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**From:** Eric Danner - NOAA Federal <eric.danner@noaa.gov>  
**Sent:** Monday, April 1, 2019 8:20 AM  
**To:** Noble Hendrix  
**Subject:** Re: RocOn WRLCM Model Runs with Newman Eqs ROC\_AR\_DPP

Hi Noble,

OK, lets plan on talking at noon. Let me know if anything changes for you. Call your cell?

Eric

On Sun, Mar 31, 2019 at 9:19 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Thanks Eric!

Our flight departs at 2PM and we have a few things to wrap up in the morning, but shoot me a note if there is a desire to check in tomorrow. I think 12-1 would probably work and there may be some other times earlier that I would be able to work out. In any case, just let me know.

Thanks and hope you had a great weekend,

Noble

On Sun, Mar 31, 2019 at 7:51 PM Eric Danner - NOAA Federal <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:  
Thanks for both of these. Have a great time in Japan.

Eric

On Sun, Mar 31, 2019 at 6:41 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Hi Eric,

Data attached for figures in the Mar 30 2019 WRLCM presentation for RocOn.

Best,  
Noble

On Sun, Mar 31, 2019 at 6:31 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Hi Eric,

Powerpoint attached, and each slide has a short narrative describing the figure in the slide.

The CRR and abundance metrics were using all years of data, which was affecting to some small degree the differences in productivity among water year types. The first 4 years are initialization years, so all metrics were updated to start with model year 5 (1926). Likewise we use model output to year 79 (2000) as this is the last year where we can calculate the full age class of returns. Ultimately, the patterns in the productivity by water year type remained, suggesting that those categories are generally not very useful for describing good versus bad productivity years for winter-run.

When we use the model years 5 to 79 (1926 to 2000), then we obtain the results presented in the slides. Namely, there is a lower abundance in the PA relative to the COS of about 3% (95% intervals supplied as well) and this happens in almost all iterations. This result was basically the same as the one that I showed you and Steve (which used years 2 to 79). But, when I recalculate the CRR under the PA relative to the NAA when using the model years 5 to 79 the results changed. Basically there is negligible difference between PA and COS in CRR. This is due to the first few years, particularly the 4th having a moderate negative CRR under PA relative to COS during this initiation phase and that year influencing the previous results that included all years.

I have not included the plots of the physical data, since you and Miles were preparing plots that may provide a bit better insight into the dynamics there.

I have worked up the data for each of the figures, and I will package that up and send in a separate email.

Cheers,  
Noble

On Sun, Mar 31, 2019 at 5:54 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Just getting ready to now. Have to get the wifi connected to the hotel. Should be in the nextt 10 min or so  
Noble

desde mi celular

On Sun, Mar 31, 2019, 5:39 PM Eric Danner - NOAA Federal <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:  
Hi Noble - have you sent the results yet?

Thanks, Eric

On Fri, Mar 29, 2019 at 6:53 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
OK - will send them out tomorrow. I'm digging into the pattern of freshwater productivity among water year types, in which Wet years freshwater productivity is similar to Critical. The first few years where the model is getting started is being included in those calculations, so I'm looking to see how they influence the relative productivity values. In any case, I'll get these off to you over the weekend, and I'll send a couple versions - one with the updated physical plots for the SWFSC and another without the physical variables to pass on to Cathy, since it looks like you guys are plotting the physical variables up anyway.

Thanks and hope you have a good weekend,  
Noble

On Fri, Mar 29, 2019 at 5:20 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Not that important - have fun and I'll send out the updated slides to you in a bit.

Cheers,  
Noble

On Fri, Mar 29, 2019 at 5:17 PM Eric Danner <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:  
I am down in LA visiting friends. If it's important we can talk.

On Mar 29, 2019, at 12:21 PM, Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:

Yes, only the plots. We checked the implementation too to make sure it was correct.  
Noble

desde mi celular

On Fri, Mar 29, 2019, 12:08 PM Eric Danner - NOAA Federal

<[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:

Hi Noble,

Good to hear you found the issue. Just to confirm, this does not change the result of the LCM runs in any way? Just the way the physical drivers were plotted, right?

Eric

On Fri, Mar 29, 2019 at 11:29 AM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:

Hi all,

It looks like Eva found the issue. When we used the exports data we shifted it to line up with the brood year, so that exports Jan - June 1977 are applied to brood year 1976. When we were plotting, we used the brood year to categorize the water year type, so the WYT was being applied incorrectly. When she shifted it by a year, then the box plots look the same as the ones Miles produced. We are working on getting those plotted up, and will send them out a bit later today just so that we can be sure that everything is lining up.

Thanks!

Noble

On Thu, Mar 28, 2019 at 6:03 PM Sara John - NOAA Affiliate

<[Sara.John@noaa.gov](mailto:Sara.John@noaa.gov)> wrote:

Ok, got it. My check of the exports indicates that everyone is using "South Delta Exports". This is node D409 in the CALSIM files and VarID 74 in the SQLite database. The data Miles gave me matches the data Eva gave me, so the discrepancy is occurring somewhere later in the workflow.

Sara

On Thu, Mar 28, 2019 at 5:54 PM Noble Hendrix <[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)>

wrote:

Hi all,

I think we actually settled on the Hood data as indicated in Alan's script. So I think we should be good there. The outstanding issue is the export difference I think.

Noble

desde mi celular

On Thu, Mar 28, 2019, 5:19 PM Sara John - NOAA Affiliate

<[Sara.John@noaa.gov](mailto:Sara.John@noaa.gov)> wrote:

Hi Eva,

Freeport flow is not currently in the SQLite database. However, I know which CALSIM node it is (C169), so I should be able to add it to the database without

much trouble. Noble, let me know if you want that, and if so, I can make the addition tonight or tomorrow.

Sara

On Thu, Mar 28, 2019 at 5:01 PM Eva Dusek Jennings <[itseva@gmail.com](mailto:itseva@gmail.com)> wrote:

Hi Sara,

Good catch on the Freeport flow! Just in case Noble asks me to change the simulation scripts tomorrow to reflect Freeport flow, can you please tell me what the VarID is for Freeport flow, if it is in the database?

Thanks so much,

-Eva

On Thu, Mar 28, 2019 at 4:43 PM Sara John - NOAA Affiliate <[Sara.John@noaa.gov](mailto:Sara.John@noaa.gov)> wrote:

Hi all,

I checked Exports for COS and PA and Verona Flow for COS and PA. Happy to report that the data Miles extracted from the CALSIM DSS file is the same as the data I provided via SQLite database and also the same as the data Eva provided as csv files. So if everyone is using the same data, I assume that the error was made in the creation of someone's boxplots.

Also, something I noticed when I was going through the data is that you have data labeled as log flow at Freeport. This is actually log flow at Hood, not Freeport. (See line 82 in Alan's R script which calls for node C400 (Hood)).

Please let me know if any can be of any other help.

Sara

On Thu, Mar 28, 2019 at 3:51 PM Eric Danner - NOAA Federal <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:

Thanks Eva. I am bringing Sara into the loop.

Eric

On Thu, Mar 28, 2019 at 3:44 PM Eva Dusek Jennings <[itseva@gmail.com](mailto:itseva@gmail.com)> wrote:

Hi Eric,

That sounds good. Also, I just looked at the script which calls in the physical drivers from an sqlite DB, and it looks like the first column is not always March of BY. Here is the breakdown:

Exports, Freeport LogFlow, and Keswick Temp should all start March of BY

Wilkins Flow, Bend Bridge Flow, Yolo Ratio and Verona Flow should all start July of BY.

If this isn't seeming to line up with your data, please let me know and I'll take a more thorough look. To be honest, my SQL skills are not great yet, and the author of the script didn't always clearly label the code to indicate starting and ending month.

Cheers,

-Eva

On Thu, Mar 28, 2019 at 3:35 PM Eric Danner - NOAA Federal

<[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:

Thanks Eva. Lets hold off on a phone call until we have had a chance to look at these data.

Eric

On Thu, Mar 28, 2019 at 3:28 PM Eva Dusek Jennings <[itseva@gmail.com](mailto:itseva@gmail.com)>

wrote:

Hi All,

Here are the physical data for all of the drivers that we use in the model. Column 1 is March of BY. Hope this is helpful.

-Eva

On Thu, Mar 28, 2019 at 3:11 PM Eric Danner - NOAA Federal

<[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:

Given that Noble is leaving this weekend and Miles and Sara have tomorrow off, can we have a call at 3:30 to get to the bottom of this?

Also, Noble if you can send the flow data you are using that will help.

Eric

On Thu, Mar 28, 2019 at 3:01 PM Miles Daniels - NOAA Affiliate

<[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:

Hi Noble,

I just asked Sara and she said D409 should be included.

-Miles

On Thu, Mar 28, 2019 at 2:47 PM Noble Hendrix

<[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:

Hi Miles and Eric,

Looping Eva in on the discussion since she has been working with preparing the physical data for inclusion into the model too. So, I'm wondering if we can get Sara to confirm that we have node 409 being

incorporated into the Sqlite database that we used to develop our export values?

We will check on our side to see if we are somehow transposing months or years that would make things fail to line up.

Thanks,  
Noble

On Thu, Mar 28, 2019 at 2:36 PM Miles Daniels - NOAA Affiliate  
<[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:  
Data now attached.

-Miles

On Thu, Mar 28, 2019 at 2:33 PM Miles Daniels - NOAA Affiliate  
<[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:  
Hi Nobel,

I did a check with node D409 and it is the same as D419+D418.

Attached is a plot using D409 by water year type like the ones Noble shared and the data used to make plot if helpful.

I'm still not able to have our figures line up.

-Miles

On Thu, Mar 28, 2019 at 1:02 PM Miles Daniels - NOAA Affiliate  
<[miles.daniels@noaa.gov](mailto:miles.daniels@noaa.gov)> wrote:  
Hi Noble,

Thanks for sending those data. Turns out it was an error on my part as when I merged the Calsim and HEC-5Q data I forgot to account for them having different starting dates.

Would you be able to send along the data for the other plots as well?

Thanks,  
Miles

On Thu, Mar 28, 2019 at 11:13 AM Noble Hendrix  
<[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:  
Hi Eric and Miles,

Data attached for temps at Keswick under each alternative along with the Water Year file. Let me know if you would like the data for the other physical data plots, and I can pull those out.

Cheers,  
Noble

On Thu, Mar 28, 2019 at 9:56 AM Eric Danner - NOAA Federal  
<[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)> wrote:

Noble - we came up with some different results in our plots for the physical drivers. Can you send Miles the CSV file you used so we can cross-check?

On Thu, Mar 28, 2019 at 9:31 AM Noble Hendrix  
<[noblehendrix@gmail.com](mailto:noblehendrix@gmail.com)> wrote:

Hi Eric,

I just finished up the next round of runs with the Newman equations for the smolt survivals this morning, and they are attached. Short story is that the model reflects the additional exports under the PA relative to the COS. There is an average decrease in abundance and a consistently lower (albeit small difference on average) in CRR. I am available this morning if we would like to discuss the outputs.

Best,  
Noble

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