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**From:** Hannon, John <jhannon@usbr.gov>  
**Sent:** Thursday, June 13, 2019 9:45 AM  
**To:** Evan Sawyer - NOAA Federal; Barbara Byrne - NOAA Federal; Garwin Yip - NOAA Federal; Cathy Marcinkevage - NOAA Federal  
**Subject:** Fwd: [EXTERNAL] IOS Ocean abundance

FYI on the seed number for IOS - see email below. I'll update that in my write-up.

And here are updated calculations for winter-run ocean abundance that I'll update in the write-up. The change in median value is what changed (from a 10% increase to a 1.5% increase). The 97.5 and 2.5 percentile calculations for change from COS to PA were consistent with Evan's calculation so I didn't change those. The median value for COS comes from recent PSMFC reported abundances, not from the model, and the rest of the abundances are derived from that one.

Adjustment for winter-run from IOS model	median	97.5 %ile	2.5%ile
Winter-run Chinook COS (IOS model) *	3,293	9,345	446
Winter-run Chinook COS to PA (proportional IOS model changes)	0.015	0.501	-0.450
Winter-run Chinook PA (IOS model changes)	3,342	14,024	245

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John Hannon, Fisheries Biologist  
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----- Forwarded message -----  
**From:** Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)>  
**Date:** Thu, Jun 13, 2019 at 8:48 AM  
**Subject:** RE: [EXTERNAL] IOS Ocean abundance  
**To:** Hannon, John <[jhannon@usbr.gov](mailto:jhannon@usbr.gov)>

Hi John-

I should have been more specific in my previous answer. The model is seeded with 5000 individuals of which 65% are female (3250 total females). After pre-spawning mortality is applied, the exact number of females spawning in the first four years is 3,087.5. These seed numbers are not very relevant as they are only used to get the model started and I do not report them when running the model as they are not a function of any of the model parameters. The other thing I would caution with this model is that it is not intended to provide actual estimates of what escapement or ocean abundance is likely to be. As a simulation model it is intended to be used to compare among scenarios. I am not sure how it is being used for your purposes but I am happy to provide more guidance if needed.

Steve

**From:** Hannon, John <[jhannon@usbr.gov](mailto:jhannon@usbr.gov)>  
**Sent:** Thursday, June 13, 2019 7:25 AM  
**To:** Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)>  
**Subject:** Re: [EXTERNAL] IOS Ocean abundance

Hi Steve,

Is there a difference in this seed number used for the ocean abundance calculations and the rest of the model? Is the 3,000 spawners total escapement or females?

Thanks

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John Hannon, Fisheries Biologist  
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On Wed, Mar 27, 2019 at 9:08 AM Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)> wrote:

The first four years of the model are seeded with 3000 spawners

**From:** Hannon, John [mailto:[jhannon@usbr.gov](mailto:jhannon@usbr.gov)]  
**Sent:** Wednesday, March 27, 2019 7:30 AM  
**To:** Steve Zeug  
**Cc:** Harrison, Katrina; Ellis, Gregg  
**Subject:** Re: [EXTERNAL] IOS Ocean abundance

Steve, what was the starting population used?

Thks

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On Tue, Mar 26, 2019 at 3:52 PM Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)> wrote:

Hi John-

Attached are the revised results with just 3 and 4 year olds. Let me know if you have any questions.

Steve

**From:** Hannon, John [mailto:[jhannon@usbr.gov](mailto:jhannon@usbr.gov)]  
**Sent:** Monday, March 25, 2019 9:17 AM  
**To:** Steve Zeug  
**Cc:** Harrison, Katrina; Ellis, Gregg  
**Subject:** Re: [EXTERNAL] IOS Ocean abundance

That will work. Thank you Steve.

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On Mon, Mar 25, 2019 at 9:06 AM Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)> wrote:

I'll need to re run the model to get the 2 year olds out. I can have it ready tomorrow.

**From:** Hannon, John [mailto:[jhannon@usbr.gov](mailto:jhannon@usbr.gov)]  
**Sent:** Monday, March 25, 2019 6:39 AM  
**To:** Steve Zeug  
**Cc:** Harrison, Katrina; Ellis, Gregg  
**Subject:** Re: [EXTERNAL] IOS Ocean abundance

Thank you Steve. Is there a way I could remove the two year olds? This is for estimating killer whale prey and two year olds would not be in that prey size yet.

Thanks

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On Fri, Mar 22, 2019 at 4:53 PM Steve Zeug <[stevez@fishsciences.net](mailto:stevez@fishsciences.net)> wrote:

Hi John-

Attached is an updated IOS results file that now includes ocean abundance. This output is the combined number of 2, 3 and 4 year old fish in the ocean after natural mortality is applied but prior to harvest. Let me know if you have any questions.

Steve

**Steven Zeug, Ph.D., Senior Scientist**

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