

Year 2000 Oregon Coastal Natural Coho Management Review

A performance review of Plan Amendment 13 to the Pacific Fishery Management Council (PFMC) Salmon Management Plan is stipulated in the language of the Amendment. Amendment 13 is modeled after the coho harvest management component of the Oregon Coastal Salmon Restoration Initiative (Oregon Plan) and that document includes a similar performance review stipulation. The goal of the review is to assure that the harvest management portion of the rebuilding plan for Oregon Coastal Natural (OCN) coho is based upon the best available science.

The review of Plan Amendment 13 will be completed in 2000, will span historical data through brood year 1996 returns, and will be a cooperative effort among PFMC co-managers. In the November 1999 meeting of the PFMC, the Oregon Department of Fish and Wildlife (ODFW) proposed the formation of an ad hoc work group to complete the review. The proposed group included representatives from ODFW and PFMC, the Scientific and Statistical Committee (SSC), the Oregon Production Index Technical Team (OPITT), and Oregon's Governor appointed Independent Multidisciplinary Science Team (IMST). ODFW was designated as the lead agency. The PFMC approved this structure and authorized John Coon from staff, Dr. Pete Lawson from the SSC, and Dr. Robert Kope from the STT to participate. ODFW has designated Sam Sharr and Curt Melcher from the Interjurisdictional Fisheries Group and Tom Nickelson from the Northwest Region as representatives. All three ODFW representatives as well as Dr. Lawson from the SSC are co-authors of the Amendment 13 risk assessment document. Curt Melcher is an STT representative and can represent that group in Dr. Kope's absence. Both Dr. Lawson and Curt Melcher serve on OPITT and can represent that group as well. The IMST has not formally designated participants but has agreed to periodic participation. Sam Sharr of ODFW will act as informal chair of the group.

The work group will attempt to meet the following timelines:

- December 1999: Initial meeting of work group.
 - Identify key issues.
 - Initial work assignments.
- Nov. 1999 – Feb. 2000: Data compilation and model review.
- Mar. 2000: Progress report to SSC, PFMC, and IMST.
- Mar. – Jun. 2000: Continuation of data analysis.
- Jun. 2000: Progress report to SSC and IMST.
- Jun. – Sep. 2000: Data analysis and report writing.
- Sep. 2000: Preliminary report to SSC, PMFC, and IMST.
- Sep. – Nov. 2000: Revisions and final edits to report.
- Nov. 2000: Final report to SSC, PFMC, and IMST.

The work group held it's first formal meeting on December 17, 1999 in Corvallis, OR. Sam Sharr, John Coon, Pete Lawson, Curt Melcher, and Tom Nickelson were in attendance. Dr. Bill Percy and Dr. Stan Gregory of Oregon State University attended as

IMST representatives. The purpose of the meeting was to define key harvest management issues for OCN coho recovery and to make initial work assignments with respect to investigating and resolving those issues.

There was consensus among the group that, while the two-dimensional management matrix (Table 1) in Plan Amendment 13 is conceptually sound, existing parental spawner and marine survival decision points need to be reconsidered and possibly redefined. The feasibility of sub-aggregate specific management was also identified as an issue based upon observed differences in recruitment among OCN sub-aggregates. Finally, the group wanted to ensure that data collected subsequent to the adoption of Amendment 13 be included in all new analyses. Specifically, the group posed the following questions:

- 1) Are parental spawner decision points at ~~30%~~^{19%}, 50%, and 75% of full seeding adequate to achieve recovery?
- 2) Do the current marine survival decision points based on data for hatchery fish accurately reflect historically observed ranges of low, medium, and high survival categories and are the categories properly scaled to represent wild fish? ~~Survival?~~ ✓
- 3) Are there low levels of marine survival or parental spawning escapement at which we are no longer willing to accept any harvest impacts?
- 4) What is the lowest impact achievable for OCN coho without seriously jeopardizing fisheries that are directed at other species?
- 5) Are sufficient data available to apply the management matrix to stock sub-aggregates or gene conservation groups (GCG's) instead of the entire coastal aggregate?
- 6) Will data acquired or updated since the Amendment 13 Risk Assessment Analysis change our decision criteria?

To address these questions the work group identified data, analytical, and modeling needs and made the following work assignments:

- 1) Data
 - a) Update habitat classification database in the Habitat Based Production Model. (Nickelson).
 - b) Update data files for all remaining population parameters (e.g. recent year parental escapement, marine survival etc.). (Lawson and Nickelson)
- 2) Analysis
 - a) Analyze the historic coded-wire tag recovery database from ocean fisheries for sub-aggregate specific temporal and spatial distribution trends. (Melcher and Sharr)
- 3) Modeling
 - a) Examine the sensitivity of extinction probability to variations in population size and exploitation rate when marine survival is held constant. Complete this analysis for fixed marine survival values selected from across the range of observed values. (Lawson).
 - b) Re-simulate the application of Amendment 13 using different marine survival and parental spawner trigger points. (Lawson and Nickelson).

- c) Update historic harvest rates by fishery using FRAM with new Stratified Random Survey (SRS) escapement estimates and new Council adopted hooking mortality rates. (Melcher)

To date, task 3c is complete, and some work has begun on items 1a, 1b, and 3a. The group will give the SSC and the Council a progress report again in June.

Table 1. Matrix of allowable fishery exploitation rates for OCN coho under Amendment 13 of the PFMC Salmon Management Plan.

PARENT SPAWNER STATUS ^{b/}	SMOLT TO ADULT MARINE SURVIVAL ^{a/}		
	Low	Medium	High
High Parent Spawners achieved Level #2 rebuilding criteria <u>and</u> grand parent spawners achieved Level #1 rebuilding criteria	≤15%	≤30%	≤35%
Medium Parent spawners achieved Level #1 or greater rebuilding criteria	≤15%	≤20%	≤25%
Low Parent spawners less than Level #1 rebuilding criteria	≤15% ≤10-13% ^{c/}	≤15%	≤15%

Stock Component Rebuilding Criteria:	Level #1 (50%)	Level #2 (75%)
Northern	10,900	16,400
North - Central	27,500	41,300
South - Central	25,000	37,500
Southern	2,700	4,100
Total	66,100	99,300

- ^{a/} ^{smolt} Smolt to adult survival as estimated from measured smolt to jack survival for OPI coho. ✓
- ^{b/} In the event that a spawner criteria is achieved, but a major basin within the sock component is less than ten percent of the full seeding level, the next tier of additional harvest would not be allowed in mixed stock fisheries for that component, nor additional impacts within that particular basin. ✓
- ^{c/} This exploitation rate criteria applies when parent spawners are less than 38% of the Level #1 rebuilding criteria, or when marine survival conditions are extremely low as in 1994-95 (i.e. < 0.06% hatchery smolt to jack survival) ✓