

NOAA 2010 Protected Species Studies of Eulachon Smelt in Oregon and Washington

PROGRESS REPORT

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Reporting Period: July 1, 2010 to December 31, 2010

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Project accomplishments by objective are:

A)..Stock Assessment Objective

1. Complete larval sampling at mainstem Columbia River stations January 1- May 31, during 2011, and 2012
2. Complete calculations of river discharge by July 31, during 2011, and 2012
3. Complete laboratory work (larval densities in samples) by June 30, during 2011, and 2012
4. Complete sampling of adult smelt December 1, 2010- March 31, 2011, and December 1, 2011- March 31, 2011
5. Complete fecundity, sex, and age determinations on adult samples by July 31, during 2011 and 2012
6. Compile environmental correlates by August 15, during 2011 and 2012
7. Complete calculation of Spawning Stock Biomass calculations by August 31, during 2011 and 2012
8. Complete retrospective analysis and report on performance of indicators relative to SSB by September 30, 2012

None of these tasks were scheduled to be completed during 2010. We mention trying to sample some adults during December 2010, but given water conditions and some equipment issues, we did not carry out field tasks during the pilot run period.

B) Freshwater Distribution Objective.

1. Complete plankton tows and spawning substrate sampling at Columbia River and tributary stations January 1- May 31, 2011-2013
2. Complete plankton tows and spawning substrate sampling from coastal streams outside the Columbia Basin January 1- June 30, 2011-2013

3. Complete surveys of Sandy and Cowlitz River for extent of spawning activity
January 1-May 31, 2011-2013

None of these tasks were scheduled to be started or completed during 2010

C) *Marine Life-stage Objective.*

1. Complete experiments on gear-related bycatch reduction
 - a. Pilot phase: August 1-October 31, 2010
 - b. Season 1: April 1-October 31, 2011
 - c. Season 2: April 1- October 31, 2012
2. Complete observation of Washington ocean shrimp trawl fisheries
 - a. Pilot phase: August 1-October 31, 2010
 - b. Season 1: April 1-October 31, 2011
 - c. Season 2: April 1- October 31, 2012
3. Complete processing of the observation data from the Washington ocean shrimp trawl fisheries by December 31, 2010-2012
4. Complete processing of the data from the gear experiments by December 31, 2010-2012
5. Complete outreach education for the ocean shrimp trawl fishers
 - a. Project Launch: July 31, 2010
 - b. Pilot Phase Review: February 28, 2011
 - c. Season Review: February 29, 2012
 - d. Project Completion: December 31, 2013

Oregon Department of Fish and Wildlife Shrimp Project staff completed an evaluation of reduced bar spacing in rigid-grate BRDs (bycatch reduction devices) as a gear-based bycatch reduction technique for eulachon in August 2010, but utilized state of Oregon funds that became available, rather than Section 6 funding. However, results are directly applicable to eulachon bycatch issues addressed by this section 6 contract. We found a 16.6% reduction in eulachon bycatch by weight with a BRD with $\frac{3}{4}$ inch spacing, in comparison to a control device with 1 inch spacing. As a result, in December 2010, the Oregon Fish and Wildlife Commission voted to require the use of only rigid-grate BRDs with no more than $\frac{3}{4}$ inch bar spacing in Oregon's shrimp trawl fishery by April 1, 2012. This has freed up section 6 funding to be used to test other reduction techniques, such as footrope modifications, or to evaluate post-exclusion survival of eulachon, in 2011. Work was also started on developing a high-definition, stop-motion underwater video system that may be capable of filming eulachon being excluded via a BRD to evaluate condition.

During August 2010, Washington Department of Fish and Wildlife staff conducted a five-day/one-vessel monitoring of the shrimp trawl fishery off the coast of Washington. The purpose of the trip was to survey bycatch composition and collect species for identification. By-catch of eulachon during one day of sampling was approximately 300 grams (shrimp take was approximately 8,300 pounds). The sample was dominated by small fish, likely of Age 1+ or Age 0+. Due to the limited

sample size (n=27), we are unable to make a meaningful comparison to the thousands of eulachon sampled during the late April- mid May 2010 WCVI shrimp test fishery (where Age 2+ or older fish clearly dominated the bycatch). Funding has been secured to carry out a full monitoring of the Washington offshore shrimp trawl fishery next year. Interviews have been conducted; a lead technician has been hired and candidates for observer positions have been identified.

D) Genetic Analysis Objective.

1. Complete collection of genetic samples in conjunction with activities under objectives 1-3
2. Complete laboratory work (genetic sample processing) by June 30, 2011-2013
3. Complete all genetic analyses by September 30, 2013.

None of these tasks were scheduled for completion in 2010. From the standpoint of collecting samples from the pilot run, we missed that opportunity in terms of adult collection during December 2010. However, egg and larvae collected in late December and early January by Ellis Environmental is supposed to be shared with us. Those larvae might be used as a source of DNA to compare to larvae gathered during later plankton tows by ODFW and WDFW.

E) Reporting.

1. Complete annual progress reports for each objective by June 30, 2011-2013
2. Complete comprehensive report of three year study by December 31, 2013
3. Document and distribute datasets from the study by December 31, 2013
4. Complete submission of articles to peer reviewed journals by December 31, 2013

We are beginning to compile the first annual progress report. There were no articles or presentations made to peer groups during 2010.

Expenditures:

Subcontract to WDFW, June 1 - December 31, 2010: \$29,206.16