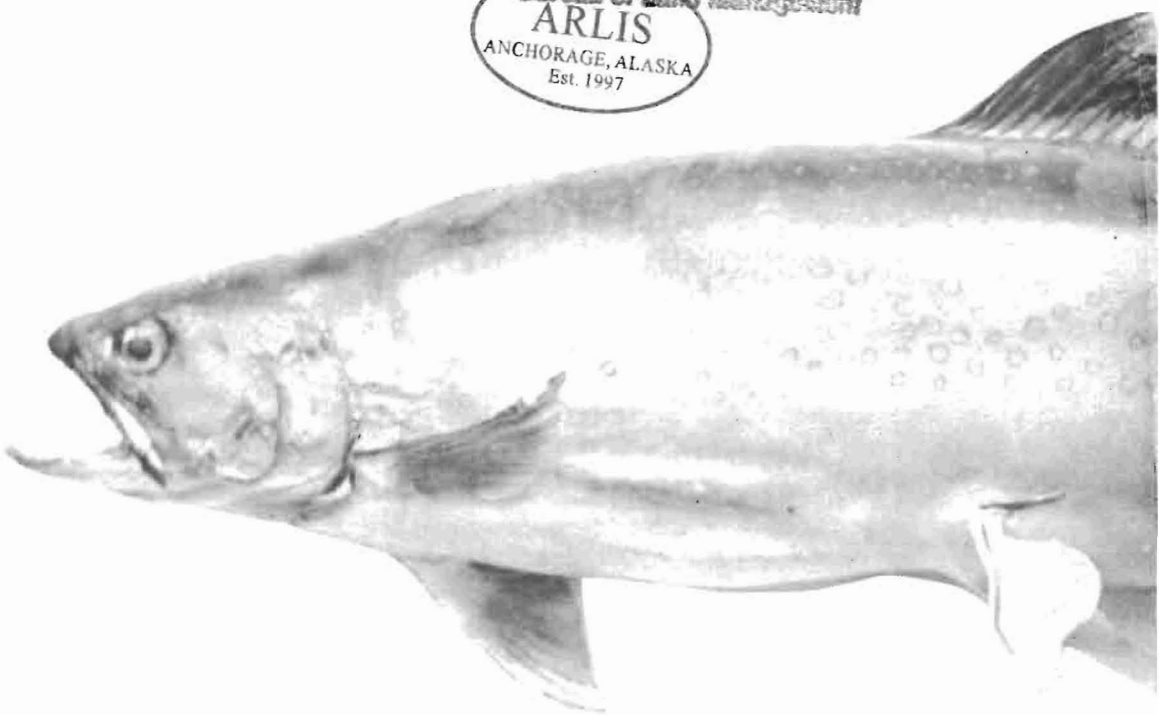
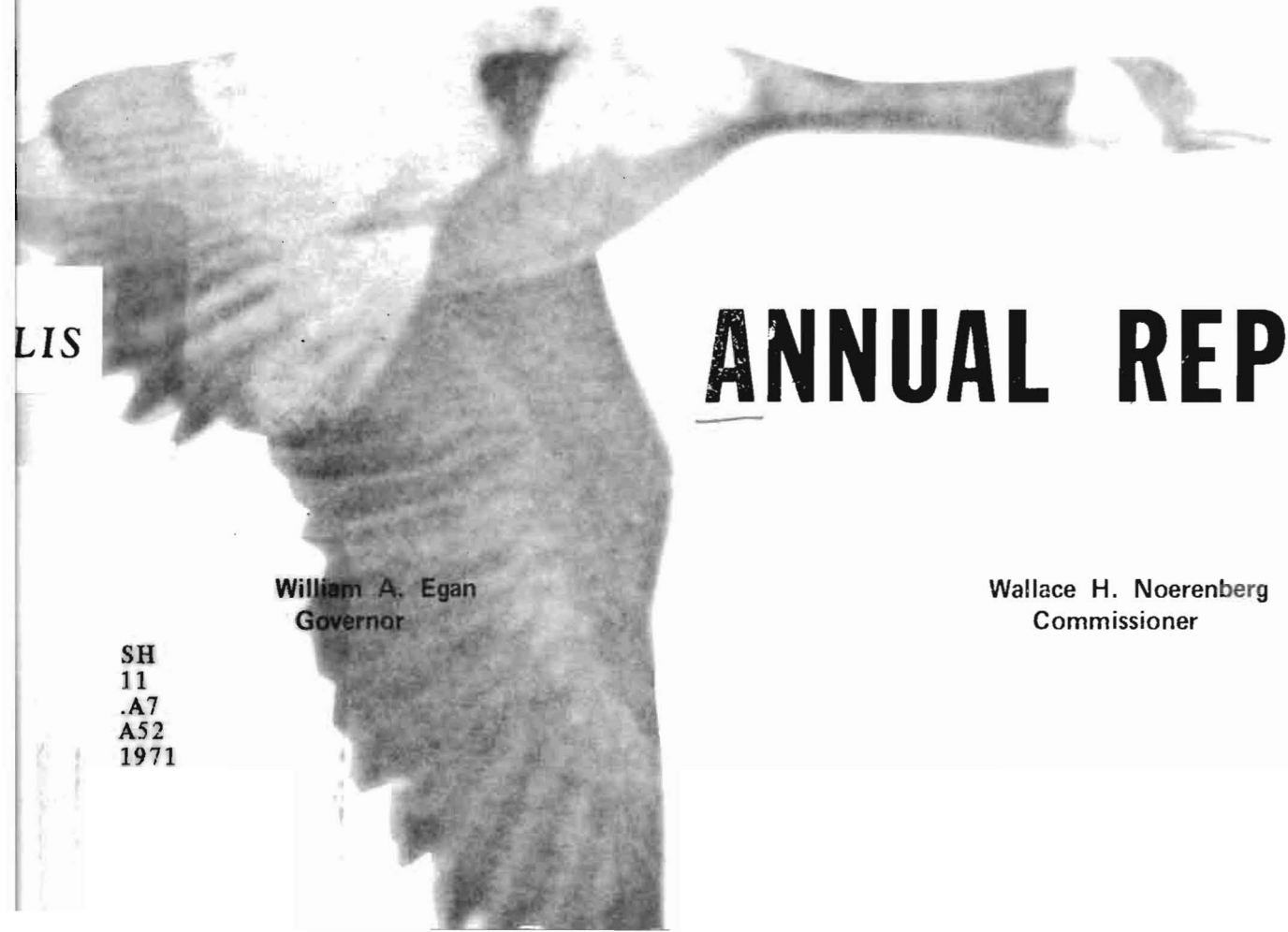
1971



alaska department of fish & game



LIS

ANNUAL REPORT

William A. Egan
Governor

Wallace H. Noerenberg
Commissioner

STATE OF ALASKA

WILLIAM A. EGAN, Governor

DEPARTMENT OF FISH & GAME

OFFICE OF THE COMMISSIONER SUBPORT BUILDING
JUNEAU 99801

January 31, 1972

The Honorable William A. Egan
Governor of Alaska
Juneau, Alaska

Dear Governor Egan:

We are pleased to submit to you this summary of Department of Fish and Game activities in 1971.

The report emphasizes the Department's accomplishments in a year that saw establishment of a new division and other major steps taken to more effectively manage and conserve Alaska's fish and wildlife resources.

Increasing population pressures and demands for the resources call for a continued high effort in this area and the Department of Fish and Game will continue to provide the on-going programs necessary to meet these needs.

Sincerely,

Wallace H. Noerenberg

Wallace H. Noerenberg
Commissioner

INTRODUCTION

The calendar year 1971 was a momentous one for the fish and game resources of the state, for residents with an interest in fish and game resources and for the Department of Fish and Game. Events set into motion during the year will have a lasting impact on several aspects of the state's management programs. However, the full implications of several of these developments will not be thoroughly understood or defined for a number of years. Several of the events mentioned briefly in this introduction will be explained in more detail in the individual division and section reports which follow. Some occurred so late in the year that follow-up actions and reactions were not begun in 1971.

Of crucial importance to the fish and game resources of the state and the use and enjoyment of these by the people was the passage on Dec. 18, 1971 of the Alaska Native Claims Settlement Act. The principles embodied in this act and the land use and ownership patterns resulting from its implementation will be of the greatest importance to the state and its people. The year 1972 will see the village corporations, regional corporations and federal government agencies selecting or identifying their various land allotments. The state, in a surprise move, selected 76 million acres of its statehood land grant during January, 1972.

The transference of more than 40 million acres of land from federal ownership into private ownership (i.e., village and regional corporations) inevitably will affect the management of the state's fish and game resources. Access and jurisdictional problems for the management agencies can be expected, based upon the experiences of other states. In similar fashion, selection of the state's land allotment under the Statehood Act and the anticipated identification of 80 million or more acres by the federal government for extensions of wildlife refuges, national parks, national forests and wild and scenic rivers will be of major significance to the state's management of fish and game resources.

An especially important provision of the Native Claims Settlement Act is the establishment of a Joint Federal-State Land Use Planning Commission. The deliberations and recommendations of this commission should play a key role in the land use and development programs of the three major land holders of the state; i.e., native villages and corporations, the state and the federal government.

Another important event was the establishment within the Department of Fish and Game of a new Division of Fisheries Rehabilitation, Enhancement and Development. This division was established in 1971 by the Legislature with the concurrence of the Governor. The funding level for the new division for fiscal year 1972 was set at $530,000 for a variety of stream clearing, gravel incubation, saltwater rearing and lake rehabilitation projects. Because of staffing problems, the stream clearing projects were to be administered by the Division of Commercial Fisheries during FY 72 and then turned over to the new division in FY 73. A division director was appointed on Aug. 31, 1971 and the nucleus staff was established by means of inter-divisional shifts.

With the establishment of the new division, the state and the Department embarked on an accelerated course of nonregulatory rehabilitation and enhancement of the state's fishery resources. Historically, the major thrust of both federal and state fisheries management had been aimed at the state's incomparable natural fish stocks and the maintenance of its freshwater and estuarine habitats. The new direction reflects the increasing awareness of the public that artificial propagation has potential for providing more fish for the sport and commercial fishermen. This annual report contains a summary

account of the history and activities of the Division of Fisheries Rehabilitation, Enhancement and Development during its first six months. More detailed accounts were prepared as a part of the new program budget system and as an independent submittal to the Legislature as required by the provisions of AS 16.05.092.

During the April, 1971 meeting on king crab regulations, the Board of Fish and Game reestablished the one-meeting system which it had followed during the first 10 years of statehood. The old one-meeting system had been replaced for a short time by a two-meeting system which required an excessive amount of time and participation by board members, the public and the staff of the department. The return to the old one-meeting system by the board, made possible by legislation amending the Administrative Procedure Act, was unanimously welcomed by all participants in the regulation-making process and concurrently served to eliminate a great deal of public concern regarding the effectiveness of the Board of Fish and Game.

Another landmark for the Department in 1971 was the convening of the 1971 annual meeting of the International North Pacific Fisheries Commission in Anchorage during October and November. The 1971 annual meeting was the 18th meeting of the Commission, and always in the past the locations of the meeting had alternately rotated between Tokyo, Japan; Vancouver, B. C. and Seattle, Wash. The fishery resources of Alaska have always been a major concern of the International North Pacific Fisheries Commission since its inception in 1956, and the convocation of the 1971 meeting in Alaska was recognition by the Commission of this fact. Many residents of Alaska and staff members of the Department of Fish and Game were thus able to observe the workings of the Commission at first hand.

Another event that took place in Alaska during 1971 generated interest and concern throughout the nation and the world. This was the nuclear explosion "Cannikin" on Amchitka Island. The shot on Nov. 5, 1971 was preceded by months of attempts to secure its deferral, either temporarily or permanently. A major concern to the state administration and many others was the threat to human lives and property resulting from the possible triggering of destructive seismic sea waves and earthquakes. Also of concern were the environmental aspects relating to the possible radioactive contamination of the area's fishery resources, the threat to the island's important sea otter population, and the disruption of the island's role in the Aleutian Islands National Wildlife Refuge.

Immediately following the blast, initial reports of the sea otter mortality came primarily from the Department but the normally inclement weather conditions at Amchitka in November precluded the attainment of substantial evidence to identify actual mortalities. The Commissioner was quoted extensively in the press, both nationally and worldwide, on the apparent high rate of mortalities of sea otters which occurred, in striking contrast to minimum publicity provided by the A.E.C. Assessments of the sea otter population of the island will continue in 1972 in an effort to understand how "Cannikin" affected the sea otter population.

A significant portion of the Department's time and effort during 1971 was devoted to the numerous pieces of federal legislation relating to fish and game management, land use planning and habitat protection. A Department biologist testified at a Congressional committee hearing at Washington, D. C., on the subject of marine mammals. Department and state positions were also developed on many other bills which were under consideration by the Congress. Significant legislation of concern to the state and the Department is not expected to diminish in 1972 but will continue to increase as time passes.

DIVISION OF ADMINISTRATION

I. PURPOSE AND DUTIES:

The Division of Administration acts as business manager for the Department of Fish and Game. It also provides centralized services of accounting, personnel, supply, data processing, switchboard, central mail room, warehousing, records storage, budget counseling and monitoring as well as administrative guidance at regional offices. The Director of Administration also has responsibility for operation and maintenance of Department-owned aircraft and vessels.

II. ACCOMPLISHMENTS:

The Division of Administration accomplishments tend to be in the area of improving the quality of services furnished, and improving the efficiency of operations.

Notable in the field of accomplishments is the progress made in obtaining more adequate office space in Anchorage and Fairbanks. Anchorage has been a location where the Department of Fish and Game has for some time occupied less than adequate office space. During the last calendar year, after some three years of unsuccessful efforts, commitments were finally made for leasing office and warehouse space. This space will for the first time in several years make all divisions of the Department available to the public at one location. Fairbanks is another location where office space has been less than adequate in terms of size, location and facilities. The last year saw construction begun and almost completed on a new office building for the Department, utilizing both federal and state funds. In conjunction with this project an existing administrative position was reclassified to maintenance mechanic to take care of the new building.

Internal improvements in systems have resulted in reduced handling of accounting documents, better property accounting systems, more accurate personnel files and reporting of hours worked. An improved system has been instituted for handling of lease requirements.

In the face of an ever expanding workload brought on by increased Departmental staff and budget, the administrative functions are performed with no increase in manpower and little increase in funding.

The following statistics are somewhat indicative of the workload within the administrative function:

The Accounting Section processed documents for receiving and paying some $5.6 million, including over 2,400 field warrants, thereby speeding payments to vendors.

The Statistics Section compiled, published and distributed a total of 25,000 copies of six different statistical publications, prepared and distributed copies of 465 separate computer reports to Fish and Game personnel, prepared and mailed 83,000 Harvest Ticket Reminder letters, processed 27,000 commercial fisheries license applications and filled 140 separate Departmental requests for mailing labels.

The Personnel Section answered approximately 1,800 pieces of correspondence, processed 2,600 personnel actions, obtained 280 certified registers and processed as many as 762 payroll warrants during peak months, while maintaining personnel records for an authorized 433 permanent employees.

The Supply Section processed some 95,000 pieces of mail, maintained records on $3.3 million worth of inventoriable personal property, processed 472 purchase requisitions and issued 506 purchase documents while also repairing small engines, maintaining warehousing and coordinating building maintenance and miscellaneous other services.

An increased variety of services are being provided at regional offices by regional administrative personnel without increased staffing.

The Aircraft Section operated 13 planes during the year for a total of 4,051 hours, or an average of 311 hours per plane. This same amount of flying if obtained from commercial sources would have cost the state an additional $100,000. During the year, emergency locator beacons were made standard equipment on all state aircraft. Flights were made for enforcement, management, research and logistics purposes. State twin engine planes were used in hauling some 200,000 pounds of freight including 2 million silver salmon eggs and 2.5 million rainbow and silver salmon fingerlings.

State-owned vessels were operated for a total of 1,515 days, running 82,800 miles in carrying out enforcement patrols, research projects and management activities. Over 160 citations were issued for fishing violations as a result of the use of state-owned vessels and resulted in approximately $40,000 in fines. Much valuable research was conducted aboard state vessels and they transported 330 tons of cargo. State vessels were directly responsible for at least two arrests of foreign fishing violators which were fined more than $50,000.

ENGINEERING SECTION

I. PURPOSE AND DUTIES:

The Engineering Section is responsible for the control and direction of the total engineering efforts of the Department including construction, stream rehabilitation and development and capital improvement projects. It also consults with and advises the administrative personnel of the several divisions and sections on technical and professional engineering matters.

II. ACCOMPLISHMENTS:

Five major categories of output with type examples of each are:

1. Reports, Consultation and Advice. (15 items)
   a. Quantitative geomorphology of drainage basins related to fish production.
   b. Chatanika channel change and weir.
   c. Haul road and pipeline stream crossings.
2. Preliminary Project Site Recons and Estimates. (8 items)
   a. Petersburg warehouse.
   b. Russian River fishway.
   c. Nancy Lakes controls.
3. Facilities Maintenance and Repairs. (4 items)
   a. King Salmon headquarters sewage system.
4. Project Surveys, Designs, Plans and Specifications. (17 items)
   a. Buskin Reservior fish pond.
   b. Akalura Lake weir.
   c. King Salmon station facilities.
5. Project Construction. (9 items)
   a. Fire Lake Hatchery waterline, warehouse and standby power.
   b. King Salmon bulkhead and dock.
   c. Prince William Sound stream rehabilitation.

HABITAT SECTION

I. PURPOSE AND DUTIES:

It is this Section's function to coordinate the Department's involvement in environmental quality programs. It administers the Department's statutory authority over the protection of waters important to fish (16.05.870; 16.10.010; 16.05.020).

In addition, it coordinates the Department's program in land and water use planning. It also works with the Department of Health and Welfare in enforcement and updating of the state's water quality standards.

II. ACCOMPLISHMENTS:

The Habitat Section completed its first full calendar year under the Commissioner's Office.

The major accomplishment of the Section was the coordination of the Department's responses to the myriad applications for development that might affect the fish and wildlife resources and their habitat. Coordination was achieved not only within the Department but among departments, so the state frequently was able to issue a single position.

The Section is divided into four major components. Below is a brief review of each component's major accomplishment for 1971:

Permitting

The year saw the continuation of major emphasis on oil, the pipeline and associated activities. We continue to coordinate Department review of pipeline alignments and gravel sites.

The major accomplishment was the completion of an applied research project that measured the impact of air-gun seismic operations on anadromous fish. Simply stated, there is no measurable detrimental impact. A presentation of the data with movies of the project is planned for February, 1972.

Water Planning

A major accomplishment centered around coordination of Department efforts in a planning program for Kuiu Island in Southeastern Alaska. Due to pressures of conservation groups, the Forest Service was forced to postpone logging activities in a portion of their Sitka pulp allotment. In order to make up for the lost volume, it proposes to enter into the Kuiu Island contingency area. We are working with them to determine: a) what areas can sustain timber harvest, and b) how these areas can be logged without damage to the water and related land resources.

Access

Work continued on the cataloging of waters in Alaska and the protecting of public access to these waters. We now have approximately 20,200 waters cataloged and access to approximately 450 lakes on state land.

A major area of interest is legislation guaranteeing public access to the waters of the state. The Constitution guarantees such access, but the Constitutional provision has never been set forth in statute form. The Section proposed legislation in 1971 to handle this problem and we hope that the legislation is enacted in the 1972 session.

Land Use Planning

Three programs consumed the staff's time in the area of land use planning. The Department entered into an agreement with the Natural Resources Department and the Matanuska-Susitna Borough for the joint management of 219,000 acres on the west side of Cook Inlet in 1970. Work on the initial phases of a management plan was started in 1971.

Land use allocations within the Bristol Bay watershed have generally been unilateral and haphazard. We undertook phase one of a three-phase study to determine the wisest use of land (habitat) as it relates to wildlife in this area. Our objective with phase one is to delineate all critical wildlife habitats; our ultimate objective is to supply the various land managers with sufficient fish, wildlife and habitat data for them to make wise allocations of land.

The end of 1971 saw the finalization of plans for a Northern Alaska Land Use Study. This Section is supplying the manpower to conduct the fish and wildlife portion of the study. With the settlement of the native claims, there is speculation that the study for Northern Alaska could be expanded to a statewide study. Our involvement will only increase.

HATCHERY SERVICES SECTION

I. PURPOSE AND DUTIES:

Hatchery Services was activated in 1969-70 to implement the $3 million fish hatchery construction bond issue, SLA 1968, Chapter 227.

The consolidated operations of the Department's existing and expanded fish hatchery facilities were assigned to Hatchery Services effective in July, 1971.

Hatchery Services has three basic goals:

1. Completion of the development of the new fish hatchery facilities as funded by the Fish Hatchery Construction Statute.

2. Becoming completely operational with the new and existing fish hatchery facilities in a unified operation.

3. Fully utilizing the facilities to provide the Sport Fish Division, Commercial Fisheries Division and Fishery Rehabilitation, Development and Enhancement Division with adequate fish for their expanding needs.

Prior to calendar year 1971, the evaluation of more than 30 fish hatchery sites was completed and two sites were selected by the Governor in September, 1970 for immediate development. Picked were the Crystal Lake hatchery near Petersburg to serve Southeastern Alaska and the Fort Richardson rearing facility at Anchorage to complement the Fire Lake hatchery in serving that highway connected system.

Recirculating and reconditioning facilities with year-round warm water had become economically possible because of recent technical breakthroughs and the modernized Fire Lake hatchery, one of the first in the nation, served as the prototype. Final planning and design for the selected sites proceeded immediately.

II. ACCOMPLISHMENTS:

Early in 1971 the first actual construction of fish hatcheries under the bond issue funding was underway. With the coordination of Fort Richardson Army Post, the construction for upgrading the Fort Richardson rearing facility was essentially completed and fish were being reared in the upgraded ponds by October, in time to take the expanded production of fry and fingerling from the Fire Lake hatchery. Utilizing the upgraded capabilities of rearing salmon and trout in the year-round warm water were realized one full season ahead of the engineering consultant's projection.

The major contractor's failure to complete the work on schedule has interjected additional risk to this first winter's operation, and created undesirable operational expediencies until total completion is possible next spring.

The Crystal Lake hatchery construction project is proceeding on schedule and incubating of eggs is planned to commence next fall, at the engineering consultant's earliest projected date, although total completion and full fish rearing is not scheduled until midwinter which is still ahead of the July, 1973 projection of latest completion date.

Maintenance of project timing, as now scheduled, is essential to gain the full season of fish production and there is no room for unavoidable delays during the ensuing calendar year.

The project's embankment mat was completed last summer. It is now undergoing the necessary stabilization period and will be ready for final construction to start early next spring. Bids for construction were advertised in December for award this winter.

The development of two major rearing facilities for serving two areas, combined with inflation, made many expediencies and compromises necessary to maintain the planned production levels. There will be increased work load and operational expenses in some aspects. Desirable flexibility was also foregone in some instances. Despite this, the state will have two modern fish hatchery complexes with all the advantages of water temperature control to circumvent Alaska's cold winter water, and the design allows for adapting to any circumstances that arise in the state's fish cultural developments.

The integration of the Department's hatchery system was started in July, 1971 with the hatchery functions of the Kitoi Bay Research Station and the Fire Lake-Fort Richardson complex being assigned from the Commercial Fish Division and the Sport Fish Division respectively.

The Kitoi Bay hatchery facilities were operated at maintenance levels. Experiments were immediately initiated to develop red salmon holding facilities for taking eggs at the station. They demonstrated the need for advancement in adult holding facilities and fish cultural training before significant success can be attained. A small number of red salmon eggs were incubated. The station was largely on a standby basis, awaiting the requirements of the Akalura project and use of the facility for experimental egg incubation procedures. A highly desirable last minute red salmon egg take was made in the area by the associated research staff and the approximately one-quarter million eggs resulting are being incubated for later shipment to Japan.

The Fire Lake hatchery continued its role in supplying fish for enhancement projects which are largely recreational and also initiated the first all-purpose fish cultural activities. The recently modernized station's recirculating-reconditioning facilities are still undergoing "shakedown" and fish production with the recycle system is not yet a standardized procedure. Initial integration with the upgraded Fort Richardson rearing facility was accomplished and the unified complex is operational.

Immediate steps were initiated to increase incubating capacity for the projected needs of saltwater salmon rearing prototypes. These efforts were not successful in fully meeting the specific objective because the supplier of the added standard incubating facilities was months late meeting the delivery deadline. The carrying capacity on hand was not adequate and the total number of eggs projected were not successfully incubated.

The Department's first integrated attempts at production egg takes were initiated after July 1. These attempts cannot be considered efficient and met with minimum results in several instances. However, adequate eggs to meet projected needs were obtained and incubated with one possible exception. Coordinated efforts and the development of trained personnel and facilities in establishing egg sources are a projected priority.

Overall, the first six months of developing a production hatchery system encountered numerous problems. Many were surmounted. Others are now under control and the rest are recognized and being pursued.

Fish to meet the Department's needs for stocking next spring are on hand, and adjustments in stocking requirements appeared acceptable to the using divisions during recent evaluation of the projected needs.

INFORMATION AND EDUCATION SECTION

I. PURPOSE AND DUTIES:

The Information and Education Section is responsible for informing the public about the fish and wildlife resources of Alaska and the Department's research, management and protective activities.

This is accomplished through a variety of informational and educational programs which include news releases, films distributed throughout the state, a weekly television program, a magazine, pamphlets, exhibits, feature stories, photo displays and personal appearances. The Department's technical library is part of the Section and provides valuable research facilities to staff personnel. The Section answers more than 6,000 letters per year from persons seeking information about Alaska's fish and game.

II. ACCOMPLISHMENTS:

Much effort was devoted in 1971 to upgrading the Department's magazine, "Fish Tales and Game Trails." Additional features, use of one color and improved writing and variety in articles were major improvements noted in the magazine during the year. The magazine continues to be well received and the distribution is now approaching 5,000 copies per issue. About 100 new requests for the magazine are received each month.

Footage for two new Department movies was obtained in 1971 and the films will be released in 1972. The films, both on sport fishing, deal with angling for grayling on the Delta River and for silver salmon and trout on Admiralty Island. Several excellent new films dealing with Alaskan wildlife were purchased, including one excellent television documentary on the Department's polar bear tagging program.

Arrangements were made for expanded use of the Department's television show and the program is now being seen in Juneau, Ketchikan, Sitka and Fairbanks, as well as in Anchorage where it is produced. The program runs 52 weeks per year and has high public acceptance.

Reorganization and cataloging of the library has started and the results should make this facility more useful to Department personnel and others using it for research.

The Section issued nearly 200 news releases covering many aspects of Departmental activity. Other accomplishments included establishment of a Department exhibit at the Juneau airport and participation in numerous shows, exhibits, displays and school educational projects.

DIVISION OF FISHERIES REHABILITATION, ENHANCEMENT AND DEVELOPMENT

I. PURPOSE AND DUTIES:

The Division of Fisheries Rehabilitation, Enhancement and Development was created during the 1971 legislature (AS 16.05.092). The Division has the responsibility to (1) develop and continually maintain a comprehensive, coordinated state plan for the orderly present and long-range rehabilitation, enhancement and development of all aspects of the state's fisheries for the perpetual use, benefit and enjoyment of all citizens and to revise and update this plan annually; (2) encourage the investment by private enterprise in the technological development and economic utilization of the fisheries resources; and (3) through rehabilitation, enhancement and development programs do all things necessary to insure perpetual and increasing production and use of the food resources of Alaskan waters and continental shelf areas.

II. ACCOMPLISHMENTS:

The Director was appointed Aug. 31, 1971 and a secretary was hired on Oct. 10.

An analysis was completed of existing, proposed and possible rehabilitation, enhancement and development projects within the Department and other agencies. This analysis was undertaken prior to the formation of the Division's staff and direction in order to (1) prevent short or probable long-range project overlap or duplication of efforts between divisions or agencies; (2) prevent duplication of certain key disciplines between divisions or agencies when those disciplines needed for a successful program might be secured through cooperative agreements; and (3) allow the assignment of functions to those divisions or agencies that would be in the best position to accomplish certain legislated objectives.

As a result of this analysis, recommendations have been made concerning functional assignments between divisions within the Department and between agencies within the state. A follow-through on these recommendations between divisions and agencies will take place in the future and should save the state considerable money and time but still allow the achievement of objectives as legislated.

III. PROJECTS UNDERWAY IN 1971:

1. Development of prototype gravel incubation system for salmon. The basic system has been installed at the Auke Creek Station. This was accomplished by a cooperative agreement between the Alaska Department of Fish and Game, Territorial Sportsmen and the National Marine Fisheries Service. This Division purchased the equipment and furnished some temporary help. The Territorial Sportsmen leased the land and the National Marine Fisheries Service provided the renovated building and assigned a senior biologist to the project.

2. Design of the corroborative incubation system at Kitoi Bay has been completed. This system will be at full testing capacity in the summer of 1972 (1 million fry).

3. Initiation of the Southeastern Stream Clearance program (administered by Commercial Fisheries Division until July 1, 1972 when that function will be turned over to this Division). Work plans are being drawn up for this spring's work.

4. Design of the Akalura control structure has been submitted. This is part of the first phase of the rehabilitation of a major sockeye system on Kodiak Island; this system ranked fourth among the Kodiak area's sockeye producers prior to the major decline in all stream populations in the 1930s.

5. Designs of saltwater salmon rearing units are being drawn up and reviewed. Possible sites are being investigated. Six hundred thousand coho fingerlings and 100,000 king fingerlings will be made available from the Fire Lake Hatchery for transport to the rearing sites during the late spring of 1972.

6. Review of possible new projects is continuing throughout the state. This review includes examination of fish passage needs, lake rehabilitation possibilities, incubation system needs and clam and whitefish development.

IV. STAFF:

The proposed staffing for fiscal 1973 of this Division reflects two basic ideas: (1) establishment of a relatively small staff of senior biologists and engineering positions to investigate, design and monitor projects; and (2) establishment of a broad work force of sub-professional positions to carry out proposed programs that from a maintenance and operational standpoint do not require constant services of professional people (example of feeding of salmon in saltwater rearing units).

We anticipate an increase of permanent fisheries technicians in all regions as project maintenance and operation load increases. We do not anticipate an increase in professional people in the near future.

DIVISION OF COMMERCIAL FISHERIES

I. PURPOSE AND DUTIES:

The Division of Commercial Fisheries has the responsibility of managing all of Alaska's commercial fish species (except halibut) and of conducting research to provide the best information possible to obtain a maximum sustained yield from the fisheries resources.

II. ACCOMPLISHMENTS:

SOUTHEASTERN MANAGEMENT

The attainment of pink salmon escapement levels comparable with the strong even-year levels throughout Southeastern confirmed the success of the Region I management program in 1971. If freshwater survival conditions are good, the weak odd-year pink runs should be very close to even-year levels in 1973.

With reduced gear levels, the purse seine fishery harvested approximately 8.6 million pinks. This was the largest odd-year catch since 1963. Total catch by the purse seine fishery was 9.9 million salmon.

Preliminary catch data indicates a total catch of 1.5 million by the drift gillnet fisheries. This compares favorably with the 1.7 million high taken in 1970.

In the troll fishery catches were up significantly over 1969 and 1970, with a total catch of approximately one million salmon. The 1971 catch compares closely with the 10-year average.

The salmon setnet fisheries in the Yakutat area were highly successful with a total catch of over 250,000 salmon. This was the largest catch in the last five-year period.

Dungeness crab catches in the Yakutat area remained at a high level of 1.2 million pounds.

SOUTHEASTERN RESEARCH

Pink and Chum Salmon Research - A return of 16.6 million pink salmon surpassed by a small margin the 1970 return of 16 million pinks to Southeastern Alaska. The 1971 forecasts indicated a return of about 12.8 million pinks, which resulted in an unexpected late season fishery in the southern half of the region.

Researchers concentrated on obtaining additional information pertaining to the upstream distribution of pink salmon in study streams. This information will result in a more realistic distribution of effort when sampling for pre-emergent fry, which provide an index for forecasting returning runs.

Red Salmon Research - Sampling was conducted at stream weirs and within the commercial fisheries to determine age composition of returning fish and the contributions of various freshwater systems to the commercial fisheries.

The project transferred from Ketchikan to Juneau. There, additional effort will be devoted to the red salmon stocks of Lynn Canal, the site of a rapidly expanding drift gillnet fishery.

Coho Salmon Research - Freshwater environments were surveyed to determine utilization by spawning adults and rearing juvenile fish. The objective of the surveys was the classification of freshwater systems as to relative importance as coho producers, which will be followed by a study of stock separation in Lynn Canal streams.

Adult coho scales from various parts of the state were analyzed. The results are being written into a report along with similar commercial catch sampling data from Southeastern Alaska.

Herring Research - The major objective of this project is the location and quantitative assessment of herring stocks. Hydroacoustical sounding equipment lends itself to estimating numbers of fish in wintering schools. Results enable fishery managers to annually determine if existing catch quotas are realistic.

Salmon and Land Use Research - The study of environmental damage to salmon streams by logging operations was de-emphasized in favor of pre-logging studies. Surveys conducted in watersheds where logging is imminent, resulted in reports for inclusion in an environmental impact statement produced by the joint efforts of the Alaska Department of Fish and Game and the Forest Service.

CENTRAL REGION MANAGEMENT

Prince William Sound

Prince William Sound experienced the most successful purse seine season in 24 years and had better than average spawning escapements. In addition, the Copper and Bering river fisheries produced sockeye and king salmon catches well above the 15-year average. Herring and herring spawn on kelp produced an economic boost in the spring during a usual slack period. The herring spawn on kelp production was the largest in the short history of the fishery.

Bristol Bay

Approximately 15.8 million red salmon comprised the total inshore run to Bristol Bay in 1971 for a 9.6 million catch and a 6.2 million escapement. The red salmon catch exceeded the 21-year average (1951-1971) by slightly over one million. Escapements within forecast ranges were achieved for all river systems. Run timing lagged approximately one week behind the 11-year (1960-1970) average. The king salmon catch for Bristol Bay totaled 123,000 or about 33,000 (36 per cent) above the 21-year average (1951-1971). Chums are caught incidentally during the red salmon fishery in Bristol Bay. The 1971 chum catch of 677,000 was approximately 42 per cent above the 21-year average.

Cook Inlet

The 1971 Cook Inlet sockeye harvest (657,000) was below the 17-year average (1,086,000) by 429,000 fish. However, this is not an unprecedented low. In general good sockeye escapements were achieved throughout the inlet. The Kenai and Kasilof River stocks were unusually late in appearing in the rivers and the delayed fishery which had to be imposed to protect the stocks caused considerable public unrest.

Pink, chum and coho catches were very close to the odd-year average. Good escapements were realized throughout the inlet.

Shrimp catches amounted to 5.5 million pounds in 1971, slightly below the 1970 production of 5.7 million pounds.

King crab production was slightly higher than 1970 (3.9 million pounds) with 4.1 million pounds taken to the end of the year.

Tanner crab production was the highest on record with 2 million pounds delivered in 1971.

Dungeness crab production was normal.

CENTRAL REGION RESEARCH

Salmon Forecast - The 1971 Bristol Bay sockeye run was forecast at 15,900,000 fish prior to the season. Final catch and escapement figures totaled 15,802,000 sockeye. Both the 1971 Prince William Sound and Cook Inlet southern and outer district pink runs exceeded forecast levels by 50 to 60 per cent. The Prince William Sound run had been forecast as good, but the actual return was the best in recent history. The Prince William Sound chum run came in at about 760,000, well within the forecast range.

Sonar Research - Work continued on the development of a sonar counter to enumerate salmon smolt. Work on this unit has progressed to the stage that an estimate of the total numbers of young fish leaving the important Lake Iliamna system should be possible in 1972. Accurate estimates of young fish production should enable us to more accurately forecast returning adult run size and delineate optimum escapement levels for this and other important sockeye salmon producing systems in Alaska.

Test Fishing - The offshore test fishing program at Port Moller gave an accurate estimate of the size of the Bristol Bay sockeye run approximately seven days in advance of the season. Test fishing boats on the Kvichak and Egegik rivers provided accurate escapement indices for these rivers as did aerial surveys of index areas.

Razor Clams - Work continued on the clearing of razor clam beaches for interstate shipment of fresh and frozen clams. Federal approval is apparently imminent. Work is also nearly completed on study of the population dynamics of razor clams of protected and open beaches. Results of this study should result in management strategies for regulating the harvest of razor clams.

Cook Inlet Escapement Enumeration - Problems encountered during the 1971 season with escapement enumeration by sonar counters have prompted an expanded program to improve these counters and explore other methods of obtaining escapement information such as weirs, traps and expansion of foot surveys. Program planning for Susitna River investigations was also continued.

Prince William Sound Earthquake Rehabilitation - The Prince William Sound stream rehabilitation program de-emphasized mechanical rehabilitation of streams and initiated experiments with transplants of adult fish and the installation of incubation boxes to rebuild runs in streams with reduced populations. Some mechanical work in the streams was also continued to evaluate the effects of brush clearance in certain streams, to clear log jams and debris from certain streams and to maintain some of the work done in the past. Part of this work was done in cooperation with the U. S. Forest Service.

Copper River Program - Tagging and recovery of sockeye salmon was continued in the Copper River to derive estimates of escapement size. This program has been expanded in an attempt to move the escapement estimation closer to the fishery to provide information on which to manage the fishery in season. Work on the racial contribution of various stocks within the drainage to the fishery and on the impact of the subsistence fishery at Chitina are also continuing.

ARCTIC-YUKON-KUSKOKWIM REGION MANAGEMENT

The 1971 season in the Arctic-Yukon-Kuskokwim Region was highlighted by better than average king and chum salmon runs, economically the most important species in the region. Pink and coho salmon were below average in abundance.

Commercial fishermen harvested a total of 864,079 salmon of all species which was the second largest catch recorded for the region. Fisherman registration and effort in all fishing areas equaled or exceeded that of previous seasons.

An excellent king salmon run to the Yukon River produced an above-average commercial harvest of 108,000 fish. Aerial surveys of index spawning areas indicate that the 1971 king salmon escapement was the best since 1965. For the third consecutive season the chum salmon run was above average and the resultant commercial harvest of 289,000 fish was the third greatest recorded.

Yukon River subsistence fishermen had an above-average harvest of 23,745 king salmon. The catch of the other species, mainly chums, totaled 173,000, the smallest catch ever recorded. This small chum salmon harvest was the result of declining fishing effort and subsistence dependence upon this species.

The Kuskokwim River king salmon run and commercial harvest of 40,000 fish was considered average based on comparative data. The relatively poor coho salmon catch of 5,000 made in the Kuskokwim River resulted from below-average fishing effort operating on a below-average run. The 1971 season marked the first commercial chum salmon fishery on this river since the early 1920s; a harvest of approximately 68,000 fish was taken.

An above-average subsistence harvest of 45,000 king salmon was made in the Kuskokwim River. The catch of the other salmon species, mostly chums, totaled 120,000 fish which was below average. Late catch reports will probably result in average harvest of the other species of salmon.

Excellent chum salmon runs to the systems of the Norton Sound-Kotzebue area produced a commercial harvest of 270,000 fish and excellent escapements were achieved. The Norton Sound pink salmon run was unusually small.

ARCTIC-YUKON-KUSKOKWIM REGION RESEARCH

Spawning salmon are counted and sampled for age, sex and size data in index areas. Results indicate relative magnitude and quality of escapement which are indicative of the effectiveness of the management program.

Salmon catches are sampled throughout the runs to obtain age, sex and size compositions. Studies are under way to determine if certain age/sex classes can be selectively harvested by allowing fishing during certain periods of time.

Subsistence salmon fisheries are surveyed to determine harvest, fishing effort and relative success of the fishery. Approximately 1,500 fishing families are surveyed annually involving 2,500 river miles traveled by boat and 1,500 air miles traveled in single-engine aircraft.

Tag and recovery studies to estimate the population of summer chum salmon in the Yukon River were continued. Preliminary results indicate a harvestable surplus of chum salmon exists.

Test fishing sites, located at the mouths of the Kuskokwim and Yukon rivers, provide information on relative abundance and timing of king and chum salmon runs. Studies are also conducted to obtain age, sex and size composition of salmon taken in gill nets of varying mesh size. Results are applicable for obtaining maximum sustained yield for a "mixed" chum and king salmon fishery.

Special whitefish studies were initiated in July, 1971 to obtain biological and population dynamics information necessary to manage whitefish resources on the basis of maximum sustained yield.

WESTWARD REGION MANAGEMENT

The 1971 Chignik run marked the second year in a row that the total red salmon return to the Chignik system exceeded two million fish. The fishermen and processors did not settle their price negotiations until June 26. The fishery began on June 27 with fishing allowed 24 hours a day, seven days a week. Because of the late start, however, the escapement goal of 400,000 was exceeded by about 250,000 fish for the first run. The commercial fishery took approximately 447,000 fish from the early run. About 150,000 of these fish were taken at Cape Igvak by Kodiak fishermen. The late run was the largest since 1950. The commercial catch was approximately 754,000 with about 100,000 of these taken at Cape Igvak. The escapement of the late run was 234,000 fish. Seventy-seven boats fished the Chignik area in 1971. The red salmon case pack was 83,631 cases.

Pink Salmon - The pink salmon return to the Eastern District is normally weak on an odd year. However, the Western and Perryville districts were expected to produce well in view of the excellent escapements into the streams in the parent year of 1969. Poor survival resulted in a below-average catch of 612,328 pink salmon. Catch in the Eastern District was only 46,648 pinks, 67,111 in Chignik Bay District, 286,484 in the Western District and 212,085 in the Perryville District. Escapements ranged from approximately 5,500 pinks in the Chignik Bay District to a high of 193,500 in the Western District. The Eastern District received about 91,300 while the Perryville District received 34,500. The pink salmon case pack at Chignik was 23,284 cases.

Chum Salmon - The 1971 chum catch was 354,000 which is 100,000 above the past 12-year average. The catches by district were: Eastern 114,942, Chignik Bay 19,938, Western 178,169 and Perryville 40,902. Chum escapements were good. Except for Kujulik Bay, the Eastern District had excellent escapement with a total of approximately 223,800. Chignik Bay District received 7,050, Western District 143,800 and Perryville District 25,500. The case pack was 26,469.

The only shellfish production of any magnitude was shrimp with 1,049,942 pounds taken. King crab were down to 13,287 pounds, tanner crab 152,256 pounds and dungeness crab 5,865 pounds.

Peninsula-Aleutians

The king crab seasons in registration areas O and R were terminated early when the quotas were attained in each area. About 9.4 million pounds were landed in area O and 15.5 million pounds in area R. Area LM catch was very near its 4 million pound quota. The Bering Sea catch reached 12.7 million pounds (calendar year).

In the south Peninsula salmon fishery pink and coho catches were weak, red catches about average and the chum catch was very good. Red catches were above average in the north Peninsula fishery. Aleutian Islands catches and effort were low.

Kodiak

The total Kodiak area salmon catch was 6,423,000 fish, which was approximately 500,000 salmon above the odd-year average for the past 24 seasons. The number of fishing units utilized to harvest the average return was comparable to the magnitude of effort employed on the recent high production years.

Hydraulic sampling of 28 major pink salmon producing streams yielded a below-average density for the odd-year cycle. A 1972 forecast of 7.9-11.1 million pink salmon was developed from pre-emergent fry sampling data.

The total herring catch was 563,000 pounds for the Kodiak area. The harvest depends upon pre-spawn condition herring for roe removal and was similar to past years in that sufficient pre-spawn herring were not available to make the fishery economically sound.

The 1971-72 king crab quota of 10.2 million pounds was landed by Oct. 29. The fishery was closed on this date by emergency order. Although most crabs taken were of recruit size, indications are that this year class is stronger than the last three. Shrimp production increased to 81 million pounds, a new record for the area and an increase of 19 million pounds over last year. Approximately 30 million pounds of shrimp landed were taken from Marmot Gully in the Portlock area.

Tanner crab production remained at the same level as 1970 with 7.5 million pounds landed in 1971. Dungeness crab catches were down drastically in 1971. Total landings were 1.3 million pounds as compared to 5.7 million pounds in 1970 and 1969. This reduction is due in part to a poor early season affected by cold water temperatures and extensive molting during the normal peak.

The razor clam harvest, primarily from Swikshak beaches, increased again with 189,000 pounds taken for human consumption and bait. The Kodiak area also produced 780,000 pounds of shucked scallop meat.

WESTWARD REGION RESEARCH

In the westward region efforts were expanded in shrimp and king crab research. The addition of the RV Resolution to the Fish and Game Department fleet provided a tool for research into the knotty problem of population dynamics of these species. Results will be used to more effectively impose the quota system instigated by the Board of Fish and Game in the previous year.

Transfer of salmon projects to other divisions (Rehabilitation, Enhancement and Development Division and the Hatchery Services Section) has resulted in the discontinuation of westward region salmon research under this division. Tanner and dungeness crab studies have been terminated to accommodate the needs in shrimp and king crab research.

GAME DIVISION

I. PURPOSE AND DUTIES:

The Game Division, in accordance with the concept of sustained yield as specified in Section 4, Article VIII of the Constitution of the State of Alaska, has the responsibility of conducting a conservation program involving all species of land animals and marine mammals in the state. Basically, the goal of the Division's program is to provide maximum benefits to the citizens of Alaska through orderly utilization of the state's game resources.

Game Division operations, which are directed toward managing, maintaining and improving game resources while knowledgeably directing the utilization of harvestable surpluses, are divided into three distinct categories: management, research and survey-inventory. Management activities include administration of guide examinations, enforcement of guide and hunting regulations, administration of controlled hunts, preparation of regulatory proposals and public relations work. Research activities, surveys and inventories of game populations and their habitat provide information necessary for the proper management of Alaska's game resources.

II. ACCOMPLISHMENTS:

The Game Division operated with an acting director (the deputy director's position) throughout 1971. Although the disadvantages of being understaffed in the headquarters office are manifold, 1971 did serve to point out the capability of our recently decentralized organization to remain productive despite having no director.

Acceptance of 12 new biologist and clerical positions by the 1971 Legislature provided the Division of Game personnel to essentially complete its reorganization initiated in 1969. Several important field stations (Palmer and Glennallen) are now staffed with assistant area biologists to compiement the efforts of their previously existing area biologists. Delta, Fort Yukon and Wrangell, previously without resident biologists, will be staffed by the end of fiscal 1972. The addition of four new game biologist III positions allowed the upgrading of area biologists at Ketchikan, Kodiak, Juneau and Nome, thus standardizing area biologists statewide.

By the end of 1971, the new regional headquarters complex for Game, Sport Fish, Protection and Administration division staffs in Fairbanks was nearly ready for occupancy. This complex, consisting of offices, laboratory facilities and a storage building, was funded jointly with federal aid, game fund and general fund money. Upon its completion early in 1972, the Fairbanks office will house the Region III headquarters staff and will provide a conference site for both state officials and Fairbanks townspeople.

One of the major accomplishments of the Game Division staff during 1971 was the completion of preliminary species management policies for all of Alaska's major game animals. Extensive efforts by individual staff members plus a highly productive review by the Program Review Committee in September resulted in the accomplishment of this task. After final divisional and committee review in January, 1972 these policies will be presented to the Fish and Game Board for its review and eventual acceptance. Completion of these policies will lead the way to development of comprehensive management plans for all species and game management units statewide.

Sea otters were in the limelight in 1971. During July, 64 of these animals were transplanted to Oregon in order to bolster previously transplanted stocks. As with previous operations, the otters were trapped by staff biologists near the coast of Amchitka Island and transported to Oregon by the Atomic Energy Commission. Surveys of Salisbury Sound near Sitka conducted in August, 1971 indicated that transplants of sea otters from Amchitka to Southeastern Alaska during the past several years have been successful. The apparent reestablishment of this species to Southeastern waters highlighted our successful relationships with the A.E.C.

However, following the November, 1971 detonation of a high yield nuclear device on Amchitka Island, investigations by Game Division biologists indicated that approximately 1,000 sea otters and many other marine mammals, birds and fishes were victims of the "Cannikin" blast.

Early in 1971, the Game Division was directed to produce a substantial impact statement relating to the development of North Slope oil. This report, covering the potential impact of the proposed trans-Alaska pipeline and its terminus at Valdez on wildlife populations along the pipeline route and in Prince William Sound, was incorporated into the State of Alaska's impact statement.

Exhaustive research on moose continued at the Game Division's Moose Research Center near Soldotna. This facility received a new staff biologist position in 1971, and several graduate students at the University of Alaska have augmented staff programs with studies of their own. In the fall of 1971, the most successful antlerless moose seasons in Alaska's history were held. The increased public acceptance of these hunts was probably attributed to a stepped-up program informing Alaska's citizens of the rationale behind them.

Polar bear research and management continued as major programs within the Game Division. The first limited permit hunt for these big bears was successfully conducted in the spring of 1971. Two-hundred and four bears were taken by the 300 permit holders. Research on polar bear movements and populations continued to provide invaluable data for management of this species, and polar bear research in 1971 was expanded to include studies of their reproduction and studies aimed at reliable age determination.

In an attempt to provide more Alaskans the opportunity to hunt big game where it is not necessary to compete with other hunters using mechanical means of transportation, the Game Division staff proposed to the Fish and Game Board that several special walk-in-only hunting areas be established. The Board adopted these proposals and the resultant Delta, Glacier Mountain, Lake Louise and Sourdough Management (controlled use) areas proved to be extremely popular with Alaskans during 1971.

DIVISION OF PROTECTION

I. PURPOSE AND DUTIES:

The Division of Protection is charged with the responsibility of protecting the fish and game resources of the state. The Division's responsibility and role within the Department is to provide effective enforcement of all regulations and laws which have been promulgated to insure the sustained yield principle in dealing with Alaska's fish and game resources. While enforcement is a primary directive, the Division is responsible for the bounty program, a hunter safety program, resource education and is a service division for the programs of Commercial Fisheries, Sport Fisheries and Game divisions. The Division further provides support to the Fish and Game License Division of the Department of Revenue and personnel serve as peace officers of the state when necessary to assist the Department of Public Safety. Recognizing that protection officers are located in a number of remote locations, many without a representative of the Department of Public Safety, the request for law enforcement assistance by the public occurs most frequently.

The Division objectives include perpetuation and, where feasible, enhancement of fish and game resources through education of the public as to the need for various laws and regulations and enforcement of the commercial, sport fish, hunting, guiding and trapping laws and regulations. Further objectives include protection of the public and promoting safe use of firearms to reduce injuries, death and unsportsmanlike conduct while engaging in outdoor recreation.

Staffing of the Division of Protection consists of 51 field officers, seven supervisors and administrative officers, two staff officers, seven seasonal officer positions and ten clerical classifications for a total of 77 positions. The staff of 51 field officers was supplemented by approximately 50 temporary assistants during the peak summer commercial fisheries season. Officers of the Division are located in 36 field stations, three of which are maintained on a seasonal basis for the present, due to lack of permanent housing facilities.

II. ACCOMPLISHMENTS:

A concerted effort was made this past period to reduce the flow of unlawful game trophies and pelts from the state to nonresidents and taxidermists where a lucrative market exists for such items as brown bear, polar bear and other trophies unique to Alaska. Fourteen different taxidermy firms were visited outside of Alaska, primarily in the northwestern states. These visits revealed in excess of 600 taxidermy invoices worthy of further investigation. By year's end, the investigations disclosed some 158 questionable hides and trophies that could not be established as being legally taken and/or shipped from Alaska. This included 30 polar bear hides, 93 brown bear hides and 35 miscellaneous wildlife trophies. Of these, 118 were in the names of nonresident hunters involving 35 different states, Canada and Europe. The investigations were pursued with the assistance of the U. S. Fish and Wildlife Service in the various states. At year's end, 97 of the 158 investigations were completed and work is continuing with the apparent result that illegal traffic has slowed and some deterrent has been accomplished.

A continuing surveillance was maintained over the crab and scallop fishery of Western Alaska with year-round assistance of personnel in the westward portions of the Alaska Peninsula. The program was initiated in 1969 and has continued with both permanent and temporary personnel. Housing facilities were established in Cold Bay and a permanent officer assigned to direct and supervise the field effort in this area.

Personal contacts of resource users by protection personnel exceeded 25,000 during the calendar year. Some 6,238 contacts were made among the 20,686 persons licensed to fish commercially during 1971. About 8 per cent of the licensed sport fishermen were contacted and 9 per cent of the licensed hunters received contact by protection personnel. Statistics of the enforcement effort included 1,434 violations prosecuted in the courts: 458 were in commercial fisheries, 459 in sport fisheries, 394 in game and 123 miscellaneous. An additional 272 warning citations were issued during the period.

SPORT FISH DIVISION

I. PURPOSE AND DUTIES:

The Sport Fish Division formulates management regulations and conducts research on the various game fish for the purpose of meeting angling needs. The sportfisherman constitutes the largest recreational resource user in the state. In excess of 200,000 anglers participated in Alaska's recreational fishery during 1971 and spent approximately 2.9 million man-days pursuing their sport. The growth trend of anglers has averaged 10 per cent annually. A special publication, "Federal Field Committee for Development Planning in Alaska" (1971), reported that 46 per cent of Alaska's visitors were attracted to the state because of the sport fishing opportunities available and that 40 per cent returned because of the quality of their sport fishing experiences.

The Division's management objective is to supply quality fishing for the greatest number of anglers with a minimum of restrictions and regulations, consistent with fair distribution, continued supply and proper utilization of the resources within the biological capacity of the various environments. Research programs have been developed to fulfill management's needs as follows:

1. To gather biological, physical and chemical information on all recreationally desirable fish species within the state.

2. To increase sport fishing opportunities.

3. To investigate the limiting environmental factors influencing the spawning, rearing and carrying capacity of the state's waters.

II. ACCOMPLISHMENTS:

REGION I (SOUTHEAST ALASKA)

Due to the accelerated population growth in central and northern Alaska, the Division through the first decade of statehood concentrated in meeting human demands and needs of these areas. Southeastern Alaska, with the introduction of the Marine Highway System and resource development, has required an increasing amount of attention each year. In 1971, the regional staff was increased and reorganized to obtain information for management of the sea-run cutthroat and steelhead trout and king salmon.

Expansion of the logging and wood products industry in Southeastern Alaska required specific guidelines to minimize recognized harmful impacts on the fish, fishery habitat and angler access. Effects of logging research was given top priority and an intensive program is underway with the assignment of two biologists to this project.

King Salmon - As more and more anglers enter the fishery for king salmon each year, a new project was added to collect basic life history data for immediate management needs. From this effort management techniques will be established for correcting the steady decline of these fish.

Mendenhall Glacier Ponds - Eight ponds located in the forelands of the Mendenhall Glacier near Juneau were investigated and found to possess the potentials necessary for the rearing of salmonoid fishes. Cooperatively working with the U. S. Forest Service in their development, the Division has undertaken the basic construction financing. The Forest Service is providing the land, hydrology and engineering design.

Three of the eight ponds are being developed for rearing rainbow trout, adding new waters and a new game fish for the Juneau angler. Five of the ponds are being developed for rearing silver and/or king salmon. The fish will be reared to smolt size and released. Upon obtaining maturity, the fish are expected to significantly add to the marine sport fish and commercial fishery of the area. The fish entering the escapement will be held until ripe and spawned. Their progeny will be used to restock the rearing ponds on an annual basis.

Logging - A study of logging and its effects on sport fish and fishermen was initiated. A cooperative effort was conducted with the assistance of the U. S. Forest Service in several training sessions at logging camps. The establishment of guidelines for use by foresters was formulated.

Steelhead-Cutthroat - Petersburg Creek, located near Petersburg, was selected as the site for conducting a life history study on these two species of fish. The proposed accelerated logging program in Southeastern Alaska has and will continue to become involved in a major portion of the fish rearing aquatic habitat types.

REGION II (SOUTHCENTRAL, BRISTOL BAY, KODIAK)

Region II consists of more than 75 per cent of the state's population and the bulk of the Division's research and management staff. The major effort has been on assessment of the fishery resource and its enhancement through restoration of water and fish stocks.

Russian River Research and Management - Management and research achievements on the Russian River, Alaska's most popular freshwater salmon fishery, were only moderately successful in 1971 because of unusual conditions which affected both the early and late sockeye salmon runs. Extremely high stream flows resulted in an upstream fish migratory block at Russian River falls during both the early and late runs. Persisting high-water conditions through the falls area necessitated a fish rescue operation by personnel of the Sport Fish and Commercial Fisheries divisions. Flows subsided each time to allow eventual fish passage. The Division instigated positive action in seeing that the Department includes a fish passage facility in the FY 1973 budget request.

Salmonoid Rearing and Migration Study on Ship Creek System - King salmon have been reared at the Fort Richardson cooling pond, marked and released into Ship Creek since 1963 in an effort to enhance anadromous fish stocks in this creek. During 1971, 30,400 silver salmon and 182,000 king salmon smolts were marked and released.

Returning adult salmon enumerated at the Chugach Dam trap amounted to 1,206 silver salmon and 221 king salmon.

Approximately 200,000 king salmon and 560,000 silver salmon eggs were taken from Ship Creek stock and fertilized for incubation at the Fire Lake Hatchery for release in Ship Creek and other waters throughout the state in 1972.

Sampling at local canneries indicated Ship Creek stocks of silvers and kings contributed significantly to the commercial harvest in Cook Inlet in 1971. Several thousand anglers also participated in the Ship Creek salmon fishery.

Resurrection Bay - The total estimated fishing effort in Resurrection Bay (Seward) amounted to a record-breaking 27,230 man-days with a harvest of 21,330 silver salmon. The growth of this fishery is due, in part, to the smolt stocking program. Over 22 per cent of the sport harvest was comprised of marked fish. The Division plans to continue this smolt stocking program provided this level of success can be maintained.

Cook Inlet King Salmon Harvest - The Department issued 23,277 king salmon punch cards to anglers for the Cook Inlet area during the 1971 season. This indicates the tremendous interest and participation in this fishery. The total estimated harvest by the anglers amounted to 1,105 fish. The Division, through its efforts in attempting to maintain a king salmon fishery in Cook Inlet, is currently spending approximately $250,000 annually. Indications (commercial harvest) are that the number of fish annually entering the Inlet is steadily decreasing.

Cook Inlet Razor Clam Investigation - Creel census information revealed that an estimated 6,800 diggers harvested an estimated 187,750 razor clams in the Homer area.

Lake Restoration - Four lakes were treated with rotenone for the removal of undesirable fish. The largest lake to be treated was Bear Lake, located near Seward. Bear Lake has 445 surface acres, 15,000 acre-feet, and has a maximum depth of 65 feet. Several years of investigation have revealed that Bear Lake was no longer able to rear significant numbers of juvenile salmon due to an overwhelming competition of threespine stickleback. Prior to treatment, 99 per cent of the fish in the lake were stickleback which competed with salmon for food and space. The lake will be stocked at a high density with silver salmon to further enhance the Resurrection Bay sport fishery. If the plant proves successful, it should be reflected in bolstering Seward's future economy.

REGION III (INTERIOR ALASKA)

Region III encompasses the area north of the Alaska Range. Interest in the fishery resource is growing annually. The Division and its programs have assisted and influenced the direction taken in the area's development. With the advent of more and easier access, the area's fisheries will become increasingly important. Active programs currently in progress include: (1) inventory and monitoring of Arctic waters, (2) sheefish-whitefish study, (3) inventory and cataloging of Interior waters, (4) Arctic grayling study, and (5) northern pike life history and utilization study.

Monitoring and Evaluation of Arctic Waters with Emphasis on the North Slope Drainages - Work in 1971 centered around surveys, life history and utilization of the fishery. Physical and chemical surveys were conducted on all major tributaries of the Sagavanirktok River drainages including aerial fish counts. A weir constructed across the Lupine River provided information on movement, timing, abundance and composition of the various fish species.

Sheefish and Whitefish - During the past several years considerable effort has been given to the methods and means of hatching and rearing sheefish. Egg takes have been accomplished with the successful rearing to fry stage in Fire Lake Hatchery. These fish have been experimentally introduced into two lakes near Fairbanks. Anglers have commenced to harvest sheefish at a size range of 20 inches in length. The Division will in the near future extend the range of this species under controlled conditions into waters south of the Alaska Range, most likely near Anchorage. If the transplant proves successful and the fish are accepted by the angler, a planned program of management could result.

Inventory and Cataloging of the Sport Fish and Sport Fish Waters in Interior Alaska - All streams along the proposed trans-Alaska pipeline from Isabel Pass to Shaw Creek were initially surveyed. Fisheries in remote areas of the north are assuming more importance each year. Generally, the lake systems have been found to possess the characteristics necessary to sustain optimum man-days of use.

Arctic Grayling - Winter ecology and summer distribution of Arctic grayling along with life history requirements have been under investigation in the Tanana River drainage for several years with major emphasis in the Chena River system. Information collected is being compiled for guidance of the Corps of Engineers in construction of the proposed Chena River flood control dam.

Northern Pike Life History and Utilization - Study of northern pike distribution, movement and population indices in the Tanana River drainage continues. Minto Flats was chosen in 1968 as the area for the initial study. In 1970 a secondary road was constructed by the state into this area, and angler use has increased significantly since then.

Information gathered from the study will assist us in our northern pike management. In conjunction with the research study, the "personal use" needs (requirements) are being evaluated.

Proposed oil pipeline river crossings and haul road crossings from the Atigun River to Sagwan were observed and recommendations made for protecting the aquatic environment. All gravel removal sites were surveyed from Accomplishment Creek to Sagwan.

Various life history aspects of Arctic char were investigated. All major char spawning grounds of the Sagavanirktok River drainage were noted. Abundance of fish stocks and some of the physical requirements during summer and winter periods were noted.

Present utilization of the North Slope fishery stems primarily from the oil exploration construction camps. Commercial and subsistence fisheries presently occur in other northern rivers other than the Sagavanirktok River system. Information was gathered on these fisheries in the Nome, Kotzebue and Kivalina areas.

STATEWIDE INVENTORY AND FISH STOCKING

Additional angling recreation was provided by the Division's surveys and fish stocking programs conducted throughout the state. This program provided the public with increased opportunity for recreational fishing pursuits as indicated in Table 1 and Table 2.

Table 1. Number of Lakes and Streams Surveyed, by Region, during 1971.

Region	Lakes	Streams
I	40	42
II	89	53
III	15	107*
Total	144	202

*Seventy-three streams were observed sites in connection with the oil pipeline route.

Table 2. Fish stocking, by Region, for Alaska Anglers during 1971.

Region	Fish Species	Number
I	Rainbow trout	61,000
II	Rainbow trout	716,300
	Silver salmon	187,900
III	Rainbow trout	1,319,100
	Silver salmon	254,700
Total		2,539,000

DEPARTMENT OF FISH AND GAME

1971-72 Budget Authorizations

Section	Amount
Administration	$ 1,190,014
Hatchery Services	291,400
Habitat	213,900
Commercial Fisheries	4,112,600
Game	2,796,600
Protection	2,086,275
Sport Fisheries	1,709,400
Bounties	25,000
Vessels & Aircraft	710,900
Alaska King Crab Marketing & Quality Control Board	95,500
Fisheries Rehabilitation, Enhancement and Development	530,000
DEPARTMENT TOTAL	$13,761,589

Line Item	Amount
100	$ 8,219,075
200	696,100
300	2,261,914
400	972,800
500	434,700
600	2,000
800	130,000
900	1,045,000
DEPARTMENT TOTAL	$13,761,589