

From: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>
Sent: Monday, May 27, 2019 11:08 AM
To: Garwin Yip - NOAA Federal
Cc: J. Stuart - NOAA Federal; Barbara Byrne; Howard Brown
Subject: Re: [EXTERNAL] Re: Preliminary ROC on LTO plots to start discussion

....and for one final distraction related to this (b/c some of us are supposed to have our heads in other places in the action area!), here's one plot from USGS showing the effects. This shows the difference in survival probability b/w the PA and COS. Negative means the COS survival is greater. Can't really avoid having your eye drawn to Oct/Nov.

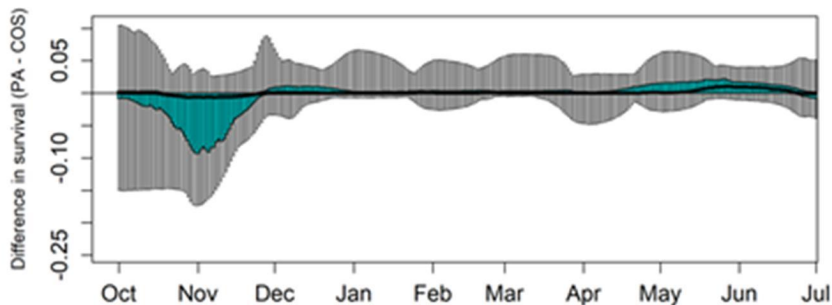


Figure 4. Boxplots of daily median differences in through-Delta survival between the PA and COS scenario. Each box plot represents the distribution of median survival differences among years for a given date. The point in each box represents the median, the box hinges represent the 25th and 75th percentile, and the whiskers display the minimum and maximum.

On Mon, May 27, 2019 at 11:01 AM Garwin Yip - NOAA Federal <garwin.yip@noaa.gov> wrote:
I agree, parrot. From there, discuss the extent of the DCC gate openings in the PA compared to the COS, and what it would likely mean for fish entrainment through the DCC and subsequent effects.

-Garwin-

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On Mon, May 27, 2019 at 10:47 AM Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov> wrote:

Jeff, how about something like this, which is mostly taking Derya's text. Feel free to tweak, I'm just thinking its best to parrot back exactly what we've got and include that in references.

These results reflect a difference in DDC closure for the PA. The CalSimII model estimates the number of days that the flow at Wilkins Slough would be greater than 7,500 cfs using a relationship derived from historical monthly flows and closes DCC for that many days in a month within the Oct-Dec 14 period. While the model code is exactly the same for the COS and the PA, higher flows at Wilkins Slough result in a greater number of days of closure. Because the COS scenario includes the 2008 USFWS BiOp Fall X2 component in wet and above normal years, flows at Wilkins Slough are higher for the COS than for the PA, there are more frequent exceedances of the 7,500 cfs threshold and associated modeled closures of the DCC gates. The modeled flows in October and November of wet and above normal years are generally lower under the PA and therefore do not trigger closure of the DCC as often (Sumer, 2019).

On Mon, May 27, 2019 at 10:09 AM J. Stuart - NOAA Federal <j.stuart@noaa.gov> wrote:

OK. I have used a general explanation that upstream operational differences - such as reservoir operations create different daily in -river flow conditions that influence the operations of the DCC gates. I will further clarify that the operations of the DCC gates are linked to flows at Wilkins Slough exceeding 7,500 cfs, which triggers a gate closure to protect fish for the same number of days that the flows are greater than 7,500 cfs. Hopefully that is what Derya is saying. Not being a "modeler guru" I'm trying to distill it down to something easy and short.

On Mon, May 27, 2019 at 9:56 AM Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov> wrote:

I say we include it and describe it. We can point to this email as explanation. We'll have to see how much someone wants us to rely on RTO to solve it, but we daylighted it and have an explanation of why it happens, and I'm not going to overlook that.

Cathy Marcinkevage

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On May 27, 2019, at 9:50 AM, J. Stuart - NOAA Federal <j.stuart@noaa.gov> wrote:

Saw that last night, basically different upstream operations between the COS and PA such as reservoir releases lead to different "triggers" being met downstream in the Delta for the DCC gates. It what I generally thought, but now we see it is the flows at Wilkins Slough that are the driver of the differences. Thoughts?

On Mon, May 27, 2019 at 9:16 AM Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov> wrote:

More on the DCC discrepancy.

Begin forwarded message:

From: "Sumer, Derya" <dsumer@usbr.gov>
Date: May 27, 2019 at 12:51:18 AM PDT
To: "Micko, Steve/SAC" <Steve.Micko@jacobs.com>
Cc: "Perry, Russell" <rperry@usgs.gov>, Vamsi Sridharan - NOAA Affiliate <vamsi.sridharan@noaa.gov>, Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>, Adam Pope <apope@usgs.gov>, J Stuart <J.Stuart@noaa.gov>, "Leaf, Rob/SAC" <Rob.Leaf@jacobs.com>, David Mooney <dmmooney@usbr.gov>
Subject: Re: [EXTERNAL] Re: Preliminary ROC on LTO plots to start discussion

Hello Everyone,

CalSim estimates the number of days that the flow at Wilkins Slough would be greater than 7,500 cfs using a relationship derived from historical monthly flows and closes DCC for that many days in a month within the Oct-Dec 14 period.. Therefore, even though the model code is exactly the same between the COS and the PA, higher flows at Wilkins Slough would result in higher number of days closed (high flows assumed to flush salmon into the Delta). The COS has the Fall X2 in wet and above normal years, and that causes more frequent exceedance of the threshold. See attached description of the code implementation from back in 2009 (page 13).

The flows in October and November of wet and above normal years are generally lower under the PA and therefore do not trigger closure of the DCC as often. See attached spreadsheet.

Hope this helps,

Derya

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On Thu, May 23, 2019 at 4:34 PM Micko, Steve/SAC
<Steve.Micko@jacobs.com> wrote:

Hi Russ,

CalSim II develops the DCC operation schedule. Although there is a proposed change to DCC operations, model representation of the proposed

DCC operations are the same in COS and PA. Proposed changes cannot be captured within the CalSim model.

I believe the CalSim II implementation of October 1 – December 14 period in NMFS BO Action 4.1.2 causes different DCC operations between COS and PA. In the PA, CalSim II opens DCC gates for more days in October/November (depending on the year) to meet water quality standards at Jersey Point and Rock Slough.

Please let me know if you have any questions.

Best,

Steve

From: Perry, Russell <rperry@usgs.gov>
Sent: Thursday, May 23, 2019 11:35 AM
To: Vamsi Sridharan - NOAA Affiliate <vamsi.sridharan@noaa.gov>; Micko, Steve/SAC <Steve.Micko@jacobs.com>
Cc: Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>; Adam Pope <apope@usgs.gov>; J Stuart <J.Stuart@noaa.gov>
Subject: Re: [EXTERNAL] Re: Preliminary ROC on LTO plots to start discussion

Hi Vamsi and Steve,

Thanks for the help in understanding how daily flows were constructed from the monthly flows. I have another question about DCC operations to help us interpret our results. In October/November we are finding some differences in DCC operation between scenarios in some years (see top panel below). Can you tell us the control rule that is causing there to be different DCC operations between scenarios? It doesn't appear to be flows > 25 kcfs, which triggers a DCC closure.

Thanks,

Russ

Russell W. Perry, Ph.D.

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On Thu, May 9, 2019 at 3:35 PM Vamsi Sridharan - NOAA Affiliate
<vamsi.sridharan@noaa.gov> wrote:

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>
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 disaggregated 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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