From:	J. Stuart - NOAA Federal <j.stuart@noaa.gov></j.stuart@noaa.gov>
Sent:	Tuesday, May 14, 2019 4:19 PM
То:	Brian Ellrott - NOAA Federal
Subject:	Re: ROC LTO winter-run I&S critical habitat table

Include it, as I had it in my original critical habitat table. When the DCC is <u>open</u> it is a high magnitude stressor as approximately 30-40 percent of the fish present at the junction go into it. The difficult part is that the gates can only be open up to 10 days during the December through January period for water quality issues, which reduces the overall impact, but really has strong negative impacts to any fish that are located in that portion of the river system. However only 5% of the juvenile spring-run population has moved into the upper Delta by the end of the Dec-Jan period so a medium impact as far as the population impact, higher impact for yearlings but we don't have "estimates" for their passage profile since they avoid our monitoring efforts quite successfully. As far as critical habitat, it definitely negatively impacts migratory corridor quality when open, but when closed, the river is more "natural" and less fish overall are diverted into the Delta interior via Georgiana Slough (although the percentage of fish going into Georgiana Slough goes up a little bit due to more fish being in the Sacramento River at the junction, since they didn't go into the DCC) and the riverine reach of the Sacramento River extends downstream farther, with better survival characteristics.

Not the easy answer to your question I'm afraid.

On Tue, May 14, 2019 at 3:46 PM Brian Ellrott - NOAA Federal <<u>brian.ellrott@noaa.gov</u>> wrote: Makes sense.

Regarding inclusion and magnitude for DCC operations in the spring-run CH table:

1. Should it be included? Seems like it should, but defer to you.

2. If yes, given that the species table has DCC operations as a high magnitude stressor, is it appropriate to identify DCC operations as a high magnitude stressor for spring-run CH?

On Tue, May 14, 2019 at 1:40 PM J. Stuart - NOAA Federal <<u>j.stuart@noaa.gov</u>> wrote: Because I did my sections and wrote up the tables before most folks were done. Kristin had a few sections in the Delta sections that she did for me and followed up after I had already completed my sections. I guess they weren't put together when Norma did the word docs. Murphy's Law......

On Tue, May 14, 2019 at 12:49 PM Brian Ellrott - NOAA Federal <<u>brian.ellrott@noaa.gov</u>> wrote: Thanks Jeff. Out of curiosity, why was/is there a Kristin table and another one?

On Tue, May 14, 2019 at 2:42 PM J. Stuart - NOAA Federal <<u>j.stuart@noaa.gov</u>> wrote: Here it is. It looks like you have only Kristin's table in there. Both tables are in the folder.

On Tue, May 14, 2019 at 12:30 PM Brian Ellrott - NOAA Federal <<u>brian.ellrott@noaa.gov</u>> wrote: Ok, that makes sense. Thanks Jeff.

Can you send me that CH table with DCC included?

On Tue, May 14, 2019 at 12:26 PM J. Stuart - NOAA Federal <<u>j.stuart@noaa.gov</u>> wrote: Problem is that there is no critical habitat for either SRCS or WRCS in the central and south Delta to be impacted by the exports. The effects of exports don't "reach" up into the mainstem Sacramento River where WR critical habitat exists. I had a critical habitat table on the share driver (R:\Draft BiOp\2_ESA\2.8-2.9 Integration and Synthesis and Conclusion\Winter-run Tables\Delta division Effects to CH - WR Table) that had DCC effects as well as water transfer effects

On Tue, May 14, 2019 at 12:12 PM Brian Ellrott - NOAA Federal <<u>brian.ellrott@noaa.gov</u>> wrote: Same for spring-run. I thought DCC routing and south Delta exports would adversely impact spring-run PBF#3, but they are not included in the CH table in the I&S.

Spring-run PBF #3:

Freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival. These features are essential to conservation because without them juveniles cannot use the variety of habitats that allow them to avoid high flows, avoid predators, successfully compete, begin the behavioral and physiological changes needed for life in the ocean, and reach the ocean in a timely manner.

One could argue that DCC routing and south Delta exports impact water quantity and quality conditions such that juvenile salmon experience greater contact with predators and do not reach the ocean in a timely manner.

Would like to know how you're thinking about this.

On Sat, May 11, 2019 at 6:29 AM Brian Ellrott - NOAA Federal <<u>brian.ellrott@noaa.gov</u>> wrote: Jeff,

For the w-r critical habitat summary table, I didn't see DCC routing or exports from the south Delta pumps listed as stressors. Those should be included, right?

Take a look at the CH table in this file to see what I'm talking about. I added a comment to you on this. Let me know what you think.

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Thanks, Brian

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