

Title supplied by ARLIS:

River Basin Studies and moose census information regarding the proposed Susitna hydroelectric project, 1951-1954.

Pages extracted from the 13th (1951-52), 14th (1952-53), and 15th (1953-54) Annual Report of the Alaska Game Commission to the Secretary of the Interior.

For the use of the Susitna-Watana Hydroelectric Project and in fulfilment of the repository project conducted by Alaska Resources Library and Information Services (ARLIS).

July 2015

**THIRTEENTH
ANNUAL REPORT
OF
THE ALASKA GAME COMMISSION**



**TO
THE SECRETARY OF THE INTERIOR
FOR THE PERIOD
JULY 1, 1951 TO JUNE 30, 1952**

MANAGEMENT OF GAME SPECIES

Wildlife management aims to maintain a shootable crop of game by the most practicable means at hand. Surveys to determine range conditions and game populations indicate proper management measures: restricted or liberalized take, complete closure, permit hunt, predator control or refuge establishment. Opportunities for modifying the habitat are extremely rare, but opportunities for turning natural habitat changes to good advantage are frequent; fires, logging, ecological succession and variations in grazing and housing by animals are the elements chiefly responsible for changes in vegetation.

Recommendations for regulations are made to the Game Commission as a result of field surveys conducted by personnel of the Refuge, Federal Aid, Predator, River Basin and Wildlife Research Branches and the Enforcement Division.

In addition to game animals, similar basic procedures are applied to fur animals, waterfowl and sport fish.

Management activity places full emphasis on the native species already proven adapted to Alaska. Introduction of exotic species or even artificial dispersion of native species has great appeal for many sportsmen. It is more economical and biologically much more practical to assist nature in what is already established rather than attempt the spectacular, but seldom successful, new stockings of game, fish or fur. However, where physical obstacles such as glaciers or high waterfalls are obvious barriers, stocking can function legitimately to extend the range of native species.

Federal Aid Activities

Federal Aid projects in operation during the year were of two types: fact-finding and development. Surveys and investigations under the first type uncover facts on which to base management and regulation. The second type of project involves actual improvement of the habitat, game or fish stocking and physical improvements needed for protection. Both types of work are underway with wildlife while, with sport fish, the work has been confined so far to surveys and investigations.

Surveys and Investigations

The most extensive herd composition survey to date resulted in tallying 1,867 moose, of which 45% were cows, 28% bulls and 27% calves. This is a better calf crop than in the previous year. Since the Kenai calf ratio, although lower, also increased it appears that 1951 was a good year for moose production. Neither at Susitna or Kenai was the production of twin calves as great as frequently assumed; in early winter counts the ratio of single calves to twins was 6:1 and 5:1 respectively at the two locations.

Susitna moose density surveys in late winter 1952 showed 3.09 moose per square mile compared to 3.78 in 1951, 2.73 in 1950 and 2.94 in 1949.

A special portion of the Susitna moose study has been a check on animals killed and cause of mortality. Of 687 animals removed in fiscal year 1952 from Susitna Valley: 514 were legally killed bulls, 90 were killed by trains, 31 by highway vehicles, 22 illegal kills, 9 by accidentally falling off a cliff, 4 by predators, 4 accidentally shot and wounded, 4 unknown, 1 drowned, 1 caught in a fence and 7 calves were taken for stocking purposes. It must be pointed out that certain causes of mortality are more apparent than others, the above tabulation representing those animals about which definite information was obtained.

The Stikine Valley moose range in Southeastern Alaska was surveyed in March 1952 in order to check reports of a poor calf crop and legal harvest composed almost entirely of two-year-old bulls. Of 126 moose observed 24 or 19% were calves. On the lower Stikine, the area of heaviest hunting pressure, the calf crop was low in contrast to the upper river.

Caribou Studies

A close check during the 1951 hunting season showed 500 to 525 caribou taken from the Nelchina herd. Of the known kill airplane hunters took 101, while hunters with tractors and other vehicles killed 385. Hunters with vehicles killed practically all their animals in the first four days while the airplane kill was spread throughout the season.

The Nelchina caribou moved eastward out of the summer range in the Talkeetna Mountains in late August. Movement was in three bands which dispersed in the Lake Louise region. The annual mid-winter count showed 7,000 animals, the calf crop amounting to 16% of the herd. This represents a general increase over 1951. In addition the small band of caribou in the Mt. Sanford area showed an increase from 45 to 53 animals. There was also evidence that a small band had moved into the Chistochina River area. A mid-June 1952 survey disclosed a 22% calf crop in the segment of the Nelchina herd checked.

Again in the spring of 1952 the Arctic caribou survey was attempted, and again complete coverage was not possible. However, the south side of the central and western Brooks Range was covered and all except the extreme eastern end was covered on the north side. An estimate of less than 50,000 animals leads to the conclusion that earlier estimates may have been too high. The country from Chandalar River east was not covered.

A more intensive check of caribou was made by Predator agents in the Umiat area where the calf crop in late winter amounted to 8%.

Caribou Re-Introduction

Range surveys were conducted on the Kenai to determine the practicability of re-establishing caribou. Only limited lichen ranges were found on the high ridges above timber line and in small patches associated with spruce at lower elevations. The drainages of Mystery Creek and Chickaloon River have sufficient winter for an estimated two hundred caribou.

Since many fires occur in Alaska, a project was initiated to obtain information on the effects on wildlife. An area on the Porcupine River was selected and plots established. These plots will be rechecked after two years.

The Alaska Wildlife Forum, a weekly fifteen-minute radio program, was continued through its second year.

The first two Master of Science degrees in Wildlife Management were awarded to two Unit Research Assistants. One of the men is now employed by the Alaska Native Service as a Range Conservationist for reindeer; the other is awaiting call of the Selective Service board. A third student, who has nearly completed his graduate work, is employed by the Fish and Wildlife Service as Assistant Refuge Manager in the Aleutian Islands National Wildlife Refuge.

RIVER BASIN STUDIES

Hydro-electric power developments are being proposed and in some cases are actually under construction on certain Alaska rivers. Because such projects can affect fish and wildlife to a serious degree, the Fish and Wildlife Service is required by law to evaluate them in advance. A formal program of Alaskan river basin study was started during the year with the hire of one fishery biologist to work primarily on the salmon runs of the Susitna River. It is planned to add a wildlife biologist to study the effect of dams and reservoirs on game and fur animal habitat. The objective is to insure maintenance of present, renewable resources in coordination with the new industrial developments which are rapidly coming to the Territory.

A work plan for the Susitna surveys was prepared, as well as a preliminary statement of the expected impact of the proposed Susitna development on fish and wildlife resources. Since the planning for the 12 dams in Susitna Basin is still in a state of flux, frequent consultations have been held with the Bureau of Reclamation in order to keep abreast of engineering information as it developed.

A conference was held with the Army Corps of Engineers to obtain comprehensive information as to proposed and potential river development plans of that agency. A third category of river basin interest, private hydro-power development licensed by the Federal Power Commission, is relatively unimportant to date in Alaska. As such projects are proposed or come up for re-licensing, they are investigated as to the effect upon fish and wildlife.

FOURTEENTH
ANNUAL REPORT
OF THE
ALASKA GAME COMMISSION



TO
THE SECRETARY OF THE INTERIOR
FOR THE PERIOD
JULY 1, 1952 TO JUNE 30, 1953

INVESTIGATIONS AND DEVELOPMENT
conducted under the
FEDERAL AID IN FISH AND WILDLIFE RESTORATION PROGRAMS

Four Federal Aid projects were in operation during the year. One wildlife project dealt with surveys and investigations and another with stocking. Likewise, one fishery project was survey and investigation while the other concerned restoration facilities--trails, shelters and skiffs. Both fact-finding and developmental projects were undertaken together.

Surveys and Investigations

Moose

Moose investigations have been concentrated in south-central Alaska and on the Alaska Peninsula. Comparisons between the Kenai Peninsula and the Susitna Valley herds showed the latter roughly twice as productive as the former. Calf percentages on the Susitna were 24% and on the Kenai 12%. The difference is between an area that has reached peak production and one that is beyond the peak. The upper Copper River Valley (calf percentage, 20%) has not yet reached its peak. In all areas more bulls were found than necessary to maintain productivity.

A survey of the Alaska Peninsula revealed a moose population in excess of 500 animals with Bering Sea side producing the most. In former years moose were scarce on the Peninsula and present numbers indicate a surprising increase. Concentrations were found near Mother Goose Lake and along the Savonoski River.

During the Matanuska Valley special permit hunt, 69 hunters killed 50 moose. Great interest was shown as reflected by the 2,000 applications for 75 permits.

Caribou

Northern herds - Extensive aerial surveys of caribou along the Alaska-Yukon boundary were carried out in cooperation with the Canadian Wildlife Service. A herd was followed during a purposeful migration from the Porcupine River in Yukon Territory in March to the Arctic coast and west to Barter Island by June. The distance covered was over 400 miles. The herd was estimated at 20,000 to 30,000 animals. Surveys on the Arctic slope disclosed a minimum population of 47,000 caribou with concentrations of 20,000 on the Nimiuktuk River and 15,000 on the Utukok River in northwest Alaska. Total population is believed to be substantially above this minimum figure.

Southern Herds - The Steese-Forty Mile caribou herd proceeded east from the Steese Highway in September to Yukon Territory and returned in April. Calving ground counts

distribution of coyotes and wolves and their relative abundance for certain years. Information is also being collected and assembled on coyote-fox competition. Food habit studies are continuing in cooperation with the Unit at College.

PREDATORS TAKEN BY FEDERAL CONTROL AGENTS

	<u>Getters</u>	<u>Poison</u>	<u>Shooting</u>	<u>Total</u>
Wolf	27	46	27	100
Coyote	28	9	6	43
Fox (predatory)	<u>25</u>	<u>7</u>	<u>0</u>	<u>32</u>
Total	80	62	33	175

RIVER BASIN STUDIES

The Susitna River was the locale for the major portion of basin surveys during the year. A plan developed by the Bureau of Reclamation for large-scale hydro-power facilities considered 19 potential dam and reservoir sites in the Susitna system: six on the main river, six on the tributary Talkeetna River, three on Skwentna River, three on Chulitna River and one on Tyone River. Only Devil Canyon site on the upper Susitna is under active consideration for early construction. The Service report recommended eight of the sites be dropped because these dams would block important salmon runs. In addition to the fishery resources, wildlife--particularly moose and caribou--range will be affected by reservoir flooding.

Next in importance to the Susitna study was a report prepared on three creeks in the Anchorage area: Ship, Chester and Campbell. Because of expanded industrial activity and the number of existing dams, it was concluded that effort should be extended to preserve only Campbell Creek as a fish stream with the other two given over to higher priority use.

The Chena-Tanana Flood Control Plan was reviewed and the area surveyed and reported upon. Fortunately, the effect of this project was found to be negligible so far as fish and wildlife resources are concerned.

A number of privately-financed power projects, up for licensing by the Federal Power Commission, were studied and appropriate reports prepared as follows:

F.P.C. #831 Chichagof Island
F.P.C. #1196 Upper Trail Lake, Moose Pass
F.P.C. #1432 Kodiak Island
F.P.C. #1922 Lower Silvis Lake, Ketchikan.

At the beginning of the fiscal year, the River Basin staff consisted of one fishery biologist; in November a wildlife biologist was added by transfer from Region 3, thus bringing to two the personnel engaged fulltime in this activity.

HATCHERY OPERATIONS

The Fish and Wildlife Service operates no fish hatcheries in Alaska. Under a cooperative agreement with the Kodiak Conservation Club, however, a small hatchery was constructed and placed in operation during the 1953 season. The Club is composed of military and civilian personnel of the Kodiak Naval Base, under the leadership of Admiral John Perry. Actual hatchery operation was under supervision of a Service fish culturist.

With the original objective of replenishing Kodiak streams and lakes subjected to heavy fishing pressure, primarily military, the program was broadened to provide rainbow trout fry for adjacent mainland waters as well.

The 24-trough hatchery is located at Devil's Canyon on the Navy Reservation. Eggs from adult trout taken by Service personnel in Karluk River were fertilized in the field and then transported to the hatchery by surface craft and by air. Spawn-taking commenced on April 29 and concluded May 21 with a yield of 2,554,350 eggs. Hatching started July 8 and ended July 13. Operations during the period August 7 to 16 saw 1,776,645 fry planted: 1,265,445 in Kodiak waters and 511,200 in the Anchorage-Palmer area and at Lake Louise. Transporting large numbers of fry to the mainland was found to be inadvisable and will be generally supplanted by eyed-egg hauling in the future.

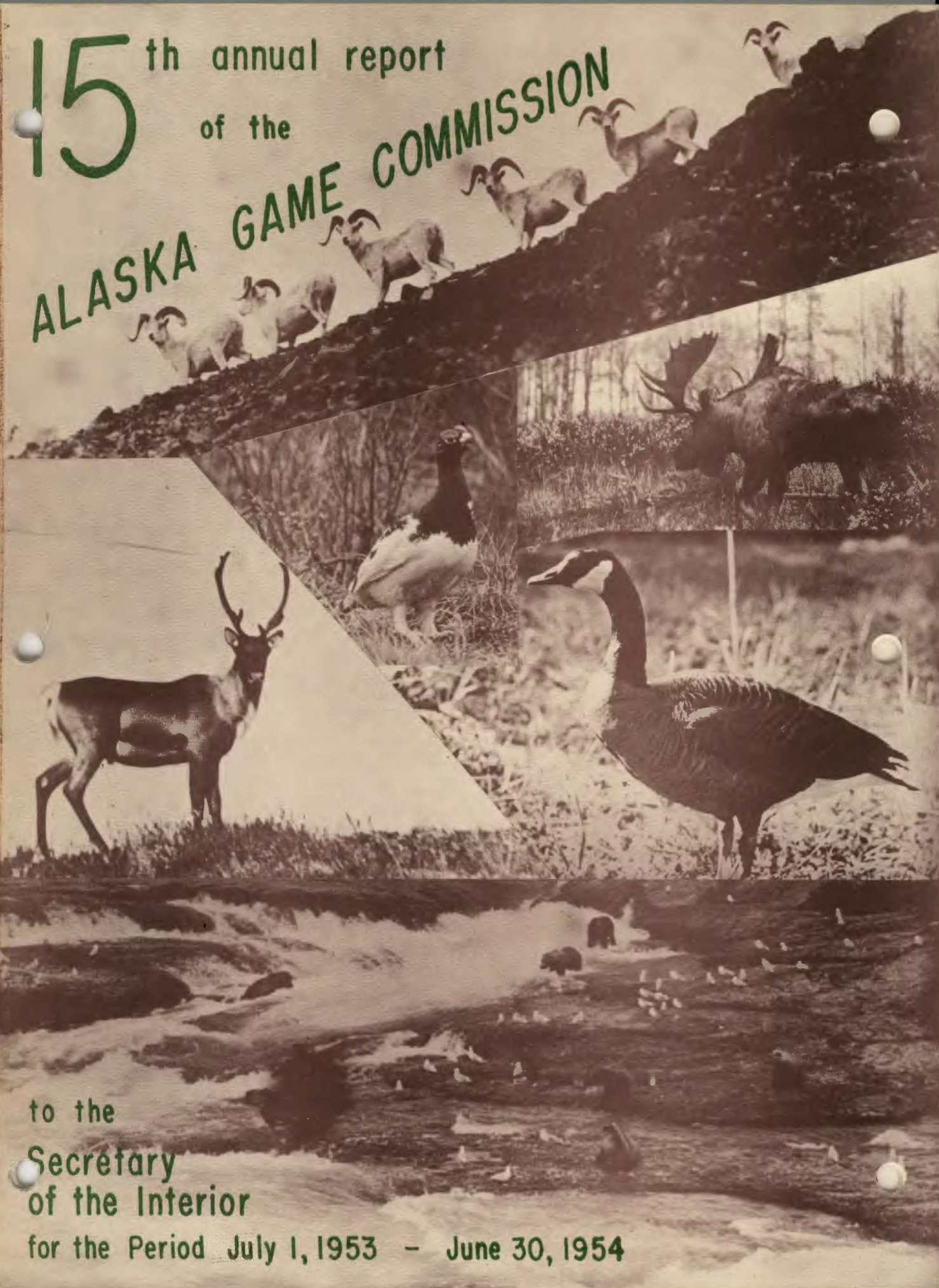
WATERFOWL MANAGEMENT

Keeping tabs on migratory waterfowl is a traditional stateside function of the Fish and Wildlife Service. A resume is included in this report because of the importance of Alaska as a producer of ducks and geese. In the absence of a formal waterfowl section or adequate funds for the job, the seasonal surveys were conducted by personnel of various Regional Divisions: Federal Aid, Law Enforcement, Refuges, Predator Control and River Basin Studies. Winter inventory, spring breeding ground survey, summer banding and nesting studies and hunting season bag checks were carried out by this cooperative means and provide an index to waterfowl conditions in the Territory.

Banding

During the summer of 1952 waterfowl were banded at Yukon Delta, Minto Lakes, Copper River delta and Izembek Bay.

15th annual report of the ALASKA GAME COMMISSION



to the
Secretary
of the Interior
for the Period July 1, 1953 - June 30, 1954

FEDERAL AID IN WILDLIFE RESTORATION

Funds available under the Federal Aid in Wildlife Restoration Act were used to sponsor two projects:

(1) Wildlife Investigations of Alaska

(2) Stocking, Restocking and Introduction of Game Birds and Mammals in Alaska. Complete reports of these activities are on record at most field stations, Juneau, and Washington. A brief summary follows.

Wildlife Investigations of Alaska

Moose

The most comprehensive aerial moose herd composition counts (not total census) on record were made in November 1953 with the following tabulation on 6,700 moose:

<u>Area</u>	<u>Total Moose Counted</u>	<u>Bull-Cow Ratios</u>	<u>Percent Calves</u>
Susitna Valley	2700	48:100	21
Kenai	2900	62:100	14
Nelchina-Copper River	1100	107:100	29

The Kenai calf crop was 6.6% in 1950, 12.1% in 1951, and 12.1% in 1952; the Susitna calf crop was 16.5% in 1950, 27.1% in 1951 and 23.8% in 1952. The success of the calf crop is believed to be an expression of range conditions more than any other factor.

Seventeen cows accidentally killed in the Anchorage area were examined for embryological development. Seven of the 15 adults carried embryos, two of which were twins.

Chemical sprays were used experimentally on 65 plots on the Kenai and Susitna in an effort to develop feasible methods of browse production.

In order to determine age classes, measurements of teeth from 69 jaws were completed, but the results are not conclusive and further work will be required.

Caribou

Nelchina Herd Summer range surveys classified cover by three types from which 544 species composition quadrats were taken for later analysis. Checking station operation secured information from 807 hunters and collected 146 caribou stomach samples, 152 antler measurements, and 161 lower jaws. Analysis of antler-jaw data showed an age distribution of 9% one year class, 13% two year, 19% three year, 23% four year

RIVER BASIN STUDIES

The office of River Basin Studies, primarily concerned with investigations on water use development projects, concentrated extensively on Federal Power Project No. 2138, to be located on the Copper River, by the Harvey Aluminum Company, Inc., of Torrance, California. Under terms of the Federal Power Act, the preliminary permit only assures the applicant of maintaining priority of application for a license. The purpose of the proposed project is hydro-electric power production which would be utilized for electro-chemical and electro-metallurgical industries as well as other unspecified purposes. Proposed development features consist of a 560 foot dam located in Wood Canyon about 4 miles below the confluence of the Copper and Chitina Rivers. The Copper River is considered one of the most important salmon spawning streams in Alaska and annually produces more salmon than any other one stream flowing into the south-central coast. Because of the importance of the salmon fishery and the significant wildlife resources involved, the Copper River Basin received priority over all other studies during the year.

Fishery and Wildlife field surveys were initiated and all available basic data and statistical records were compiled. A Service report was submitted in relation to the effects the proposed development would have on the resources.

Because of the urgent need for basic biological information on the fish and wildlife resources in the Copper River Basin, field investigations on the Susitna River were curtailed. However, considerable progress was made in the compilation of accumulated basic data on the fish and wildlife resources in this basin. Summation of these compilations and studies were submitted in two reports entitled "Progress Report on Wildlife of the Susitna Basin," and "A Progress Report on the Fishery Resources of the Susitna River Basin." These reports were the result of the Bureau of Reclamation's proposed plan of development for the Susitna River Basin.

As a result of Reclamation's Preliminary investigations, the Service was required to submit reports on the following projects: Blue Lake, in Sitka area; Lake Dorothy and Swan Lake in the Juneau area; and Wickersham in the Fairbanks area. Blue Lake and Wickersham reports required field investigation, while the Lake Dorothy and Swan Lakes required only review and comments resulting from changes of Reclamation's plans. It was anticipated that these proposed developments would have no significant adverse effect on the fish and wildlife resources involved.

The following, proposed or considered, privately financed power projects, on the Kenai Peninsula were studied: Grant, Ptarmigan and Tustumena Lakes. A report was written on Project 2129 (Grant Lake) while only field investigations were conducted on Tustumena and Ptarmigan Lakes.

Two Corps of Engineers' projects which received attention during the year, were the Kodiak Small Boat Harbor and the Corps' Interim Report No. 1 on Southeastern Alaska. In conjunction with the Corps' plan of study, fishery and wildlife basic data were gathered and compiled on the Nushagak and Wood River Drainages.

During this fiscal year, considerable basic field data were gathered and compiled on the moose and caribou kills in the Copper and Susitna River Basins for subsequent River Basin Reports. In addition, the staff actively engaged in cooperative Fish and Wildlife programs of wildlife censusing, attending game hearings, press releases, public talks and other activities which were closely related to River Basins work.

Permanent River Basin staff during the fiscal year, consisted of one fishery research biologist and one wildlife research biologist. This staff is supplemented by two fishery and one wildlife biological aids during the busy summer months.

In general, all equipment was in good condition and only minor repairs were needed during the year.

FISH HATCHERY OPERATIONS

Although the Fish and Wildlife Service operates no fish hatcheries in Alaska, for the second year, cooperation was extended the Kodiak Conservation Club in running the Devil's Canyon hatchery on the Navy Reservation.

During the winter 650 fry trays and 650 egg trays were constructed and 24 standard-size troughs were built and installed at the hatchery.

Following installation of the weir in Karluk River, spawn-taking commenced on May 9th and continued until May 27th at which time 3,540,580 eggs had been taken from 768 female rainbow trout. Transportation to the hatchery was accomplished by weasel, ship and aircraft.

Distribution of eyed eggs and of fry began on June 30 and was completed on August 18. Eggs were hatched and fry reared past the yolk-sac stage at the Alaska Department of Fisheries Lost Lake and Fire Lake hatcheries and at the Auke Creek hatchery of the Territorial Sportsmen, Inc.

Planting records are tabulated as follows: