPAWNING, FECUNDITY, SMOLT, JUVENILES, LIMNOLOGY]

**Gard,** Richard. 1964. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April through October, 1964. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (April 21, 1964). Unpublished Report. 5pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1964 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, MIGRATION, SPAWNING, FECUNDITY, EGGS, SMOLT, LIMNOLOGY]

**Gard,** Richard. 1965. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April through October, 1965. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay, AK (April 20, 1965). Unpublished Report. 4pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1965 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, SUBPOPULATIONS, FECUNDITY, EGGS, SMOLT, LIMNOLOGY]

**Gard,** Richard. 1965. Merganser Food Habits Study, 1965. Unpublished Data. 1pp.
(File "Merganser Study", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary table of stomach contents of 18 American and Red-breasted mergansers from Karluk Lake; foods included salmonid juveniles, sticklebacks, and aquatic insects. -- [SOCKEYE, BIRDS]

**Gard,** Richard. 1966. Red salmon investigations. Kodiak red salmon studies. Plan of operations, April 1966 to April 1967. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK (June 23, 1966). Unpublished Report. 4pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1966 field season. -- [SOCKEYE, FRY MIGRATION, ADULTS, SPAWNING, FECUNDITY, EGGS, SMOLT, LIMNOLOGY]

**Gard,** Richard & Benson Drucker. 1972. Differentiation and cause of decline of sockeye salmon of the Karluk River system, Alaska. National Marine Fisheries Service, Auke Bay Fisheries Laboratory, Auke Bay, Alaska. Unpublished Report. 50pp.
(Copy from Richard Gard, Juneau, AK)

Important detailed study of Karluk's sockeye salmon that showed distinct subpopulations; migration and spawning times; adult age and length; fecundity; fry size and migration; discussion of the theories of decline of Karluk's sockeye salmon run. -- [SOCKEYE, AGE, FECUNDITY, FRY, MIGRATIONS, SUBPOPULATIONS, THEORIES OF DECLINE]

**German,** McNair, Montagne, Russell & Seawright. 1957. Cottonwood Creek map, Karluk Lake. US Fish and Wildlife Service. Unpublished Data Map.
(File "Cottonwood Creek Tagging, 1957", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed map of stream widths for Cottonwood Creek, a Karluk Lake sockeye salmon spawning tributary (16 August 1957). -- [SOCKEYE, PHYSICAL]

**Greenbank,** John. 1956. Stickleback life history study. Unpublished outline report (9 June 1956). 5pp.
(File "Stickleback study outline and methods," Box 87, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed outline of status of stickleback life history study at Karluk Lake and nearby areas, including work done and proposed on taxonomy, distribution within lake, movements, sex ratios, age and growth, reproduction, physiology, disease and parasites, food habits, and role as prey. -- [STICKLEBACK]

**Greenbank,** John T. 1957. Dolly Varden studies, Karluk Lake, 1957. Field Report (1 October 1957). Unpublished Report. 11pp. (File " Morphometric Differences between *S. malma* & *S. alpinus*", Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Important ecological observations of Dolly Varden in the Karluk River and Karluk Lake tributary streams in 1957; migrations, distribution, spawning, morphology, food habits, and possible predation on sockeye salmon juveniles; digestion rate of sockeye salmon eggs; suggested further studies of food habits in winter and early spring. -- [DOLLY VARDEN, FOOD HABITS, MIGRATION, PREDATION, SOCKEYE]

**Grischkowsky,** Roger S. c. 1976. The status of diseases of feral fish in Alaska. Alaska Department of Fish and Game, Fish Pathology Laboratory, Anchorage, AK. Unpublished Report. 13pp.
(FRED papers, ADFG Library, Douglas, AK)

Record of aeromonad bacteria infections in wild adult sockeye salmon from the Thumb River, Karluk Lake, 1974. -- [SOCKEYE, DISEASE]

**Grischkowsky,** Roger S. c. 1980. Infectious hematopoietic necrosis virus . Alaska Department of Fish and Game. Unpublished Report. 4pp.
(FRED papers, ADFG Library, Douglas, AK)

Discussion of loss of 2,500,000 Upper Thumb River sockeye salmon at the Kitoi Bay hatchery to IHN virus; infection of second stock from Lower Thumb River and partial control of IHN virus by heated water incubation and intensive culture methods. -- [SOCKEYE, DISEASE]

**Grischkowsky,** Roger S. & Donald F. Amend. c. 1974. Survey for infectious hematopoietic necrosis virus in Alaskan sockeye salmon *Oncorhynchus nerka*. Alaska Department of Fish and Game, Anchorage, AK. Unpublished Report. 7pp.
(FRED papers, ADFG Library, Douglas, AK)

Record of IHN virus in wild adult sockeye salmon populations from O'Malley River and Karluk Lake beach spawners. -- [SOCKEYE, DISEASE]

**Grischkowsky,** Roger S. & Diane Godsey Elliott. c. 1975. Increase in known distribution of infectious hematopoietic necrosis virus in Alaskan sockeye salmon. Alaska Department of Fish and Game, Anchorage, AK. Unpublished Report. 3pp.
(FRED papers, ADFG Library, Douglas, AK)

Record of IHN virus in wild adult sockeye salmon populations from O'Malley River and Karluk Lake. -- [SOCKEYE, DISEASE ]

**Grogan,** Frank B. 1953. 1953 summer report. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak. Unpublished Report [Also titled, "Bear-salmon study, Karluk Lake, 1953" and published as US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Auke Bay Biological Laboratory, Manuscript Report-File, MR-F No. 71 (October, 1969)]. 17pp.
(ABL Library Files, Auke Bay, AK)

Report on the number of sockeye salmon taken by Kodiak brown bears in the summer of 1953 at Halfway Creek; few salmon were taken by bears in 1953, these mainly feeding on berries and grasses; 115 bears estimated in Karluk Lake drainage in 1953; field study included a weir, electric fence, and escape pond on Halfway Creek; bear fecal examinations. -- [SOCKEYE, BEARS]

**Hander,** Ray. 1993. Instream distribution and movement of spawning coho salmon on the Ayakulik and Karluk Rivers. Final Report. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak (June, 1993). Unpublished Report. 31pp.
(US FWS, Kodiak National Wildlife Refuge, Kodiak, AK)

Detailed analysis of the movements of 52 adult coho salmon in the Karluk River in 1991-1992 using radio telemetry methods; major spawning areas identified in the upper and lower Karluk River; coho also spawn in Karluk, Thumb, and O'Malley lakes and Silver Salmon Creek; length of life in the Karluk River averaged 29

days (range 6-61 days; one coho tagged in the Ayakulik River was later recovered in the Karluk River; one tag was recovered from a pile of bear feces. -- [COHO, SPAWNING, MIGRATION]

**Hoopes,** David T. 1961. Fluvial gravel analysis for two Karluk Lake tributaries. Unpublished Data. 18pp.
(File "Stream Gradient Data, 1961", Box 106, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief study of substrate particle size composition in two Karluk Lake tributaries used by spawning sockeye salmon (Meadow and Grassy Point Creeks, July, 1961); substrates analyzed at 8-10 sites along each creek; stream gradient survey. -- [SOCKEYE, SPAWNING, PHYSICAL]

**Hungerford,** Howard H. 1926. Report of operations at Karluk weir for season of 1925. Department of Commerce, Bureau of Fisheries. Unpublished Report. 3pp.
(File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of activities at Karluk River weir in 1925; 200 sockeye salmon tagged. -- [SOCKEYE, WEIR]

**Hungerford,** Howard H. 1926. Report of operations at Karluk Weir (Lower) season of 1926. Department of Commerce, Bureau of Fisheries. Unpublished Report. 4pp.
(Copy 1: File "Karluk 1926", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of activities and observations of fish movements at the lower Karluk River weir in 1926, including a study to determine the travel time of sockeye salmon between the lower (near Karluk Lagoon) and upper (Portage) weir locations; daily sockeye salmon counts (20 May-14 October). -- [SOCKEYE, WEIR, MIGRATION]

**Hungerford,** Howard H. 1926. Report of operations at Upper Karluk Weir, season of 1926. Department of Commerce, Bureau of Fisheries. Unpublished Report. 5pp.
(Copy 1: File "Karluk 1926", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of activities at the upper Karluk River weir at Portage in 1926, including a study to determine the travel time of sockeye between the lower and upper weir locations; daily sockeye and Chinook salmon counts (6 June-11 September); daily air and water temperatures. -- [SOCKEYE, CHINOOK, WEIR, MIGRATION, PHYSICAL]

**Hungerford**, Howard H. 1928. Report of operations - Kodiak-Afognak District, 1928. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1928, including Karluk's sockeye salmon; Dolly Varden destruction; sockeye smolt marking; Karluk BOF employees; 1928 Karluk River weir operations. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Hungerford,** Howard H. 1929. Report of operations - Kodiak-Afognak District, 1929. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of Kodiak Island fisheries in 1929, including Karluk's sockeye salmon; Dolly Varden destruction; sockeye smolt marking by Willis H. Rich; 1929 Karluk River weir operations. -- [SOCKEYE, SMOLT, DOLLY VARDEN, WEIR]

**Hungerford,** Howard H. 1930. Report of operations - Kodiak-Afognak District, 1930. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1930, including Karluk's sockeye salmon; 1930 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Hungerford,** Howard H. 1931. Report of operations - Kodiak-Afognak District, 1931. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1931, including Karluk's sockeye salmon; Dolly Varden destruction; detailed biweekly reports of 1931 Karluk River weir operations by foreman; Karluk BOF weir employees. -- [SOCKEYE, DOLLY VARDEN, WEIR]

**Hungerford,** Howard H. 1932. Report of operations - Kodiak-Afognak District, 1932. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1932, including Karluk's sockeye salmon; 1932 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Hungerford,** Howard H. 1934. Report of operations - Kodiak-Afognak District - 1933. Department of Commerce, Bureau of Fisheries, Seattle, WA (January 27, 1934). Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1933, including Karluk's sockeye salmon; 1933 Karluk River weir operations; Karluk BOF employees; Thomas Barnaby marked sockeye smolts; inventory of supplies present at Karluk River weir. -- [SOCKEYE, SMOLT, WEIR]

**Jaenicke,** Herbert W. 1996. List of Karluk sockeye salmon scales at the National Archives, Anchorage. Unpublished Report.
(Copy from Herbert W. Jaenicke, ABL, Auke Bay, AK)

Chronological list of sockeye salmon scales from Karluk stored at the National Archives and Records Administration, Anchorage, AK; number of fish and NARA location information. -- [SOCKEYE, SCALES]

**Johnson,** Robert F. 1959. Three possible research problems for investigation at Karluk Lake. Unpublished Report. 6pp.
(File "Karluk Research, 1959", Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Three proposed studies of Karluk's sockeye salmon, with an outline of methods – (1) ecology of lake residents, seasonal variations in food habits, vertical distribution, and growth rates, (2) egg studies, gravel size used for spawning, environmental factors on embryo development, comparison of egg deposition and survival in lateral and terminal streams, and (3) fry emergence, food habits, and downstream migration from lateral and terminal streams. -- [SOCKEYE, FRY, EGGS, MIGRATION]

**Jones,** McNair, Montagne & Seawright. 1957. Grassy Point Creek map, Karluk Lake. US Fish and Wildlife Service. Unpublished Data Map.
(File "Grassy Point Tagging, 1957", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed map of stream widths and characteristics of Grassy Point Creek, a Karluk Lake tributary used by spawning sockeye salmon (8 September 1957). -- [SOCKEYE, PHYSICAL]

**Kaill,** Mike, Lorne White & Kit Rawson. 1981. Considerations of causes for decline in Karluk sockeye: a proposal outline. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development (FRED), Anchorage. Unpublished Report. 16pp.
(ADFG, Soldotna, AK)

Summary and discussion of the possible factors causing the historic decline in the Karluk's sockeye salmon, including overfishing, nutrient depletion, competition, predation, depleted subpopulations, and run timing; outline of research and management activities to understand the Karluk system and rebuild the runs, including egg planting of Upper Thumb River, use of coded wire tags, use of sonar to determine smolt abundance, diatom analysis of core samples from Karluk Lake, and studies of juvenile sockeye food habits; discussion of spawner-recruit data for Karluk's sockeye salmon. -- [SOCKEYE, THEORIES OF DECLINE, SMOLT, JUVENILES, FOOD, LIMNOLOGY]

**Kodiak Area Management Staff.** 1967. Kodiak area annual report, 1967. Alaska Department of Fish and Game, Division of Commercial Fisheries. Unpublished Report. 72pp.

(Folder 8, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report on Kodiak Island fisheries in 1967, including Karluk's sockeye salmon runs; 1967 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Koenings,** J. P. 1980. The importance of escapement size of sockeye salmon on the fertility of Karluk Lake. Alaska Department of Fish and Game. Unpublished Report. 10pp.
(Copy not located, possibly present at ADFG, Soldotna, AK)

Report not examined, but presumably it contains an analysis of the effect of sockeye salmon escapement size on the nutrient levels in Karluk Lake. -- [SOCKEYE, LIMNOLOGY]

**Koenings,** J. P. & R. D. Burkett. 1986. An aquatic Rubic's cube: The return of the Karluk Lake sockeye. Alaska Department of Fish and Game. Division of Fisheries Rehabilitation, Enhancement and Development Unpublished Report. 57pp.
(Copy not located, possibly present at ADFG, Soldotna, AK)

Report not examined, but presumably it contains similar material to that in the published paper by Koenings & Burkett (1987b). -- [SOCKEYE, LIMNOLOGY, FERTILIZATION, FRY, SMOLT, SPAWNING]

**Kollaen,** Lawrence H. c. 1949. Research program, Alaska Fishery Investigations. US Fish and Wildlife Service, Seattle, WA. Unpublished Report. 28pp.
(Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Discussion of 6 fisheries projects proposed for Karluk Lake and River in 1949-1950 – (1) age composition of sockeye salmon smolts, (2) age composition of sockeye salmon adults, (3) independence of the spring and fall runs of sockeye salmon and the existence of distinct subpopulations within each run, (4) effects of bear predation on sockeye salmon populations, (5) effects of chemical compounds in Karluk Lake on planktonic food supplies for juvenile sockeye, and (6) effects of competition by sticklebacks on juvenile sockeye in Karluk Lake. -- [SOCKEYE, AGE, SMOLT, SUBPOPULATIONS, LIMNOLOGY, BEARS, STICKLEBACK]

**Kollaen,** Larry. c. 1952. Possibility of increasing red salmon production through lake fertilization being tested by Fish and Wildlife Service in Alaska. Unpublished Report. 15pp.
(File "Increasing red salmon production through lake fertilization - Kollaen", Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of the hypothesis that the long term decline in Karluk's sockeye salmon runs was caused by fewer salmon carcasses adding nutrients to Karluk Lake, ultimately decreasing the food supply of juvenile sockeye salmon; suggested fertilization of Karluk Lake after first testing the idea in a smaller lake; results of the 1950 and 1951 fertilization experiment at Bare Lake. -- [SOCKEYE, LIMNOLOGY, FERTILIZATION]

**Lall,** Dexter F. & Robert S. Roys. 1961. Kodiak area annual report, 1961. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 46pp.
(Folder 2, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1961, including Karluk's sockeye salmon runs; 1961 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Lechner,** J. & M.F. Eaton. 1969. Studies on adult sockeye salmon migration routes along the West Coast of Kodiak Island 1969, 1970, 1971, with special reference to Karluk sockeye runs. Alaska Department of Fish and Game. Unpublished Report.
(ADFG Files, Kodiak, AK)

Summary report on ocean migration routes of Karluk's sockeye salmon. -- [SOCKEYE, MIGRATION]

**Lechner,** Jack, Martin F. Eaton, Kenneth R. Manthey, Louis A. Gwartney & Lawrence M. Malloy. 1972. Kodiak area management annual report, 1972. Alaska Department of Fish and Game. Unpublished Report.
(Folder 14, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1972, including Karluk's sockeye salmon runs; 1972 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Lechner,** Jack, Paul C. Pedersen, Kenneth R. Manthey, Louis A. Gwartney & Lawrence M. Malloy. 1973. Kodiak area management annual report, 1973. Alaska Department of Fish and Game. Unpublished Report.

(Folder 15, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1973, including Karluk's sockeye salmon runs; 1973 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Lindsley,** Roy R. 1949. Annual report, Kodiak District, 1949. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 27pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1949, including Karluk's sockeye salmon runs; 1949 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Lindsley,** Roy R. 1950. Annual report, Kodiak District, 1950. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 28pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1950, including Karluk's sockeye salmon runs; 1950 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Lindsley,** Roy R. 1951. Annual report, Kodiak District, 1951. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 30pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1951, including Karluk's sockeye salmon runs; 1951 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Lindsley,** Roy R. 1952. Annual report, Kodiak area, 1952. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 27pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1952, including Karluk's sockeye salmon runs; 1952 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Lindsley,** Roy. 1952. US Fish and Wildlife Service, stream survey report, Kodiak District, 1951-1955. University of Washington, Fisheries Research Institute, Kodiak Island Research. Unpublished Report.
(KP F1.Un 1951-1955, Accession Number 491, FRI Archives, University of Washington, Seattle, WA)

Brief observations on the abundance of pink salmon in the Karluk River in 1951-1955 based on periodic stream surveys. -- [PINK]

**Lindsley,** Roy R. 1953. Annual report, Kodiak area, 1953. US Department of the Interior, Fish and Wildlife Service, Branch of Alaska Fisheries. Unpublished Report. 24pp.
(Copy 1: ABL Library File, Auke Bay, AK. --- Copy 2: File "1947-1956 Annual Reports Kodiak District", Box 11, National Oceanic and Atmospheric Administration Alaska Region 1884-1975 Annual Reports 1925-1966, RG 370, NARA, Anchorage, AK)

Annual summary report of the Kodiak Island fisheries in 1953, including Karluk's sockeye salmon runs; 1953 Karluk River weir operations. -- [SOCKEYE, WEIR, THEORIES OF DECLINE]

**Logan,** Mark A. 1944. Annual report, Kodiak -- Afognak, 1943. Seattle, WA (January 17, 1944). US Department of the Interior, Fish and Wildlife Service, Seattle, WA. Unpublished Report. 37pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1943, including Karluk's sockeye salmon runs. -- [SOCKEYE]

**Lucas,** Fred R. 1922. Report of the census of red salmon that escaped to the Karluk Lake spawning grounds during the season of 1921. Department of Commerce, Bureau of Fisheries. Unpublished Report. 14pp.
(File "Census of red salmon that escaped to the Karluk Lake spawning grounds 1921 - Lucas", Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed summary report of the first Karluk River weir operations in 1921; sketch map of the lower Karluk River and photographs of the river, weir, and Dolly Varden; daily counts of sockeye salmon and weather observations (26 May-18 Sep); 1921 Karluk River weir construction details; observations of Dolly Varden, steelhead, and Chinook, pink, and coho salmon movements. -- [SOCKEYE, DOLLY VARDEN, STEELHEAD, CHINOOK, COHO, PINK, WEIR]

**Lucas,** Fred R. 1924. Summary of red salmon census for the season of 1922 at Karluk Alaska. Department of Commerce, Bureau of Fisheries. Unpublished Report. 5pp.
(File "Biological Correspondence in 1921-1922", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed report on the 1922 Karluk River weir operations; weir installed diagonally across the river; 18,635 Dolly Varden captured and destroyed; pink salmon carcasses damaged weir; competition between beach and purse seines in the Karluk fishery. -- [SOCKEYE, DOLLY VARDEN, PINK, WEIR]

**Lucas,** Fred R. 1924. Report of the red salmon census at Karluk Alaska during the season of 1923. Department of Commerce, Bureau of Fisheries. Unpublished Report. 4pp.
(Copy 1: File "Karluk 1924", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Biological Correspondence in 1923-1927", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the 1923 operations at the Karluk River weir; discussion of possible alternative weir locations, including Karluk Lagoon, Portage, and Lake; combined high tide, wind, and high river overtopped the weir on 12 October. -- [SOCKEYE, WEIR]

**Lucas,** Fred R. 1924. Report of the Alaska Division work in the Kodiak-Afognak District during the month of May 1924. Letnik Lake (3 June 1924). Unpublished Report. 3pp.
(File "Karluk 1924", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of May operations in the Kodiak-Afognak District, including installation and counting at the Karluk River weir; impact on the Karluk fishery of the White Bill mandating 50% escapement. -- [SOCKEYE, WEIR]

**Lucas,** Fred R. 1924. Report of Alaska Division work in Kodiak-Afognak District for the month of June, 1924. Afognak, AK (3 July 1924). Unpublished Report. 2pp.
(File "Karluk 1924", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary of June operations in the Kodiak-Afognak District, including collection of 100 sockeye salmon scales per day at Karluk; discussion of the 91 m fishing exclusion line around the Karluk River mouth. -- [SOCKEYE, SCALES, FISHERY]

**Lucas,** Fred R. 1924. Report of Kodiak-Afognak Fisheries District to August 31, 1924. Afognak, AK (5 September 1924). Unpublished Report. 8pp.
(Copy 1: File "Karluk 1924", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: ABL Library Files, Auke Bay, AK)

Summary of August operations in the Kodiak-Afognak District, including description of the very large pink salmon run of 1924 at Karluk; management problems from the pink salmon run because they hold in Karluk Lagoon before passing the weir; problems encountered at the Karluk River weir from pink salmon carcasses. -- [SOCKEYE, PINK, FISHERY, WEIR]

**Lucas,** Fred R. 1924. Report of Kodiak-Afognak District for the month of September 1924, including the inspection of the Karluk and Uganik spawning areas. Afognak, AK (4 October 1924). Unpublished Report. 9pp.
(Copy 1: File "Karluk 1924", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: ABL Library Files, Auke Bay, AK)

Important summary report of the effects of the large pink salmon run at Karluk in 1924 and how they affected the sockeye spawning streams at Karluk Lake; field observations of Karluk Lake tributaries on 16-24 September 1924. -- [SOCKEYE, PINK, SPAWNING]

**Lutz,** J. E., W. K. Clark & F. L. Beals. 1950. Bear-salmon study – 1950, Kodiak-Afognak Islands, Alaska. US Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, Kodiak, Alaska. Unpublished Report. 18pp.
(Copy not located)

Not examine this report, but apparently it contains information about bear predation on sockeye salmon at Karluk Lake. -- [SOCKEYE, BEARS]

**Maciolek,** J. c. 1980. A critical evaluation of Karluk Lake baseline studies, proposed as part of a sockeye salmon rehabilitation project. Unpublished Report. 15pp.
(ABL Files, Auke Bay, AK)

Not examine this reference, but apparently it reviews rehabilitation plans for the Karluk River sockeye salmon. -- [SOCKEYE]

**Manthey,** Ken, Larry Malloy & Joan Peterson. 1974. Annual management report, 1974, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 134pp.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1974, including Karluk's sockeye salmon runs; 1974 Karluk River weir operations; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Melayna McGuire. 1975. 1975 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 160pp.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1975, including Karluk's sockeye salmon runs; 1975 Karluk River weir located near Karluk Lake's outlet and counting tower near Karluk Lagoon; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Yolanda Servin. 1976. 1976 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 174pp.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1976, including Karluk's sockeye salmon runs; 1976 Karluk River weir operations; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Linda Wright. 1977. 1977 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 179pp.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1977, including Karluk's sockeye salmon runs; 1977 Karluk River weir operations; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Linda Wright. 1978. 1978 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 231pp.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1978, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; ocean tagging studies on west side of Kodiak Island; 1978 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, MIGRATION, COHO, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Linda Wright. 1979. 1979 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. 256pp. Unpublished Report.
(ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1979, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; ocean tagging studies on west side of Kodiak Island; 1979 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, MIGRATION, COHO, SUBSISTENCE]

**Manthey,** Ken, Larry Malloy & Linda Wright. 1980. 1980 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 246pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1980, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; ocean tagging studies on west side of Kodiak Island; 1980 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, MIGRATION, COHO, SUBSISTENCE]

**Manthey,** Ken, Dave Prokopowich & Linda Wright. 1981. 1981 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 255pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1981, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; ocean tagging studies on west side of Kodiak Island; 1981 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village. -- [SOCKEYE, WEIR, MIGRATION, COHO, SUBSISTENCE]

**Manthey,** Ken, Dave Prokopowich & Linda Wright. 1982. 1982 annual management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 315pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1982, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; 1982 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village; Karluk pink and Chinook salmon. -- [SOCKEYE, WEIR, COHO, PINK, CHINOOK, SUBSISTENCE]

**Manthey,** Ken, Dave Prokopowich & Linda Wright. 1983. 1983 annual finfish management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 354pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1983, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; 1983 Karluk River weir operations; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village; Karluk pink and Chinook salmon. -- [SOCKEYE, WEIR, COHO, PINK, CHINOOK, SUBSISTENCE]

**Manthey,** Ken, Dave Prokopowich & JoAnn Strickert. 1984. 1984 annual finfish management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 338pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1984, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; 1984 Karluk River weir operations; Karluk sockeye salmon age composition and smolts; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village; Karluk pink and Chinook salmon. -- [SOCKEYE, WEIR, AGE, SMOLT, COHO, PINK, CHINOOK, SUBSISTENCE]

**Manthey,** Ken, Dave Prokopowich & JoAnn Strickert. 1985. 1985 annual finfish management report, Kodiak Management Area. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak. Unpublished Report. 415pp. (ADFG Library, Douglas, AK)

Annual summary report of the Kodiak Island fisheries in 1985, including Karluk's sockeye salmon runs; Karluk sockeye salmon management plan; 1985 Karluk River weir operations; Karluk sockeye salmon age composition and smolts; Karluk Lagoon coho salmon fishery; Karluk ADFG employees; subsistence fishing at Karluk Village; Karluk pink and Chinook salmon. -- [SOCKEYE, WEIR, AGE, SMOLT, COHO, PINK, CHINOOK, SUBSISTENCE]

**McCready,** Alan. 1958. Karluk Lake adult pen study. Unpublished Report. 13 pp.
(File "Adult pen study 1958", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Report on the 1958 attempts to use adult salmon pens to measure the productive capacity of 4 sockeye spawning habitats at Karluk Lake and River (lateral and terminal streams, lake beaches, and outlet river); spawning activity; adult spawner life span; female spawner egg retention; egg loss at redd construction; egg survival. -- [SOCKEYE, EGGS, SPAWNING]

**McIntyre,** John D. 1980. Further consideration of causes for decline of Karluk sockeye salmon. US Fish and Wildlife Service, National Fisheries Research Center, Seattle (September 18, 1980). Unpublished Report. 29pp.
(Copy from USFWS National Fisheries Research Center, Seattle, WA)

Summary and evaluation of past knowledge about Karluk's sockeye salmon; effects of commercial fishery and Karluk River weir on the sockeye runs; discussion of how changes in the Karluk fish communities have affected the sockeye runs; removal of adult sockeye in the commercial fishery has let competitor fishes such as sticklebacks increase in abundance; recommendation to rehabilitate the sockeye runs by controlling sticklebacks, managing harvests, and artificial propagation. -- [SOCKEYE, MANAGEMENT, STICKLEBACKS]

**Meyer,** Marcus W. 1944. Annual report, Kodiak District, 1944. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 52pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1944, including Karluk's sockeye salmon runs; Karluk FWS employees; 1944 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Meyer,** Marcus W. 1945. Annual report, Kodiak District, 1945. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 90pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1945, including Karluk's sockeye salmon runs. -- [SOCKEYE]

**Meyer,** Marcus W. 1946. Annual report, Kodiak District, 1946. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 63pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1946, including Karluk's sockeye salmon runs. -- [SOCKEYE]

**Meyer,** Marcus W. 1947. Annual report, Kodiak District, 1947. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 55pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1947, including Karluk's sockeye salmon runs. -- [SOCKEYE]

**Meyer,** Marcus W. 1948. Annual report, Kodiak District, 1948. US Department of the Interior, Fish and Wildlife Service, Alaska Fisheries Division. Unpublished Report. 45pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1948, including Karluk's sockeye salmon runs. -- [SOCKEYE]

**Morton,** Mark. c. 1942. No Title. Unpublished Report. 3pp.
(File "Research Program Karluk 1933-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK).

A 1942 summary of Morton's ideas (given to Allan C. DeLacy) on fisheries research projects at Karluk; suggestions included (1) enhancement of juvenile sockeye production from Karluk Lake, (2) setting fixed escapement goals, (3) construction of a year-round research station at Karluk Lake, (4) installation of the Karluk River weir near the lake's outlet, (5) operation of a small hatchery at Karluk Lake, and (6) a detailed list of

research questions which need to be answered for sockeye adults, eggs, juveniles, and smolts. -- [SOCKEYE, ADULTS, EGGS, JUVENILES, SMOLT, DOLLY VARDEN, STICKLEBACKS, WEIR, MANAGEMENT, THEORIES OF DECLINE]

**Morton,** William M. 1940s. Suggestions for a long-range Alaskan stream improvement program, to Project Leaders of Alaska Division at Seattle Laboratory. Unpublished Report. 8pp.
(File "Proposed Research", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK).

General discussion of rehabilitation and improvement methods for Alaskan salmon; stream and lake surveys; special obligation to rehabilitate Karluk's sockeye salmon runs. -- [SOCKEYE, MANAGEMENT]

**Murray,** John B. 1985. Karluk River steelhead (pp. 70-74). *In:* Frank D. Van Hulle (ed.), Alaska steelhead workshop, 1985. Alaska Department of Fish and Game, Division of Sport Fish, Juneau (April 25, 1985). Unpublished Report. 124pp.
(Copy from Gary Sanders, Alaska Department of Fish and Game, Division of Sport Fish, Juneau, AK)

Brief summary of the status of Karluk River steelhead; migration timing; age and size; 16-43% repeat spawners; influence of Karluk River weir on downstream migration and mortality; $50 use fee implemented by the Native corporation. -- [STEELHEAD, AGE, SIZE, MIGRATION, SPAWNING, WEIR]

**Nelson,** Patricia A. 1998. Long term variability in freshwater growth of early run sockeye salmon, Karluk Lake, Alaska. Masters Thesis proposal, Juneau Center, School of Fisheries and Ocean Science, University of Alaska, Fairbanks. Unpublished Report. 26pp.

Age composition of Karluk's sockeye salmon. -- [SOCKEYE, AGE]

**Nelson,** Philip R. 1953. Basic effects of water fertilization experiments at Bare Lake during the years 1950-1952. US Fish and Wildlife Service, Regional Office, Juneau, AK. Unpublished Report. 9pp.
(Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Discussion of the 1952 Bare Lake fertilization program and summary of the results from 1950 and 1951. -- [SOCKEYE, FERTILIZATION, LIMNOLOGY]

**Nelson,** Philip R. c. 1953. Plan for measuring the mortality of red salmon caused by gill nets. Unpublished Report. 7pp.
(File "Gill Net Experiments Planning", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Research proposal and methods for measuring the mortality of Karluk's sockeye salmon injured by gill nets. -- [SOCKEYE]

**Nelson,** Philip R. 1955-1956. Monthly report of activities (October 1955-April 1956). US Fish and Wildlife Service, Seattle, WA. 7 Unpublished Reports.
(File "Monthly Report of Activities", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief summary reports of sockeye salmon research at Karluk and Bare Lakes (October 1955-April 1956). -- [SOCKEYE]

**Nelson,** Philip R. 1956. Kodiak Island red salmon investigations. Plan of operations for 1956 field season. US Department of the Interior, Fish and Wildlife Service, Administration of Alaska Commercial Fisheries (May 29, 1956). Unpublished Report. 5pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1956 field season. -- [SOCKEYE, ADULTS, SMOLT, LIMNOLOGY]

**Nicholson,** Larry D. 1978. A summary of all known red salmon (*Oncorhynchus nerka*) tagging conducted on Kodiak Island, Alaska. Alaska Department of Fish and Game, Kodiak. Unpublished Report.
(ADFG Office Files, Kodiak, AK)

Important summary report of all known sockeye salmon tagging studies in the Kodiak Island area; ocean migration routes of Karluk's sockeye salmon along the coast of Kodiak Island. -- [SOCKEYE, MIGRATION]

**Noerenberg,** Wallace H. 1950. A review of the red salmon runs and red salmon spawning grounds other than Karluk in the Kodiak Island area. Kodiak Island, Fisheries Research Institute, University of Washington, Seattle, WA (May, 1950). Unpublished Report. 62pp.
(KP F4.N68 1949, Accession Number 494, FRI Archives, University of Washington, Seattle, WA)

Broad overview discussion of the sockeye salmon runs in many lake-river systems, other than Karluk, in the Kodiak Island area; historical comments and physical descriptions of the river-lake systems (Afognak, Uganik, Little, Kizhuyak, Buskin, Saltery, Pasagshak, Kiliuda, Alitak, Kaguyak, Red, and Alaska Peninsula); comments on effects of 1912 Katmai volcanic eruption on the salmon fisheries; brief comments on the effect of traps and purse seines on the Karluk District sockeye salmon catches. -- [SOCKEYE, SPAWNING SURVEYS, COMMERCIAL CATCH]

**Noerenberg,** Wallace H. 1950. Red salmon spawning ground surveys of 1950 in the Kodiak-Afognak Islands area. Kodiak Island, Fisheries Research Institute, University of Washington, Seattle, WA (November, 1950). Unpublished Report. 79pp.
( KP F4.N68 1950, Accession Number 377, Fisheries Research Institute Archives, University of Washington, Seattle, WA)

Aerial and ground surveys of sockeye spawning sites in the Kodiak and Afognak Islands area (Afognak, Uganik, Little, Red, Olga Bay, Brown's) in 1950, Karluk not included. -- [SOCKEYE, SPAWNING]

**Noerenberg,** Wallace H. 1952. Weather observations, 1949. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Data.
(KP A2A 1949, Accession Number 428, FRI Archives, University of Washington, Seattle, WA)

Weather observations from Karluk Lake and its tributaries in 1949 (17-31 July); sky conditions, air and water temperatures, wind direction and speed. -- [WEATHER, LIMNOLOGY]

**Olson,** Robert A. & Richard L. Wilmot. 1989. Karluk Lake sockeye salmon and threespine stickleback studies (1982 to 1988). US Fish and Wildlife Service, Region 8, Alaska Fish and Wildlife Research Center, Anchorage (29 June 1989). Unpublished Report. 56pp.
(Copy from Richard L. Wilmot, ABL, Auke Bay, AK)

Report summarizing the 1985-1988 stickleback collections from the littoral and limnetic zone of Karluk, Thumb, and O'Malley lakes; stickleback exclusion experiment in O'Malley Lake in 1985-1987; relative catch abundance of sticklebacks and juvenile sockeye; seasonal movements between habitats; spawning migration; stickleback ages 0, 1, 2, 3, 4; many length-frequency diagrams; growth variation by location, year, and density. -- [STICKLEBACK, AGE, GROWTH, SOCKEYE]

**Owen,** John B. 1957. Salmon survival investigations. Kodiak Island red salmon investigations. Plan of operations for 1957 field season. US Department of the Interior, Fish and Wildlife Service, Administration of Alaska Commercial Fisheries (May 14, 1957). Unpublished Report. 11pp.
(ABL Office Files, Auke Bay, AK)

Plan for the sockeye salmon studies at Karluk Lake in the 1957 field season. -- [SOCKEYE, ADULTS, SPAWNING, FECUNDITY, SMOLT, PREDATION, BEARS, LIMNOLOGY, FERTILIZATION]

**Owen,** John B. 1957. Karluk Lake weekly reports (12 August-21 September 1957). US Fish and Wildlife Service, Karluk Lake, AK. 2 Unpublished Reports.
(File "Karluk Weekly Reports, 1957-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief summaries of weekly field research at Karluk Lake (12 August-21 September 1957); spawning ground comparison of lateral and terminal streams; physical description of Karluk Lake tributaries; sockeye salmon egg studies; Dolly Varden food habits. -- [SOCKEYE, EGGS, SPAWNING, DOLLY VARDEN, PHYSICAL]

**Owen,** John B. 1958. Outline of 1958 proposed research at Karluk Lake. Unpublished Report. 3pp.
(Copy 1: ABL Office Files, Auke Bay, AK. --- Copy 2: File "Egg Pump Data and Analysis, 1958-1959", Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief history of the Karluk's sockeye salmon fishery and research; recent research; results of 1957 field season and tentative research conclusions; 1958 research objectives; rehabilitation plan. -- [SOCKEYE]

**Owen,** John B. 1958. Red salmon survival studies in Karluk Lake, Kodiak Island, 1957. Field Report. Salmon survival investigations. US Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region (February 18, 1958). Unpublished Report. 27pp.
(ABL Office Files, Auke Bay, AK)

Summary report of the 1957 field season at Karluk and Bare Lakes; escapement counts at weir; collection of racial samples; stream surveys; classification and seasonal use of spawning habitats; spawning areas; spawning behavior; egg survival; sculpin life history; smolt migration; Bare Lake post-fertilization studies. -- [SOCKEYE, SPAWNING, PHYSICAL, EGGS, SMOLT, SCULPINS]

**Owen,** John B. 1958. Karluk Lake weekly reports (22 June-27 September 1958). US Fish and Wildlife Service, Karluk Lake, AK. 8 Unpublished Reports.
(Copy 1: File "Correspondence (Karluk) 1950-1958", Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK. --- Copy 2: File "Karluk Weekly Reports, 1957-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Weekly summaries of sockeye salmon research at Karluk Lake (22 June-27 September 1958); limnological sampling; spawning ground studies; salmon counting tower in Karluk River; sockeye salmon egg studies. -- [SOCKEYE, EGGS, SPAWNING, WEIR, LIMNOLOGY]

**Owen,** John B. 1959. Notes on seminar on Rounsefell' paper on Karluk Lake given by John B. Owen. Unpublished Report. 12pp.
(File "Karluk Research, 1959", Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of George A. Rounsefell's 1958 paper on Karluk's sockeye salmon by John B. Owen, Harry, Wilimovsky, Thorsteinson, Charles Y. Conkle, Harry Rietze, Ted Merrell, Whitesel, Charles Di Costanzo, Wilbur Hartman, and Bouchard. -- [SOCKEYE, THEORIES OF DECLINE]

**Owen,** John B. c. 1960. No Title. Unpublished Report. 6pp.
(File "Karluk Research, 1959", Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Preliminary outline of facts, ideas, and references that eventually were presented in the Owen et al. (1962) paper. -- [SOCKEYE, THEORIES OF DECLINE]

**Petry,** Charles. 1942. Annual report of operations in the Kodiak District, 1942. US Department of the Interior, Fish and Wildlife Service. Unpublished Report. 56pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1942, including Karluk's sockeye salmon run; Karluk FWS employees; 1942 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Raleigh,** Robert F. 1956. Kodiak Island red salmon investigations, 1956 field season report. US Fish and Wildlife Service (December 31, 1956). Unpublished Report. 16pp.
(ABL Office Files, Auke Bay, AK)

Summary report on the research of the 1956 field season at Karluk and Bare Lakes; observations of spawning behavior in lateral streams; bear predation on sockeye salmon; smolt behavior at passing Karluk River weir; limnological data collected (water temperatures, Secchi disk, plankton, water chemistry, weather data); collection of sockeye adults and smolts and adult pink salmon for racial studies; Bare lake studies (fertilization, limnology measurements, adult escapements, fecundity, smolt migration, food habits, and abundance of coho salmon and Dolly Varden). -- [SOCKEYE, SPAWNING, BEAR, SMOLT, LIMNOLOGY, FERTILIZATION, SUBPOPULATIONS, PINK, COHO, DOLLY VARDEN]

**Raleigh,** Robert F. 1958. Karluk Lake field reports (4 April-7 June 1958). US Fish and Wildlife Service, Karluk Lake, AK. 6 Unpublished Reports.
(File "Karluk Weekly Reports, 1957-1958", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief summary of sockeye research at Karluk Lake (4 April-7 June 1958); mild weather; sockeye fry migration into Karluk Lake occurred prior to 4 April; Dolly Varden predation on sockeye fry not evident in early April; observed sockeye fry migrating up Karluk River into lake; sockeye smolt traps washed out; 1958 counting tower operations in the Karluk River. -- [SOCKEYE, FRY, SMOLT, DOLLY VARDEN, WEIR]

**Raleigh,** Robert F. 1962. Karluk Lake Project Reports. Unpublished Reports.
(File "Monthly and Quarterly Reports, 1961", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief monthly reports of research on Karluk's sockeye salmon. -- [SOCKEYE, FRY, SMOLT, WEIR, LIMNOLOGY]

**Raleigh,** Robert F. & John B. Owen. 1958. Salmon survival investigations. Kodiak Island red salmon investigations. Plan of operations for 1958 field season. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region (May 21, 1958). Unpublished Report. 13pp.
(ABL Office Files, Auke Bay, AK)

Summary report of planned fisheries research for the 1958 field season at Karluk and Bare Lakes; use of counting tower for escapement counts; seasonal use of spawning habitats; physical aspects of spawning habitats; spawner length of life; spawning pen studies; egg deposition, fry migration and predation; studies of juvenile sockeye in Karluk Lake; smolt migration. -- [SOCKEYE, WEIR, SPAWNING, EGGS, JUVENILES, SMOLT]

**Raleigh,** Robert F. & Charles Y. Conkle. 1960. Kodiak red salmon investigations. Plan of operations, April through October, 1960. US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Alaska Region (March 10, 1960). Unpublished Report. 12pp.
(ABL Office Files, Auke Bay, AK)

Summary report of planned fisheries research for the 1960 field season at Karluk and Bare Lakes; fry survival and migration in two types of spawning habitats; seasonal use of spawning habitats; study of sockeye subpopulations; smolt migrations. -- [SOCKEYE, JUVENILES, SPAWNING, SMOLT, SUBPOPULATIONS]

**Raleigh,** Robert F. & John B. Owen. 1969. Heterogeneity, homing, and selective mortality of sockeye salmon in Karluk River, Alaska. US Bureau of Commercial Fisheries, Biological Laboratory, Seattle, WA. Unpublished Report. 25pp.
(Copy from Robert F. Raleigh, Council, ID)

Important detailed discussion of discrete spawning subpopulations in Karluk's sockeye run and the possible effect of selective fishing mortality; heterogeneity of spawning habitats and spawning runs. -- [SOCKEYE, SUBPOPULATIONS, THEORIES OF DECLINE]

**Rich,** Willis H. 1926. Map of Karluk Lake. Map.
(File "Charts", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Bathymetric map (25 x 48 cm) of Karluk Lake based on the reconnaissance survey of 1926; Karluk Lake tributary streams and lakes (Note: a smaller version of this map was published in Gilbert and Rich 1927). -- [LIMNOLOGY, PHYSICAL]

**Rich,** Willis H. 1927. Observations on the spawning grounds. Unpublished Handwritten Report. 2pp.
(File "Karluk 1926", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Observations of the spawning grounds at Karluk Lake in July-August, 1927; comparison of 1927 run with the very large 1926 run; comparison of 1926 and 1927 climate and water temperatures at Karluk Lake. -- [SOCKEYE, SPAWNING, LIMNOLOGY]

**Rich,** Willis H. No Date. Rich's comments on Karluk fertility. Unpublished Note. 1 pp.
(File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Brief comments on the limnological factors that influence survival of young sockeye in Karluk Lake; past limnological sampling was inadequate; questions if phosphorus is a limiting factor; the need for better data on sockeye smolt production. -- [SOCKEYE, LIMNOLOGY, SMOLT]

**Robertson,** T. c. 1975. Rehabilitation of sockeye salmon stocks using artificial propagation techniques. Unpublished Report. 35pp.
(Copy in the personal papers of Richard Gard, Juneau, AK)

Summary report on the Karluk system and its sockeye salmon runs; discussion of rehabilitating the sockeye runs in different spawning habitats by planting fry; proposed the use of instream egg incubators and 4 hatcheries at Karluk Lake (Karluk River, Lower Thumb River, Canyon Creek, and O'Malley River). -- [SOCKEYE, HATCHERY]

**Rounsefell,** George A. 1934. Report on scientific activities of the US Bureau of Fisheries in Alaska and the Pacific Northwest. In response to the request of July 25th by The Honorable Daniel C. Roper, Secretary of Commerce. Unpublished Report. 13pp.
(File "Report on scientific activities of the US Bureau of Fisheries in Alaska and the Pacific Northwest - Rounsefell - 1934," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Summary report of the salmon research done by the US Bureau of Fisheries in Alaska and the Pacific Northwest, including results of sockeye and pink salmon studies at Karluk; Karluk River weir; returns from known escapements of Karluk's sockeye salmon; age of adult and juvenile sockeye salmon; interactions of Karluk's sockeye and pink salmon. -- [SOCKEYE, AGE, PINK, WEIR]

**Rounsefell,** George A. & Richard F. Shuman. 1952. Population dynamics of the sockeye salmon, *Oncorhynchus nerka*, of Karluk River, Alaska. US Department of the Interior, Fish and Wildlife Service, Woods Hole, MA. Unpublished Report. 72pp. (Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Early draft report that eventually led to Rounsefell's 1958 paper on Karluk's sockeye salmon; population dynamics of sockeye runs using 1921-1950 data on escapements and catches; age composition of run; size, fecundity, and sex ratio of adults; size variation of smolts; effect of ocean temperature on size at maturity; seasonal distribution of the run; smolt size influenced by water temperature and salmon carcasses; Karluk's sockeye salmon one population; recommended limnological studies and artificial fertilization of lake. -- [SOCKEYE, AGE, SEX, SIZE, SMOLT, SEX, FECUNDITY, LIMNOLOGY, FERTILIZATION]

**Rutter,** Cloudsley Louis. 1903. Field notes by Cloudsley Rutter on his Karluk work of 1903. Unpublished Notes. 48pp.
(Barton Warren Evermann papers, Box 130, Library Special Collections, California Academy of Sciences, San Francisco, CA)

Important early scientific study and observations of Karluk's fishes in the summer of 1903 by the US Fish Commission fishery biologist, Cloudsley L. Rutter, and his assistant Milo H. Spaulding; research primarily on adult and juvenile sockeye (saltwater migrations, freshwater movements, run timing, spawning locations and behavior, food habits, age, size, predators, and tagging studies); Dolly Varden abundance and food habits; discussion of potential for a hatchery at Karluk Lake. – (Note: Since Rutter died in November 1903, his Karluk studies were published by Chamberlain in 1907). -- [SOCKEYE, AGE, SIZE, FOOD, RUN TIMING, MIGRATION, SPAWNING, HATCHERY, DOLLY VARDEN]

**Rutter,** Cloudsley Louis. 1903. Notes made by Mr. Cloudsley Rutter at Karluk, season of 1903 (Also titled "Notes on salmon and other fishes, Karluk, 1903). Unpublished Notes. 7pp.
(Barton Warren Evermann papers, Box 130, Library Special Collections, California Academy of Sciences, San Francisco, CA)

Early observations on Karluk fishes other than sockeye salmon; brief comments on pink, Chinook, chum, and coho salmon, steelhead, stickleback (migrations), and also a few marine fish species. -- [PINK, CHINOOK, CHUM, COHO, STEELHEAD, STICKLEBACK]

**Ryser,** Alice. c. 1990. Karluk Salmon Fishing, 1889-1989. Kodiak Historical Society, Baranov Museum, Kodiak, AK. Unpublished Photographic Album.
(Baranov Museum/Erskine House Collection, Kodiak, AK)

Loose-leaf album containing 52 historical photographs of the Karluk Spit, Lagoon, cannery buildings, and fishing activities in the vicinity of Karluk. -- [SOCKEYE, CANNERIES]

**Sanders,** Gary. 1985. Summary of age, sex, run timing, and length-weight characteristics of Alaska steelhead (pp. 29-49). In: Frank D. Van Hulle, Alaska steelhead workshop, 1985. Alaska Department of Fish and Game, Division of Sport Fish, Juneau (April 25, 1985). Unpublished Report. 124pp.
(Copy from Gary Sanders, ADFG, Division of Sport Fish, Juneau, AK)

Summary report on the biological characteristics of Karluk River steelhead, including age, sex, migration timing, and length-weight; common ages = 3.R, 3.2, and 2.2; in-migration starts in mid August and continues

through October; a few steelhead enter Karluk River in spring; out-migration occurs in late-May and June; out-migration slowed by Karluk River weir; mean length = 730 mm, mean weight = 3.68 kg. -- [STEELHEAD, AGE, SIZE, MIGRATION, WEIR]

**Shuman,** Richard F. 1945. Observations on escapements and returns of red salmon at the Karluk River. US Fish and Wildlife Service, Division of Fishery Biology. Unpublished Report. 17pp.
(Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Analysis of escapements, returns, and surpluses of Karluk's sockeye salmon for 19 years (1921-1939); smaller escapements produced larger surpluses; recommended a fixed escapement at Karluk of 350,000-500,000, but never more than 750,000; suggested changes in the White Act of 1924. -- [SOCKEYE, ESCAPEMENTS, RETURNS]

**Shuman,** Richard F. 1949. Map of tractor route from Karluk River Portage to Karluk Lake outlet. Map.
(File "Karluk Pictures and Maps", Box 103, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Map traced in ink from 1944 aerial photographs and showing two tractor routes taken from the Karluk River Portage to Karluk Lake in 1944 and June 1949; map shows Karluk Lake and Karluk River downstream to the Portage, Larsen Bay, bog areas, small lakes, and several tributary streams (Silver Salmon Creek, Spring Creek, and Moraine Creek). -- [PHYSICAL]

**Shuman,** Richard F. 1950. Biological studies of the red salmon *Oncorhynchus nerka* (Walbaum) of the Karluk River, Alaska. A report on the trends in abundance, with a discussion of the ecological factors involved. Unpublished Report. 73pp.
(Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK)

Important summary report on Karluk's sockeye salmon in the late 1940s; analysis of run statistics for 1921-1948; recommended escapement goal of 700,000 (350,000 spring run + 350,000 fall run); recognition that spring and fall runs are distinct subpopulations; seasonal run distribution; seasonal use of spawning habitats by sockeye; discussion of factors affecting freshwater survival of juvenile sockeye – weather, predators, competitors, and food supply; discussion of importance of salmon-carcass nutrients to Karluk Lake's productivity; recommendation to fertilize Karluk Lake. -- [SOCKEYE, ESCAPEMENTS, RETURNS, SUBPOPULATIONS, RUN DISTRIBUTION, SPAWNING HABITATS, FOOD SUPPLY, LIMNOLOGY, FERTILIZATION, THEORIES OF DECLINE]

**Shuman,** Richard F. 1951. Trends in abundance of Karluk River red salmon with a discussion of ecological factors. Manuscript prepared for Fishery Bulletin 71, Volume 52. Unpublished Report. 56pp.
(ABL Office Files, Auke Bay, AK – Note: 1945 Title: "Observations on escapements and returns of red salmon at the Karluk River". 1948 Title: "Production of red salmon, *Oncorhynchus nerka* (Walbaum), in the Karluk River, Alaska". 1950 Title: "Biological studies of the red salmon *Oncorhynchus nerka* (Walbaum) of the Karluk River, Alaska. A report on the trends in abundance, with a discussion of the ecological factors involved.")

Important summary report on Karluk's sockeye salmon in the late 1940s; analysis of run statistics for 1921-1948; recommended escapement goal of 700,000 (350,000 spring run + 350,000 fall run); recognition that spring and fall runs are distinct subpopulations; seasonal run distribution; seasonal use of spawning habitats by sockeye; discussion of factors affecting freshwater survival of juvenile sockeye – weather, predators, competitors, and food supply; discussion of importance of salmon-carcass nutrients to Karluk Lake productivity; recommendation to fertilize Karluk Lake. -- [SOCKEYE, ESCAPEMENTS, RETURNS, SUBPOPULATIONS, RUN DISTRIBUTION, SPAWNING HABITATS, FOOD SUPPLY, LIMNOLOGY, FERTILIZATION, THEORIES OF DECLINE]

**Shuman,** Richard F. & Philip R. Nelson. 1950. Further studies of bear depredations on red salmon spawning populations in the Karluk River system, 1948. US Fish and Wildlife Service. Unpublished Report. 33pp.
(File "Further studies of bear predations on red salmon spawning populations - Shuman", Box 12, Raw Data, Logs, Notes, and Studies, Auke Bay Fisheries Laboratory, Auke Bay, Alaska, 1901-1970, RG 370, NARA, Anchorage, AK)

Report on the 1948 bear predation on sockeye salmon at Moraine and Halfway Creeks, a follow-up to the study done in 1947 at Moraine Creek; bear predation behavior; attempts to determine the number of unspawned salmon killed by bears; estimated 33.5% loss of unspawned salmon; suggested bear control. -- [SOCKEYE, BEARS, PREDATION]

**Simon,** Robert J. & Robert S. Roys. 1960. Kodiak area annual report, 1960. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 31pp.
(Folder 1, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1960, including Karluk's sockeye salmon runs; 1960 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Dexter F. Lall & Robert S. Roys. 1962. Kodiak area annual report, 1962. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 51pp.
(Folder 3, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1962, including Karluk's sockeye salmon runs; 1962 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Dexter F. Lall & Larry B. Jennings. 1963. Kodiak area annual report, 1963. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 43pp.
(Folder 4, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1963, including Karluk's sockeye salmon runs; 1963 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Dexter F. Lall & Larry B. Jennings. 1964. Kodiak area annual report, 1964. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 115pp.
(Folder 5, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1964, including Karluk's sockeye salmon runs; 1964 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Dexter F. Lall & Larry B. Jennings. 1965. Kodiak area annual report, 1965. Alaska Department of Fish and Game, Commercial Fisheries Division, Kodiak. Unpublished Report. 88pp.
(Folder 6, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1965, including Karluk's sockeye salmon runs; 1965 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Dexter F. Lall & Larry B. Jennings. c.1965. Karluk, a report for the Governor's Office. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau, AK. Unpublished Report. 37pp.
(ADFG Library, Douglas, AK)

Summary report on Karluk's sockeye salmon; history of Karluk's sockeye fishery and research efforts to reverse declining abundance; review of Karluk sockeye management since Alaska statehood. -- [SOCKEYE]

**Simon,** Robert J., Dexter F. Lall, Paul C. Pedersen & Melvan C. Morris, Jr. 1966 Kodiak area annual report, 1966. Alaska Department of Fish and Game, Division of Commercial Fisheries. Unpublished Report. 82pp.
(Folder 7, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1966, including Karluk's sockeye salmon runs; 1966 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Jack Lechner, Peter Jackson & Martin Eaton. 1968. Kodiak area management annual report, 1968. Alaska Department of Fish and Game. Unpublished Report.
(Folder 9, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1968, including Karluk's sockeye salmon runs; 1968 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Simon,** Robert J., Jack Lechner, Martin F. Eaton & Peter B. Jackson. 1969. Kodiak area management annual report, 1969. Alaska Department of Fish and Game. Unpublished Report.
(Folder 10, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1969, including Karluk's sockeye salmon runs; 1969 Karluk River weir operations; ocean tagging study at Uganik. -- [SOCKEYE, MIGRATION, WEIR]

**Simon,** Robert J., Jack Lechner, Martin F. Eaton, Peter B. Jackson & Louis A. Gwartney. 1970. Kodiak area management annual report, 1970. Alaska Department of Fish and Game. Unpublished Report.
(Folder 11, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1970, including Karluk's sockeye salmon runs;1970 Karluk River weir operations; ocean tagging study along west side of Kodiak Island; important travel time tagging study of Karluk River adult sockeye. -- [SOCKEYE, MIGRATION, WEIR]

**Simon,** Robert J., Jack Lechner, Martin F. Eaton & Louis A. Gwartney. 1971. Kodiak area management annual report, 1971. Alaska Department of Fish and Game. Unpublished Report.
(Folder 12, Box 7183, Series 572, Area Annual Reports 1931-1979, RG 11, ASA, Juneau, AK)

Annual summary report of the Kodiak Island fisheries in 1971, including Karluk's sockeye salmon runs; 1971 Karluk River weir operations; Karluk ADFG employees. -- [SOCKEYE, WEIR]

**Stockley,** Clint. 1996. Laura and Frazer Lakes - The beginning. Memoirs of Clint Stockley. Unpublished Report. 10pp
(Copy 1: ADFG Library, Douglas, AK. --- Copy 2: SH20.S86A3, ARLIS, Anchorage, AK)

Personal memoir of exploring the fishery potential of Frazer Lake in 1948 and planting sockeye salmon eggs from Karluk Lake in 1951-1952; description of diverting Falls Creek into its old channel discharging into the upper O'Malley River. -- [SOCKEYE, EGGS]

**Taft,** Alan C. c. 1928. Karluk red salmon investigations – 1927-1928. Unpublished Report. 35pp.
(File "Karluk Field Notes Taft 1927-1928", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Detailed report of the sockeye salmon studies at Karluk from 1921 to 1928; research data clearly presented in many tables; weekly variation of age composition of adult sockeye through the season, 1922-1928; return from known escapements, 1921-1923; run composition (age, sex, length) of adult sockeye, 1927-1928; details of the smolt marking study (timing, number, ages, length) in 1926-1928. – (Note: this report is closely tied with the unpublished report by Taft c. 1929. The figures and tables may have been intended for the 1929 report). -- [SOCKEYE, AGE, SEX, SIZE, SMOLT]

**Taft,** Alan C. c. 1929. Investigations concerning the red-salmon runs to the Karluk River, Alaska. II. 1927-1928. Unpublished Report. 57pp.
(File "Karluk Field Notes Taft 1927-1928", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Important detailed discussion of the sockeye salmon studies at Karluk in 1927-1928; weekly variation of age composition of adult sockeye through the season, 1922-1928; return from known escapements, 1921-1923; run composition (age, sex, length) of adult sockeye, 1927-1928; details of the smolt marking study (timing, number, ages, length) in 1926-1928; observations of the Karluk Lake spawning grounds, 1927-1928. – (Note: this report is closely tied with the Taft c. 1928 unpublished report. The 1929 report was prepared for publication and was intended to be a sequel to the paper by Gilbert & Rich (1927). Besides Taft, other intended co-authors were possibly, Charles H. Gilbert, Willis H. Rich, and J. Thomas Barnaby. The NARA copy of this report contains editorial comments that appear to be those of Willis H. Rich). -- [SOCKEYE, AGE, SEX, SIZE, SMOLT, SPAWNING]

**Terrell,** Terry T. 1982. Some observations on the trophic history of Karluk Lake. US Fish and Wildlife Service, Seattle. Unpublished Report. 18pp.
(Location unknown)

Not examine this report, but it apparently discusses the past productivity of Karluk Lake based on analysis of diatoms in a bottom-sediment core sample. -- [SOCKEYE, LIMNOLOGY]

**Terrell,** Terry T. 1983. No Title. US Fish and Wildlife Service, Seattle. Unpublished Report. 10pp.
(Copy from Terry Terrell, US Fish and Wildlife Service, Denver, CO)

Ratios of araphidinae (A) to centric (C) diatoms in Karluk Lake sediment cores were used to assess the past productivity of the lake; A/C ratios indicated variable production over time; cycles observed at intervals of 55-

75 years and at 10-15 years; suggestion that Karluk Lake trophic status is controlled by sockeye salmon escapement, but not since the 1920s; radiocarbon dating of lake sediments. -- [SOCKEYE, LIMNOLOGY]

**Thompson,** Clark S. c. 1963. Studies of the Dolly Varden (*Salvelinus malma* Walbaum) at Bare Lake, Alaska. US Fish and Wildlife Service, Montlake Laboratory, Seattle, WA. Unpublished Report. 17pp.
(Copy from Clark S. Thompson, Shelton, WA – Note: 1956 Title: "Progress report on studies concerning Dolly Varden (*Salvelinus malma* Walbaum) at Bare Lake, Alaska)

Detailed report of a 1954-1955 Dolly Varden study at Bare Lake; Dolly Varden size distribution; Dolly Varden movements within Bare Lake determined by tagging; measurement of the 1955 Dolly Varden population size in Bare Lake at 4,200; food habits of 48 Dolly Varden and 51 juvenile sockeye; Dolly Varden predation on juvenile sockeye; winter food habits of 4 Dolly Varden and 13 juvenile sockeye in February 1955. -- [DOLLY VARDEN, SIZE, MIGRATION, FOOD, SOCKEYE]

**Troyer,** Willard A. 1958. Karluk Lake bear studies, 1958. US Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 14pp.
(ARLIS, Anchorage, AK)

Not examine this report; Karluk Lake bears. -- [BEARS]

**Troyer,** Will, et al. 1959. Karluk Lake bear studies, 1959. US Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 17pp.
(ARLIS, Anchorage, AK)

Not examine this report; Karluk Lake bears. -- [BEARS]

**Troyer,** Will & Dick Hensel. 1961. Karluk Lake bear studies, 1960. US Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report (31 March 1961). 21pp.
(ARLIS, Anchorage, AK)

Not examine this report; Karluk Lake bears. -- [BEARS]

**Troyer,** Will, et al. 1962. Karluk Lake bear studies, 1961. US Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report (21 April 1961). 52pp.
(ARLIS, Anchorage, AK)

Not examine this report; Karluk Lake bears. -- [BEARS]

**Troyer,** Will, et al. 1962. Karluk Lake bear studies, 1962. US Fish and Wildlife Service, Kodiak National Wildlife Refuge. Unpublished Report. 82pp.
(ARLIS, Anchorage, AK)

Not examine this report; Karluk Lake bears. -- [BEARS]

**Troyer,** Willard A. & Richard J. Hensel. c. 1967. The brown bear of Kodiak Island. US Bureau of Sport Fisheries and Wildlife, Branch of Wildlife Refuges, Kodiak. Unpublished Report. 233pp.
**(**ARLIS, Anchorage, AK)

Comprehensive summary of information on the habitat, life history, and management of Kodiak brown bears, including data from the Karluk Lake area; habitat, growth and development; age, population size, reproduction, movements, food habits, behavior, harvest, and bear-salmon relations; description of bear predation on sockeye salmon. -- [SOCKEYE, BEARS, PREDATION]

**Turner,** Charles. 1934. Report of operations, Kodiak -- Afognak Dist., 1934. Department of Commerce, Bureau of Fisheries. Unpublished Report. 49pp.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1934, including Karluk's sockeye salmon runs; sockeye smolt marking by Thomas Barnaby; Karluk BOF employees; 1934 Karluk River weir operations; estimate of escapement when weir not operating (22 August-17 September). -- [SOCKEYE, SMOLT, WEIR]

**Turner,** Charles. 1935. Report of operations, Kodiak -- Afognak Dist., 1935. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1935, including Karluk's sockeye salmon runs; BOF employees; 1935 Karluk River weir operations. -- [SOCKEYE, WEIR]

**Turner,** Charles. 1936. Report of operations, Kodiak -- Afognak Dist., 1936. Department of Commerce, Bureau of Fisheries. Unpublished Report.
(ABL Library Files, Auke Bay, AK)

Annual summary report of the Kodiak Island fisheries in 1936, including Karluk's sockeye salmon runs; Karluk BOF employees; 1936 Karluk River weir operations. -- [SOCKEYE, WEIR]

**US Fish and Wildlife Service.** 1985. Karluk Lake sockeye salmon studies 1984. Part I: Competition, predation, and lake fertility. Part II: Karluk Lake smolt outmigration - 1984. Draft. US Fish and Wildlife Service, Seattle National Fishery Research Center, Alaska Field Station. (January, 1985). Unpublished Report. 39pp.
(Copy 1: ADFG Office Files, Kodiak, AK. --- Copy 2: ARLIS, Anchorage, AK)

Progress report of the Karluk Lake studies of 1982-1984 – (1) sediment core analysis to determine past lake fertility, (2) charr predation on juvenile sockeye, (3) juvenile coho salmon predation on juvenile sockeye, (4) distribution and abundance of fishes (sockeye, stickleback, coho, and sculpins) in Karluk Lake's littoral, and (5) the 1984 sockeye smolt migration. -- [SOCKEYE, COHO, STICKLEBACK, DOLLY VARDEN, PREDATION, COMPETITION, LIMNOLOGY, SMOLT]

**US Fish and Wildlife Service.** 1986. The controlled addition of inorganic nitrogen and phosphorus into Karluk Lake. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Draft Environmental Assessment. Unpublished Report. 65pp.
(Copy 1: US Fish and Wildlife Service Files, Kodiak National Wildlife Refuge, Kodiak, AK. --- Copy 2: Alaska Department of Fish and Game Files, Soldotna, AK)

Environmental Impact Report on the proposed 1986-1990 fertilization of Karluk Lake by the ADFG; discussion of 7 alternative nutrient additions to Karluk Lake, including inorganic nitrogen and phosphorus, and increased escapements of pink salmon. -- [SOCKEYE, FERTILIZATION, LIMNOLOGY, PINK]

**US Fish and Wildlife Service.** 1987. Karluk River king salmon streamside creel census, May 27 to June 26, 1987. US Fish and Wildlife Service, Kodiak National Wildlife Refuge, Kodiak. Unpublished Report. 4pp.
(US Fish and Wildlife Service Files, Kodiak National Wildlife Refuge, Kodiak, AK)

Not examine this citation. -- [CHINOOK, SPORT FISHING]

**US Weather Bureau.** 1954-1969. Monthly weather sheets, Karluk Lake. Unpublished Data.
(FRI Archives, University of Washington, Seattle, WA)

Monthly weather records from the Karluk Lake station (May 1954-October 1969); daily maximum and minimum air temperatures, precipitation, wind speed and direction, and sky conditions; the weather station had different names (Karluk River, Karluk Lake, Karluk Lake Research Station, Karluk Lake No. 2). -- [WEATHER]

**Van Hulle,** Frank. 1981. Approximate size and condition of the Karluk River steelhead run. Alaska Department of Fish and Game, Division of Sport Fish, Kodiak (6 February 1981). Unpublished Report. 3pp.
(ADFG Office Files, Division of Sport Fish, Kodiak, AK)

Brief report of the age, size, and numbers of steelhead migrants counted at the Karluk River weir in 1976-1980; estimate Karluk's steelhead population at 2,000-10,000; proportion of initial and repeat spawners in 1972-1980; creel census; Karluk's steelhead population considered to be in good condition in 1981. -- [STEELHEAD, AGE, SIZE, MIGRATION, SPAWNING]

**Van Hulle,** Frank D. (ed.). 1985. Alaska steelhead workshop, 1985. Alaska Department of Fish and Game, Division of Sport Fish, Juneau (April 25, 1985). Unpublished Report. 124pp.
(Copy from Gary Sanders, Alaska Department of Fish and Game, Division of Sport Fish, Juneau, AK)

Conference report on Alaskan steelhead (held 25-26 February 1985, Anchorage, AK); biological data and status of Karluk River steelhead. -- [STEELHEAD, AGE, SIZE, MIGRATION, SPAWNING, WIEIR]

**Walker,** Charles E. 1954. Karluk young fish study, 1950-1954. Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report.
(KP F1.4W15 1950-54, Accession Number 716, FRI Archives, University of Washington, Seattle, WA)

Note: This citation is sometimes divided into two parts, with the second part further divided into 5 parts.
Karluk Young Fish Studies, 1950-1953
Karluk Young Fish Study, 1954
The red smolt migration at Karluk Lake, 1954. Pt. I
The red smolt migration at Karluk Lake, 1954. Pt. II –
Size and age analysis of red smolt migration.
Length frequency graphs of red smolts (unweighted).
Change in length of red migrants from live to preserved forms.
Smolt marking experiment.

Important study of the distribution, growth, and migration of sockeye salmon fry, fingerlings, and smolts in the Karluk River, Lake, and tributaries, 1950-1954; numerous length-frequency samples (May to October) from many locations; observations of upstream fry migration in the Karluk River; time of fry emergence from lateral and terminal streams; age and size composition and timing of the 1954 smolt migration; few observations on predation and parasites of juveniles. -- [SOCKEYE, JUVENILE, SMOLT, SIZE, AGE, MIGRATION, PARASITES]

**Walker,** Charles E. 1954. Comments on the life history of Karluk Lake stickleback (*Gasterosteus aculeatus*). Kodiak Island Research, Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report.
(KP F1.4W15 1950-54, FRI Archives, University of Washington, Seattle, WA)

This reference could not be found, but it is included in the FRI card catalogue of unpublished reports. -- [STICKLEBACK]

**Walker,** Charles E. 1955. Scale analysis, 1948-1953. University of Washington, Fisheries Research Institute, Kodiak Island Research. Unpublished Report.
(KP A5 1948-1953, FRI Archives, University of Washington, Seattle, WA)

Four brief studies of sockeye salmon scales at Karluk – (1) comparison of scales and otoliths for aging salmon and the effect of formalin on otoliths, (2) the accuracy of using spawning ground scales to determine saltwater age, (3) using scales to study freshwater growth differences of early and late run sockeye, and (4) using scales to compare freshwater growth of age 2- and 3-saltwater fish from the same brood year. -- [SOCKEYE, SCALES]

**Walker,** Charles E. 1956. Age analysis of the Karluk red salmon runs, 1922, 1924-1936, and 1952-1955. Fisheries Research Institute, University of Washington, Seattle, WA (January 31, 1956). Unpublished Report. 29pp.
(KP A4.W15 1955, Accession Number 881, FRI Archives, University of Washington, Seattle, WA)

Age analysis of Karluk's sockeye salmon – (1) the numbers in each age group of returning adults for past years, (2) comparison of sockeye ages measured by FWS and FRI biologists in 1952 based on independent sampling of the escapement, and (3) comparison of scales and otoliths for aging salmon. -- [SOCKEYE, AGE, SCALE]

**Walker,** Charles E. 1956. Karluk young fish study – scale graphs, 1950-1954. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report.
(KP F1.3 1950-1954, Accession Number 540, FRI Archives, University of Washington, Seattle, WA)

Many length-frequency graphs and scale curves for Karluk's juvenile sockeye salmon; photographs of juvenile scales. -- [SOCKEYE, JUVENILES, AGE, SCALE]

**Walker,** Charles E. 1959. The enumeration of the Karluk red salmon smolt run in 1954. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report. 15pp.
(FRI Archives, University of Washington, Seattle, WA)

Description of the methods used to estimate the 1954 sockeye smolt migration at the Karluk River weir; design and operation of the smolt traps; daily smolt catches (23 May-28 June); age and length of smolts. -- [SOCKEYE, SMOLT, AGE, SIZE]

**Walker,** Charles E. & Donald E. Bevan. 1955. Observations on the biology of the red salmon in the Karluk watershed. Fisheries Research Institute, University of Washington, Seattle, WA. Unpublished Report.
(Copy not located, but likely present in FRI Archives, University of Washington, Seattle, WA)

Apparently, this is a summary report of all FRI studies on Karluk's sockeye salmon in the 1940s-1950s. It was cited in Van Cleve & Bevan (1973) -- (Note: This may be the summary report that Walker claimed had only 3 original copies prepared for Walker, Bevan, and FWS biologist Robert F. Raleigh. Upon inquiry in 1997, both Walker and Raleigh had lost their copies of this report). -- [SOCKEYE]

**Walker,** Charles E. & Donald E. Bevan. c. 1968. Factors possibly contributing to the condition of the Karluk sockeye salmon run. Unpublished Handwritten Report. 18pp.
(FRI Archives, University of Washington, Seattle, WA)

Discussion of 3 factors that possibly contributed to the decline of Karluk's sockeye salmon runs – (1) pink salmon runs, (2) abundant stickleback in Karluk Lake, and (3) accidental catch of sockeye smolts in the beach seines at Karluk Spit. -- [SOCKEYE, THEORIES OF DECLINE, PINK, STICKLEBACK, SMOLT]

**White,** Lorne E. 1976. Karluk sockeye restoration. Project Brief. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development (December, 1976). Unpublished Report. 68pp.
(ADFG Office Files, Kodiak, AK)

Important summary report of the physical, chemical, and biological features of the Karluk lake-river system; physical dimensions and chemical characteristics of Karluk Lake; aquatic macrophytes; zooplankton abundance and composition; invertebrates; fishes of Karluk Lake; life history of sockeye salmon; egg deposition and survival; juvenile residence in Karluk Lake; smolt migration; ocean life history; sockeye salmon diseases; rearing capacity of Karluk Lake; spawning areas; sockeye salmon ages. -- [SOCKEYE, LIMNOLOGY, INVERTEBRATES, EGGS, JUVENILES, SMOLTS, DISEASE, SPAWNING, AGE]

**White,** Lorne E. 1978. Karluk Lake sockeye rehabilitation, 1978. Operational Plans. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development (January, 1978). Unpublished Report. 62pp.
(ADFG Library, Douglas, AK)

Report on the 1978 plans to rehabilitate of sockeye salmon run in the Upper Thumb River; plans to operate a hatchery on Camp Island; hatchery incubation to the eyed-egg stage; egg planting; egg-to-fry survival; fry-to-adult survival using fry marking; plan to count sockeye smolts at the Karluk River Portage with sonar; limnological sampling of Karluk Lake; juvenile sockeye food habits study. -- [SOCKEYE, REHABILITATION, HATCHERY, EGGS, FRY, JUVENILES, FOOD, SMOLTS, LIMNOLOGY]

**White,** Lorne E. 1978. Karluk Lake sockeye rehabilitation, 1978. Contingency to supplement the Operational Plan. Alaska Department of Fish and Game, Kodiak (June, 1978). Unpublished Report. 18pp.
(ADFG Library, Douglas, AK)

Report amending previous 1978 plans for a hatchery on Camp Island; Devil's Creek and Kitoi hatcheries to incubate sockeye eggs from Upper Thumb River in 1978. -- [SOCKEYE, HATCHERY]

**White,** L. E. 1978. Karluk Lake sockeye rehabilitation, 1978. Project Proposal. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development (May, 1978). Unpublished Report. 71pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the plans of ADFG to rehabilitate the Upper Thumb River sockeye run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** Lorne E. 1979. Karluk Lake sockeye rehabilitation. Project Proposal, 1980-1981. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development (December, 1979). Unpublished Report. 57pp.
(Copy in the personal papers of Richard Gard, Juneau, AK)

Report of plans for 1980-1981 to rehabilitate the sockeye run in the Upper Thumb River using streamside egg incubators; operational plans for handling eggs and fry; sonar counts of smolts; limnological sampling. -- [SOCKEYE, HATCHERY, EGGS, JUVENILES, SMOLTS, LIMNOLOGY]

**White,** L. E. 1980. Karluk Lake sockeye rehabilitation, 1979. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. Unpublished Report. 30pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1979 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. 1982. Karluk Lake sockeye rehabilitation, 1980. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. 43pp. Unpublished Report.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1980 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. 1983. Karluk Lake sockeye rehabilitation, 1981. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. Unpublished Report. 36pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1981 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. 1983. Karluk Lake sockeye rehabilitation, 1982. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. Unpublished Report. 42pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1982 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. 1984. Karluk Lake sockeye rehabilitation, 1983. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. Unpublished Report. 40pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1983 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. 1985. Karluk Lake sockeye rehabilitation, 1978-1984. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau (March, 1985). Unpublished Report. 45pp.
(ADFG, Kodiak, AK)

Summary report of the ADFG's rehabilitation of sockeye salmon at Karluk Lake in 1978-1984; summary of egg taking and planting; estimates of egg-to-fry survival; attempts to plant fry at Upper Thumb River; summary of methods used to measure the smolt migration and age composition (sonar counts and Canadian fan traps); 1978-1984 zooplankton densities and composition in Karluk and Thumb lakes; adult sockeye escapements, catches, and age composition. -- [SOCKEYE, EGGS, HATCHERY, JUVENILES, SMOLTS, LIMNOLOGY, AGE]

**White,** L. E. 1987. Karluk Lake sockeye rehabilitation, 1986. Progress Report. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development. Unpublished Report. 65pp.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined, but apparently it summarizes the 1986 ADFG efforts to rehabilitate the Upper Thumb River sockeye salmon run by incubating and planting eggs. -- [SOCKEYE, EGGS, HATCHERY]

**White,** L. E. c. 1987. Sockeye salmon rehabilitation at Upper Thumb River, Karluk Lake, Alaska 1978-1984 [microform]. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau. Unpublished Report.
(ARLIS, Anchorage, AK)

Report not examined. -- [SOCKEYE]

**White,** L. E. 1990. Kodiak Island sockeye salmon enhancement investigations, annual report, 1988-1990. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau. Unpublished Report. (ARLIS, Anchorage, AK)

Report not examined. -- [SOCKEYE]

**White,** L. E. 1991. Kodiak area sockeye salmon rehabilitation and enhancement, annual report 1991. Alaska Department of Fish and Game, Division of Fisheries Rehabilitation, Enhancement and Development, Juneau (AFS 52-4). Unpublished Report.
(Copy not located, possibly present at ADFG, Kodiak, AK)

Report not examined. -- [SOCKEYE]

**Wilmot,** Richard L., Carl V. Burger, David B. Wangaard, James W. Terrell & Robert M. Lichorat. 1983. Karluk Lake studies, progress report. US Fish and Wildlife Service, Alaska Field Station, National Fishery Research Center, Anchorage, AK (July, 1983). Unpublished Report.
(Copy from Richard L. Wilmot, ABL, Auke Bay, AK)

Progress report on the Karluk Lake studies, 1982-1983 – (1) analysis of past lake fertility as shown by sediment cores, (2) charr predation on juvenile sockeye, (3) juvenile coho salmon predation on juvenile sockeye, (4) distribution and abundance of fishes (sockeye, stickleback, coho, and sculpins) in Karluk Lake's littoral, (5) age and growth of juvenile sockeye, and (6) genetics of sockeye salmon (1978-1982). -- [SOCKEYE, AGE, GROWTH, COHO, STICKLEBACK, DOLLY VARDEN, PREDATION, COMPETITION, LIMNOLOGY, GENETICS]

**Wilmot,** R. L., R. A. Olson, R. R. Reisenbichler, J. D. McIntyre & J. E. Finn. c. 1989. Effects of competition with threespine stickleback (*Gasterosteus aculeatus*) on growth of age-0 sockeye salmon (*Oncorhynchus nerka*) in Karluk Lake, Alaska. US Fish and Wildlife Service, Alaska Fish and Wildlife Research Center, Anchorage, AK. Unpublished Report. 20pp.
(Copy from Jim Finn, FWS, Anchorage, AK)

Important field study of competition between adult threespine stickleback and age-0 sockeye salmon in Thumb and O'Malley Lakes; reduced density of adult sticklebacks in O'Malley Lake increased growth rates of young sockeye; growth was temperature-dependent; growth was food-limited by intra- and interspecfic competition. -- [SOCKEYE, STICKLEBACK, GROWTH, COMPETITION]

**Wisner,** J. N. c. 1903. Pages from a report by J. N. Wisner (Handwritten note on cover page: "August 11, 1927, Mr. W. T. Bower took these from an old chest in the attic, left there by Fassett"). Unpublished Report. 52pp.
(File "Karluk Alaska Report Original Wisner", Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK)

Discussion of the conditions of the salmon fisheries in Alaska in 1903; arguments for establishing hatcheries to rebuild depleted salmon runs; requirements for selecting hatchery location; recommends US Government ownership of hatcheries; 387,198 salmon captured for Karluk River hatchery, 1896-1902; 20,105 females spawned at Karluk River hatchery, 1900-1902; 40% of salmon captured for Karluk River hatchery died before spawning; egg hatching times as influenced by water temperature; air and water temperatures at Karluk River hatchery, 1899-1903. -- [SOCKEYE, HATCHERY, EGG, WEATHER]

**Wood,** Ray S. 1931. Report of the Karluk River weir, 1931. Department of Commerce, Bureau of Fisheries, Karluk, AK (Attached to report of Hungerford 1931). 10 Unpublished Reports.
(ABL Library Files, Auke Bay, AK)

Biweekly reports of activities at the Karluk River weir, 1931; observations on fish migrations; Dolly Varden destruction. -- [SOCKEYE, DOLLY VARDEN, STEELHEAD, MIGRATION, WEIR]

# FIELD NOTEBOOKS, LOGBOOKS, and DATABOOKS

**Abegglen,** Carl E. 1955. Daily field notebook (9 May-13 August), Karluk Lake and weir.
[File "A0790", Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Alaska Department of Fish and Game.** 1967-1975. Daily field notebooks for 1967-1975, Karluk River weir near Karluk Lake.
[Alaska Department of Fish and Game, Kodiak, AK]

**Alaska Department of Fish and Game.** 1976-1997. Daily field notebooks for 1976-1997, Karluk River weir near Karluk Lagoon.
[Alaska Department of Fish and Game, Kodiak, AK]

**Alaska Department of Fish and Game.** 1994. Data notebook for 1994 sport creel census at Karluk River Portage camp.
[Alaska Department of Fish and Game, Kodiak, AK]

**Ajwani,** Santo H. 1955. Daily field notebook for 1955 (1 July-29 September), Karluk Lake, River, and weir.
[File A0789, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Baer,** Harry D. & H. Olafson. 1932. Daily notebook for 1932 (9 May-8 October), Karluk weir.
[File A0743, Box , Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Barnaby,** Joseph Thomas. 1930. Daily notebook for 1930 (16 May-12 October), Karluk Lake and River, Larsen Bay.
[Original: File A0737, Box 109, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK --- Copy: (typed summary copy, with additional information), File "Karluk field notes, Barnaby, 1930, 1931, 1932", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Barnaby,** Joseph Thomas. 1931. Daily notebook for 1931 (1 April-15 October), Karluk Lake and River, Larsen Bay.
[Original: File A0740, Box 109, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK --- Copy: (typed summary copy, with additional information), File "Karluk field notes, Barnaby, 1930, 1931, 1932", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Barnaby,** Joseph Thomas. 1932-1933. Daily notebook for 1932 (7 May-5 Oct) and 1933 (5 May-11 November), Karluk Lake and River, Larsen Bay.
[Original: File A0747, Box 110, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK --- Copy: (typed summary copy for 1932, with additional information), File "Karluk field notes, Barnaby, 1930, 1931, 1932", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Barnaby,** Joseph Thomas. 1934-1935. Daily notebook for 1934 (2 May-22 September) and 1935 (27 April-22 September), Karluk Lake and River, Larsen Bay.
[File A0750, Box 110, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Barnaby,** Joseph Thomas 1936-1937. Daily notebook for 1936 (11 May-29 September) and 1937 (28 April-2 October), Karluk Lake and River, Larsen Bay.
[File A0753, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bean,** Tarleton H. 1880. Daily journal for May-October 1880, Alaskan voyage, with a stop made at Kodiak on 9-14 July 1880.
[Location unknown, but Bean (1902) mentions that he kept a journal in 1880 and he published the portion for 11 August-17 September 1880]

**Bean,** Tarleton H. 1889. Daily journal for June-October 1889, with a field reconnaissance of the Karluk Spit canneries and Karluk Lake spawning grounds on 2 August-7 September 1889.
[Location unknown, but it is highly likely that Bean kept a field journal in 1889, this being standard field protocol]

**Bevan,** Donald E. 1948. Daily notebook for 1948, Karluk.
[K B46 1948, Accession Number 126, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1949. Daily notebook for 1949 (July-August), Karluk Lake, River, and tributaries.
[K B46 1949, Accession Number 131, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1950. Daily notebook for 1950 (25 May-18 October), Karluk Lake.

[K B46 1950, Accession Number 234, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1951. Daily notebook for 1951 (20 June-26 September), Karluk Lake, River, weir, and tributaries.
[K B46 1951, Accession Number 343, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1952. Daily notebook for 1952 (2 July-4 October), Karluk River, Lake and tributaries.
[K B46 1952, Accession Number 486, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1953. Daily notebook for 1953 (16 July-21 September), Karluk Lake and tributaries.
[K B46 1953, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1954. Daily notebook for 1954, Karluk Lake and tributaries.
[K B46 1954, Accession Number 700, FRI Archives, University of Washington, Seattle, WA]

**Bevan,** Donald E. 1955. Daily notebook for 1955, Karluk River, Lake and tributaries.
[K B46 1955, FRI Archives, University of Washington, Seattle, WA]

**Breuser,** Ray N. 1949. Daily notebook for 1949 (16 May-29 September), Karluk Lake and weir.
[File A0780, Box 114, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bridgeman,** John. 1953. Daily notebook for 1953 (13 June-25 September), Karluk Lake and tributaries.
[K B76 1953 and K A1 1953, FRI Archives, University of Washington, Seattle, WA]

**Bureau of Commercial Fisheries.** 1957. Data notebook for 1957 (15 May-3 October), Karluk weir, stream surveys, migrants, limnology, logistics.
[File A0781 part 8 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1957. Data notebook #1 for 1957 (15-26 May), Karluk River weir, sockeye downstream migrants.
[File A0823, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1957. Data notebook for 1957, sculpin length frequencies, Karluk River, Lake and tributaries.
[File A0823, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1957. Data notebook for 1957 (31 July-22 August), water chemistry for Karluk, Thumb, and O'Malley Lakes.
[File A0824, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1958. Data notebook for 1958 (31 May-1 October), Karluk counting tower, weather, stream surveys, migrants, limnology, logistics.
[File A0781 part 9 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1958. Data notebook for 1958 (2 July-12 August), Karluk Lake tributaries adult pen study.
[File A0823, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1959. Data notebook for 1959 (2 June-8 October), Karluk counting tower, stream surveys, migrants, egg surveys, limnology, logistics.
[File A0781 part 10 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1959. Data notebook for 1959 (22 June-18 August), Thumb River weir.
[File A0823, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1960. Karluk Lake Station 1960 Record Book. Data notebook (Upper Thumb River fry, adults, and tag recoveries; Karluk River weir adult escapements; stream surveys and tag recoveries).
[File A0139, Box 31, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1960. Data notebook for 1960 (1 June-10 October), Karluk weir, weather, stream surveys, tags, fry studies, migrants, limnology, logistics.
[File A0781 part 11 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1961. Karluk Lake Station 1961 Record Book. Data notebook (Upper Thumb River and Grassy Point Creek fry; Karluk River weir adult escapements; smolt estimate; stream surveys and tag recoveries; Grassy Point and Meadow Creek weirs; Canyon Creek electronic adult counter; homing persistence study).
[File A0139, Box 31, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1961. Karluk Lake Stream Surveys 1961. Data notebook for 30 June-29 September.
[File A0141, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1962. Karluk Lake Station 1962 Record Book. Data notebook (Grassy Point and Meadow Creek fry; Karluk River weir adult escapements; smolt estimates; stream surveys; Grassy Point, Meadow, and Canyon Creek weirs and fecundity studies).
[File A0139, Box 31, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1962. Data notebook for 1962, Meadow Creek sockeye salmon fry lengths.
[File A0141, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1962. Five data notebooks for 1962: (1) Grassy Point Creek adult weir, (2) Grassy Point Creek fry studies, with length measured every 2 days, (3) Canyon Creek adult weir, (4) Meadow Creek adult weir, and (5) Stream surveys.
[File A0141, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1963. Karluk Lake Station 1963 Record Book. Data notebook (Grassy Point, Meadow, and Canyon Creek fry; stream surveys; Karluk River weir adult escapements; Portage weir counts and tagging; smolt estimate; fecundity studies at Grassy Point, Canyon, Meadow, Cottonwood, Upper Thumb, Lower Thumb, O'Malley River, and Thumb Beach; weirs at Canyon, Grassy Point, and Canyon Creeks).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1963. Five data notebooks for 1963: (1) Grassy Point Creek adult weir, (2) Canyon Creek adult weir, (3) Karluk River Portage adult weir, (4) Stream surveys and diary by Ken Durley, and (5) Fecundity study.
[File A0141, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1963. Data notebook for 1963, Karluk Log Book 1963. Daily log of events at Karluk Lake.
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1964. Karluk Lake Station 1964 Record Book. Data notebook (Grassy Point and Canyon Creek fry; Karluk River weir adult escapements; smolt estimates; stream surveys; Grassy Point Creek adult weir, bear predation study, and egg pumping; fecundity study at Karluk River weir; Karluk River tagging).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1964. Seven data notebooks for 1964: (1) Stream surveys, (2) Grassy Point Creek adult weir and bear kills, (3-7) Grassy Point Creek bear study.
[File A0141, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1965. Karluk Lake Station 1965 Record Book. Data notebook (Grassy Point Creek fry, weir, fecundity, egg pumping, and bear study; Karluk River weir adult escapements; smolt estimates; fecundity studies at Karluk River weir, Canyon, Meadow, Cottonwood, Thumb Beach, Upper Thumb, Lower Thumb, and O'Malley River).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1965. Six data notebooks for 1965: (1) 1965 Log Book, (2) Stream surveys, (3) Canyon Creek area survey, (4) Fecundity samples, (5) Grassy Point Creek adult weir, and (6) Grassy Point Creek bear study.
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1966. Karluk Lake Station 1966 Record Book. Data notebook (Grassy Point Creek fry, weir, fecundity, and egg pumping; Karluk River weir adult escapements; smolt estimates).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1966. Three data notebooks for 1966: (1) Grassy Point Creek fecundity, adult weir, stream surveys, and egg pumping; (2) Grassy Point Creek utilization of spawning beds and rate of disappearance of spawning adults; and (3) Coho adult data.
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1967. Karluk Lake Station 1967 Record Book. Data notebook (Grassy Point Creek fry, adult weir, fecundity, egg retention, and egg pumping; Karluk River weir adult escapements; smolt estimates; Halfway Creek weir, egg retention, and fecundity study; transport of adults from Grassy Point to Halfway Creek, and behavior of displaced fish).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1967. Seven data notebooks for 1967: (1) Grassy Point Creek adult weir and bear study, (2) Dissolved oxygen levels near Karluk River weir (no data entered in notebook), (3) Halfway Creek adult weir and bear study, (4-5) Halfway Creek bear study, (6) Halfway Creek bear study and transfer of sockeye adults to Grassy Point Creek, and (7) Halfway Creek fecundity (only length data).
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1967-1968. Data notebook for 1967 and 1968, Grassy Point Creek egg pumping data.
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1968. Karluk Lake Station 1968 Record Book. Data notebook (Grassy {Point Creek fry, adult weir, fecundity, egg retention, and egg pumping; Karluk River weir adult escapements; smolt estimates; Halfway Creek adult weir, fecundity, and egg retention; transport of adults from Grassy Point to Halfway Creek; rate of disappearance of tagged spawners).
[File A0140, Box 32, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1968. Five data notebooks for 1968: (1) Halfway Creek adult weir and bear study, (2) Halfway Creek bear study, (3) Grassy Point Creek stream gradient, (4) Grassy Point Creek adult weir and bear study, and (5) Grassy Point Creek stream survey and rate of disappearance of spawning adults.
[File A0141, Box 34, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Commercial Fisheries.** 1969. Karluk Lake Station 1969 Record Book. Data notebook (Grassy Point Creek fry; smolt estimates; Karluk River weir adult escapements; weir washed out 5 June-11 July).
[File A0140, Box 33, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1927. Data notebook for Records of Plankton Hauls, 1927, Karluk Lake.
[File "Karluk Lake Early Years Limnology Data, 1920s and 1930s," Box 88, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1927. Chemical data notebook for Alaskan Lakes, 1927, including Karluk Lake and tributaries, Thumb and O'Malley Lakes (19 July-16 September).
[File "Karluk Lake Early Years Limnology Data, 1920s and 1930s," Box 88, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1928. Karluk, Marked Fish Records, 1928 (12 June-7 September). Department of Commerce.
[File "Karluk 1928", Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1929. Daily notes of research activities for 1929 (28 May-2 October), Karluk Lake and River, Larsen Bay cannery.
[Original (location unknown) --- Copy (4pp. typed brief summary of activities), File "Karluk field notes, 1925 through 1929", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1936. Data notebook for 1936, water temperatures and chemistry of Karluk Lake and tributaries [probably by JT Barnaby].
[File A0754, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1937. Data notebook for 1937, water temperatures and chemistry of Karluk Lake and tributaries [probably by JT Barnaby].
[File A0754 part 2, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Bureau of Fisheries.** 1938. Data notebook for 1938, tagging and recoveries of trout, Karluk Lake and weir.
[File A0760, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Burgner,** Robert L. 1948. Daily notebook for 1948 (9-24 August), brief visit to Karluk River and Lake.
[K B91 1948, FRI Archives, University of Washington, Seattle, WA]

**Burnett,** Leland. 1955. Daily field notebook for 1955 (1 July-24 September), Karluk Lake, River, and weir.

[File A0813, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Carlson,** Frank T. 1956. Daily field notebook for 1956 (10 May-23 September), Karluk Lake, River, and weir.
[File A0822, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Conkle,** Charles Y. 1955-1956. Daily field notebook for 1955 (9 May-9 October) and 1956 (10 May-7 October), Karluk Lake, River, and weir, plus a few notes on Bare Lake.
[File A0815, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Crawford,** John S. 1949. Daily field notebook for 1949 (16 May-1 October), Karluk Lake, River, and weir.
[Historical Files of Herb Jaenicke, ABL, Auke Bay, AK]

**Dufva,** Emmett A. 1953. Daily notebook for 1953 (15 May-4 June), Karluk Lake and tributaries.
[K B76 1953 and K A1 1953, FRI Archives, University of Washington, Seattle, WA]

**Duncan,** Rae E. 1953. Daily notebook for 1953 (16 June-17 July), Karluk Spit.
[K D 91 1953 and K A1 1953, FRI Archives, University of Washington, Seattle, WA]

**Duncan,** T. O. 1955. Daily field notebook for 1955 (10 May-24 June), Karluk Lake, River, and weir.
[File A0789, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fassett,** Harry Clifford. 1900. Field memo book Number 7, 1900. Sketches of Karluk Lagoon hatchery and sockeye salmon egg take data.
[Box 3, Harry Clifford Fassett papers, Library Special Collections, California Academy of Sciences, San Francisco, CA]

**Fish and Wildlife Service.** 1941. Data notebook for 1941, water temperatures and chemistry of Karluk Lake and tributaries.
[File A0762, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1942-1946. Data notebook for 1942, 1943 (17 May-15 October), 1944 (25 May-31 August), 1945 (30 May-10 October), and 1946 (4 June-20 October), Karluk weir counts, weather, and water levels.
[File A0768, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1946. Data notebook for 1946, tag recoveries and stream surveys, Karluk Lake and tributaries.
[File A0771, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1947-1948. Notebook for 1947-1948, mostly Bare Lake, some Karluk Lake and weir (10-24 May).
[File A0774, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1947. Data notebook for 1947, water chemistry from Karluk Lake and tributaries.
[File A0775, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1954.
[File A0792, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fish and Wildlife Service.** 1955. Data record notebook #2 for 1955 (June), Karluk weir smolt catches.
[File A0818, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Fisheries Research Institute.** 1948. Kodiak Log, 1948. Daily field notes of Edwin S. Iversen and Clinton E. Stockley (Note: other FRI staff 1948 logs are bound separately). Karluk Lake, River, and tributaries; stream surveys, recovering tags.
[K A1 1948, Accession Number 285, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1949. Kodiak Log, 1949. Daily field notes of Donald E. Bevan, Allan C. Hartt, John W. Martin, Wallace H. Norenberg, Fredrik V. Thorsteinson, and Robert Zwick. Karluk Lake, River, and tributaries; tagging and recoveries.
[K A1 1949, Accession Number 286, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1950. Kodiak Log, 1950. Daily field notes of Donald E. Bevan, Allan C. Hartt, Wallace H. Norenberg, and Charles E. Walker. Karluk Lake, River, and tributaries; young fish studies.
[K A1 1950, Accession Number 305, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1951. Kodiak Log, 1951. Daily field notes of Donald E. Bevan, Allan C. Hartt, Wallace H. Norenberg, and Charles E. Walker. Karluk Lake, River, and tributaries; young fish studies, limnology.

[K A1 1951, Accession Number 375, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1952. Kodiak Log, 1952. Daily field notes of Donald E. Bevan, William Mulligan, and Charles E. Walker. Karluk Lake, River, and tributaries; young fish studies, limnology.
[K A1 1952, Accession Number 489, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1953. Kodiak Log, 1953. Daily field notes of Donald E. Bevan, John Bridgeman, Emmett A. Dufva, Rae E. Duncan, and Charles E. Walker. Karluk Lake, River, and tributaries; young fish studies, limnology.
[K A1 1953, Accession Number 569, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1954. Kodiak Log, 1954. Daily field notes of Donald E. Bevan, Kenneth B. Kral, and Charles E. Walker. Karluk Lake, River, and tributaries; young fish studies, limnology.
[K A1 1954, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1955. Kodiak Log, 1955. Daily field notes of Donald E. Bevan, J. Wesley Morgan, and Charles E. Walker. Karluk Lake stream surveys, explore Karluk River for tower site, Karluk Lagoon and Spit.
[K A1 1955, Accession Number 822, FRI Archives, University of Washington, Seattle, WA]

**Fisheries Research Institute.** 1956-1969. Kodiak Logs and Daily notebooks for 1956-1969 by various authors (Aven M. Andersen, James L. Armstrong, R. N. Barnes, Donald E. Bevan, Allen S. Davis, Karl Dietz, Charles Hicks, Michael F. Geiger, Ted Hoffman, Don W. Johnson, Robert A. McHardy, Norman H. Moe, Wallace H. Noerenberg, Juri Peet, Hugh M. Rackleff, A. Sullard, Richard W. Tyler, F. Wahlquist, Charles E. Walker, Brian F. Waters), occasional salmon work at Karluk Lake, River, Lagoon, and Larsen Bay cannery.
[K A1 1956-1969, FRI Archives, University of Washington, Seattle, WA]

**Freeman,** Arthur. 1947. Daily field notebook for 1947, Karluk River weir and Karluk Lake.
[Original notebook in personal papers of Arthur Freeman, Indianapolis, IN]

**Freeman,** Arthur. 1948. Daily field notebook for 1948, Karluk River weir and Karluk Lake.
[Original notebook in personal papers of Arthur Freeman, Indianapolis, IN]

**Gilbert,** Charles H. 1917. Field diary
[Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Gilbert,** Charles H. 1918. Field diary.
[SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Gilbert,** Charles H. 1921. Field diary, including 8-13 August trip to Karluk Lake.
[Original: SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA --- Copy : (Typed summary of Gilbert's survey of Karluk Lake, 8-13 August), File "Karluk Field Notes Prior to 1925", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Gilbert,** Charles H. 1922. Field diary, including 18-24 August trip to Karluk Lake.
[Original: SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA --- Copy : (Typed summary of Gilbert's survey of Karluk Lake, 18-24 August), File "Karluk Field Notes Prior to 1925", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Gilbert,** Charles H. 1923. Field diary.
[SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Gilbert,** Charles H. 1924. Field diary, including time spent at Larsen Bay.
[SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Gilbert,** Charles H. 1925. Field diary, including time spent at Karluk River weir.
[SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Gilbert,** Charles H. 1927. Field diary, including time spent at Larsen Bay.
[SC 85, Box 2, Stanford University Libraries, Department of Special Collection and University Archives, Palo Alto, CA]

**Guinasso,** Charles B. 1951. Daily notebook for 1951, Karluk.
[K A1 1951, FRI Archives, University of Washington, Seattle, WA]

**Hansen,** Richard J. 1953. Daily field notebook in 1953 (14 May-31 August), Karluk Lagoon tagging study.
[File A0803, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hansler,** Robert. 1955. Daily field notebook for 1955 (9 May-7 October), Karluk Lake.
[File A0814, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hartt,** Allan C. 1949. Daily notebook for 1949 (25 May-18 October), Karluk Lake.
[K H25 1949 and K A1 1949, Accession Numbers 140 and 286, FRI Archives, University of Washington, Seattle, WA]

**Hartt,** Allan C. 1950. Daily notebook for 1950 (19-23 August), Karluk Lake.
[K H25 1950 and K A1 1950, Accession Numbers 233 and 305, FRI Archives, University of Washington, Seattle, WA]

**Hartt,** Allan C. 1951. Daily notebook for 1951 (5 May-26 September), Karluk Lake, River, weir, and tributaries.
[K H 25 1951 and K A1 1951, Accession Numbers 317 and 375, FRI Archives, University of Washington, Seattle, WA]

**Hatch,** Paul. 1953. Daily field notebook for 1953 (14 May-4 October), Bare Lake, plus a few notes from Karluk Lake.
[File A0806, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Higgins,** et al. 1953.
[File A0797, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hines,** John Q. 1954. Field notebook for Stream Guard in 1954 (15 June-6 August), Karluk Spit.
[File A0812, Box 121, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hoover,** Jay. 1953. Daily field notebook for 1953 (14 May-5 October), Karluk Lake, River, and weir.
[File A0807, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hubbs,** Carl L. 1939. Field notebooks, papers, testimony, correspondence, and photographs associated with his Alaskan trip (June-October, 1939) as field representative of the Department of the Interior to investigate the administration of fish and wildlife resources in Alaska.
[Carl Leavitt Hubbs Papers, Manuscript Collection, MC 5, University of California, San Diego, Scripps Institution of Oceanography Archives, La Jolla, CA]

**Hungerford,** H. H. 1931-1933. Daily notebook for 1931 (1 June-31 December), 1932 (1 January-31 December), and 1933 (3 January-31 May), Fishery Warden patrols around Kodiak Island.
[File A0742, Box 109, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Humgerford,** H. H. 1933-1934. Daily notebook for 1933 (1June-29 December) and 1934 (4-31 January), Fishery Warden patrols around Kodiak Island.
[File A0749, Box 109, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hungerford,** H. H. 1935. Daily notebook for 1935 (5 May-8 October), Karluk weir.
[File A0751, Box 110, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Hunter.** 1950. Daily notebook for 1950, Bare Lake.
[File A0800, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Huver,** Charles W. 1955. Daily notebook for 1955, Karluk and Bare Lake.
[Original notebook in personal papers of Dr. Charles W. Huver, Forest Lake, MN]

**Iversen,** Edwin S. 1948. Daily notebook for 1948 (12-26 September), Karluk Lake and tributaries.
[K I5 1948, Accession Number 130, FRI Archives, University of Washington, Seattle, WA]

**Jorgenson,** Walter W. 1948. Daily notebook for 1948 (15 May-27 September), Karluk Lake, River, and weir; stream surveys, tagging, limnology, Moraine Creek weir.
[File A0777, Box 114, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Kemmerer,** George I. 1927. Chemical data notebook for 1927 (6 July-14 August), with water chemistry from Karluk Lake and tributaries (pH, P, $SiO_2$, $CO_2$, Fixed $CO_2$, $NH_3$, $NO_2$, $NO_3$, $O_2$)
[File "Karluk Lake Early Years Limnology Data, 1920s and 1930s," Box 88, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Koranda,** John. 1951. Daily field notebook for 1951 (18 May-13 October), Karluk Lake, River, and weir.
[File A0788, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Lucas,** Fred R., Ray S. Wood, Forsyth & G.O. Thompson. 1922-1923. Daily notebook of operations at the Karluk weir in 1922 (22 April-November) and 1923 (May-October).
[File A0715, Box 107, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**McCreary,** Peter. 1955. Daily field notebook for 1955 (6 July-22 September), Karluk Lake, River, and weir.
[File A0817, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Mellin,** James A. 1956. Daily field notebook for 1956 ( 10 May-29 June), Karluk Lake, River, and weir.
[File A0820, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Meyer,** Marcus W. 1944. Daily notebook for 1944 (1 February-21 December), fishery patrol in Southeastern Alaska and around Kodiak Island, few Karluk visits.
[File A0770, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Morgan,** J. Wesley. 1955. Daily notebook for 1955, Karluk Spit.
[K M88 1955 and K A1 1955, FRI Archives, University of Washington, Seattle, WA]

**Morton,** William Markham. 1939-1940. Daily notebook for 1939 (1 May-9 October) and 1940 (10 June-19 August), Karluk River weir and Karluk Lake.
[Original notebook in personal papers of Robert S. Morton, Portland, OR]

**Morton,** William Markham. 1940-1941. Daily notebook for 1940 (20 August-6 October) and 1941 (1 May-10 August), Karluk River weir and Karluk Lake.
[Original notebook in personal papers of Robert S. Morton, Portland, OR]

**Morton,** William Markham. 1941. Daily notebook for 1941 (10 August-4 October), Karluk River weir and Karluk Lake.
[Original notebook in personal papers of Robert S. Morton, Portland, OR]

**Mulligan,** William. 1952. Daily notebook for 1952 (16 July-29 August), Karluk Lake and tributaries.
[KP M91 1952 and K A1 1952, Accession Numbers 461 and 489, FRI Archives, University of Washington, Seattle, WA]

**Nelson,** Philip R. 1946-1947. Daily field notebook for 1946 (20 May-3 November) and 1947 (20 May-16 September), Karluk Lake, River, tributaries, and weir; stream surveys; tagging; limnology; Moraine Creek study.
[File A0772, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1948. Daily field notebook for 1948 (15 May-9 October), Karluk Lake, tributaries, and weir; limnology & sticklebacks.
[File A0778 part 1 of 2, Box 114, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1949-1950. Daily field notebook for 1949 (16 May-30 August) and 1950 (16 May-12 October), Karluk and Bare Lakes.
[File A0778 part 2 of 2, Box 114, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1950. Data notebook for 1950 (16 May-9 October), Karluk weir, stream surveys, tagging, logistics.
[File A0781 part 1 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1951. Data notebook for 1951 (27 May-13 October), Karluk weir, stream and egg deposition surveys, logistics.
[File A0781 part 2 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1952. Data notebook for 1952 (25 May-7 October), Karluk weir, stream and egg deposition surveys, flow and temperature, FRI tags, logistics.
[File A0781 part 3 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1952. Memoranda booklet with miscellaneous field notes, personnel, addresses, fertilizers, flying times, etc. in 1952, Karluk and Bare Lakes.
[File A0802, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1952-1954. Daily field notebook for 1952 (15 May-16 July), 1953 (15 May-24 July), and 1954 (15 May-29 July), Bare and Karluk Lakes, Karluk River, weir, and Lagoon.
[File A0787, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1953. Data notebook for 1953 (18 May-3 October), Karluk weir, egg deposition surveys, fingerlings, gill net study, tags, logistics.
[File A0781 part 4 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1953. Data notebook for 1953 (5 July-2 October), stream surveys of Karluk Lake and tributaries, tagged and gill-net marked sockeye salmon.
[File A0785, Box 117, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1953-1954. Two memoranda booklets with miscellaneous field notes, personnel, addresses, tagging numbers, movie films, flying times in 1953 and 1954, Karluk and Bare Lakes.
[File A0798, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1954. Data notebook for 1954 (22 May-22 July), Karluk River weir smolt migration.
[File A0786, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1954. Data notebook for 1954 (20 May-1 October), Karluk weir, stream and egg deposition surveys, tags, length-weight data, logistics.
[File A0781 part 5 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1955. Data notebook for 1955 (13 May-4 October), Karluk weir, weather, stream surveys, migrants, juveniles, logistics.
[File A0781 part 6 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1955. Daily field notebook for 1955 (10 February-4 March, 11 May-16 June, 29 August-9 October), Bare Lake winter trip; summer and autumn at Karluk Lake, River, and weir, and Bare Lake.
[File A0787, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1956. Daily field notebook for 1956 (10 May-21 June), Karluk and Bare Lakes, plus a few notes on steelhead egg takes at Karluk River portage (17 May).
[File A0795, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Nelson,** Philip R. 1956. Data notebook for 1956 (20 May-6 October), Karluk weir, stream surveys, migrants, juveniles, logistics.
[File A0781 part 7 of 11, Box 115, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Noerenberg,** Wallace H. 1949. Daily notebook for 1949, Karluk Spit.
[K N68 1949 and K A1 1949, Accession Numbers 139 and 286, FRI Archives, University of Washington, Seattle, WA]

**Noerenberg,** Wallace H. 1950. Daily notebook for 1950 (12 June-28 July), Karluk River Portage.
[K N68 1950 and K A1 1950, Accession Numbers 232 and 305, FRI Archives, University of Washington, Seattle, WA]

**Noerenberg,** Wallace H. 1951. Daily notebook for 1951 (7 August-2 November), Karluk Lake, River, weir, and tributaries.
[K N68 1951 and K A1 1951, Accession Numbers 351 and 375, FRI Archives, University of Washington, Seattle, WA]

**O'Brien,** James. 1937-1938. Daily notebook for 1937 (10 May-5 October) and 1938 (7 May-26 September), Karluk weir.
[File A0755, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**O'Brien,** James. 1939-1940. Daily notebook for 1939 (14 May-25 September) and 1940 (10 May-13 September), Karluk weir.
[File A0759, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Olson,** Jerrold M. 1944. Daily field notebook for 1944 (22 April -28 August), Karluk weir at Portage, Karluk Lake and River.
[Original notebook in personal papers of Jerrold M. Olson, Auke Bay, AK]

**Olson,** Jerrold M. 1946. Daily field notebook for 1946 (19 May-21 August), Karluk weir, Karluk Lake and tributaries.
[Original notebook in personal papers of Jerrold M. Olson, Auke Bay, AK]

**Otter,** Jason J. 1953. Daily field notebook for 1953 (9 June-2 October), Karluk Lagoon and Lake.
[File A0808, Box 121, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Owen,** John B. 1957. Daily field notebook for 1957 (9 May-5 October), Karluk Lake.
[Original notebook from the personal papers of Dr. John B. Owen, Grand Forks, ND; notebook to be donated to NARA, Anchorage, AK]

**Pike,** W. 1938. Daily notebook for 1938 (10 July-28 September), Karluk Lake
[File A0758, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Rabe,** Fred. 1956. Daily field notebook for 1956 (26 May-30 August), Karluk Lake, River, and weir, and Bare Lake.
[File A0819, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Raleigh,** Robert F. 1956-1958. Daily field notebook for 1956 (9 May-31 August), 1957 (9 May-6 June), and 1958 (4 April-9 June), Karluk and Bare Lakes.
[File A0794, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Reeves,** J. D. 1954. Daily field notebook (14 May-3 August) at Karluk River weir, Lake, and tributaries; observations of salmon, birds, bears, other mammals, and vegetation around Karluk Lake.
[File A0811, Box 121, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Rich,** Willis H. 1922. W. H. Rich's survey notes, Alaska, 1922, May 25 to September 29.
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rich,** Willis H. 1926. Willis H. Rich field notes, 1926
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rich,** Willis H. 1927. Willis H. Rich field notes, 1927.
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rich,** Willis H. 1929. Willis H. Rich field notes, 1929.
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rich,** Willis H. 1930. Willis H. Rich field notes, 1930.
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rich,** Willis H. 1931. Willis H. Rich field notes, summer of 1931.
[Original: Location unknown (in 1956, Rich had the original notebook) --- Copy 1: File "Notes from the diary of Willis H. Rich, 1922-1933", Box 56, Salmon Fisheries Research Data 1914-1966, RG22, NARA, Anchorage, AK --- Copy 2: Notes from the diary of Willis H. Rich, 1922-1933, US Department of the Interior, Fish and Wildlife Service, Bureau of Commercial Fisheries, Biological Laboratory, Auke Bay, AK, Manuscript Report - File, MR-F 1 (June, 1963), ABL Library]

**Rutter,** Cloudsley L. 1903. Memo notebook for 1903 (16 June-14 July), Karluk Spit, Portage, River, and Lake.

[Box 130, Barton Warren Evermann papers, Library Special Collections, California Academy of Sciences, San Francisco, CA]

**Rutter,** Cloudsley L. 1903. Tin tags and other numbers, Karluk, 1903 – tagging notes.
[Box 130, Barton Warren Evermann papers, Library Special Collections, California Academy of Sciences, San Francisco, CA]

**Safsten,** Gunnar. 1955. Daily field notebook for 1955 (9 May-23 September), Karluk Lake, River, and weir.
[File A0816, Box 122, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Schroeder,** F. Hal. 1953. Daily field notebook for 1953 (14 May-5 October), Karluk Lake, River and weir.
[File A0804, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Seawright,** Gary Lyle. 1956. Daily field notebook for 1956 (10 May-5 September), Karluk and Bare Lakes.
[File A0821, Box 123, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** George D. 1951-1953. Daily field notebooks for 1951 (15 May-17 October), 1952 (15 May-15 October), and 1953 (14 May-24 July), Karluk Lake and weir.
[File A0801, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, AK]

**Shuman,** Richard F. 1943. Daily notebook for 1943 (24 May-18 October), Karluk Portage weir, Lake, and River; egg fecundity study at canneries.
[File A0763, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1947. Data notebook for 1947 (20 May-3 October), Karluk weir, stream surveys, tagging, and logistics, Karluk Lake.
[File A0767, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1947. Data notebook for 1947 (30 June-13 August), Moraine Creek weir and stream surveys, Karluk Lake; numbers of bear-killed sockeye salmon; gill net and eagle marked salmon; water temperatures.
[File A0764, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1947-1948. Daily notebook for 1947 (20 May-10 October) and 1948 (15 May-9 October), Karluk Lake, River, tributaries, and weir; stream surveys; tagging; limnology; Moraine Creek study.
[File A0773, Box 113, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1948. Data notebook for 1948 (20 May-3 October), Karluk weir, stream surveys, Moraine Creek, tagging, and logistics, Karluk Lake.
[File A0766, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1949. Daily notebook for 1949 (16 May-2 October), Karluk Lake and weir, stream surveys, limnology.
[File A0779, Box 114, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Shuman,** Richard F. 1949. Data notebook for 1949 (15May-28 September), Karluk weir, stream surveys and logistics, Karluk Lake.
[File A0765, Box 112, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Smith,** Seymour P. 1927. Daily notebook of research activities for 1927 (5 April-11 October), Karluk Lake and River, Larsen Bay cannery.
[Original: (hard to read because shorthand notations were used), File A0726, Box 108, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK --- Copy 1: (9pp. typed, condensed, and summarized by J.T. Barnaby) --- Copy 2: (2pp. handwritten abstract of notes from selected dates) --- Copy 3: (32pp. typed summary from selected spring and fall dates), File "Karluk field notes, 1925 through 1929", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Smith,** Seymour P. 1928. Daily notebook of research activities for 1928 (28 May-5 September), Karluk Lake and River.
[Original: Location unknown --- Copy 1: (6pp. typed notes of July and September observations on the spawning grounds, Karluk) --- Copy 2: (11pp. typed notes on Karluk Lake fall stream surveys and limnological sampling) --- Copy 3: (24pp. typed notes on smolt marking in June, and stream surveys and limnological sampling in July), File "Karluk field notes, 1925 through 1929", Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK]

**Spaulding,** Milo H. 1903. Field notebook of sockeye studies at Karluk Lake in 1903.

[Location unknown. F. M. Chamberlain mentions that he used Spaulding's 1903 field notes to prepare his 1907 paper]

**Stockley,** Clinton E. 1948. Daily notebook for 1948 (24 August-26 September), Karluk Lake and tributaries.
[K S62 1948, Accession Number 122, FRI Archives, University of Washington, Seattle, WA]

**Stuttman,** Leonard M. 1947. Daily notebook for 1947, Karluk Lake and tributaries, Karluk Spit.
[Original notebook in personal papers of Leonard M. Stuttman, Lansing, MI]

**Taft,** Alan C. 1928. Daily notebook for 1928 (12 May-16 September), Karluk River weir, and Larsen Bay and Uyak canneries.
[File A0729, Box 108, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Thompson,** Clark S. 1954. Daily field notebook for 1954 (15 May-2 October), Bare Lake, plus a few notes about Karluk Lake.
[File A0809, Box 121, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Thompson,** Clark S. 1955. Daily field notebook for 1955 (9 May-30 August), Bare Lake, plus a few notes about Karluk and the steelhead egg take operation at the Karluk River Portage.
[File A0791, Box 118, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Thorsteinson,** Fredrik V. 1949. Daily notebook for 1949 (16 July- ), Karluk Lake, River, and tributaries.
[K T39 1949 and K A1 1949, Accession Numbers 134 and 286, FRI Archives, University of Washington, Seattle, WA]

**Troutman,** William M. 1953. Daily field notebook for 1953 (9 June-5 October), Karluk Lagoon tagging study.
[File A0805, Box 120, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Troyer,** Willard A. 1952-1959. Field notes, Kodiak National Wildlife Refuge.
[Microfiche, ARLIS, Anchorage, AK]

**Turner,** Charles P. 1935-1936. Daily notebook for 1935 (28 February-27 October) and 1936 (21 March-15 October), fishery patrols around Kodiak Island.
[File A0752, Box 110, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Wake,** C. E. 1938. Daily notebook for 1938 (16 May-30 September), Karluk saltwater area & Lake.
[File A0757, Box 111, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Walker,** Charles E. 1950. Daily notebook for 1950 (25 May-18 October), Karluk Lake, River, and weir.
[K W15 1950 and K A1 1950, Accession Numbers 230 and 305, FRI Archives, University of Washington, Seattle, WA]

**Walker,** Charles E. 1951. Daily notebook for 1951 (5 May-20 June), Karluk Lake, River, weir, and tributaries.
[K W15 1951 and K A1 1951, Accession Numbers 318 and 375, FRI Archives, University of Washington, Seattle, WA]

**Walker,** Charles E. 1952. Daily notebook for 1952 (2 June-4 October), Karluk Lake, River, and tributaries.
[K W15 1952 and K A1 1952, Accession Numbers 488 and 489, FRI Archives, University of Washington, Seattle, WA]

**Walker,** Charles E. 1953. Daily notebook for 1953 (15 May-29 August), Karluk Lake, River, weir, and tributaries.
[K W15 1953 and K A1 1953, Accession Numbers 535 and 569, FRI Archives, University of Washington, Seattle, WA]

**Walker,** Charles E. 1954. Daily field notebook for 1954 (15 May-26 August), Karluk Lake, River, weir, Spit, and tributaries (Note: This notebook included the original and 2 carbon copies. Location of original notebook unknown. One copy went to FRI, Seattle, WA, while a second copy went to FWS and eventually was located at NARA in Anchorage, AK)
[File A0793, Box 119, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

**Walker,** Charles E. 1955. Daily notebook for 1955, Karluk Lake, Lagoon, and River.
[K W15 1955 and K A1 1955, Accession Number 822, FRI Archives, University of Washington, Seattle, WA]

**Willis,** Raymond A. 1948. Daily notebook for 1948, Karluk Lake and River.
[K W67 1948, Accession Number 122, FRI Archives, University of Washington, Seattle, WA]

**Wysor,** Fred J. 1954. Daily field notebook for 1954 (14 May-23 June), Karluk Lake.
[File A0810, Box 121, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK]

# CORRESPONDENCE

## 1903

July 19 – Letter from Spaulding. Karluk Lake, to Rutter [at Karluk Spit].
[Box 130, Barton Warren Evermann papers, Library Special Collections, California Academy of Sciences, San Francisco, CA] – Brief mention of fieldwork on spawning sockeye salmon at Karluk Lake in 1903; spawning behavior of sockeye; comments on tagged adult sockeye; research ideas; plans for the field season; inability to dry pressed plants in the cloudy weather.

## 1910

October 7 - Memo from Ward T. Bower, Department of Commerce and Labor, Bureau of Fisheries, Washington, DC.
[File "Karluk field notes prior to 1925," Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Description of 7 May 1910 visit to the Karluk River hatchery; suggestion to move hatchery to Karluk Lake; 319,346,652 sockeye fry released from hatchery 1897-1910.

## 1916

April 16 – Memo from Ward T. Bower, Bureau of Fisheries, Washington, DC, to Commissioner of Fisheries, Washington, DC.
[File 4-3 "Karluk Hatchery," Box 3 Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK] -- Summary report on the Karluk River hatchery; laws governing the hatchery; problems with release of sockeye fry into Karluk Lagoon; recommendation to revoke approval for Karluk River hatchery.

April 27 – Memo report from E. M. Ball, Assistant Agent, Alaska Fisheries Service, Bureau of Fisheries, Washington, DC, to Commissioner of Fisheries, Washington, DC.
[File 4-3 "Karluk Hatchery," Box 3 Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK] -- Detailed report on inspection of the Karluk River hatchery on 18 April, 1916; records of sockeye salmon eggs taken and fry released; white spot disease on fry.

June 24 – Memo from Ward T. Bower, Bureau of Fisheries, Washington, DC, to Commissioner of Fisheries, Washington, DC.
[File 4-3 "Karluk Hatchery," Box 3 Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK] -- Discussion of 1915-1916 sockeye egg takes and fry released at Karluk River hatchery.

July 23 – Memo report from E. M. Ball, Assistant Agent, Alaska Fisheries Service, Bureau of Fisheries, Washington, DC, to Commissioner of Fisheries, Washington, DC.
[File 4-3 "Karluk Hatchery," Box 3 Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK] -- Short report of an inspection of Karluk River hatchery on 19 July 1916; APA closes Karluk River hatchery 30 June 1916; remaining 1,000,000 sockeye eggs transferred to Afognak hatchery; report on eggs taken and fry released.

## 1921

June 17 - Letter from Henry O'Malley, Field Assistant, to Commissioner of Fisheries, Washington, DC.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on 1921 travel plans to visit Karluk River weir and survey conditions at Karluk Lake with Charles H. Gilbert of Stanford University.

November 10 - Letter from W.E. Baumann, Afognak, AK, to Henry O'Malley, Seattle, WA.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report on Karluk River weir operations for September-October, 1921; problems with high water and ice; air and water temperatures at weir (1 September-31 October).

November 25 - Letter from Fred R. Lucas, Fish Culturist, Parkplace, OR, to Henry O'Malley, Field Assistant, Seattle, WA.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report on Karluk River weir operations for May-August, 1921; salmon migrations up Karluk River; Dolly Varden and steelhead movements; sockeye smolt migration; air and water temperatures at the weir (1 May-31 August).

December 5 - Letter from Charles H. Gilbert, Bureau of Fisheries, Stanford University, CA, to Henry O'Malley, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of importance of the 1921 report on the Karluk River weir operations by Fred R. Lucas; suggestions for improving clarity of Lucas' report.

## 1922

April 14 - Letter from H. F. Moore, Acting Commissioner, to Fred R. Lucas, Bureau of Fisheries, c/o Alaska Packers Association, Larsen Bay, AK.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the collection of gull and tern stomachs, especially for those bird species feeding on salmon eggs and juveniles in the Karluk River.

May 4 - Letter from Shirley A. Baker, Assistant Agent, Cordova, AK, to John J. Folstad, Afognak, AK.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Detailed instructions for collecting Karluk's sockeye salmon scales and recording length, weight, and sex of fish from the 1922 fishery.

May 6 - Letter from Shirley A. Baker, Assistant Agent, Cordova, AK, to John J. Folstad, Afognak, AK.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Detailed description of John J. Folstad's duties as Stream Watchman at Karluk in 1922; placing markers, fishing violations, taking scales, catch data, and semi-monthly reports.

June 11 - Letter from Fred R. Lucas, Bureau of Fisheries, Uyak, AK, to Field Superintendent, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of activities at the Karluk River weir, 1922; number of Dolly Varden killed; purse seine boats present.

June 27 - Letter from William Timson, Alaska Packers Association, San Francisco, CA, to Henry O'Malley, US Fish Commissioner, Washington, DC
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Complaints about purse seining boats on the salmon fishing grounds at Karluk.

July 3 - Letter from Henry O'Malley, Commissioner, to William Timsen, Alaska Packers Association, San Francisco, CA.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Brief comments on salmon fishing conflicts at Karluk; purse seine boats.

July 12 - Telegram from Shirley A. Baker, Assistant Agent, Bureau of Fisheries, Cordova, AK, to Fisheries, Washington, DC
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Description of conflicts between fishermen and Natives over salmon fishing locations at Karluk; beach seine versus purse seine competition.

September – Memo from J. R. Russell, Field Superintendent, Bureau of Fisheries.
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Pink salmon carcasses drift against and undermine Karluk River weir in 1922; pink salmon carcass removal required until 14 September.

December 12 - Letter from Shirley A. Baker, Assistant Agent, Bureau of Fisheries, Cordova, AK, to Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1921-1922," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of 1922 Karluk River sockeye salmon catch data; actual Karluk salmon catch much higher than case pack records because of salmon caught for table use, fishermen salted salmon, and company salted-salmon gratuities.

## 1923

October 17 - Letter from A. K. Tichenor, Vice-President and General Superintendent, Alaska Packers Association, San Francisco, CA, to Henry O'Malley, US Fish Commissioner, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Criticism of the 1923 operation of Karluk River weir and location; claim that salmon become

exhausted in swift water; Karluk Lagoon spawning of sockeye salmon observed; suggestion that weir be moved to Karluk River Portage.

October 26 - Letter from Henry O'Malley, Commissioner, to A. K. Tichenor, Vice President, Alaska Packers Association, San Francisco, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussed Karluk River Portage weir site and requested help from APA and Northwestern Fisheries Company.

October 26 - Telegram from Fred Lucas, Superintendent, Bureau of Fisheries, Afognak, AK, to Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Response to APA's criticism of 1923 Karluk River weir location; few sockeye salmon spawn in Karluk Lagoon; pink salmon spawn below weir; weir did not keep salmon from reaching spawning grounds.

October 27 - Letter from Henry O'Malley, Commissioner, to A. K. Tichenor, Vice President, Alaska Packers Association, San Francisco, CA
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Response to APA's criticism of Karluk River weir location; description of typical sockeye salmon movements to and from Karluk Lagoon.

November 15 - Letter from A. K. Tichenor, Vice-President and General Superintendent, Alaska Packers Association, San Francisco, CA, to Henry O'Malley, US Fish Commissioner, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- APA's offer to haul weir material to Karluk River Portage for building a new weir site.

November 23 - Letter from Henry O'Malley, Commissioner, to William Timson, President, Alaska Packers Association, San Francisco.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on possible new Karluk River weir site at the Portage; questions on how to apportion escapement.

## 1924

January 7 - Letter from Fred R. Lucas, Superintendent, Bureau of Fisheries, Afognak, AK, to Commissioner of Fisheries, Washington, DC
[File 1 "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, and File 2 "Karluk 1924," Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transmittal of report on the 1923 Karluk River weir operations; rebuttal of APA's claims that weir harms salmon; comments on salmon behavior at weir.

February 5 - Letter from Fred R. Lucas, Superintendent, Bureau of Fisheries, Afognak, AK, to Henry O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on spiked log placed off Karluk Spit beach by competing fishermen and possible retaliation.

February 21 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of advantages and disadvantages of moving Karluk's weir to a new location upstream; decide to keep weir at present lower Karluk River site.

March 11 - Letter from Dennis Winn, Agent, Seattle, WA, to Tichenor, Alaska Packers Association, San Francisco, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Statement of why Karluk's weir will not be changed to a new upstream location in 1924.

December 30 - Letter from Fred R. Lucas, Superintendent, Clackamas, OR, to Commissioner of Fisheries, Washington, DC
[File "Karluk 1924," Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Salmon catch and escapement at Karluk; discussion 1924 Karluk River weir operation and problems caused by the large run of pink salmon; ideas for a weir at the Karluk River Portage.

## 1925

April 9 - Letter from Dennis Winn, Agent, Bureau of Fisheries, Seattle, WA, to Henry O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry on how to regulate Karluk's sockeye catch and escapement in 1925; two sockeye salmon escapement goals – (1) 50% of run and (2) 1,000,000 minimum.

April 14 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Seattle.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Instructions for regulating Karluk's sockeye catch and escapement in 1925; primary plan is to meet 50%escapement goal.

April 25 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Seattle.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Instructions for regulating Karluk's sockeye catch and escapement in 1925; Charles Gilbert not responsible for regulating fishery times.

June 1 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations in May 1925; 4,632 Dolly Varden captured; Charles Gilbert collecting Dolly Varden scales at weir; a candlefish caught at weir.

June 17 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 1-15 June 1925; 23,432 Dolly Varden captured; sockeye smolts were numerous 2-10 June; Charles Gilbert collected smolts at weir.

July 3 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 16-30 June 1925; 30,221 Dolly Varden captured, few present in early July; sockeye salmon smolts absent.

July 16 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 1-15 July 1925; gill-net marked sockeye salmon seen; Chinook salmon run almost finished; steelhead have passed downstream.

August 1 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 16-31 July 1925; Dolly Varden migrating upstream; some sockeye salmon spawning in Karluk Lagoon.

August 18 – Letter from Ray S. Wood to Fred R. Lucas.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 1-15 August 1925; 200 sockeye salmon tagged at Karluk Spit to measure their travel time to the weir.

September 11 – Letter from Ray S. Wood to Fred G. Morton.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 16-31 August 1925; sockeye salmon tagged at Karluk Spit and recorded at the weir, one caught at the Waterfalls.

September 23 – Letter from J. R. Russell, Field Superintendent, to Dennis Winn.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Karluk River weir in 1926 to be built on upper river or at lake outlet; transport weir lumber in winter with tractor across Portage.

September 30 – Letter from Dennis Winn to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Hungerford transferred to Karluk to take charge of Morton, William Baumann, and Ray Wood; operate Karluk River weir and transport weir lumber from head of Larsen Bay to lake outlet; move tractor from Afognak to Larsen Bay to help move the weir lumber.

October 6 – Letter from Ray S. Wood to Fred G. Morton.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations in September 1925; some sockeye salmon spawn in upper Karluk Lagoon.

October 24 – Letter from Ray S. Wood to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations in October 1925; few steelhead present.

December 9 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Suggestion to install a telephone line between Karluk Spit, the weir, and Karluk Lake.

## 1926

January 16 - Letter from Howard H. Hungerford, Warden, Alaska Service, Bureau of Fisheries, Larsen Bay, AK, to Dennis Winn, Agent, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of hauling lumber to Karluk River Portage in the mild winter of 1925-1926.

February 15 - Letter from Henry O'Malley, Commissioner, to W.S. Erwin, Chief, Division of Supplies, Department of Commerce.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry to obtain 3 wireless telephones to use in the Karluk area.

February 17 - Letter from Howard H. Hungerford, Warden, Alaska Service, Bureau of Fisheries, to J.R. Russell, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Progress report on hauling lumber across portage to new weir site; hauling lumber to lake impossible.

February 19 – Letter from Henry O'Malley to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Weir must be built at Karluk Lake's outlet in 1926; haul lumber by tractor or use skiff to tow lumber up Karluk River.

March 13 – Telegram from Dennis Winn to US Bureau of Fisheries, Washington, DC.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Adverse weather prevented Hungerford from hauling weir lumber to Karluk Lake.

March 15 – Telegram from Henry O'Malley to Dennis Winn.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Try to get weir lumber to lake this winter or transport it up the Karluk River in the spring; install weir at old site on lower river; weir must not be installed at Portage.

April 13 - Letter from W.S. Erwin, Chief, Division of Supplies, Department of Commerce, Washington, DC, to Commissioner of Fisheries.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- 3 wireless telephones for Karluk available for purchase from Navy.

April 15 - Telegram from Russell via Winn to Commissioner of Fisheries.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on hauling lumber for a Karluk weir at the Portage and lake; inquiry on where weir should be located in 1926; recommends installing upper weir at Karluk River Portage.

April 16 - Memo from Ward T. Bower to O'Malley.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of advantages and disadvantages of different weir locations; recommends installing weir on lower Karluk River in 1926.

April 17 - Telegram from Winn, Seattle, WA, to Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Procurement of 3 radio telephones for use at Karluk.

April 17 - Telegram from Radcliffe to Henry O'Malley, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry on where Karluk River weir should be located in 1926.

April 19 - Telegram from [Commissioner ?] to Dennis Winn.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Install weir on lower Karluk River in 1926; also install heavy web weir at Karluk Lake.

April 21 - Letter from Henry O'Malley, Commissioner, to W.S. Erwin, Chief, Division of Supplies, Department of Commerce, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Arrangements for obtaining 3 radio telephones for use in the Karluk area.

April 26 - Letter from Henry O'Malley, Commissioner, to W.S. Erwin, Chief, Division of Supplies, Department of Commerce, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Costs of 3 radio telephones.

April 28 - Letter from Frank T. Watrous, Bureau of Supplies and Accounts, Navy Department, Washington, DC, to Commandant, Navy Yard, Puget Sound.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Arrangements for getting 3 radio telephones.

April 30 - Letter from W.S. Erwin, Chief, Division of Supplies, Department of Commerce, Washington, DC, to Commissioner of Fisheries.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Arrangements for getting 3 radio telephones.

May 10 - Telegram from Russell to Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about the purpose of the 1926 Karluk Lake outlet weir, to obtain accurate sockeye salmon counts or only to intercept pink salmon?

May 10 - Telegram from O'Malley to Russell, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- 1926 Karluk Lake outlet weir planned to keep pink salmon from entering Karluk Lake and to collect pink salmon eggs.

May 12 - Letter from J.R. Russell, Field Superintendent, Bureau of Fisheries, Seattle, WA, to Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report on preparations to install a temporary web weir across the river near Karluk Lake's outlet in 1926.

May 20 - Letter from Ray S. Wood to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk's weir operations on 1-15 May 1926; crew living in old hatchery building; no smolt yet present; Dolly Varden and steelhead gathering above weir; Dolly Varden trap to be installed.

May 24 - Letter from J.R. Russell, Field Superintendent, Bureau of Fisheries, Seattle, WA, to Henry O'Malley, Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Installation of a counting weir at Karluk Lake's outlet not possible in 1926.

May 26 - Letter from J.R. Russell, Field Superintendent, Bureau of Fisheries, Seattle, WA, to Henry O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of Karluk River weir locations and use of 3 radio telephones to communicate escapement and catch information.

May 27 - Telegram from O'Malley to Russell, Bureau of Fisheries, Seattle, WA.

[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Logistics of sockeye salmon studies at Karluk in 1926.

May 27 - Telegram from Russell to Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Installing picket weir at Karluk River Portage in 1926.

June 1 - Letter from Henry O'Malley, Commissioner, to J.R. Russell, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on installing weir at the Karluk River Portage in 1926.

June 2 - Letter from Henry O'Malley, Commissioner, to W.S. Erwin, Chief, Division of Supplies, Department of Commerce, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Cancel the order for 3 radio telephones to use at Karluk.

June 2 - Letter from Henry O'Malley, Commissioner, to J. R. Russell, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Radio telephones canceled; suggest that telephone lines be installed at Karluk.

June 3 – Letter from Ray S. Wood to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 16-30 May 1926; sockeye smolts present; Willis Rich and Seymour P. Smith marking smolt; 5,609 Dolly Varden caught in two traps; Barton to install another Karluk River weir at the Portage.

June 16 – Letter from Ray S. Wood to Howard H. Hungerford.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of Karluk River weir operations on 1-15 June 1926; sockeye smolts absent; Willis Rich and Seymour Smith marked 47,000 smolt; steelhead above weir.

September 27 - Letter from Charles H. Gilbert, Bureau of Fisheries, Stanford University, CA, to Henry O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Suggest changes in Karluk's sockeye salmon regulations; proposed 1927 weir location at Karluk Lake's outlet.

October 4 - Letter from Henry O'Malley, Commissioner, to Charles H. Gilbert, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Karluk's sockeye salmon regulations; proposed 1927 weir location at Karluk Lake's outlet.

December 3 - Letter from Howard H. Hungerford, Warden, Alaska Service, Bureau of Fisheries, Seattle, WA, to Dennis Winn, Agent, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- List of proposed BOF operations for the Karluk area in 1927; plans for cabins and weirs at Karluk Lake and River; plans to destroy predatory fishes; plans to position materials at 3 Karluk River weir locations (lower river above lagoon, at Portage, and below lake's outlet).

## 1927

January 22 - Letter from Ward T. Bower to E. M. Ball, St. Louis, MO.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about a 1916 BOF report on the Karluk region.

January 25 - Letter from Ward T. Bower to Willis H. Rich, Stanford University, CA
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Sending copies of Karluk's sockeye salmon catch and escapement; attempts to find 1911 and 1916 BOF reports on Karluk investigations.

January 31 - Letter from Ward T. Bower to Willis H. Rich, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Attempts to find a 1911 BOF report describing a visit to Karluk Lake on 29 July-1August; transmittal of 1917-1919 Karluk reports.

February 5 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Bureau of Fisheries, Washington, DC [File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Instructions for the 1927 field season at Karluk River and Lake; construct Karluk Lake cabin and a trail from Larsen Bay to Karluk Lake; destroy predatory fishes.

February 5 - Letter from Henry O'Malley, Commissioner, to Willis H. Rich, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about Willis Rich's preferred location for the 1927 Karluk River weir; O'Malley prefers weir be located on lower Karluk River.

February 7 - Letter from Willis H. Rich, Chief Investigator, Salmon Fisheries, Bureau of Fisheries, Stanford University, CA, to Ward T. Bower, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments and questions about old BOF reports on Karluk Lake; questions about past catch and escapement records for Karluk's sockeye salmon.

February 9 - Letter from Rich to Higgins.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments about George I. Kemmerer's plans to use short-wave radio to communicate at Karluk Lake; radio communication advantageous if weir is located at Karluk Lake's outlet.

February 14 - Letter from Willis H. Rich, Bureau of Fisheries, Stanford University, CA, to Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Karluk's weir location in 1927; need to build a cabin on Camp Island at Karluk Lake.

February 21 - Letter from Henry O'Malley, Commissioner, to C. H. Gilbert, c/o P.W. Baker, Atlanta, GA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about Karluk's weir location in 1927.

February 25 - Letter from C. H. Gilbert, Department of Commerce, Office of the Secretary, Atlanta, GA, to Henry O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Recommend that Karluk's weir be located on the lower river in 1927; desire to use Portage weir site to take pink salmon eggs for the State of Washington.

March 1 - Letter from Ward T. Bower to Willis H. Rich, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of discrepancies in past data on Karluk's salmon catch.

March 1 - Letter from Henry O'Malley, Commissioner, to Willis H. Rich, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Karluk River weir to be located on lower river in 1927; cabins to be built on Camp Island and near Karluk Lake's outlet in 1927.

March 3 - Telegram from Winn to O'Malley, Commissioner of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Willis Rich and Dennis Winn request that Karluk's weir be installed at Portage in 1927.

March 4 - Telegram from Dunlap to Winn, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Weir to be located on lower Karluk River in 1927.

March 19 - Letter from George Kemmerer to W.H. Rich.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of logistics and use of short-wave radios in the Karluk area in 1927.

March 25 - Memo from Elmer Higgins, In Charge Scientific Inquiry, Bureau of Fisheries, Washington, DC, to Bower.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on costs and use of short-wave radio in the Karluk area in 1927.

March 31 - Letter from Dennis Winn, Agent, Bureau of Fisheries, Seattle, WA, to Ward T. Bower, Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Costs of radio equipment and other supplies for Karluk Lake field studies in 1927.

April 6 - Memo by M. Alln [Possibly Henry D. Aller or Alan C. Taft?]
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Short discussion and calculation of the mortality of sockeye salmon eggs and fry in the Karluk River system.

April 14 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Minimum escapement of Karluk River sockeye salmon set at 1,000,000 in 1927.

April 25 - Letter from Willis H. Rich, Chief Investigator, Salmon Fisheries, Stanford University, CA, to Dennis Winn, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Karluk travel plans for Willis Rich and Charles Gilbert; plan to get sockeye salmon scales from Native catches at Karluk.

April 26 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Fiscal year 1928 salaries and expenses for sockeye salmon research at Karluk Lake.

May 12 - Letter from Lewis Radcliffe, Acting Commissioner, to George Kemmerer, Assistant Professor of Chemistry, University of Wisconsin, Madison, WI.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of a radio license for George Kemmerer at Karluk Lake in 1927.

May 16 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Karluk River weir activities to May 15, 1927; installed traps to catch Dolly Varden.

May 17 - Letter from Willis H. Rich, Bureau of Fisheries, Seattle, WA, to O'Malley.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of proposed 1927 Uganik Bay tagging study of sockeye salmon.

May 25 - Letter from Henry O'Malley, Commissioner, to Willis H. Rich, Bureau of Fisheries, Uyak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Uganik Bay salmon traps and their possible influence on Karluk's sockeye salmon runs; need a tagging study.

May 31 - Telegram from Russell to Bureau of Fisheries, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Karluk's sockeye salmon weir escapements to 28 May 1927; Charles Gilbert approves closing Karluk fishing until minimum escapement assured.

June 2 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir activities for 16-31 May 1927; 20,224 Dolly Varden captured; high percentage of sockeye salmon grilse.

June 16 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir activities for 1-15 June 1927; total of 26,122 Dolly Varden captured; smolt migration underway.

June 29 - Letter from Ward T. Bower to C. H. Gilbert, c/o Alaska Packers Association, Uyak, AK.

[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Karluk's sockeye salmon run in 1927 was lower than normal.

July 2 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir operations for 16-30 June 1927; last smolts seen on 22 June.

July 5 - Letter from J.R. Russell, Field Superintendent, Seattle, WA, to H. H. Hungerford, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Attempt to correct discrepancies in reported escapements of Karluk's sockeye in 1927.

July 17 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir operations for 1-15 July 1927.

August 3 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to H. H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir activities for 16-31 July 1927; work started on cabin addition using lumber from the old hatchery building.

August 17 - Letter from Ray S. Wood, Foreman In Charge, Bureau of Fisheries, Karluk, AK, to Howard H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir activities for 1-15 August 1927; start construction on the 3.7 x 6.1 m cabin.

September 15 - Letter from Fred J. Spach, Junior Engineer, Alaska Road Commission, Juneau, AK, to M. C. Edmunds, Superintendent, Alaska Road Commission, Anchorage, AK.
[File "Road survey to Karluk Lake," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Cost estimate to build a tractor road from Larsen Bay to Karluk River Portage: foot trail to Karluk Lake.

October 14 - Letter from Willis H. Rich, Chief Investigator, Salmon Fisheries, Bureau of Fisheries, Stanford University, CA, to Ward T. Bower, Washington, DC
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about possible errors in Karluk's sockeye salmon catch for 1921-1926.

October 20 - Letter from Ward T. Bower to Willis H. Rich, Stanford University, CA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Explanation of discrepancies in Karluk's sockeye salmon catch for 1921-1926.

October 24 - Letter from Ray S. Wood, Bureau of Fisheries, Afognak, AK, to Howard H. Hungerford, Warden, Bureau of Fisheries, Seattle, WA.
[File "Biological Correspondence in 1923-1927," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of Karluk River weir operations (16 September to end of 1927 season); problems with ice in the Karluk River and Lagoon.

November 18 - Letter from Willis H. Rich, Bureau of Fisheries, Stanford University, CA, to C. H. Gilbert, Washington, DC
[File "Marking of 1927," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Two estimates of the number of sockeye smolt that migrated from Karluk Lake in 1926.

November 29 - Letter from Willis H. Rich, Bureau of Fisheries, Stanford University, CA, to C. H. Gilbert, Bureau of Fisheries, Washington, DC
[File "Karluk 1926," Box 98, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Accuracy of published data on Karluk's sockeye salmon runs in 1921-1926.

## 1928

February 20 - Letter from Dennis Winn, Agent, Bureau of Fisheries, Seattle, WA, to Commissioner of Fisheries, Washington, DC

[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Costs to construct bridges on a trail and tractor road from Larsen Bay to Karluk Lake.

March 22 - Letter from Ward T. Bower to Dennis Winn, Bureau of Fisheries, Seattle, WA.
[File "Correspondence in 1928-1935 (Biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Karluk's salmon fishing regulations for 1928; sockeye salmon escapement set at 1,000,000.

July 2 - Letter from Ray S. Wood, In Charge, Bureau of Fisheries, Karluk, AK, to Howard H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of activities at the Karluk River weir on 16-30 June 1928; discovery of sockeye salmon in Northeast Harbor Creek, a Karluk River tributary.

September 3 - Letter from Ray S. Wood, In Charge, Bureau of Fisheries, Karluk, AK, to Howard H. Hungerford, Warden, Bureau of Fisheries, Kodiak, AK.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of activities at the Karluk River weir on 16-31 August 1928.

October 16 - Letter from Ward T. Bower, Administrative Officer, to J.R. Russell, Bureau of Fisheries, Seattle, WA. [File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Concern that Karluk's sockeye catch exceeded escapement, a violation of the 50% White Act.

October 20 - Letter from J.R. Russell, Field Superintendent, Bureau of Fisheries, Seattle, WA, to Ward T. Bower, Bureau of Fisheries, Washington, DC
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Response about Karluk's sockeye catch exceeding escapement.

## 1929

February 19 - Letter from [?] to Dennis Winn, Bureau of Fisheries, Seattle, WA.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Instructions to manage Karluk's sockeye catch and escapement in 1929; sockeye escapement set at 1,000,000.

April 4 - Letter from C. S. Black, Wake Forest College, Department of Chemistry, NC, to C. Juday, University of Wisconsin.
[File "Karluk Limnology Report Data," Box 88, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Analyses of Karluk Lake's bottom sediment samples.

July 24 - Letter from J. R. Russell, Field Superintendent, BOF, Seattle, WA, to Ward T. Bower, BOF, Washington, DC
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on possible harm to Karluk's sockeye run in 1929 from the large pink salmon runs of 1924; observation that 1924 low river flows and pollution killed adult and young salmon.

November 4 - Extract of letter from Dr. Rich to O'Malley, Department of Commerce, Bureau of Fisheries.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments that the large pink salmon run of 1924 only damaged the mid-season sockeye run; suggestion that sockeye offspring at Karluk return and spawn at the same time of year as their parents.

late-1929 - Memo from A. C. Taft.
[File "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Prediction about Karluk's sockeye salmon run for 1930.

## 1930

December 30 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Nashua, NH.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Instructions for counting gill-net marked sockeye at the Karluk River weir.

December - Memo from J.T. Barnaby.
[File "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Prediction about Karluk's sockeye salmon run for 1931.

## 1931

February 3 - Letter from Harlan B. Homes, Associate Aquatic Biologist, Bureau of Fisheries, Stanford University, CA, to Commissioner of Fisheries, Washington, DC
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments about sockeye salmon races at Chignik and regulations to divide the fishing season into two periods; similar regulations in place at Karluk River.

February 13 - Letter from Henry O'Malley, Commissioner, to Harlan B. Homes, Bureau of Fisheries, Stanford University, CA.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Chignik sockeye salmon regulations; not divide season.

November 7 - Memo from J.T. Barnaby, Temporary Assistant, Seattle, WA.
[File 1 "Catch and run analysis and graphs," and File 2 "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Prediction about Karluk's sockeye salmon run for 1932.

November 15 - Letter from [Willis H.] Rich, Bureau of Fisheries, Stanford University, CA, to Tom [Barnaby]
[File "Karluk predictions (notes)," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Prediction about Karluk's sockeye salmon run in 1932; Karluk Lake plankton samples and water temperatures to be sent to C. Juday.

December 18 - Letter from Henry O'Malley, Commissioner, to Dennis Winn, Bureau of Fisheries, Seattle, WA. [File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Karluk's sockeye salmon regulations for 1932; minimum escapement of 500,000 discontinued and replaced with 50% escapement.

## 1932

January 5 - Letter from Commissioner to W.H. Rich, Stanford University, CA.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Karluk's sockeye salmon regulations for 1932; concern that escapements were too large in the past, when a minimum of 1,000,000 fish were required; comments on areas assigned to Karluk's sockeye salmon run.

January 18 - Extract of letter from W.H. Rich, Stanford University, CA, to [Commissioner O'Malley ?]
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Argues that present sockeye escapements are not excessive at Karluk; assignment of sockeye salmon to the Karluk River; validity of the 50% escapement requirement being tested.

October 4 - Letter from JTB [Joseph Thomas Barnaby], Temporary Assistant, Seattle, WA, to Willis H. Rich, Stanford University, CA.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of the 1932 field studies on Karluk's sockeye salmon; smolt marking; search for marked adults at the canneries; trips to the spawning grounds at Karluk Lake in July and September.

October 8 - Letter from H. Olafson, Bureau of Fisheries, Karluk, AK, to Tom Barnaby, Seattle, WA.
[File "Karluk predictions (notes)," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report that a box of 200 sockeye scales were lost in the Karluk River; pink salmon carcasses drifting against the weir and causing problems.

October 28 - Memo from J.T. Barnaby, Scientific Assistant, Seattle, WA.
[File "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Prediction about Karluk's sockeye salmon run in 1933.

## 1933

November 27 - Memo from J.T. Barnaby, Scientific Assistant, Seattle, WA.
[File "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Prediction about Karluk's sockeye salmon run in 1934.

## 1934

August 4 - Letter from George A. Rounsefell, Acting Director, Fisheries Biological Station, Bureau of Fisheries, Seattle, WA, to Daniel C. Roper, Secretary of Commerce, Washington, DC

[File "Report on scientific activities of the US Bureau of Fisheries in Alaska and the Pacific Northwest, Rounsefell, 1934," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Transmittal of a report on the BOF's scientific studies in Alaska and the Pacific Northwest, including those at Karluk River and Lake.

August 18 - Letter from M.C. Edmunds, Superintendent, Alaska Road Commission, Anchorage, AK, AK, to Ike P. Taylor, Chief Engineer, Juneau, AK.
[File "Road survey to Karluk Lake," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Description of terrain and cost estimate of a road from Larsen Bay to Karluk Lake.

## 1935

January 4 - Letter from Ward T. Bower, Chief, Division of Alaska Fisheries, to Seton H. Thompson, c/o W. H. Rich, Stanford University, CA.
[File "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report that several hundred, fresh run, sockeye salmon were caught at Karluk Spit and Lagoon on 19-20 November 1934.

January 14 - Memo from J.T. Barnaby entitled "Memorandum on Karluk River red salmon escapement of 1934."
[File 1 "Weirs 1935," Box 40 -- File 2 "Estimated escapement data 1934 (J.T. Barnaby)," Box 77 – File 3 "Correspondence in 1928-1935 (biological)," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Estimate of Karluk's sockeye escapement in 1934, with corrections for the 27 days (22 August-17 September) when the weir was out (300,000 sockeye estimated).

January 23 - Memo from J.T. Barnaby, Scientific Assistant, Seattle, WA, to Commissioner of Fisheries.
[File 1 "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, and File 2 "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Prediction about Karluk's sockeye salmon run in 1935; recommend the counting weir be moved to Karluk River Portage.

## 1939

November 28 - Memo from Allan C. DeLacy, Junior Aquatic Biologist, and Joseph T. Barnaby, Associate Aquatic Biologist, Seattle, WA, to Acting Commissioner, Bureau of Fisheries, Washington, DC.
[File "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Advantages and disadvantages of a counting weir at the Karluk River Portage; recommend the weir be placed at the Portage in 1940; recommend operating the weir until 10 October each year.

## 1940

May 21 - Letter from Tom [Barnaby ?] to Fred [Director, Bureau of Fisheries, Seattle, WA ?], written on Alaska Steamship Company stationary.
[File "Road survey to Karluk Lake," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Past cost estimates for a tractor road between Larsen Bay and Karluk Lake by Alaska Road Commission.

May 22 - Letter from Hawley Sterling, Assistant Chief Engineer, Alaska Road Commission, Juneau, AK, to Director, Bureau of Fisheries, Seattle, WA.
[File "Road survey to Karluk Lake," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Transmittal of the 1927 and 1934 cost estimates of a tractor road between Larsen Bay and Karluk Lake.

## 1942

March 31 - Permit letter from Harold L. Ickes, Secretary of the Interior, Washington, DC, to Allan C. DeLacy, Fish and Wildlife Service, Seattle, WA.
[File "Predators Karluk area," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Permit to take fish-eating birds at Karluk for a food habit study.

November 5 - Letter from Allan C. DeLacy, Assistant Aquatic Biologist, Alaska Fishery Investigations, Seattle, WA, to W.M. Morton, Fish and Wildlife Service, Stanford University, Palo Alto, CA.
[File "Racial Data -- Methods & Results," Box 102, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discusses variations in vertebral and gill raker counts of Karluk's sockeye salmon in 1941-1942.

November 9 - Memo from Allan C. DeLacy, Assistant Aquatic Biologist.
[File "Predictions - Karluk runs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Predictions about Karluk's sockeye and pink salmon runs in 1943; discussion of the even- and odd-year pink salmon runs; discussion of weir counts of Karluk's pink salmon in 1941; pink salmon escapement likely was incorrect because

the weir tender padded the counts; pink salmon escapements in 1941 may have been substantially less than 50,000, rather than the 133,285 reported.

December 2 - Letter from Joseph T. Barnaby, Acting In Charge, Alaska Fishery Investigation, Seattle, WA, to Director, FWS, Chicago, IL.
[File "Predators Karluk area," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Twenty red-breasted mergansers collected (May 18-August 10) at Karluk Lake in 1942 for stomach content analyses.

## 1945

October 23 - Letter from R.F. Shuman, Aquatic Biologist, Seattle, WA, to A. C. Mott, Alaska Packers Association, San Francisco, CA.
[File "Correspondence 1939-1940, 1947, 1952, 1954-1956, & 1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Requests sockeye case-pack records for Karluk in 1880-1920; suggested using case pack records to estimate past escapements.

## 1946

February 5 - Letter from E.H. Dahlgren, Acting In Charge, Alaska Fishery Investigations, Seattle, to The Director, FWS, Washington, DC
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Discussion of Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River".

February 12 - Letter from Elmer Higgins, Chief, Division of Fishery Biology, FWS, Washington, DC, to Willis H. Rich, Seattle, WA.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Rich requested to critically review Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River"; possible amendment to White Act needed.

March 19 - Letter from Willis H. Rich, Consultant, Salmon Fishery Investigations, Stanford University, to R.F. Shuman, FWS, Seattle, WA.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Brief criticisms of Shuman's manuscript, "Observations on escapements and returns of red salmon at the Karluk River".

March 25 - Letter from Elizabeth Vaughan, Seattle, to Willis H. Rich, Stanford University.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Response to Rich's criticisms of Shuman's manuscript, "Observations on escapements and returns of red salmon at the Karluk River".

April 2 - Letter from Richard F. Shuman, Aquatic Biologist, Seattle, to Willis H. Rich, Stanford University. [Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Response to Rich's criticisms of Shuman's manuscript, "Observations on escapements and returns of red salmon at the Karluk River".

April 22 - Letter from W. H. Rich, Consultant, Salmon Fishery Investigations, Stanford University, CA, to Elmer Higgins, Fish and Wildlife Service, Washington, DC
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transmittal of Rich's critique of Shuman's manuscript, "Observations on escapements and returns of red salmon at the Karluk River", and suggestion that Rich and Shuman co-author the paper.

April 22 - Memo by Willis H. Rich, Consultant, Salmon Fishery Investigations, on Shuman's manuscript "Observations on escapements and returns of red salmon at the Karluk River".
[File 1 "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK, and File 2 Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Important detailed critique of Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River"; argues that past depletion of Karluk's sockeye salmon runs was from the declining fertility of Karluk Lake; recommends a constant escapement goal of 2,000,000 sockeye at Karluk.

May 1 - Letter from Elmer Higgins, Chief, Division of Fishery Biology, FWS, Washington, DC, to Willis H. Rich, Seattle, WA.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Important detailed discussion of Rich's review of Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River"; discussion of Karluk Lake fertilization; Rich discouraged from seeking co-authorship with Shuman.

May 2 - Letter from Elmer Higgins, Chief, Division of Fishery Biology, to George B. Kelez, Seattle, WA.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Kelez and Shuman advised to interact with Rich to improve Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River".

May 6 - Letter from George B. Kelez, In Charge, Alaska Fishery Investigations, Seattle, WA, to [Elmer] Higgins, via Director, FWS, Washington, DC
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Important summary of the 3 May 1946 meeting between Willis Rich, Richard Shuman, Tom Barnaby & George Kelez about Shuman's manuscript, "Observations on escapements and return of red salmon at the Karluk River"; discussion of fertilizing Karluk Lake to increase salmon productivity.

May 11 - Letter from Willis H. Rich, Consultant, Salmon Fishery Investigations, to Elmer Higgins, Chief, Division of Fishery Biology, FWS, Washington, DC
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of the meeting between Willis Rich, Richard Shuman, Tom Barnaby & George Kelez about Shuman's Karluk manuscript, "Observations on escapements and return of red salmon at the Karluk River"; possible Karluk Lake fertilization; influence of predation and competition on Karluk's sockeye salmon; future publications.

c. May - Notes by Tom Barnaby on Rich's critique of Shuman's manuscript.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Barnaby's comments on Rich's critique of Shuman's Karluk manuscript, "Observations on escapements and return of red salmon at the Karluk River", and Rich's responses to Barnaby's comments.

August 16 - Letter from Willis H. Rich, Consultant, Salmon Fisheries Investigations, Stanford University, to R.F. Shuman, Fish and Wildlife Service, Seattle.
[File 1 "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK, and File 2, Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Rich's outline for revising Shuman's Karluk manuscript, "Observations on escapements and return of red salmon at the Karluk River".

September 4 - Letter from R. E. Foerster, Director, Pacific Biological Station, Fisheries Research Board of Canada, Nanaimo, BC, to R. F. Shuman, Karluk Salmon Investigations, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Response to Shuman's request for information on the sockeye salmon of Cultus Lake; comments on the stickleback-sockeye salmon interaction.

October 15 - Letter from Elmer Higgins, Chief, Division of Fishery Biology, Washington, DC, to Dr. Cottam, Assistant Director, Chicago.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transmittal of Quarterly Report (1 July-30 September 1946), Alaska Fishery Investigations, by George B. Kelez; comments on proposed sockeye salmon studies at Karluk Lake; lake fertilization and provisions for a year-round research station.

## 1947

February 28 - Letter from RFS [Richard F. Shuman], Fish and Wildlife Service, Seattle, WA, to Mark Meyer. [File 1 "Correspondence 1939-1940, 1947, 1952, 1954-1956, & 1959," Box 109, Salmon Fisheries Research Data 1914-1966, and File 2 "Biological Correspondence 1948," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Estimate of Karluk's 1947 sockeye salmon run; proposed alternative escapement plans for 1947; comments on proposed fisheries research at Karluk in 1947.

October 23 - Memo from Richard F. Shuman, Aquatic Biologist, to Seton Thompson, Division of Alaska Fisheries.
[File "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of spring and fall sockeye salmon runs at Karluk and predictions for 1948; set minimum escapement goals for the spring (350,000) and fall (350,000) sockeye runs.

## 1948

February 12 - Memo from Richard F. Shuman, Aquatic Biologist, to Chief, Branch of Fishery Biology.
[File 1 "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, and File 2 "Catch and run analysis and graphs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of Karluk's sockeye salmon runs; change in age composition, with fewer 5-year fish and

more 6-year fish; proposed regulations for the 1948 Karluk fishery; prediction of sockeye run size in 1948; interaction between pink and sockeye salmon.

February 24 - Letter from Seton H. Thompson, Chief, Division of Alaska Fisheries, to Regional Office, Juneau, AK.
[File "Catch and run analysis and graphs," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transmittal of Shuman's Feb. 12 memo, with comments.

December 7 - Letter from Lawrence N. Kolleen, Acting Chief, Alaska Investigations, Seattle, WA, to Clarence J. Rhode, FWS, Juneau.
[File 1 "Biological Correspondence 1948," and File 2 "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Shuman's memorandum for regulating Karluk's sockeye fishery in 1949; two distinct sockeye salmon runs (spring and fall) at Karluk.

December 7 - Memo from Richard F. Shuman, Aquatic Biologist, FWS, Seattle, WA, to Regional Director, FWS, Juneau.
[File 1 "Biological Correspondence 1948," and File 2 "Recommendations -- memos to Director 1935-1951," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of the spring and fall sockeye runs at Karluk and proposed regulations for 1949; since spring and fall runs are separate and distinct, each should have its own regulations; fall run needs rebuilding.

December 29 - Letter from Marcus W. Meyer, Enforcement Agent, Kodiak, AK, to Regional Director, FWS, Juneau.
[File "Biological Correspondence 1948," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of proposed sockeye salmon regulations at Karluk in 1949; regulations adjusted to protect fall sockeye run.

## 1949

January 19 - Memo from J.T. Barnaby to R.F. Shuman.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- History of how Thomas Barnaby transplanted spruce trees from Kodiak to Camp Island, Karluk Lake, in 1932.

April 20 - Letter from W.F. Thompson, Director, Fisheries Research Institute, University of Washington, Seattle, WA, to Richard Shuman, Fish and Wildlife Service, Seattle, WA.
[File "Tagging, FRI, 1948," Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Recovery of FRI ocean-tagged sockeye salmon in the Karluk River drainage by the FWS in 1948.

August 18 - Memo from R. P. Silliman, Chief, Section of Anadromous Fisheries, to R.F. Shuman, Fishery Biologist, through Kelez, Supervisor of Fisheries.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Criticism of Shuman's manuscript on Karluk's sockeye salmon.

October 27 - Letter from Clarence J. Rhode, Regional Director, Juneau, to Refuge Manager, Kodiak.
[File "Bear predations 1947," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of bear-salmon studies needed and devices to restrict bear predation on Karluk's sockeye salmon.

## 1950

February 10 - Letter from [Richard Shuman ?], Seattle, WA, to Willis H. Rich, Stanford University, CA.
[File "Tagging, FRI, 1949," Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comparison of two Kodiak Island studies of ocean-tagged sockeye salmon, (1) that done by Willis Rich in 1927 and (2) that done by Donald Bevan in 1948; inquiries about location of Rich's original Karluk field notebooks and location of early Karluk Lake limnological data.

February 27 - Letter from Willis H. Rich, Fish and Wildlife Service, Menlo Park, CA, to Dick [Shuman ?]
[File "Tagging, FRI, 1949," Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the recovery of Karluk's sockeye from the 1948-1949 FRI tagging studies and the influence of Red River sockeye salmon; in 1950 Rich possesses his original Karluk field notebooks; Karluk Lake plankton data should be at University of Wisconsin, Madison.

March 3 - Letter from [Richard Shuman ?], Seattle, WA, to Willis H. Rich, Menlo Park, CA.
[File "Tagging, FRI, 1949," Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the recovery of FRI ocean-tagged sockeye at Karluk and Red River.

March 30 - Teletype from Silliman, Fish and Wildlife Service, Washington, DC, to Kelez, Fish and Wildlife Service, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Inquiry about submission date of Shuman's manuscript on Karluk's sockeye salmon.

April 5 - Letter from G. B. Kelez, Chief, Alaska Fishery Investigations, to Chief, Branch of Fishery Biology, Washington, DC, attention Dr. Silliman.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Forward copies of Shuman's revised manuscript on Karluk's sockeye salmon.

April 11 - Letter from Willis H. Rich, Fish and Wildlife Service, Menlo Park, CA, to Dick [Shuman ?]
[File "Tagging, FRI, 1949," Box 101, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the recovery of FRI ocean-tagged sockeye salmon at Karluk and Red River.

May 3 - Memo from R. P. Silliman, Chief, Section of Anadromous Fisheries, to R.F. Shuman, Fishery Research Biologist, through Chief, Alaska Fishery Investigations.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Criticism of Shuman's manuscript on Karluk's sockeye salmon.

May 17 - Letter from R. F. Shuman, Fishery Research Biologist, Seattle, to Ralph Silliman, Chief, Section of Anadromous Fisheries, Washington, DC
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Shuman's response to Silliman's criticism of his manuscript on Karluk's sockeye salmon.

May 23 - Memo from R. P. Silliman, Chief, Section of Anadromous Fisheries, to Richard F. Shuman, Alaska Fishery Investigations, Seattle, through Kelez.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] – Suggests that Shuman change the manuscript's title to "A report on the trends in abundance of the red salmon (*Oncorhynchus nerka*) of the Karluk River, Alaska, with a discussion of the ecological factors involved".

May 29 - Letter from Richard F. Shuman, Alaska Fishery Investigations, through Kelez to Ralph Silliman, Chief, Section of Anadromous Fisheries.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Progress on Shuman's manuscript of Karluk's sockeye salmon.

June 13 - Memo from Philip R. Nelson, Fishery Research Biologist, to G. B. Kelez, Chief, Alaska Fishery Investigations.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of a proposal to study sockeye egg fertilization when male-female ratios are 1:10 in a Karluk Lake tributary stream.

November 14 - Letter from A. R. Malsbary, Dillingham, to Richard Shuman, Fisheries Management Supervisor, Petersburg, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Comments on fertilization studies near Karluk Lake.

December 4 - Letter from R. F. Shuman, Fishery Management Supervisor, to A. R. Malsbary, Dillingham. [Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Ideas on Karluk Lake's productivity, escapements, and fertilization.

## 1951

January 22 - Letter from [Nelson ?], Seattle, WA, to Mark Morton, Portland, OR.
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Observations of beach spawning by Karluk's sockeye salmon.

March 6 - Letter from Philip R. Nelson, Fishery Research Biologist, Seattle, WA, to R. F. Shuman, Fishery Management Supervisor, Juneau, AK.
[File "Predators Karluk area," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Number of bears observed around Karluk Lake in 1946-1950.

March 14 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Chief, Section of Anadromous Fisheries, Washington, DC
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of Bare Lake fertilization study and 3 methods for adding fertilizer in the coming years; preconditions needed before fertilizing Karluk Lake.

June 20 - Letter from R. F. Shuman, Fishery Management Supervisor, Fish and Wildlife Service, Juneau, AK, to Regional Director, Fish and Wildlife Service, Juneau, AK.
[File "Bear predations 1947," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Shuman's response to Frank Dufresne's criticism in *Field and Stream* (June 1951).

c. July - Letter from Clarence J. Rhode, Regional Director, Juneau, to Director, Washington, DC
[File "Bear predations 1947," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the article by Frank Dufresne in *Field and Stream*.

July 12 - Letter from R. F. Shuman, Fishery Management Supervisor, Fish and Wildlife Service, Juneau, AK, to Regional Director, Fish and Wildlife Service, Juneau, AK.
[File "Bear predations 1947," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Shuman's response to Frank Dufresne's criticism in *Field and Stream* (June 1951).

September 13 - Letter from R. F. Shuman, Acting Regional Director, Fish and Wildlife Service, Juneau, to Chief, Section of Anadromous Fisheries, Fish and Wildlife Service, Washington, DC
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] – Transmittal of the galley proofs for Shuman's manuscript on Karluk's sockeye salmon; comments on reviewer criticisms.

## 1952

January 23 - Letter from Ralph [Silliman], Cheverly, MD, to Dick [Richard F. Shuman]
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Stalemate on Shuman's manuscript on Karluk's sockeye salmon; suggests that a third party review the manuscript.

March 20 - Memo from O.E. Sette, Director, Pacific Oceanic Fishery Investigations, Fish and Wildlife Service, Honolulu, HI to Chief, Branch of Fishery Biology.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review and criticism of Shuman's manuscript on Karluk's sockeye salmon.

May 7 - Letter from Clinton E. Atkinson, Chief, Pacific Coast Salmon Investigations, Seattle, WA, to Chief, Section of Anadromous Fisheries, Washington, DC
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary of a meeting between FWS and FRI to cooperate in their 1952 sockeye salmon studies at Karluk Lake sockeye.

July 8 - Handwritten memo on suggestions by Barnaby.
[File "Research Program Karluk 1933-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Ideas on how to test the relative survival of sockeye salmon in 3 different spawning periods at Karluk (spring, midseason, fall).

October 21 - Letter from Philip R. Nelson, Fishery Research Biologist, Seattle, WA, to John Lutz, Fish and Wildlife Service, Kodiak, AK.
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of run timing in Karluk's sockeye salmon; FRI hypothesis that sockeye salmon run were originally unimodal; sockeye salmon spawning use of lake beaches, lateral streams, and terminal streams at Karluk Lake; bear predation on sockeye salmon.

December 5 – Letter from Philip R. Nelson, FWS, Seattle, WA, to Fishery Management Supervisor, Juneau, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Management of sockeye and pink salmon in even and odd years in the Karluk District.

December 16 - Letter from George A. Rounsefell, Fish and Wildlife Service, Woods Hole, MA, to Richard F. Shuman, Fish and Wildlife Service, Juneau.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Transmittal of Rounsefell and Shuman's manuscript on Karluk's sockeye salmon.

December 18 - Memo from Clarence J. Rhode, Regional Director, FWS, Juneau, AK, to Assistant Regional Director Baltzo, FWS, Juneau, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Controversy between the FRI and FWS over the survival and spawning of gill-net injured salmon; desire to know the effect of gill-net marks on salmon.

## 1953

January 7 - Memo from R. F. Shuman, FWS, Juneau, to Regional Director, FWS, Juneau AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Criticisms of Rounsefell's manuscript on Karluk's sockeye salmon; Shuman declines joint authorship.

January 9 - Memo from Joseph T. Barnaby, Regional Staff Biologist, Portland, OR, to Regional Director, Juneau, AK.
[File "Transplanting - Fish Stocking,1949-1956" Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Historical description of annual steelhead egg takes at Karluk River Portage, 1926-1931.

January 12 - Letter from Clinton E. Atkinson, Chief, Pacific Salmon Investigations, Seattle, WA, to Regional Director, Fish and Wildlife Service, Juneau, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Different ideas and data on the mortality of gill-net marked sockeye salmon at Karluk; need for a quantitative study of the problem in 1953.

February 9 - Letter from Clarence J. Rhode, Regional Director, Fish and Wildlife Service, Juneau, AK, to Chief, Atkinson, Pacific Salmon Investigations, Fish and Wildlife Service, Seattle, WA.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Bare Lake fertilization study to continue; desire to apply Bare Lake fertilization results to Karluk Lake to reverse the decline of its sockeye salmon run.

February 26 - Letter from Clinton E. Atkinson, Chief, Pacific Salmon Investigations Seattle, WA, to Regional Director, Fish and Wildlife Service, Juneau, AK.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of fertilization study at Bare Lake and future fertilization of Karluk Lake; start pre-fertilization and smolt studies at Karluk Lake; methods for determining smolt abundance needed.

March 6 - Memo from Ralph P. Silliman, Chief, Section of Anadromous Fisheries, to Chief, Pacific Salmon Investigations.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review of Rounsefell's manuscript on Karluk's sockeye salmon.

March 12 - Letter from Philip R. Nelson, Fishery Research Biologist, to Chief, Pacific Salmon Investigations, Seattle, WA.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Overview of Bare Lake fertilization study; study time needed to show results on adult sockeye.

March 23 - Memo from Clarence J. Rhode, Regional Director, Fish and Wildlife Service, Juneau, AK, to Clint Atkinson, Fish and Wildlife Service, Seattle, WA.
[File "Gill net experiment planning," Box 107, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on a proposed study of gill-net marked sockeye at Karluk.

April 14 - Letter from Ralph P. Silliman, Chief, Section of Anadromous Fisheries, to Chief, North Atlantic Fishery Investigations.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Attempts to regain the past research data held by Rounsefell on Karluk's sockeye salmon; data on weather, pink salmon escapements, and sockeye catches, escapements, and age compositions.

April 27 - Memo from Beth Vaughan to P. R. Nelson.
[File "Analysis between FWS and FRI lengths," Box 77, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comparison of sockeye salmon lengths measured by the FWS and FRI at Karluk in 1952.

August 27 - Letter from Clinton C. Atkinson, Chief, Pacific Salmon Investigations, to Chief, Section of Anadromous Fisheries.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Suggestion that Philip R. Nelson should pursue publication of Richard F. Shuman's manuscript on Karluk's sockeye salmon.

September 11 - Record of agreement between Clarence J. Rhode, Fish and Wildlife Service; Rear Admiral John Perry, US Navy; and R. E. Lee, President, Kodiak Conservation Club concerning operation of the fish hatchery at the US Naval Station, Kodiak, AK.
[Folder "26", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Memorandum of understanding between the 3 concerned groups on their separate responsibilities in operating the Kodiak fish hatchery.

September 15 - Memo from Ralph P. Silliman, Chief, Section of Anadromous Fisheries, to Richard F. Shuman, Fishery Research Biologist.

[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Comments on Shuman's manuscript of Karluk's sockeye salmon.

December 10 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Chief, Pacific Salmon Investigations.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Brief comparison of soluble phosphorus levels in Karluk Lake for 7 years (1927-1949); suggestion that lake nutrients and plankton have declined during the study period.

## 1954

January 25 - Letter from Philip R. Nelson, Fishery Research Biologist, to Chief, Pacific Salmon Investigations.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Brief history of the sockeye salmon studies at Karluk, including the main people involved and what they studied.

May 25 - Memo from Clarence J. Rhode, Regional Director, FWS, Juneau, AK, to Applicable Field Stations. [Folder "783-01 Stocking (Gen. Corresp.)", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Disposition of Karluk River steelhead eggs and fry incubated at the Kodiak Conservation Club hatchery.

July 7 - Letter from Roger W. Allin, Fisheries Management Biologist, FWS, Anchorage, AK, to Regional Director, FWS, Juneau, AK.
[Folder "783-01 Stocking (Gen. Corresp.)", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Comments on hatchery loss of Karluk River steelhead eggs; disposition of eggs; steelhead eggs not returned to the Karluk River.

July 14 - Letter from Roger W. Allin, Fisheries Management Biologist, FWS, Anchorage, AK, to Regional Director, FWS, Juneau, AK.
[Folder "783-01 Stocking (Gen. Corresp.)", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Disposition of Karluk River steelhead eggs and fry.

August 3 - Letter from [Phil Nelson] to Carl [Abegglen]
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Field work planned at Karluk Lake in 1954; jug experiments in Karluk Lake; placement of sockeye egg cartridges in different gravels; leeches and oligochaetes infest eggs; 16mm movie of Karluk Lake.

October 22 - Letter from Carl E. Abegglen, Fishery Research Biologist, Seattle, WA, to Acting Chief, Pacific Salmon Investigations, Seattle, WA.
[File "Karluk weir historical record to date," Box 97, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report on the 22-23 August 1954 flood damage to the spawning streams at Karluk Lake; damage greatest on tributaries at south end of Karluk Lake.

October 27 - Letter from Roger W. Allin, Fisheries Management Biologist, FWS, Anchorage, AK, to Bob Scott, FWS, Fairbanks, AK.
[Folder "783-01 Stocking (Gen. Corresp.)", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of fish-stocking activities by ADF and FWS; description of 1953-1954 egg take from Karluk River steelhead.

December 6 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Chief, Pacific Salmon Investigations.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the 1954 sockeye smolt traps at Karluk; division of salmon research responsibilities between FWS and FRI at Karluk.

## 1955

March 15 - Letter from Phil [Nelson], Seattle, WA, to M. P. Shepard, Pacific Biological Station, Nanaimo, BC.
[File "Correspondence 1939-1940, 1947, 1952, 1954-1956, & 1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on a winter trip to Bare Lake in 1955; sampled limnological conditions and sockeye juveniles; winter food habits of juvenile sockeye.

October 31 - Memo from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Administrator, Alaska Commercial Fisheries, Juneau, AK.
(File 1 "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK, and File 2: Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Summary of the lake

fertilization hypothesis to increase sockeye abundance at Karluk and Bare Lakes; statement prepared for Senate Committee on Interstate and Foreign Commerce hearing under chairmanship of Senator Warren Magnuson.

November 4 - Memo from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Administrator, Alaska Fisheries, Fish and Wildlife Service, Juneau, AK.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Short summary of the major research projects conducted (but unpublished) in the Kodiak Island area by the FWS, FRI, & ADF since 1945, including many on Karluk's sockeye salmon (tag studies, bear predation, egg survival, sticklebacks, subpopulations, age and length, juvenile salmon, counting tower).

November 8 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Administrator, Alaska Commercial Fisheries.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of budgets and future sockeye salmon studies at Karluk Lake; proposed to test William F. Thompson's theory of a productive midseason run at Karluk; need for more limnological data before Karluk Lake is fertilized.

November 9 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Administrator, Alaska Commercial Fisheries.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Brief summary of Karluk's sockeye salmon studies, including weir operations, age-sex-length data, stream surveys, smolt numbers, weather, and limnology.

November 22 - Memo from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to W. F. Royce, Administrator, Alaska Commercial Fisheries, Fish and Wildlife Service, Juneau, AK.
[File 1: "Correspondence (Karluk) 1950-1958", Box 109, and File 2: "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Summary report of the 1955 field studies at Karluk and Bare Lakes; smolt migration measurements; Karluk Lake samples of sockeye salmon juveniles; fertilization results; 16mm movies of Karluk and Bare Lakes.

November 22 - Letter from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Kim [Clark], Wildlife Management Biologist, Fish and Wildlife Service, Kodiak, AK.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Inquiry about weather data and water levels at Karluk Lake; comments on the 1948 Karluk Lake bear-salmon manuscript.

c. 1955 - Data summary of Kodiak Conservation Club.
[Folder "Summaries of Stocking Activities. All material prior to 1960", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Report on the distribution of steelhead fry and eyed eggs from the Karluk River.

c. 1955 - Data summary.
[Folder "Summaries of Stocking Activities. All material prior to 1960", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Data summaries of fish stocking locations and numbers in 1953, 1954, and 1955.

## 1956

January 19 – FWS notes on a conference with George Rounsefell.
[File "Research Program Karluk 1933-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of 3 ideas to rebuild Karluk's sockeye salmon runs, (1) poison the leeches and oligochaetes that feed on salmon eggs, (2) stream improvements, and (3) reduce predators and reestablish 5-year cycle.

February 2 – Letter from Clarence J. Rhode, Administrator of Alaska Commercial Fisheries, FWS, Juneau, AK, to Administrator of Alaska Wildlife Resources, attention Mr. Royce.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Comments on the use of Kodiak National Wildlife Refuge reports by biologists Lutz, Clark, Grogan, Chapados, and Hoffman in the proposed paper by Shuman and Nelson about bear predation on salmon at Karluk Lake and other Kodiak Island salmon spawning areas; suggested withholding publications until more spawning streams were sampled.

February 7 - Notes of [Philip R.] Nelson on a conference with research project leaders.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments that past sockeye salmon research from Karluk should be located and inventoried.

February 20 - Memo from William F. Royce, Assistant Administrator in Charge of Research, to Administrator of Alaska Commercial Fisheries.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] – Comments on Rounsefell's activities in Seattle.

February 24 - Letter from William F. Royce, Assistant Administrator in Charge of Research, Juneau, AK, to W. K. Clark, Kodiak, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Discussion about including data on bear-salmon predation from studies done in the 1950s by Kodiak National Wildlife Refuge biologists in the manuscript, "Further studies on bear predation on red salmon spawning populations in the Karluk River system" by Richard F. Shuman and Philip R. Nelson; comments on authorship and adequate credit for studies completed.

February 28 - Memo from Philip R. Nelson, Fishery Research Biologist, to Assistant Administrator in Charge of Research.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Discussion about including data on bear-salmon predation from studies done in the 1950s by Kodiak National Wildlife Refuge biologists in the manuscript, "Further studies on bear predation on red salmon spawning populations in the Karluk River system" by Richard F. Shuman and Philip R. Nelson; recommendation that Refuge studies be published separately and the Shuman and Nelson paper be limited to the 1947 and 1948 studies.

March 1 - Memo from William F. Royce, Assistant Administrator in Charge of Research, FWS, Juneau, AK, to Philip R. Nelson, FWS, Seattle, WA.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Comments about adding studies of bear-salmon predation done by Refuge biologists in the 1950s to the Shuman and Nelson manuscript, "Further studies on bear predation on red salmon spawning populations in the Karluk River system".

March 8 – Memo from W. K. Clark, WMB, FWS, Kodiak, AK, to W. F. Royce, AACR, FWS, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Discussion of revising the manuscript, "Further studies on bear predation on red salmon spawning populations in the Karluk River system" by Shuman and Nelson and including data collected by Kodiak National Wildlife Refuge biologists in the 1950s.

March 12 - Letter from Donald L. McKernan, Administrator of Alaska Commercial Fisheries, Juneau, to Milton E. Brooding, Chairman, International North Pacific Fisheries Commission, San Francisco.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] – Discussion of Rounsefell's ideas and proposals to rehabilitate Karluk's sockeye salmon.

March 26 - Letter from C. L. Anderson, Director, ADF, to Robert J. Simon, Junior Biologist, ADF, College, AK. [Folder "Kodiak: Agreements with Kodiak Conservation Club (NAVY) 519.2", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Agreements between the ADF and Kodiak Conservation Club for the transfer of Robert J. Simon to Kodiak, weir operations, and cost of Karluk River steelhead eggs ($8 per 1000 eggs).

March 27 - Letter from David L. Spencer, Refuge Supervisor, FWS, Kenai, AK, to Wildlife Administrator, FWS, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Discussion and review of Webster K. Clark's revision of the bear-salmon predation manuscript by Shuman and Nelson; inclusion of data collected by Kodiak National Wildlife Refuge biologists in the 1950s.

June 14 - Memo by Charles Y. Conkle.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comparison of sockeye smolt trap catches in the Karluk River weir when using metal panels versus wooden pickets; coho salmon smolts affected the study results.

July 13 - Letter from [Nelson ?], Seattle, WA, to Chuck [Conkle ?]
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of the Karluk Lake field studies in 1956; study of bear-killed sockeye salmon; trapping sockeye fry in Karluk Lake tributaries.

August 7 - Letter from Cy [Conkle], Fish and Wildlife Service, to Phil [Nelson]
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the length-frequency graph prepared from the results of seine hauls of juvenile sockeye made at Jackpot Cove in Karluk Lake; comments on the causes of salmon death in spawning streams.

August 7 - Letter from C. L. Anderson, Director, ADF, to C. J. Rhode, Wildlife Administrator, FWS, Juneau, AK.
[Folder "Fish and Wildlife File 1956", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Summary of 1956 steelhead egg take at the Karluk River; disposition of eggs to ADF, FWS, Navy Adak, and Kodiak Conservation Club.

August 20 - Memo from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to John Greenbank, Fish and Wildlife Service, Juneau, AK.
[File "Stickleback correspondence 1956," Box 87, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on stickleback migrations at Karluk and Bare Lakes; no mass stickleback migrations to and from the ocean; presence of large stickleback individuals in Karluk Lagoon.

September 6 - Letter from John Greenbank, Fishery Biologist, to Grace Orton, Scripps Institution of Oceanography, LaJolla, CA.
[File "Stickleback correspondence 1956," Box 87, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Detailed discussion of stickleback reproduction, reproductive organs, and discovery of hermaphroditism in specimens from Karluk and Bare Lakes.

September 11 - Memo from Philip R. Nelson, Fishery Research Biologist, Fish and Wildlife Service, Seattle, WA, to Assistant Administrator In Charge of Research, Fish and Wildlife Service, Juneau, AK.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Report of sockeye salmon research at Bare and Karluk Lakes in August-September 1956.

October 24 - Letter from John Greenbank, Fishery Biologist, Seattle, WA, to Charles Huver, University of Wisconsin, Madison, WI.
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of hermaphroditism and eyed eggs in Karluk and Bare Lake sticklebacks.

November 13 - Letter from Philip R. Nelson, Fishery Research Biologist, Seattle, WA, to Milo Moore, Seattle, WA.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Overview of Karluk's sockeye salmon studies since 1921; people in charge of Karluk research, 1921-1957.

## 1957

February 1 - Letter from E. S. Marvich, Senior Biologist, ADF, Juneau, AK, to Robert J. Simon, Junior Biologist, ADF, Kodiak, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of the steelhead egg take from the Karluk River in 1956, and plans for 1957; concern expressed about the steelhead run; request that steelhead scales be collected; disposal of steelhead carcasses.

February 7 - Letter from Robert J. Simon, ADF, to E. S. Marvich, Senior Biologist, ADF.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of sport fishing during steelhead egg takes at Karluk; egg takes for 1953-1956.

c. February - Letter from Robert J. Simon, ADF, to E. S. Marvich, ADF.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of carcass disposal of Karluk's steelhead; steelhead scales collected from 30 females.

February 14 - Letter from C. L. Anderson, Director, ADF, to Clarence J. Rhode, Wildlife Administrator, FWS, Juneau, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, , Juneau, AK] -- Summary of steelhead egg takes from the Karluk River in 1953-1956; request to use FWS supplies at Karluk River Portage in 1957.

February 26 - US FWS permit form.
[Folder "Fish and Wildlife File 1956", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- 1957 permit to the Kodiak Conservation Club to take 1,500,000 steelhead eggs from the Karluk River.

February 28 - Letter from Clarence J. Rhode, Administrator, Alaska Wildlife Resources, to Gilbert W. Edgar, President, Kodiak Conservation Club, Kodiak, AK.
[Folder "Fish and Wildlife File 1956", Box 7074, Series 560, RG 11, ASA, Juneau, AK] – Transmittal of the FWS steelhead egg-take permit.

March 5 - Letter from E. S. Marvich, Senior Biologist, ADF, Juneau, AK, to Robert Simon, Biologist, ADF, Kodiak, AK.
[Folder "Rainbow egg contract correspondence", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of the FWS permit to take 1,500,000 steelhead eggs in 1957 from the Karluk River Portage.

April 8 - Letter from Clarence J. Rhode, Wildlife Administrator, FWS Juneau, AK, to Clarence L. Anderson, ADF, Juneau, AK.

[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of steelhead carcass disposal following egg takes at the Karluk River.

April 8 - Letter from Clarence J. Rhode, Wildlife Administrator, FWS Juneau, AK, to Troyer, Refuge Manager, FWS, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of steelhead carcass disposal following egg takes at the Karluk River.

June 11 - Letter from [Phil Nelson ?], Fish and Wildlife Service, Annapolis, MD. to John Owen, Fish and Wildlife Service, c/o Roy Lindsley, Kodiak, AK.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the sockeye salmon research at Karluk Lake, including possible fertilization of Karluk Lake, Dolly Varden and Arctic charr predation, and the continuation of studies at Bare Lake.

June 26 - Memo from [John] Greenbank to N. J. Wilimovsky.
[File "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Brief comments on studies of sculpins and sticklebacks at Karluk Lake.

July 8 - Letter from Robert J. Simon, ADF, to E. S. Marvich, Senior Biologist, ADF.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Summary of steelhead egg take from the Karluk River in 1957; disposition of eggs; steelhead carcasses donated to Baptist's Children Home.

July 13 - Letter from John B. Owen, Fishery Research Biologist, to W. F. Royce, FWS, Juneau, AK.
[File "Correspondence (Karluk) 1950-1958," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK) -- Weekly report of fisheries research at Karluk Lake in 1957, including sockeye smolt studies and spawner survival times in tributary creeks.

August 7 - Letter from C. L. Anderson, ADFG, to Clarence J. Rhode, Administrator of Alaska Wildlife Resources, FWS, Juneau, AK.
[Folder "Fish and Wildlife File 1956", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Summary of steelhead egg take from the Karluk River in 1957; disposition of eggs to Navy Adak, FWS Anchorage and Juneau, ADFG Anchorage, Fairbanks, and Kodiak.

September 30 - Letter from John B. Owen, FWS, Karluk Lake, AK, to W. F. Royce, FWS, Juneau, AK.
[File 1 "Correspondence (Karluk) 1950-1958", Box 109, and File 2 "Biological Correspondence 1951-1958," Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of sockeye salmon run timing at Karluk and the influence of the fishery; proposal to study the differential survival of early- and fall-run sockeye salmon.

October 1 - Memo from John Greenbank, Biologist, through John B. Owen, Project Leader, Karluk Project, to W. F. Royce, In Charge Research.
[File "Morphometric differences between *S. malma* and *S. alpinus*," Box 86, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on the possible publication of the Dolly Varden field studies done at Karluk Lake in 1957.

October 1 – Memo from Philip R. Nelson, Fishery Research Biologist, to Assistant Administrator in Charge of Research.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Inquiry on the status of 3 manuscripts submitted for review and publication, (1) "Further studies on bear predation on red salmon spawning populations in the Karluk River system", (2) "Effect of fertilizing Bare Lake, Alaska, on the growth and production of red salmon (*Oncorhynchus nerka* Walbaum)", and (3) "Relationship between the rate of photosynthesis and growth of red salmon at Bare lake, Kodiak Island, Alaska".

October 18 – Memo from William F. Royce, Assistant Regional Director for Research, BCF, FWS, Juneau, AK, to Philip R. Nelson, FWS, Annapolis, MD.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Brief review comments on two manuscripts, (1) "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman and (2) "Relationship between the rate of photosynthesis and growth of juvenile red salmon at Bare Lake, Kodiak Island, Alaska" by Philip R. Nelson.

## 1958

January 16 – Memo from Norman J. Wilimovsky, Editorial Committee, FWS, Juneau, AK, to Assistant Regional Director for Research, BCF, Juneau, AK.

[File “A0826”, Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Critical review of the manuscript, “Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska” by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman.

March 19 - US FWS permit form.
[Folder "Fish and Wildlife File 1958", Box 7074, Series 560, RG 11, ASA, Juneau, AK] – FWS permit to the Kodiak Conservation Club to take 1,500,000 steelhead eggs from the Karluk River in 1958.

May 21 - Letter from Robert J. Simon, Biologist, ADF, to E. S. Marvich, Senior Biologist, ADF.
[Folder "Rainbow egg contract correspondence", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Location and number of steelhead to be planted on Kodiak Island in 1958.

April 16 - Memo from Philip R. Nelson, Fishery Research Biologist, Annapolis, MD, to W. F. Royce, Assistant Regional Director in Charge of Research.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Detailed comments on the field research at Karluk and Bare Lakes in 1957; discussion of sockeye salmon run timing at Karluk; discussion of William F. Thompson's hypothesis of a productive midseason run; spawning habitat use by Karluk’s sockeye salmon.

June 12 – Letter from William F. Royce, Assistant Regional Director for Research, to Dr. Willis H. Rich, 2120 Santa Cruz Avenue, Menlo Park, CA
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Copies of Willis H. Rich’s field notes of 1922-1948 were made and the original notebooks returned to him; several of his field notebooks have detailed observations of Karluk’s environment and salmon.

July 15 - Letter from Douglas Hilliard, Aquatic Biologist, Public Health Service, Arctic Health Research Center, Anchorage, AK, AK, to John Owen, FWS, Kodiak, AK.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Request for samples of juvenile sockeye from Karluk to study the cestode life cycle.

August 20 - Letter from John B. Owen, FWS, Karluk, AK, to Norman J. Wilimovsky, FWS, Juneau.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Abstract and outline of presentation, “A review of the Karluk red salmon runs and present research aims,” given at the 1958 Ninth Alaska Science Conference by Robert F. Raleigh.

September 23 - Memo from Theodore R. Merrell, Supervisory Research Biologist, Bureau of Commercial Fisheries, Juneau, AK, to Assistant Regional Director for Research, Bureau of Commercial Fisheries, Juneau, AK.
[File "Biological Correspondence 1937-1959," Box 109, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Comments on Nelson's proposal for future research at Bare Lake.

c. late 1958 - Data sheet.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Summary of steelhead egg takes from the Karluk River in 1958 and disposition of eggs.

## 1959

February - Memo from Phil Nelson.
[File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Four causes of the decline of Karluk River sockeye salmon; outline of 4 research ideas.

March 5 - US FWS permit form.
[Folder "Fish and Wildlife File 1959", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- FWS permit to the Kodiak Conservation Club to take 1,100,000 steelhead eggs from the Karluk River in 1959; disposition of eggs to ADFG at Fairbanks & Kodiak, Navy at Adak, and Washington Game Department, Seattle.

April 15 - Letter from E. S. Marvich, Senior Biologist, ADFG, to Cliff Millenbach, Seattle, WA.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Inquiry about future needs of Karluk River steelhead eggs; comments on the biology of Karluk River steelhead and plans for future research.

April 27 - Memo from Philip R. Nelson, Acting Chief, Branch of Anadromous and Inland Fisheries, to Regional Director, BCF, Juneau, AK, attention Assistant Regional Director for Research.
[File “A0826”, Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Brief history of the bear-salmon predation manuscript by Shuman and Nelson; suggestion that original 1950 manuscript be reviewed for

publication, “Further studies of bear predation on red salmon spawning populations in the Karluk River system”, by Richard F. Shuman and Philip R. Nelson.

May 3 - Memo from Roger J. Reed, Associate Biologist, ADFG, Kodiak, AK, to Edward Marvich, Senior Biologist, ADFG, Juneau, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Comments on the steelhead egg take from the Karluk River in 1959; discussion of egg-take problems; inquiry about the ADFG’s interest in future egg takes and use of the Kodiak hatchery.

May 8 - Memo from Edward Marvich to Roger Reed.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of the ADFG's interest in the Kodiak hatchery; Kodiak Conservation Club cannot sell Karluk River steelhead eggs because of prohibitions in the new state constitution.

May 13 and 14 - Letter from Norman J. Wilimovsky, Supervisory Research Biologist, Chairman, Editorial Committee, BCF, Juneau, AK, to Director, BCF, attention Assistant Chief, Branch of Anadromous and Inland Fisheries.
[File “A0826”, Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Scientific review and criticisms of the original 1950 manuscript, “Further studies of bear predation on red salmon spawning populations in the Karluk River system”, by Richard F. Shuman and Philip R. Nelson; manuscript based on the 1948 bear-salmon data from Moraine and Halfway Creeks.

May 19 - Letter from Roger J. Reed, Associate Biologist, to Roger L. Burum, Kodiak Conservation Club, Kodiak, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] – Comments on the steelhead egg take from the Karluk River in 1960; legal problem in taking steelhead eggs under the new state constitution.

May 19 - Letter from Roger J. Reed, Associate Biologist, to Roger L. Burum, Kodiak Conservation Club, Kodiak, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Comments on the steelhead egg take from the Karluk River in 1959.

May 25 - Letter from C. L. Anderson, Commissioner, ADFG, to Urban C. Nelson, Acting Regional Director, FWS, Bureau of Sport Fisheries and Wildlife, Juneau, AK.
[Folder "Fish and Wildlife File 1959", Box 7074, Series 560, RG 11, ASA, Juneau, AK] -- Brief summary of the steelhead egg take from the Karluk River in 1959.

June 9 - Letter from E. S. Marvich, Senior Biologist, ADFG, Juneau, AK, to Roger J. Reed, Associate Biologist, ADFG, Kodiak, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Disposition of Karluk River steelhead eggs in 1959.

September 3 - Letter from Robert F. Johnson, Ames, IO, to George Harry, Director of Research, Bureau of Commercial Fisheries, Juneau, AK.
[File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transmittal of 3 research ideas about Karluk’s sockeye salmon.

September 24 - Memo from Urban C. Nelson, Regional Director, BSFW, Juneau, to Regional Director, BCF, Juneau.
[ABL Office Files, Auke Bay, AK] -- Review of the BCF plans to build research facilities on Camp Island, Karluk Lake.

December 14 – Letter from R. E. Johnson, Chief, Division of Sport Fisheries, Bureau of Sport Fisheries and Wildlife, to Phil [Nelson]
[File “A0826”, Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Comments on the manuscript, “Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska” by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; encourage publication.

December 18 – Memo from Lansing A. Parker, Director, Bureau of Sport Fisheries and Wildlife, to Regional Director, Region 6, Juneau, AK.
[File “A0826”, Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Continued revision of the manuscript, “Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska” by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman.

## 1960

January 14 – Memo from Philip R. Nelson, Acting Chief, Branch of Anadromous and Inland Fisheries, to Regional Director, BCF, Juneau, AK, attention Laboratory Director.

[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Discussion of revisions made to the manuscript, "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; effort to complete manuscript review and publish manuscript.

February 29 – Letter from Urban T. Nelson, Regional director, Bureau of Sport Fisheries and Wildlife, and John T. Gharrett, Regional Director, Bureau of Commercial Fisheries, Juneau, AK, to [Phil Nelson], Acting Chief, Branch of Anadromous and Inland Fisheries.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Reviewer criticisms of the manuscript, "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; recommendation that manuscript be published as an Administrative Report, not as a formal journal publication.

March 15 - Letter from E. S. Marvich, [ADFG], Juneau, AK, to Frank Stefanich, Anchorage, AK.
[Folder "Kodiak: Agreements with Kodiak Conservation Club (NAVY) 519.2", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- No plans for a steelhead egg take at Karluk in 1960; study of past steelhead plants; conflict with Navy over need for a fishing license on the Kodiak Naval base.

March 30 - Memo from Philip R. Nelson, Acting Chief, Branch of Anadromous and Inland Fisheries, to Regional Director, BCF, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Historical summary of the origins, revisions, and the changing authorship of the manuscript, "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; original 1950 manuscript by Shuman and Nelson was based on bear-salmon data from Moraine and Halfway Creeks in 1948; Nelson's response to reviewer criticisms.

October 12 - Memo from Philip R. Nelson, Acting Chief, Branch of Inland Fisheries, to Laboratory Director, Juneau, AK.
[File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Location of 1955-1956 sockeye salmon scales from the Karluk River.

October 17 - Memo from George Y. Harry, Jr., Laboratory Director, Bureau of Commercial Fisheries, Juneau, AK, to Chief, Red Salmon Investigations, Bureau of Commercial Fisheries, Juneau, AK.
[File "Karluk research, 1959," Box 71, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Location of 1955-1956 sockeye salmon scales from the Karluk River.

October 20 – Memo from Philip R. Nelson, Acting Chief, Branch of Inland Fisheries, to Regional Director, BCF, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Inquiry about publishing the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman.

October 26 – Memo from Murray, Chairman, Editorial Committee, to Regional Director.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Additional revision needed before publication of the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; need for a policy decision about publishing data on the bear-salmon predation topic.

November 21 – Memo from George Harry.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Detailed review of the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman.

December 2 - Letter from George Y. Harry, Jr., Laboratory Director, BCF, Juneau, AK, to Regional Director, BCF, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Detailed criticism of the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; recommend manuscript not be published, but if so, only BCF data should be included.

## 1961

January 30 - Letter from C. F. Pautzke, Deputy Commissioner, ADFG, to R. K. Stacer, Commander Naval Reserve and President Kodiak Conservation Club, Seattle, WA.

[Folder "Kodiak: Agreements with Kodiak Conservation Club (NAVY) 519.2", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion about stationing a fishery biologist at the Kodiak Naval Station.

March 23 - Letter from Harry L. Rietze, Regional Director, to Phil Nelson, Acting Chief, Branch of Inland Fisheries, BCF, Washington, DC.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Editorial comments and needed revisions before publication of the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman; recommended that manuscript be an Administrative Report and not formally published.

April 4 - Memo from Urban C. Nelson, Regional Director, Bureau of Sport Fisheries and Wildlife, Juneau, AK, to Regional Director, Bureau of Commercial Fisheries, Juneau, AK.
[ABL Office Files, Auke Bay, AK] -- Discussion of the BCF use of refuge land at Karluk Lake, garbage disposal, tractor us, and removal of structures and equipment no longer being used.

April 5 - Memo from Harry L. Rietze, Regional Director, BCF, Juneau, AK, to Acting Chief, Branch of Inland Fisheries, BCF, Washington, DC.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Transmittal of the manuscript "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska", by P. R. Nelson, R. F. Shuman, W. K. Clark, and R. R. Hoffman.

May 8 - Letter from E. S. Marvich to C. L. Anderson.
[Folder "Kodiak: Agreements with Kodiak Conservation Club (NAVY) 519.2", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Summary of a meeting between the ADFG, Navy, and Kodiak Conservation Club about the hatchery use, expenses, supplies, and ADFG fishery biologist; no plans for a steelhead egg take at Karluk River in 1961.

May 26 - Memo from Urban C. Nelson, Regional Director, Bureau of Sport Fisheries and Wildlife, Juneau, AK, to Regional Director, BCF, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Recommendation that bear-salmon data collected by both the BCF and Bureau of Sport Fisheries and Wildlife should be included in the final publication of the manuscript, "Brown bear predation on spawning salmon 1948-1953, Kodiak Island, Alaska" by Philip R. Nelson, Richard F. Shuman, Webster K. Clark, and Russell R. Hoffman.

June 29 - Letter from George Y. Harry, Jr., Laboratory Director, BCF, Auke Bay, AK, to Regional Director, BCF, Juneau, AK.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Comments on how to proceed with publication of Nelson's manuscript about bear predation on sockeye salmon; unresolved whether to combine or separate the BCF and Bureau of Sport Fisheries and Wildlife bear-salmon data in the final publication.

July 7 - Memo from John L. McHugh, Chief, Division of Biological Research, to Director, Office of Program Review, FWS.
[ABL Office Files, Auke Bay, AK] -- Information on the Native sockeye salmon fishery at Karluk (1951-1960); Karluk's research budget and plans; Karluk's sockeye salmon escapement and catch (1954-1960).

## 1962

October 22 - Letter from George Y. Harry, Jr., Laboratory Director, to Regional Director.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Editorial comments on Nelson's bear-salmon manuscript and a recommendation that it only include the BCF data in the final publication.

October 22 – Letter from Frank T. Piskur, Acting Regional Director, BCF, Juneau, AK, to [Philip R. Nelson], Chief, Branch of Inland Fisheries, BCF, Washington, DC.
[File "A0826", Box 125, Fisheries Research Data, ca. 1921-1994, RG 370, NARA, Anchorage, AK] -- Comments on how to proceed with publication of Nelson's bear-salmon manuscript.

## 1964

February 3 - Letter from Jeremy C. Sexsmith, Fishery Biologist, Sport Fish Division, Fire Lake Hatchery, Eagle River, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "Kodiak: Agreements with Kodiak Conservation Club (NAVY) 519.2", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of equipment at the Kodiak hatchery, condition of living quarters, past living arrangements, and work needed to re-activate the hatchery.

April 22 - Letter from US Bureau of Reclamation, Alaska District Headquarters, Juneau, AK, to Harry L. Rietze, Regional Director, FWS, BCF, Juneau, AK
[File "Larsen Bay Hydroelectric Project", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Discussion of the proposed Larsen Bay Project; proposed hydroelectric dam on the Karluk River and a 3 m diameter penstock feeding a 30,000 KW power plant on Larsen Bay; Karluk Lake water level to increase 4.6 m.

July 22 - Memo from Richard A. Marriott, Sport Fish Biologist, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Inquiry about using the Karluk River Portage weir for future steelhead egg takes.

August 4 - Memo from Alex H. McRea, Director, Sport Fish Division, to Richard A. Marriott, Sport Fish Division, Kodiak, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Statement that steelhead egg takes from the Karluk River have questionable value; no plans to reconstruct the weir; no plans for future major egg takes.

August 10 - Memo from Richard A. Marriott, Sport Fish Biologist, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau] -- Inventory of weir material and egg-taking supplies at the Karluk River Portage; 1965 plan to take 200,000 steelhead eggs from the Karluk River.

## 1965

January 9 - Memo from Richard A. Marriott, Sport Fish Division, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "33", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Discussion of the planned steelhead egg take from the Karluk River in 1965; logistics of egg take; need for steelhead eggs to mitigate earthquake damage.

April 16 - Letter from Harry L. Rietze, Regional Director, FWS, Juneau, AK, to George N. Pierce, District Manager, US Bureau of Reclamation, Alaska District Headquarters, Juneau, AK.
[File "Larsen Bay Hydroelectric Project", Box 110, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Response to the proposed Larsen Bay Project, which included a hydroelectric dam on the Karluk River near the Portage and a 3 m diameter penstock to a power plant on Larsen Bay; Karluk Lake water level to increase 4.6 m; inundation of 16 km of upper Karluk River spawning habitat, eliminating Chinook, coho, and steelhead runs; much salmon spawning habitat would be lost in the lower reaches of Karluk Lake's lateral and terminal streams; problems with adult salmon ascent of lower Karluk River; salmon homing behavior may be disrupted; smolts would be destroyed in powerhouse turbines; Karluk Lake littoral zone damaged by fluctuating water levels; food supply for brown bear disrupted; research field camps would be inundated.

May 25 - Letter from Walter Kirkness, Commissioner, ADFG, to Harry Rietze, Regional Director, FWS, BCF, Juneau, AK.
[Folder "Karluk River steelhead egg take, Kodiak area 519.6", Box 7076, Series 560, RG 11, ASA, Juneau, AK] -- Brief comments on the proposed hydroelectric project affecting the Karluk River and Lake; damage to sockeye spawning and rearing areas.

June 1 - Letter from Richard A. Marriott, Fishery Biologist, Sport Fish Division, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "58", Box 4000, Series 599, RG 11, ASA, Juneau, AK] – Discussion of the steelhead egg take at the Karluk River Portage by the Kodiak Conservation Club in 1965; possible depressed steelhead population from the egg takes and sport harvests; no further major steelhead egg takes should be attempted at the Karluk River.

November 1 - Letter from Richard A. Marriott, Fishery Biologist, Sport Fish Division, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "58", Box 4000, Series 599, RG 11, ASA, Juneau, AK] -- Comments on tagging Karluk River steelhead; subsistence fisherman at Karluk claimed that their pre-1953 annual harvest was 4000 steelhead.

## 1966

April 1 - Letter from Richard A. Marriott, Fishery Biologist, Sport Fish Division, ADFG, Kodiak, AK, to Alex H. McRea, Director, Sport Fish Division, ADFG, Juneau, AK.
[Folder "58", Box 4000, Series 599, RG 11, ASA, Juneau, AK] -- Brief comments on the unsuccessful attempt to estimate the number of wintering steelhead in Karluk River from aerial surveys; 1965 steelhead scales.

October 20 - Memo from Benson Drucker, Acting Project Leader, Karluk Lake, Red Salmon Investigations, Bureau of Commercial Fisheries, Auke Bay, AK, to Laboratory Director, Bureau of Commercial Fisheries, Auke Bay, AK.
[File "Streamflow and Pickets," Box 106, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] -- Transfer of full responsibility for the Karluk River weir and for estimating smolt abundance from the BCF to the ADFG.

## 1969

October 28 - Letter from John B. Owen, Associate Professor, University of North Dakota, Grand Forks, ND, to Ben Drucker, Supervisor, Karluk Lake Research Station, Auke Bay, AK.
[File "Correspondence (Karluk) 1962-1970," Box 108, Salmon Fisheries Research Data 1914-1966, RG 22, NARA, Anchorage, AK] – Past observations of sockeye salmon spawning in Karluk Lake's tributary streams.

## 1972

March 30 - Letter from Robert J. Simon, Regional Supervisor, Commercial Fisheries Division, [ADFG], to Don Bevan, Office of the Vice President for Research, University of Washington, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review of the manuscript on Karluk's sockeye salmon by Richard Van Cleve and Donald E. Bevan.

March 30 - Letter from C. E. Walker, Vancouver, BC, to R. L. Burgner, Director, Fisheries Research Institute, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review of the manuscript on Karluk's sockeye salmon by Richard Van Cleve and Donald E. Bevan.

April 17 - Letter from Richard Van Cleve, College of Fisheries, Fisheries Research Institute, University of Washington, Seattle, to Philip M. Roedel, Director, NMFS [National Marine Fisheries Service], Washington, DC
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Discussion of the manuscript on Karluk's sockeye salmon by Richard Van Cleve and Donald E. Bevan; recommended removal of Karluk River weir and restriction of biological field research.

May 8 - Letter from Philip M. Roedel, Director, to Richard Van Cleve, College of Fisheries, Fisheries Research Institute, University of Washington, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Response to Van Cleve's April 17 letter.

June 2 - Letter from Charles J. Di Costanzo, Deputy Laboratory Director, Auke Bay Fisheries Laboratory, Auke Bay, AK, to Richard Van Cleve, College of Fisheries, Fisheries Research Institute, University of Washington, Seattle.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Critical review of Van Cleve and Bevan's manuscript on Karluk's sockeye salmon.

June 9 - Letter from R. Van Cleve, College of Fisheries, University of Washington, Seattle, to William A. Smoker, Laboratory Director, Auke Bay Fisheries Laboratory, Auke Bay, AK.
[ABL Office Files, Auke Bay, AK] -- Comments about ABL references on Karluk's sockeye salmon and review of paper by Chuck Di Costanzo.

5 July – Letter from Ben Drucker, Technical Advisory Division, NMFS, Washington, DC, to Dr. Rueben Lasker, NMFS.
[Copy in the personal papers of Richard Gard, Juneau, AK] -- Critical review of Van Cleve and Bevan's manuscript on Karluk's sockeye salmon.

September 8 - Letter from C. E. Walker, Senior Biologist, Environment Canada, Vancouver, BC, to C. J. Di Costanzo, Deputy Laboratory Director, Auke Bay Fisheries Laboratory, Auke Bay, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review of Di Costanzo's critique of Van Cleve and Bevan's manuscript on Karluk's sockeye salmon.

c. late September - Letter from Di Costanzo [?] to Charles E. Walker, Senior Biologist, Environment Canada, Vancouver, BC.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Response to Walker's review of Di Costanzo's critique of Van Cleve and Bevan's manuscript on Karluk's sockeye salmon.

## 1976

December 23 - Letter from Gerry Atwell, Refuge Manager, FWS, Kodiak National Wildlife Refuge, Kodiak, AK, to John J. Kinney, Regional Engineer, NMFS, Juneau, AK.
[ABL Office Files, Auke Bay, AK] -- Request to remove the old cabin on Camp Island, Karluk Lake.

## 1977

October 13 - Letter from Robert S. Roys, Director, ADFG, Anchorage, AK, AK, to William A. Smoker, Director, NMFS, ABL, Auke Bay, AK.
[ABL Office Files, Auke Bay, AK] -- Request to transfer Camp Island research facilities on Karluk Lake to the ADFG, Fisheries Rehabilitation, Enhancement and Development Division.

November 1 - Letter from W. A. Smoker, Laboratory Director, to Robert Roys, Director, FRED Division, ADFG, Anchorage, AK.
[ABL Office Files, Auke Bay, AK] -- NMFS response to ADFG's request for the research facilities on Camp Island, Karluk Lake.

November 1 - Memo from W. A. Smoker, Laboratory Director, to Harry L. Rietze, Director, Alaska Region.
[ABL Office Files, Auke Bay, AK] -- Discussion of options for the Camp Island research facilities, Karluk Lake.

November 10 - Memo from Harry L. Rietze, Director, Alaska Region, NMFS, Juneau, to Smoker, Director, Auke Bay Laboratory.
[ABL Office Files, Auke Bay, AK] -- Rejects transfer of Camp Island research facilities to ADFG, but suggests a 3-way agreement between the NMFS, ADFG, and BSFW on future use of facilities.

November 22 - Memo from James K. White, Alaskan Regional Counsel, NMFS, Juneau, to Smoker, Director, Auke Bay Laboratory.
[ABL Office Files, Auke Bay, AK] -- Offer to help prepare a 3-way agreement for use of the Camp Island research facilities, Karluk Lake.

December 9 - Memo from Harry L. Rietze, Director, Alaska Region, NMFS, to Gordon Watson, Area Director, FWS.
[ABL Office Files, Auke Bay, AK] -- Discussion over an agreement between the NMFS, ADFG, and FWS on use of the Camp Island research facilities, Karluk Lake.

## 1978

March 17 - Letter from Harry L. Rietze, Director, Alaska Region, to Sue A. Wolf, Bureau of Land Management, Anchorage, AK, AK.
[ABL Office Files, Auke Bay, AK] – Abandonment of previous request to have the NMFS field research station on Camp Island, Karluk Lake, withheld from selection by Native corporations; no sockeye research done by the NMFS at Karluk Lake in the past 10 years; intent to transfer Camp Island facilities to FWS refuge.

May 17 - Letter from Harry L. Rietze, Director, Alaska Region, to Ronald O. Skoog, Commissioner, ADFG, Juneau.
[ABL Office Files, Auke Bay, AK] – Cancellation of agreement between the NMFS and ADFG for use of the Camp Island research facilities because they will be transferred to the FWS refuge.

## 1979

September 8 - Letter from Harry D. Baer, Shingletown, CA, to Patricia Roppel
[File 4-5 "Patricia Roppel, Letters received," Box 3 Miscellaneous, Inventories of Alaska Fish Hatchery Records, 1903-1982 (MS 79), Alaska Historical Collections, Alaska State Library, Juneau, AK] -- Memories by BOF employee Harry Baer of his hatchery work in the Kodiak area, 1920s-1930s; steelhead egg takes at the Karluk River Portage, 1929-1932; Karluk River weir tender, 1932.

## 1983

April 11 - Letter from Donald H. Rosenberg, Director, Alaska Sea Grant College Program, University of Alaska, Fairbanks, to W. A. Smoker, NMFS Auke Bay Laboratory, Auke Bay, AK.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Request review of Richard Gard's proposal to summarize the research history of Karluk's sockeye salmon.

April 28 - Letter from William A. Smoker, NMFS, Auke Bay Laboratory, Auke Bay, AK, to Donald H. Rosenberg, Director, Alaska Sea Grant College Program, University of Alaska, Fairbanks.
[Historical File of Herbert W. Jaenicke, ABL, Auke Bay, AK] -- Review of Richard Gard's proposal to summarize the research history of Karluk's sockeye salmon.

May 10 - Letter from Robert W. McVey, Director, Alaska Region, to Martin L. Karstetter, Chief, Branch of Easement Identification, Bureau of Land Management, Anchorage, AK, AK.
[ABL Office Files, Auke Bay, AK] -- Discussion of use of Camp Island after this land was selected for ownership by the Native village of Larsen Bay.