

Evaluation of Responses to IMST Recommendations

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Independent Multidisciplinary Science Team

Oregon Plan for Salmon and Watersheds

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Acronyms

CHS	spring Chinook salmon
DPS	Distinct Population Segment
GIS	geographic information systems
GNRO	Governor's Natural Resource Office
IMST	Independent Multidisciplinary Science Team
ODFW	Oregon Department of Fish and Wildlife
ORS	Oregon Revised Statute
PNAMP	Pacific Northwest Aquatic Monitoring Partnership
WCGA	West Coast Governor's Agreement

Introduction

Oregon Revised Statute (ORS) 541.409, which created the Independent Multidisciplinary Science Team (IMST), specifies that agencies are to respond to the recommendations of the IMST, stating “(3) *If the Independent Multidisciplinary Science Team submits suggestions to an agency responsible for implementing a portion of the Oregon Plan [for Salmon and Watersheds], the agency shall respond in writing to the team explaining how the agency intends to implement the suggestion or why the agency does not implement the suggestion. The Team shall include any agency responses in its report to the Joint Legislative Committee on Salmon and Stream Enhancement*”.

For this reason, the IMST has explicitly identified its suggestions as recommendations and has directed them to specific agencies or entities. The IMST’s recommendations are included in final Technical Reports, Letter Reports and letters and deal with technical and scientific matters that the Team feels are important for the Oregon Plan. In this report we include responses to letter reports issued in 2007 and 2008 that were not included in the last Administrative Report. As with the previous Administrative Reports, we briefly evaluate each response and indicate if scientific and technical perspectives strongly suggest additional consideration of the recommendation. We understand that there may be matters of policy or other issues that make it impossible or undesirable to implement a specific recommendation of the Team. Our purpose in suggesting reconsideration of some recommendations is not to argue against specific policy or management decisions, but to ensure that the technical and scientifically based consequences of the decisions are clearly understood.

IMST believes that the key characteristics of a good response are:

- It includes a short, clear statement that the agency (or entity) (a) accepts or agrees with the recommendation or (b) that it rejects or disagrees with it. In some cases, an agency (or entity) may be reluctant to agree or accept a recommendation because it sees significant difficulties in implementing it. However IMST believes if the recommendation is sound, then the agency (or entity) should work towards eliminating the impediments to implementation that it sees.
- It provides short, clear descriptions of what the agency (or entity) intends to do to implement recommendations it accepts (including how it might remove impediments) or, as required by ORS 541.409, that it provides specific reasons why it rejects the recommendations. Discussion between agency or legislative staff and Team members at IMST meetings should also help clarify agency (or entity) and IMST perspectives, and most importantly, advance the mission and goals of the Oregon Plan.

Once formal responses are received, the IMST reviews the scientific adequacy of each response and determines if further action or consideration by the agency (or entity) is warranted. In the material that follows we (a) state the recommendation of the IMST, (b) summarize the agency response to it, and (c) give our evaluation of the response. We conclude by indicating whether or not additional consideration of the recommendation is warranted. Each response was assigned to one of four general categories: adequate, intermediate, inadequate or indeterminate.

- **Adequate** means that the IMST supports the decision of the agency
- **Intermediate** means that the IMST does not fully support the agency decision because the decision will decrease the likelihood of accomplishing the goals of the Oregon Plan in a timely manner, but not doom it to failure. IMST notes its concerns but stops short of suggesting that the recommendation be reconsidered.
- **Inadequate** means that the IMST feels the decision by the agency will seriously detract from achieving the goals of the Oregon Plan, and the IMST strongly suggests that the decision be reconsidered.
- **Indeterminate** means that IMST cannot tell what the agency decided to do with the recommendation, or lacks sufficient information to fully evaluate the response.

The material is organized by the letter from which the recommendation came. The responses to recommendations were reviewed and evaluated at a public IMST meeting shortly after receipt of the responses.

Earlier Administrative Reports on responses to recommendations can be accessed at www.fsl.orst.edu/imst/reports/evaluation.html.

Oregon Department of Fish and Wildlife's
Native Fish Conservation Plan for the Spring Chinook Salmon: Rogue Species
Management Unit
(ODFW February 28, 2007 draft)

Recommendation 1. IMST recommends that ODFW's native fish conservation plans should contain sufficient information on data, data analysis, variance estimates and other critical information, to demonstrate whether or not the plans are scientifically rigorous.

ODFW Response: The agency modified the draft Rogue spring Chinook conservation plan (Rogue CHS Plan) in response to recommendation. wherever possible, indices of variability and summary statistics were added to data and analyses, however, there are several instances in which statistical certainty estimates could not be provided. ODFW gave three main factors that contribute to the lack of certainty estimates in those instances. ODFW commented that the Rogue spring Chinook population has one of the most robust data sets of all of the salmonid populations in Oregon. In future salmonid conservation plans, the agency will provide basic descriptions of available data and associated variability, along with the analysis and other available information.

IMST Conclusions: *Indeterminate.* The response appears to be adequate in terms of modifications made in the Rogue CHS Plan, however, the Team finds that the rationale expressed by ODFW for not adding estimates of statistical uncertainty for some analyses not adequate. The IMST is aware that, like other agencies, ODFW does not always have the resources to conduct desired sampling, and one of the intents of IMST recommendations is to help provide agencies with validation for securing needed resources. We believe that ODFW would increase transparency of the process used to develop conservation plans by candidly indicating when data do not exist and when data are too limited for rigorous statistical analysis. In addition, variation and uncertainty can be expressed in adjectives when statistical estimates are unavailable.

Regarding ODFW's statement that '*...spring Chinook salmon in the Rogue River primarily inhabit fourth and fifth order streams for which there are currently no standardized sampling protocol that can produce associated measures of statistical certainty,*' we encourage ODFW to examine the monitoring Drs. Bruce Rieman and Dan Isaak (US Forest Service, Idaho) have been conducting for several years on Chinook salmon in fourth and fifth order streams to see if there is a protocol that could be standardized for use in Oregon. Further, ODFW stated that '*...we know of no methods to estimate the statistical certainty associated with inter-annual rates of ocean survival.*' This could be accomplished by adequately marking and recapturing fish.

Recommendation 2. IMST recommends that ODFW should follow steps to ensure statistical best practices are used in the conservation planning process.

ODFW Response: For the Rogue CHS Plan, ODFW mainly relied on a 2000 completion report¹ for spring Chinook salmon in the Rogue River. The 2000 report and the analyses with in it received extensive review by statistical experts associated with ODFW, US Army Corps of Engineers, and Humboldt University. Future conservation plans will seek to use statistical best practices. ODFW plans to regularly consult with StatNet, a group of Oregon State University statisticians. ODFW's Conservation and Recovery Program has also hired several new staff members with statistical expertise.

IMST Conclusions: *Adequate.*

Recommendation 3. IMST recommends that ODFW should include measurements of habitat variables as well as monitoring of fish abundances.

ODFW Response: ODFW modified the draft Rogue CHS Plan in response to this recommendation. The *Monitoring Needs* section was revised to include sections on annual, weekly, and intermittent monitoring needs. Future conservation plans will, where possible, provide benchmarks for proposed actions that will allow progress to be tracked. Actions that are related to habitat will include benchmarks related to the appropriate habitat variable.

IMST Conclusions: *Adequate.*

Recommendation 4. IMST recommends that ODFW investigate alternative models and relationships to explain trends and variability in observed data. For example, straight-line models might not be the “best fit” (e.g., Figures 5–7).

ODFW Response: ODFW investigated multiple types of models that could be used to explain data trends and variability for Rogue spring Chinook salmon. The models used in the draft conservation plan reflected contemporary concepts for stock-recruitment relationships commonly exhibited by Chinook salmon. ODFW recognizes that a variety of models could be used to describe stock-recruitment relationships and revised the three sections (spawner abundance, persistence, and viability) of the conservation plan based on the application of a more sophisticated assessment model. ODFW also recognizes the need to periodically update, and possibly revise, the stock-recruitment relationship described in the Rogue CHS Plan. Methods to do so are proposed as a research need in the Rogue CHS Plan. Future conservation plans will consider a variety of potential models and relationships when analyzing data. These will be discussed and reasons for choosing and applying them will be explained in the plans.

IMST Conclusions: *Intermediate.* The IMST has concerns with this response because of the statement ‘*ODFW believe that because these life history stages* [i.e., relationships between

¹ ODFW. 2000. Effects of Lost Creek Dam on spring Chinook salmon in the Rogue River. Phase II Completion Report. ODFW , Fish Research Project DACW 57-77-C-0033, Completion Report. Portland, OR.

spawner abundance and recruitment through juvenile life history stages] are only linked within freshwater, variations in ocean conditions are not likely factors that affect potential spawner-juvenile relationships.’ These life histories are not just linked within freshwater. Variations in ocean conditions can be expressed in the size, number, and quality of eggs in females, as well as the size and quality of fish, returning to spawn which may have an affect on progeny fitness.

Recommendation 5. IMST recommends that ODFW should provide clearly defined measures and criteria for recovery in all conservation plans.

ODFW Response: The Rogue CHS Plan contains both strategies and actions intended to achieve the desired status; the actions are outline as the measures the IMST recommended. ODFW believes that the numerical criteria presented in the *Desired Biological Status* section of the Rogue CHS Plan are measureable and commensurate with the ISMT recommendation and the section complies with the associated need listed as a plan requirement in the Native Fish Conservation Strategy. Future conservation plans will also work towards identifying actions, or measures, that include benchmarks for assessing effectiveness and progress toward meeting the desired status for that species. Each future plan will also define measureable criteria to allow the effectiveness of the plan to be evaluated.

IMST Conclusions: *Intermediate.* IMST found ODFW’s response intermediate because of this statement, ‘*In many cases, particularly related to reservoir management, the actions could not be specific because there is uncertainty as to what can or cannot be accomplished.*’ This statement is troubling because every decision has uncertainty associated with it, but that should not exclude an agency from articulating specific actions and expected outcomes from those actions.

Recommendation 6. IMST recommends that ODFW should not recommend the killing of native predators without adequate research on the effectiveness of predator control. Control of non-native species should include both non-game and game fish.

ODFW Response: The management strategies (Alternative 9) adopted by the Fish and Wildlife Commission in the *Alternate Management Strategies* section of the Rogue CHS Plan does not call for killing native predators. The alternative does call for development of a program designed to encourage fishing related mortality on Umpqua pikeminnow, which is not native to the Rogue River. Other non-native species were not identified as limiting factors.

IMST Conclusions:

- *Adequate.* The action taken by the Oregon Fish and Wildlife Commission is adequate.
- *Indeterminate.* ODFW’s response did not indicate if the agency agrees with the recommendation and what approach the agency may take in developing future fish conservation and recovery plans.

Recommendation 7. IMST recommends that if Lost Creek Dam is the factor most strongly associated with the decline of spring Chinook salmon in the Rogue River, ODFW should list and evaluate all options relative to retention and operation of the project and prioritize those that would most benefit naturally produced spring Chinook salmon.

ODFW Response: ODFW modified the Rogue CHS Plan in response to this recommendation. A new section, Appendix K – Options for Reservoir Management, was added to the revised plan. These options were considered by the advisory committee and ODFW prior to the formulation of the alternative management strategies outlined in the plan. While some options outlined in Appendix K would have had significant benefits to naturally produced spring Chinook, the advisory committee and ODFW chose to only include management strategies that were believed to be most achievable given the current societal context.

IMST Conclusions: *Adequate.*

West Coast Governors' Agreement on Ocean Health
(October 19, 2007 Draft Action Plan)

The Independent Multidisciplinary Science Team recommends that the State of Oregon ensure that the *West Coast Governors' Agreement on Ocean Health's* priority area of expanding ocean and coastal scientific information, research, and monitoring explicitly include provisions for an interstate and international ocean research program to determine the major causes of and variability in ocean mortality of anadromous salmonids.

State of Oregon Response: The Governor's Natural Resource Office agrees with the premise of the recommendation. Oregon, along with Washington and California, are equal partners in the West Coast Governor's Agreement (WCGA). The three states and federal partners developed 26 final actions. Seven priority areas have been identified and one specifies '*...expand ocean and coastal scientific information, research, and monitoring*'. In addition the WCGA Action Plan identifies three actions related to this priority and two are relevant to the recommendation. Action 6.1 states '*Develop a regional research agenda in partnership with the four Sea Grant programs and seek federal support to fill marine research needs identified.*' Action 6.2. states '*Support full federal funding for the long-term maintenance of ocean observing systems and monitoring assets along the West Coast for the development of products that address management needs*'. In addition the Action Plan calls for a west coast-wide assessment of anticipated impacts of climate change and calls for an ecosystem based management approach to marine ecosystems. Oregon has also entered into an agreement with Alaska, California, Washington, and British Columbia to increase information sharing, collaboration, cooperative action, and innovation among the four governors and the Premier of British Columbia. While not specifically named, salmonid management and ocean health are likely to be topics discussed among the principles.

IMST Conclusions: *Adequate.* We find the answer adequate, however, IMST is uncertain how the State will implement the recommendation. The IMST's concern is that we have not seen an implementation plan. Is there a plan in place or is one being prepared? Will the plan be sufficient to meet the intent of the IMST's recommendation? Therefore, the IMST asks that the GNRO periodically brief the Team on progress made on implementation.

Oregon Department of Fish and Wildlife's (ODFW)
Conservation and Recovery Plan for Oregon Steelhead Populations in the Middle
Columbia River Steelhead Distinct Population Segment
(ODFW November 2007 draft)

Recommendation 1. IMST recommends that Oregon Department of Fish and Wildlife include in the Mid-Columbia Steelhead Recovery Plan and all future recovery and conservation plans an explicit analysis or discussion of uncertainty associated with fundamental assumptions or conclusions regarding management action effectiveness that are likely to have significant consequences to recovery if the assumption or conclusion was incorrect.

ODFW Response: ODFW agreed with this recommendation and intends to add both qualitative and quantitative characterization of uncertainty to sections of the Mid-Columbia Steelhead Recovery Plan that pertain to the taxonomic divisions within the DPS, the effects of resident rainbow trout on abundance and productivity gaps, effectiveness of the monitoring design, effectiveness of management actions, and potential future threats to the DPS.

IMST Conclusions: *Adequate.*

Recommendation 2: IMST recommends that the Oregon Plan Core Team further demonstrate how the multi-agency monitoring activities proposed in the Mid-Columbia Steelhead Recovery Plan will detect change in status and trends of populations and habitat in the DPS.

State of Oregon Response: The GNRO indicated that many monitoring activities described in the Mid-Columbia Steelhead Recovery Plan will be implemented by ODFW and that this subset is sufficient to detect changes in status and trends is sufficiently funded. The GNRO also acknowledged that funding to implement sufficient monitoring is not currently available. To compensate the State is working to develop a set of 'high level' indicators that will aid in assessment of recovery efforts and the effects of climate change but these efforts are still undergoing refinement. The Core Team is currently searching for opportunities to coordinate monitoring efforts carried out by individual Oregon Plan agencies and have identified the Coast Coho ESU coordination efforts as a model for the Mid-Columbia Steelhead DPS. Constraints imposed by limited funding and current approaches to data management must be overcome before an integrated monitoring effort can be successfully implemented. The State may designate a recovery plan monitoring team for the Mid-Columbia Steelhead DPS (and is pursuing funding for a 'implementation coordinator') that would follow the conceptual model of the Pacific Northwest Aquatic Monitoring Partnership (PNAMP).

IMST Conclusions: *Adequate*. The Team ranked the response as adequate overall but noted that the response did not sufficiently address how proposed monitoring activities will detect status and trends.

Recommendation 3. IMST recommends that in all future recovery and conservation plans Oregon Department of Fish and Wildlife include a monitoring plan sufficient to demonstrate that trends departing from recovery targets could be detected in time to allow changes in recovery strategies or tactics intended to respond to such trends. This would require clear objectives and milestones for monitored parameters, as well as a description of monitoring plan design, implementation, and identification of resources required to implement the monitoring plan.

ODFW Response: ODFW indicated that the Monitoring and Evaluation section of the recovery plan will be expanded to address weaknesses identified during the IMST review. Revisions described included clarification of the monitoring plan design, resources required for the implementation plan, and gaps between current and desired monitoring efforts.

IMST Conclusions: *Indeterminate*. The Team ranked the response as indeterminate because the response did not provide sufficient detail on how research and monitoring data would be used to make decisions or determining monitoring milestones and objectives in future plans.

Recommendation 4. IMST recommends that in each recovery and conservation plan Oregon Department of Fish and Wildlife include the specific management actions to be taken if the status and trends of populations and habitat diverge significantly from recovery goals or predicted trends.

ODFW Response: ODFW indicated that they found the recommendation unclear and the suggestion to identify an alternative set of management actions unreasonable. ODFW also indicated their intent to expand the description of the adaptive management process used evaluate trends and redirect management actions when emerging threats or unexpected outcomes are identified during the implementation process.

IMST Conclusions: *Indeterminate*. Team ranked the response as indeterminate because the response indicated ‘*confidence that the proposed actions represent state of the science approaches...*’ but did not address the quality of the ‘state of the science’ and did not articulate how the agency would consider alternatives to the current plan if population trends continued to decline.

Recommendation 5a. IMST recommends that in each recovery and conservation plan Oregon Department of Fish and Wildlife thoroughly consider projections of future changes to landscape or limiting factors, including land use and climate changes, when establishing recovery actions and formulating adaptive management strategies.

ODFW Response: ODFW described a multi-step process that will be used to incorporate considerations relevant to land use and climate change in the recovery plan including an assessment of how well actions already proposed in the plan will address any future environmental changes resulting from climate change, a synthesis that identifies environmental attributes that are both sensitive to climate change and likely to affect steelhead habitat, and conversion of model outputs to a format compatible with a GIS analysis. The quantitative aspects of this work will require considerable time and effort on the part of ODFW. Consequently, the final recovery plan may only include analyses for populations determined to have high vulnerability to the effects of climate change.

IMST Conclusions: Adequate.

Recommendation 5b: IMST recommends that State of Oregon integrate monitoring and evaluation into state initiatives in the area of climate change to allow for scientific evaluation of recovery and conservation plans.

State of Oregon Response: The GNRO described state efforts to assess effects of climate change and its implications for recovery planning including work on ‘high-level’ indicators, the Headwaters to Ocean Initiative, and the Climate Change Initiative.

IMST Conclusions: Adequate.

Recommendation 6. IMST recommends that Oregon Department of Fish and Wildlife ensure that time and cost estimates of recovery plans include costs for recovery actions listed in the plan.

ODFW Response: ODFW agreed with this recommendation and indicated that the time and cost section of the Mid-Columbia Steelhead Recovery Plan will be revised to include additional information on action costs and implementation timeframes. However, ODFW indicated that uncertainty of future funding hindered their ability to determine accurate time estimates. Future updates to the recovery plan will include additional cost estimates as projections improve.

IMST Conclusions: Indeterminate. The Team ranked this response as indeterminate because the response addressed available funding rather than an approach for how the agency would generate realistic cost estimates for implementation.