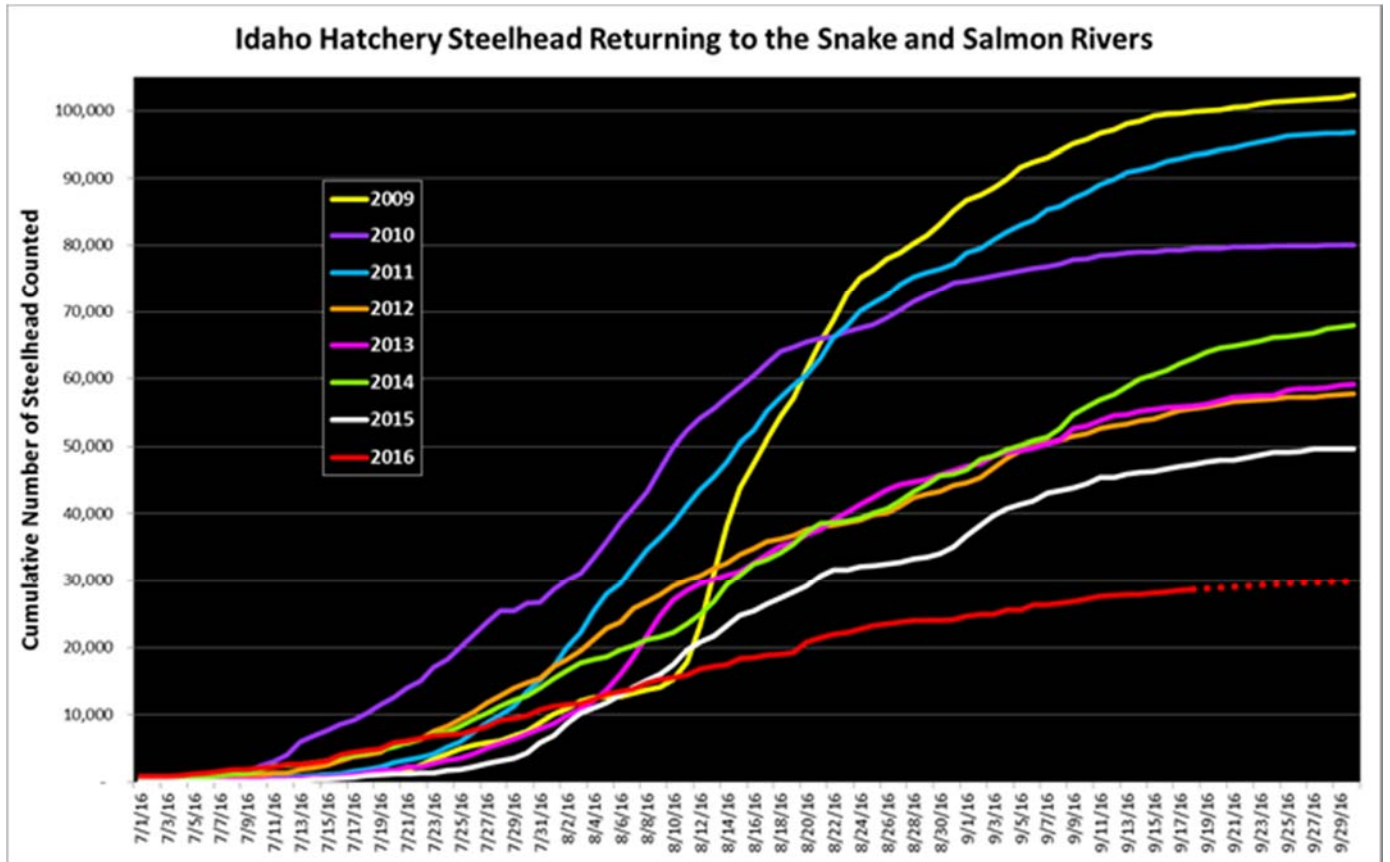
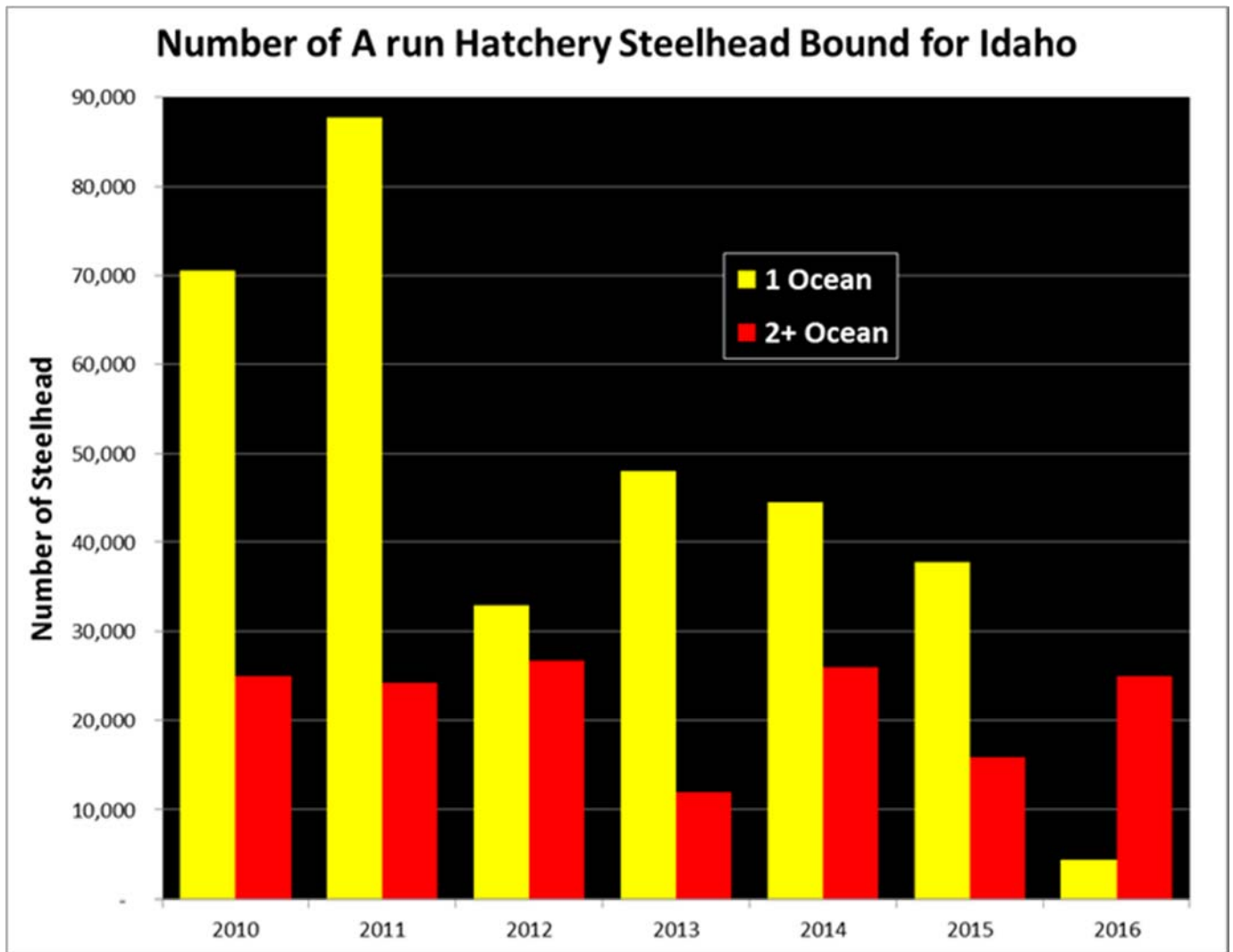


Hi everybody, I recently summarized a bunch of information about this year's steelhead run for an upcoming meeting, and I thought all you steelhead anglers would all like to see it as well. I saved the good news for last, so be sure to read clear to the end.

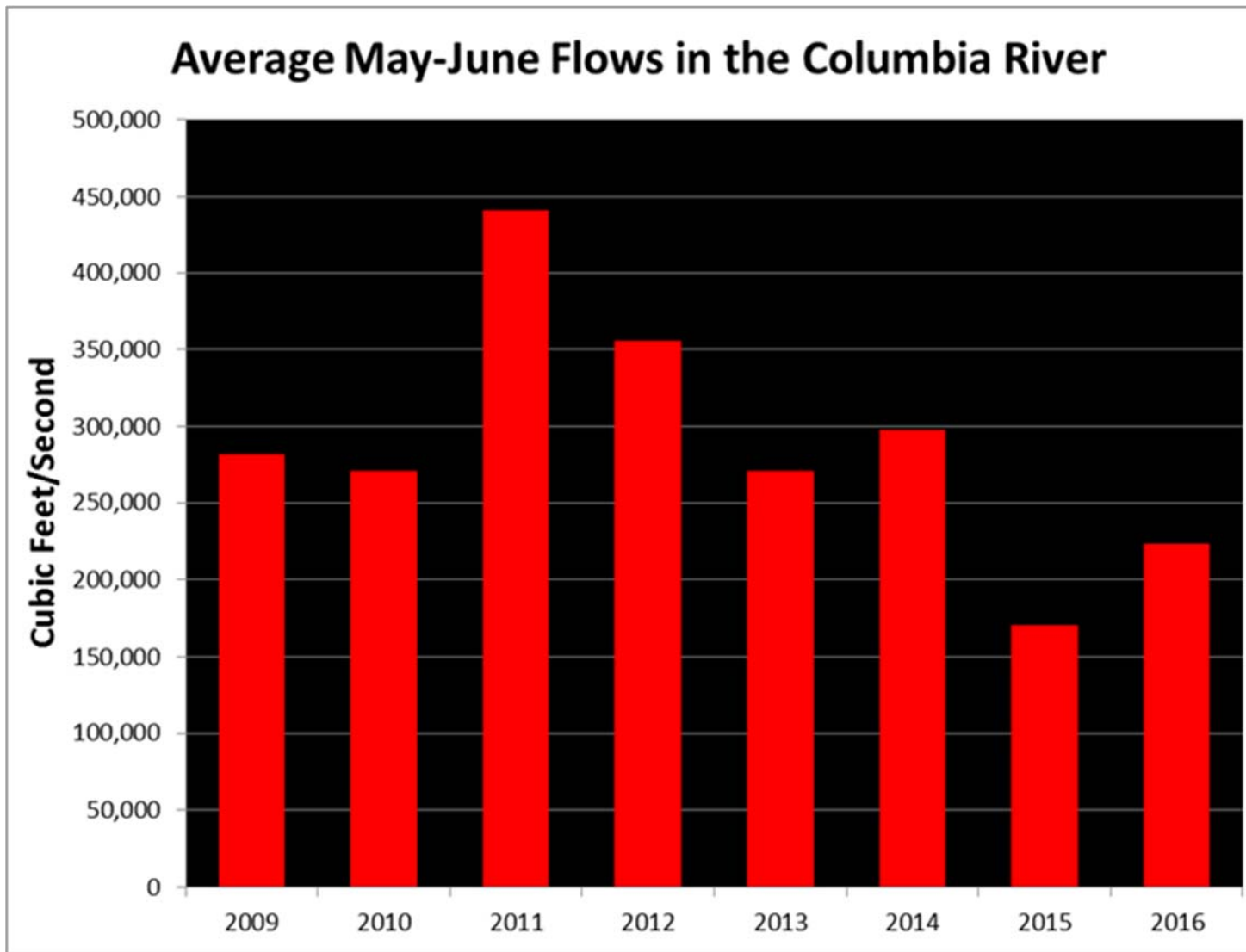
The first two graphs below compare how this year's hatchery steelhead A-run (fish released in the Snake and Salmon rivers of Idaho) compares to previous years. This data was generated from PIT tag detections as steelhead passed over Bonneville Dam. As you can see, this year's A run will be considerably lower than previous 7 years. If you look at the second graph, it is evident that the reason for this down run is due to a poor return of 1-ocean fish (fish that spent one year in the ocean).



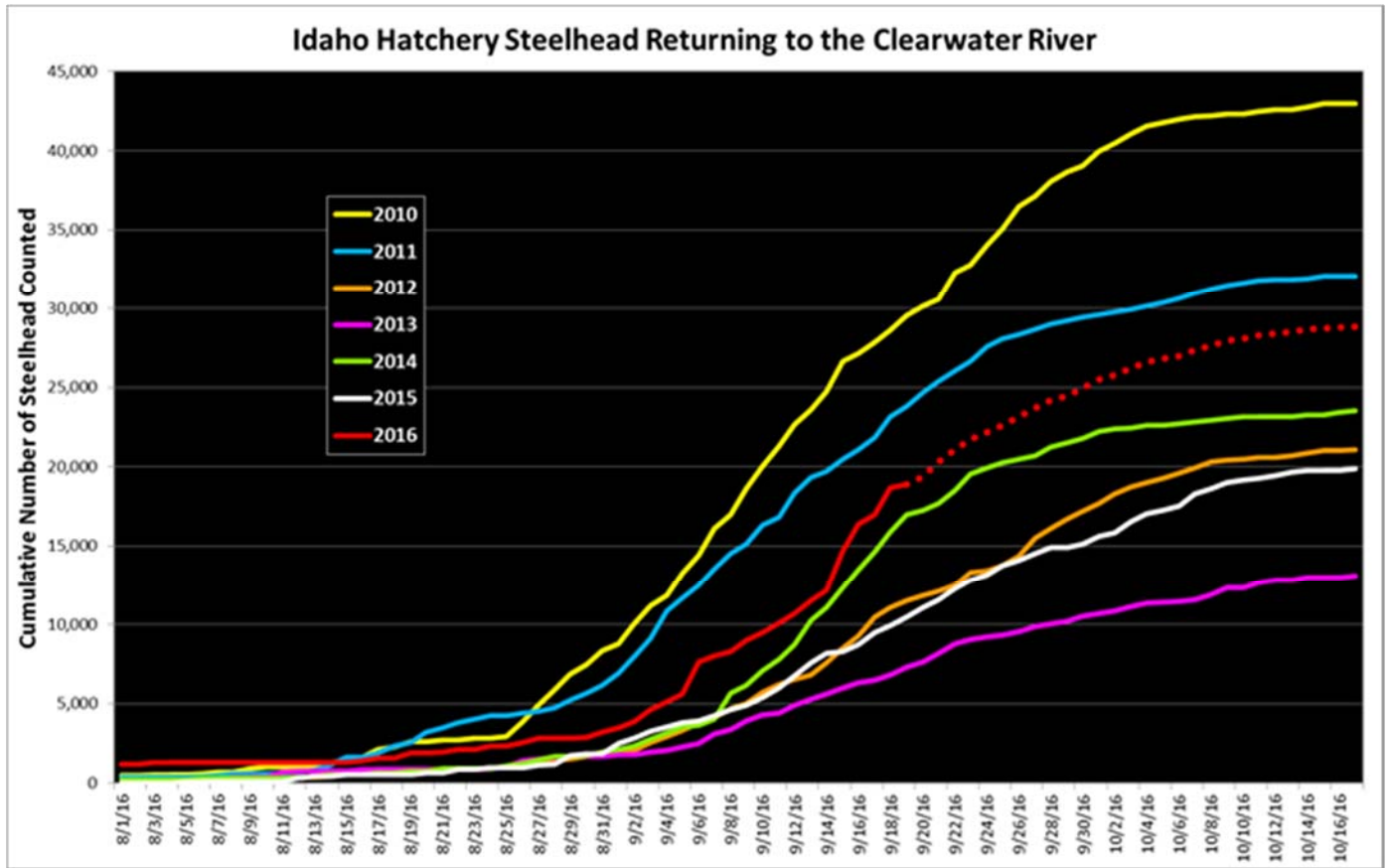


The question everybody is asking is “what happened to the 1-ocean return?”. The two figure below help explain why this may have happened. Ocean conditions have been found to strongly influence salmon and steelhead year class strength. The first table below ranks how various ocean conditions influenced juvenile salmon and steelhead survival since 1998. Green boxes generally represent good survival conditions whereas red boxes indicate poor survival conditions. As you can see from this table (look at the bottom row for an overall rank), last year (2015) when the 1-ocean adults entered the ocean as smolts, ocean conditions were ranked 16 out of 18 - the third poorest since 1998. River flows have also been found to influence survival of steelhead smolts as they migrate to the ocean. In general, lower flows increase the time it takes for these fish to reach the ocean which tends to result in lower survival. The second figure below compares the average flows in the Columbia River in May and June (the time when most of Idaho’s steelhead smolts migrate down this river) between years. As you can see, the flows in 2015 were the lowest we have seen since 2009. When you combine poor ocean conditions and poor flows, it often doesn’t bode well for anadromous fish.

	Year																	
<i>Ecosystem Indicators</i>	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
PDO (Sum Dec-March)	16	6	3	12	7	17	11	15	13	9	5	1	14	4	2	8	10	1
PDO (Sum May-Sept)	10	4	6	5	11	15	14	16	12	13	2	9	7	3	1	8	17	1
ONI (Average Jan-June)	18	1	1	6	12	14	13	15	8	11	3	10	16	4	5	7	9	1
46050 SST (*C: May-Sept)	15	8	3	4	1	7	18	14	5	16	2	9	6	10	11	12	13	1
Upper 20 m T (*C: Nov-Mar)	17	11	8	10	6	14	15	12	13	5	1	9	16	4	3	7	2	1
Upper 20 m T (*C: May-Sept)	14	11	13	4	1	3	18	16	7	8	2	5	12	10	6	15	17	1
Deep temperature (*C: May-Sept)	18	6	8	4	1	9	12	14	10	5	2	7	13	11	3	17	16	1
Deep salinity (May-Sept)	18	3	7	4	5	14	15	8	6	1	2	11	16	10	9	13	17	1
Copepod richness anom. (no. species: May-Sept)	17	3	1	7	6	13	12	16	14	11	8	10	15	4	5	2	9	1
N. copepod biomass anom. (mg C m <sup>-2</sup> : May-Sept)	17	13	9	10	3	15	12	18	14	11	6	8	7	1	2	4	5	1
S. copepod biomass anom. (mg C m <sup>-2</sup> : May-Sept)	18	2	5	4	3	13	14	17	12	10	1	7	15	9	8	6	11	1
Biological transition (day of year)	17	11	6	7	8	12	10	16	15	3	1	2	14	4	9	5	13	1
Ichthyoplankton biomass (mg C 1000 m <sup>-2</sup> : Jan-Mar)	18	9	2	5	7	16	15	11	14	13	1	10	3	12	8	6	17	1
Chinook salmon juvenile catches (no. km <sup>-2</sup> : June)	17	4	5	15	10	12	16	18	11	8	1	6	7	14	3	2	9	1
Coho salmon juvenile catches (no. km <sup>-2</sup> : June)	17	7	12	5	6	2	14	18	15	3	4	9	10	13	16	1	11	1
Mean of ranks	16.5	6.6	5.9	6.8	5.8	11.7	13.9	14.9	11.3	8.5	2.7	7.5	11.4	7.5	6.1	7.5	11.7	14.5
Rank of the mean rank	18	5	3	6	2	13	15	17	11	10	1	7	12	7	4	7	13	1



**Now for the good news!** The figure below compares returns of Idaho hatchery steelhead since 2010 that are bound for the Clearwater River (the bigger B-run fish). This data was generated from PIT tag detections as these steelhead passed over Bonneville Dam. The red line below is what this year's run is looking like. If the run continues as projected (dotted red line), this will be the third best return since 2010.



So, there you have it. I hope you all are enjoying your fall as much as I am.

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