STATUS REPORT - PINNIPED PREDATION AND DETERRENT ACTIVITIES AT BONNEVILLE DAM, 2012

Robert Stansell, Bjorn van der Leeuw, and Karrie Gibbons - (541) 374-8801

Fisheries Field Unit
U.S. Army Corps of Engineers
Bonneville Lock and Dam
Cascade Locks, OR 97014

April 27, 2012

This is the ninth weekly status report for 2012 and summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through April 25, 2012 (unless otherwise noted). Regular daylight observations began January 6 and will continue through the end of May, five days per week excluding holidays. Final predation estimates will be expanded for hours and days not observed, adjusted for "unknown" prey species take, and a night time predation factor applies at the end of the observation season and those updated figures will be presented in our annual field report. This report can be found at: http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2012/.

PRELIMINARY RESULTS

All data presented here are preliminary as of the status report date. Predation figures are unexpanded (unless otherwise noted) and sea lion abundance estimates will likely change as the season progresses and data are proofed and analyzed, so please use these estimates with appropriate caution. A final report summarizing the results of the 2012 evaluation will be available in the fall of this year.

PINNIPED ABUNDANCE

Both Steller sea lions (*Eumetopias jubatus* - SSL) and California sea lions (*Zalophus californianus* – CSL) numbers grew this past week (Figure 1). Average daily SSL numbers are similar to last year (Figure 2). The maximum number of Pinnipeds seen any day so far this year was 38 (on April 25). The maximum number of of SSL seen any day so far this year was 29 and 14 for CSL (Figure 1). Average CSL numbers present per day this year is lower than last year (Figures 2), which is the lowest for CSL since 2002. This is undoubtedly influenced by the removal of several CSL which would otherwise be adding to the daily abundance estimates. We have documented about 64 different SSL's visiting the dam so far and 28 CSL. At least 32 of the SSL are confirmed as seen in past years, and 21 of the CSL.

PREDATION DATA

Unexpanded numbers for fish observed taken in the Bonneville Dam tailrace for 2012 (through April 25) are:

Prey	*California Sea Lions*	*Steller Sea Lions*	*Total*
Chinook	178	283	461
Steelhead	48	125	173
Sturgeon	0	1340	1340
Lamprey	8	3	11
Shad	3	25	28
Smolt	0	0	0
Other	0	0	0
Unknown	17	245	262

It is likely that most of the recent unidentified fish are Chinook. There is a higher probability that SSL are eating some prey underwater, and thus undetected by our observers, than with CSL. Besides observing many steelhead and smaller Chinook swallowed whole by SSL, we are also observing SSL just breaking the surface with larger Chinook prey that are already missing the head or tail section, and SSL are usually finished with a large Chinook in less than a minute. Most Chinook predation has occurred in powerhouse 1 (Figure 3). Only 4 sturgeon were caught during the past week. Sturgeon catch (expanded for weekends only) is less than last years at this time (Figure 4). The Chinook run hit the 1,000 per day mark on April 21 and rose for a few days before slowing down to a little over a thousand yesterday, likely due to the very high river flows. To date 4,049 steelhead and 19,538 Chinook have passed the count station windows at Bonneville Dam from January 1 through April 26. The cumulative count has finally risen to be higher than four of the past 10 years at this date. Chinook predation was quite high the past week, more than doubling predation in all previous weeks combined. Total salmonid catch by sea lions through April 25 (861 expanded by interpolating for weekends) is lower than the past six years, but now higher than in 2002 and 2005 (Figure 5). However, predation on salmonids, by CSL in particular, continues to be far lower than any previous year monitored (Figure 6). On the other hand, SSL predation on salmonids dramatically increased the past week and is now very similar to last year (Figure 7) and SSL predation on salmonids continues to be higher than that for CSL, which is not surprising when looking at the abundance figures for each species (Figure 8).

DETERRENTS/TRAPPING

Hazing by USDA (land) began on March 1 and will continue until the end of May, seven days a week. CRITFC began hazing from boats March 5th.

The states trapped 2 SSL this week, putting an acoustic pack on both and branding one that was not branded. They also trapped 8 CSL, putting an acoustic pack on 4 (and branding 3 that did not have brands) and removing 4 that were on the list for removal. As per authorization from their NOAA permit, one of those will be sent to an aquarium as it was determined to be healthy and without disease and a facility was willing to take one.

OTHER ITEMS OF INTEREST

CRITFC conducted a survey from the I205 bridge to Tanner Creek earlier this week and spotted 9 SSL in the water (one with a salmonid kill) and 4 CSL in the water (one with a salmonid kill). They also spotted 7 SSL on Phoca Rock. During the same time period, we had at least 19 SSL and 5 CSL in the Bonneville Dam tailrace area and observed 33 salmonid being preyed upon by the pinnipeds.

We conducted a very early morning observation (0300h – 0600h) observation last week and were surprised to see 4 SSL hunting at PH2 tailrace and 3 SSL hunting at PH1 tailrace the first hour. This abundance increased the last hour just before sunrise. We observed 2 salmonid takes during that last hour, at PH1. Numbers on or rafting near the traps was initially at least 25, but dropped to about 15 during the last hour. This night time hunting and predation by a few SSL through the night, coupled with the SSL ability to eat/swallow smaller prey underwater and quickly eat larger prey before we may have an opportunity to observe and record the act leads us to believe we may be underestimating predation by SSL near the dam. We will factor in the night predation we observe, but we may be missing several predation events at night and several underwater, at least for SSL. Also, the fact that SSL tend to eat sturgeon farther downstream of our viewing area (and indeed around Hamilton Island where many sturgeon congregate in the fall/winter/early spring) makes estimating SSL predation with surface observations not the most accurate of methods. This is a good opportunity to remind readers that all these predation and abundance estimates in our reports are minimums. They are only for the period between January 1 through May 31, and only for the near dam area of Bonneville Dam and do not include downstream predation/abundance, upstream predation/abundance, and predation occurring during other times of the year.

Figure 1. Daily pinniped abundance, by species, at Bonneville Dam, 2012.

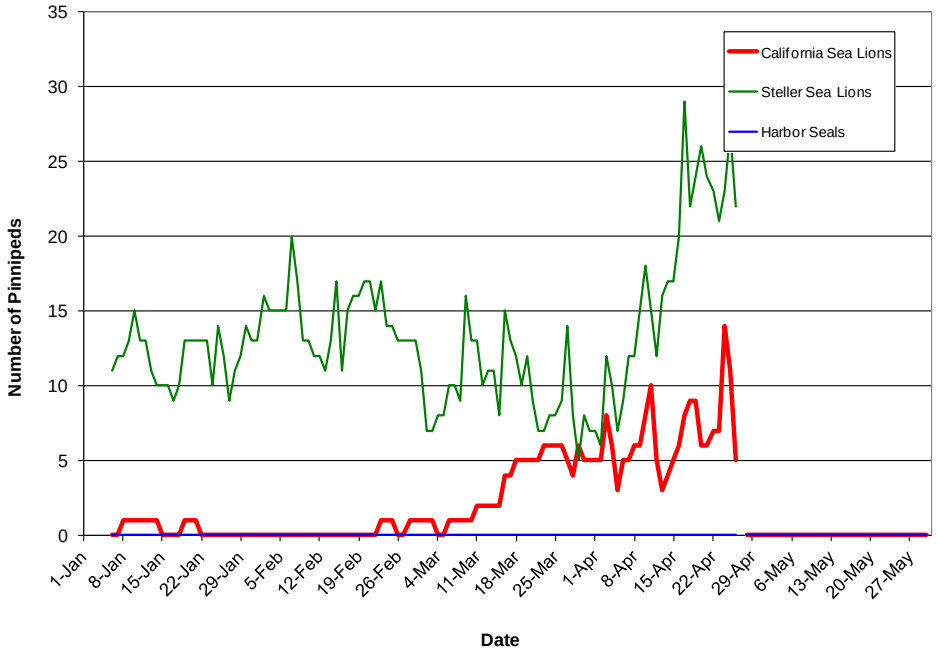

Figure 2. Average daily presence of pinnipeds, by species, to date (April 26) for each year at Bonneville Dam.

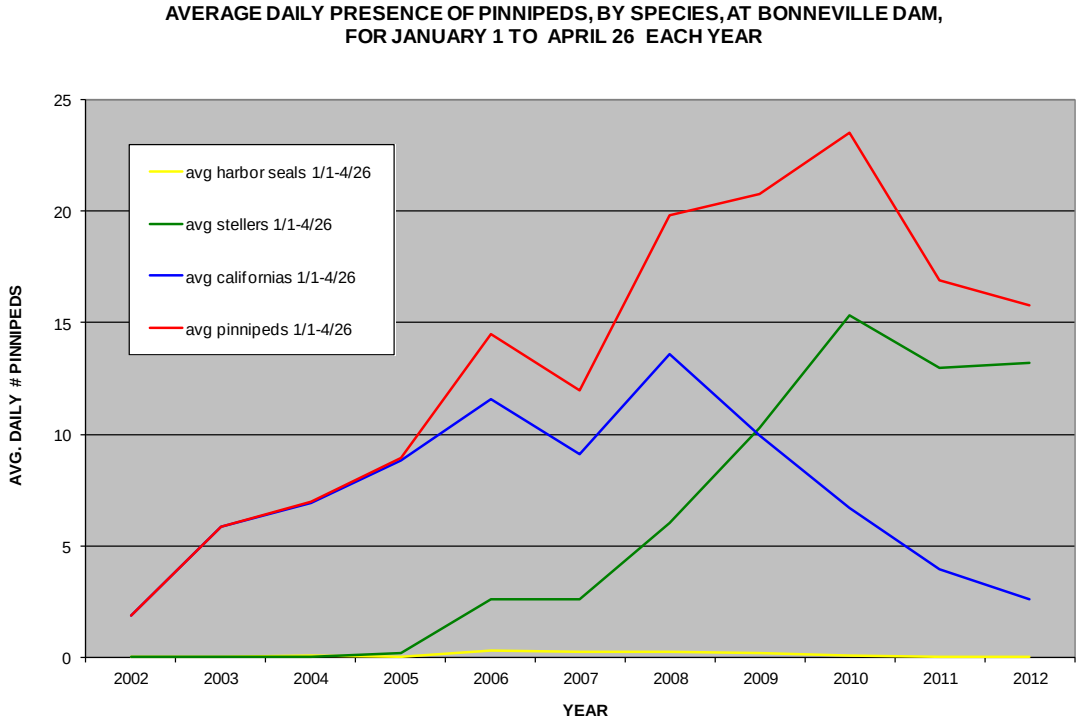

Figure 3. Distribution of prey taken by Pinnipeds by location at Bonneville Dam, through April 25, 2012.

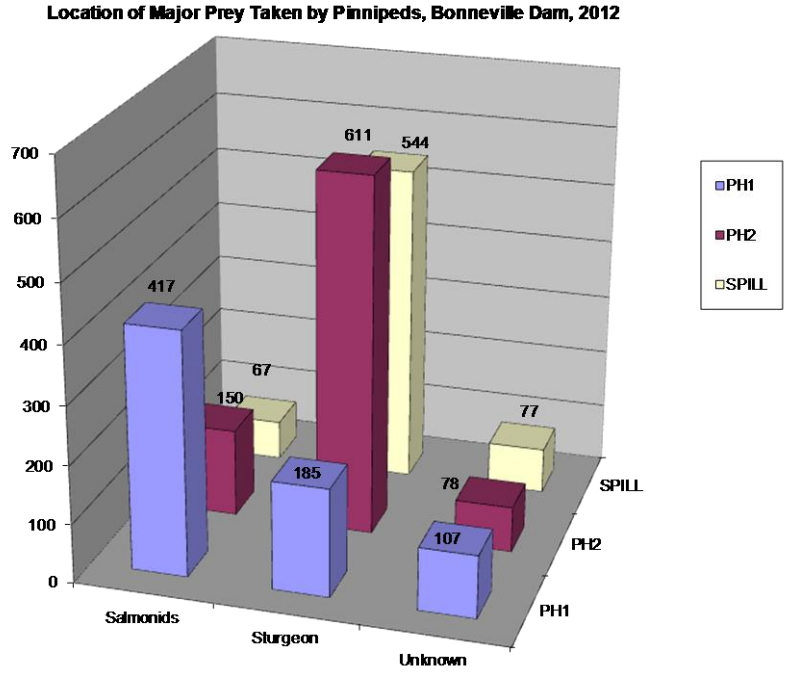

Figure 4. Daily cumulative sturgeon catch (interpolated for weekends) at Bonneville Dam, 2006-2012.

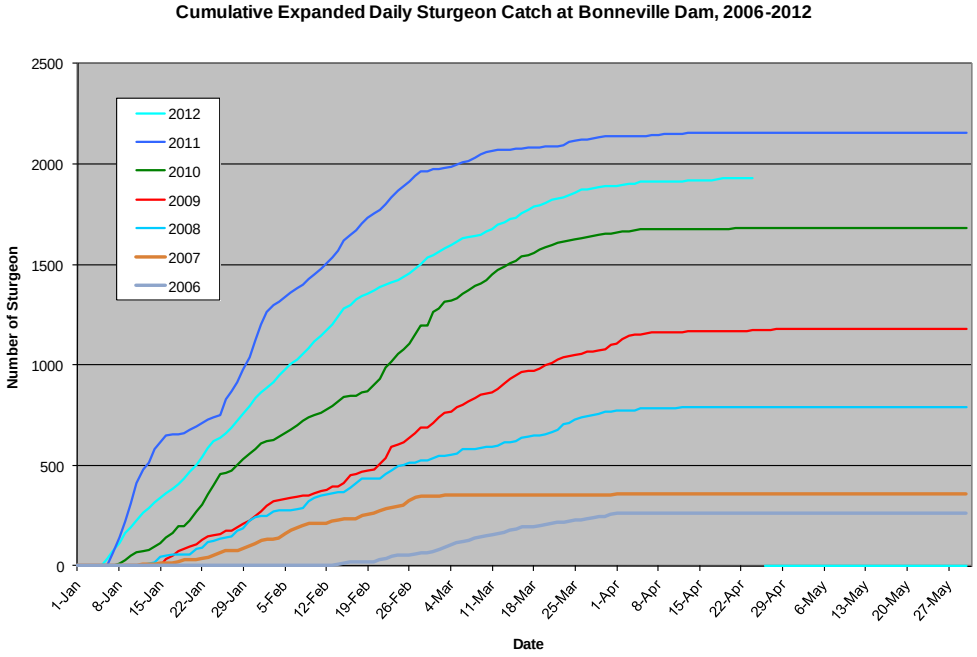

Figure 5. Daily average salmonid predation by all pinnipeds, by week, for each year at Bonneville Dam.

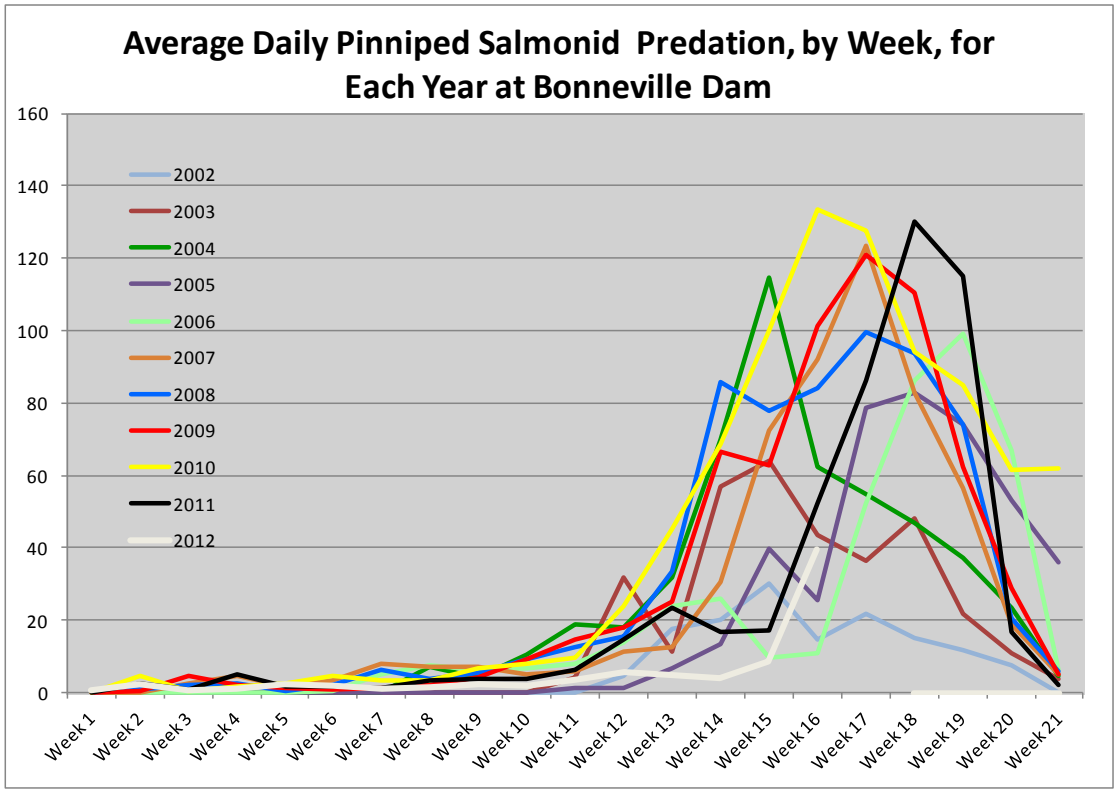

Figure 6. Cumulative estimated salmonid catch by CSL at Bonneville Dam, 2002-2012.

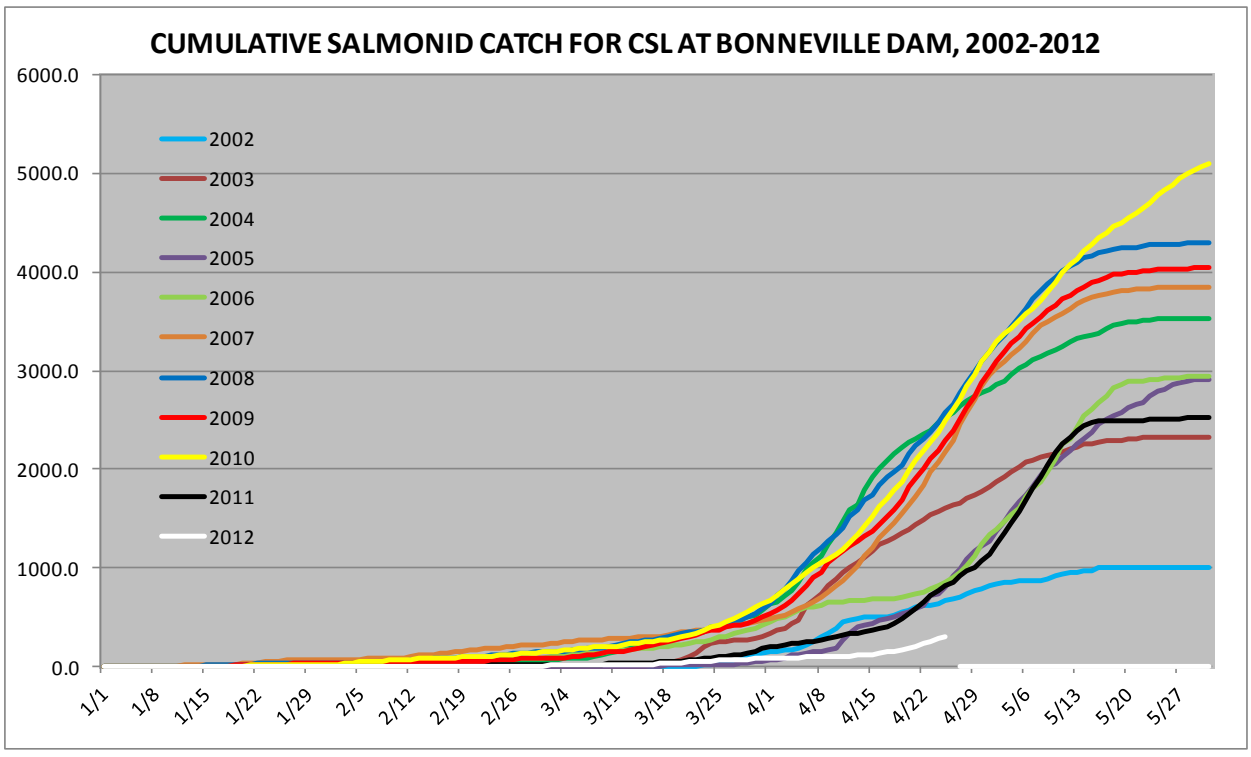

Figure 7. Cumulative estimated salmonid catch by SSL at Bonneville Dam, 2002-2012.

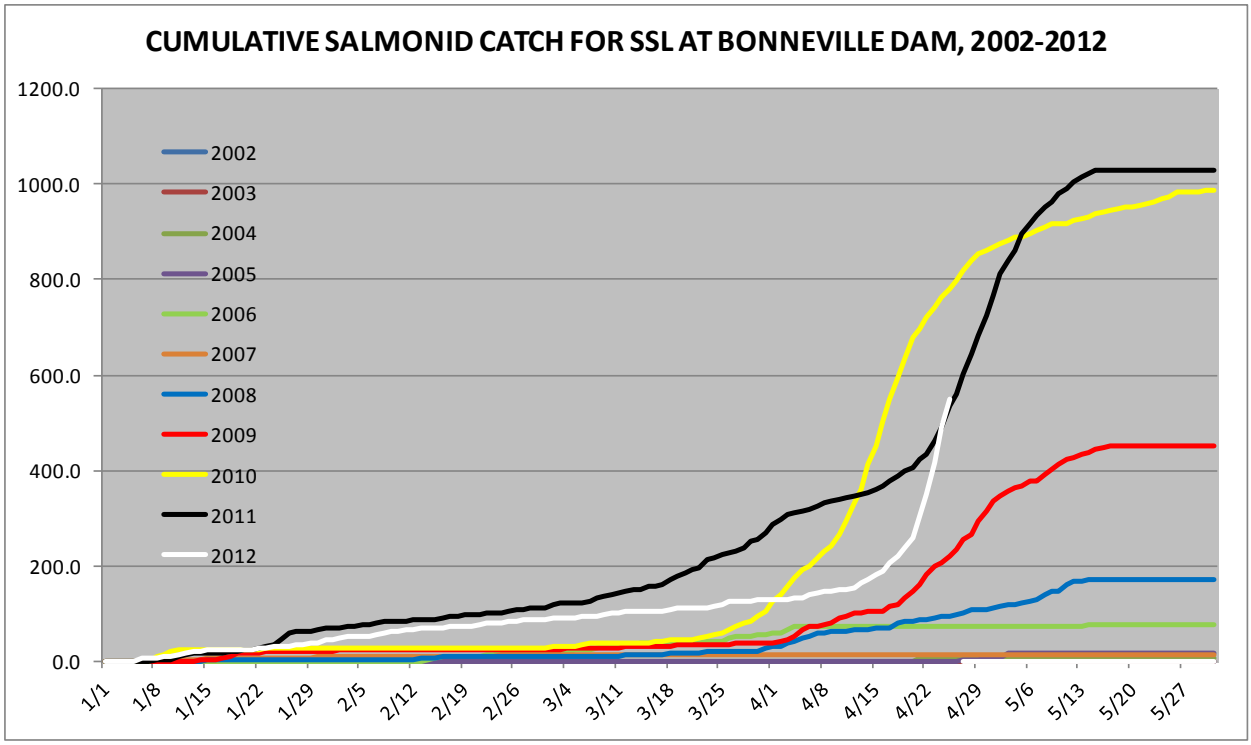

Figure 8. Predation by predator and prey species at Bonneville Dam in 2012.