

BI-WEEKLY UPDATE: PINNIPED ABUNDANCE AND SALMON PREDATION AT BONNEVILLE LOCK AND DAM

Fisheries Field Unit

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

Correspondence: Kyle.S.Tidwell@usace.army.mil

This is the fourth status report for the 2018 pinniped monitoring season and summarizes the observed predation and deterrent activities at Bonneville Dam from 11 May through 24 May, 2018. Observations will continue through May 31, 2018. A final report will be compiled soon thereafter.

Previous reports and related PMP information can be found at the link below:

<http://pweb.crohms.org/tmt/documents/FPOM/2010/Task%20Groups/Task%20Group%20Pinnipeds/>

PLEASE NOTE - All data presented here are preliminary as of the status report date. Predation numbers and abundance estimates are unexpanded and will change as data are proofed and analyzed. Final predation estimate data will be expanded to adjust for hours and days not observed as well as “unknown” prey species consumed for the final report. The final report summarizing the results of the 2018 Pinniped Monitoring Program will be available in the fall of this year.

PINNIPED ABUNDANCE

We present abundance data using the maximum number of individuals counted during a comprehensive tailrace point count and interpolated for days not observed. For inter and intra-year comparison of abundance estimates, we report average daily abundance with standard deviation as measures of variance.

Abundance: 11 May – 24 May, 2018

Since 11 May, 2018, the number of California sea lions (CSL; *Zalophus californianus*) at Bonneville Dam is below the ten year average, whereas the number of Steller sea lions (SSL; *Eumetopias jubatus*) continues to be above the ten year average (Figure 1). The numerically dominate species in the tailrace continues to be the SSL with an average daily abundance of $19.7 \pm \text{SD } 15.4$, whereas CSL had an average daily abundance of $8.5 \pm \text{SD } 1.9$ (Table 1). No harbor seals (*Phoca vitulina*) have been observed since January 24, 2018.

To date, we have documented 27 SSL and 39 CSL as uniquely identifiable individuals. For this period of time, all uniquely identifiable sea lions have been documented near Bonneville Dam in previous years, except two CSL which were branded and released. The low number of individually identifiable SSL is due to the limited branding effort for the species. The number of unique individuals for this period is at least 54 given the high count on 11 May, 2018.

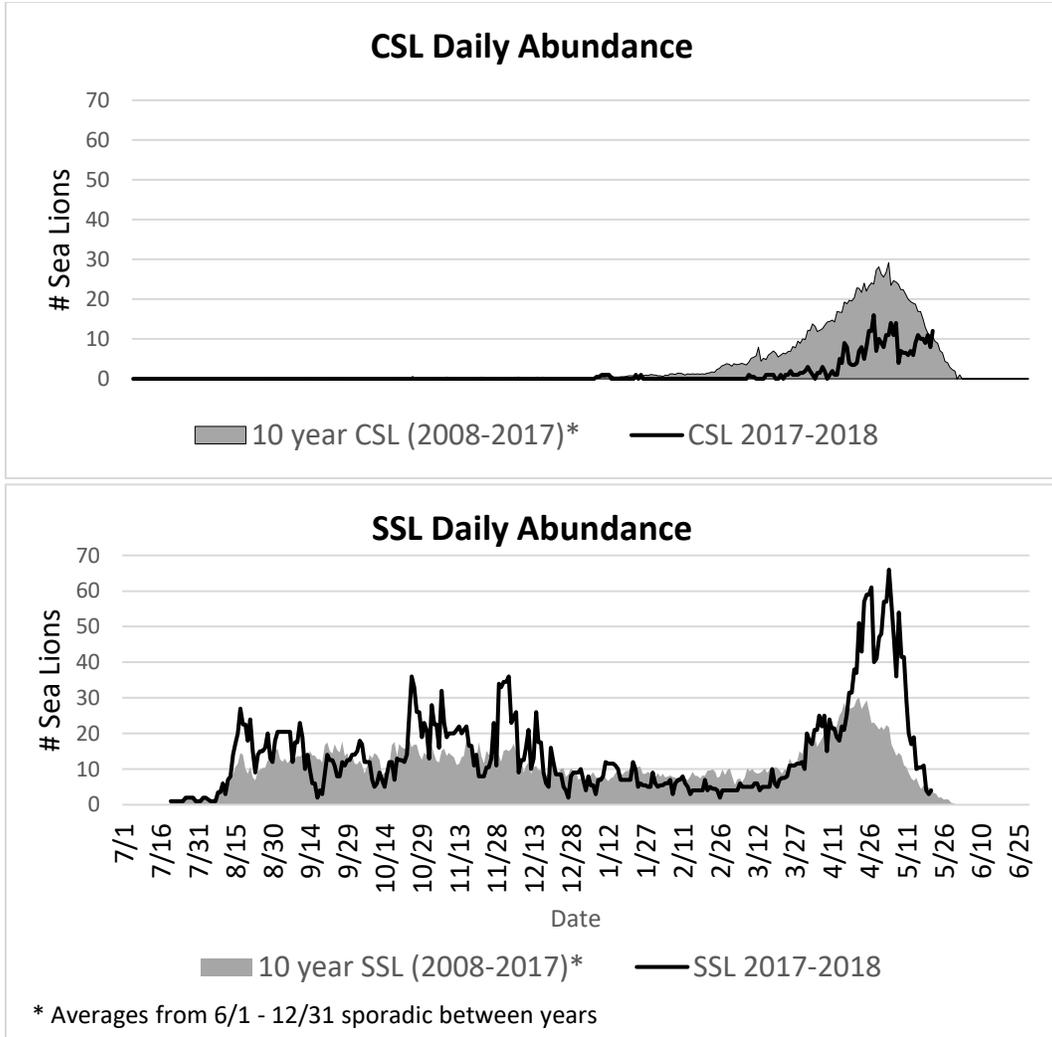


Figure 1. Comparison of estimated abundance of each pinniped species at Bonneville Dam between the 10 year running average and the current year.

Species	$\bar{x} \pm \text{S.D.}$	Range	$n = 0$
SSL	19.7 ± 15.4	3 - 54	0
CSL	8.5 ± 1.9	6 - 12	0

Table 1. Interpolated daily minimum counts of pinnipeds at Bonneville Dam tailraces between 11 May and 24 May, 2018.

PREDATION DATA

A review of the combined salmonid passage during the focal sampling period to date shows that the run was late, but is now above the 10 year average (Figure 2). The arrival of

spring Chinook (*Oncorhynchus tshawytscha*) corresponded to an increase in the number of predatory sea lions.

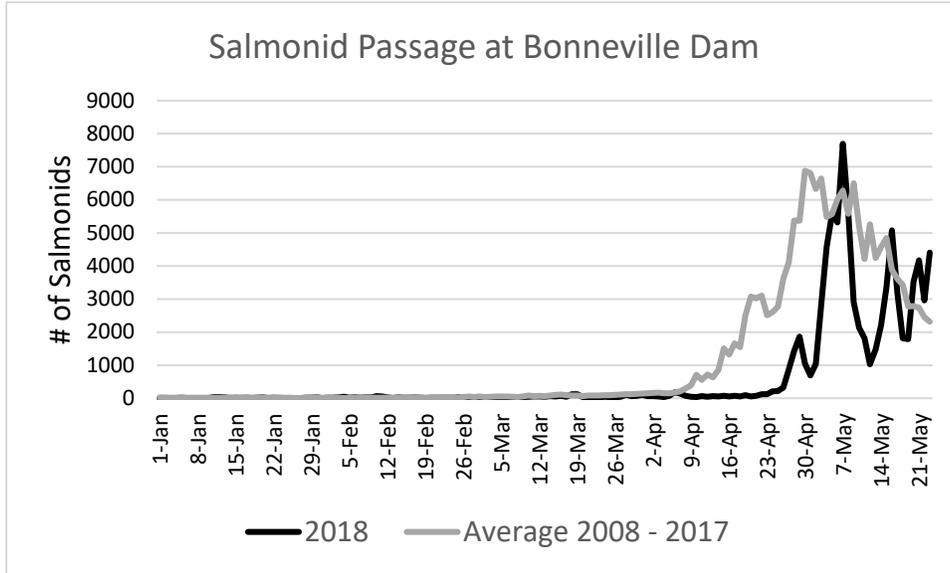


Figure 2. Comparison of the ten year average and current passage of all salmonids over Bonneville Dam.

We present only the raw (unexpanded and unadjusted) predation data. That is, we present only the accounts of fish predation events we have observed and do not account for the number of unidentifiable catches made by each species. Expansion to account for unidentifiable fish catches and adjustment for un-observed hours will be conducted at the end of the season using the same protocols employed in last year’s report.

From 11 May to 24 May, 2018, a total of 178 Chinook salmon, five Steelhead and three White Sturgeon (*Acipenser transmontanus*) have been documented being killed by pinnipeds (Table 2).

Fish Predation: 11 May – 24 May, 2018

Species	Chinook	Steelhead	Sturgeon	Lamprey	Other	Unknown
SSL	91	4	3	5	0	9
CSL	87	1	0	2	2	19
Total	178	5	3	7	2	28

Table 2. Observed fish consumption by both species of pinniped at Bonneville Dam from 11 May – 24 May, 2018.