Upper Cook Inlet East Side Set Net Chinook Salmon Harvest Patterns

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

AP/AL: Appropriation
Category: Natural Resources
Location: Kenai Areawide
Impact House District: Kenai Areawide (HD 33-35)
Estimated Project Dates: 07/01/2012 - 06/30/2015

Project Type: Research / Studies / Planning
House District: Kenai Areawide (HD 33-35)
Contact: Jeff Regnart
Contact Phone: (907)267-2350

Brief Summary and Statement of Need:
The objectives of this project are two-fold: (1) examine patterns of Chinook salmon harvests in the East Side Set Net (ESSN) fishery Upper Cook Inlet (UCI) through analyses of historical fish ticket data; and (2) examine patterns of Chinook salmon harvests and stock composition in the ESSN fishery. This project could provide additional fishing opportunities for both sport and commercial fishermen, specifically for sockeye salmon in the Kenai Section of the UCI management area and for Chinook salmon in the Kenai and Kasilof Rivers and provide economic benefits to the Kenai Peninsula.

Funding:	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	Total
CFEC Rcpts	$789,000						$789,000
Total:	$789,000	$0	$0	$0	$0	$0	$789,000

☐ State Match Required ☑ One-Time Project ☐ Phased - new ☐ Phased - underway ☐ On-Going
0% = Minimum State Match % Required ☐ Amendment ☐ Mental Health Bill

Operating & Maintenance Costs:

	Amount	Staff
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	0	
Totals:	0	0

Additional Information / Prior Funding History:
This is the first year for the project. There was a one year study conducted in 1996 by the department. This study was not identical to the one that is being proposed. However the proposed study does contain some aspects of the 1996 study. The following is the information concerning the previous study. http://www.sf.adfg.state.ak.us/fedaidpdfs/Sp98-03.pdf

Project Description/Justification:
Data collected from this project could aid in management of the commercial ESSN fishery, allowing for a potential increase in the efficiency of harvesting sockeye salmon, while at the same time providing for conservation of numerous east-side Chinook salmon stocks. This project would 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 inriver users. At the same time, the data from this project should provide insight into the interrelationship 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.

This project will examine patterns of Chinook salmon harvests in the ESSN fishery in UCI through analyses of historical fish ticket data. Two analyses will be conducted. The first will examine harvest patterns in total daily Chinook salmon catch by subdistrict (Ninilchik, Cohoe, Kalifornsky Beach, and Salamatof). The second analysis will examine daily harvest patterns among selected set-net sites (six to eight sites if possible) within each subdistrict. A principal components analysis will be conducted to examine spatial patterns in daily Chinook salmon harvests among set-net sites within the ESSN fishery.

The second objective of this project would utilize 16 ADF&G technicians, who will accompany fishermen in their skiffs to observe and record Chinook and sockeye salmon harvests in about five nets (beach, mid, offshore) picked after each ebb and flood tide at each of 16 sites (four sites each in the Ninilchik, Coho, Kalifornsky Beach, and Salamatof subdistricts) during each fishery opener in July. Results from the first objective (retrospective fish ticket analyses) will be used to aid in selecting sites. Tissue samples will be collected from each Chinook salmon and sent to the ADF&G Gene Conservation Laboratory. Genetic stock identification methods will be used to estimate stock composition in relation to distance from shore, date period and subdistrict, if possible.

This project contributes to the department's mission and is consistent with the Division of Commercial Fisheries core service of Harvest Management. This project may increase economic and social benefits derived from the harvest and use of Kenai River king and sockeye salmon fish, shellfish, and aquatic plants in Alaska.

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.

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Estimated Project Dates: 07/01/2012 - 06/30/2017

Project Type: Research / Studies / Planning
House District: Kenai Areawide (HD 33-35)
Contact: Jeff Regnart
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:	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	Total
CFEC Rcpts	$789,000						$789,000
Total:	$789,000	$0	$0	$0	$0	$0	$789,000

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Operating & Maintenance Costs:

	Amount	Staff
Project Development:	0	0
Ongoing Operating:	0	0
One-Time Startup:	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

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.