# 2014 Season Summary Cook Inlet

Fall 2014

## Chinook Salmon Research Initiative

Chinook salmon are an important resource to many Alaskans. At the direction of the Governor, a team of Alaska Department of Fish and Game (ADF&G) scientists and biologists, in collaboration with federal agencies and academic partners, developed a research plan with recommended studies to address low Chinook salmon returns. The Alaska Legislature provided funding for implementation during their 2013 and 2014 sessions. The core of the plan is stock specific, life history-based research focused on 12 indicator stocks from across Alaska.

The Kenai and Susitna rivers are two of the stocks selected for study under this plan. On the Kenai, ADF&G is documenting oral and traditional knowledge, and collecting age, sex, length, coded wire tag, and genetics information from fish caught in commercial and sport fisheries. On the Susitna River, adult abundance, juvenile abundance, catch in marine waters, and local and traditional knowledge are all being studied.

Look for the salmon logo (🐟) to identify CSRI research in this newsletter

More information on the CSRI can be found online at: www.adfg.alaska.gov

## New Board of Fish provisions for managing Kenai River king salmon

At the Upper Cook Inlet Board of Fisheries meeting in February 2014, the board adopted proposals affecting the Kenai River Late Run King Salmon Management Plan. The plan is in regulation to ensure an adequate escapement of late-run king salmon into the Kenai River system and provide management guidelines to the department.

Recent board action sought to provide additional protection to late run king salmon stocks by creating "paired" restrictions. These restrictions identify management actions taken in one fishery and link it to restrictions in the other fisheries. For example, prohibiting bait in the Kenai River king salmon sport fishery to meet escapement objectives triggers prohibiting retention of king salmon in the Kenai River personal use dip net fishery, and limits commercial fishing periods in the Eastside set gillnet fishery to 36 hours per week.

Paired restrictions in 2014 provided guidance to managers charged with minimizing the harvest of king salmon while taking advantage of strong sockeye salmon runs. The late-run king salmon escapement of 16,061 achieved the goal of 15,000- 30,000.

# Marine sampling captures king harvest in East Side Set Net Fishery

Marine sampling of king salmon harvested in the Upper Cook Inlet East-side set gillnet commercial (ESSN) fishery took place in 2014. The effort, which was funded through the Chinook Salmon Research Initiative (CSRI), set out to estimate harvest of Kenai River king salmon in the ESSN Fishery. A total of 2,055 king salmon were harvested in the ESSN fishery in 2014, of which 898 fish (44%) were sampled for genetic tissue and for age, sex, and length information. To accurately represent the ESSN king salmon harvest by the Kenai/East Forelands and Kasilof sections, samples from 470 fish (23% of total harvest) were selected for genetic analysis and age, sex, and length information.

Sampling harvest of marine mixed-stock fisheries to collect coded-wire tag and/or genetics data provides information on stock composition in these fisheries including contributions of CSRI indicator stocks. Knowing where fish come from in these mixed-stock fisheries – in concert with other CSRI research projects – improves knowledge about stock productivity, optimizing fishing opportunity and sustained yield, and potential management actions to attain escapement goals.

## *The Kenai Peninsula*

The **Kenai River early run king salmon** sport fishery was closed by emergency order preseason in an effort to achieve the escapement goal of 5,300-9,000 fish. The goal was achieved with an estimated escapement of 5,311 through June 30. **Kenai River late run king salmon** saw sport and personal use fisheries restricted preseason by emergency order. Restrictions to the commercial and sport fisheries inseason resulted in achieving the escapement goal with an estimated preliminary escapement of 16,061 through August 11.

The **Kasilof River/Crooked Creek king salmon** sport fishery was restricted by emergency order preseason to no retention of naturally produced king salmon, and retention of only one hatchery king salmon per day. The escapement goal was achieved with a weir count of 1,411 through August 6. Sufficient broodstock was collected for egg-takes to achieve future stocking objectives.

**Kenai River sockeye salmon** passage was an estimated 1,525,000 fish. This level of passage will likely be sufficient to meet the escapement goal of 700,000 to 1,400,000 fish after inriver sport harvest above the sonar is subtracted. Commercial harvest was 2.29 million sockeye salmon, which is well below the recent average of 3.4 million sockeye salmon.

**Kasilof River sockeye salmon** cumulative passage was approximately 440,000 fish. This is above the upper end of the escapement goal. **Russian River early-run sockeye salmon** saw increased angling opportunity. The Sanctuary opened by emergency order on June 24, while bag and possession limits increased to 6 per day/12 in possession from Russian River downstream to Skilak Lake on June 24. The escapement goal was exceeded with a final weir count of 52,277 through September 8. The **Russian River late-run sockeye salmon** escapement goal was achieved with a weir count of 43,962.

## *Anchorage and Mat-Su Areas*

Preseason emergency orders were issued to reduce king salmon harvest by 75% in the **Susitna and Little Susitna** sport and commercial fisheries. The Deshka River king salmon escapement goal was met with 16,500 fish. In total, eight of 17 systems met escapement goals in Northern Cook Inlet.

The **Fish Creek sockeye salmon** personal use fishery opened by emergency order for seven days; the escapement goal was achieved with a final weir count of 43,800 fish. **Knik Arm coho salmon** showed strong returns and bag limits were liberalized by emergency order in Cottonwood, Wasilla, and Fish creeks and Little Susitna River (excluding Jim Creek) in the Mat-Su; and Ship Creek in Anchorage. Fish Creek and Little Susitna escapement goals were exceeded.

## *Lower Cook Inlet*

**King salmon** restrictions were placed on fresh and marine water sport fisheries, escapement goals were met on the Ninilchik River and Deep Creek; the escapement goal was not achieved on the Anchor River. Returns to Kachemak Bay terminal fisheries were good for hatchery-reared king salmon and excellent for coho salmon.

# Study assesses king escapement to Susitna

During the 2014 field season, data was collected to estimate the escapement of king salmon to the entire Susitna River drainage by conducting separate capture-recapture operations on the mainstem Susitna River and the Yentna River. Radio tags were applied to approximately 700 king salmon in the Susitna River and 300 king salmon in the Yentna River and tracked via stationary receivers and periodic aerial surveys, to locate major spawning grounds and as part of the project. All work was funded by the Susitna Watana Hydro project.

# *Cook Inlet Coho Salmon Genetics Project*

The Alaska State Legislature provided funding for Cook Inlet coho salmon genetics studies conducted by the Alaska Department of Fish and Game Gene Conservation Laboratory and other regional staff.

The objective of Phase I of this project was to determine if sufficient population genetic structure exists in Cook Inlet coho salmon to warrant construction of a full genetic baseline for genetic stock identification. Results demonstrated sufficient population structure for this effort. The goal of Phase II is to develop a genetic baseline for coho salmon in Cook Inlet using samples from spawning populations collected from 2012 to 2014, including weir sites throughout the district.

Preliminary results indicate at least five genetic reporting groups are feasible; however, additional baseline collections will be necessary before genetic stock identification can be effectively applied to Cook Inlet fishery samples.

Phase III will involve application of genetic stock identification to coho harvested in test net and commercial fisheries of Cook Inlet for the 2013-2015 seasons. To date, nearly 10,000 samples have been collected for future analysis.

# Stormy Lake Restoration

Spring surveys conducted by department staff at Stormy Lake indicate the native fish resources are recolonizing the lake after the 2012 rotenone treatment. The highlights of this restoration include reclamation of the 320 acre lake which in part serves as juvenile coho salmon rearing habitat. Reclamation will boost the numbers of adult coho salmon returning to the adjoining Swanson river drainage. In addition, native Arctic char restoration efforts are very encouraging as char comprised the majority (51%) of fish in netting surveys which also included; rainbow trout, juvenile coho salmon and long nose suckers. Historically Stormy Lake supported the most popular roadside recreational fishery in the Northern Kenai Peninsula Management Area prior to the illegal introduction of northern pike. It is anticipated that Stormy Lake will become a very popular year round sport fishery as native fishes become reestablished.

ADF&G will continue to eradicate northern pike in the Soldotna Creek drainage (tributary of the Kenai river), with the application of rotenone to four of the seven drainage lakes in October, 2014. Treatment of the remaining lakes and the creek will occur in a stepwise fashion culminating in the restoration of native fish resources throughout the drainage by the year 2018. Through this project restoration of salmon (primarily coho salmon), rainbow trout as well as Dolly Varden spawning and rearing areas will occur. These efforts will boost future salmon runs to the Kenai River and restore resident species fisheries lost through the illegal introduction of northern pike into this drainage approximately 40 years ago.

# Around Cook Inlet:

### *Interviews and port sampling conducted at three locations*

Marine sport sampling took place at three locations in Cook Inlet. Nearly 5,000 anglers were interviewed and over 2,000 king salmon were sampled for tag information; genetic tissue samples were taken from over 1,700 king salmon.

Sampling the marine waters sport harvest will allow researchers to collect tags, potentially from other ADF&G king salmon projects; and analysis of genetic samples could provide information on which king salmon stocks are harvested in area fisheries.

### *Eklutna Tailrace Youth-Only Fishery Established*

A new Youth-Only fisheries for king and coho salmon at the Eklutna Tailrace began this season. The fisheries are an excellent opportunity for youth 15 years old and younger to catch a salmon. ADF&G recently tripled the number of smolt released at the Eklutna Tailrace site, which should result in even better salmon fishing beginning in 2015.