From: Joe Heublein - NOAA Federal <joe.heublein@noaa.gov>
Sent: Wednesday, May 29, 2019 1:36 PM
To: Naseem Alston - NOAA Federal
Cc: Brian Ellrott - NOAA Federal
Subject: Re: ROC LTO: steelhead I&S

I modified I&S to say that these RPAs are listed in the 2014 Recovery Plan. I recommend adding the RPAs that are occurring (e.g. Fremont passage) to the baseline at some point but I think this works for now

-Joe

On Wed, May 29, 2019 at 11:51 AM Naseem Alston - NOAA Federal <naseem.alston@noaa.gov> wrote:

> So, to that end - beyond a bunch of specific updates/write-ups on actions, we include this paragraph to capture "everything else" - please let me know if I should specify anything else from the list you included.
>
> Specific smaller scale fish habitat restoration actions mandated as part of the NMFS 2009 Opinion (National Marine Fisheries Service 2009a) are occurring on the upper reaches of the Sacramento River between Keswick Dam and RBDD as well as on the lower American River between Nimbus Dam and the State Route 160 Bridge. At select sites within these areas, the projects involve creation of side channels, addition of spawning gravel, and placement of in-water woody material. NMFS has determined that actions that have been implemented have begun to contribute improvements to aquatic habitat, and are expected to continuing to contribute to the recovery of ESA-listed salmonids in the Central Valley.

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On Tue, May 28, 2019 at 11:38 PM Naseem Alston - NOAA Federal <naseem.alston@noaa.gov> wrote:

> so the difficulty with the RPA is there are so many actions, we did not include them all. Some of those specific actions were described, others not.
>
> Naseem O. Alston
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On Tue, May 28, 2019 at 10:25 PM Brian Ellrott - NOAA Federal <brian.ellrott@noaa.gov> wrote:

Hi Joe and Naseem,
Finally got a chance to look at SH I&S comments flagged for me. Responses in blue text below. Naseem, looping you in too b/c you might be able to address comment 1 off the top of your head...

Comment 1.

Section 2.4.4.7 (Restoration Actions from NMFS 2009 Opinion on the Long-term operations of CVP/SWP BiOp) identifies several RPA actions from the NMFS 2009 BiOp that are described in the baseline and [JCH1] expected to improve the spatial structure for CCV steelhead:

- RPA Action I.1.2.:Channel Maintenance Flows
- RPA Action I.1.3: Spawning Gravel Augmentation
- RPA Action I.1.5: Thermal Stress Reduction
- RPA Action I.1.6 (Adaptively Manage to Habitat Suitability/IFIM Study Results)[SLG2]
- RPA Action I.7: Reduce Migratory Delays and Loss of Salmon, Steelhead, and Sturgeon at Fremont Weir and Other Structures in the Yolo Bypass (Improve Yolo Bypass Adult Fish Passage)
- RPA Action I.6.1: Restoration of Floodplain Rearing Habitat (Increase Juvenile Salmonid Access to Yolo Bypass, and Increase Duration and Frequency of Yolo Bypass Floodplain Inundation)
- RPA Action I.2.6: Restore Battle Creek for Winter-Run, Spring-Run, and CCV Steelhead (Complete Battle Creek Salmon and Steelhead Restoration Project)[JCH3]

[JCH1]Double check if this is true

[SLG2]These are not called out in Restoration Action from 2009, but should they be added?

[JCH3]For Brian- crosscheck this with the baseline

Naseem - do you know if EB identifies these RPA actions?

Comment 2.

For example, comparing annual water deliveries from the American River Division in recent years (*e.g.*, about 300 TAF in 2006) to annual demands that were modeled in the CVP/SWP operationsROC on LTO BA for full build out of the proposed actionPA (*i.e.*, 800 TAF in 2030), suggests that annual demands by 2030 are expected to be about three to four times higher than current levels.[JCH1] [JCH2]

[JCH1]From OCAP, I'm not sure we looked at future demand in the effects. Maybe Brian double check for accuracy

[JCH2]Maybe Barb is aware if this is in the PA, couldn't find it. Brittany was looking into this too

Based on information from Derek Hilts, that comparison is not appropriate to make. I deleted the sentence from the American effects section.

Comment 3.

Relative to the Clear Creek population, the PA's potential impact on CCV steelhead occurring in the Sacramento, American, and Stanislaus rivers carry slightly less weight. However, given that most historic independent CCV steelhead populations have already been extirpated, [JCH1] NMFS considers that an expected appreciable reduction in any population's viability due to implementation of the PA would also appreciably reduce the likelihood of survival and recovery of the population's diversity group and the DPS.

[JCH1]Brian should check

This seems fine to me.

Comment 4.

In general, much of the spawning, rearing, migratory, and estuarine habitat for CCV steelhead are [RdR1] considered as not properly functioning (National Marine Fisheries Service 2016, Williams *et al.* 2016)[JCH2] [JCH3] . [GMY4]

[RdR1]Would be or are?

[JCH2]Brian should check if this is the right reference here, maybe Lindley et al. 2007

[JCH3]National Marine Fisheries Service. 2016. Central Valley Recovery Domain 5-Year Review: Summary and Evaluation of California Central Valley Steelhead Distinct Population Segment. 1-44 pp.

[GMY4]Can we get a more recent citation?

I'm not aware of one document that relates the status of CV steelhead habitat to the concept of PFC/PFH. Need to think more about that.

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