From: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Sent: Monday, March 18, 2019 12:17 PM
To: Maria Rea
Subject: Fwd: CCVO Needs for ROC LTO Analysis Support

Maria --

Here are some specific questions that Evan and Sarah provided to Eric and Miles, along with (attached) initial thoughts from Science Center. We discussed these with Eric and Miles late last week and they have some action items to address what they can as a result (mostly items 1 and 2).

Cathy

---------- Forwarded message ---------
From: **Eric Danner - NOAA Federal** <eric.danner@noaa.gov>
Date: Wed, Mar 13, 2019 at 9:16 AM
Subject: Re: CCVO Needs for ROC LTO Analysis Support
To: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Cc: Miles Daniels - NOAA Affiliate <miles.daniels@noaa.gov>, Evan Sawyer - NOAA Affiliate <evan.sawyer@noaa.gov>, Sarah Gallagher - NOAA Federal <sarah.gallagher@noaa.gov>, Garwin Yip <garwin.yip@noaa.gov>

Here are some thoughts...

On Mon, Mar 11, 2019 at 3:50 PM Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov> wrote:

> Eric and Miles --
>
> Please see the questions below from our ROC team (revised/edited by me to hopefully be helpful....) regarding the upper Sac, Shasta, and temperatures.
>
> 1. For the "Exposure-Response-Risk" approach of our BiOp analysis, we need to try to ascertain exposure. For the average distribution of redds, what proportion would be exposed to temperatures in excess of 53.5 F for the PA and for the COS? What is the temperature temperature dependent mortality for this "historical average" redd distribution for both the PA and COS?
>
> 2. What causes the temperature dependent mortality improvements in the PA relative to the COS (found in both the Martin and Anderson models). Is it timing (start of temperature management?), is it location (a change in temperature compliance point?) is it initial storage (higher May 1 storage, allowing access to upper gates, caused by some other factor/op.?)?
>
> 3. Is there a tool (perhaps the WRLCM) that can provide analysis of winter run juvenile habitat changes after fall and winter flow decreases and stranding effects to juveniles in the upper river? Are there tools that can assess the changes in habitat availability/quality related to flow changes in the upper river?

4. Reclamation talks about the "early season efficiencies" and decisions that are made in, say, Feb or March, before the temperature management season begins. Are there differences in these "decisions" between the PA and COS that are reflected in the modeling (either the input or the results?)? There are clearly different management actions taken in the PA vs the COS -- what is modeled in the PA that is different than the COS to get there? We note that this is something that Reclamation should provide to us, but they haven't, and we thought it worth an ask if you know where to look to tease this out.

I've scheduled 9:15-10:00 am Wednesday to discuss. Let me know if you have any problems.

Thanks!
Cathy

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