

STATUS REPORT – PINNIPED PREDATION AND DETERRENT ACTIVITIES AT BONNEVILLE DAM, 2016

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This is the second status report for the 2016 pinniped monitoring season and summarizes the observed predation and deterrent activities at Bonneville Dam from January 1 through April 1, 2016. Observations, which began on January 4, are conducted during daylight hours Monday through Friday and will continue to the end of May. This report can be found at:

<http://www.nwd-wc.usace.army.mil/tmt/documents/fish>

PLEASE NOTE - 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. 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 2016 Pinniped Monitoring Program will be available in the fall of this year.

PINNIPED ABUNDANCE

Steller sea lions (*Eumetopias jubatus*) were more abundant at the dam than California sea lions (*Zalophus californianus*) through the months of January, February and March. Although the presence of Steller sea lions dropped during the end of February they have rebounded to a season high during the second week in March (Figure 1). The number of Steller sea lions increased from about 4 per day and has remained around 25 per day. The maximum count of 34 Steller sea lions and 11 California sea lions occurred on March 9 (Figure 1). We have documented approximately 39 unique individual Steller sea lions through April 1. At least 36 were observed in previous years and three were newly identified.

The first California sea lion was observed on February 26 this year. We continue to see low numbers of California sea lions at the dam, approximately five per day, but there is an increase of unique individuals showing up at the dam. We have documented 27 branded individual California sea lions through April 1. Of these, 25 have been seen in multiple seasons and two were newly identified.

Point counts are taken at powerhouse 1, spillway, powerhouse 2, and Tower Island throughout the day to monitor the number of pinnipeds present at Bonneville Dam. Pinniped abundance for 2016 through March 31 in comparison with the 10 year average is shown in figure 2 below.

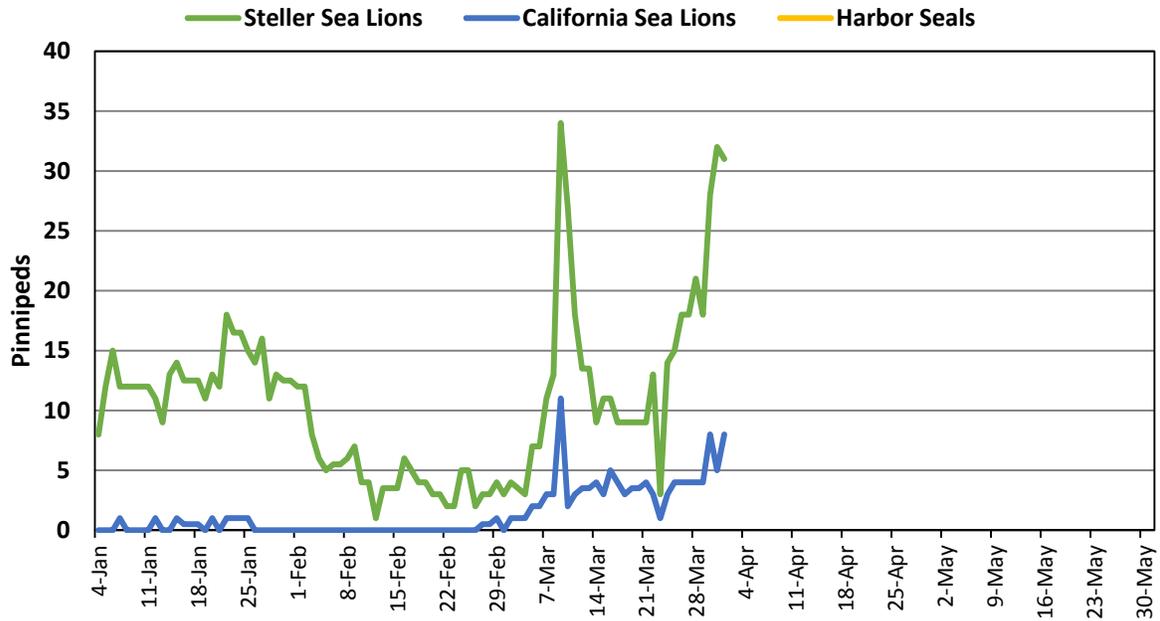


Figure 1. Daily abundance of pinnipeds, by species through April 1, 2016 at Bonneville Dam.

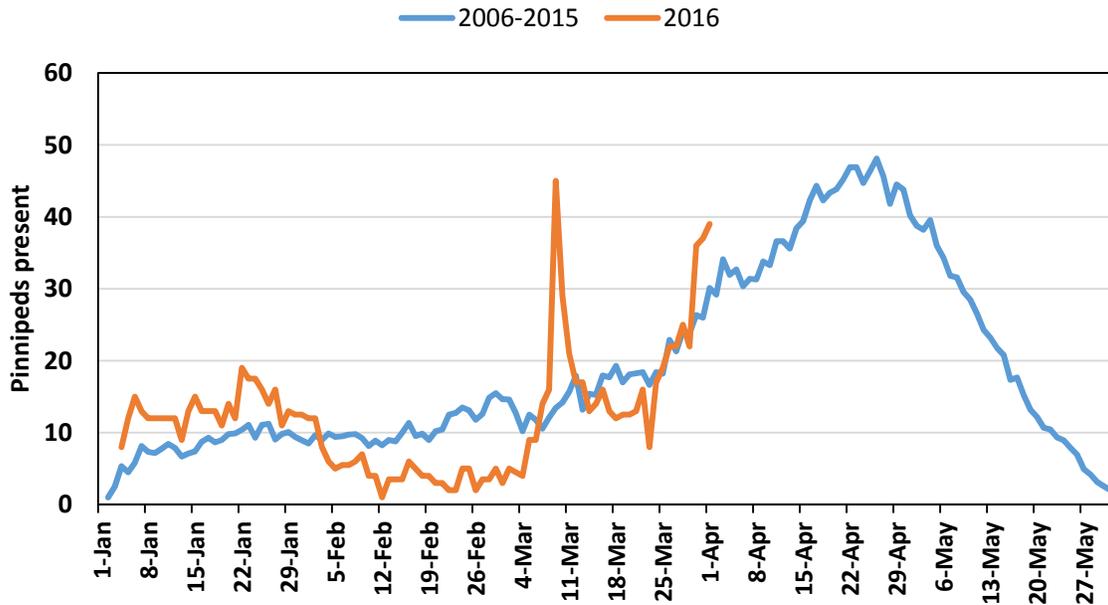


Figure 2. California and Steller sea lion combined daily abundance (interpolated for weekends) at Bonneville Dam through April 1 of 2016 versus the ten year average.

PREDATION DATA

Chinook salmon (*Oncorhynchus tshawytscha*) is now the main prey item for both California and Steller sea lions followed by steelhead (*Oncorhynchus mykiss*) and then white sturgeon (*Acipenser transmontanus*). Observed sturgeon catches have remained low this season (Table 1). Of the eighteen sturgeon catches observed most occurred at powerhouse 2 tailrace, followed closely by the Spillway and then powerhouse 1 (figure 3). The majority of Sturgeon caught ranged in size from less than 2 feet up to 4 feet. The largest of the recorded sturgeon catches by Steller sea lions for this report period was over 7 foot. Many of the catches by Steller sea lions categorized as unknown were in downstream areas far and away from our range of view.

Observed catches by California sea lions have been Chinook followed by steelhead. Unknown catches by California sea lions is also a result of the catch location and quickness of the consumption.

Table 1. Observed fish catches by pinnipeds at Bonneville Dam through April 1, 2016.

Prey	Steller Sea Lion	California Sea Lion	Total
Chinook	66	54	120
Steelhead	25	10	35
Sturgeon	16	2	18
Smolt	1	3	4
Unknown	24	11	35
Shad	0	1	1
Other	0	1	1
Lamprey	0	2	2
Total	132	84	216

Note: these are raw numbers

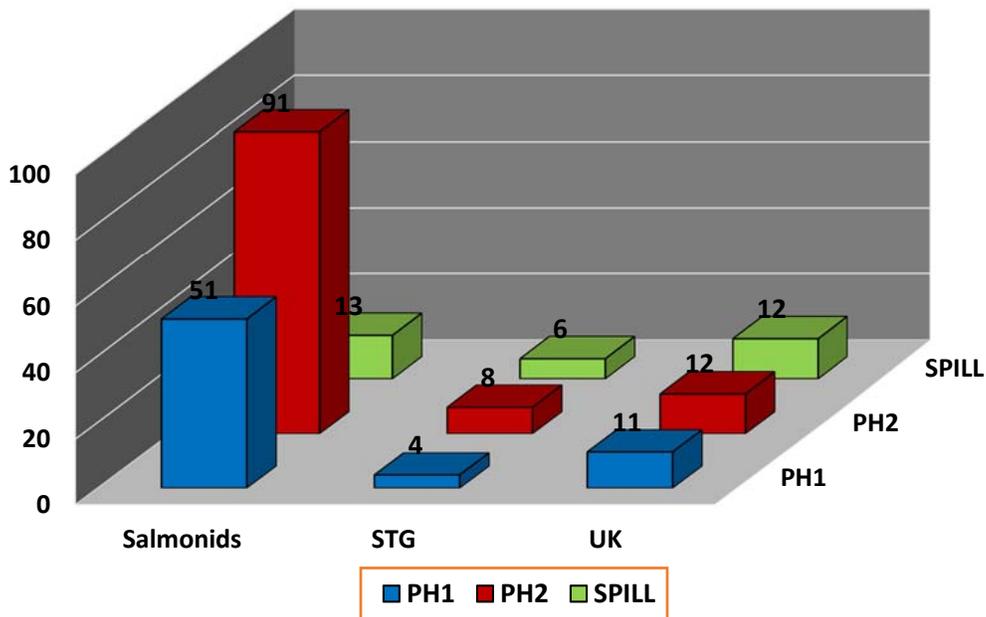


Figure 3. Observed pinniped catches of salmon and sturgeon by location at Bonneville Dam, 2016.

Adult salmonid consumption (Chinook salmon and Steelhead combined) is similar to previous seasons (Figure 4). Estimated consumption of salmonids through April 1, expanded for hours not sampled, is 409. Catches of Sturgeon has dropped substantially from the ten year average consumption seen in figure 5 but is similar to the past two years. Estimated consumption of sturgeon through April 1, expanded for hours not sampled, is 59.

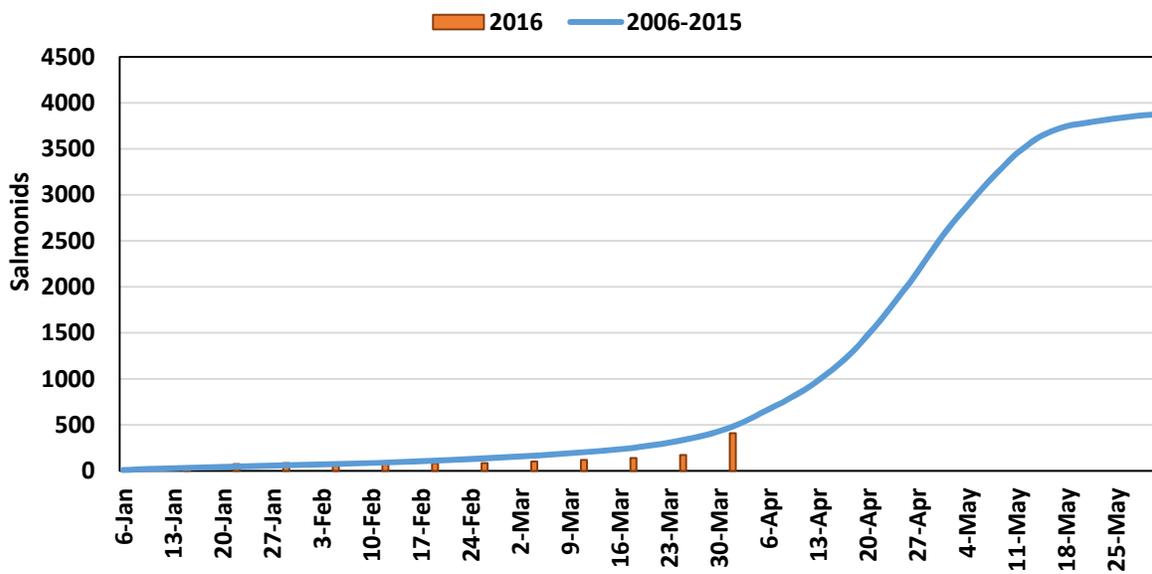


Figure 4. Salmonid weekly consumption estimate versus the ten year average of adult salmonids consumption at Bonneville Dam.

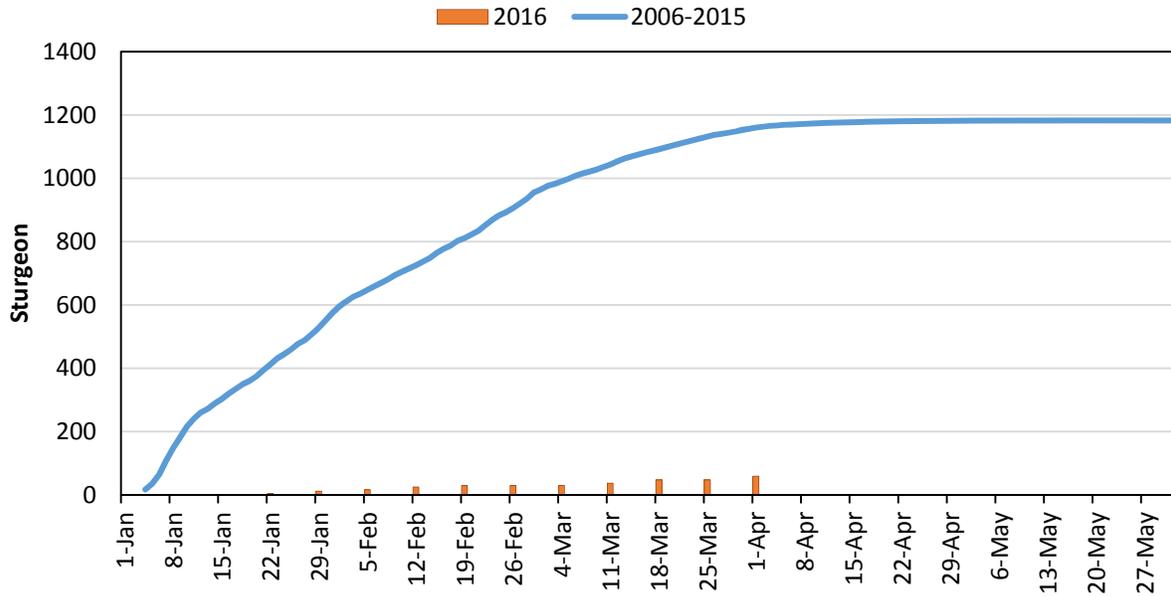


Figure 5. White Sturgeon weekly consumption estimate versus the ten year average of white sturgeon consumption at Bonneville Dam.

DETERRENTS/TRAPPING

Sea lion exclusion devices (SLEDs) were deployed at powerhouse 2 on October 26, 2015 and at powerhouse 1 on March 1, 2016.

In response to several Steller sea lions climbing over the floating orifice gates (FOGs) at powerhouse 2 and entering the fishway, wood panels were placed on the top to prevent this behavior from recurring.

Boat-based hazing by Columbia River Inter-Tribal Fish Commission (CRITFC) began on March 7. CRITFC plans to haze Mondays, Thursdays, and Fridays.

Dam-based hazing by USDA began on March 8. USDA will be hazing seven days a week for 8 hour shifts. Thus far hazing has been effective toward the Stellers that appear a little more skittish and the new to Bonneville animals.