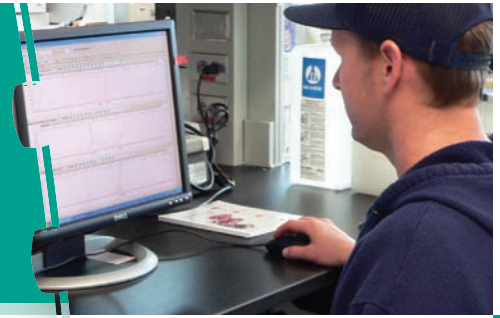




AYK SUSTAINABLE SALMON INITIATIVE

Project Synopsis

BERING SEA-MARINE



(Christine M. Kondzela)

PROJECT 719

PRINCIPAL INVESTIGATOR

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CONTRIBUTING ORGANIZATION

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RESEARCH PERIOD

July 2007 -
March 2011

BUDGET

\$561,556.00

WORK-IN-PROGRESS GENETIC ANALYSIS OF IMMATURE BERING SEA CHUM SALMON

IDENTIFYING INCIDENTAL CATCH

Chum salmon bycatch in the Bering Sea groundfish fisheries continues to be an issue of concern that affects a variety of allocation, conservation, and international treaty factors. Although chum salmon bycatch is closely monitored, and observer data and industry's awareness provide invaluable information, one of the underlying questions—the origins and destination of the fish—remains unaddressed, and the dynamics of the variation in their movements is unknown. This knowledge is crucial in determining the ultimate impact of the bycatch.

OUR OBJECTIVES

Determine the marine distribution of chum salmon populations in the eastern Bering Sea across time and space by genetically analyzing chum salmon caught incidentally in groundfish fisheries and in surveys in which admixtures of chum salmon populations are collected.

HOW WE WILL DO IT

We will use chum salmon scale and tissue samples collected between 1988 and 2005 from the Bering Sea and Aleutian Islands trawl fishery bycatch, and from several U.S. and Russian Bering Aleutian Salmon International Surveys (BASIS) research cruises. We will analyze variation at a minimum of 12 microsatellite genetic markers compatible with data from other laboratories, and from a suite of single nucleotide polymorphisms developed within this

RESEARCH FRAMEWORKS:

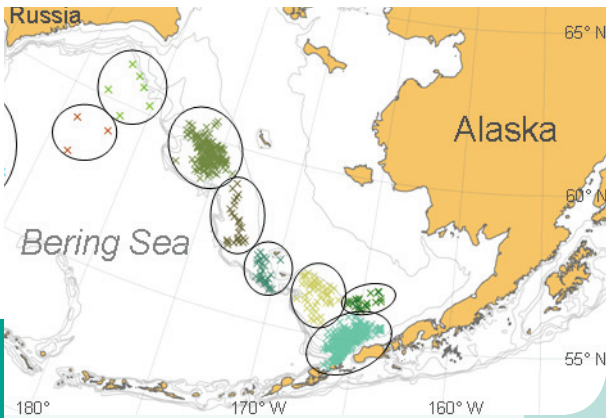
SALMON LIFE CYCLE –
PRIORITY #1;

SYNTHESIS &
PREDICTION –
PRIORITY #7

SNAPSHOT

This project will perform genetic analysis on archived chum salmon samples from the Bering Sea and Gulf of Alaska in order to determine the compositions of immature chum salmon aggregations in different regions of the eastern Bering Sea, their seasonal variation, and their variation among years.

The results are expected to shed light on ocean migration patterns and abundance and help determine the impact of chum salmon bycatch on western Alaska chum salmon returns.

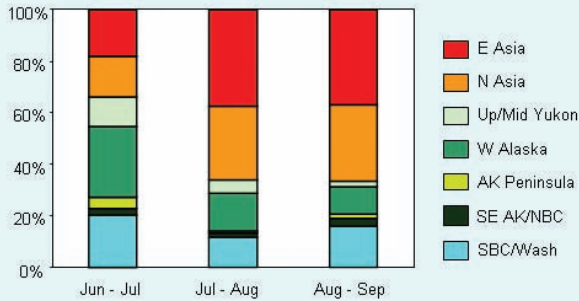


Map of locations of chum salmon genetic samples from the groundfish fishery bycatch, and U.S. and Russian BASIS surveys, collected between 1988 and 2005. (Kondzela, NOAA)

project and in collaboration with other laboratories. Our findings will be compared with several collections from the western Bering Sea and Gulf of Alaska. Another task of this project is the acquisition of allele (haplotype) frequency data from representative chum salmon populations throughout the geographic range. After the resolution of the coast-wide baseline is evaluated, the baseline will be used for the mixture analyses.

REPORT COMPLETION

May 2011



Preliminary results of the origin of a subset of chum salmon collected in the Bering Sea during 2005. (Kondzela, NOAA)

AYK SSI Mission: To collaboratively develop and implement a comprehensive research plan to understand the causes of the declines and recoveries of AYK salmon.

ARCTIC-YUKON-KUSKOKWIM SUSTAINABLE SALMON INITIATIVE

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