

STATUS REPORT - PINNIPED PREDATION AND DETERRENT ACTIVITIES AT BONNEVILLE DAM, 2013

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March 28, 2013

This is the eighth weekly status report for 2013 and summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through March 27, 2013 (unless otherwise noted). Regular daylight observations began January 4 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/2013/sea_lion_hazing2013.html

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 2013 evaluation will be available in the fall of this year.

PINNIPED ABUNDANCE

California sea lions (*Zalophus californianus* – CSL) are present now fairly consistently, although still in low numbers and do not spend much time in any one location (Figure 1). The maximum number of CSL seen on any one day so far this year is 12. We’ve only identified seven so far, three being repeat individuals from previous years. Steller sea lions (*Eumetopias jubatus* - SSL) are slightly less abundant than the past two years (figures 1 and 2). The maximum number of SSL seen any day so far this year was 21 (Figure 1). We have documented approximately 43 different SSL’s visiting the dam so far (including 23 with brands). All but six of the SSL are confirmed as seen in past years, although there may be some new individuals we have not adequately documented yet. These figures do not include pinniped numbers that are upstream of Bonneville Dam. By breaking down average daily abundance for CSL and SSL into three year time blocks (pre-hazing 2002-2004, hazing only 2005-2007, early removal 2008-2010, recent removal years 2011-2013), it reveals a pattern of increasing CSL presence through the first couple of periods, then decreases in the following periods, particularly the last few years (Figures 7) and the opposite pattern with SSL presence (Figure 8).

PREDATION DATA

Unexpanded numbers for fish observed taken in the Bonneville Dam tailrace for 2013 (through March 27) are:

<i>Prey</i>	<i>California Sea Lions</i>	<i>Steller Sea Lions</i>	<i>Total</i>
Chinook	0	34	34
Steelhead	1	39	40
Sturgeon	0	286	286
Lamprey	0	8	8
Shad	0	72	72
Smolt	0	1	1
Other	0	0	0
Unknown	0	70	70

Our first predation by CSL for the year was observed March 18. Most sturgeon have been caught in the spillway tailrace, followed by the powerhouse 2 tailrace, while relatively few are caught at powerhouse 1 (Figure 3). Sturgeon catch (455 expanded for weekends only) is the lowest rate since 2006 at this time of year (Figure 4), most taken being in the 2 to 4 foot range. Few fish are passing the count stations (1,347 steelhead and 160 Chinook) from January 1 through March 26, lower than the last three years and less than half the 10 year average (Figure 6). Total salmonid catch through March 27 (109 expanded by interpolating for weekends) is fewer than any previous year (Figure 5) excluding the earliest years when sea lions were just now arriving. By breaking down average daily estimated salmonid predation for CSL and SSL into three year time blocks (pre-hazing 2002-2004, hazing only 2005-2007, early removal 2008-2010, recent removal years 2011-2013), it reveals a pattern of increasing CSL presence through the first three periods, then decreases in the final period (Figures 9) and the a marked increase by SSL predation in the last two periods (Figure 10). Daily salmonid passage past Bonneville Dam is shown in Figure 11 in the same time blocks as described for predation, to show some perspective with run timing shifts and run magnitude variability.

DETERRENTS

Hazing by USDA (land) began on March 4 and will continue until the end of May, seven days a week. CRITFC also began hazing from boats March 4. No trapping has been conducted at Bonneville to date.

OTHER ITEMS OF INTEREST

We received several reports of sea lions in the Bonneville forebay eating steelhead and on March 21 were able to confirm one small CSL with no brand (may be one of the four in the Bonneville pool since last spring or a new CSL from this year, but was not one of the two branded or other identified CSL's. We documented at least two steelhead being taken just upstream of the Powerhouse 2 corner collector. We also documented the first SSL upstream of Bonneville on the same date and have seen him on March 22 and March 26.

Figure 1. Daily pinniped abundance, by species, at Bonneville Dam, 2013.

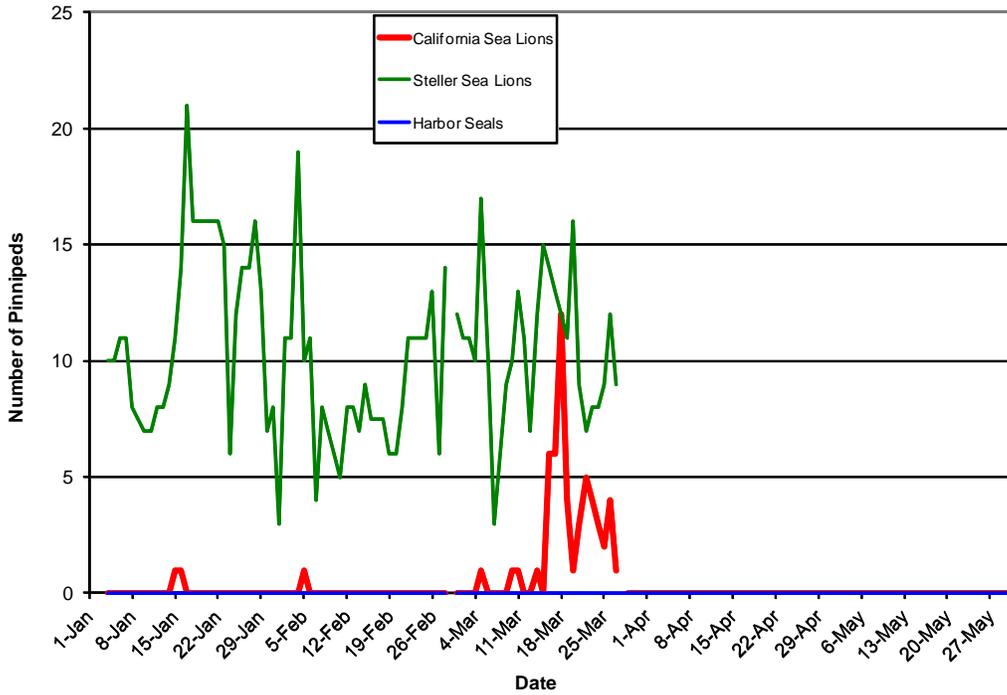


Figure 2. Average daily presence of pinnipeds, by species, to date (March 27) for each year at Bonneville Dam.

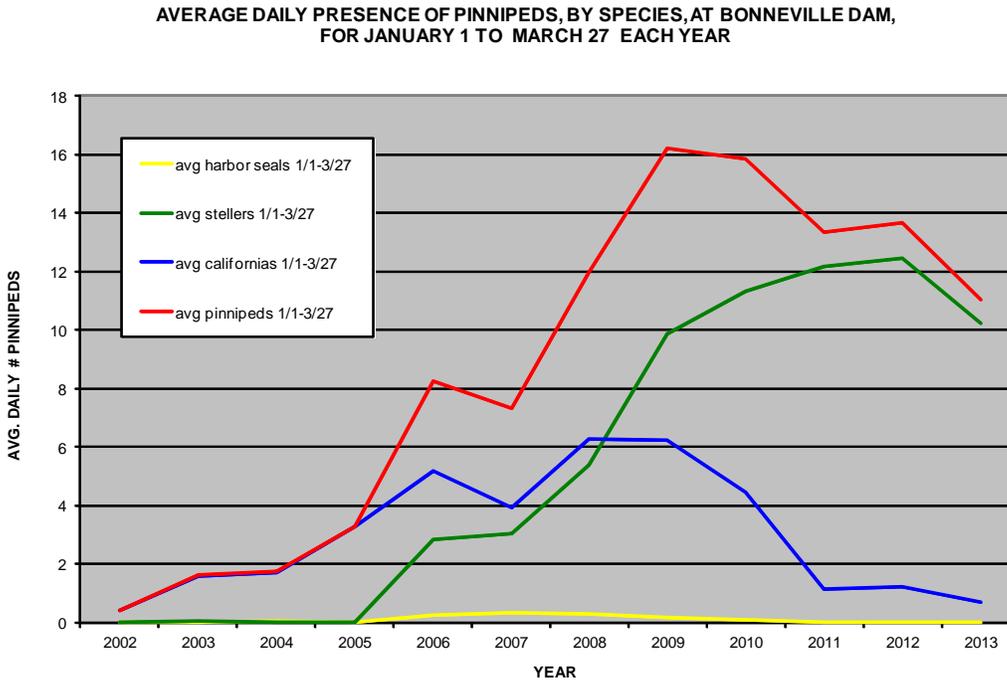


Figure 3. Distribution of prey taken by Pinnipeds by location at Bonneville Dam, through March 27, 2013.

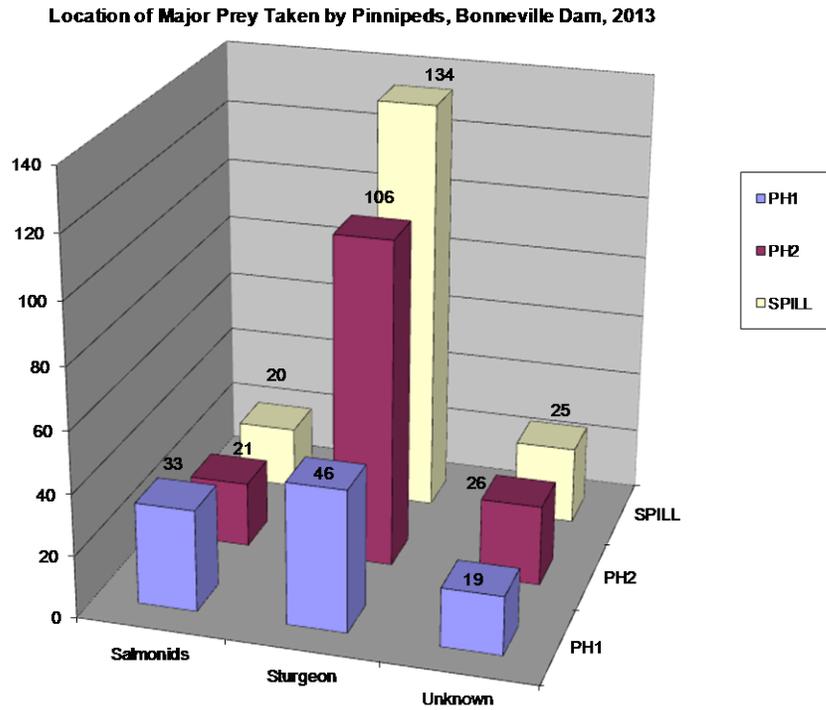


Figure 4. Daily cumulative sturgeon catch (interpolated for weekends) at Bonneville Dam, 2006-2013.

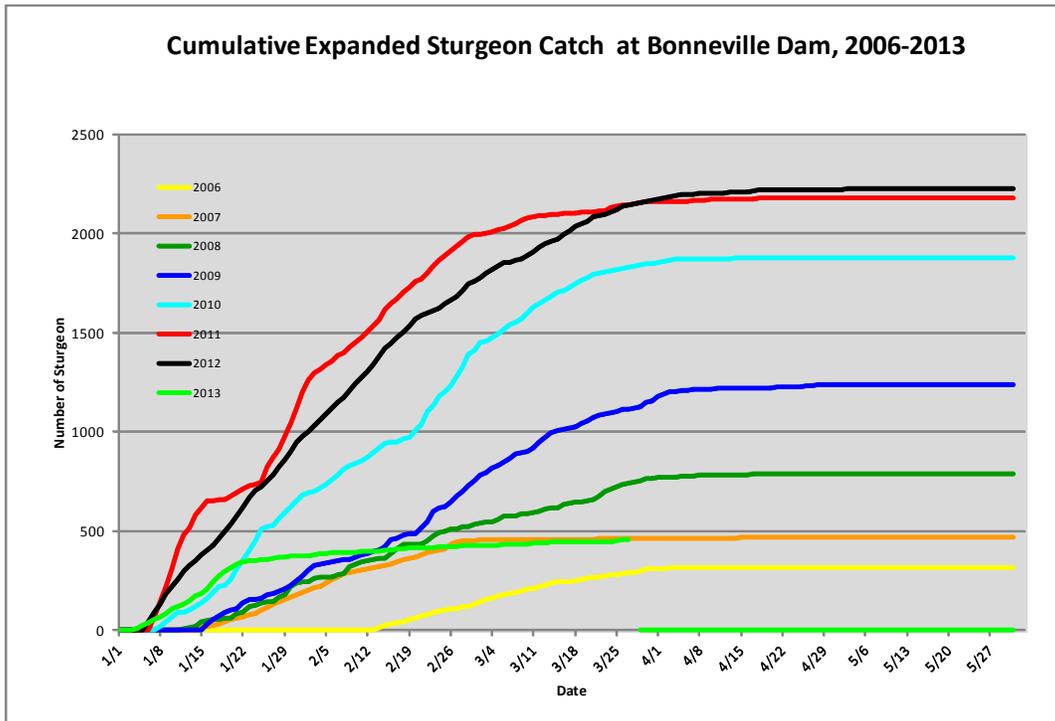


Figure 5. Daily cumulative salmonid catch (interpolated for weekends) at Bonneville Dam, through March 27 for 2002-2013.

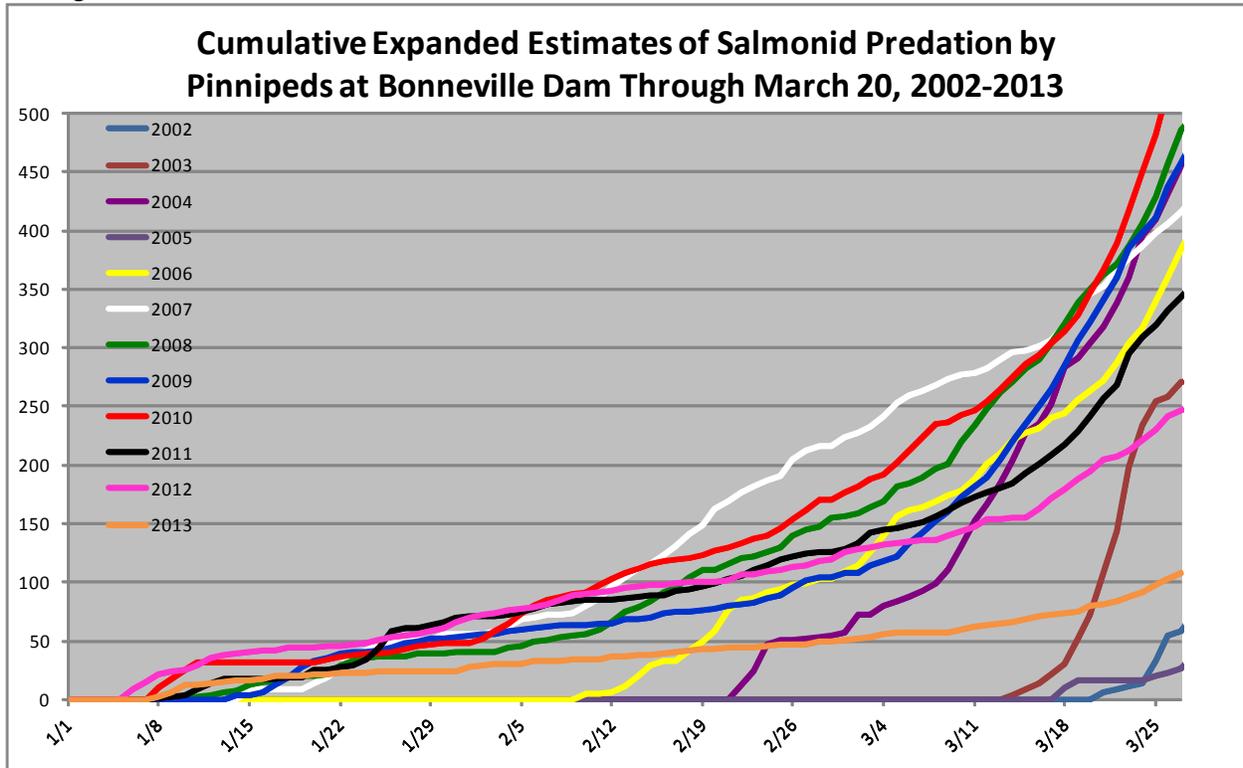


Figure 6. Cumulative salmonid passage at Bonneville Dam for 2013 and the 10 year average to date.

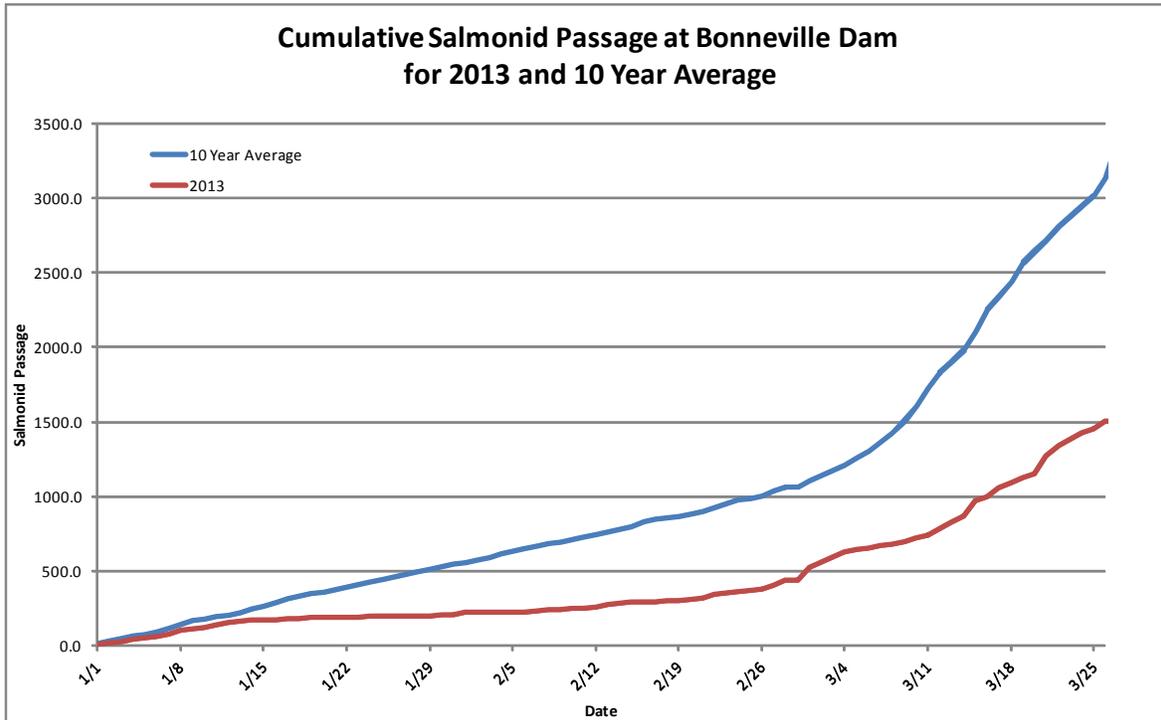


Figure 7. Average daily CSL abundance at Bonneville Dam for specific year blocks.

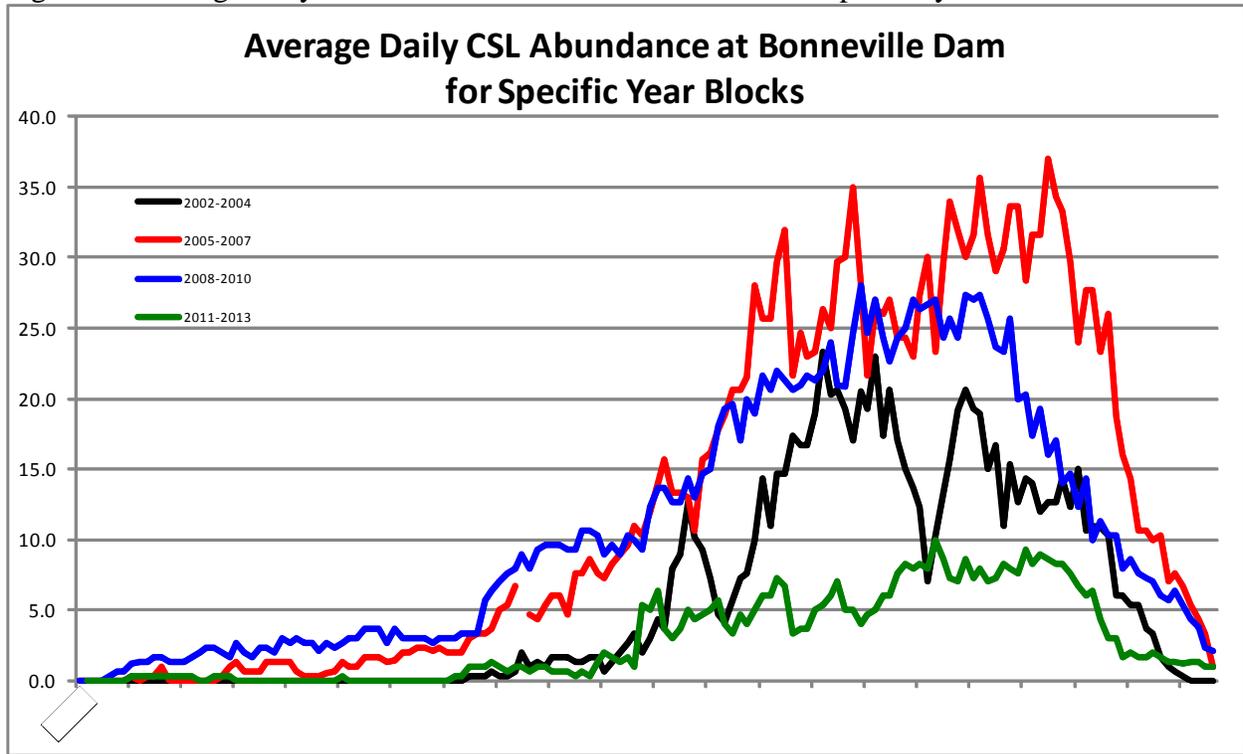


Figure 8. Average daily SSL abundance at Bonneville Dam for specific year blocks.

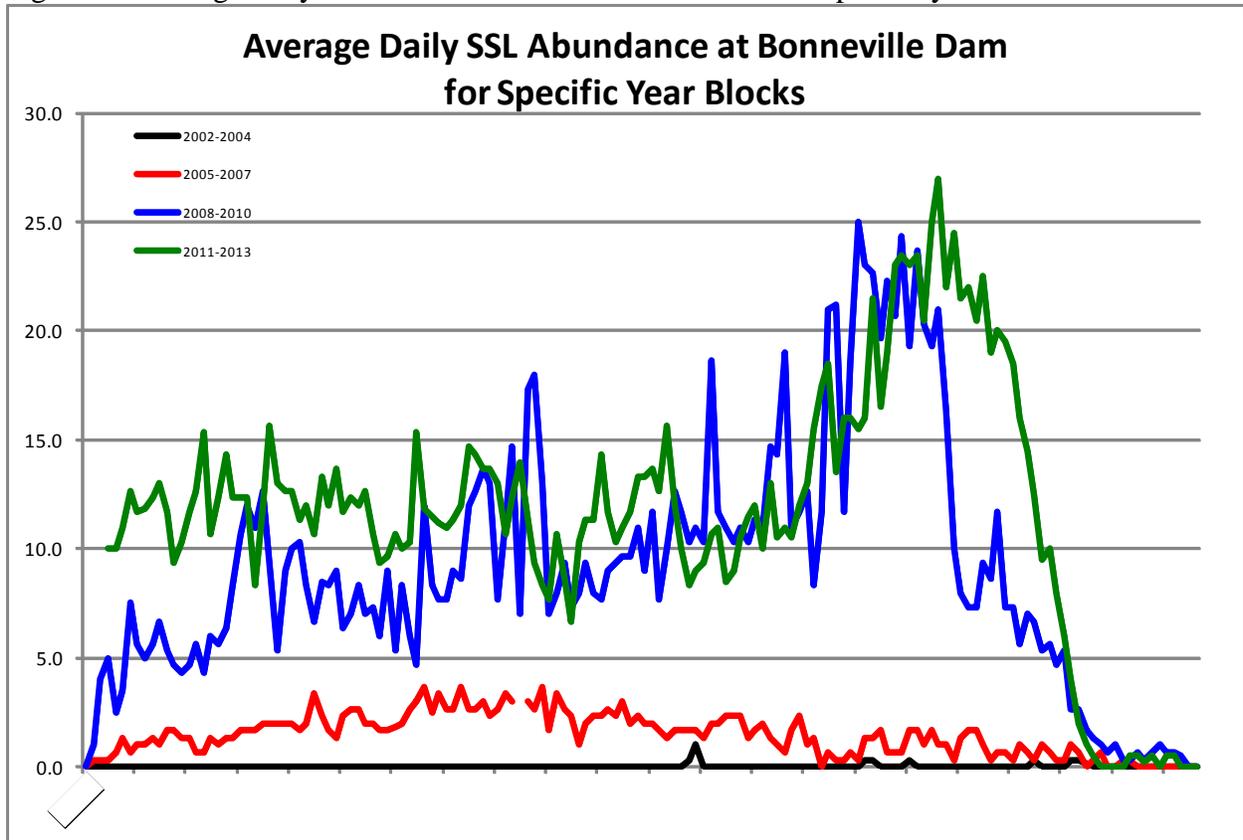


Figure 9. Average daily estimated salmonid predation by CSL at Bonneville Dam for specific year blocks.

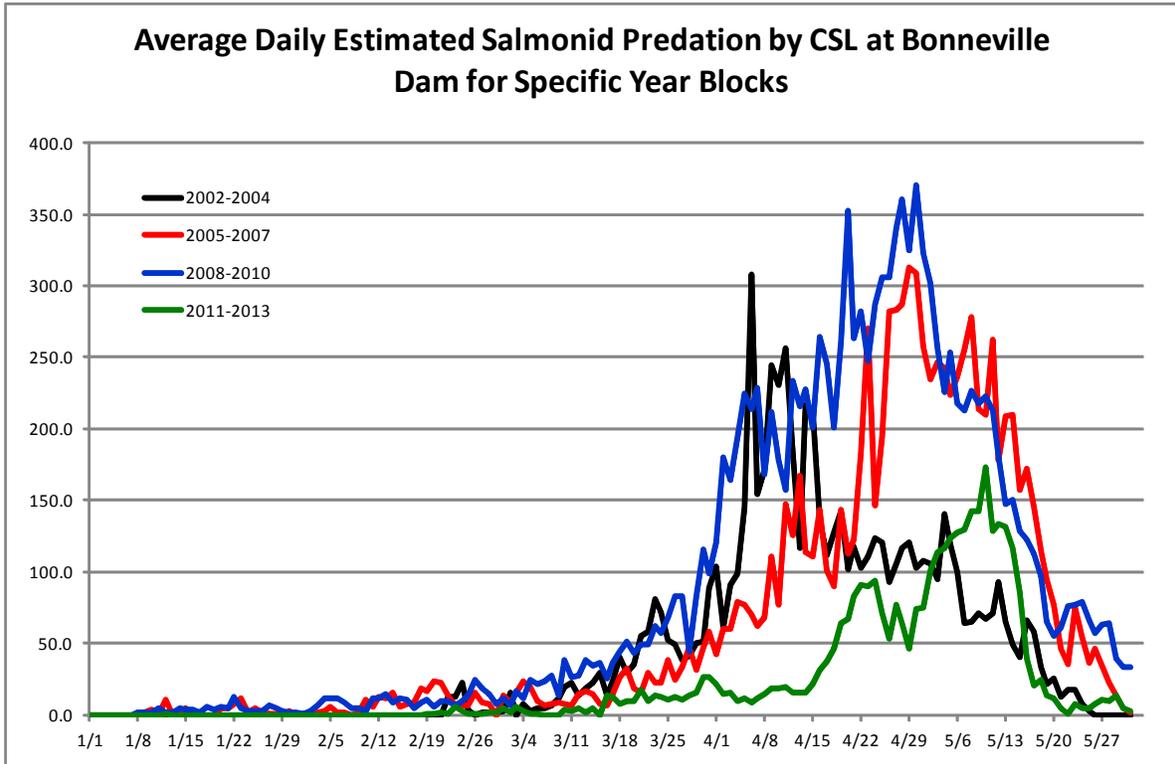


Figure 10. Average daily estimated salmonid predation by SSL at Bonneville Dam for specific year blocks.

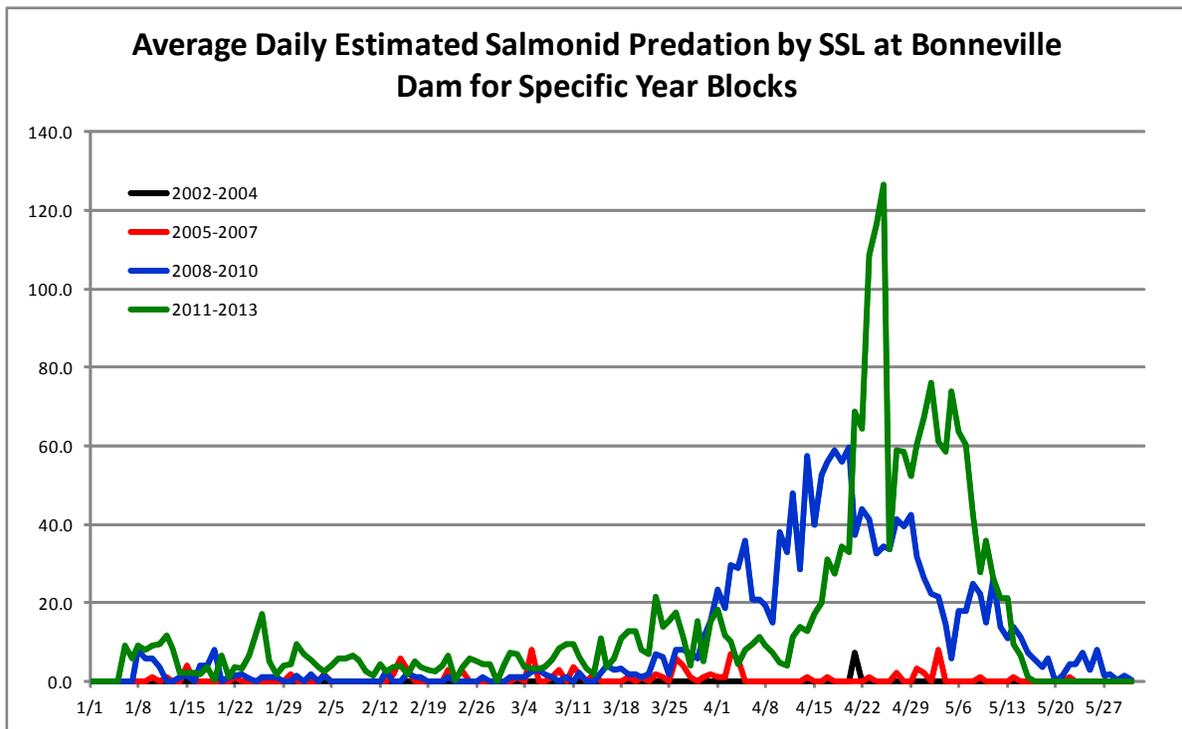


Figure 11. Average daily salmonid passage at Bonneville Dam for specific year blocks.

