

# **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**

**April 10, 2009**

This ninth weekly status report of 2009 summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through April 8, 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 39 different California sea lions, 25 Steller sea lions, and 2 harbor seal (*Phoca vitulina*) since full-time

monitoring began. Up to 11 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	476	25	501
Steelhead	150	20	170
Sturgeon	32	702	734
Lamprey	5	4	9
Shad	7	12	19
Other	2	1	2
Unknown	106	315	421

It is likely that most unknown fish caught by Steller sea lions are sturgeon, while those unknown fish caught by California sea lions were Chinook or Steelhead (Figure 3). Observed sturgeon catch has exceeded the catch of previous years (Figure 4) with a record 50 being observed caught on February 23. More sturgeon are being observed caught in PH2, followed by the spillway, then PH1 (Figure 5). Salmonid catch has increased a good deal the past week, however, the cumulative salmonid catch to date continues to be lower than it has been for the past 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. We have also begun to see an increase in the frequency of Steller sea lions stealing the Chinook catch from California sea lions over the last week, a behavior we typically begin to see this time of year when the Chinook run picks up.

Salmonid passage has begun to pick up recently, with 1,311 steelhead and 603 Chinook passing since January 1, but it is still the second lowest to date total since we have been observing sea lions back in 2002. Spill began today, April 10, and Chinook passage will likely increase rapidly during the next couple of weeks.

### **DETERRENTS/TRAPPING**

Trapping by the states began March 10, and to date, a total of 11 animals have been trapped and removed. This week, two animals were trapped on April 8, neither on the list for removal. One was C697 which had already been trapped last week and fitted with an acoustic tag. The other was unmarked, so it was branded C927 and fitted with an acoustic tag. Both animals were released that morning. Last week, two animals (C657/B127 and C578) of the six removed were in Point Defiance Zoo awaiting transfer to Gladys Porter Zoo in Texas after passing their health exam. Table 1 summarizes the animals trapped this year to date. 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. The states recently submitted supporting data to NMFS to add six more individually identifiable California sea lions to the list for removal under the Section 120 permit.

<b>Sea Lion ID</b>	<b>Capture Date</b>	<b>On Removal List?</b>	<b>Passed Health Exam?</b>	<b>Action</b>	<b>Additional Information</b>
C265/B237	3/10/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C635/B240	3/11/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C643/B241	3/17/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
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	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C578	4/1/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C579	4/1/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C586	4/1/2009	Yes	Yes	Relocated	Relocated to Gladys Porter Zoo, Texas
C657/B127	4/1/2009	Yes	Yes	Relocated	Relocated to Gladys Porter Zoo, Texas
C669/B110	4/1/2009	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C697	4/1/2009 4/8/2009	No No	- -	Released Released	Tagged with acoustic transmitter for research (ODFW/CRITFC)
C926/B278	4/1/2009	Yes (09)	-	Released	Tagged with acoustic transmitter for research (ODFW), branded C926
C927	4/8/2009	No	-	Released	Tagged with acoustic transmitter for research (ODFW), branded C927

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

Hazing by the states from boats began in January has been conducted on most days (excluding weekends) up through April 8. Hazing continues to have some limited, local, short term impact in reducing predation in the tailrace, but less so now that the spring Chinook run has begun and the number of California sea lions has increased.

### **OTHER ITEMS OF INTEREST**

#### **Night Observations**

We conducted a second observation at night at PH1 and PH2 tailraces for 5 hours each on April 3. We also made counts of the numbers of pinnipeds hauling out by the traps each hour. At

PH1, 2 California sea lions were present and actively hunting between 2000-0100h, with a third California sea lion present also for a time. Three Chinook were observed caught by one individual California sea lion during that time. This same individual was later seen hauled out at 0130h by the traps. At PH2, one California and three Steller sea lions were observed for the first hour, tapering down to 1-2 Steller sea lions for the remaining hours. Only one sturgeon catch by a Steller was observed for those hours. Near the traps, the numbers of pinnipeds hauling out grew steadily from 6 pinnipeds (all California sea lions) at 1930h to 31 at 0130h (16 California, 15 Steller). Again, as with the first night observation, we are seeing some activity and take into the first hours of darkness, but not a lot. Our next observation will focus on the 0100-0600h time frame. The night vision monocular was most useful for counting animals hauled out, and the thermal imaging device, although effective, was not as good as the night vision. 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. However, listening was severely hampered at PH2 now due to the corner collector being in operation and making too much noise at the south side of the powerhouse. Take events were relatively easy to spot without the aid of any tools at least within about 100 meters. This data is not included in the take figures presented above.

Our SCA interns observed both days this past weekend, and will observe at least one more weekend this month. This data has not been included yet in the take figures presented.

### **Acoustic Tracking**

Two trapped animals were given acoustic tags and released at Bonneville on April 1 and another tagged and released on April 8. Bryan Wright of ODFW has made one download of the acoustic receivers which show one animal, C697, coming up into PH2 tailrace in the evenings and leaving in the morning downstream to Marker 85 most of the day, and returning at night. The other, C926, spends most of its time up in the PH2 tailrace and occasionally other tailrace zones of Bonneville. This corresponds to our observer records, which primarily show C697 near the traps in the mornings, but not at the dam during the day, and we have multiple sightings of C926 all day long. Neither of these sea lions has yet to be detected or seen actively hunting at night.

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

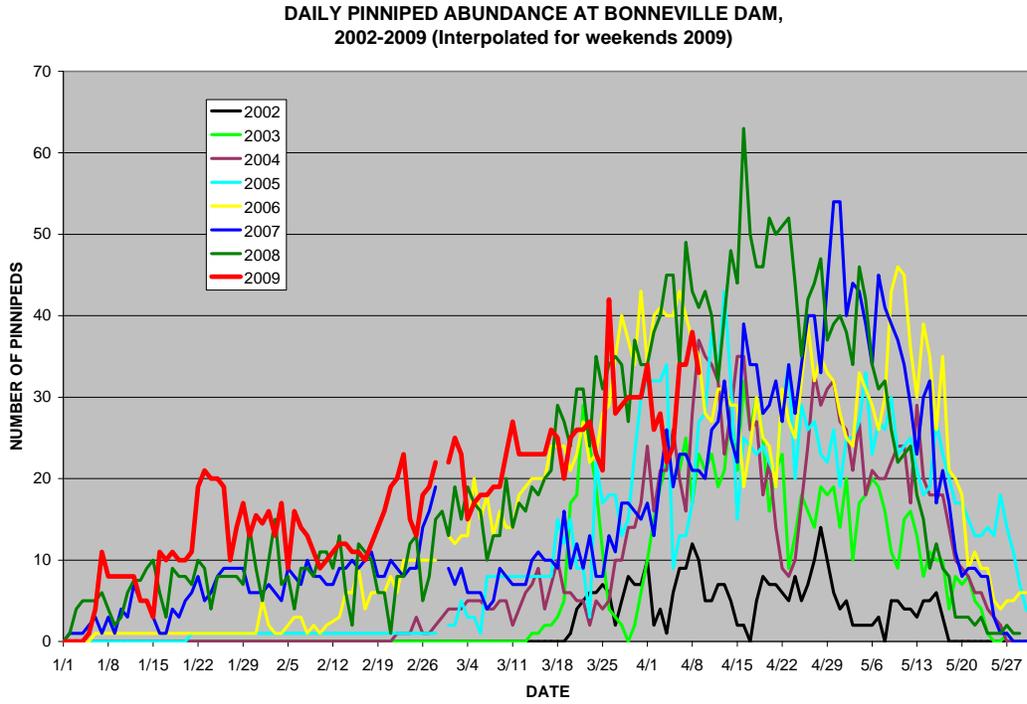


Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2009.

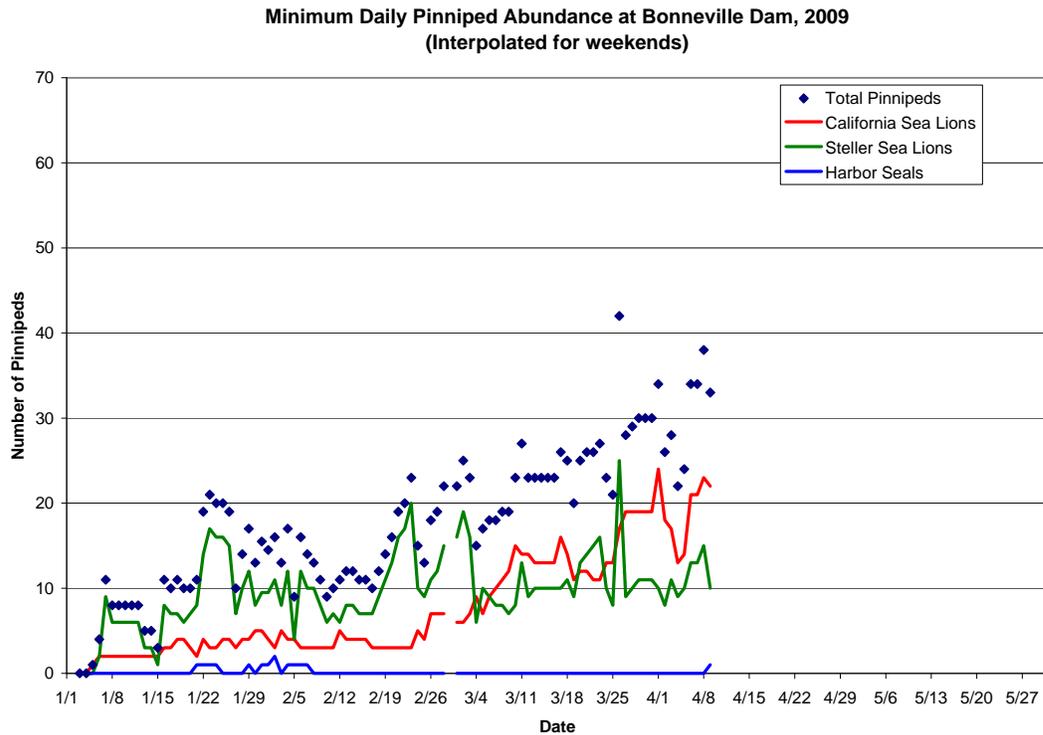


Figure 3. Major prey species taken by Pinniped species at Bonneville Dam, 2009.

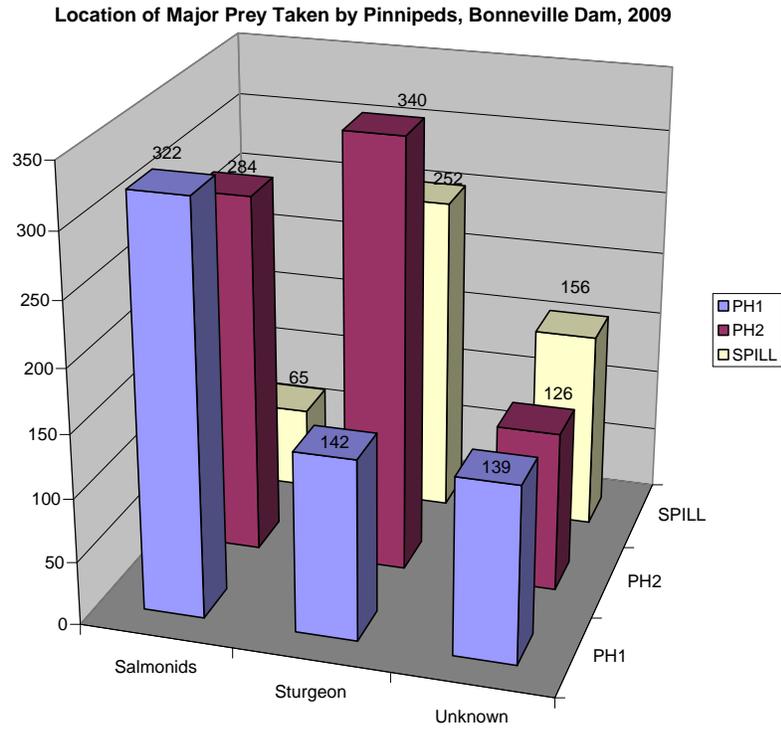


Figure 4. Daily cumulative sturgeon catch at Bonneville Dam, 2006-2009. All data unexpanded.

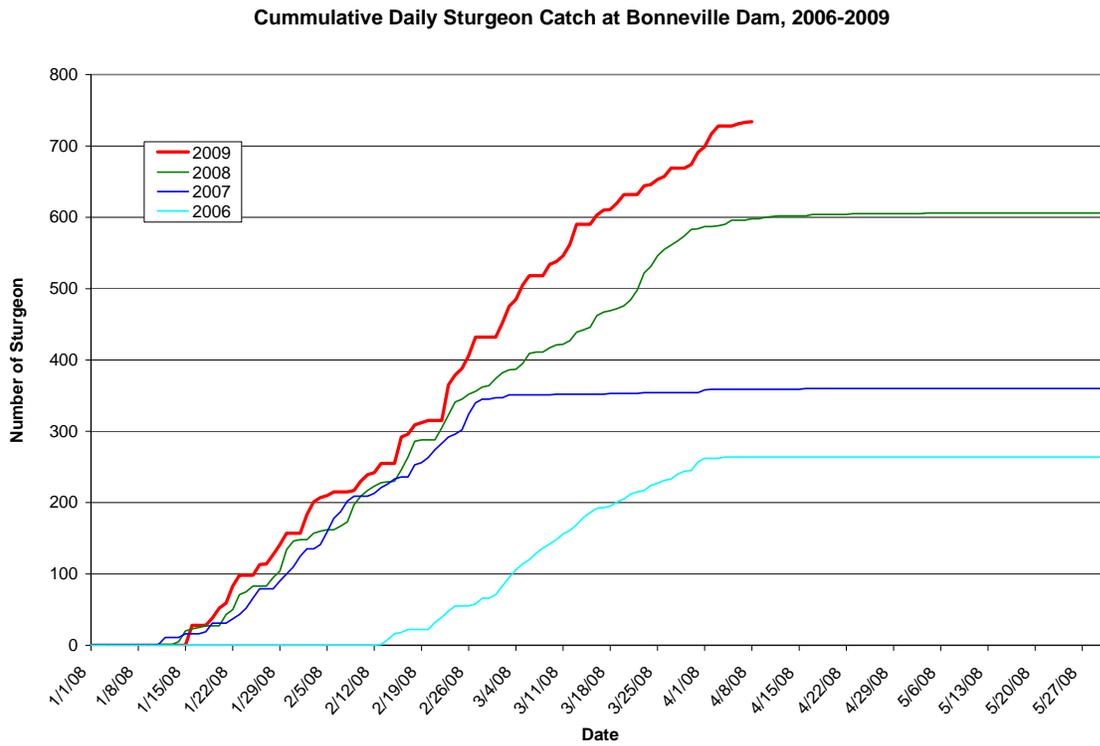


Figure 5. Major prey species taken by Pinnipeds by location, 2009.

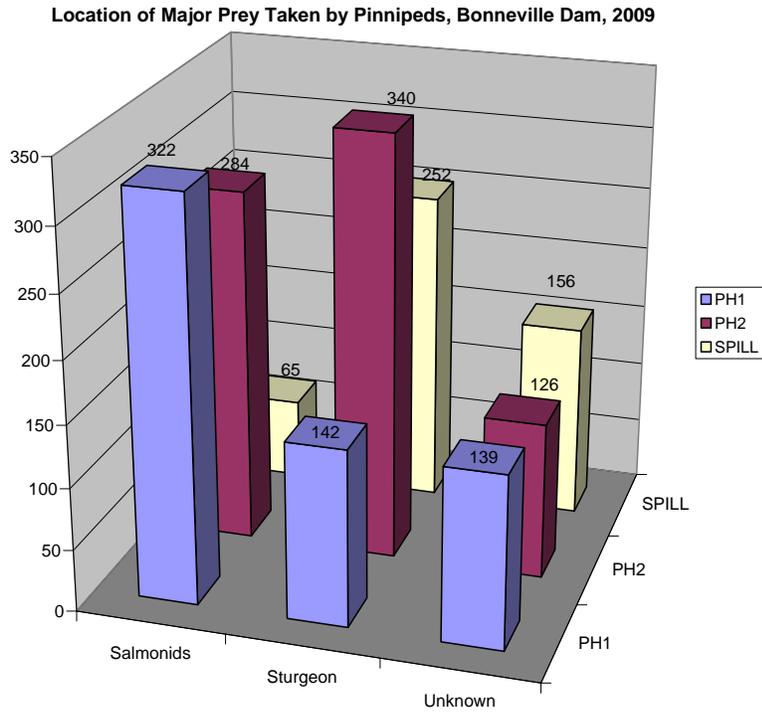


Figure 6. Average daily presence of pinnipeds, by species, to date (March 25) for each year at Bonneville Dam.

