

Genetic Marker Screening for Estimating the Stock Composition of Western Alaska Salmon Fisheries

FY2011 Request: \$750,000
Reference No: 42050

AP/AL: Appropriation

Project Type: Research / Studies / Planning

Category: Natural Resources

Location: Bristol Bay Borough

Contact: John Hilsinger

House District: Bristol Bay/Aleutians (HD 37)

Contact Phone: (907)465-6100

Estimated Project Dates: 07/01/2010 - 06/30/2012

Brief Summary and Statement of Need:

This project funds continued studies using genetic stock identification to identify the stock composition of Western Alaska chum and sockeye salmon fisheries, screening newly developed sockeye genetic markers against the existing baseline. This is the second half of an original request for \$1,500,000 submitted in FY10 necessary to complete the objectives of the project. This project will contribute to the department's mission by improving ADF&G's capacity to manage important chum and sockeye stocks in Western Alaska for maximum sustained yield.

Funding:	<u>FY2011</u>	<u>FY2012</u>	<u>FY2013</u>	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>	<u>Total</u>
Gen Fund	\$750,000						\$750,000
Total:	\$750,000	\$0	\$0	\$0	\$0	\$0	\$750,000

<input type="checkbox"/> State Match Required	<input type="checkbox"/> One-Time Project	<input type="checkbox"/> Phased - new	<input checked="" 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
<u>One-Time Startup:</u>	0	
Totals:	0	0

Additional Information / Prior Funding History:

FY07 - \$400,000; FY08 - \$1,542,500 reappropriated to AR # 43616; FY09 - \$2,375,000; FY10 - \$750,000, AR 41508, SLA09, Ch.15, p.81, l. 3.

Project Description/Justification:

Funding the completion of this project will provide ADF&G and stakeholder unprecedented information on the numbers and distribution in space and time of salmon stocks in Western Alaska to allow improved estimation of productivity and fishery impacts on a stock-specific basis. There is strong commitment by stakeholders to obtain the data and scientific analyses necessary to inform the public policy debate and help Alaskans generate solutions to reduce conflict and assure the sustainability of the stocks and the fisheries upon them. The effects of fisheries on the various stocks of chum and sockeye salmon in Western Alaska have been a concern for several decades and are not adequately understood and incorporated into maximum sustained yield models.

Stock composition studies are conducted by 1) developing baseline DNA data for all of the stocks potentially present in the fisheries, 2) sampling the fisheries comprehensively through space and time, and 3) analyzing fishery samples for the same DNA markers in the baseline so that standard mathematical procedures can allocate catch to stock of origin. Baseline DNA data is routinely updated as a part of the learning and proofing process in DNA studies.

**Genetic Marker Screening for Estimating the Stock
Composition of Western Alaska Salmon Fisheries**

**FY2011 Request: \$750,000
Reference No: 42050**

In order to provide the greatest stock resolution possible in these analyses, additions of both genetic markers and baseline populations for chum and sockeye salmon are needed. Improvements to the chum salmon baseline have already been funded and are proceeding according to schedule. The FY10 funding (\$750,000) is currently being used to develop more than 48 additional genetic markers for sockeye salmon. This FY11 request will fund the screening and addition of these markers to the current coastwide baseline, which includes more than 30,000 individuals. Additions of baselines and genetic markers should significantly improve the accuracy and precision of our stock composition estimates.

The end result is stable or increasing economic and social benefits derived from harvest and use of Alaska's aquatic resources. This request directly addresses conservation of natural fish stocks through improved stock resolution in fisheries by continued development of DNA-based markers for sockeye salmon and through better estimates of stock-specific harvest which are required to calculate and establish reproductive goals. It also addresses continued sustained salmon fisheries through responsive management systems by providing unprecedented and critical fishery stock composition estimates that may inform allocative decisions by the Board of Fisheries.