

**Regional Information Report No. 1J06-12**

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**A Program for Improving Management and Research  
of Fisheries in the Southeast Region—  
Southeast/Yakutat Salmon Fisheries**

by

**Scott Kelley**

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November 2006

Alaska Department of Fish and Game

Division of Commercial Fisheries





***REGIONAL INFORMANTION REPORT NO. 1J06-12***

**A PROGRAM FOR IMPROVING MANAGEMENT AND RESEARCH OF  
FISHERIES IN THE SOUTHEAST REGION—SOUTHEAST/YAKUTAT  
SALMON FISHERIES**

By

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November 2006

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## **ABSTRACT**

This report summarizes research and management information gaps and projects to address those gaps for salmon fisheries in Southeast Alaska. Projects identified in this document are currently unfunded or under funded. If fully funded these projects would contribute to the knowledge base for the species associated with each project and in many cases facilitate management of abundance based fisheries that exploit those stocks

Key words: Salmon, stock assessment, management, Southeast Alaska

## **INTRODUCTION**

The Southeast Alaska/Yakutat Region (Region I) consists of Alaska waters between Cape Suckling on the north and Dixon Entrance on the south. Region I is divided into two salmon net registration areas. Registration Area A, the Southeast Alaska area, extends from Dixon Entrance to Cape Fairweather. The Southeast Alaska area is divided into 17 regulatory districts, Districts 1 through 16 and the Dixon Entrance District. Registration Area A districts are further divided into regulatory sections and statistical areas. Registration Area D, the Yakutat area, extends from Cape Fairweather to Cape Suckling. The Yakutat area is further divided into the Yakutat District, extending from Cape Fairweather to Icy Cape, and the Yakataga District extending westward from Icy Cape to Cape Suckling.

For management and administrative purposes, Region I is divided into six management areas with area offices in Juneau, Ketchikan/Craig, Petersburg/Wrangell, Sitka, Haines, and Yakutat. The Craig and Yakutat offices are seasonally staffed.

## **FISHERIES MANAGEMENT ORGANIZATION**

Management of the Region I salmon fisheries is accomplished via coordination of the area management biologists. There are six area management biologists in Region I, corresponding to the area offices. Management biologists with area responsibilities oversee the commercial salmon net (purse seine, drift and set gillnet), herring, pot shrimp, miscellaneous dive, and the subsistence/personal use fisheries in their respective areas. Management biologists with regional responsibilities oversee the groundfish, crab, shrimp beam trawl, and salmon troll fisheries. There is a closely coordinated regional management approach for every fishery because of the spatial and temporal movement of fish and fishers between the various management areas.

## **HISTORICAL SUMMARY**

Commercial utilization of the Region I salmon resources began in the late 1870s. Until the early 1900s, sockeye salmon was the primary species harvested. Pink salmon began to dominate the harvest in the early 1900s and in the past ten years have comprised 51 to 84% of the region's total salmon harvest. The relative order of production (in numbers of fish) from highest to lowest is generally pink, chum, coho, sockeye, and Chinook salmon.

The harvest of salmon in Region I peaked in the late 1930s and early 1940s and declined to historical low levels in the 1950s and early 1960s. During the mid to late 1960s, harvests increased, but in the early 1970s, another decline in production occurred. Since the mid 1970s, salmon production levels in Region I have generally been increasing with record harvests of Chinook (2004), sockeye (1993), coho (1994), pink (1999), and chum salmon (1996) occurring in recent years. In 2005, the region harvested approximately 34.2 million more fish than the all-

year historic average, and harvested approximately 3.9 million fish more than the 10-year average of 68.6 million.

## **FISHERY CHARACTERISTICS**

Salmon are commercially harvested in Southeast Alaska (Registration Area A) with purse seines and drift gillnets, in Yakutat (Registration Area D) with set gillnets, and in both areas with hand and power troll gear. The salmon net fisheries are confined to state waters. The troll fishery operates in both state waters and in the federal waters of the Exclusive Economic Zone (EEZ). The use of floating fish traps is restricted to the Annette Island Fishery Reserve, established by Presidential Proclamation in 1916, however, there have been no reported fish trap harvests since 1993.

Region I salmon fisheries are complex due to the mixed stock and mixed species nature of the returns and to the existence of several different gear groups that often harvest the same stocks of fish. Because the region contains approximately 5,500 salmon producing streams and tributaries of various productivity levels, it is difficult to apply stock specific fisheries management according to the run strength of individual returns. Additionally, some salmon harvested in the region originate from other states (primarily Washington and Oregon) and Canada. A fishery targeting a specific salmon stock may incur major incidental harvests of other stocks.

## **FISHERY PARTICIPATION**

According to preliminary information from the Commercial Fisheries Entry Commission (CFEC), 375 purse seine, 451 drift gillnet, 149 set gillnet, 915 hand troll, and 935 power troll permits were issued in 2006. Participation for all Southeast Alaska salmon fisheries was up from 2005 levels but was still below the 10-year average.

## **SALMON HARVEST**

The Region I cumulative commercial salmon harvest by all gear types, including hatchery cost recovery, totaled approximately 29.5 million fish in 2006. The Region I total commercial salmon harvest percentage consisted of Chinook (1%), sockeye (5%), coho (7%), pink (40%), and chum salmon (47%). The 2006 combined Chinook harvest of 354,100 fish was well above average but below recent record levels. The 1.3 million sockeye harvest was slightly below the 10-year average. The coho harvest of about 2.0 million fish was below the 10-year average. The pink harvest of 11.9 million fish was the lowest since 1987 and well below the recent 10-year average of about 50 million fish. The chum harvest of 14 million fish was well above the recent 10-year average of about 12 million fish.

Salmon landed by purse seiners accounted for 76% of the total salmon harvest, followed by drift gillnetters (17%), trollers (6%) and setnetters 1%. Approximately 3% of the Chinook and 35% of the chum salmon harvest was taken in the hatchery cost recovery fisheries.

## **EXVESSEL VALUE**

The exvessel value (wholesale fish ticket value) of the 2005 Region I commercial salmon harvest was estimated at \$65.9 million, an 11% decrease from 2004. This exvessel estimate is probably below the actual value because it is based on the price reported on fish tickets and does not include subsequent price adjustments. The actual exvessel value, possibly 10 to 20% higher, will not be known until final processor reports are received and analyzed by the Commercial Fisheries Entry Commission (CFEC).

The exvessel value by gear was highest for purse seine (\$29.7 million), followed by troll (\$17.9 million), drift gillnet (\$9.2 million), hatchery cost recovery (\$7.0 million), Annette Island/Miscellaneous (\$1.0 million), and set gillnet gear (\$1.0 million). The total regional harvest of salmon was valued at approximately: Chinook \$13.9 million, sockeye \$8.8 million, coho \$9.6 million, pink \$19.2 million, and chum salmon \$14.5 million.

## **PROPOSED PROJECTS**

This document contains a list of projects proposed for increased funding. The projects described are either not conducted due to a lack of funding or are currently operated at levels insufficient to meet management objectives due to erosion of funding levels.

Projects are grouped into three categories (A–C) and are listed in Table 1. The categories are not prioritized, but the projects within each category are listed in order of priority. The first category (A) covers escapement-monitoring projects. Within this category, projects were ranked with priority given to projects that improve the department’s abilities to ensure escapement goals are achieved and to provide for increasing surplus harvest opportunities, subject to the constraints created by the unpredictable environment. The second category (B) includes projects associated with catch and escapement sampling and run reconstruction. One project is proposed in this category, which increases funding for the region’s salmon port sampling program. This program has been scaled back and in recent years routinely funded with special, relatively short term funding sources due to continual erosion of funding over many years. The third category (C) includes projects that directly improve salmon management.

The department administers many other projects related to Southeast Alaska salmon fisheries under the auspices of the Pacific Salmon Treaty. The State receives federal funding for many of those projects and relies heavily on that funding to conduct salmon stock assessment and management in the region. Several projects related to the Treaty have been funded from allocations from the Pacific Coast Salmon recovery fund and Northern Fund in recent years.

**Table 1.**—Summary of proposed projects and estimated costs (thousands of dollars).

<b>Project</b>	<b>Estimated First-Year Cost (Thousands)</b>	<b>Estimated Annual Continuing Cost (Thousands)</b>	<b>Duration</b>
A. Salmon Escapement Monitoring			
A.1. Chilkat River Inseason Escapement Monitoring	\$110.0	\$110.0	Long Term
A.2. McDonald Lake Escapement Estimation	\$70.0	\$70.0	Long Term
A.3. Sockeye Salmon Lake Stock Assessment	\$250.0	\$250.0	Long Term
A.4. Ketchikan Area Sockeye Salmon Escapement	\$77.0	\$77.0	Long Term
A.5. Coho Salmon Escapement Surveys	\$57.0	\$57.0	Long Term
A.6. Early Taku Coho Salmon Assessment	\$17.0	\$17.0	4 Years
A.7. Crescent Lake Sockeye Escapement Estimation	\$85.0	\$70.0	Long Term
B. Catch and Escapement Sampling/Run Reconstruction			
B.1. Regionwide Port Sampling	\$170.0	\$170.0	Long Term
C. Salmon Fishery Management			
C.1. Full State funding for salmon management biologists	\$200.0	\$200.0	Long Term
C.2. Salmon aerial surveys	\$90.0	\$90.0	Long Term
C.2. Assistant Troll Biologist	\$65.0	\$65.0	Long Term
C.3 Southeast Alaska Troll Chinook Salmon Management	\$8.0	\$8.0	5 Years

## **A. Salmon Escapement Monitoring**

The management of commercial salmon fisheries in Southeast Alaska depends heavily on inseason monitoring of salmon escapements to assess run strength. Harvest opportunities are allowed if and where salmon runs have a surplus to escapement needs. A large number of fisheries in the region are managed to harvest a share of the surplus of specific runs, under the terms of Pacific Salmon Treaty agreements. To manage accordingly, the department must be capable of projecting escapement, catch, and total run for individual stocks or stock groups. Additionally, accurate monitoring of escapements is critical for understanding production characteristics and setting escapement goals for salmon populations.

A variety of escapement monitoring techniques are used in the region. Aerial surveys are the major assessment tool used to provide indices of escapements of pink and chum salmon and to manage commercial purse seine fisheries, which primarily target these species. Aerial surveys are also important for indexing escapement levels for select coho and sockeye salmon systems. Monitoring of Chinook salmon systems in Southeast Alaska is often based on helicopter surveys, which are usually conducted by the Division of Sport Fish. Reductions in general fund money and increasing fuel, insurance, and charter costs have resulted in a decrease in the number of streams monitored and frequency of aerial surveys in many areas. Operation of counting weirs in the region has declined in recent years due to budgetary limitations and the expense of such programs, despite the fact that in many cases weirs provide the most accurate estimates of escapement for clear water drainages, particularly for sockeye and coho salmon. Federal funding is currently supporting short-term monitoring studies (2–3 years) of escapement at approximately 15 sockeye salmon systems in the region that are heavily utilized by subsistence fishers. Mark-recapture techniques are used to estimate escapements on several large glacial systems in the region. These studies are carried out cooperatively with other divisions and agencies using funding sources that are not long term in nature. An increase in general fund support of escapement monitoring projects in the region is needed and will result in improved management of Southeast Alaskan commercial salmon fisheries.

### **Project A.1. Chilkat River Inseason Escapement Monitoring using fish wheels**

Location: Chilkat River.

Primary Objective: To continue to monitor the inseason escapement of Pacific salmon into the Chilkat River drainage.

Description: The Chilkat River is one of the largest producers of Chinook, sockeye, coho and fall chum salmon in northern Southeast Alaska and contributes significantly to the commercial drift gillnet and troll, sport, and subsistence fisheries. Estimating the escapement of sockeye salmon and fall chum salmon is done through mark-recapture techniques using fish wheels on the lower river for enumeration, tagging and collecting biological information. The fish wheels are also used as an inseason tool to estimate the abundance of returning adult Pacific salmon to the Chilkat River drainage. Additionally, the fish wheels serve as a platform for the collection of biological data on king and coho salmon, the recovery of coded wire tagged king and coho salmon, and for radio tagging salmon in the Chilkat River. Fish wheels have been used continually on the Chilkat River since 1994. The Pacific Coast Salmon Recovery Fund (PCSRF) has provided funding for the fish wheel project beginning in 2004. This funding will continue through the 2006 field season for the operation of the Chilkat River fish wheels and another proposal has been submitted to the PCSRF for 2007. Long term funding has not been secured.

Information collected from this project is critical for managing returns of Pacific salmon to the Chilkat River drainage.

Duration: A long-term stable funding source is desired. Portions of the project currently have short-term PCSRF funding. The division has included this project in the FY08 request for the General Fund component.

Estimated Annual Cost: \$110,000 annually.

### **Project A.2. McDonald Lake Escapement Estimation using mark-recapture**

Location: McDonald Lake.

Primary Objective: Estimate the sockeye salmon spawning escapement at McDonald Lake.

Description: McDonald Lake is one of the largest producers of sockeye salmon in southern Southeast Alaska, although runs have greatly declined over the last several seasons. The escapement averaged 82,000 since 1979, but in the last five years has only averaged 45,000. Additionally, the escapement has fallen below the escapement goal six out of the last ten years. ADF&G biologists have generated approximate escapement estimates for McDonald Lake sockeye salmon annually since 1983, based on the sum of foot-survey counts, calibrated to weir counts in 1983 and 1984. Although these foot surveys probably do an adequate job of capturing escapement trends, the conversion to total escapement magnitude is questionable, at best. The funds we are requesting would be used to implement a mark-recapture study to enumerate the total escapement to the lake on an annual basis.

Duration: We are hoping for a long term, stable funding source.

Estimated Annual Cost: \$70,000 annually.

### **Project A.3. Sockeye Salmon Lake Stock Assessment**

Location: Entire Southeast Alaska and Yakutat areas.

Primary Objective: To monitor escapement, terminal harvest, lake productivity, and escapement goals for selected sockeye salmon runs in Southeast Alaska.

Description: The Alaska Department of Fish and Game currently has 13 escapement goals for sockeye producing systems in Southeast Alaska and the Yakutat area, although the region's sockeye production comes from over 200 lake systems. Many small sockeye runs in the region support directed subsistence and sport fisheries and incidental commercial catches, but these systems are only sporadically monitored. Federal funding is currently supporting short-term studies (2–3 years) of escapement, terminal harvest, and lake productivity at a few of these systems. In Alaska, following the ocean-climate regime shift of the 1970s, the catch of sockeye salmon for many stocks rose to historical levels (e.g., Kodiak area sockeye salmon), or far above historical levels (e.g., Bristol Bay or Cook Inlet sockeye salmon). Over the same period, sockeye yields increased somewhat in Southeast Alaska but not as dramatically as for many other stocks that migrate into the Gulf of Alaska. Recently, sockeye yields in the Yakutat area have actually fallen to levels near their historic low point. With this project, we will provide long-term funding for a dedicated sockeye stock assessment project in Southeast Alaska. The project would fund a Fishery Biologist III project leader, a Fishery Biologist II assistant, and some level of funding for travel and supplies. A Fishery Biologist II for southern Southeast Alaska would be provided to this project by redirecting existing staff. This project would take over some level of

responsibility for existing sockeye monitoring projects, it would seek funding from federal cooperators for joint projects, and this project would assist with stocks status reviews and escapement goal development for the entire region. More importantly, staff working for this project would track trends in yield and develop predictive fishery models to help understand trends in run size, effort, and yield for the whole region.

Duration: Parts of this project are currently funded with short-term, Federal funding. A long-term stable funding source is desired.

Estimated Annual Cost: \$250,000.

#### **Project A.4. Ketchikan Area Sockeye Escapement**

Location: Ketchikan Area Sockeye Escapement

Primary Objective: To continue monitoring the sockeye salmon escapements to three systems in the Ketchikan area: Hugh Smith Lake, Salmon Lake, and McDonald Lake. This will be accomplished by operating an adult salmon weir at Hugh Smith Lake, and conducting foot surveys at Salmon and McDonald lakes.

Description: ADF&G has monitored the sockeye salmon escapements to Hugh Smith (weir) and McDonald lakes (foot surveys) since the early 1980s, and to Salmon Lake (foot surveys) since the mid 1990s. The Hugh Smith Lake sockeye stock was formally recognized by the Alaska Board of Fisheries in 2003 as a Stock of Concern. The Board and ADF&G developed an Action Plan to aid rebuilding of the stock. This plan included harvest management actions, a lake-stocking program, and an intensive in-lake stock assessment program for Hugh Smith Lake sockeye salmon. This program would support the stock assessment at the lake. McDonald Lake has been one of the largest contributors of Alaskan sockeye salmon to the commercial net fisheries in Sumner strait, Clarence strait, and West Behm Canal. The Department has monitored the escapement of sockeye salmon to McDonald Lake through a systematic series of foot surveys that were calibrated to weir counts in the early 1980s. We would like to maintain our long time series of foot surveys for this stock, while we obtain an estimate the escapement through a mark-recapture study. Salmon Lake is one of the primary sockeye salmon producers on Prince of Wales Island and supports a subsistence fishery (Karta River). Salmon Lake also contributes to the gillnet and seine fisheries in Clarence Strait. ADF&G has conducted foot surveys of the main spawning area since 1995. These three lakes represent the longest escapement series for sockeye salmon in southern Southeast Alaska. Information collected on a long-term basis is crucial for tracking trends and changes in stock abundances over time, and for setting and evaluating escapement goals. We have included four months of a Fish and Wildlife Technician IV as a project coordinator, which has not been funded in the past.

Duration: A long-term stable funding source is desired.

Estimated Annual Cost: \$77,000

#### **Project A.5. Coho Salmon Escapement Surveys**

Location: Entire Southeast Alaska/Yakutat Area.

Primary Objective: To increase the number of streams in the Southeast Alaska/Yakutat region that are monitored for escapement of coho salmon.

Description: Several thousand streams produce coho salmon in Southeast Alaska, but only a few index systems are consistently monitored for escapement. This project would fund additional coho salmon escapement surveys in the Yakutat, Sitka, Petersburg, Juneau, and Prince of Wales areas, by using existing staff and extending employment for four technicians. The funds would be used to fill in important gaps in escapement information and to begin surveys on streams that are likely to be subjected to increasing harvest pressures from developing sport and new federal subsistence fisheries.

Duration: A long-term funding source is desired.

Estimated Annual Cost: \$57,000.

### **Project A.6. Early Taku Coho Salmon Assessment**

Location: Taku River, British Columbia.

Primary Objective: To assess early run Taku River coho salmon spawning abundance, distribution, and juvenile habitat utilization.

Description: Early season returns of Taku River coho salmon in the last five years may have been lower than the prior decade, based on inriver and District 11 fishery performance and early season fishwheel counts. The earliest migrating Taku River coho salmon stocks enter the river from mid-July to mid-August and spawn in three main tributaries of the Nahlin River (i.e. upper Nahlin River, Dudidontu River, and Tseta Creek) during late-August to late-September. In 1986, the department initiated a program with Pacific Salmon Commission funds to identify the extent to which early runs existed in the Taku drainage, to determine their fishery distribution and exploitation rates, and to develop a baseline escapement index. Escapement surveys were conducted on the three Nahlin River tributaries in 1986 and were continued through 1991 in the upper Nahlin and Dudidontu Rivers, where physical conditions appeared excellent for obtaining comparable visual counts. The current proposal is for a project that will fund helicopter surveys of coho salmon escapement in tributaries of the Nahlin River in the upper Taku River drainage and minnow-trap surveys of the summer distribution of juvenile coho salmon in areas that are known to have been used by early coho salmon stocks. Locations that were previously surveyed will be revisited to determine if there has been an obvious change in the presence of juvenile coho salmon in the drainage, and new sites will be sampled to improve information on the distribution and use by juveniles. The findings will be compared with escapement counts and observations on the distribution of adults and rearing juveniles during 1986–1991. In addition to an assessment of the level of escapement and the distribution of juveniles relative to the baseline period, another purpose of the surveys is to document changes in access by spawners to habitat within the system.

Duration: Four years.

Estimated Annual Cost: \$17,000.

## **Project A.7. Crescent Lake Sockeye Salmon Escapement Estimation**

Location: Crescent Lake, Port Snettisham, Southeast Alaska.

Primary Objective: To provide inseason escapement estimates of sockeye salmon to Crescent Lake.

Description: Wild and hatchery management concerns in the Taku/Snettisham (District 111) gillnet fishery require timely and accurate estimates of the harvests and escapements of the principal contributing stocks of sockeye salmon. In the past, the department operated a weir on the outlet stream to Crescent Lake, one of the major sockeye salmon systems in Port Snettisham, but problems with high water and other factors rendered the weir ineffective in enumerating the return. Douglas Island Pink and Chum (DIPAC), the operators of the Snettisham Hatchery, acquired a split-beam sonar system to monitor the escapement of salmon into Crescent Lake, and deployed the system for the first time in 2002. However, substantial technical details remain to be worked out, and this approach has not yet resulted an accurate, scientifically defensible escapement estimate. We are proposing to upgrade this project to a combined weir and mark-recapture project. We are asking for funding for weir materials, operating costs, and funding for annual planning and project documentation. Information from this project will improve management precision, create harvest opportunities on co-migrating stocks, and aid in development of escapement goals for this important sockeye salmon system.

Duration: A long-term stable funding source is desired.

First Year Cost (with materials): \$85,000.

Estimated Annual Cost: \$70,000.

## **B. Catch and Escapement Sampling/Run Reconstruction**

Thousands of salmon runs contribute to salmon harvests in Southeast Alaska. Commercial salmon harvests are sampled for a wide variety of biological data that is necessary for effective resource management and research activities in the region. Catches are sampled for age, sex, and size information, for a variety of data used for stock composition studies (scales, otoliths, presence of coded wire tags, presence of parasites, and genetics samples), for troll fishery performance data, for pink salmon sex ratio data used to determine run timing, and for a variety of other information. Select salmon escapements are sampled for age, sex, and size information and other biological characteristics. Thorough understanding of stock compositions of harvests is necessary to allow accurate run reconstruction, develop better understanding of stock-specific productivity, establish and improve escapement goals, monitor international harvest sharing agreements, and assess effects of management actions.

Most funding for catch and escapement sampling programs in Southeast Alaska comes from federal sources. Funding levels have largely remained static, while costs have risen and increased demands have been placed on the program. The following project is needed to maintain the existing catch and escapement sampling program and improve stock identification information needed for Pacific Salmon Treaty compliance.

## **Project B.1. Regionwide Port Sampling**

Location: Entire Southeast Alaska/Yakutat area.

Primary Objective: To collect biological information from salmon harvests in the Southeast Alaska/Yakutat area.

Description: The Southeast Alaska port sampling project samples commercial landings at all major ports and processors in the region. The sampling program provides research and management support, and includes sampling for coded wire tags (over one million fish sampled annually), scales (approximately 225,000 fish sampled annually and used to estimate stock composition of sockeye salmon harvests), troll catch-per-unit effort and pink salmon sex ratios. Over the years, employee costs have increased, but budgets have remained static and demands on the sampling programs have increased. Some sampling programs have been reduced or eliminated and what remains is required for management and research support. Furthermore, labor-intensive matched sampling is now common. In order to meet sampling goals for the existing program additional personnel are needed. This project adds an additional seasonal fisheries technician sampler for each of the ports of Ketchikan, Petersburg, Sitka, and Juneau, adds funding for spring troll sampling, and adds some time for a project biologist to assist with the project administration.

Duration: A long-term stable funding source is desired.

Estimated Cost: \$170,000.

## **C. Salmon Fishery Management**

### **Project C.1. Full State Support for Salmon Management Biologists**

Location: Entire Southeast Alaska/Yakutat Area

Primary Objective: To provide full State funding and support for salmon management biologists.

Description: Salary costs for assistant area and troll management biologists in Southeast Alaska are split between state general funding and the PSC and Anadromous Federal contracts. The Southeast Region is the only region in the division that does not have full state general fund support for these critical management positions. This increment would provide for full state funding for area management biologists and allow more flexibility to conduct salmon stock assessment projects related to implementing the 1999 Agreement of the Pacific Salmon Treaty.

Full state general fund support for management biologist will allow PSC grant funds to be used to better carry out divisional missions and measures A1 (ensure the conservation of natural stocks of fish, shellfish and aquatic plants based on scientifically sound assessments) and A2 (sustain fisheries on stocks of fish, shellfish, and aquatic plants based upon the control and regulation of harvests through responsive management systems). It will also enable the department to better meet obligations mandated by the Pacific Salmon Treaty.

Duration: A long-term stable funding source is desired. The division has included this project in the FY08 request for the General Fund component.

Estimated Annual Cost: \$200,000.

## **Project C.2. Salmon Aerial Surveys**

Location: Entire Southeast Alaska/Yakutat Area

Primary Objective: To provide increased state general fund support for the salmon aerial survey program.

Description: Intensive monitoring of incoming run strength is required for successful abundance-based management of commercial salmon fisheries in Southeast Alaska and Yakutat. Aerial surveys are one of the main assessment methods used, particularly for pink and chum salmon in Southeast Alaska and sockeye and coho salmon in the Yakutat area. Fishery openings are targeted where production surplus to escapement goals is identified with these surveys. Recently, survey costs rose rapidly in response to the increase in fuel and insurance costs. Annual general fund operational budgets have not increased accordingly. As a result, there has been a decrease in the number of streams monitored and frequency of aerial surveys, particularly after fisheries are over in the fall season. This has degraded the department's ability to monitor peak escapement counts which, in turn, affects our ability to measure the effect of harvest, establish escapement goals, and allow fishing opportunity. Additionally, numerous changes in management staff that conduct aerial surveys have occurred in the last several years. To be effective, the new staff requires training surveys to learn the art of aerial observation. The existing state general fund support for salmon aerial escapement surveys is approximately \$180,000 annually. This funding is distributed to the Sitka, Ketchikan, Petersburg, Haines, and Yakutat area offices. Additional funding for salmon aerial surveys has been obtained from the Pacific Coast Salmon Recovery Fund for the last four years.

Duration: A long-term stable funding source is desired. Portions of the project currently have short-term PCSRF funding. The division has included this project in the FY08 request for the General Fund component.

Estimated Annual Cost: \$90,000.

## **Project C.3. Assistant Troll Fishery Management Biologist**

Location: Juneau, Alaska.

Primary Objective: Provide additional management support for the Southeast Alaska salmon troll fishery.

Description: Historically, one Regional Troll Biologist and two assistant biologists have managed this complex fishery. One of the assistant positions was cut because funding from the Federal Pacific Salmon Commission grant has been insufficient to cover the costs of inflation. The loss of this position will limit the department's ability to make inseason management decisions, particularly in the spring troll season, reduce the opportunity for public interaction, and reduce staff support for industry contacts. The loss of this position may also degrade the department's ability to manage the troll fishery in accordance with the Pacific Salmon Treaty.

Duration: Long term.

Estimated Annual Cost: \$85,000.

#### **Project C.4. Southeast Alaska Troll Chinook Salmon Management**

Location: All of Southeast Alaska.

Primary Objective: Provide better in-season estimates of Chinook salmon catch rates, which would be particularly helpful during "low" abundance years and would enable the department to more accurately achieve Chinook salmon troll harvest allocations mandated by the Alaska Board of Fisheries and Pacific Salmon Treaty.

Description: This three-year project would enable regional troll staff to conduct on-the-grounds vessel interviews along the outside coast from Yakobi Island to approximately Whale Bay during the first Chinook summer retention period. The timing of this survey would be approximately July 2–4 annually.

Duration: 5 years.

Estimated Annual Cost: \$8.0.

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