

# **STATUS REPORT - PINNIPED PREDATION AND DETERRENT ACTIVITIES AT BONNEVILLE DAM, 2009**

**Robert Stansell, Sean Tackley, and Karrie Gibbons - (541) 374-8801**

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

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This eighth weekly status report of 2009 summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through April 1, 2009.

Regular daylight observations began on January 19 and will continue to the end of May, five days per week. Weekends will not be regularly monitored this year. Predation estimates will be expanded for hours and days not observed at the end of the observation season and these updated figures will be presented in our annual field report.

Boat-based crews from Oregon Department of Fish and Wildlife (ODFW), Washington Department of Fish and Wildlife (WDFW), and Columbia River Inter-Tribal Fish Commission (CRITFC) began hazing sea lions within the Bonneville dam boat restricted zone (BRZ) and in downriver areas in January, and plan to continue through the end of May. The U.S. Department of Agriculture (USDA) Wildlife Services, contracted by the Corps, began to haze sea lions from dam structures and adjacent lands the first week of March and will continue seven days per week, eight hours per day, during daylight hours through the end of May.

## **PRELIMINARY RESULTS**

*All data presented here are preliminary as of the status report date. Predation figures are unexpanded 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 of the 2009 evaluation will be available later this year.*

### **PINNIPED ABUNDANCE**

Over the past two weeks, we have seen an increase in the number of California sea lions present at the dam. We have seen as many as 24 California sea lions and 25 Steller sea lions at the dam on any given day (Figures 1 and 2). Although the recent removal of 11 California sea lions from the Bonneville population has obviously dropped their numbers present recently, there have still been more total pinnipeds present per day on average to date this year, although it has dropped from last years levels for California sea lions (Figure 6). The highest daily abundance estimate for all pinnipeds at Bonneville dam was 42 on March 26. We have seen at least 34 different California sea lions, 25 Steller sea lions, and 2 harbor seal (*Phoca vitulina*) since full-time

monitoring began. Up to 10 of the California sea lions appear to be new visitors to Bonneville Dam, with the remainder repeats from previous years.

### **PREDATION DATA**

Unexpanded numbers for fish observed taken in the Bonneville Dam tailrace for 2009 are:

	California Sea Lions	Steller Sea Lions	Total
Chinook	251	10	261
Steelhead	116	17	133
Sturgeon	32	667	699
Lamprey	2	4	6
Shad	7	12	19
Other	2	1	2
Unknown	91	309	400

It is likely that most unknown fish caught by Steller sea lions are sturgeon, while those unknown fish caught by California sea lions were Steelhead (Figure 3). Observed sturgeon catch has already exceeded the catch of previous years (Figure 4) with a record 50 being observed caught on February 23. More sturgeon are now being observed caught in PH2, followed by the spillway, then PH1 (Figure 5). Cumulative salmonid catch to date is lower than it has been for the three years (Figure 7). This may be due to the removal of 11 California sea lions, or that fewer salmon have been present at Bonneville Dam to pass the dam to date, or a combination of these factors.

Salmonid passage has begun to increase to double digits most days, with 930 steelhead and 182 Chinook passing since January 1, which is the second lowest to date total since we have been observing sea lions back in 2002. River temperatures are just now making it to the mid- 40°F's.

### **DETERRENTS/TRAPPING**

Trapping by the states began March 10, and to date, a total of 11 animals have been trapped and removed. This week, eight animals were trapped on April 1, four on one trap, two each on the remaining two traps. Two animals trapped (C697, B278) were given acoustic tags, neoprene patches, and B278 was branded C926. They were released that morning. C554, C578, C579, C586, C657/B127, and C669 were on the removal list and held for health examinations. Up to five animals that pass the health examination may go to Gladys Porter Zoo in Texas. As of this morning at least one and likely two will pass, one had the herpes virus, and the remainder are still waiting on the blood test results. Table 1 will now summarize the animals trapped this year and be updated weekly. Table 2 shows the result of trapping in 2008. The traps will continue to be used to mark California sea lions not previously captured and to remove animals that meet removal criteria in the following weeks, per removal authority granted to the states of Oregon, Washington, and Idaho by NOAA Fisheries under Section 120 of the Marine Mammal Protection Act.

Sea Lion ID	Capture Date	On Removal List?	Passed Health Exam?	Action	Additional Information
C265/B237	3/10/2009	Yes	No	Euthanized	Infected with virus that causes urogenital cancer
C635/B240	3/11/2009	Yes	No	Euthanized	Infected with virus that causes urogenital cancer
C643/B241	3/17/2009	Yes	No	Euthanized	Infected with virus that causes urogenital cancer
C507	3/18/2009	Yes	Yes	Relocated	Relocated to Shedd Aquarium (Chicago, IL)
C700/B247	3/18/2009	Yes	Yes	Relocated	Relocated to Shedd Aquarium (Chicago, IL)
C554	4/1/2009	Yes			
C578	4/1/2009	Yes			
C579	4/1/2009	Yes			
C586	4/1/2009	Yes			
C657/B127	4/1/2009	Yes	Yes		To be relocated to Gladys Porter Zoo, Texas
C669/B110	4/1/2009	Yes	No		
C697	4/1/2009	No	-	Released	Tagged with acoustic transmitter for research (CRITFC)
C926/B278	4/1/2009	Yes (09)	-	Released	Tagged with acoustic transmitter for research (CRITFC), branded C926

Table 1. Summary of information for California sea lions trapped in 2009, to date.

Sea Lion ID	Capture Date	On Removal List?	Passed Health Exam?	Action	Additional Information
C319/B239	4/24/2008	Yes	Yes	Relocated	Relocated to Sea World
C606	4/24/2008	Yes	Yes	Relocated	Relocated to Sea World
C739/B136	4/24/2008	Yes	Yes	Relocated	Relocated to Sea World
C795/B291	4/24/2008	No	-	Released	Branded and released
C796	4/24/2008	No	-	Released	Branded and released
C797	4/24/2008	No	-	Released	Branded and released
C640/B241	4/28/2008	Yes	Yes	Relocated	Relocated to Sea World
C668/B244	4/28/2008	Yes	Yes	Relocated	Relocated to Sea World
C805/B208	4/28/2008	Yes	-	Released	Branded and released
B66	4/28/2008	Yes	Yes	Relocated	Relocated to Sea World
B198	4/28/2008	Yes	No	Died	Died while under anesthetic, did not recover
C347	5/4/2008	Yes	-	Died	Died from heat exhaustion on trap
C672	5/4/2008	No	-	Died	Died from heat exhaustion on trap
B252	5/4/2008	No	-	Died	Died from heat exhaustion on trap
B275	5/4/2008	No, but qualified	-	Died	Died from heat exhaustion on trap

Table 2. Summary of information for California sea lions trapped in 2008.

Hazing by the states from boats began in January has been conducted on most days (excluding weekends) up through April 1. Boat hazing continues to have some limited, local, short term impact in reducing predation in the tailrace, primarily by Stellers on sturgeon, during this time of year. USDA agents began hazing from the tailrace decks the first week of March and will continue seven days per week.

### **OTHER ITEMS OF INTEREST**

We conducted night-time observation at PH1 and PH2 tailraces for 5 hours each on March 27. We also made counts of the numbers of pinnipeds hauling out by the traps each hour. At PH1, 1 California sea lion was present and actively hunting between 2000-0100h, with a second California and 1 Steller sea lion present also for a time. One unknown fish was observed caught by a California sea lion during that time. At PH2, no animals were originally observed close to the powerhouse, however, 6 catches were observed about 50-100 meters downstream (1 was a sturgeon caught by a Steller sea lion, the rest unknown, but likely the same). Later, 2 Steller sea lions moved in and out of the tailrace area. There was no activity after 2300h. The spillway tailrace was checked for activity once, with no animals seen hauled out or in the water. Near the traps, the numbers of pinnipeds hauling out grew steadily from 7 pinnipeds (all California sea lions) at 1930h to 37 at 0030h (9 California, 10 Steller, and 18 undetermined). This is only one night, but so far it matches observations of previous years, where maybe one or two California sea lions may be hunting and taking a few salmonids at night, with even more Steller sea lion activity taking sturgeon, but almost all activity tapering off as the night progresses. Based on this information, I would not say there is significant salmonid predation occurring at night. We will continue one night observation per week for the next few weeks. The night vision monocular was most useful for counting animals hauled out, and the thermal imaging will be tested for that this week also. Thermal imaging was not useful for seeing animals hunting in the water, and the night vision monocular was of limited use, only if the animals were close. A spot light was useful for identification of animals next to the dam, while simply listening for breathing, prey thrashing, and vocalizations were also useful for determining presence, species, and take. Take events were relatively easy to hear and spot without the aid of any tools at least within about 100 meters.

Two trapped animals were given acoustic tags and released at Bonneville on April 1. CRITFC personnel will work with ODFW to download acoustic data on a regular basis from all the sensors in the river. It will likely be after the season before any of this information will be analyzed and available. As of this morning, at least one of the animals is still at Bonneville.

Figure 1. Daily minimum pinniped abundance (weekends interpolated) at Bonneville Dam, 2002-2009.

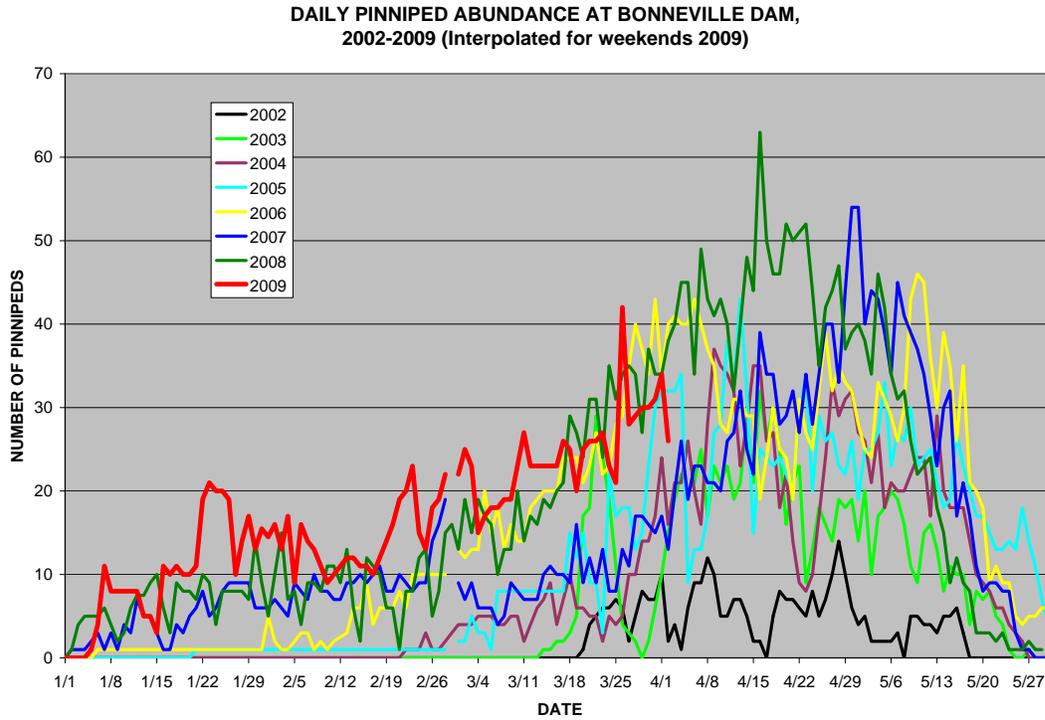


Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2009.

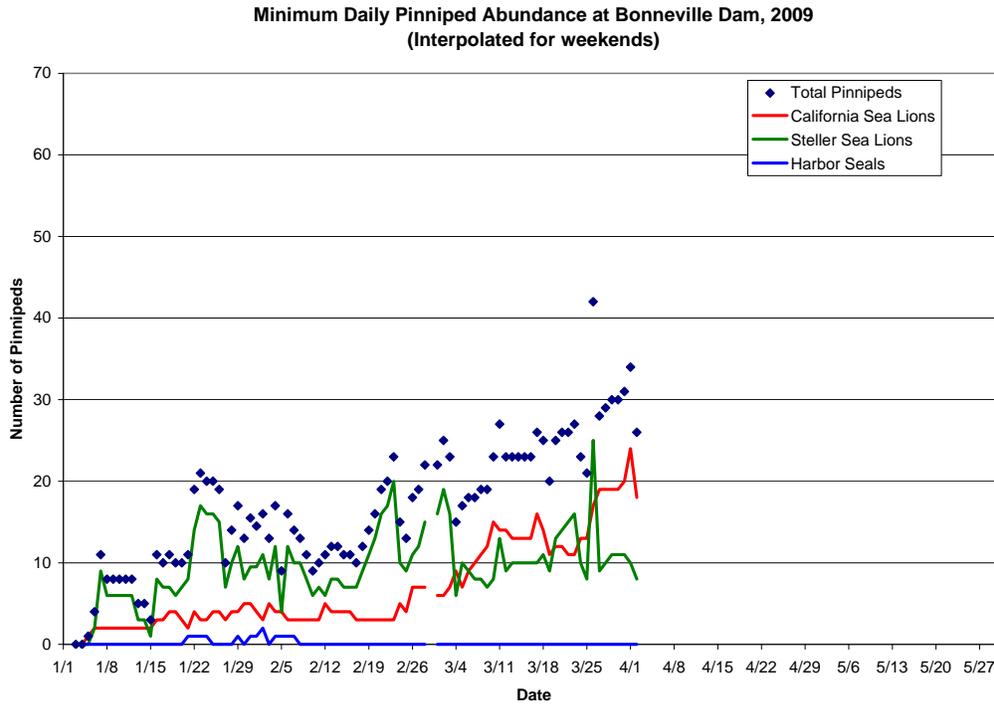


Figure 3. Major prey species taken by Pinniped species at Bonneville Dam, 2009.

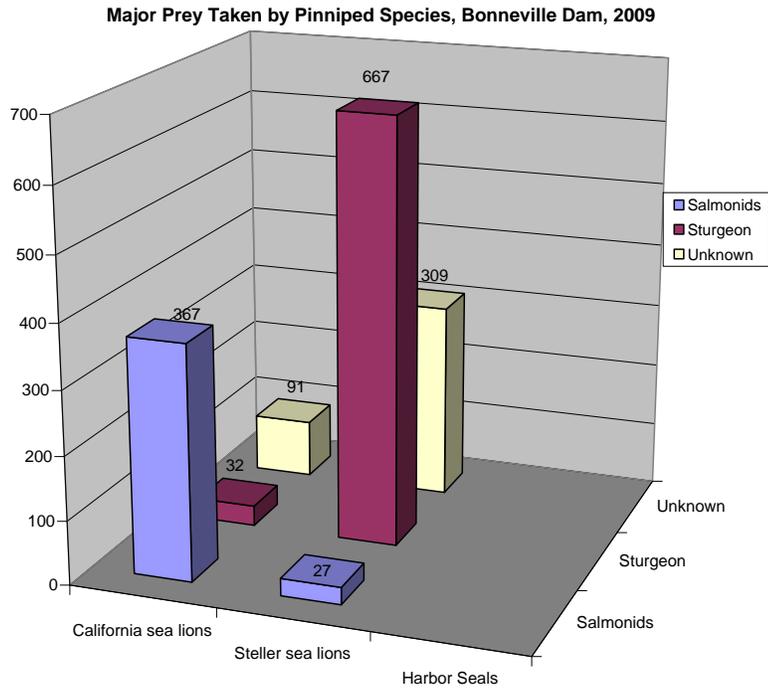


Figure 4. Daily cumulative sturgeon catch at Bonneville Dam, 2006-2009. All data unexpanded.

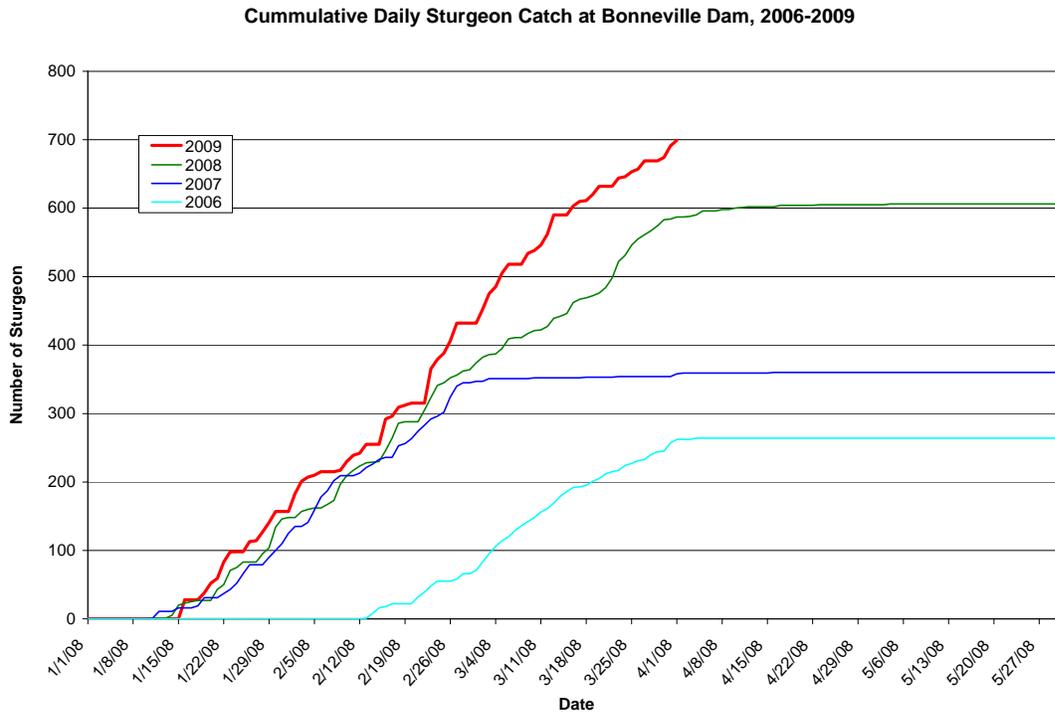


Figure 5. Major prey species taken by Pinnipeds by location, 2009.

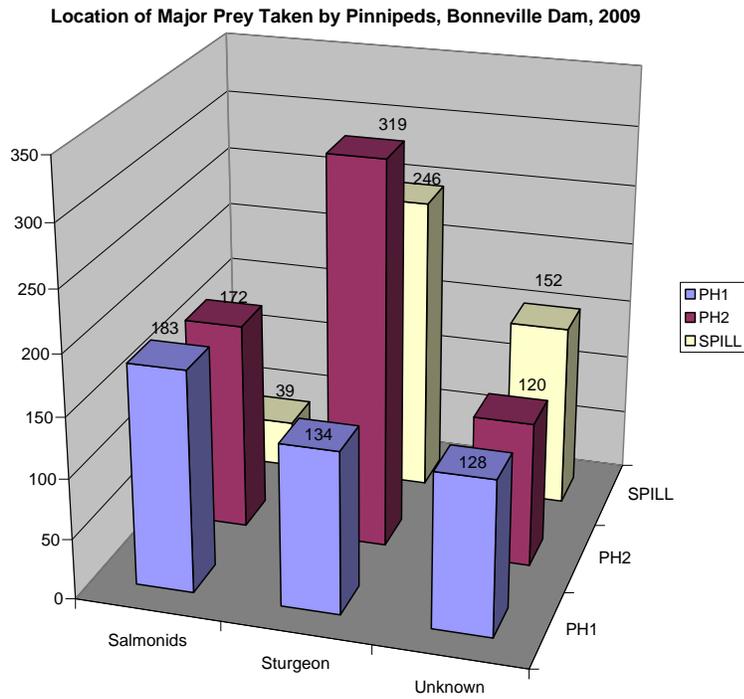


Figure 6. Average daily presence of pinnipeds, by species, to date (March 25) for each year at Bonneville Dam.

