

PROJECT CROOS

Collaborative Research on Oregon Ocean Salmon

www.PacificFishTrax.org & www.ProjectCROOS.com

Quarterly Newsletter (July 29, 2010)

Updates

- Project CROOS and West Coast Salmon Genetic Stock Identification Collaboration (WC-GSI) partners are collecting fine-scale data at-sea along the coasts of California, Oregon and Washington from May through August, 2010, and in Oregon during September. In closed times and areas, non-retention sampling is being conducted from south of Cape Falcon, Oregon through California. This sampling is authorized by a scientific research permit issued by the NOAA Fisheries Northwest Regional Office.
- Since project inception in 2006, approximately 230 vessel operators and an estimated 100 crew have signed up to participate in Project CROOS. In 2010 alone, over 130 vessel operators have sampling contracts and more than 100 fishermen have been trained in at-sea sampling protocols. Of these, approximately 70 fishermen and 55 crewmembers have conducted at-sea sampling during the 2010 fishing season.
- Members of the fishing community, including Fishermen, fleet managers, and port-liaisons have received more than \$735,000 in compensation, of which over \$200,000 was distributed May - July 2010.
- Since at-sea sampling commenced in May, 2010, a total of 2,803 Chinook salmon samples have been collected by Oregon fishermen using at-sea sampling protocols. Of these samples, 1,765 have been genotyped and analyzed, 774 are in-laboratory process and 264 were archived because the target sample size for the weekly time/area strata was reached.
- Project CROOS and the California GSI Project are working with Advanced Research Corporation in Newport, Oregon, to continue development of the Pacific Fish Trax database and web-based data access and analysis tools. Aggregate data will be available on the website for the general public, and each fisherman will be able to access their own data through a password protected portal by fall 2010. Tools for fisheries managers and scientists are also in development, and will be available before the 2011 fishing season. The Pacific Fish Trax website will also serve as a portal for traceability and marketing Oregon seafood.
- One goal of Project CROOS is to develop a system to efficiently collect data from the deck of a boat while fishing or conducting at-sea research sampling and to transfer these data to a shore-side database. A new custom-designed electronic data-collection system, or "deck box", has been ruggedly designed to withstand harsh conditions encountered at-sea. Each box, approximately 10" long, 7" wide, and 4 ½ " deep, contains a small single-board computer that connects via a wireless "ZigBee interface" to a laptop computer housed in the wheelhouse. The top of the box displays five small LCD screens and provides buttons for data entry. Five deck boxes will be tested at-sea during August, 2010.

- Project data entry and management was simplified in 2010 by implementing web-based data-entry software custom designed for use by Port Liaisons in California and Oregon. This software allows the user to upload a GPS file containing spatial data and to associate biological and geospatial data for each fish sample and fishing vessel effort. These data are uploaded directly into the Pacific Fish Trax database.
- A WC-GSI data sharing, access and publication agreement is scheduled to be adopted at the December 7th and 8th, 2010, WC-GSI meeting (see upcoming events for meeting details).
- Fishing vessels conducted non-retention GSI sampling in Chinook salmon in the otherwise closed Klamath zone during June, 2010. During non-retention sampling 46 Chinook were sampled in 33 fishing days. Non-retention sampling in Oregon is scheduled to be conducted in September, 2010, after the fishing season has closed for the year.
- Support for Project CROOS and the West Coast Genetic Stock Identification Collaboration is being pursued through a number of sources including competitive grants, fiscal year 2011 Federal Appropriations and a line-item in the President's budget.
- Project descriptions and in-season updates are posted to the Pacific Fish Trax website: <http://www.pacificfishtrax.org/resources/reports-and-publications>

Upcoming events

Two "Pacific Fish Trax" presentations will be given during the Local Catch- Quality, Marketing and Consumption symposium of the American Fisheries Society meeting in Pittsburg, Pennsylvania on Thursday, September 16, 2010. Presentation titles are: "A comprehensive information system for managing, tracking and marketing seafood" and "Marketing local seafood using a near real time information system".

The American Fisheries Society tentative meeting schedule is available at: <http://afs.confex.com/afs/2010/webprogramdraft/meeting.html>

The WC-GSI Collaboration is scheduled to meet on December 7th and 8th, 2010, at the Pacific Fishery Management Council office by the Portland Airport (7700 Northeast Ambassador Place, Portland, Oregon). At this meeting, the Collaboration will review tri-state season results, adopt the data sharing, access and publication agreement, and discuss ways in which genetic information may be used to improve fisheries management. If you are interested in attending this meeting and have not yet attended a WC-GSI meeting please contact Renee Bellinger (renee.bellinger@oregonstate.edu) to be placed on the email list-serve.

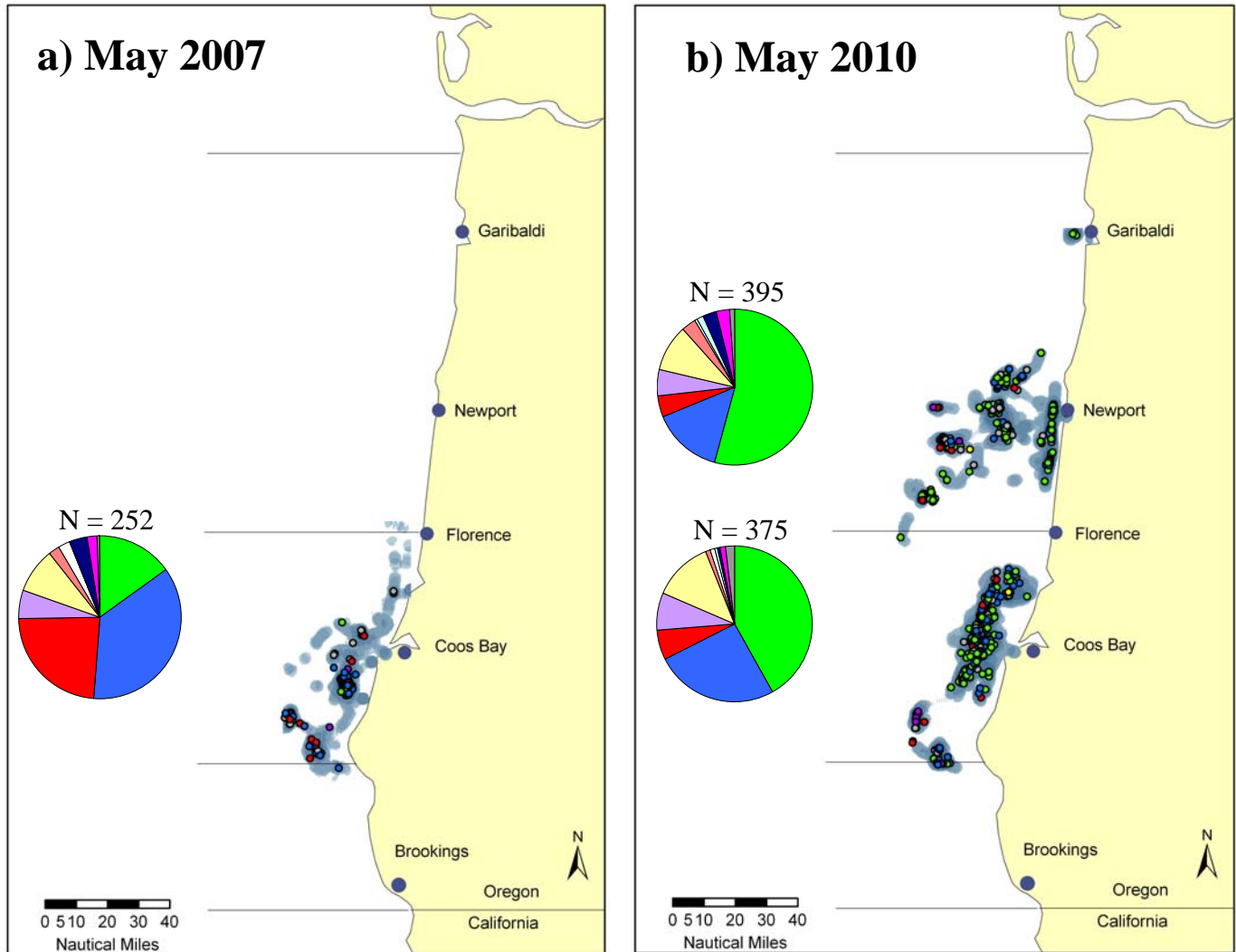
Preliminary 2010 In-season results and comparisons to 2007

The relative composition of Chinook salmon stocks in May, June, and July 2007 and 2010 are presented in Figures 1 (May), 2 (June) and 3 (July); a) and b) are 2007 and 2010, respectively. Stock composition estimates are relative proportions; therefore, a greater abundance of one stock will decrease proportional estimates of other stocks present in a sample. In other words, stock proportions are an indicator of the relative abundances of the many stocks in the fishery sample, but not necessarily the actual abundance of any one stock.

Encounter rates, measured as fish caught per hour, can be used to compare the abundance of a single stock between years or areas. Encounter rates are a better indicator of the local abundance of a stock because they are not dependent on the abundance of other stocks. Encounter rates were calculated for the California Central Valley Sacramento River fall run for May-August 2007 and May – July 2010. In 2007, Sacramento fall run encounter rates were 0.28, 0.16 and 0.15 and 0.16 fish per hour in May, June, July and August, while in 2010 encounter rates were 0.11, 0.12, and 0.11 fish per hour in May, June and July.

The lower encounter rates of the Sacramento fall run in 2010 compared with 2007 can have three main causes: 1) fish may be distributed differently, 2) overall abundance may be lower, or 3) catchability may be different due to changes in feeding conditions or other oceanographic factors. Of course, all three of these can be true at the same time. Our ability to interpret stock proportions and encounter rates in-season will improve as we collect more years of data and across broader regional scales. However, lower catch rates, in combination with lower stock proportions, suggest that there is not likely to be a strong run of Sacramento River fall Chinook in 2010.

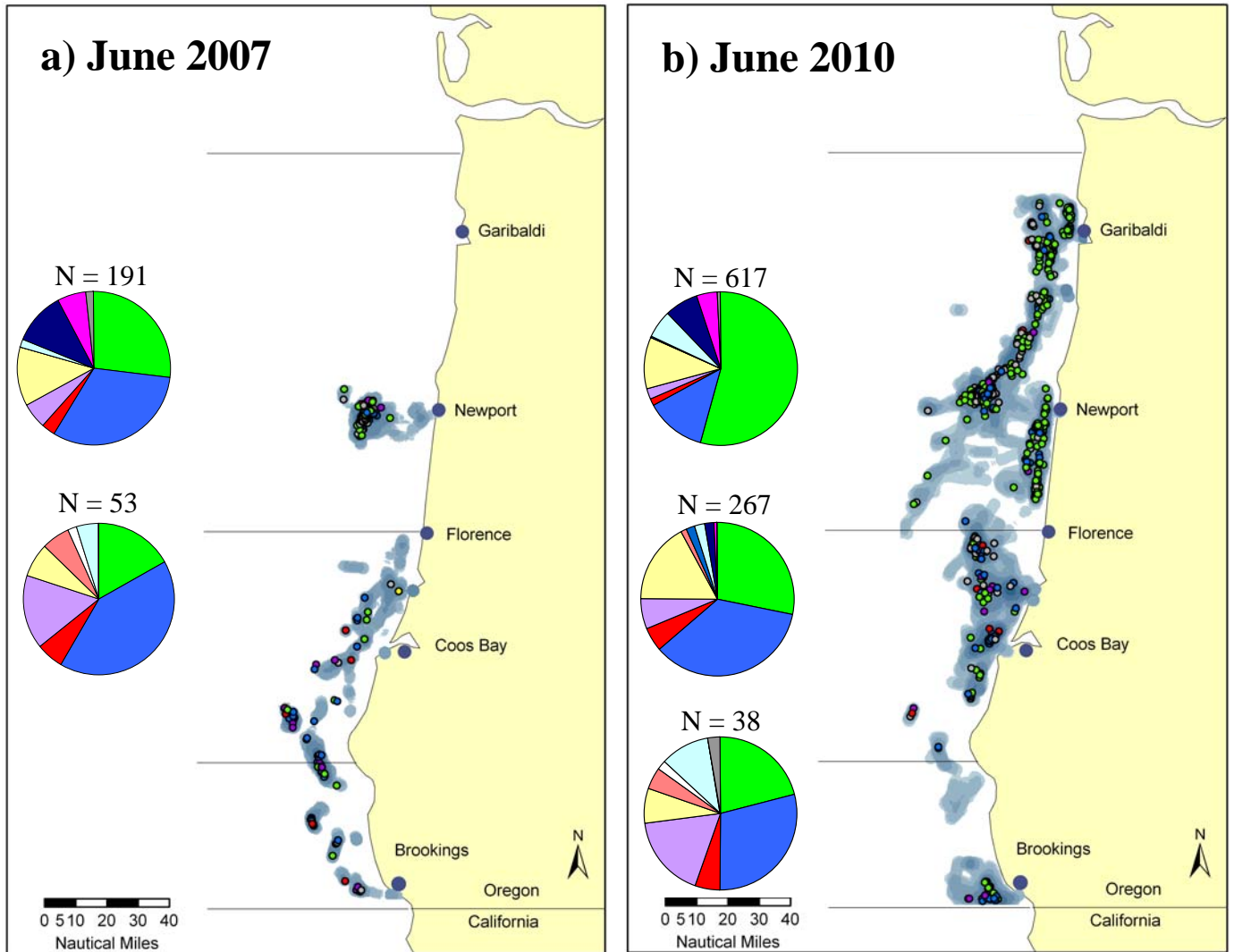
Figure 1. Preliminary stock compositions, fishing effort, and locations of fish sampled south of Cape Falcon to the California/Oregon border during May 2007 (a) and 2010 (b). Genotypes were analyzed using the Genetic Analysis of Pacific Salmonids (GAPS) standardized microsatellite baseline version 3 and Program ONCOR (Kalinowski et al. 2007). The total number of fish sampled during May 2010 was n = 852; mixed stock analysis sample sizes are presented with results.



Key to pie chart and Chinook salmon sample locations (color coded by stock)

- | | | |
|---|---|--|
| ■ Columbia | CA Coastal | ● Vessel effort |
| ■ Central Valley fall/Feather Sp. | Snake | |
| ■ Klamath | Puget Sound | |
| ■ Rogue | BC | |
| ■ OR Coastal | Other | |
| ■ N CA_S OR | | |

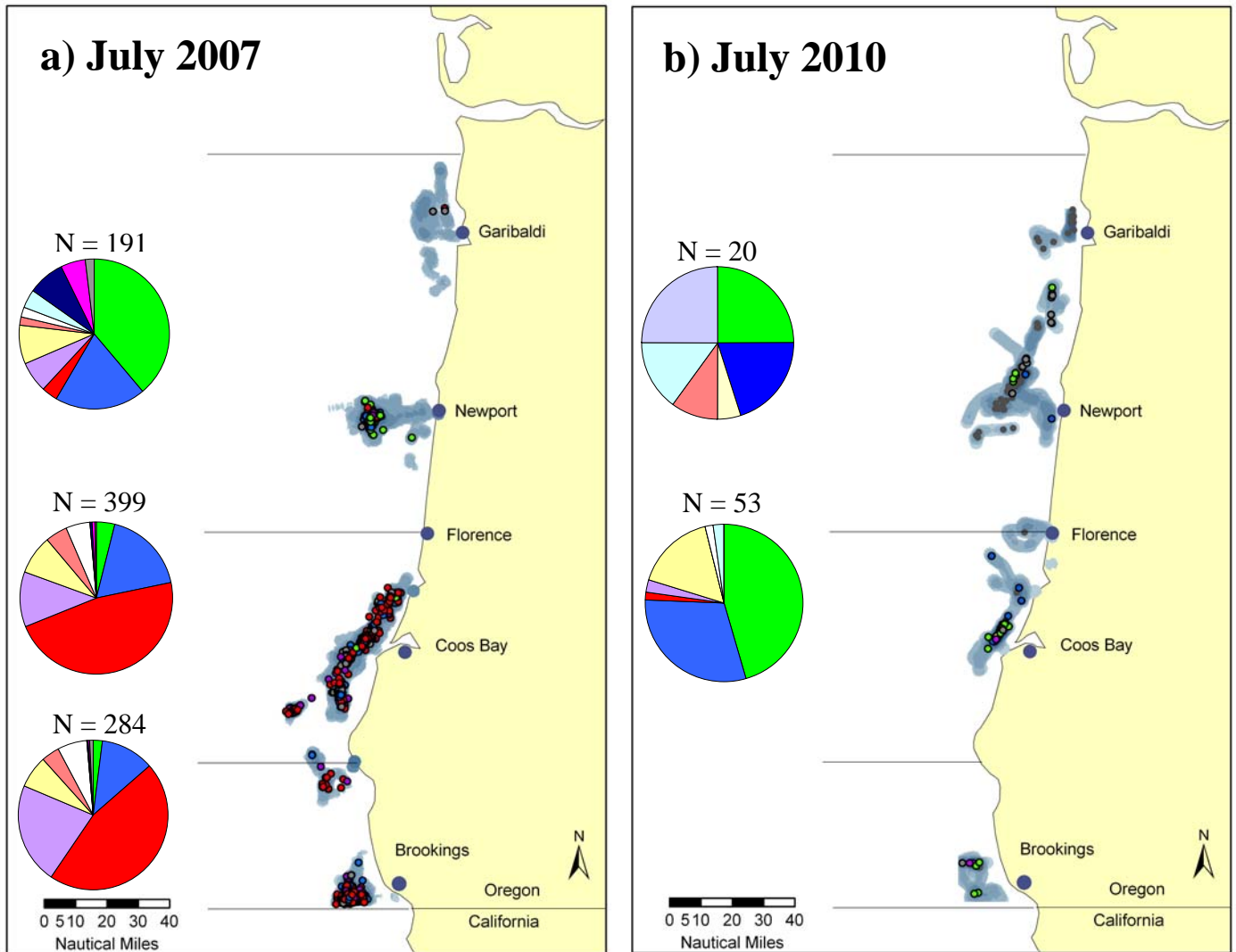
Figure 2. Preliminary stock compositions, fishing effort, and locations of fish sampled south of Cape Falcon to the California/Oregon border during June 2007 (a) and 2010 (b). Genotypes were analyzed using the Genetic Analysis of Pacific Salmonids (GAPS) standardized microsatellite baseline version 3 and Program ONCOR (Kalinowski et al. 2007). The total number of fish sampled during June 2010 was n = 1740; mixed stock analysis sample sizes are presented with results.



Key to pie chart and Chinook salmon sample locations (color coded by stock)

- | | | |
|---|---|--|
| ■ Columbia | CA Coastal | ● Vessel effort |
| ■ Central Valley fall/Feather Sp. | Snake | |
| ■ Klamath | ■ Puget Sound | |
| ■ Rogue | ■ BC | |
| ■ OR Coastal | ■ Other | |
| ■ N CA_S OR | | |

Figure 3. Preliminary stock compositions, fishing effort, and locations of fish sampled south of Cape Falcon to the California/Oregon border during July 2007 (a) and 2010 (b). Genotypes were analyzed using the Genetic Analysis of Pacific Salmonids (GAPS) standardized microsatellite baseline version 3 and Program ONCOR (Kalinowski et al. 2007). The total number of fish sampled during July 2010 was $n = 211$; mixed stock analysis sample sizes are presented with results.



Key to pie chart and Chinook salmon sample locations (color coded by stock)

- | | | |
|---|--|---|
| ■ Columbia | CA Coastal | ● Vessel effort |
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| ■ Klamath | Puget Sound | |
| ■ Rogue | BC | |
| ■ OR Coastal | Other | |
| ■ N CA_S OR | | |

We invite you to learn more about Project CROOS and Pacific Fish Trax by visiting our website, www.pacificfishtrax.org. Project CROOS reports from 2006 and 2007, as well as individual project descriptions, are listed under the “Resources” tab and sub-section “Reports and Publications”. Additional information on the goals of Project CROOS can also be found at www.ProjectCROOS.com.

Regards,

Project CROOS Team

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References

Kalinowski, S. T., K. R. Manlove, and M. L. Taper. 2007. ONCOR A computer program for Genetic Stock Identification. . Department of Ecology, Montana State University, Bozeman MT 59717. Available for download from <http://www.montana.edu/kalinowski>