

Puget Sound Chinook RMP update

8/9/2014

The comanagers have been working revising the Puget Sound Chinook Harvest Management Plan for resubmission to NOAA over the past several months. Work has primarily centered around 1) addressing NOAA's comments on the December 2017 submission, and 2) resolving issues related to differences in the various fishery models and exploitation rate estimates used to determine appropriate conservation objectives for Puget Sound Chinook.

Many of NOAA's comments on the 2017 submission centered around the need to strengthen the explanations for how the Plan meets the requirements of the salmon 4(d) rule for a Fishery Management Plan – primarily related to showing how the plan meets the concepts of NOAA's 'Viable Salmonid Populations' document. The state and tribal comanagers have been working on revisions to address those comments both in the body of the plan and in the watershed-specific appendices.

More difficult to address have been some of the issues related to exploitation rate estimates and conservation objectives. A technical workgroup composed of NOAA, WDFW and tribal scientists was convened this summer to work on resolving issues caused by differences in fishery models (FRAM model vs Chinook Technical Committee model) used to estimate exploitation rates on Puget Sound stocks, and resulting differences in calculations of Rebuilding Exploitation Rates for those populations. That work has proceeded slower than we would like, but its completion is critical to our ability to put forward conservation objectives for several Puget Sound populations (most notably – Skagit, Stillaguamish and Snohomish). The comanagers sent NOAA a letter last week summarizing our position on the issue and encouraging continued collaboration to resolve these issues as quickly as possible. As they are resolved, we will continue work on revising the plan for individual watersheds appropriately.

and Wildlife (WDFW), the Oregon Department of Fish and Wildlife (ODFW), California Department of Fish and Game (CDFG), or of any other governmental entity that has co-management authority for the listed salmonids, when the employee or designee, acting in the course of his or her official duties, takes a threatened salmonid without a permit if such action is necessary to:

- (i) Aid a sick, injured, or stranded salmonid,
- (ii) Dispose of a dead salmonid, or
- (iii) Salvage a dead salmonid which may be useful for scientific study.
- (iv) Each agency acting under this limit on the take prohibitions of paragraph (a) of this section is to report to NMFS the numbers of fish handled and their status, on an annual basis. A designee of the listed entities is any individual the Federal or state fishery agency or other co-manager has authorized in writing to perform the listed functions.

(4) The prohibitions of paragraph (a) of this section relating to threatened species of salmonids listed in § 223.102 (a)(5) through (a)(10), and (a)(12) through (a)(19) do not apply to fishery harvest activities provided that:

(i) Fisheries are managed in accordance with a NMFS-approved Fishery Management and Evaluation Plan (FMEP) and implemented in accordance with a letter of concurrence from NMFS. NMFS will approve an FMEP only if it clearly defines its intended scope and area of impact and sets forth the management objectives and performance indicators for the plan. The plan must adequately address the following criteria:

(A) Define populations within affected listed ESUs, taking into account spatial and temporal distribution, genetic and phenotypic diversity, and other appropriate identifiable unique biological and life history traits. Populations may be aggregated for management purposes when dictated by information scarcity, if consistent with survival and recovery of the listed ESU. In identifying management units, the plan shall describe the reasons for using such units in lieu of population units, describe how the management units are defined, given biological and life history traits, so as to maximize consideration of the important biological diversity contained within the listed ESU, respond to the scale and complexity of the ESU, and help ensure consistent treatment of listed salmonids across a diverse geographic and jurisdictional range.

(B) Utilize the concepts of "viable" and "critical" salmonid population

thresholds, consistent with the concepts contained in the technical document entitled "Viable Salmonid Populations (NMFS, 2000b)." The VSP paper provides a framework for identifying the biological requirements of listed salmonids, assessing the effects of management and conservation actions, and ensuring that such actions provide for the survival and recovery of listed species. Proposed management actions must recognize the significant differences in risk associated with viable and critical population threshold states and respond accordingly to minimize the long-term risks to population persistence. Harvest actions impacting populations that are functioning at or above the viable threshold must be designed to maintain the population or management unit at or above that level. For populations shown with a high degree of confidence to be above critical levels but not yet at viable levels, harvest management must not appreciably slow the population's achievement of viable function. Harvest actions impacting populations that are functioning at or below critical threshold must not be allowed to appreciably increase genetic and demographic risks facing the population and must be designed to permit the population's achievement of viable function, unless the plan demonstrates that the likelihood of survival and recovery of the entire ESU in the wild would not be appreciably reduced by greater risks to that individual population.

(C) Set escapement objectives or maximum exploitation rates for each management unit or population based on its status and on a harvest program that assures that those rates or objectives are not exceeded. Maximum exploitation rates must not appreciably reduce the likelihood of survival and recovery of the ESU. Management of fisheries where artificially propagated fish predominate must not compromise the management objectives for commingled naturally spawned populations.

(D) Display a biologically based rationale demonstrating that the harvest management strategy will not appreciably reduce the likelihood of survival and recovery of the ESU in the wild, over the entire period of time the proposed harvest management strategy affects the population, including effects reasonably certain to occur after the proposed actions cease.

(E) Include effective monitoring and evaluation programs to assess compliance, effectiveness, and parameter validation. At a minimum, harvest monitoring programs must

collect catch and effort data, information on escapements, and information on biological characteristics, such as age, fecundity, size and sex data, and migration timing.

(F) Provide for evaluating monitoring data and making any revisions of assumptions, management strategies, or objectives that data show are needed.

(G) Provide for effective enforcement and education. Coordination among involved jurisdictions is an important element in ensuring regulatory effectiveness and coverage.

(H) Include restrictions on resident and anadromous species fisheries that minimize any take of listed species, including time, size, gear, and area restrictions.

(I) Be consistent with plans and conditions established within any Federal court proceeding with continuing jurisdiction over tribal harvest allocations.

(ii) The state monitors the amount of take of listed salmonids occurring in its fisheries and provides to NMFS on a regular basis, as defined in NMFS' letter of concurrence for the FMEP, a report summarizing this information, as well as the implementation and effectiveness of the FMEP. The state shall provide NMFS with access to all data and reports prepared concerning the implementation and effectiveness of the FMEP.

(iii) The state confers with NMFS on its fishing regulation changes affecting listed ESUs to ensure consistency with the approved FMEP. Prior to approving a new or amended FMEP, NMFS will publish notification in the **Federal Register** announcing its availability for public review and comment. Such an announcement will provide for a comment period on the draft FMEP of not less than 30 days.

(iv) NMFS provides written concurrence of the FMEP which specifies the implementation and reporting requirements. NMFS' approval of a plan shall be a written approval by NMFS Southwest or Northwest Regional Administrator, as appropriate. On a regular basis, NMFS will evaluate the effectiveness of the program in protecting and achieving a level of salmonid productivity commensurate with conservation of the listed salmonids. If it is not, NMFS will identify ways in which the program needs to be altered or strengthened. If the responsible agency does not make changes to respond adequately to the new information, NMFS will publish notification in the **Federal Register** announcing its intention to withdraw the limit for activities associated with that FMEP. Such an announcement will



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August 3, 2018

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RE: Rebuilding Exploitation Rate Translation Issues

Dear Mr. Wulff:

We wrote to you in February (see attached letter dated February 8, 2018) regarding technical issues with NOAA's approach for translating Chinook Technical Committee (CTC) Exploitation Rate Analysis (ERA)-based recovery exploitation rates (RERs) into RERs based on the Fishery Regulation Assessment Model (FRAM). Specifically, we pointed out issues with the post-hoc linear translation of the exploitation rates. The state/tribal comanagers met with NOAA policy staff on May 8 to further discuss this issue. At that meeting we agreed to convene a technical workgroup to explore understanding and resolving differences between ERA-based and FRAM-based exploitation rate inputs used in modeling to develop RERs. That group met three times in June and July with analyses and data explorations performed between meetings to work toward development of the most representative harvest inputs. While those meetings were productive in resolving some of the technical concerns, and greatly appreciated by state and tribal comanagers, there remain some important unresolved issues.

There is a fundamental difference in philosophy between comanagers' technical staff and NOAA technical staff about how best to represent harvest in the dynamic model that feeds into the VRAP analysis that produces RERs. This difference comes down to whether we think it more important to reflect biological impacts of harvest in terms of our domestic fishery management structure and the tools we use to assess it, or whether we think it more important to format information in a way that works well as an input to the dynamic model. The RER Technical Workgroup noted that whichever exploitation rate estimates one thinks best represents reality will sway the preference for either 1) using ERA-based A&P exploitation rates

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as inputs into the dynamic model or 2) converting A&P exploitation rates into FRAM-based equivalents prior to inputting into the dynamic model. As the RER Technical Workgroup found, there are pros and cons to both; however, the comanagers assert that it would be preferable to assess our proposed Chinook Harvest Plan (RMP) and the management unit profiles (MUPs) therein using FRAM-based harvest rates to determine RERs. The method discussed among the Workgroup that we think best accomplishes this is to translate ERA-based ERs into FRAM equivalents prior to inputting them into the dynamic model.

Attached is a technical memo outlining the theory behind our thinking. While we know that every model has limitations, if the goal is to best represent the "true" exploitation rate, then we can show that translating exploitation into FRAM equivalents prior to running the dynamic model will theoretically result in a more accurate reflection of reality. Also, if a primary purpose of the RER development work is to assess pre-season fishery plans against management objectives and the ERA-based rates cannot be used for pre-season purposes, then we believe the true question isn't about which model more accurately portrays reality, but rather "how can we develop an RER analysis that properly incorporates FRAM exploitation rates to develop pre-season management objectives?"

At the last RER Technical Workgroup Meeting we were also made aware of an error in the conversion of HRJ (i.e. a harvest rate worksheet developed by Jim Scott) files to fishing rates for the A&P tables. The Workgroup meetings have gone a long way toward increasing the transparency of NOAA's analysis; however, the comanagers feel that there is still a need to review all of the steps in NOAA's technical work. While most of these have likely been recently exchanged, we want to ensure that comanager technical staff have the following:

- Updated A&P tables
- Updated input files to VRAP
- Current version of VRAP
- Output files from VRAP
- An understanding of how HRJ files are converted to fishing rates as well as a more detailed understanding of the error that was uncovered and exactly how it was fixed

In addition to developing RERs that properly incorporate FRAM-based ERs and ensuring that those are reviewed for errors, the comanagers reiterate their request that NOAA provide a technical review of the methodology used to develop comanager management objectives for Skagit River Spring and Fall Chinook. We consider both incorporation of FRAM-based ERs and review of this additional comanager science consistent with the cooperative approach the workgroup has used in considering alternative scientific methods for developing biologically sound and defensible management objectives. The comanager objectives for Skagit Chinook stocks were developed using FRAM exploitation rates to construct spawner recruit curves to

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estimate abundance thresholds and associated exploitation rate ceilings. Our request is that in addition to reviewing the methodology for Skagit stocks, that comanager objectives be assessed against RERs developed using FRAM-based exploitation rates.

Finally, we note that there seems to be some inconsistency in the tools NOAA proposes using to assess the impacts of this action to southern resident killer whales compared to impacts to Chinook populations (i.e. using FRAM to estimate harvest and the reduction of Chinook as prey for orca while using ERA-based brood year exploitation to estimate harvest for constructing spawner-recruit curves). Since the Chinook fisheries being assessed are planned and evaluated using FRAM, the state and tribal comanagers think we should be using that currency for assessing impacts wherever possible. Again, the comanagers appreciate the productive and collaborative nature of the work to date to resolve the technical issues surrounding the exploitation rate translations, and look forward to that cooperation continuing as we move forward with these important issues.

Sincerely,



Lorraine Loomis, Chairperson
Northwest Indian Fisheries Commission



Ron Warren, Assistant Director
Washington Department of Fish and Wildlife

cc: Barry Thom, Regional Administrator, NOAA West Coast Region
Susan Bishop, Anadromous Harvest Management Branch Chief, NMFS West Coast Region
Sheila Lynch, Legal Counsel, NOAA Office of General Counsel, Northwest Section
NWIFC Commissioners

(2) Attachments