JEFFREY H. WOOD, Acting Assistant Attorney General
Environment & Natural Resources Division
SETH M. BARSKY, Chief
S. JAY GOVINDAN, Assistant Chief
ROBERT P. WILLIAMS, Sr. Trial Attorney
KAITLYN POIRIER, Trial Attorney
U.S. Department of Justice
Environment & Natural Resources Division
Wildlife & Marine Resources Section
Ben Franklin Station, P.O. Box 7611
Washington, D.C. 20044-7611
Tel: 202-307-6623; Fax: 202-305-0275
Email: robert.p.williams@usdoj.gov
Email: kaitlyn.poirier@usdoj.gov

Attorneys for Federal Defendants

UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

HOOPA VALLEY TRIBE, Plaintiff, v. U.S. BUREAU OF RECLAMATION, et al., Defendants, and KLAMATH WATER USERS ASSOCIATION, et al., Defendant-Intervenors.	Case No. 3:16-cv-04294-WHO **FEDERAL DEFENDANTS' RESPONSE TO DEFENDANT-INTERVENORS' MOTION FOR RELIEF FROM JUDGMENT AND/OR STAY OF ENFORCEMENT (ECF NO. 139)** Honorable William H. Orrick Hearing Date: April 11, 2018 Hearing Time: 2:00 p.m. Courtroom 2, 17th Floor

TABLE OF CONTENTS

I. INTRODUCTION

Defendant-Intervenors Klamath Water Users Association, Sunnyside Irrigation District, Ben Duval, Klamath Drainage District, Klamath Irrigation District, and Pine Grove Irrigation District (collectively, "Intervenors") have moved this Court to stay enforcement of two flows required in its March 24, 2017 Injunction (ECF No. 111): the winter-spring surface flushing flows modeled on Management Guidance 1 and the emergency dilution flows modeled on Management Guidance 4. Intervenors' Motion, ECF No. 139. Federal Defendants the United States Bureau of Reclamation ("Reclamation") and National Marine Fisheries Service ("NMFS") submit this response to advise the Court regarding Reclamation's ability to implement Management Guidance Measures 1 and 4 under the currently challenging hydrologic conditions.

As the Court may recall, the Injunction contains an internal limitation that requires the Guidance Measures to be implemented only if doing so would not "interfere with conditions necessary to protect the endangered sucker fish [Lost River suckers and shortnose suckers]." Injunction, ECF No. 111 at ¶ 3. As explained more fully below and in the attached declarations, current forecasts do not predict that sufficient water will be available in the Klamath Project in this dry water year to fully implement Management Guidance 1 without causing Upper Klamath Lake (which is designated critical habitat for suckers) to drop below the threshold elevations specified in the 2013 Biological Opinion for the species' protection. *See* Designation of Critical Habitat for Lost River Sucker and Shortnose Sucker, 77 Fed. Reg. 73,739, 73,753 (Dec. 11, 2012). Additionally, there is not enough water for Reclamation to fully implement Management Guidance 4 prior to May 24[1] -- which is more than seven weeks after the specified possible implementation date of April 1 -- without causing Upper Klamath Lake to drop below the threshold elevations. This is true even with a complete shutoff of irrigation deliveries.

The Guidance Document upon which the Court's Injunction is based does not speak to *partial* implementation of Guidance Measures 1 or 4 with less than the full complement of water

[1] Reclamation's models presently indicate that 50,000 acre feet of water may be available for use as an emergency dilution flow on May 24, 2018. The models currently suggest that Reclamation could implement Management Guidance 4 on this date without violating the end-of-month threshold elevations in the 2013 Biological Opinion.

necessary to carry out those measures as they are specified in the Guidance Document. *See* Guidance Document, ECF No. 96-4. However, it is the opinion of the widely-recognized experts in *C. shasta* at the U.S. Fish & Wildlife Service ("USFWS") (authors of the four technical memorandums upon which the Guidance Document was based and whose opinions were reviewed for accuracy by Dr. Sascha Hallett, a *C. shasta* expert from Oregon State University) that partially implementing Management Guidance 4 would increase the "uncertainties … about the potential effectiveness" of Management Guidance 4 and therefore would not provide the intended population-level disease benefits. *See* USFWS Technical Memorandum, Exhibit A at 5. For these reasons, Federal Defendants do not read the Injunction as requiring Reclamation to implement either Guidance Measure partially.

However, rather than foregoing the Guidance Measures, holding water for Management Guidance 4 until May 24 in the (uncertain) event that disease thresholds will be met after that date, or implementing the Guidance Measures only partially, Reclamation has developed a proposed operations plan for 2018. In this challenging water year, Reclamation's proposed operations plan best meets the goal of the Injunction and the interests of all stakeholders. Reclamation's proposal has the support of co-Defendant NMFS and non-party USFWS. Under the proposal, Reclamation would acquire enough supplemental, non-Klamath Project water voluntarily offered by USFWS and utility company PacifiCorp to allow Reclamation to fully implement Management Guidance 1, and forego Management Guidance 4. Reclamation proposes to prioritize Management Guidance 1 because the USFWS disease experts believe it is likely to be more effective than Management Guidance 4 at lowering *C. shasta* disease infection rates in coho salmon. *Id.* at 6; Simondet Decl., Exhibit B at ¶ 4. Reclamation proposes to forego Management Guidance 4 because new information from USFWS experts indicates that there is scientific uncertainty regarding the effectiveness of fully implementing that flow and, as noted above, partially implementing the flow given current hydrologic conditions may not have the intended benefit for coho salmon. Additionally, foregoing Management Guidance 4 would avoid a complete irrigation shutoff until as late as June 15, 2018, which would otherwise result from an

order requiring Reclamation to either attempt to implement Management Guidance 4 on or after May 24 or partially implement Management Guidance 4.

Federal Defendants read the Injunction as prohibiting full implementation of Management Guidance 1 and Management Guidance 4 (prior to the projected date of May 24) in 2018 to protect suckers. Federal Defendants also do not read the Injunction as requiring Reclamation to partially implement either Management Guidance 1 or Management Guidance 4; at best, the Injunction is unclear. In light of these circumstances, the Federal Defendants believe their proposed operations plan for 2018 is consistent with the Court's Injunction. However, because Intervenors have filed their Motion for Relief and any order on that motion could impact Reclamation's 2018 operations, Federal Defendants respectfully provide the Court with the attached proposed order for its consideration. Reclamation held separate meetings with the Hoopa Valley and Yurok Tribes on March 12, 2018 to discuss this proposed operations plan for 2018.[2] Additionally, undersigned counsel met and conferred by telephone with counsel for Plaintiff on March 14, 2018. Counsel for Plaintiff indicated that Plaintiff was not willing to agree to Reclamation's proposed operations plan for 2018.

FACTUAL BACKGROUND

A. Hydrologic Conditions In Water Year 2018

Hydrologic conditions in the Klamath River Basin are well below average due to the limited precipitation and snow water equivalent (a measure of snowpack) that has occurred since December 2018. *See* Plaintiff's Opposition, ECF No. 141 at 1 (discussing the dry hydrologic conditions this year). For example, in the Upper Klamath Basin, cumulative inflows to Upper Klamath Lake during this water year have been some of the lowest observed since 1981. Bottcher Decl., Exhibit C at ¶ 5; Hydrologic Assessment, Exhibit D at 2. In fact, 80 percent of the inflows to Upper Klamath Lake since 1981 have been greater than the inflows seen since this water year began. *Id.* Because of these low inflows, Upper Klamath Lake is projected to reach a peak elevation of only 4,142.73 feet, which is significantly below the full pool elevation of

[2] Reclamation also was party to discussion with the Plaintiffs on the following additional dates: January 10, 2018, January 18, 2018, January 31, 2018, February 9, 2018, and February 13, 2018.

4,143.30 feet. *Id.* To put this in perspective, that is a difference of 47,525 AF between the projected peak and full pool elevations. In addition to low inflows to Upper Klamath Lake and the resulting low lake levels, water accretions between Link River Dam and Iron Gate Dam have also been consistently low throughout the 2018 water year. *Id.* Nearly 70 percent of the accretions seen since 1981 have been greater than the accretions seen this water year. *Id.*

These hydrologic conditions, combined with the future hydrologic conditions forecasted for Upper Klamath Lake by the Natural Resources Conservation Service ("NRCS"), prevent Reclamation from fully implementing Management Guidance 1 as it is designed. Additionally, the dry conditions prevent Reclamation from fully implementing Management Guidance 4 prior to the projected date of May 24 -- which is over seven weeks after the possible start date specified in the Guidance Document. As explained more fully below, in this dry water year, implementing Management Guidance 1 at all, and implementing Management Guidance 4 prior to May 24, would cause Reclamation to miss the conditions necessary to protect suckers contained in the 2013 Biological Opinion.

B. 2013 Biological Opinion Requirements for Suckers

In the 2013 Biological Opinion, USFWS developed a formula that calculates the end-of-month surface elevations for Upper Klamath Lake based on the cumulative inflows into the Lake and the previous month's lake volume. BOR AR 000783-95. The end-of-month elevations "represent the extreme lower limits of elevations that should be observed in" Upper Klamath Lake during the term of the proposed action except in rare cases (defined as no more than 5 percent of the months during the term of the Biological Opinion). BOR AR 001059; BOR AR 000781; Hydrologic Assessment, Exhibit D at 1. Elevations in Upper Klamath Lake "should rarely be at these end-of-month thresholds; most of the time, end-of-month elevations should be well above the thresholds." BOR AR 001059. Whenever operation of the Klamath Project causes Upper Klamath Lake elevations "to trend downwards towards the thresholds, special scrutiny is required." *Id.* Upper Klamath Lake elevations "approaching a threshold indicate that Reclamation must identify the reasons for the unexpected elevations and consult with the Services [USFWS and NMFS] regarding implementation of potential adaptive management

actions to prevent violation of the threshold." BOR AR 000782. If Upper Klamath Lake end-of-month thresholds are violated and "USFWS does not accept the rationale for the violation or mitigation of the effects [of the violation], the action will be declared to be outside of the USFWS analysis and may trigger reinitiation of consultation." *Id.*

USFWS also concluded in its 2013 Biological Opinion that, at each life stage, suckers have specific physical habitat needs that correspond with the levels in Upper Klamath Lake. *See* BOR AR 000798; Hydrologic Assessment, Exhibit D at 1. For example, Upper Klamath Lake elevations need to be at a certain level for the months of March, April, and May (biologically significant minimums) for suckers to have adequate access to spawning habitat at shoreline springs along the east side of the Lake. BOR AR 000798; BOR AR 000800-02. Reductions in Upper Klamath Lake elevations, whether because of drought conditions or management actions, reduces the amount of physical habitat available for suckers. Hydrologic Assessment, Exhibit D at 1. Reductions below end-of-month threshold lake elevations reduce the amount of physical habitat available for suckers to the point where suckers and their habitat will be, or could be, adversely affected. *See, e.g.*, BOR AR 000800-02 (concluding that Upper Klamath Lake elevations below end-of-month elevations for March, April, and May are "likely to adversely affect sucker spawning because of reduced habitat availability"); BOR AR 000782 (noting that USFWS did not fully analyze elevations below the end-of-month thresholds because they are outside the scope of Reclamation's proposed action).Therefore, based on USFWS's conclusions in the 2013 Biological Opinion and recent discussions with USFWS regarding the needs of suckers outlined in the Biological Opinion, Reclamation has determined that any purposeful management action resulting in missing end-of-month threshold elevations would not comply with the 2013 Biological Opinion and would "interfere with conditions necessary to protect the endangered sucker fish." Injunction, ECF No. 111 at ¶ 3; Hydrologic Assessment, Exhibit D at 2; Bottcher Decl., Exhibit C at ¶ 4.

II. DISCUSSION

A. Given Dry Hydrologic Conditions, Guidance Measure 1 Cannot Be Implemented at all, and Guidance Measure 4 Cannot Be Implemented Prior to May 24,

Without Impermissibly Interfering With Conditions Necessary to Protect Endangered Suckers

The Court's Injunction requires Reclamation to implement flows modeled on the recommendations contained in a Guidance Document created by representatives of the Hoopa Valley Tribe, the Yurok Tribe, and the Karuk Tribe. *See Measures to Reduce Ceratanova Shasta Infection of Klamath River Salmonids: A Guidance Document* (Jan. 17, 2017), ECF No. 96-4.[3] Specifically, the Injunction requires Reclamation to: (1) implement a surface flushing flow in accordance with Management Guidance 1 every year; (2) implement a deep flushing flow in accordance with Management Guidance 2 every other year;[4] and (3) reserve 50,000 acre feet ("AF") of water every year by April 1 for emergency dilution flows if specific thresholds relating to spore concentrations of *C. shasta* or prevalence of infection in Chinook salmon are exceeded, in accordance with Management Guidance 4. Injunction, ECF No. 111 ¶¶ 6, 7, 10, 12, 14. The Injunction states that "[i]n all other respects, the 2013 Biological Opinion on Klamath Project Operations [] and incidental take statement remain in effect pending completion of the reinitiated formal consultation." *Id.* ¶ 2. And, most relevant to the present situation, the Injunction mandates that "[i]n no event shall the mitigation measures interfere with conditions necessary to protect the endangered sucker fish." *Id.* ¶ 3. Federal Defendants read these provisions, particularly the latter provision, as placing an internal limitation on the requirement to implement the Court-ordered flows to the extent that they would require Reclamation to deviate from the protections for suckers outlined in the 2013 Biological Opinion. *Id.* at ¶¶ 3, 13; Hydrologic Assessment, Exhibit D at 2; Bottcher Decl., Exhibit C at ¶ 4.

---

[3] The description of the Guidance Document in this brief is intended to explain what is required by the Injunction vis-à-vis the Guidance Document and should not be viewed as agreement with either the Injunction or the recommendations in the Guidance Document. While the USFWS Technical Memoranda on which the Guidance Document is based have undergone peer review, the Guidance Document itself has not. *See* ECF No. 93 at 9; 98-1 at 5. Reclamation, NMFS, and USFWS were all given the opportunity to review the Guidance Document to varying degrees, and remain concerned about the scientific basis for the recommendations contained in Management Guidance 4.

[4] Management Guidance 2 is not at issue in the current briefing. The parties to the litigation are in agreement that Reclamation made a good-faith effort, and substantially achieved, the criteria for implementing the deep flushing flow in 2017. Bottcher Decl., Exhibit C at ¶ 3 n.1.

As explained more fully below, that is the situation confronting Reclamation in this dry water year. Under current hydrologic conditions and forecasts, there will not be sufficient water available in the Klamath Project this year to fully implement Management Guidance 1 or Management Guidance 4 (prior to May 24) without running afoul of conditions required in the Biological Opinion for endangered suckers—even with a complete shutoff of irrigation deliveries. Bottcher Decl., Exhibit C at ¶ 19; Hydrologic Assessment, Exhibit D at 8. Additionally, it is the opinion of the widely-recognized experts in *C. shasta* at USFWS (whose opinions were reviewed for accuracy by Dr. Sascha Hallett, a *C. shasta* expert from Oregon State University), that there is scientific uncertainty regarding the effectiveness of fully implementing Management Guidance 4 and that partially implementing Management Guidance 4 may not provide the intended population-level disease benefits intended by that measure. USFWS Technical Memorandum, Exhibit A at 5. Moreover, the Guidance Document itself does not contain recommendations for partial implementation of either Guidance Measure. Guidance Document, ECF No. 96-4 at 8-10, 12-14. For these reasons, Federal Defendants do not read the Injunction as requiring Reclamation to partially implement either Guidance Measure with less than the full complement of water that the authors of the Guidance Document believed was necessary to carry out the operations and meet the stated goals of the Measures.

1. Management Guidance 1

The Injunction states that "the Bureau shall release surface flushing flows modeled on Management Guidance #1 in every year" until reinitiated consultation is completed. Injunction, ECF No. 111 at ¶ 6. According to the Guidance Document, the stated goal of Management Guidance 1 is to "induce the movement of fine sediments below Iron Gate Dam in order to reduce the populations of the polychaete host of *C. shasta*, thus reducing the incidence and severity of *C. shasta* in the future." Guidance Document, ECF No. 96-4 at 8. To accomplish this goal, Management Guidance 1 "[i]mplement[s] flows sufficient to move surface sediments as described in the Geomorphic Memo in Table 3 during the winter period (Nov 1-April 30)." *Id.* The Geomorphic Memo specifies a range of flows for the mobilization of surface sediment—from 5,000-8,700 cubic feet per second ("cfs"). But, the authors of Management Guidance 1

specifically prescribed "a flow of at least 6,030 cfs from Iron Gate Dam" because "that magnitude of flow would mobilize fine sediment." *Id.*

Additionally, the authors of Management Guidance 1 acknowledge that "[i]n general, a longer duration event will accomplish more of the objective than a shorter duration." *Id.* at 8. Accordingly, Management Guidance 1 calls for the 6,030 cfs flow to be implemented for a full 72 hours. Management Guidance 1 further asserts that "[i]t is [] preferable to have a gradual descending limb to the hydrograph, so that sediments can be sorted as they are deposited on the river bed." *Id.* at 9. For that reason, Management Guidance 1 recommends that the "existing guidelines for downramping as contained in the 2013 Biological Opinion [be followed] unless modified by the technical team or FASTA as necessary and supported by scientific information." *Id.* at 9-10. So, as described in Management Guidance 1 and the Injunction, Reclamation is to implement a yearly flow of at least 6,030 cfs from Iron Gate Dam for a 72 hour period, using the existing guidelines for downramping rates contained in the 2013 Biological Opinion. *Id.* at 8-10; Injunction, ECF No. 111 at ¶ 6.

As Reclamation explains in the attached declaration of Jared Botcher, Chief of the Water Operations Division at the Klamath Basin Area Office, Reclamation modeled how different management decisions (*i.e.*, implementing Management Guidance 1 alone, implementing both Guidance Measures, implementing the 2013 Biological Opinion without any additional ordered flows, and implementing Reclamation's proposal for water year 2018) would impact elevations in Upper Klamath Lake and consequently, suckers. Bottcher Decl., Exhibit C at ¶¶ 16-20; Hydrologic Assessment, Exhibit D at 4-11. Because actual hydrology can change over time and Reclamation wanted to thoroughly assess these options against a range of predicted hydrologic conditions, Reclamation modeled each management decision using three exceedance levels for the April to September forecasted inflows into Upper Klamath Lake, provided by NRCS on March 19, 2018: 30 percent, 50 percent, and 70 percent. Bottcher Decl., Exhibit C at ¶ 17; Hydrologic Assessment, Exhibit D at 4. These exceedance levels mean that there is a 30, 50, or 70 percent chance in 2018 that inflows into Upper Klamath Lake could exceed the forecasts, respectively. *Id.*

Under all three exceedance levels, and with a complete shutoff of irrigation deliveries, the models show that fully implementing Management Guidance 1 would cause Reclamation to miss the end of April threshold elevation for Upper Klamath Lake specified in the 2013 Biological Opinion. Bottcher Decl., Exhibit C at ¶ 20; Hydrologic Assessment, Exhibit D at 8. Thus, the operation is prohibited by the Injunction's own terms. Injunction, ECF No. 111 at ¶¶ 2-3.

Hydrology would permit Reclamation to implement Management Guidance 1 only partially. According to the models, at the 50 percent exceedance level, Reclamation would be able to produce only a flushing flow of 6,030 cfs for 27 hours followed by ramp down rates that are modified from the 2013 Biological Opinion. Bottcher Decl., Exhibit C at ¶ 20; Hydrologic Assessment, Exhibit D at 8. But neither the Injunction nor Management Guidance 1 specifically call for Reclamation to implement a flow operation that is less than the magnitude (6,030 cfs) or duration (72 hours) specified in Management Guidance 1. *See* Injunction, ECF No. 111; Guidance Document, ECF No. 96-4 at 8-10. The Guidance Document chose a specific flow operation (including duration and downramping rates) that, in the authors' opinion, would "induce the movement of fine sediments below Iron Gate Dam in order to reduce the populations of the polychaete host of *C. shasta*, thus reducing the incidence and severity of *C. shasta* in the future." ECF No. 96-4 at 8. A partial flow operation was not recommended in the Guidance Document and there is no evidence in that Document that it would achieve the intended goal of Guidance Measure 1.

2. Management Guidance 4

The Injunction states that Reclamation "shall release emergency dilution flows modeled on Management Guidance #4" every year until the reinitiated consultation is complete. Injunction, ECF No. 111 at ¶¶ 10, 12. The Guidance Document states that the objective of Management Guidance 4 is to reduce spore density and *C. shasta* disease transmission through the provision of flows in the spring period. Guidance Document, ECF No. 96-4 at 12. In an effort to accomplish this, Management Guidance 4 contains four elements:

(1) Reclamation must have 50,000 AF of Reserve Water by April 1;

(2) the 50,000 AF of Reserve Water must be available for use as an emergency dilution flow as soon as one of two disease threshold criteria are met (which could be as early as April 1 and as late as June 14);

(3) if the threshold criteria are met, Reclamation must release water to achieve 3,000 cfs at Iron Gate Dam or, if flows at Iron Gate Dam have exceeded 3,000 cfs for seven days, flows must be increased to 4,000 cfs; and

(4) those flows must continue until the thresholds are no longer met, the 50,000 AF of reserved water is expended, it is June 15th, or 80% of juvenile Chinook salmon outmigration has occurred. *Id.*; Injunction, ECF No. 111 at ¶¶ 11-14.

Current forecasts and modeling indicate that hydrology will prohibit Reclamation from meeting at least three of these four elements prior to May 24. As it did with Management Guidance 1, Reclamation has modeled implementing Management Guidance 4, with specific assumptions detailed in the Hydrologic Assessment, to determine how the operation would impact elevations in Upper Klamath Lake and consequently, suckers. Bottcher Decl., Exhibit C at ¶¶ 16-19; Hydrologic Assessment, Exhibit D at 6-11. For the purposes of its modeling, Reclamation assumed that it had already performed a full surface flushing flow under Management Guidance 1 as required by the Injunction (using supplemental, non-Project water as explained below). Hydrologic Assessment, Exhibit D at 6. Regardless of the exceedance level (30 percent, 50 percent, or 70 percent), and with a complete shutoff of irrigation deliveries, the models show that Reclamation cannot fully implement Management Guidance 4 prior to May 24 (*i.e.*, set aside 50 TAF on April 1 for potentially immediate use) without missing both the April and May end-of-month threshold elevations required for Upper Klamath Lake specified in the 2013 Biological Opinion. Bottcher Decl., Exhibit C at ¶ 19; Hydrologic Assessment, Exhibit D at 8. Because fully implementing Management Guidance 4 prior to May 24 would cause Upper Klamath Lake to fall below levels necessary for endangered suckers, that operation is prohibited by the Injunction's own terms. Injunction, ECF No. 111 at ¶¶ 2-3.

Reclamation's modeling predicts that, without violating end-of-month thresholds, it would have only enough water available to achieve 3,000 cfs for seven days at Iron Gate Dam by

May 9.[5] Bottcher Decl., Exhibit C at ¶ 19; Hydrologic Assessment, Exhibit D at 8. There would not be enough water available at that time to increase the flow to 4,000 cfs for seven days if required by Management Guidance 4 within the timeframe past data indicates disease triggers would be eclipsed. *Id.* Again, this is the case even if there are no irrigation deliveries.[6] *Id.*

Finally, based on the 50 percent exceedance scenario, Reclamation would be able to implement a full 50,000 AF emergency dilution flow under Management Guidance 4 starting on May 24 and still meet subsequent end-of-month Upper Klamath Lake threshold elevations. However, in only five years (2006, 2010, 2011, 2012, and 2017) of the 13 years for which Reclamation has disease trigger data were disease triggers exceeded just prior to May 24, on May 24, or later. *Id.* Three of these five years were exceptionally wet years with above average precipitation (both rain and snow) and above average river flows. *Id.* Currently, Reclamation does not have the ability to predict if or when disease triggers will be exceeded in any given year. *Id.* Therefore, Reclamation is not certain if disease triggers will be exceeded this year or when that might occur. *Id.* In other words, it is possible, but by no means certain, that triggers would be exceeded on or after May 24 this year and hence that implementing a full emergency dilution flow after would provide the intended population-level disease benefits.

B. Partially Implementing Guidance Measure 4 Would Not Provide the Intended Population-Level Disease Benefits

As noted above, hydrology would permit Reclamation to implement Management Guidance 4 only partially prior to May 24. The Guidance Document does not recommend implementing this type of incomplete operation, however, or suggest that this incomplete

---

[5] For modeling purposes, Reclamation selected May 9, 2018 as the date for implementation of a theoretical partial emergency dilution flow after consulting USFWS's Arcata Office, concluding that spore concentrations are not likely to start to increase before three weeks after a surface flushing flow event pursuant to Management Guidance 1. Hydrologic Assessment, Exhibit D at 6.

[6] Moreover, in some modeled scenarios, the implementation of both Guidance Measures results in Upper Klamath Lake elevations dropping below 4,142 feet between March and May. Hydrologic Assessment, Exhibit D at 11. Maintaining an Upper Klamath Lake elevation above 4,142 feet from March 10 through May 20 is critical for adult sucker access to spawning areas on the east shore of Upper Klamath Lake. BOR AR 000800-02.

operation would achieve the stated goals of Management Guidance 4. *See* Guidance Document, ECF No. 96-4 at 12-14. In fact, the experts on *C. shasta* at the USFWS's Arcata Office[7] recently opined that "there are significant questions and uncertainties about the science behind" even a full implementation of Management Guidance 4, which could occur after May 24 if the disease thresholds were exceeded. USFWS Technical Memorandum, Exhibit A at 6. First, the effects of Management Guidance 4's dilution flow cannot be accurately predicted or assessed because of a relative lack of high flow events since disease sampling began. *Id.* at 2. Therefore, USFWS is "not yet able to predict changes in disease-related variables like prevalence of infection ('POI'), disease severity, or percent mortality in response to" flow increases. *Id.* USFWS also is unable to predict "how long any disease reductions, whether significant or minor (if realized at all) would persist following an elevated flow release or during an event's descending limb." *Id.*

Second, USFWS has expressed a "primary concern" with Management Guidance 4 that one of the disease criteria thresholds for triggering an emergency dilution flow -- the 5 spores per liter threshold -- can be triggered at *any* Klamath River sampling station, whereas the flows from Iron Gate Dam prescribed by Management Guidance 4 are fixed. *Id.* at 2-3. Therefore, the volume of water released from Iron Gate Dam "would not generate the same proportional increase in discharge (dilution) at lower river sample states as compared to sample sites" located nearer Iron Gate Dam. *Id.* at 3. NMFS agrees with USFWS that this leads to "uncertain[ty]" regarding the efficacy of the prescribed emergency dilution flows in Management Guidance 4. Simondet Decl., Exhibit B at ¶ 7.

"[A]nother concern" that USFWS has with Management Guidance 4 is that it is difficult to measure the emergency dilution flow's effectiveness for the target population (coho salmon) because of the non-species specific disease threshold criteria. USFWS Technical Memorandum, Exhibit A at 4. The 5 spores per liter disease criteria threshold used by Management Guidance 4 is based on non-genotype specific total spore concentration. *Id.* In other words, it encompasses both Type I spores associated with mortality in non-ESA listed Chinook salmon and Type II

[7] The Hoopa Valley and Yurok Tribes have previously acknowledged, and relied on, science and opinions provided by the experts at the USFWS's Arcata Office. *See, e.g.*, Guidance Document, ECF No. 96-4 at 1-2.

spores associated with mortality in the threatened coho salmon. *Id.* Therefore, it is possible for the spore disease criteria threshold to be triggered by Type I spores associated with Chinook salmon, and an emergency dilution flow implemented, even though it is not necessary for coho salmon. *Id.* Similarly, an emergency dilution flow event can be triggered when the POI of all captured juvenile Chinook salmon, not coho salmon, exceeds 20% in aggregate for the preceding week at the Kinsman Rotary Screw Trap. *Id.*

Management Guidance 4's disease threshold criteria also may not accurately indicate any pending disease risk. *Id.* 5 spores per liter and 20 percent POI in juvenile salmon, either of which can initiate an emergency dilution flow, "can indicate normal or background levels of *C. shasta* condition in the wild." *Id.* For example, these values were approached or met in 2017, a wet water year with "low *C. shasta* infection levels and no clinical signs of disease observed in any of the fish sampled in the Klamath basin." *Id.* at 4-5. (quoting True et al. 2017). The experts at USFWS state that "[a]lthough these trigger values can occur in years with or without elevated disease risk, it is important to note that . . . temperature plays an essential role in disease incidence and severity (Ray et al. 2014), and that at warmer temperatures these triggers could indicate escalating disease risk." *Id.* at 5. However, Management Guidance 4's disease threshold criteria do not incorporate water temperature, which is another "serious concern"[8] *Id.* NMFS concurs with USFWS's assessment: estimates of infection rates alone "are not necessarily a good measure of disease risks to juvenile salmon populations given the strong relationship between water temperature and disease risks to juvenile salmon." Simondet Decl., Exhibit B at ¶ 7.

USFWS's experts have determined that partial implementation of Management Guidance 4 would amplify all of the above scientific uncertainties concerning Management Guidance 4's dilution flow. USFWS Technical Memorandum, Exhibit A at 5. Specifically, "[g]iven a smaller volume of water available to implement a managed emergency dilution flow event, it would be more difficult to predict measurable disease reductions than if the full 50 TAF were available." *Id.* USFWS's opinion is supported by the observation that as the amount of water available to

[8] Please see USFWS's Technical Memorandum for a full analysis of why USFWS scientists believe there are "significant questions and uncertainties" surrounding the effectiveness of Management Guidance 4. *Id.* at 6.

implement a dilution flow decreases, the managed event likely takes the form of the 2014 pulse flow event where peak discharge was elevated less than 2-fold, was held at this peak for a single day, lasted around 5 days total, but "was not expected to affect *C. shasta* mortality risk…." *Id*. at 3, 5. In fact, Reclamation has determined that for this water year in particular, Iron Gate Dam flows are projected to be 1,472 cfs just prior to implementation of a hypothetical partial emergency dilution flow. Bottcher Decl., Exhibit C at ¶ 22; Hydrologic Assessment, Exhibit D at 11. Implementation of a 3,000 cfs flow (which is all that Reclamation can accomplish on May 9) represents a doubling of the Iron Gate Dam flow, making it similar to the ineffective 2014 event. *Id.* In USFWS's opinion, an event mirroring the effectiveness of the 2014 pulse flow event "would not provide the intended population-level disease benefits intended" by Management Guidance 4. USFWS Technical Memorandum, Exhibit A at 5.

C. Reclamation's Voluntary Proposed Operations Plan is the Best Means of Implementing the Injunction In this Challenging Water Year

As explained above, the Injunction's own internal protections for endangered suckers will not permit Reclamation to fully implement Guidance Measures 1 and 4, as modeled, this year. Federal Defendants do not read the Injunction as requiring partial implementation of those Measures. Moreover, the USFWS experts on *C. shasta* believe that scientific uncertainties exist regarding full implementation of Management Guidance 4 (which could occur after May 24 in the event triggers are met) and that partial implementation of the Management Guidance 4 may not further the Injunction's goal of reducing disease infection rates. *See* USFWS Technical Memorandum, Exhibit A at 2-5.

Rather than foregoing both Management Guidances 1 and 4 entirely, holding water for Management Guidance 4 until May 24 in the (uncertain) event that disease thresholds will be met after that date, or implementing the Management Guidances only partially and likely ineffectively, Reclamation has voluntarily undertaken an effort to develop a proposed operations plan for 2018 that would meet the goals of the injunction while benefitting all affected stakeholders and listed species. Under the proposal, Reclamation would voluntarily acquire 21,500 AF of supplemental, non-Klamath Project water to implement Management Guidance 1.

Bottcher Decl., Exhibit C at ¶ 30; Hydrologic Assessment, Exhibit D at 12. This 21,500 AF of supplemental water, combined with the limited water that Reclamation does have available in the Project, would allow Reclamation to fully implement Management Guidance 1 without violating the 2013 Biological Opinion for suckers. *Id.* Non-party USFWS has volunteered to provide Reclamation with 11,000 AF of water by draining that amount from its Upper and Lower Klamath National Wildlife Refuges, which are a home and migratory stopping point for dozens of species. Letter from Paul Souza, USFWS, Exhibit E. Non-party utility company PacifiCorp has volunteered to provide an additional 10,500 AF from its Copco Reservoir. Letter from Tim Hemstreet, PacifiCorp, Exhibit F. Reclamation has agreed to repay USFWS and PacifiCorps for this water in kind by the fall/winter of 2018.

Reclamation proposes to prioritize Management Guidance 1 because the experts at USFWS and NMFS believe it is likely to be more effective than Management Guidance 4 at lowering disease infection rates in coho salmon. Bottcher Decl., Exhibit C at ¶¶ 30-32; *see* USFWS Technical Memorandum, Attachment A at 6; Simondet Decl., Exhibit B at ¶ 4. It is USFWS's expert opinion that "the science supporting the efficacy of the proposed flushing flow in [Management Guidance 1] is strong and agree that this action should be prioritized" over Management Guidance 4. USFWS's Technical Memorandum, Exhibit A at 6; *see also* Letter from Paul Souza, USFWS, Exhibit E. Similarly, it is the opinion of James Simondet, the Klamath Branch Chief at NMFS, that "[i]mplementation of [Management Guidance 1] would provide a greater reduction in *Ceratonova shasta* disease risk to juvenile salmon in the Klamath River than the emergency spore dilution flow release prescribed by [Management Guidance 4]". Simondet Decl., Exhibit B at ¶ 7. As part of its proposal, Reclamation would not implement Management Guidance 4 (in whole or in part) for disease reduction purposes for the reasons provided by USFWS experts in their Technical Memorandum and NMFS in the declaration of James Simondet.[9] Bottcher Decl., Exhibit C at ¶¶ 30-32.

[9] As discussed above, it would not be possible to fully implement Management Guidance 4 prior to May 24 as it is described in the Injunction and Guidance Document without violating the end-of-month elevations for suckers—even after Reclamation acquires the 21,500 AF of supplemental water from USFWS and PacifiCorp. Hydrologic Assessment, Exhibit D at 8.

Reclamation's proposal has the added benefit of avoiding a complete shutoff of irrigation deliveries that otherwise could result from the partial implementation of Management Guidance 4. *See id.* at ¶ 30. Reclamation could begin charging the irrigation canals in preparation for irrigation on April 19, 2018, based on the 50 percent exceedance scenario. *Id.* Limited irrigation deliveries could begin after the canals are fully charged. Reclamation could provide a total of 252,000 AF of water to irrigators (based on the 50 percent exceedance scenario), which is substantially less than the maximum allowed irrigation supply of 390,000 AF. *Id.* The 252,000 AF of water is used to meet irrigation needs from Upper Klamath Lake for the entire 2018 water year (from whenever the canals become fully charged through November 30, 2018). *See id.*

In short, Reclamation's proposal would meet all end-of-month and biologically significant Upper Klamath Lake thresholds, ensure implementation of the scientifically-supported surface flushing flow for coho salmon under Management Guidance 1, and guarantee some water for irrigation.

D. Federal Defendants Would Like to Clarify Their Views of the Available Science[10]

1. 2017 Water Conditions Provide Little Information on the Effectiveness of the Guidance Measures in 2018

Intervenors make a number of statements concerning Guidance Measures 1 and 4 and water years 2017 and 2018. Intervenors' Motion, ECF No. 139 at 10, 17. According to the expert view of USFWS, the scientific evidence regarding the potential "legacy effect" of high flow events is too uncertain to warrant ignoring the potential need for disease management flows in 2018. USFWS Technical Memorandum, Exhibit A at 7-8. The spatial extent and duration of

[10] Plaintiffs in this case and the related case claim the Court lacks jurisdiction to consider Defendant-Intervenors' motion. ECF No. 141; Yurok Tribe v. U.S. Bureau of Reclamation, No. 16-cv-06863 (N.D. Cal.), ECF No. 105. At a minimum, the Court has jurisdiction to issue an indicative ruling pursuant to Rules 60(b) and 62.1. Dkt. No. 141 at 9; Yurok Tribe, ECF No. 105 at 9-10; *see also* Injunction, ECF No. 111 at ¶ 17 (reserving jurisdiction to resolve disputes "relating to the Bureau's implementation of the surface flushing flows, deep flushing flows, and emergency dilution flows ordered herein").

reductions in the prevalence of infection that may result from 2017 have not been assessed yet and are therefore unknown at this time. *Id.*

For example, a 2016 study reported in the USFWS Technical Memorandum (Shea *et al*. 2016), discussed the historical frequency and duration of discharge events below Iron Gate Dam and the likelihood that high water events will mobilize various aspects of the riverbed. *Id.* Because in the last 10-15 years, flows have not neared the magnitude and duration below Iron Gate Dam observed in 2017, data is not available to inform the extent or duration of any potential legacy effect. *Id.* at 8. As such, scientific evidence of a "legacy effect" sufficiently potent to negate the benefit or need of managed flows for 2018 simply does not exist yet. *Id.* This is particularly true given the hydrologic conditions observed thus far in the 2018 water year. *Id.*

2. USFWS Does Not Share Intervenors' Opinions Regarding Management Guidance 1

Intervenors argue that Management Guidance 1's flushing flow event would increase the impacts of disease in juveniles. Intervenors' Motion, ECF No. 139 at 2, 3, 9. To the contrary, the experts at USFWS state that high flow events like Management Guidance 1's fine sediment flushing flow event are naturally-occurring springtime events in cold-water, salmon-producing streams. USFWS Technical Memorandum, Exhibit A at 8. The benefits of this event include flushing fine sediments and scouring polychaete worms, among others. *Id.* USFWS believes that Management Guidance 1's flushing flow event would, in this way, disrupt critical stages of the *C. shasta* lifecycle and decrease the risk of disease in outmigrating juvenile salmon. *Id.* at 1-2, 6. Such disturbances are particularly important given recent flow release levels from Iron Gate Dam, relatively low inflow accretions from tributaries, and the resulting accumulation of fine sediments since the last high flow event. *Id.* at 8.

Intervenors also make arguments regarding the timing of coho salmon outmigration. Intervenors' Motion, ECF No. 139 at 6-7, 9. Intervenors' certainty regarding the timing of the 2018 juvenile salmon outmigration is unwarranted because it is unknown at this time. USFWS Technical Memorandum, Exhibit A at 6, 9-10. USFWS constructed the scientific model Intervenors cite using 13 years of data concerning the outmigration timing of Chinook, not coho,

salmon in the Klamath River. *Id.* at 9-10. The study Intervenors cite is not applicable to coho salmon. *Id.* FWS has not developed a model to predict the outmigration timing of coho salmon, and no such model exists. *Id.*at 9.

3. It is USFWS's Opinion that the POI Index is Currently a More Useful Tool than the S3 Model that Intervenors Reference

The version of the Stream Salmonid Simulator Model ("S3 Model") that Intervenors champion is a less reliable tool than the POI Index, which is utilized in the Guidance Document. *See* Intervenors' Motion, ECF No. 139 at 17 (citing Cramer Decl.). In fact, the S3 Model results cited by Intervenors cannot be used as the basis for any scientific relevant inference or comparison. USFWS Technical Memorandum, Exhibit A at 7 ("the S3 Model results are not appropriate for any comparison to summaries of field data collected in the Klamath River"). The Intervenors have extracted the cited material from a PowerPoint presentation–not a scientific paper or study. *Id.* at 10. That presentation is now several years old and displayed an early, draft version of the S3 Model. *Id.* FWS produced that early model to elicit comments on how to improve the S3 Model and its potential future uses. *Id.* FWS had not yet validated that draft of the S3 Model or subjected it to the Department of the Interior's peer review process. *Id.* Indeed, the S3 Model has undergone numerous revisions since then, been calibrated to the weekly abundance estimates of natural (non-hatchery) Chinook Salmon, and is currently undergoing the official Department of the Interior peer review process. *Id.* The outputs from outdated, un-peer reviewed, draft version of the S3 Model are not useful here.

Conversely, the POI Index is an important metric for assessing disease conditions, *id.* at 6-7, and criticisms of the POI Index do not resonate. *See* Intervenors' Motion, ECF No. 139 at 6-9 (citing Cramer at 17). Intervenors mischaracterize a table used in calculating the POI Index to suggest that it incorrectly estimates the applicable infection rate based on both hatchery and natural Chinook salmon, combined. *Id.* at 7. To the contrary, the 2016 study by Som et al. at issue presents POI estimates weighted by abundance for outmigrating natural (non-hatchery) Chinook salmon. USFWS Technical Memorandum, Exhibit A at 6. Intervenors also overlook the importance of the Index for assessing disease conditions in real time and other aspects of

disease impact assessment. *Id.* at 6-7. Intervenors additionally fail to recognize the POI Index's key role, along with other disease-related variables, for informing management decisions such as the timing of hatchery releases, calculating parasite exposure or dose, and its reliance to ongoing sentinel fish disease studies. *Id.* at 7.

E. Supplemental Water Cannot Be Obtained From the Rogue River Basin Project, or any Other Location, for Use in the Klamath Project

Intervenors suggest that, if the Court orders Reclamation to implement the Guidance Measures this year, the Court order Reclamation to acquire water from outside of the Klamath Project "before even considering action that would adversely affect the Klamath Project." Intervenors' Motion, ECF No. 139 at 19. Specifically, Intervenors propose that Reclamation use water from the Rogue River Basin Project—a federal water management project that is adjacent to, but separate from, the Klamath Project. *See id.* This suggestion is inappropriate, as the operation of the Rogue River Basin is a separate agency action subject to its own biological opinion and not before the Court in this action.

Although the Injunction does not (and cannot) require it, Reclamation voluntarily made a diligent search for sources of water outside the Project that could enable it to complete the Management Guidances. *See* Bottcher Decl., Exhibit C at ¶ 8; Hydrologic Assessment, Exhibit D at 3-4. As discussed above, Reclamation is able to obtain a total of 21,500 AF of non-Project water that has been volunteered by the USFWS and PacifiCorp for implementation of Management Guidance 1. Hydrologic Assessment, Exhibit D at 12. For a variety of reasons, Reclamation could not obtain non-Project water to implement Management Guidance 4. *See id.* at 3-4 (enumerating and describing the non-Project water sources that Reclamation considered and why those sources cannot be used). Reclamation specifically considered whether it could utilize water from the Howard Prairie and Hyatt Reservoirs in the Rogue River Basin Project for the purposes of implementing the Injunction. *Id.* However, water stored in those reservoirs is utilized by the Rogue River Basin Project to comply with the 2012 Rogue River Basin Project Biological Opinion—which is distinct from the 2013 Klamath Project Biological Opinion and contains its own requirements for coho salmon. *Id.* Any water supplied to assist in augmenting

the Guidance Measures would be outside the scope of the action that was analyzed in the 2012 Rogue River Biological Opinion and would trigger reinitiation of Endangered Species Act consultation on that action. *Id.* Therefore, it would be neither appropriate nor feasible for the Court to order Reclamation to utilize water from the Rogue River Basin Project for the Klamath Project this year.

IV. CONCLUSION

For all of the foregoing reasons, Federal Defendants respectfully request that the Court approve the attached proposed order acknowledging Reclamation's proposed operations plan for the 2018 water year.

Dated: March 27, 2018

Respectfully submitted,

JEFFREY H. WOOD
Acting Assistant Attorney General
United States Department of Justice
Environment & Natural Resources Division

SETH M. BARSKY, Chief
S. JAY GOVINDAN, Assistant Chief
Wildlife & Marine Resources Section

/s/ *Robert P. Williams*
ROBERT P. WILLIAMS
Sr. Trial Attorney (SBN 474730 (DC))
Ben Franklin Station, P.O. Box 7611
Washington, D.C. 20044-7611
Tel: (202) 305-0206 | Fax: (202) 305-0275
Email: robert.p.williams@usdoj.gov

Attorneys for Federal Defendant