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**From:** Hannon, John <jhannon@usbr.gov>  
**Sent:** Monday, June 3, 2019 9:30 AM  
**To:** Barbara Byrne - NOAA Federal  
**Cc:** Evan Sawyer - NOAA Federal; Cathy Marcinkevage; Garwin Yip - NOAA Federal  
**Subject:** Re: [EXTERNAL] Re: Help with understanding IOS summaries

Here is an update in Section 1.1.1.4 on page 8 describing that the IOS abundance displayed is for ocean adults age 3 and 4.

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On Mon, Jun 3, 2019 at 8:32 AM Barbara Byrne - NOAA Federal <[barbara.byrne@noaa.gov](mailto:barbara.byrne@noaa.gov)> wrote:  
Thanks, John! The removal of 2-year olds explains the scale diff of the figure (I know we had talked about using 3+ numbers; just didn't remember that yesterday when I was looking into it...) and thanks for sending the worksheet with the calculations for the ocean abundance tab. Please do send some suggested revision in the master word doc. Sorry for my quasi-panic -- things have been pretty...busy...and my mind is losing some details.

On Mon, Jun 3, 2019 at 7:17 AM Hannon, John <[jhannon@usbr.gov](mailto:jhannon@usbr.gov)> wrote:

Hi All,

I believe the difference is that in the killer whale section I used ocean abundance and the main IOS results they provided didn't include ocean abundance. For the ocean abundance I had them remove the two year olds because they are not large enough to be killer whale prey. The escapement results include the two year olds so that's why the numbers are larger. The IOS file with an ocean abundance tab included is attached.

I see that in the write up on the Sacramento River section I didn't make it clear that I was talking about ocean abundance until later in the write-up. I can add some text to that effect in the master word doc you sent if you want.

I'll forward an email about the starting escapement.

Thanks

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On Mon, Jun 3, 2019 at 12:57 AM Evan Sawyer - NOAA Federal <[evan.sawyer@noaa.gov](mailto:evan.sawyer@noaa.gov)> wrote:  
Hey Barb, and everyone,

It's been a heck of a week that I wish I could say was more restorative than it was. To top it off we missed our flight home today. So I'm limited in my ability to resolve any issues related to the LCM analysis (I'm doing this on my phone).

That said, here's what I got:

- I miscalculated the median escapement, or I should say that I failed to include the full time series in calculating the median. For whatever reason I did not include the last year in the 82-year time series. You can confirm but without 2002, the median escapement for the COS and PA are 3856 and 3865 (1926 - 2001) respectively.

- As far as which approach is "better" or "right" I don't know, but I would say that my mistake (identified above) shows that basing a conclusion on a single data point ("ending" escapement in a year [2002]) is dependent on which year the simulation ends on.

- In my description of the starting assumption of the IOS model I state that initial abundance is 5,000, of which 3,087 are females. I was unsure of these numbers but it was my understanding that Cramer FS confirmed them. The SRKW analysis has an initial abundance of 3,000. I don't know the effect of this difference on the overall analysis but if the SRKW analysis is based on an ending abundance relative to an initial abundance I could see it as being important. Given the modeled escapement in 1926 (for both the COS and PA) is around 2,100, the initial abundance of 3,000 might make more sense but that's really just a guess. Please re-confirm with Cramer FS.

If all of this amounts to an error or errors on my part I am sorry. The pace of all of this has been fast and it's clear that I made at least one mistake. I really hate thinking that my poor performance has contributed to other's (your) increased workload/stress.

If there are any other questions or specifics that I could respond to I will try to do so.

With apologies,  
Evan Sawyer

On 6/2/19, Barbara Byrne - NOAA Federal <[barbara.byrne@noaa.gov](mailto:barbara.byrne@noaa.gov)> wrote:  
> John and Evan -- Looking for some help from you both in walking through the  
> calculations underlying your IOS summaries.  
>  
> Attached are:  
> 1. \*IOS consistency check.doc: \*Summary of potential discrepancies,

> drafted by me.  
> 2. \*SRKWpreyappendix\_V4\_MASTER.doc\*: Drafted by John.  
> 3. \*2.5.9 LifeCycle Models--V4\_ForDistribution.doc\*: Drafted by Evan  
> 4. \*IOS\_results\_summary\_2\_28\_19\_see ESCAPEMENT TAB.xls\*: Pulled from ROC  
> LTO BA supplemental modeling files; I am assuming you both used data from  
> the "Escapement" tab.  
>  
> Please review item #1 and help me understand how the numbers in your docs  
> (#2 for John, #3 for Evan) relate to the escapement numbers in item #4.  
>  
> We don't necessarily have to have the exact same approach for IOS in every  
> section, but at least want to be able to  
> (a) reproduce the numbers in each case (I couldn't, but maybe I don't  
> understand the approach you each took) and  
> (b) explain the differences between the \*0.2% diff described in the LCM  
> section\* (Evan's approach based on median escapement observed during the  
> modeled period -- i.e. median PA minus median COS as a % of median  
> COS) and \*10.5%  
> diff described in the SRKWprey appendix\* (John's approach based on the  
> difference in change in escapement over the modeled period -- i.e. (PA  
> end-PA begin) minus (COS end-COS begin) as a % of (COS end-COS begin)...I  
> think).  
>  
> Thanks for helping with figuring out these analyses.  
>  
> Barb  
> --  
>  
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