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UNITED STATES DISTRICT COURT
DISTRICT OF OREGON

NATIONAL WILDLIFE FEDERATION, *et al.*

Civil No. 01-640-RE

Plaintiffs,

v.

2008 DECLARATION OF
KIM W. KRATZ

NATIONAL MARINE FISHERIES
SERVICE, *et al.*

Defendants.

I, Kim W. Kratz, declare and state as follows:

1. I am the Director of Oregon State Habitat Office for the National Marine Fisheries Service (NMFS) in the Northwest Region, which includes the states of Oregon, Washington, Idaho and Montana. I have been in this position since August, 2008. I have been employed by NMFS as a fishery biologist, working on the impacts of land management on salmon and steelhead and their habitats, since 1997. I currently supervise NMFS' Oregon State Habitat Office staff in the implementation of the Endangered Species Act (ESA) for species of salmon and steelhead affected by land management activities occurring in the state of Oregon. From September, 1997, to August, 2008, I was a policy advisor in the Habitat Conservation Division Regional Office working on ESA consultations concerning Pacific salmonids and their habitat. My responsibilities included the development and implementation of the offsite tributary and estuary habitat mitigation programs for the Federal Columbia River Power System (FCRPS) biological opinions. In 2006, 2007 and 2008 I co-chaired two Policy Working Group (PWG) technical workgroups as part of the collaboration with states and tribes for the FCRPS Remand. The Collaboration Habitat Workgroup (CHW) developed the approach to identify habitat and biological benefits of tributary and estuary actions. The Performance Standards and RM&E Workgroup developed approaches to research, monitoring and evaluation concerning salmonid habitat associated with the mitigation programs of the FCRPS RPA.

2. I have a Ph.D. in biology (Aquatic Population and Community Ecology option) from the University of California at Santa Barbara, awarded in 1997. I obtained a B.S. in Wildlife Biology (Aquatic option) from the University of Montana, Missoula, in 1979, and a master's degree in Biology from the University of Nevada, Reno in 1984. My master's and doctoral research and peer-reviewed publications concern quantitative ecology of freshwater

systems.

3. For NMFS, I have participated in ESA consultations concerning the FCRPS since 1997. There have been three biological opinions issued by NMFS concerning comprehensive operations of the FCRPS since 1997, the most recent issued on May 5, 2008. From November 2005 through May 2008, I was responsible for supervising the Habitat Conservation Division's contributions to the final biological opinion. In preparation for this declaration, I have reviewed NMFS' Supplemental Comprehensive Analysis, FCRPS biological opinion and supporting materials for these documents; and the declarations filed on behalf of the plaintiffs' motions for summary judgment by Frederick Olney, Edward Bowles and Jack Williams.

4. This declaration is also based on information provided and analyses prepared by NMFS staff in the Habitat Conservation Division and the Salmon Recovery Division. The purpose of this declaration is to address technical issues concerning the effects on listed salmonids of the offsite mitigation program for tributary and estuarine habitat required by the 2008 FCRPS Biological Opinion.

TRIBUTARY HABITAT ISSUES

Benefits From Habitat Mitigation Program

5. The Action Agencies' Comprehensive Analysis, in Appendix C, and the NOAA Biological Opinion, Section 7.2.2, provide a comprehensive overview of the analysis used to estimate habitat improvement and survival benefits available. This is the method developed by the CHW that I co-chaired. It represents the best method available considering the current development of the science and the availability of data. It is an analysis that provided the most detail available about habitat used by particular populations, and, in some cases, subpopulations, of the listed salmon and steelhead. At the same time it was an analysis that could be

accomplished in the time available for the remand and ESA consultation. It is also an analysis that can be updated to inform the implementation of the RPA as new information becomes available through research, monitoring and evaluation (RM&E) and recovery plans are completed. The analysis used by NOAA represents, in my opinion, the best available science. Furthermore, its conclusions are reliable for defining reasonable, achievable commitments by the Action Agencies to their ten year program of habitat improvement.

6. Mr. Bowles discusses the RPA's strategy for tributary habitat in his declaration and asserts, in paragraph 160, that it "does not consider or account for the probability that future habitat conditions will continue to degrade and fails to adjust future survival benefits accordingly." Mr. Bowles is mistaken. The RPA's strategy is entitled "Habitat Strategy 1 – Protect and Improve Tributary Habitat Based on Biological Needs and Prioritized Actions." This strategy, which includes the protection of tributary habitat in its title, is laid out in RPA Nos. 34 and 35. (NOAA AR A.1, Appendix 1 RPA Table, pp. 40 – 46.) Moreover, this habitat protection objective was explicitly incorporated into the process for estimating habitat improvement potential developed by the CHW. The CHW's guidance¹ to local biologists² was to "estimate the degree of change for each environmental attribute that can be expected from the entire set of actions intended to affect the attribute. Estimates take these variables into consideration and the biologists are instructed to provide comments in the last column of the worksheet for each individual or multiple population assessment unit(s) (subbasin, watershed, or subwatershed) to note any of the following variables which caused a substantially lower

¹ The "Guidance from the Habitat Technical Subgroup of the BiOp Remand Collaboration for Providing Columbia Basin Tributary Habitat Action Information" begins on Acrobat p. 21 of [NOAA AR C.0129, Attachment]. These steps are on Acrobat p. 29-30 under the heading "Change of General Limiting Factor from Existing Condition to Optimal Function."

² Footnote 2 on p. C-1-9 to the Comprehensive Analysis [NOAA AR B.0092] describes the expertise of the local biologists enlisted in these efforts as "employed by sovereign tribes and State and Federal agencies and were intimately familiar with the biological and physical status and needs of anadromous fish as well as the salient details entailed in subbasin and recovery planning processes for the salmon and steelhead populations they addressed."

estimate:

- any existing estimates from recovery or subbasin plans or other source;
- context and location of actions;
- extent of the actions and resulting treatment of limiting factors;
- effectiveness of methods used in implementing the actions;
- interdependence of limiting factors treated by the actions with other factors and extent to which these other factors are also treated;
- degree of certainty that actions will have the expected effect on limiting factors and
- *risk of effects from other threats that would confound or reduce the positive effects of the actions.*" (emphasis added) (NOAA AR C.129 at Acrobat pp. 29-30.)

Clearly, the RPA's strategy for tributary habitat included a criterion to explicitly consider the point Mr. Bowles raises. The habitat strategy does consider future habitat conditions in estimating survival benefits from habitat actions.

7. Mr. Bowles also asserts, in paragraph 161 of his declaration, that the BiOp treated limiting factors, habitat conditions and survival improvements independently when the spatial relationship of these elements was important and could reduce their significance. Mr. Bowles is again mistaken, the spatial relationship was taken into account by the assessment of survival improvement potentially available and will be taken into account in project assessment. The guidance provided to the local experts that evaluated the habitat quality (NOAA AR C.129 at Acrobat pp. 29-30) instructed them to take these variables into consideration. They were never instructed to treat them independent of each other. See the above-referenced Guidance, particularly the second, third and fifth bulleted items.

Assessment units were identified by the local biologists based on their knowledge of the area, common threats and limiting factors for individual populations. The assessment unit(s) size was based on the spatial delineation of the population in the tributary system. Guidance to the biologists directed them to evaluate the current status of each limiting factor in the assessment

unit under consideration and to estimate the improvement that the implemented action would confer to each limiting factor, if any. In Mr. Bowles example, biologists evaluating the effect of the restoration of riparian function would have understood that riparian restoration could not improve the status of the water temperature limiting factor since the water temperature was elevated when the water from upstream arrived at the assessment unit boundary and increased shade does not reduce water temperatures. Hence no benefit could be ascribed unless it could be demonstrated that the action prevented further increases in temperature which would have further reduced survival in the assessment unit. Further, no survival benefits were conferred from any habitat action if the function of any identified limiting factor in the assessment unit was below 20% of the optimum needed by anadromous salmonids (NMFS AR C0241, p63, footnote). This criterion was applied in recognition that habitat functions upon which salmonid populations rely are not independent and substitutable, but interrelated. The benefit to the population from actions implemented in each assessment unit was weighted by the proportional representation of the assessment unit to the total population area. For example it may be possible to improve the status of a limiting factor such that habitat quality in the assessment unit will double. However, if the assessment unit only impacts a small percentage of the population the habitat improvement will provide only a small improvement to survival at the population scale. Implementation of the RPA's requires the local experts to keep projects in the context of the whole population, rather than isolated aspects of the population.

8. Mr. Bowles asserts, in paragraph 166 of his declaration, that the science does not support a reliance on habitat survival improvements to offset mortality in other life stages, relying in large part on a paper by Budy and Schaller, 2007, (NOAA AR B. 51). NOAA responded to similar assertions made in comments by Oregon in its Response to Comment Document (NOAA

AR C.1155), Response 2-Q, page 12-13, and also Response 9-C, pages 24-25.

9. In addition to the points made in NOAA's response to these comments, above, the conclusions reached by the local biologists using the CHW methodology are consistent with Budy and Schaller (A.R. B51, Acrobat page 8) who said that the Pahsimeroi River population (Upper Salmon River MPG) demonstrated the greatest potential for improved survival from tributary habitat restoration, with the Upper Mainstem Grande Ronde, South Fork Mainstem Salmon, and Lemhi populations also demonstrating substantial potential for increased survival.

10. In agreement with this assessment, the Action Agencies have committed to achieving improvements in habitat function of 41% for the Pahsimeroi Chinook, 23% for the Upper Grande Ronde population, 1% for the South Fork Salmon Chinook population, and 7% for the Lemhi River population. (Table 5-9 CA) These improvements are actually less than the full potential improvements that could be gained as estimated by the local biologists participating in the remand collaboration. The action agencies have made no commitment and therefore, NOAA Fisheries did not rely on habitat improvements in most of the other populations reviewed by Budy and Schaller (Minam, Big Sheep Creek, Bear Valley Creek, and Sulphur Creek). The exception is the Imnaha River which Budy and Schaller found "demonstrated little room for improvement." Ibid. at 9. The action agencies are committed to a 1% improvement in habitat for the Imnaha Chinook population.

11. Mr. Bowles questions the adequacy, given uncertainties, of NOAA's basis for converting changes in habitat function to survival changes in paragraph 154 of his declaration. This issue was also raised in comments on the 10/31/2007 draft of the FCRPS BiOp to which NOAA responded in its Response to Comments, at 9-D. NOAA AR C.1155 at Acrobat pp. 27-28. A particular strategy for uncertainty in the available science, referenced in the NOAA's

response, is found in RPA Action No. 57 which directs the Action Agencies to “annually convene a [regional technical] group to expand and refine models relating habitat actions to ecosystem function and salmon survival by incorporating research and monitoring results and other relevant information.” NOAA AR A.1 at Acrobat pp. 913-914. The expert group is now being formed from federal, state and tribal biologists.

12. The strategies for uncertainty also include the expert panels identified in RPA Action 35- 37. These are comprised of local fish and habitat biologists and are charged to evaluate the effect of habitat actions on limiting factors and habitat quality. While the regional technical group in RPA action 57 is established to refine the initial empirical relationships that the PWG habitat group developed and to translate the resultant habitat improvement into fish survival, the intent for the panels of RPA Actions 35-37 was to better estimate the likely benefit of projects. The strategy recognizes the need to improve the region’s predictive capacity in the short-term while monitoring occurs over the longer-term.] It is the short-term modeling that will feed into the adaptive management loop within the life of this BiOp benefiting from the work of these local panels and the expert group.

Implementation of Habitat Mitigation Program

13. Mr. Bowles further asserts in his declaration, paragraph 153 and following, that “[s]urvival improvements listed in the 2008 Biological Opinion represent an open-ended commitment to achieve identified population survival levels without knowing the specifics of what limiting factors need to be addressed, what projects are necessary to address those factors or whether required projects will be available or feasible to implement.” Mr. Bowles is incorrect. The FCRPS Biological Opinion establishes survival improvement commitments for focal populations (see RPA Table 5) and specific time periods to achieve incremental

improvement (RPA action 35). The Action Agencies are responsible for achieving those biological survival improvements, not for spending a specified amount of money. NOAA Fisheries based its assessment on the habitat program on achievement of those survival commitments, not on the Action Agencies estimates of current or future funding amounts or how funds will be distributed. RPA Actions 35 and 57 describe mechanisms for project implementation review, model refinement, and empirical studies that will be used to confirm that habitat improvements are being implemented as expected and that estimates of the associated survival improvements are consistent with the commitments in the Biological Opinion.

14. The availability and feasibility of projects for beyond 2009 was determined by the local participants in determining the level of improvement in each primary limiting factor. See NOAA's Response to Comments (C1155) 10-A p. 27 and 10-D p. 28 ("Projects to be implemented in FY 2010–2018 will be proposed by local experts with respect to addressing limiting factors identified in Recovery Plans and ability to achieve habitat and survival improvements. These projects will also receive scientific review by the ISRP.")

15. A good example of how the procedure worked for guiding project selection in the years after 2009 is found in a table prepared by biologists for the Nez Perce Tribe. This was in the First Attachment to the Declaration of Emmit E. Taylor, Jr., and is also found in NOAA's Supplement to the Administrative Record, filed October 21, 2008, S.37. The tribal biologists proposed additional projects for 2007-2009 and 2010-2016 above what the action agencies had agreed to fund at the time. These are described in the above-referenced table in columns AA and AC respectively. For example in the Lower Lochsa Assessment Unit they describe the 2007-2009 actions as follows:

Funding in this area would allow actions to address limiting factors. Actions include: 20 miles road removal per year, 0.5 miles of road improvement, 20 acres of riparian restoration

per year, retiring grazing allotments, 100 acres of revegetation per year, 1 fish passage improvement project per year, and 200 acres of weed treatment per year. For 2010-2016 actions are described as: Project activity will occur at the 07-09 approved level, road decommissioning / improvement, riparian restoration, fish passage improvement, revegetation, weed treatment.

16. The Nez Perce Tribe's biologists then made their habitat improvement estimates and entered those numbers into the survival estimate formula. (Egg-smolt PAs tab) The same was done for other assessment units. The result was a change in the 10 year improvement from 7% (as funded by BPA) to 19% as proposed by Nez Perce Tribe. The action agencies have committed to a 17% increase for the Lochsa B-run steelhead population. It is reasonable to assume site specific projects will be available and feasible as demonstrated by the Nez Perce Tribe. In order to achieve the 17% increase in habitat quality, the action agencies will need to implement future projects proposed by the Nez Perce within these categories or suitable replacement projects that achieve the same benefit. The Nez Perce Tribe has conducted culvert inventories and other inventories and assessments as a major contributor to the Clearwater Subbasin Plan, called for by the Northwest Power and Conservation Council's Fish and Wildlife Program. Specific actions will be drawn from these inventories and assessments.

17. Mr. Olney also raised this concern, asserting that survival improvements are claimed for actions that have not been identified and do not exist. Olney Declaration ¶¶82-83. Mr. Olney does not understand that the current local knowledge of the target habitat is sufficient for confidence that projects to be implemented during the time period 2010-2018 to achieve the Action Agencies' survival improvement commitment are known and feasible. We painstakingly worked with local groups and biologists to identify the primary limiting factors and what could be done to address them. All future actions will address those primary habitat limiting factors. For example, low stream flow will be addressed with water purchases or leases, and agreements

not to divert water. Barriers will be addressed by removing the barrier whether it is caused by low flow, an impassible culvert or improperly constructed irrigation diversion. Entrainment in irrigation diversions will be addressed by screening. In other cases, diversions will be eliminated and/or consolidated in screened diversions. Each of the tables developed for the populations (see NOAA AR S. 23 Column 9 for example), list the primary limiting factors and actions to address them. The local groups of experts determined how much could be done to address each factor. See S. 23 Column 9.

18. The FCRPS Action Agencies will select and fund projects to achieve those survival improvement standards in coordination with existing regional project planning, identification, prioritization and scientific review processes. For example, Bonneville Power Administration will utilize the Northwest Power and Conservation Council's (NWPCC) process for selection of projects. During the 2007-2009 time period, projects to be implemented have undergone review by the Independent Scientific Review Panel (ISRP) which considers the efficacy of proposals in its review as part of the NWPCC process. Projects to be implemented in FY 2010–2018 will be proposed by local experts with respect to addressing limiting factors identified in Recovery Plans and ability to achieve habitat and survival improvements. These projects will also receive scientific review by the ISRP. NOAA is confident, from this, that projects selected for the RPA Habitat Strategy will be implementable and will bring valuable survival improvement benefits to the target salmon and steelhead populations.

19. Both Mr. Olney (at ¶ 84) and Mr. Bowles (at ¶¶169-170) express doubt that there will be projects available in the event that a planned project proves to be infeasible or ineffective. Their concerns are pure speculation, in contrast to NOAA's assessment which is based on extensive time spent with local biologists who know the target habitat, the limiting factors and

the actions to be done to improve that habitat sufficiently to improve the survival of the intended salmon or steelhead population and ESU or DPS. NOAA does not dispute the fact that substitute projects may be warranted by changes in circumstance. For example, there may be a project to remove a fish passage barrier to access properly functioning habitat. If that watershed would burn in a forest fire, then increased fine sediment would become a primary limiting factor. In that situation it would be more beneficial to the population to substitute another project or group of projects that would provide the same or more benefit. Specific projects are being developed continuously by stakeholders. Substitute projects can be implemented in a reasonable time frame.

20. An example which demonstrates that the development of replacement projects is feasible in practice is that of the “Glory Hole” project proposed by the Nez Perce Tribe requiring the participation of the Tribe, the U.S. Forest Service, the National Forest Foundation, and private landowners. The proposal was to eliminate a passage barrier above the Glory Hole on the East Fork South Fork (EFSF) Salmon River. At the 11th hour, we were informed that the project would not go forward because the private landowner withdrew his support. The Nez Perce Tribe approached BPA with alternative projects. See Attachments to 4/8/08 e-mail from Emmit Taylor to Vince Kozakiewicz (NOAA AR Supplement S.2.1)³. A draft letter from the Nez Perce Tribe to NOAA that was attached to this email stated:

"The proposed project work addresses two main components: a) barrier removal and b) sediment reduction. Specific actions to address these issues include replacing two culverts, decommissioning/relocating roads, and the associated enhancement of wetland/riparian areas. Additionally, the approaches to the bridges along the South Fork Salmon River will be paved to further reduce sediment delivery. Two culverts identified as barriers and slated for replacement are located on Salt and Sugar Creeks. (See attached map.) Combined, the replacement of these two culverts restores 5 miles of

³ Full cite: NOAA AR S.2.1 -- 623 Emails from 10/7/2005 to 5/5/2008: Email from Emmit E. Taylor, Jr. (NPT) to Vince Kozakiewicz (NMFS) dated 4/8/2008 at 3:55:57 pm to which there are four attachments: Abstract.doc, NOAA Letter.doc, Salmon_SF Salmon_Habitat_NPT Actions_03-7-08.xls, and Site Specific Project Map.jpg

upstream access to native and anadromous fish populations.

Road decommissioning/relocation will occur in the following drainages: Sugar Creek, Pheobe Creek, Teapot Creek, Jakie Creek, Cow Creek, Fitsum Creek, Zena Creek, Vibika Creek, and Ruby Meadows. (See attached map.) Roads in these particular areas are not designated Forest system roads and therefore, are not necessary on the landscape. Additionally, these areas have high road densities and are chronic contributors of sediment due to unstable soil conditions. Overall, they are hydrologically degrading watershed conditions. Additionally, a large portion of the Payette National Forest was burned during 2007, creating potential for mass soil movement, especially in the batholiths.

An estimated 12 bridges are to have the approaches paved as this has been identified as a source of direct sediment to the South Fork Salmon River. This method has successfully been implemented on the Boise National Forest."

21. BPA indicated that it would fund the substitute project if the benefits to salmon and steelhead were comparable. NOAA agreed that the substitute project would provide adequate benefits. (See e-mails and attachments between Vince Kozakiewicz, NMFS, and Mr. Emmitt E. Taylor Jr., Nez Perce Tribe, sent between 4/8/08 and 4/11/08, NOAA AR Supplement S.2.1.) The Glory Hole project would have benefitted the EFSF Salmon River Chinook and SF Salmon River steelhead populations. From the FCRPS BiOp prospective, the Action Agencies made no explicit commitment to benefit EFSF Chinook while they committed to achieve a one percent survival improvement for SF Salmon steelhead. The Nez Perce Tribe's proposed substitute projects were outside the EFSF watershed, where the original Glory Hole project was located. Instead they would benefit South Fork (SF) Salmon Chinook, SF Salmon steelhead, and Secesch River Chinook and steelhead. The Action Agencies' commitments to these populations are, <1% SF Chinook and steelhead, <1% to Secesch Chinook, 1% to SF steelhead, and 6% to Secesch steelhead. (NOAA AR A.1, Appendix RPA Table, Action 35, Table 5). The Glory Hole Project would have addressed a passage barrier for the EFSF Chinook and SF steelhead. In essence, the "Glory Hole" project would give the Action Agencies credit toward their one percent commitment to SF steelhead and provide benefit to EFSF Chinook, a population where they

made no commitment. The replacement projects will benefit all SF Salmon Major Population Group (MPG) populations. The Nez Perce Tribe proposed substitute projects would be added to those already calculated to achieve benefits for the appropriate populations.

22. This incident illustrates that the FCRPS RPA, Action Nos. 34 and 35, take advantage of the ongoing collaboration process to find projects that can be implemented by willing entities, along with a commitment from the Action Agencies to fund the projects at a level to achieve identified improvements for salmon and steelhead populations. The commitment is to a specific improvement in habitat quality, not a specific project. The collaboration process identified where and how much improvement in habitat quality could be made. The action agencies made a commitment to different levels for different populations. In all cases, the potential for habitat improvement, as determined by the local experts, met or, more often, exceeded the commitment by the Action Agencies. Therefore, there is sufficient opportunity for habitat restoration work to meet the Action Agencies' commitments. As the Nez Perce Tribe was able to find substitute projects when the Glory Hole project fell through, there are more actions available for similar situations. The habitat improvement is reasonably certain to occur because there is ample potential, there are entities willing to perform the work, and the action agencies committed to a level of improvement, not a specific dollar amount.

23. RPA action 35 identifies the Action Agencies' population-specific survival improvement commitments that will be realized through tributary habitat restoration projects. High priority populations are those populations where survival improvements are necessary to ensure that the ESU has an adequate potential for recovery. Funding and/or technical assistance for the non-High Priority populations is discretionary unless survival improvement commitments in High Priority populations (RPA Table 5) prove unobtainable, and survival improvements are

necessary from non-bolded populations for the Action Agencies to achieve equivalent MPG or ESU survival benefits. In that event, funding/or technical assistance for non-High Priority populations are not discretionary and project selection must adhere to the rigid mechanism identified in RPA action 35.

24. Mr. Bowles, ¶¶ 168-169, and Dr. Williams, ¶ 18, express concerns about the consequences if suitable habitat projects are not found and implemented by the Action Agencies, despite NOAA's and the Action Agencies' extensive information gathering at the local scale and collaboration with local entities. They further express concern that the Action Agencies' commitment to survival improvements is capped at a dollar amount. These concerns are unfounded. RPA Actions 34 and 35 are not conditioned upon a spending limit of any kind, nor did NOAA assume that the expectations for the effects of these RPA Actions should be so conditioned. NOAA AR C.1155 Response 10-E at Acrobat p. 30. By their Records of Decisions the Action Agencies have adopted NOAA's RPA for implementation and therefore made the commitments to achieve the stated habitat-based survival commitments. NOAA has found that there is an adequate array of habitat improvement projects available for the Action Agencies to meet their commitment.

25. Mr. Olney (¶ 82) points out that many of the habitat improvement projects will involve federally owned lands, either by the U.S. Forest Service or the Bureau of Land Management, and therefore will need to undergo further ESA § 7(a)(2) consultation with the implication that NOAA cannot consider these projects. Mr. Olney is mistaken. NOAA has anticipated this eventuality. It is our experience that projects that are intended to benefit listed species by restoring the function of their habitat are highly unlikely to jeopardize listed species. NOAA is consulting programmatically on the habitat improvement program called for by its

RPA in the 2008 FCRPS BiOp. The type of project expected is contemplated programmatically for the purposes of ESA § 7(a)(2). What is left for the further detail available after projects are ready for implementation is a determination of incidental take likely to result even though the projects are beneficial, on balance, for listed salmon and steelhead. NOAA has issued a programmatic biological opinion for BPA's habitat program which provides incidental take coverage for projects that fall within predictable parameters (NOAA AR A.1 p 14-6, B.362). Those projects that fall outside such expectations would be the subject of site-specific ESA consultation to confirm the no jeopardy expectation and to define allowable incidental take and appropriate terms and conditions to minimize such take.

ESTUARY HABITAT ISSUES

26. NOAA concluded that the estuary module (NOAA AR C931) represents the best available summary of the limiting factors and threats in the estuary and actions needed to respond to them. It affords a useful approach to evaluating potential action effectiveness in the absence of quantitative data with which to make more mechanistic predictions. This is because the module was based on the best available science concerning the Columbia River estuary to date. There is an extensive reference list in the estuary module, including individual peer reviewed papers and key synthesis papers of research, data, and information on the estuary. Research and information from NMFS' Northwest Fisheries Science Center cited in the reference list formed the basis for key portions of the estuary module. NOAA AR C.322. In paragraphs 65 and 66, Mr. Olney states that "survival estimates were developed by the consultant without any apparent input from experts in the region." He also states that, "The consultant added to this problem by developing the per project survival benefits without using a formal expert opinion process." To the contrary, survival estimates in the module were developed with

input from technical experts at the NOAA Fisheries Northwest Regional Office, NOAA Northwest Fisheries Science Center, Lower Columbia River Estuary Partnership (LCREP), Lower Columbia Fish Recovery Board, and elsewhere. At the time this portion of the FCRPS BiOp RPA was developed, the September 2006 draft of the estuary recovery model was the most current source of information. The final version of the module will be explicit regarding experts who were consulted.

27. Mr. Olney also comments on the issue of uncertainty in paragraph #66 noting that the use of the consultant's approach ... "adds an additional level of uncertainty to the quantitative estimates of survival improvements ..." In response, the estuary module itself contains extensive discussion of the uncertainty inherent in the survival improvement targets and the allocation of that benefit among the suite of management actions. The estuary module also points out that a more quantitative or mechanistic approach is not possible due to lack of information and recommends monitoring and adaptive management to improve our understanding of many aspects of the estuary over time.

28. The Bowles declaration also comments on a lack of scientific approach taken to develop survival estimates for the estuary. In paragraph 162, Mr. Bowles agrees with the LCREP criteria that rate certainty of success and potential benefits of each Federal project that the Action Agencies propose to implement to meet BiOp requirements, but he criticizes the final assignment of survival benefits for projects. The fact of the matter is that the BiOp RPA 36 committed the Action Agencies to survival improvements of 9.0% and 5.7% for ocean and stream-type juvenile salmonids, respectively, regardless of a particular suite of actions. Furthermore, NOAA took this approach in part due to the uncertainty inherent in estimating the benefits of specific actions.

In order to develop the estuary RPA actions in the BiOp, there was extensive collaboration with the Action Agencies and the PWG. NMFS and the Action Agencies held frequent meetings as part of the FCRPS Habitat group formed to address tributary and estuary habitat issues, as well as additional meetings with the Action Agencies outside that group to review proposed estuary restoration projects for BiOp mitigation (NOAA AR C94). All parties to the PWG were invited to participate in the development of the approach to estimate the survival benefits associated with estuary actions and given opportunity to review and comment on the draft estuary approach. The state of Oregon had an opportunity to suggest an alternative approach for calculating survival benefits that would address the state's concerns with the approach taken by the Action Agencies. No alternative approach was provided. If the state had come forward with an alternative approach, NOAA would have considered it as it developed the BiOp. In the absence of such an alternative, NOAA reviewed the approach provided by the Action Agencies and determined that it was appropriate to use in the development of on-the-ground estuary restoration projects for BiOp implementation.

29. As BiOp implementation occurs, a number of steps will be taken to ensure that the best quality restoration projects from the standpoint of meeting the survival improvements of 9.0% and 5.7% for ocean and stream-type juvenile salmonids. The benefits of potential projects will be considered by the Action Agencies and the LCREP Science workgroup in coordination with other regional experts using recovery planning products and explicit project selection criteria. As part of the evaluation process project-related improvements to habitat will be related to changes in salmonid survival (AR RPA 37). This process will apply the approach originally applied in the FCRPS BA (Attachment B.2.2) (*Estimated Benefits of Federal Agency Habitat Projects in the Lower Columbia River Estuary*) and all subsequent information on the relationship between actions, habitat and salmon productivity models developed through the FCRPS RM&E to estimate the change in

overall estuary habitat and resultant change in population survival.” One of the key RM&E documents that will be used by the Action Agencies to implement the RM&E program for the estuary will be the draft *Federal Columbia River Estuary Research, Monitoring, and Evaluation Program* (Johnson et al 2006). This document was specifically prepared in support of the 2000 and 2004 BiOps, and has continued to be updated since then. This document and a number of other important RM&E documents are referenced in the September 2006 and November 2007 version of the estuary module and will be used to assist the Action Agencies in implementation the RM&E provisions of RPA 37 in the BiOp (NOAA AR B 347, C326, C931). Mr. Olney and Mr. Bowles imply that there is an inconsistency between the money spent by the Action Agencies to achieve survival improvements compared to the cost estimates in the estuary module. For example, Mr. Olney states, “ Thus, the consultant’s estimates appear to indicate that the Action Agencies for about \$62 million over 12 years, expect to achieve greater survival benefits than the Recovery Plan Module estimated could be achieved at a cost of \$209 million over 25 years.” There is no significant inconsistency. The Action Agencies committed to survival improvements of 9.0% and 5.7% for ocean and stream-type juvenile salmonids. The calculation of those survival improvement numbers was based on information in the estuary module (NOAA AR B.92, Appendix D). This commitment in the BiOp (along with any corresponding expenditures) is but one means by which estuary module actions will be implemented. The module is intended as the estuary component of NOAA’s Columbia Basin recovery plans. Recovery plans are required to identify recovery goals, management actions to achieve those goals, and estimates of the time and cost to implement the actions. Thus recovery plans, and the estuary module as a recovery plan component, identify the full suite of actions needed for recovery. In addition, the implementation time frame for actions in the module is 25 years. The final version of the module will also address the difficulties and uncertainties inherent in developing cost estimates

for recovery actions. Furthermore, the estuary module does not commit any entity to specific funding commitments. The module, like all recovery plans, contains a disclaimer that nothing in the plan “should be construed as a commitment or requirement that any Federal agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 USC 1341, or any other law or regulation.” NOAA intends to use the estuary module as a mechanism for working toward implementation of recovery actions from all sectors, private and public, including, but not limited to, Federal agency support. In the final analysis what is important for the 2008 FCRPS BiOp are the commitments made by the Action Agencies to achieve survival improvements through estuarine habitat improvements. The cost estimates associated are not the controlling factor.

30. Mr. Olney attempts to make the case that survival benefits assigned to protection of existing estuary habitat do not add to increasing current survival rates. “It simply prevents them from declining further.” Mr. Bowles also identifies a similar concern about project acquisition/protection, stating that, “Protection of existing habitats that can halt or reduce the effect of continued degradation, but protection is, in effect, simply maintenance of the status quo and does not increase survival.” This is certainly not the case. Rarely is habitat acquisition not combined with needed restoration actions, either of the purchased property or of connected habitat areas, to improve ecological function which enhances the long-term survival benefits of these actions. Acquisition is a part of a comprehensive strategy for long-term enhancement of estuarine habitat and salmon survival because it arrests and generally improves an otherwise declining baseline thereby adding increased survival benefits in the out years that would not otherwise exist. NOAA does not believe that assigning survival estimates “inflates the estimate of survival benefits.” In order to ensure that this does not happen, NOAA will continue to work

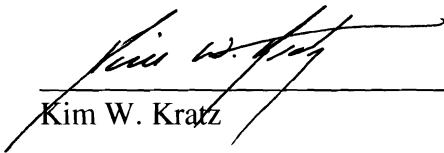
with the Action Agencies to assign the appropriate level of survival benefit based on the merits of the projects presented to it, after the projects have moved through the LCREP science workgroup process and the expert panel process from the Action Agencies.

31. Mr. Olney stated in paragraph 70 that, “Not adequately addressing limiting factors in some areas, for example reducing cormorant predation or toxic contaminants, could reduce or negate survival benefits from improvements in estuary habitats in other areas.” The BiOp acknowledges the need to address cormorant predation. The RPA (Action 46) requires that the Action Agencies “develop a cormorant management plan encompassing additional research, development of a conceptual management plan, and implementation of actions, if warranted, in the estuary.” Regarding toxics, LCREP, for example, is working with the Environmental Protection Agency on a toxics reduction strategy for the Columbia River Basin. NMFS is working with these entities on the implementation of this strategy. Thus, the BiOp is but one forum in which estuary module actions will be implemented. The estuary module identifies a comprehensive set of actions to address all limiting factors. Actions to address many of these limiting factors are already being implemented to some extent in various forums, and through the process of estuary module implementation, additional action implementation and funding needs will be identified.

32. In order to ensure that expert opinions will be used in the selection of estuary restoration projects and the assignment of survival benefits, RPA 37 in the BiOp states that the Action Agencies shall convene an expert regional technical group. This group will use project-specific improvements in habitat metrics to determine the estimated change in survival which would result from full implementation. The Action Agencies will convene this expert regional technical group during the fall/winter of 2008. BPA has contracted with an entity who will aid

the Action Agencies in facilitating and convening the expert regional technical group. Group members will include Federal and state agencies and entities and representatives, and local expert groups such as the LCREP, the Lower Columbia Fish Recovery Board, and other interested parties. The purpose of this group is to provide an additional level of scientific review and screening of the projects proposed by the LCREP science work group to ensure that the Action Agencies use the best available science in the selection of estuary restoration projects.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 24, 2008, in Portland, Oregon.



Kim W. Kratz