

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

Prepared by:

Kyle Tidwell

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 first status report for the 2018 pinniped monitoring season and summarizes the observed predation and deterrent activities at Bonneville Dam from 1 January through April 11, 2018. Observations will continue through May 31st and a final report will be compiled soon thereafter.

Previous reports can be found at the link below:

<http://pweb.crohms.org/tmt/documents/pinniped/>

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 1 January – 11 April, 2018

Since January 1, 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*) is equivalent to the ten year average and has been at or above that level since July 2017 (Figure 1). The dominate species in the tailrace continues to be the SSL with an average abundance of $7.7 \pm SD 4.7$, whereas CSL had an average of $0.4 \pm SD 0.6$ individuals (Table 1). Three Harbor seals (*Phoca vitulina*) observations have been made between January 2 and January 24.

To date, we have documented 17 SSL and 16 CSL as uniquely identifiable individuals. All uniquely identifiable sea lions have been documented near Bonneville Dam in previous years.

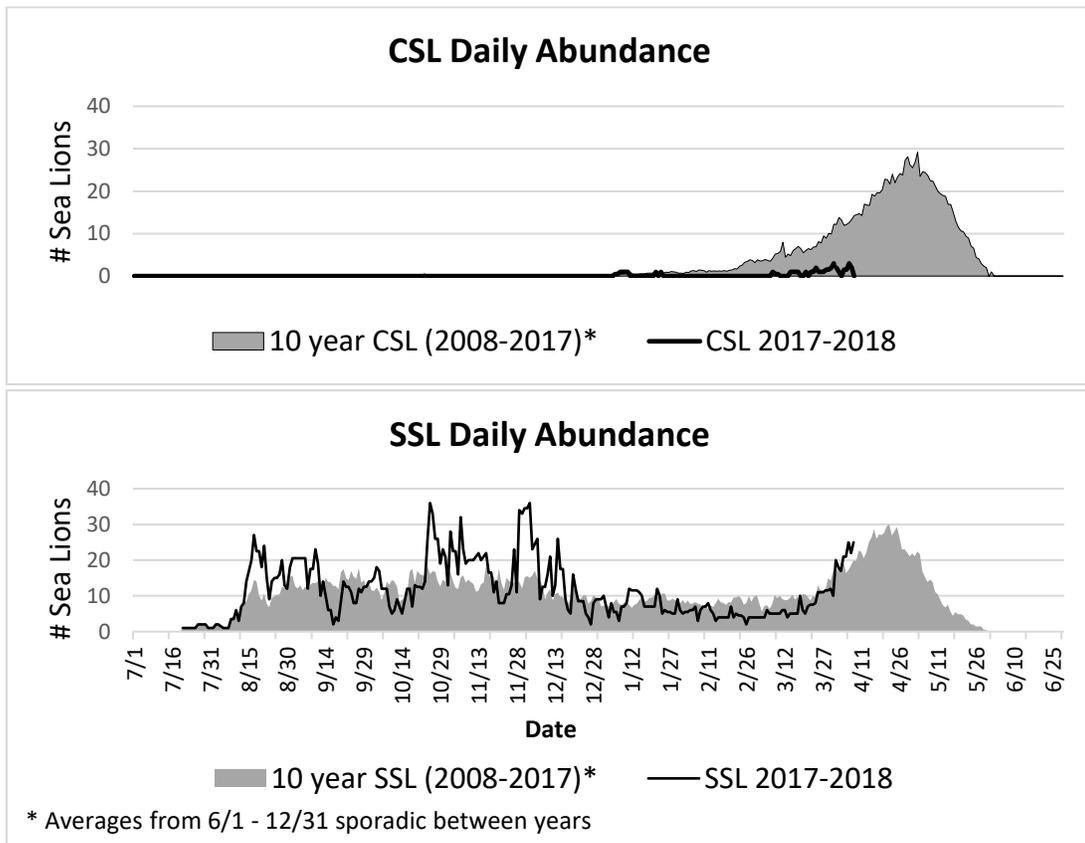


Figure 1. Comparison of estimated abundance of each pinniped species at Bonneville Dam between the 10 year running average and the current year.

Species	$\bar{x} \pm S.D.$	Range	$n = 0$
SSL	7.7 ± 4.7	0 - 25	0
CSL	0.4 ± 0.6	0 - 3	68

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

PREDATION DATA

A review of the combined salmonid passage during the focal sampling period to date shows that the winter and summer steelhead (*Oncorhynchus mykiss*) runs were slightly above the ten year average, whereas the spring Chinook (*Oncorhynchus tshawytscha*) run is below the average (Figure 2). The low numbers of CSLs (and SSLs) will likely increase as the run increases in the coming weeks.

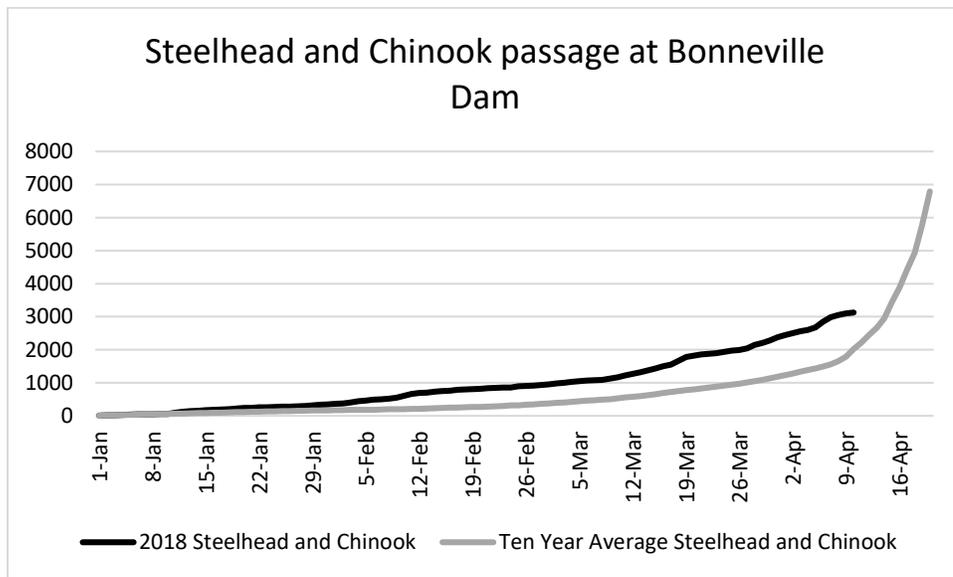


Figure 2. Comparison of the ten year average and current passage of steelhead and spring Chinook over Bonneville Dam.

Due to the low pinniped and fish passage numbers 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 include the number of unidentifiable catches made by each species. Expansion to account for unidentifiable fish catches and adjustment for unobserved hours will be conducted at the end of the season using the same protocols employed in last year’s report.

From 1 January to 11 April 2018, a total of 42 salmon and 12 sturgeon (*Acipenser transmontanus*) have been documented being killed by pinnipeds (Table 2).

Predation 1 January – 11 April, 2018

Species	Chinook	Coho	Steelhead	Sturgeon	Lamprey	Other
SSL	11	0	24	12	0	3
CSL	1	0	6	0	0	1
Total	12	0	30	12	0	4

Table 2. Observed fish consumption by both species of pinniped at Bonneville Dam.