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UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION

NATIONAL WILDLIFE FEDERATION, et al.,

Plaintiffs,

v.

NATIONAL MARINE FISHERIES SERVICE, et al.,

Defendants.

Case No.: 3:01-CV-00640-SI

**2015 REPLY DECLARATION
OF MICHAEL TEHAN,
NATIONAL MARINE
FISHERIES SERVICE, WEST
COAST REGION**

In Support of Federal Defendants'
Cross-Motion for Summary
Judgment

I, Michael Tehan, declare and state as follows:

1. In March 2015, I provided a declaration in this litigation in support of the National Marine Fisheries Service's (NMFS) 2014 Supplemental Biological Opinion for the Federal Columbia River Power System (hereafter, 2014 BiOp). See Declaration of Michael Tehan, ECF No. 2006, March 6, 2015 (hereafter, First Tehan Decl.) In that declaration I described my qualifications and experience. I also responded to issues raised in the declaration of Mr. Anthony Nigro (ECF No. 1986) regarding the methods used for estimating the benefits of tributary habitat improvement actions, the implementation of the tributary habitat program, and the ability to demonstrate the results of the tributary habitat program for offsite mitigation required by the 2008 FCRPS Biological Opinion and as confirmed by the 2010 and 2014 FCRPS Supplemental Biological Opinions. In addition, I provided technical background on the tributary habitat program as necessary for a full understanding of the program and my declaration.

2. I have reviewed a response declaration filed by Ms. Katherine Kostow, of the Oregon Department of Fish and Wildlife (ODFW), and in this declaration, I respond to issues addressed by her declaration.

3. This declaration is based on and incorporates information provided by Patricia Dornbusch, of the Interior Columbia Basin Office of NMFS's West Coast Region, and Thomas Cooney, of NOAA's Northwest Fisheries Science Center.

I. OVERVIEW OF TRIBUTARY HABITAT ISSUES ADDRESSED IN FIRST TEHAN DECLARATION

4. In my first declaration, I described the tributary habitat mitigation program that NMFS incorporated into the Reasonable and Prudent Alternative (RPA) in the 2008 Biological Opinion for the Federal Columbia River Hydropower System (2008 BiOp). I provided a brief overview (and citations to more detailed descriptions) of:

- The method used in the 2008 BiOp for estimating the changes in tributary habitat function that are reasonably certain to result from implementation of tributary habitat improvement actions and the corresponding changes in fish survival that are reasonably certain to occur as the productive capacity of habitat changes (First Tehan Decl. ¶¶12-13).
- The scientific basis for NMFS's determination that it is reasonably certain that by identifying the factors limiting habitat function and implementing actions that alleviate those limiting factors, habitat function will improve, and, ultimately, the survival of salmon and steelhead will improve as well (First Tehan Decl. ¶¶14-16).
- The manner in which NMFS took climate change into account when estimating predicted improvements from tributary habitat actions (First Tehan Decl. ¶¶18-32).
- The timing of when benefits will occur (including a detailed discussion of the Pahsimeroi spring Chinook salmon population), and the monitoring and evaluation program (including initial results) in place under the RPA (as amended by the 2010 BiOp to include the Adaptive Management and Implementation Plan) to evaluate the effects of the tributary habitat program, develop enhanced information on fish-habitat relationships, and inform program implementation (First Tehan Decl. ¶¶ 8, 62-85).
- NMFS's evaluation of the Action Agencies' implementation progress, including: (1) its determination that the tributary habitat improvement actions identified for implementation in the Action Agencies' 2014-2018 FCRPS Implementation Plan (NOAA 2014 B48), including supplemental actions, were identified with the same or greater level of detail as actions for implementation from 2007-2013 and (2) the basis for NMFS's conclusion that the Action Agencies' record of implementation,

combined with their strategies for implementation through 2018, give NMFS reasonable certainty that the required survival improvements will be achieved (First Tehan Decl. ¶¶34-37, 39-61).

II. TRIBUTARY HABITAT ISSUES RAISED IN KOSTOW DECLARATION

5. Ms. Kostow responded to my declaration in ¶¶38-40 of her declaration. I address her statements below.

6. Ms. Kostow's declaration (¶38) references my discussion of how NMFS addressed the impacts of climate change on freshwater habitat and the additional background I provided for context (First Tehan Decl. ¶¶18-32). She then states that my declaration "agrees that the effects of climate change on freshwater productivity and on limiting factor function cannot be quantified." Ms. Kostow's appraisal, however, does not reflect the full context of what I said: NMFS was not able to estimate quantitatively the effects of climate change on survival and productivity during the freshwater life stages due to lack of available information relevant to the time period under consideration in the 2008 BiOp (First Tehan Decl. ¶26). Therefore, NMFS qualitatively considered the potential impacts of climate change in the Columbia River Basin (2014 NOAA B282 at 27631-27635), including the factors described in Mr. Nigro's declaration at ¶48.

7. I also described the full extent of how NMFS considered climate change effects related to freshwater habitat (see First Tehan Decl. ¶¶24-32): (1) NMFS's ocean climate change assumptions resulted in quantitative increases in the survival improvements needed from improved tributary habitat and other beneficial actions; (2) the quantitative estimates of the survival changes expected from tributary habitat improvements are conservative because they are based on benefits expected to accrue only in the near term (i.e., through 2018), even though many benefits will continue to accrue in the longer term; (3) NMFS determined that a sufficient

number of tributary habitat improvement actions had the additional effect of ameliorating climate change effects in the freshwater environment, consistent with the ISAB's 2007 recommendations (2014 NOAA B19); and (4) climate change was fully considered throughout the process.

8. In addition, as background and context, I described how the expert panels consider the effects of ongoing actions or events that could degrade habitat (First Tehan Decl. ¶¶ 19-23). This context was relevant to a full understanding of the tributary habitat expert panels and to explaining that (1) the expert panels consider the risk of effects from any threats that would confound or reduce the positive effects of the habitat improvement actions and (2) local impacts from climate change, or any other habitat degradation occurring within the time frame of the BiOp, would be captured when expert panels evaluate limiting factors. As a specific example, I discussed how the effects of wildfires that occurred in the Upper Columbia River basin in 2014 will be considered in evaluating limiting factors and in prioritizing recovery actions for implementation through 2018. I also provided citations to notes from the 2012 expert panels indicating their consideration of other ongoing or past actions that could degrade limiting factor function or reduce the positive effects of tributary habitat improvement actions (First Tehan Decl. ¶23 and fn. 8).

9. In the past, declarants on behalf of Oregon have expressed concern that expert panels do not adequately consider the effects of actions that could degrade habitat (Bowles Declaration [ECF No. 1510], ¶160; Kratz Declaration [ECF No. 1564], ¶6; Bowles Reply Declaration [ECF no. 1592], ¶91). Thus it is perplexing that when provided with specific examples of how the expert panels do exactly that, Ms. Kostow seems to interpret it as a negative thing. She states that I discuss "unanticipated events that caused habitat actions to be reprioritized" or "that cause benefits of habitat actions to be downgraded," and concludes that "NOAA seems to be agreeing

that the benefits of the habitat actions are highly uncertain, but that somehow or other everything will be sorted out.”

10. I disagree with Ms. Kostow’s interpretation. The fact that the expert panels consider the effects of ongoing land use actions and changes in baseline limiting factor function actually increases the certainty that the identified tributary habitat benefits will be achieved because it calibrates the projected benefits to the effects of other ongoing actions and to baseline habitat function. More importantly, the examples that I noted previously (First Tehan Decl. ¶¶23 and fn. 8) demonstrate an adaptive response to changing conditions and new information that is crucial in any scientifically sound fish and wildlife management program. By ensuring the use of best available information, such an approach also increases the certainty that the projected benefits will be achieved. To imply that managing a program adaptively in a strategic context is the same as believing that “somehow or other everything will be sorted out” seems to indicate a lack of understanding of widely accepted and advocated approaches to fish and wildlife management. Finally, NMFS has described in detail and in multiple documents the rationale for its determination that it is reasonably certain that the benefits of the tributary habitat improvement actions will be achieved.¹

11. In ¶¶39 of her declaration, Ms. Kostow expresses her disagreement with NMFS’s determination that it has a “high degree of confidence that achieving the HQI performance standards for all populations in RPA Action 35 Table 5 is reasonably certain” (First Tehan Decl. ¶¶37). She also states that NMFS did “not provide any details in support of their argument,” and instead that NMFS “merely” states that it has “a high degree of confidence.” Contrary to Ms.

¹ In addition to First Tehan Decl. ¶¶14-16, 34-37, 82-84, see, e.g., 2008 BiOp at 7-43—7-46; 2010 BiOp Section 2 at 81-84; 2014 BiOp at 229-265, 276-277, 316-318; Kratz Declaration, ECF 1564, ¶¶5-12; Kratz Reply Declaration, ECF 1650, ¶¶4-22; 2008 NOAA C1155 at 20-26; 2010 NOAA CC200 at 11-15; 2014 RTC at 20-27.

Kostow's statement, my first declaration, and the many additional record materials cited therein, describe clearly, substantively, and in detail NMFS's rationale and the basis for its determinations. See, for example, First Tehan Decl.: ¶¶12-16 (basis for NMFS's determination that the tributary habitat methods represent best available science); ¶¶34-61 (description of NMFS's evaluation of implementation progress and rationale for its conclusion that meeting the HQI performance standards was reasonably certain); ¶¶ 62-74 (timing of implementation and when benefits will occur as related to basis for NMFS's determination that achieving HQI performance standards is reasonably certain); and ¶¶ 73-84 (discussion of research, monitoring, and evaluation program and how it allows the agencies to continually confirm or modify assumptions and evaluate needs for additional or alternative actions).

12. As Ms. Kostow notes, I stated in my first declaration that NMFS's analysis of the certainty that the RPA survival improvement performance standards would be achieved was "more nuanced" than the analysis presented in Appendix B of Mr Nigro's declaration. The basis for my statement was that NMFS looked in more detail at more information than did the authors of Appendix B in Mr. Nigro's declaration, and that NMFS considered the full range of factors at the population level that had influenced implementation to date and were likely to influence it through 2018. For example, in evaluating populations for which the action agencies had made less progress to date, NMFS reviewed the documentation of the 2012 expert panels (2014 NOAA B389; 2014 BiOp at 282), met with Action Agency staff, and considered factors such as the extent to which actions targeted the most heavily weighted limiting factors in the most heavily weighted assessment units and the extent to which implementation strategies appeared to be consistent with accepted watershed restoration principles (2014 BiOp at 283). The authors of Mr. Nigro's Appendix B appear to have based their evaluation of the tributary habitat program

only on the Action Agencies' 2013 Comprehensive Evaluation and 2014-2018 Implementation Plan. They do not cite or comment on NMFS's analysis in the 2014 BiOp.

13. In my first declaration, I responded to comments by Mr. Nigro (¶47 and Appendix B) regarding the fact that tributary habitat improvement actions sometimes change from the time they are first reviewed by an expert panel to the time they are implemented (First Tehan Decl. ¶¶34-61). I explained that such changes are reasonable given the size and complexity of the program (¶38). Further I noted that (1) a plan for such modifications was incorporated into the 2008 BiOp RPA (¶41); (2) this adaptive process allows the Action Agencies to respond to external factors affecting implementation and to refine the scope, focus, and sequencing of implementation when opportunities arise to achieve greater benefits² (¶39); (3) projected benefits resulting from a change in an action are adjusted accordingly (¶43); (4) the Action Agencies are responsible for achieving the performance standards in RPA Action 35 Table 5, rather than for implementing any particular set of actions; (5) sufficient replacement actions exist in recovery plans and subbasin plans (¶44); and (6) changes are made consistent with overarching strategic frameworks identified in comprehensive planning documents such as recovery plans and subbasin plans (¶40).

14. I also responded to concerns raised by Mr. Nigro (¶47 and Appendix B) regarding the pace of implementation for some populations. I discussed specifically why implementation had been slower to gain momentum in some populations and how the Action Agencies have addressed implementation challenges so that NMFS is confident implementation will be

² While some actions have been changed to be less extensive in scale or scope than initially expected, some have also been changed to be more extensive or provide greater benefits (see First Tehan Decl. ¶39).

accelerated in the remaining time frame of the BiOp. I discussed as a specific example the Yankee Fork spring Chinook salmon population (First Tehan Decl. ¶¶45-50).

15. Ms. Kostow (¶39) interprets the above discussions as a list of “numerous reasons for delays, changes and uncertainties.” Once again, her interpretation does not reflect the full context of my first declaration and ignores information that increases the certainty that the required tributary habitat benefits will be achieved (e.g., sufficient replacement actions exist and are identified consistent with overarching strategic frameworks identified in comprehensive planning documents such as recovery plans and subbasin plans; some actions are added or modified to achieve greater benefits than originally anticipated; and the Action Agencies have laid the groundwork for accelerated implementation in populations with less progress to date by conducting additional assessments, building relationships with local implementing partners, and completing required environmental and other regulatory compliance – see First Tehan Decl. ¶¶38-44, 45-50).

16. Ms. Kostow also states that “NOAA also leaves the identification of supplemental actions to the Action Agencies.” Although her exact expectation or implication is unclear, she appears to use this statement to support her arguments regarding uncertainty of tributary habitat benefits. Supplemental actions were identified using the exact same process as for all other actions implemented through the program – i.e., by the Action Agencies, working with their Accord and non-Accord partners on local implementing teams (First Tehan Decl. ¶54). All supplemental actions were informed by limiting factors analyses, tributary and reach assessments, and other studies; the methods and assumptions used in estimating their benefits were rational and clearly documented; expert panels will review the supplemental actions in 2016; they were identified with the same level of detail as the actions that were reviewed by

expert panels; and the Action Agencies are treating implementation of supplemental actions the same as any other actions. For these reasons, I disagree with Ms. Kostow's implication that benefits of supplemental actions are less certain to be achieved.

17. Ms. Kostow, in ¶39, also references my discussion of the timing of implementation and when benefits will occur (First Tehan Decl. ¶¶63-85). In that discussion, I reiterated that the full benefits of some habitat improvement actions may take years (and, in cases such as restoration of riparian areas by planting trees, even decades) to accrue, and that changes in fish survival (and the ability to demonstrate those benefits) are affected by factors including the time necessary for a habitat action to achieve its full benefit, the timing and complexity of the salmonid life-cycle, and natural variability in returns from year to year. I clarified that this lag time is appropriately considered by the expert panels, which estimate habitat change that will occur in the near term (by 2018, the end of the BiOp period) and in the longer term (by 2033, 15 years after the end of the BiOp). I also noted that the Action Agencies use a conservative assumption and base their estimates of habitat function and survival change *only on the expert panels' estimates of habitat benefits that will accrue in the near term* (i.e., through 2018). As a result, many benefits are projected to accrue in the longer term that are not incorporated in the 2008 BiOp's quantitative analysis (First Tehan Decl. ¶66). These facts undermine Ms. Kostow's implications regarding certainty of habitat benefits and support NMFS's determination that the benefits of these habitat actions are sufficiently certain even if they necessarily accrue over time.

18. Contrary to Ms. Kostow's assertion (¶39), the use of replacement actions increases the certainty that the identified tributary habitat benefits will be achieved because it allows the Action Agencies to adapt to real-world conditions as well as to new information regarding which

actions will provide the greatest benefits and to new opportunities to implement more beneficial actions.

19. Also contrary to Ms. Kostow's assertion (¶39), the fact that the Action Agencies work with local recovery planning groups and other local partners to identify actions increases the certainty that benefits will occur because these groups have long and well-established relationships with landowners, and have been engaged in subbasin and recovery planning for over a decade, giving them the requisite understanding of habitat conditions, limiting factors and threats, and action opportunities. For example, in the Upper Columbia, the Action Agencies work with the Upper Columbia Salmon Recovery Board (UCSRB) and its Regional Technical Team (RTT). These are the same groups leading the development and implementation of the Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan (NOAA B413). This allows the Action Agencies to capitalize on the strong local stakeholder relationships the UCSRB has developed since its inception in 1999 (e.g., UCSRB board members include commissioners from Chelan, Douglas, and Okanogan counties and Colville and Yakama Nation tribal representatives). It also allows them to utilize and complement the strong technical foundation that the UCSRB and its RTT have established – for example, the RTT has developed “A Biological Strategy to Protect and Restore Salmonid Habitat in the Upper Columbia Region,” a 200-page document that is regularly updated and includes a scientific foundation for restoration activities in the Upper Columbia, priority areas for habitat protection and restoration, and scoring criteria for evaluating and prioritizing actions (NOAA B47 at 4087 and 4094-4105). Other examples of how the Action Agencies are engaging collaboratively with local partners and stakeholders to carry out scientifically sound work include the Catherine Creek and Grande

Ronde Atlas processes, which are helping to identify and build local support for actions that will provide the most benefit (First Tehan Decl. ¶61).

20. Ms. Kostow (¶39) also refers to the difficulty of detecting habitat and survival benefits at the population scale. In my first declaration, I discussed how the 2008 BiOp research, monitoring, and evaluation (RME) and life-cycle modeling programs are directly dealing in state-of-the-art ways with the complexities of detecting and predicting habitat and survival benefits at the population scale (First Tehan Decl. ¶¶73-85). Furthermore, existing information on fish-habitat relationships, and the results of the RME program to date, have been summarized in the 2014 BiOp (at 232-242) and other documents (e.g., NOAA B41, B355), along with NMFS's determination that such information is adequate to provide reasonable certainty that survival improvements will be achieved.

21. Ms. Kostow goes on to state (¶39) that Oregon's perception of the uncertainty regarding the benefits of habitat actions "is an additional reason that Oregon emphasizes changes in dam operations that will provide more certain and more timely benefits for the species." Absent from this statement is the rationale for why Ms. Kostow believes that changes in dam operations are more certain. NMFS disagrees with Ms. Kostow's implication that survival improvements resulting from increasing spill levels at the mainstem FCRPS dams are substantially more certain than improvements resulting from tributary habitat improvement actions. Oregon's hypothesized benefit from increased spill is based on correlative analysis that NMFS explicitly considered in the 2014 BiOp, but did not adopt (see 2014 BiOp at 380-382; also see the first 2015 Graves Declaration, ECF No. 2005, ¶¶ 30-34).

22. In ¶40 of her declaration, Ms. Kostow states that the derivation of habitat quality improvements (HQIs) "remains unexplained" and that the habitat quality improvements (HQIs)

projected for each population “appear to be developed behind closed doors by the Action Agencies (see paragraph 12 in Tehan’s declaration).”

23. Ms. Kostow is incorrect. The derivation of HQIs is in fact explained in multiple documents (see, e.g., the 2007 Comprehensive Analysis, Appendix C, Annex 3 [NOAA B422 at 45215-45222]; the 2013 Comprehensive Evaluation, Appendix D, Attachment 3 [NOAA B47 at 4112-4147]; and the 2014 BiOp at 250-252). While it is true that the Action Agencies derive the HQIs, to say that they do so “behind closed doors” implies a lack of transparency that does not exist. The Action Agencies derive the HQIs using the results of the expert panel process and an algebraic formula that is clearly documented, transparent as to its derivation, and reproducible.

24. As we explained in response to similar comments from Oregon on the draft 2014 BiOp (see 2014 RTC at 20, 24), the method used for most populations in the 2008 BiOp (and the 2014 BiOp) to estimate HQIs was developed by the Remand Collaboration Habitat Work Group (CHW). The CHW was convened in 2006 at the request of the Policy Work Group formed as part of the court-ordered remand of NOAA Fisheries 2004 FCRPS BiOp. Members of the CHW represented the states (including Oregon [see, e.g., 2008 NOAA C0253, C0262]),³ tribes, and Federal agencies involved in the remand collaboration process and were selected for their technical expertise. The approaches that the CHW considered, and their final recommendations, are documented in Appendix C of the 2007 Comprehensive Assessment (NOAA B422 at 45182-45222) and summarized in the 2014 BiOp (at 250-251).

25. Consistent with the CHW’s recommendations, expert panels evaluate changes in habitat function expected from implementation of tributary habitat improvement actions. As steps in

³ Oregon Department of Fish and Wildlife staff also participate on the expert panels (see, e.g., BR00088271-73 and BR00088960), and panels are briefed on how the expert panel determinations of change in limiting factor function are converted to HQIs.

this process, they identify and weight the habitat assessment units within each population; identify and weight the factors limiting habitat function in each assessment unit; identify the current extent to which each limiting factor is functioning relative to properly functioning condition; and predict how a relevant limiting factor function will change as a result of implementation of tributary habitat improvement actions (for more detailed descriptions, see 2014 BiOp at 247-249; NOAA B40, B47 at 4112-4147, and B422 at 45182-45222).

26. Once the expert panels have completed these steps, the Action Agencies use the expert panels' estimates of changes in limiting factor function and the well-documented algebraic formula developed by the CHW to (1) determine an overall habitat function for each habitat assessment unit under both current and projected (2018) conditions (by multiplying limiting factor weight by limiting factor status and summing the result for all limiting factors); (2) derive current overall population-level habitat function under both current and projected (2018) conditions (by multiplying current and projected assessment unit habitat function by assessment unit weight and then summing all assessment units within a population); (3) convert habitat function to survival by multiplying current and updated habitat condition by the slope of the linear egg-to-smolt survival function developed by the CHW for Chinook salmon and steelhead; (4) calculate change in population level survival estimates from current to projected (2018) condition. The formula thus accounts for weight or relative importance of each limiting factor within an assessment unit, weight or relative importance of each assessment unit within a population, projected change in habitat function, and the conversion of habitat change to survival change. For more detailed descriptions, see the 2014 BiOp at 250-252; NOAA B40, B47 at 4112-4147, and B422 at 45215-45222.

27. Early in the implementation of the program, the Action Agencies made these calculations in Excel spreadsheets (see, e.g., 2010 NOAA S.23 - S.33; S.37- S. 46). Because of the time involved in creating and performing quality control on these spreadsheets, the Action Agencies enhanced their automated database system (www.cbfish.org) to include the HQI calculation. The expert panels' determinations of projected change in each limiting factor in each assessment unit are recorded in the automated database (www.cbfish.org). The Action Agencies download this information from the database to Excel spreadsheets, which they send to the expert panels for review (see, e.g., BR00110988-89, BR00110868-69, and BR00109804-07). When the final figures are recorded in the database, the HQIs for each population are automatically calculated using the formula developed by the CHW (explained in the multiple documents cited above, in ¶26). Having the Action Agencies perform this algebraic calculation, rather than having it performed by multiple groups, ensures consistency and appropriate quality control.

28. Ms. Kostow goes on to state that “neither Tehan, nor the 2014 FCRPS BiOp explains the methodology by which the summary metrics that are reported by the Action Agencies (for example, acres of wetland protected) become the HQIs.” I clarified previously (First Tehan Decl. ¶76, fn. 24) that the HQI is derived directly from the expert panel determinations of current and predicted limiting factor function as a result of implementation of habitat improvement actions (also see ¶25,above). As described above (¶25), the expert panels evaluate actions and their effects on limiting factor function at the assessment unit level (which is a sub-unit of a population). In their Comprehensive Evaluations (see, e.g., NMFS B47), the Action Agencies simply aggregate metrics from the assessment unit level to the population level.

29. In conclusion, while Ms. Kostow asserts that the aspects of the tributary habitat program she mentions “cast the final resolution of habitat actions and benefits into an uncertain future,” I disagree. As demonstrated in the 2008 BiOp and in this and my first declaration, existing science on fish-habitat relationships provides reasonable certainty that the needed survival benefits will be achieved. In addition, the Action Agencies have demonstrated significant progress in implementation. The program is further strengthened by a strategic and adaptive framework that capitalizes on state-of-the-art monitoring and research as well as upon strong partnerships at both the technical and management level with the many state, local, and tribal entities that are devoted to salmon recovery throughout the interior Columbia River Basin. The tributary habitat program is making a major contribution not only to the RPA but to the long-term tributary habitat recovery needs of salmon and steelhead, and its research and monitoring program are supporting implementation and advancing the science of habitat restoration and salmon recovery.

30. I declare under penalty of perjury that the foregoing is true and correct. Executed on May 5, 2015, in Portland, Oregon.


[Michael Tehan]