

PROJECT CROOS

Collaborative Research on Oregon Ocean Salmon

Fishermen's Workshop

February 25, 2009

The first CROOS Fishermen's Workshop presented by the Oregon Salmon Commission and the CROOS Advisory Group convened at 9:00 a.m. on February 25, 2009 with almost 100 in attendance including over 65 fishermen and processors. Attendees also included scientists and researchers from Oregon State University (OSU) and the Oregon Department of Fish and Wildlife (ODFW), federal congressional office staff, representatives from the state seafood commodity commissions, a state legislative Sea Grant Fellow, Seafood Consumer Center, Sea Grant, and the CROOS port liaisons.

Nancy Fitzpatrick, Oregon Salmon Commission Administrator, welcomed everyone to the workshop and introduced the members of the Advisory Group.

Gil Sylvia, Superintendent of Coastal Oregon Marine Experiment Station OSU (COMES) presented an overview of the workshop explaining that after everyone had heard about the current accomplishments of the project through presentations, there would be opportunities through poster displays and breakout groups for active participation and discussions to gather ideas and suggestions for the continuing work on Project CROOS.



Gil Sylvia's overview to workshop

Website Introduction

One of Project CROOS's primary objectives is to develop a comprehensive website to serve multiple audiences and functions. The Pacific Fish Trax "beta" website went live on-line in February 2009. Diane Moody, past Director of the Seafood Consumer Center and website consultant (at the time of the workshop), demonstrated its functionality. The site will house all of CROOS's data and results, as well as facilitate data sharing and collaborative research among



Diane Moody

multiple user groups. It will also serve as the primary communication tool for parties participating in the project in order to support interdisciplinary and comprehensive research. It is designed to 1) meet the needs of multiple audiences, 2) provide easy access "portals" for each audience, and 3) to allow each user to understand their relation to the "local" fishery seafood science, management, and marketing community. As Diane explained the purpose of the website, she demonstrated the layout, navigational tools, and future growth potential. This is the first version of the website and will be improved based on input from user groups.

Presentations provided more information about the current studies, their results, and questions to consider.

Genetics – Michael Banks, leader of the Marine Fisheries Genetics Laboratory at the Coastal Oregon Marine Experiment Station (COMES), OSU and Renee Bellinger, Science Coordinator/Research Assistant at the Marine Fisheries Genetics Laboratory, presented some of the data collected from the 2006 and 2007 seasons explaining that the approach of combining genetic stock of origin data with other analytical techniques such as otolith microchemistry may enable us to answer some of those questions such as where fish go after they enter the ocean and whether they remain as aggregated stocks or mix freely in the ocean.



Michael Banks

Scale Analysis – Lisa Borgerson, Scale Project Leader ODFW, presented data showing the age composition of CROOS Chinook by month for the years 2006 and 2007, their age composition by area of capture, as well as age composition of Chinook salmon stock groups. The study will continue to explore stock-age relationships.

Otolith Analysis – Jessica Miller, leader of the Marine Fisheries Ecology Laboratory at the Coastal Oregon Marine Experiment Station OSU, analyzed otoliths collected from the 2006 season and determined that there is preliminary evidence of stock segregation for Chinook salmon during their ocean residence. She also reconstructed juvenile size at freshwater emigration (leaving the river) using the chemical and structural composition of adult otoliths. Chinook salmon are known to have variable juvenile migratory behaviors but there is little information on the survival to adulthood of individuals with distinct migratory behaviors. Stock-specific information on the juvenile migratory behaviors that contribute to adult populations can provide insight into early ocean survival, aid in assessments of land and water management practices, and contribute to habitat restoration efforts.

Data loggers – Pete Lawson, Research Fisheries Biologist National Marine Fisheries Service (NMFS), gave a synopsis of the development of the at-sea data entry system, which will allow fishermen to more easily enter the data electronically, rather than with paper and pencil. He explained that since this is still in development, he needs more fishermen input and asked fishermen to visit his display area to try out the current touch-screen prototype.

Oceanography – Lorenzo Ciannelli, College of Oceanic & Atmospheric Sciences OSU, discussed patterns in the marine distribution of Oregon Chinook salmon. He summarized that population units of Chinook salmon differ in their distribution along the Oregon Coast depending on their river of origin; evidence for aggregation on smaller spatial scales is inconclusive at this time; and Chinook can respond quickly to short duration temporal changes in ocean conditions.

Kiosk/Marketing – Jeff Feldner, Sea Grant, and Wendy Yorkshire, consultant, explained the marketing project, which used bar-coded packaged albacore instead of Chinook salmon due to the closure of the 2008 salmon season. Kiosks were set up in two Portland New Seasons stores with frozen Oregon albacore vacuum-sealed loins/steaks for sale. Since a computer and bar-code scanner were part of the kiosk, the consumer could scan the product label and see a short video of who caught the fish and who processed it. A take-home flyer directed the consumer to the Pacific Fish Trax website for a survey asking questions about this type of marketing.



Jeff Feldner

Bob Kemp – Salmon Fisherman, talked about Project CROOS as it related to him as a fisherman.



Bob Kemp

Sampling Plans – Pete Lawson explained the decision-making process that the Pacific Fishery Management Council (PFMC) goes through each year for determining salmon seasons. One of the management principles is mixed stock management, which assumes that in the ocean many stocks are mixed together and that the ability to target stocks as well as avoid stocks is limited. The weak stock principle manages ocean fisheries to meet management targets of all stocks including Endangered Species Act (ESA) listed species as well as the management targets of escapement goals and harvest rates.

Project CROOS can sample fish in open areas without any special permits, but in order to sample in closed times and areas, a NOAA Scientific Research Permit (SRP) is required. A research plan for the SRP is being developed with full participation of the PFMC, which will account for impacts during the pre-season process.



Pete Lawson

The NOAA Scientific Permit contains three sampling designs that will be reviewed at the March 2009 PFMC meeting. (1) The ideal sampling plan, which is to sample 240 fish for each week and area, open or closed, from Cape Falcon to Point Sur over the full season. (2) If the 2009 season is restricted, the next level of proposed sampling would be to charter ten boats for one month with five fishing as they normally would and five in statistical test fishing. Boats would test at-sea data entry and deploy oceanic data loggers to collect oceanographic information. (3) If fishing is closed in 2009 and there are no impacts of fish available from the PFMC for research sampling, we would test the at-sea data entry system on the water without terminal gear in the water. Sampling impacts to the fish would be zero.

California's desire to repeat the 2007 experiment to define Klamath distribution within the San Francisco area in May and June is also part of this plan.

Next steps include talking about these alternatives at the ODFW Ocean Salmon Industry Group meeting, and presenting these plans at the PFMC meetings in March and April.

Note: Due to low predicted returns of Sacramento River fall Chinook there was no ocean fishery for Chinook salmon south of Cape Falcon, and no allocation for scientific sampling. A NOAA permit for zero-impact activities was issued but has not been used as of 16 October 2009.

West Coast Salmon Genetic Stock Identification Collaboration – Renee Bellinger explained that Oregon has joined forces with Washington and California to form the West Coast Salmon Genetic Stock Identification Collaboration (WC-GSI). This partnership of industry, state agencies, universities, scientists, managers, NMFS and state laboratories is working to benefit west coast salmon and strengthen west coast salmon fisheries by improving resource management, fishing practices, and economic opportunities through better understanding of stock specific ocean distribution and migration patterns of Chinook salmon. The Collaboration is working to standardize data collection and methodology as well as integrate the data into a coastwide management system.

Poster Displays – Discussions with scientists

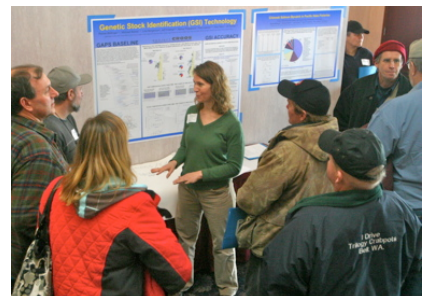
Workshop participants visited nine different poster/display areas and were able to view the findings and ask the presenters about their projects. They were encouraged to ask questions of the scientists, comment on the data, and provide insights into other information that would be beneficial to the fishermen and the entire project.

Genetics – Michael Banks, Renee Bellinger

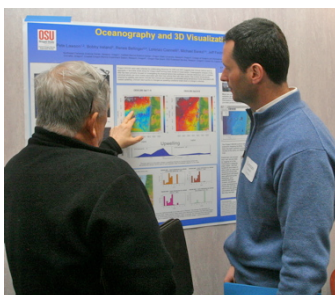
This poster had data collected by commercial fishermen in 2006 and 2007 and results of the ages of fish and the river of origin based on genetic results. Approximately 30 people viewed this poster.

Hake Study – Renee Bellinger

Chinook salmon bycatch from the shoreside Pacific Whiting fishery were sampled in Newport, Oregon during August 2008 with some of the results displayed. About 20 people stopped by to ask questions and talk about the data.



Renee Bellinger - Poster Displays



Lorenzo Ciannelli - Poster Display

Oceanography – Lorenzo Ciannelli

Maps and charts showed changes in catch distribution in response to changes in sea surface temperatures.

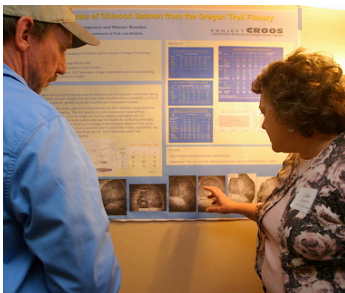
NANOOS (The Northwest Association of Networked Ocean Observing System) – Craig Risien

The poster detailed the NANOOS mission as well as data products that are currently available at nanoos.org and partner websites such as orcoos.org. With the aid of a laptop computer, Craig showed data tools and information that NANOOS and its partners are currently providing. Through the discussions, Craig learned about the fishing community needs with regard to data and information, as well as challenges with accessing data.



Craig Risien - Poster Display

Scale Analysis – Lisa Borgerson



Lisa Borgerson - Poster Display

Through scale analysis the age of Chinook salmon caught in the Oregon troll fishery can be determined. Pictures on the poster and scales on a microfiche projector demonstrated how the scientists interpret scale patterns to determine the age. The importance of scales taken from the key area on the fish and the need for quality samples were discussed.



Jessica Miller - Poster Display

Otolith Analysis – Jessica Miller

Two posters graphically presented otoliths and their physical and chemical structure. There were also images of the major life history stages in Chinook salmon. A microscope, otoliths, and a computer display were available to demonstrate aspects of the data collection procedures and to help describe how the otolith chemical and physical structures are interpreted. There were discussions about the application of this type of information and the reconstruction of juvenile migration patterns.

Data entry system – Pete Lawson

Two computers with touch screens were available for participants to try their hand at entering information directly into the computer using the touch-screen interface. These systems are being developed and this workshop allowed fishermen to try the current iteration and make suggestions for improvements. Many of the fishermen had used paper logs and hand-held GPS units for their sample collection information and they were intrigued with the ease and possibilities of these systems.



Touch Screens

Kiosk/Marketing – Gil Sylvia



Wendy Yorkshire and fishermen scanning packaged product

Bar code scanners were connected to computers to simulate the kiosks that were in New Seasons Markets in Portland. When participants scanned a bar-coded package, a short video came on the computer screen showing the fisherman who caught the fish, his vessel, as well as the buyer who processed and packaged the product.

Website – Diane Moody

Several computers with the Pacific Fish Trax website were available for participants to check out the various pages and sections of the site. They were encouraged to look through and provide comments on the site for its improvement.



Navigating through Pacific Fish Trax

Breakout Groups

The breakout groups involved more in-depth discussions on the website, marketing, management, sampling protocols, and science tools. Participants were actively engaged in these informal discussions by responding to key questions, providing additional input on applications to their fisheries, and how the data could assist them in their fishing operations, and the potential for application to management.

Individual summaries for each of these breakout groups are included at the end of this report.

Panel Discussion – Review of Breakout Groups

General discussions and findings for each breakout group were shared.

Wrap-Up

The CROOS Advisory Group thanked all presenters and group leaders for their assistance with the workshop and especially thanked all fishermen for taking the time to learn more about Project CROOS and for their input to help guide the next stages of the project.

Reception

The reception included a dedication of the Pacific Fish Trax web site to Scott Boley, who fished for many years along the Pacific coast with his wife and son. When Scott became involved in the CROOS project, he saw the potential to continue what he envisioned in the 1980s for quality handling and a signature tag bearing the name of the boat and operator. Before Project CROOS was funded, he volunteered days at sea collecting samples. Scott helped develop and fine-tune the collection protocols. He drove from Gold Beach to Newport for the semi-annual CROOS meetings. As Scott saw the potential for this project, he came to the August 2006 meeting with his vision of a website with all parts of the project branching out and coming back into the site. The dedication plaque was presented to Scott's wife, Dixie, with the many thanks of all.



Dixie Boley (left) receiving plaque from Nancy Fitzpatrick

Marketing Breakout Group

Overview

Approximately 25 individuals, who included fishermen, scientists, consultants, and seafood retailers attended the marketing breakout group, moderated by Gil Sylvia. The initial breakout topic was “*Will these tools improve the marketing of seafood and how?*” The discussion focused around two questions:

- 1) *How will the tools we have been learning about in Project CROOS improve seafood marketing?*
- 2) *Should Pacific Fish Trax (PFX) tools be used only to track product or should PFX be an identifiable product brand/label associated with attributes such as quality, safety, sustainability, local, and wild?*

A wide range of related issues were discussed including the PFX mission, supporting technical tools (e.g., the website and computer-based marketing kiosk) and test marketing of PFX labeled products at New Seasons Markets in Portland. No attempt was made to develop consensus views on strategies or recommendations.

Rick Goche presented the summary results of the session in the wrap up panel discussion.

Issues

Question 1) How will the PFX tools we have been learning about in Project CROOS improve seafood marketing?

Increase market demand

- Increase market demand for all Oregon fish
- Facilitate higher prices to all market segments including fishermen
- Improve both individual and co-operative approaches to selling seafood products
- PFX kiosks can be used to market a full range of quality Oregon frozen products—all using a PFX label

Educate consumers and the public using specific messages

- Communicate that fisherman provide the public with wild ocean-caught fish
- Emphasize that fish are the last food which is hunted
- Communicate the health and ecological drawbacks of farmed fish
- Educate the public that our product is equal or better than other quality seafood products
- Tell the story of both the fish and the fisherman
- Communicate to the public what our fishing communities do and provide
- Educate the public about the uniqueness of our resource
- Educate the public about how what we do is different from fish farming



Gil Sylvia leading Marketing discussion

Improving PFX as a marketing tool

- Provide entertainment value to consumers through use of video--for example:
 - Show the fisherman at work on the sea
 - Show extreme weather and sea conditions—"twenty foot seas are scary"
 - Show natal stream, history of fish, and watershed issues
- Expand PFX concepts and application to all Oregon fisheries
- Use the PFX website to provide feedback from customers
- PFX should work with other marketing institutes (e.g., the Alaska Seafood Marketing Institute) - learn from their success

Question 2) Should Pacific Fish Trax (PFX) tools be used only to track product or should PFX be an identifiable product brand/label associated with attributes such as quality, trust, safety, sustainability, local, and wild?

PFX as a brand

- PFX branding raises complex issues about quality, safety, and sustainability
- Would a PFX brand bring confidence to the consumer of high quality seafood product?
- Would PFX represent a mere label or the trust in information and people behind tracking?
- A PFX brand would require setting quality standards and enforce quality control
- Customers buying PFX labeled products will expect more than an average product

PFX as an information-market support system

- If there are two names on the package -- PFX and the producer -- who is responsible if the product has problems?
- PFX should be an informational tool—not necessarily a brand
- PFX tools should facilitate marketing for small producers that helps producers retain their individual identity and responsibility for product characteristics
- The PFX website should connect directly to a client's website
- Scanned product should connect to the client's site—not the PFX site
- Fishermen and seafood companies can lease the equipment, kiosks, and PFX scanning and traceability tools -- the only identifiable brand name and website would represent the individual seafood company

Marketing Summary Results

PFX provides valuable tools that can:

- Increase market demand for local seafood products
- Improve education to consumers and the public about Oregon seafood
- Be expanded and augmented to improve marketing and education

PFX may be either a brand or an information and traceability tool:

- If a brand, then the owners of PFX will need to determine what the brand represents and develop enforceable standards
- If an information tool, the tool can be custom designed to meet the individual needs of each seafood company which may not require direct identification with the PFX label or website

Pacific Fish Trax Website Breakout Group

Overview

This breakout session was attended by fishermen and was moderated by Diane Moody.

The breakout initial key topic question was “*How can the new Pacific Fish Trax web site support collaboration projects and serve your work in management, marketing and communication goals?*” From this, two questions emerged as points of discussion, both of which were centered on the site content:

Questions:

- 1) *Where should we invest our resources during the next development phase of Pacific Fish Trax?*
- 2) *What else would you like to see on the site?*

A discussion on site content revealed that fishermen felt that consumer education is #1 priority.

Issues

Question 1) Where should we invest our resources during the next development phase of Pacific Fish Trax?

- Concentrate on telling the story from the fishermen’s point of view. Profile us as intelligent, business oriented, honest, practical, proactive and collaborative
- Add component that explains gear type and boat size
- Provide an historical perspective on the role fishermen have played in managing the fishery
- Tell the story of what we’re doing to sustain the fishery
- Important to use a lot of video and photos in the story telling (positive feedback from the powerpoint picture show on the site)

Question 2) What else would you like to see on the site?

- Add fish handling information to the tracking/barcode information available to consumers
- Consumer education with specific emphasis on profiling fishermen in a positive light
- Back-end services should include
 - information to enhance the future management of fish
 - present the information to help fishermen find fish from healthy stocks
 - include historical catch data
 - weather and water temperature
 - link to NOAA
- Fishermen liked the idea of being able to selectively choose groups to participate in forums they set up. For example, a forum topic on price negotiations where fishermen can just select fishermen to participate in the conversation. One member of the group had concerns that this may create a sense of exclusion rather than inclusion.

Other

Fishermen at this forum were not interested in using the Pacific Fish Trax brand to sell their fish. They did like the idea of using the brand in a secondary way, i.e. brand the tracking system.

Fisheries Management Breakout Group

Overview

The Fisheries Management breakout group was attended by about five fishermen and one congressional aide with Pete Lawson as moderator. The breakout group topic was:

“How do you want to see this information used for management?”

The intention of the session was to explore concerns that fishermen may have about the application of CROOS-style data to fisheries management. A common concern of fishermen is that new scientific data will be “used against them” by managers to restrict fishing opportunities. This concern was not expressed at the breakout session. Instead, the fishermen were concerned with details of how the project would proceed. The community aspects of the project were well understood and valued.

Three questions emerged, with only one of them directly related to management issues. The other two questions related to quality control and funding.

Issues

Question 1) Can we ask the SAS (Salmon Advisory Subpanel) to approach the PFMC (Pacific Fisheries Management Council) to re-define the term “overfishing”?

In last year's Sacramento failure, it was not “overfishing” at all, but poor water management and poor protection of already hatched smolts. Do we need to change something in the Magnuson Act?

Question 2) How will we maintain a high quality product with more fish being caught by more fishermen and being sold to more stores?

Question 3) Is there any fear of losing funding for Project CROOS? Will the current huge data gaps discount any findings or possibly lead to loss of funding?

Sampling Protocols Breakout Session

Overview

Jeff Feldner moderated the Sampling Protocols breakout session, which was attended by approximately twenty individuals, and included Oregon fishermen and four troll fishery leaders from Washington State.

The Sampling Protocols breakout group topic was:

“How can we most effectively and efficiently plan for at-sea sampling protocols?”

This session began with a detailed description of the protocols developed and used in the 2006 and 2007 CROOS project periods. The contractual details, monetary compensation, confidentiality details, and performance standards (minimum qualifying work day, sample quality, etc.) developed in the earlier projects were also described. In general, the attendees felt that the current protocols and standards were appropriate. A number of suggestions for improvement were made, generally focusing on how to sample with greater efficiency.

Findings

- Tissue collection location was agreed to be easiest and best from a pectoral fin.
- Scale collection was the most time consuming facet of the sampling regime, and use of tweezers alone to pick out each individual scale was not very popular. Most reported using the knife to carefully scrape a few scales from the target area with little reported damage or quality loss.
- Evaluation and reporting of depth of capture was acknowledged to be an approximation in all cases due to current and vessel speed effects on the orientation and “drag effect angle” of the fishing lines. Statistical bias and uncertainty could be tested in future projects by designing control experiments. In all cases, accuracy was felt to be within 2 fathoms (12 ft.), with the greater uncertainties at deeper depths.
- Length measurement would be best accomplished by attaching a wooden or plastic “ruler” to the deck or processing surface so that the length could be measured by placing the fish over the ruler, rather than by use of the flexible fabric measuring tapes stretched over the surface of the fish as used in the earlier projects. Flexible tapes were not only more difficult to use in actual handling situations, but were felt to be susceptible to stretching over time.
- Inability to determine the age of the fish without scale or otolith analysis was felt to be a problem if GSI analysis were to be eventually used as a rapid-response management tool. Participants expressed interest in studying existing data to see if statistical length–age relationships could be determined, particularly if parsed by stock of origin and exact capture time.

In general, breakout session participants were very positive about the project’s progress to date and were eager to continue (or begin) their involvement. The Washington troll fishery leaders were very attentive, felt that they had learned a lot, and felt grateful to the CROOS group for offering to share their experiences.

Science Tools Breakout Session

Overview

The science tools breakout group, moderated by Renee Bellinger, was attended by approximately eighteen individuals and included fishermen and scientists. The session started with a brief overview of the current goals of Project CROOS research, including continuation of baseline research on stock aggregation and migratory timing patterns, improving the understanding of genetics and physiology of migrating fish and determining how these vary by stock, and improving access to fish by developing predictive models to determine when/where they move in order to provide better access to strong stocks and tools for fisheries management. From this starting point, the following question was posed to stimulate a discussion on what other types of research would be of value.

What are the major “unknowns” you think science should be addressing?

A wide range of issues were discussed, including predator prey relationships, oceanography, genetic stock identification research, and in-river issues for salmon. Predator-prey relationships and the impact of predators on salmon abundance were discussed in great detail.

Findings

Science tools could be used to study:

- Predator-prey relationships
 - assess impacts of predation
 - understand ecological processes surrounding changes in distribution/abundance of salmon predators, such as cormorants, seals and sea lions, killer whales, and possibly Humboldt squid
- Oceanography
 - develop fine-scale temporal resolution in oceanographic datasets
 - improve predictive models to forecast ocean conditions
 - develop long-term dataset to understand ocean cycles
- Genetic stock identification (GSI) research
 - address discrepancies of CWT collection and landing data
 - need to “update” CWT data where data has not been recently collected (closed areas)
 - apply GSI to address weak-stock problem in near-real time for fisheries management
 - refine data collection process
- In-river issues
 - assess/improve accuracy of spawning ground counts
 - assess straying rates between rivers (e.g., Klamath and Rogue)
 - need to evaluate how in-river predator affect salmon abundance

The three key ideas presented to the full Workshop panel were: there is a need to better understand predator-prey relationships and in-river fisheries issues, both of which are complicating fisheries management; there is a need for fine-scale oceanographic information; and that GSI and oceanographic data need to be collected over the long-term.