West Coast Salmon Genetic Stock Identification Project

What is Genetic Stock Identification

Genetic stock identification (GSI) for fishery management is the collection and analysis of genetic samples of salmon species in the ocean to identify and track the location of protected stocks. By combining GSI with real time data collection, fishery managers can employ targeted area or temporal closures as needed to limit the incidental catch of protected species while allowing continued commercial and recreational harvests of healthy stocks.

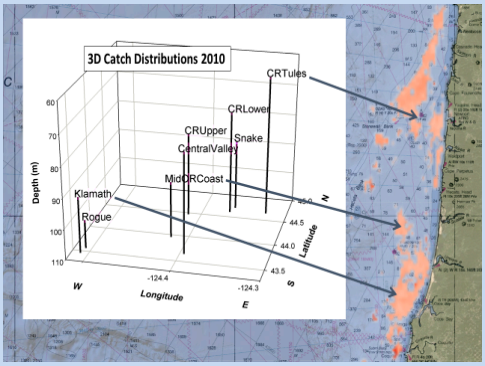
Why is Genetic Stock Identification Important

Currently, Pacific salmon fishery managers rely on historical data to estimate the location and population of each stock. Managers are further challenged to determine the location of protected species in the ocean because of changing conditions (e.g., temperature, currents, upwelling, salinity). This lack of precision results in broad geographic and seasonal closures to protect weak stock that also restrict commercial and recreational access to healthy stocks. Access to real-time genetic data can enable fishery managers to employ less restrictive closures while continuing to limit incidental catch of protected species.

Need for Greater Precision in West Coast Salmon Fishery Management

West coast fisheries are a cornerstone of the coastal economy and the marine ecosystem. More than 800 fishing vessels participate in these fisheries, generating over $55 million annually in economic activity. An additional $25 million in economic impacts is generated annually from the recreational ocean salmon fishery.

Eight west coast salmon stocks are now listed under the Endangered Species Act (ESA). The necessary protection of ESA-listed stocks creates significant challenges for managing the mixed stock ocean fishery in which salmon originating from different rivers and hatcheries share ocean waters. As a result, protection of ESA-listed stock requires a high degree of precautionary controls for the fishery, such as large-scale seasonal or area closures. Unfortunately, this broad and imprecise management technique also limits commercial and recreational access to abundant salmon populations in the same waters. It is estimated that since 2006 large area and seasonal closures have cost more than $150 million dollars to the west coast fisheries.



Benefits of Genetic Stock Identification

- Collects and disseminates fishery data in a timely manner to inform management decisions.
- Enables targeted harvesting and recreational access for healthy salmon stocks while reducing incidental harvest of ESA-listed stocks or rebuilding stocks.
- Helps avoid full-scale salmon fishery closures and costs associated with fishery disasters.
- Strengthens coastal economies while improving management of west coast wild and hatchery salmon stocks.

WCS – GSI Collaborators

Research to Application: West Coast Salmon Genetic Stock Identification Project

The West Coast Salmon Genetic Stock Identification project (WCS-GSI) was established in 2006 in the wake of the Klamath salmon disaster to address the need for more effective and precise fishery management tools.

The Project is a collaborative effort of Federal and state fishery managers, scientists, Native American tribes, university scientists, and representatives from the Washington, Oregon and California salmon troll industries.

WCS-GSI is working to collect 100,000 genetic samples of west coast salmon that reflect complete spatial and seasonal coverage of migratory patterns. The data will be used to test techniques for determining real-time location of specific stocks and application in compliance with Federal regulations and fisheries management priorities. To date, 65,000 GSI samples have been collected.

History of Federal Funding for WCS-GSI

Funding has been provided to WCS-GSI from a variety of Federal and state sources, totaling $7 million since 2006. The project has been largely funded from federal disaster assistance provided in 2007 and 2008 when the West coast salmon fishery was declared a federal disaster. Of the total Federal assistance made available, 1 percent was allocated to support genetic stock identification.

The President's Budget included funding for WCS-GSI from FY 2009-FY 2011, but did not include funding in recent years due to budget constraints. Currently, a small competitive Federal grant supports limited WCS-GSI sampling but not at the needed level.

Genetic Stock Identification can be the future of sustainable salmon fisheries management, but Federal funding is necessary to complete sampling, conduct data analysis and modeling, and implement in-season management tests.

Request of Funds for WCS-GSI

The WCS-GSI would be on track to be completed in FY 2018 with a total investment of $6 million over the next three fiscal years for sampling, modeling and field-testing of in-season management techniques.

For FY 2016, $2 million is requested to support the collection and analysis of 35,000 additional GSI samples. A total of 100,000 GSI samples are needed to reflect complete spatial and seasonal coverage of stocks. In FY 2017 and 2018 an additional $2 million per year will support remaining data collection, analysis, and field-testing to finalize recommendations for implementation.

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