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**From:** Cathy Marcinkevage - NOAA Federal <cathy.marcinkevage@noaa.gov>  
**Sent:** Monday, April 1, 2019 10:07 AM  
**To:** Howard Brown; Garwin Yip; Barbara Byrne  
**Subject:** Fwd: LCM results

We got draft initial LCM results, attached. I haven't distributed to anyone else yet. Eric and Noble could be available at noon today for any initial conversation, but I personally don't think that we need to sidetrack people today to discuss. I think we distribute and talk with Eric about them later this week.

Let me know if you agree, thanks.

----- Forwarded message -----

**From:** Eric Danner - NOAA Federal <[eric.danner@noaa.gov](mailto:eric.danner@noaa.gov)>  
**Date:** Mon, Apr 1, 2019 at 8:28 AM  
**Subject:** LCM results  
**To:** Cathy Marcinkevage - NOAA Federal <[Cathy.Marcinkevage@noaa.gov](mailto:Cathy.Marcinkevage@noaa.gov)>

Good morning Cathy,

Attached are the LCM results. I will send a followup email with the data for each of the figures. Below is a description provided by Noble.

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.

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