

Upper Cook Inlet East Side Set Net Chinook Salmon Harvest Patterns

FY2013 Request: \$789,000
Reference No: 54421

AP/AL: Appropriation **Project Type:** Research / Studies / Planning
Category: Natural Resources
Location: Kenai Areawide **House District:** Kenai Areawide (HD 33-35)
Impact House District: Kenai Areawide (HD 33-35) **Contact:** Jeff Regnart
Estimated Project Dates: 07/01/2012 - 06/30/2017 **Contact Phone:** (907)267-2350

Brief Summary and Statement of Need:

This project will characterize migration patterns of Chinook and sockeye salmon in the East Side Set Net (ESSN) Fishery near the mouths of Kenai and Kasilof rivers as they migrate to spawning locations. Identification of trends where Chinook salmon harvests are high and sockeye salmon harvests are low could lead to development of alternative time and area management strategies that better meet the Alaska Board of Fisheries' desire to conserve Chinook salmon stocks while efficiently harvesting excess sockeye salmon. This amendment revises the methodology by tagging fish and using acoustic telemetry methods.

Funding:	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>FY2017</u>	<u>FY2018</u>	<u>Total</u>
CFEC Rcpts	\$789,000						\$789,000
Total:	\$789,000	\$0	\$0	\$0	\$0	\$0	\$789,000

<input type="checkbox"/> State Match Required	<input checked="" type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input type="checkbox"/> Phased - underway	<input type="checkbox"/> On-Going
0% = Minimum State Match % Required		<input type="checkbox"/> Amendment	<input type="checkbox"/> Mental Health Bill	

Operating & Maintenance Costs:

	<u>Amount</u>	<u>Staff</u>
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	0
Totals:	0	0

Additional Information / Prior Funding History:

This is the first year for the project. There was a more limited one-year study conducted in 1996 by the department. The following link provides information regarding the 1996 study.
<http://www.sf.adfg.state.ak.us/fedaidpdfs/Sp98-03.pdf>

Project Description/Justification:

This project will provide fishery managers with an increased understanding of the spatial and temporal migration patterns of Chinook and sockeye salmon as they swim to their natal streams. This additional information could result in increased passage of Chinook salmon into streams along the east side of Cook Inlet, which would provide an economic and recreational benefit to thousands of in-river users. At the same time, the data from this project should provide insight into the inter-relationship of Chinook and sockeye salmon migration patterns, which could benefit thousands of commercial users by potentially increasing their efficiency at harvesting the targeted stock of sockeye salmon.

The first year of the project will be a pilot study to obtain information needed to design a full-scale project, such as tagging-induced effects on migratory behavior, catch rates at Ninilchik, and gear efficiency (detection range for optimal receiver spacing and utility of hydrophones in the fast moving, dynamic Cook Inlet waters). A sample of salmon will be tagged with acoustic telemetry tags and

**Upper Cook Inlet East Side Set Net Chinook Salmon
Harvest Patterns**

**FY2013 Request: \$789,000
Reference No: 54421**

acoustic telemetry receivers will be deployed near the mouths of the Kenai and Kasilof rivers. Tag data will be collected and analyzed to examine migration patterns and depth distributions of Chinook salmon as they migrate through the ESSN study area and enter each river.

During the second year, Chinook and sockeye salmon will be captured for tagging in areas of high abundance. Each tagged fish will be sampled for genetic stock identification (GSI). Acoustic telemetry receivers will be deployed along the offshore boundary of the ESSN fishery from a point approximately 20 miles north of Ninilchik to a point five miles north of the Kenai River. Acoustic receivers will also be deployed at the Yentna sonar site and at the Division of Sport Fish fish wheel site on the mainstem Susitna River (above the Yentna confluence) providing information on Susitna sockeye salmon migration rates, timing, and pathways.

An ADF&G vessel will conduct surveys offshore and inshore of the receiver array to collect additional georeferenced data on tagged salmon migration patterns and depth distributions. Fishermen will be offered a reward for return of each tag and information regarding its capture time and location (i.e., specific net and distance from shore). Returned tags will be redeployed to minimize expenditures and increase sample size.

The divisions of Commercial Fisheries and Sport Fish will collaborate on this project, including collection of tissue samples from Chinook salmon captured in the ESSN fishery for GSI to estimate stock composition of ESSN Chinook salmon harvest spatially and temporally within the study area. Data from the entire receiver array, the survey vessel, and capture locations in the fishery will be analyzed to examine Chinook and sockeye salmon migration and run-timing patterns as they enter the fishing district in relation to time, area, tides, winds, stock of origin, etc. Vertical distributions of these free-swimming Chinook and sockeye salmon will also be examined.

This project contributes to the Department's mission and is consistent with the Division of Commercial Fisheries core service of Harvest Management. This project could provide additional fishing opportunities for both sport and commercial fishermen, specifically for sockeye salmon in the Kenai Section of the Upper Cook Inlet management area and for Chinook salmon in the Kenai and Kasilof Rivers. These additional fishing opportunities would provide economic benefits to both sport and commercial fishers of the Kenai Peninsula.