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**From:** Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>  
**Sent:** Thursday, May 9, 2019 11:29 PM  
**To:** Perry, Russell; Adam Pope  
**Cc:** Vamsi Sridharan - NOAA Affiliate; J. Stuart  
**Subject:** Re: [EXTERNAL] Re: Preliminary ROC on LTO plots to start discussion

All --

Great work. I've included Jeff Stuart since he's the engine behind the Delta section and will best know what is useful and how we apply it.

Russ and Adam (and Jeff) -- PA and COS are all we need. No WOA for NMFS. I'm tied up a bit early next week but could arrange for a check-in maybe Thurs or Fri. I'll give Jeff a few days to chew on it, and maybe he and I can work over email to identify some observations. On timing, we are due to have the section that this would be in go to peer review on May 20. It seems to me that we won't have a chance to get this all analyzed and through our review by then, but we can let reviewers know that it is in the works. It would be great to be able to weave it into revisions we do (on a very short couple-day turnaround) in response to peer review on May 31. So that's the drop-dead target.

Vamsi --

We can include the note easily. If Russ and Adam don't have it in their reporting out, we can be sure to have it in the BiOp writeup.

Thanks for making this all happen, and for strengthening our analysis!

Cathy

On Thu, May 9, 2019 at 4:45 PM Vamsi Sridharan - NOAA Affiliate <[vamsi.sridharan@noaa.gov](mailto:vamsi.sridharan@noaa.gov)> wrote:  
Hi Cathy and Russ,

Given what Steve said about the flow disaggregation, I think we should have a note in the final report that explains this. Otherwise, there would be potential for misinterpretation of these results that there is somehow some monthly step function response of the system, and of the fish's movements.

Best,  
Vamsi

On Thu, May 9, 2019 at 4:44 PM Vamsi Sridharan - NOAA Affiliate <[vamsi.sridharan@noaa.gov](mailto:vamsi.sridharan@noaa.gov)> wrote:  
Thanks for the quick response, Steve. This helps us understand the results better.

Vamsi Krishna Sridharan, PhD  
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On May 9, 2019, at 4:28 PM, Micko, Steve/SAC <[Steve.Micko@jacobs.com](mailto:Steve.Micko@jacobs.com)> wrote:

Hi Vamsi,

Thank you! I hope you are doing great too!

Yes, the monthly flows from CalSim II have been applied as a constant for each day of the month. To smoothly transition from one month's flow to the next, monthly flows are splined at the beginning/end of each month. The smooth splining transition prevents model instabilities.

Please let me know if you have any questions.

Best,

Steve

**From:** Vamsi Sridharan - NOAA Affiliate <[vamsi.sridharan@noaa.gov](mailto:vamsi.sridharan@noaa.gov)>  
**Sent:** Thursday, May 09, 2019 3:35 PM  
**To:** Perry, Russell <[rperry@usgs.gov](mailto:rperry@usgs.gov)>; Micko, Steve/SAC <[Steve.Micko@jacobs.com](mailto:Steve.Micko@jacobs.com)>  
**Cc:** Cathy Marcinkevage - NOAA Federal <[cathy.marcinkevage@noaa.gov](mailto:cathy.marcinkevage@noaa.gov)>; Adam Pope <[apope@usgs.gov](mailto:apope@usgs.gov)>  
**Subject:** [EXTERNAL] Re: Preliminary ROC on LTO plots to start discussion

Hi Steve,

Hope you are doing great. After running our survival model for the COS and PA scenarios, we noticed that the daily flow into the Delta has distinct monthly jumps, but is more or less constant each day in a given month. It was my understanding that typically DSM2 rim flows from CALSIM monthly flows are disaggregated daily using a spline fit to the monthly histogram.

Am I correct in assuming that in this case, the monthly discharge values from CALSIM have been applied as a constant for each day with some inter-day randomness added in? Please advise.

Regards,

Vamsi

On Thu, May 9, 2019 at 2:33 PM Perry, Russell <[rperry@usgs.gov](mailto:rperry@usgs.gov)> wrote:

Hi Cathy,

Find attached three pdfs -- one each for survival, median travel time, and migration routing from Freeport to Chipps Island. Each page is a water year showing flows, DCC operations, and survival, travel time, and routing for PA and COS. So there's 82 pages in each pdf. We'll summarize this down into box plots, but I think these are a good place to start understanding how operations change both within and among years and how that affects daily survival, travel time, and routing.

Vamsi,

Cathy asked if we could summarize the STARS runs that we did for the life cycle model to provide some further insights in the ROC on LTO effects analysis. I'd like to include you as a co-author on our report for for the work that you've done gathering the daily flow and DCC data and summarizing our investigations of using STARS for the life cycle model.

All,

The flow data changes daily, but does have obvious monthly "jumps", which seems quite different the from CALSIM daily dissaggregated flow data we used for WaterFix. Is this a characteristic that you've noticed before with these runs?

Are we just focused on COS and PA, or do we want to do anything with WOA?

These are hot off the presses and we haven't had a chance to absorb them yet, so let me know if you see anything wonky.

I will be off much of the next week, but we'll be pecking away at more summary plots and pass them along when we have them. I will be checking email once a day or so. Adam will be available to answer questions that arise.

Cheers,

Russ

Russell W. Perry, Ph.D.

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Jacobs' Energy, Chemicals and Resources business is now part of Worley

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