

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

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**April 17, 2009**

This tenth weekly status report of 2009 summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through April 15, 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 few 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 26 Steller sea lions at the dam on any given day (Figures 1 and 2). Steller sea lion presence remains high, while California sea lion numbers are lower than the past few years (Figure 6). The highest daily abundance estimate for all pinnipeds at Bonneville dam was 43 on April 11. We have seen at least 43 different California sea lions, 26 Steller sea lions, and 2 harbor seal (*Phoca vitulina*) since full-time monitoring began. Up to 12 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	703	38	741
Steelhead	176	21	197
Sturgeon	33	704	737
Lamprey	9	4	13
Shad	7	12	19
Other	3	1	4
Unknown	118	323	441

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 were observed caught in PH2, followed by the spillway, then PH1 (Figure 5). Size distribution of sturgeon seen caught has been similar to the past few years (Figure 10). However, only three sturgeon were seen caught last week. Chinook salmon are now the primary prey caught by both California and Steller sea lions, 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. In the past two weeks, 63 fish were stolen from the primary individual which caught the fish, compared to 23 fish stolen in all the other previous weeks combined. About 2/3rds of this is from Steller sea lions taking Chinook from California sea lions.

Salmonid passage has stayed anemic this past week, with 1,738 steelhead and 1,332 Chinook passing since January 1. This is still the second lowest to date total since we have been observing sea lions back in 2002 (Figures 8 and 9). Hopefully the warmer temperatures this coming weekend will get the Chinook moving and passing the dam next week!

## **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 16, neither on the list for removal. One was C927 which had already been trapped last week and fitted with an acoustic tag. Of interest is that in the seven days between being trapped, he was observed to eat at least 4 Chinook, 1 steelhead, and 1 unknown fish, but his weight went from 704 lbs to 793 lbs, a gain of 12.7 lbs per day!(weight gain data courtesy Matt Tennis, PSMFC). The other sea lion was unmarked, so it was branded C928 and fitted with an acoustic tag. Both animals were released that morning. 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.

<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/B242	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 4/16/2009	No No	- -	Released Released	Tagged with acoustic transmitter for research (ODFW), branded C927
C928	4/16/2009	No	-	Released	Tagged with acoustic transmitter for research (ODFW), branded C928

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

Hazing by the states and CRITFC 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 third observation at night at PH1 and PH2 tailraces for 5 hours each on April 10/11. 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 0100h and 0600h, with a Steller present for a short time. Three Chinook were observed caught by one individual California sea lion during that time. This was the same individual seen the previous week hunting at night. At PH2, one California sea lion was seen all hours hunting, with a harbor seal seen briefly during one hour. Two Chinook were observed caught by the California sea lion for those hours. Near the traps, the numbers of pinnipeds hauling out on traps or along the corner collector wall at 0030h was 11 Steller and 9 California sea lions through 0330h, when about 27 animals total were present. Then, at 0630h when there was sufficient light, the count was 26 Steller sea lions, 16 California sea lions. It may be that night count estimates, even with night vision gear, underestimate the numbers of pinnipeds present, especially when they are tightly packed together on the traps or along the wall. As with the first two night observations, we saw some activity and take during the hours of darkness, but not a lot. This data is not included in the take figures presented above.

Our SCA interns will observe this next weekend, as they did on April 4 and 5. This data has not been included yet in the take figures presented, but it will be for the next report.

### **Acoustic Tracking**

Two trapped animals were given acoustic tags and released at Bonneville on April 1, one tagged and released on April 8, and another on April 16. Bryan Wright of ODFW has made at least 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 (Figure 11 and 12). This animal was trapped again last week and has since been seen hauled out at the Astoria boat basin docks. 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.

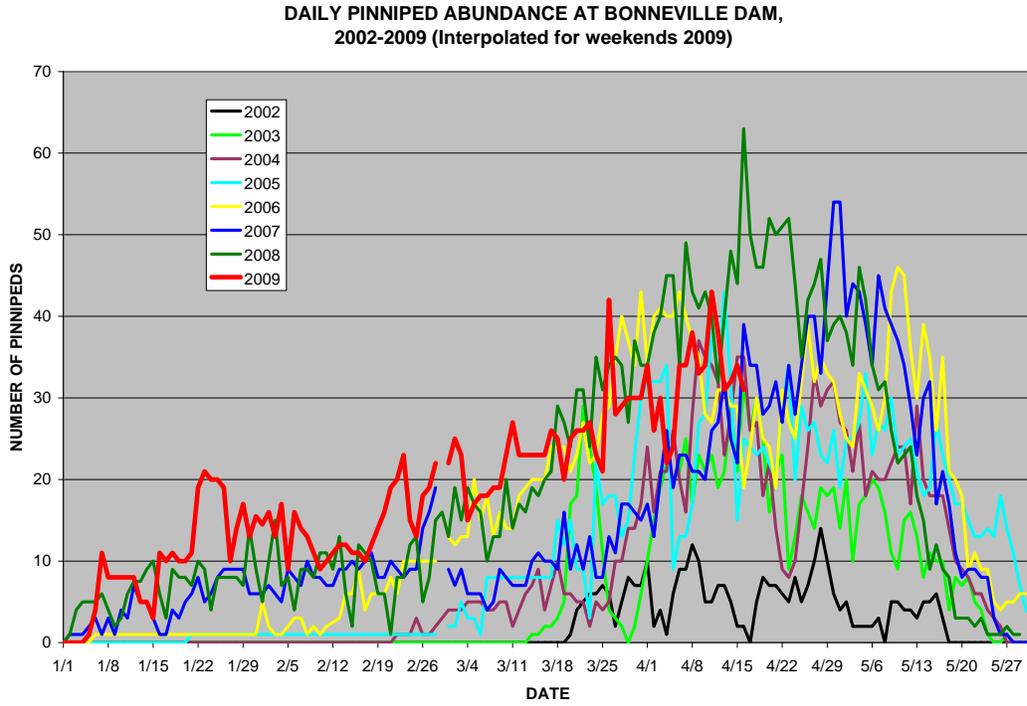


Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2009.

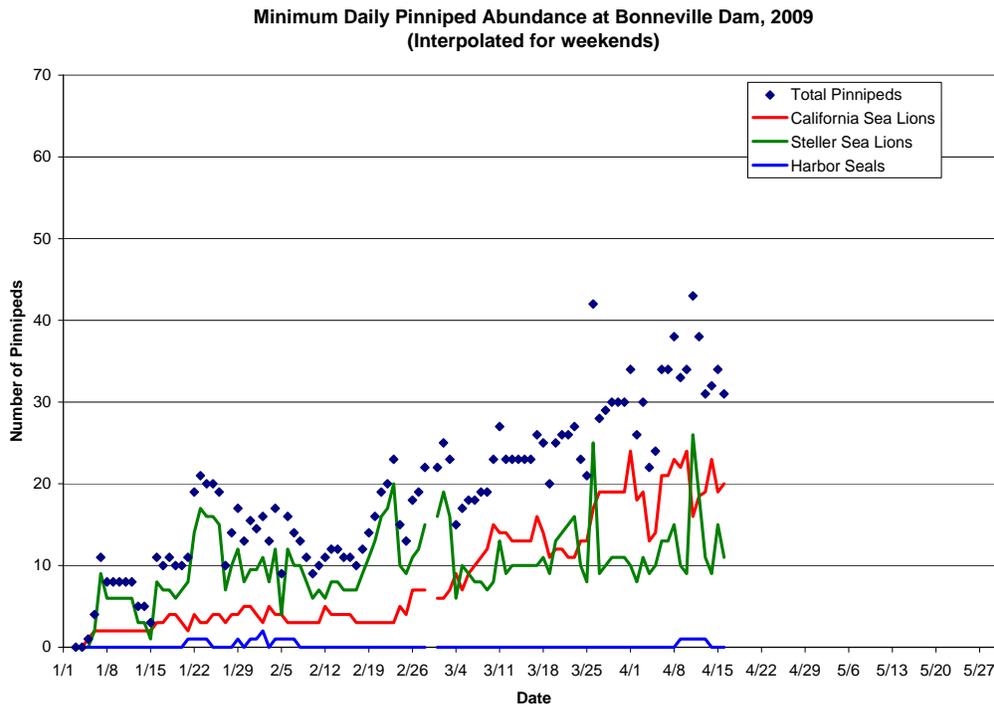


Figure 3. Major prey species taken by Pinniped species at Bonneville Dam, 2009.

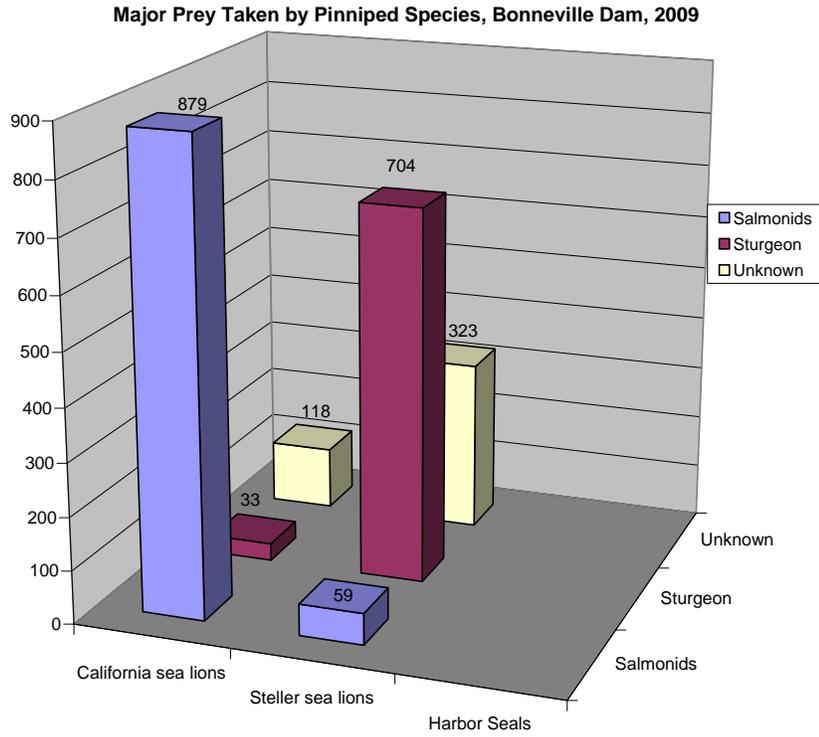


Figure 4. Daily cumulative sturgeon catch at Bonneville Dam, 2006-2009. All data unexpanded.

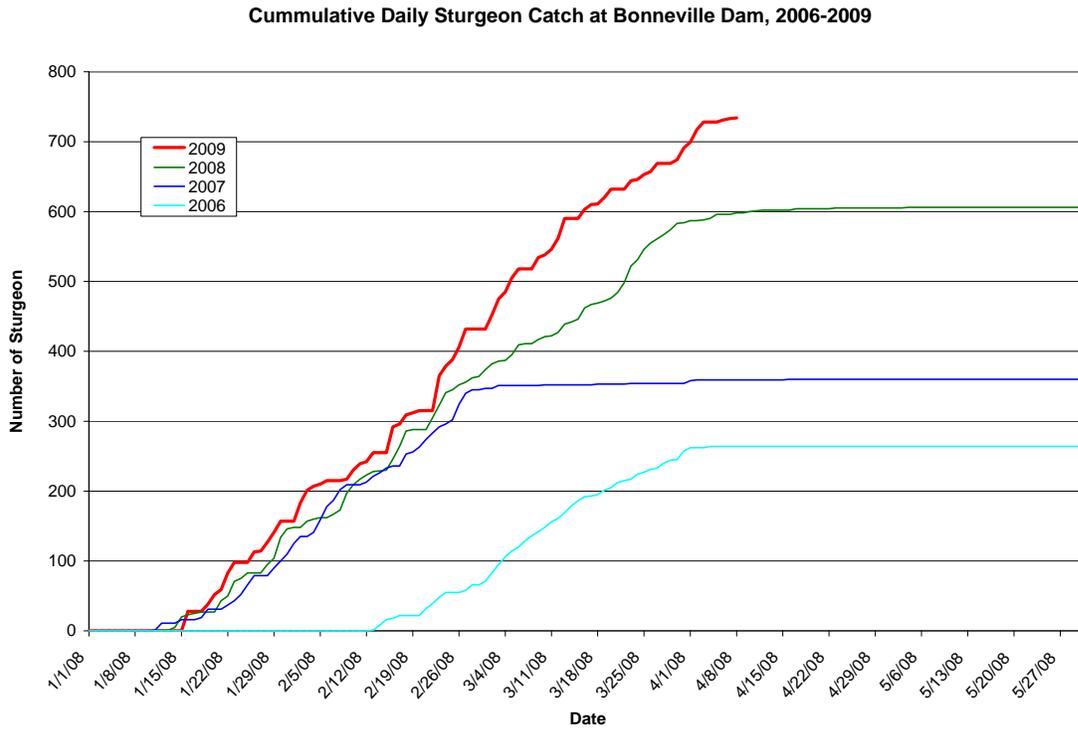


Figure 5. Major prey species taken by Pinnipeds by location, 2009.

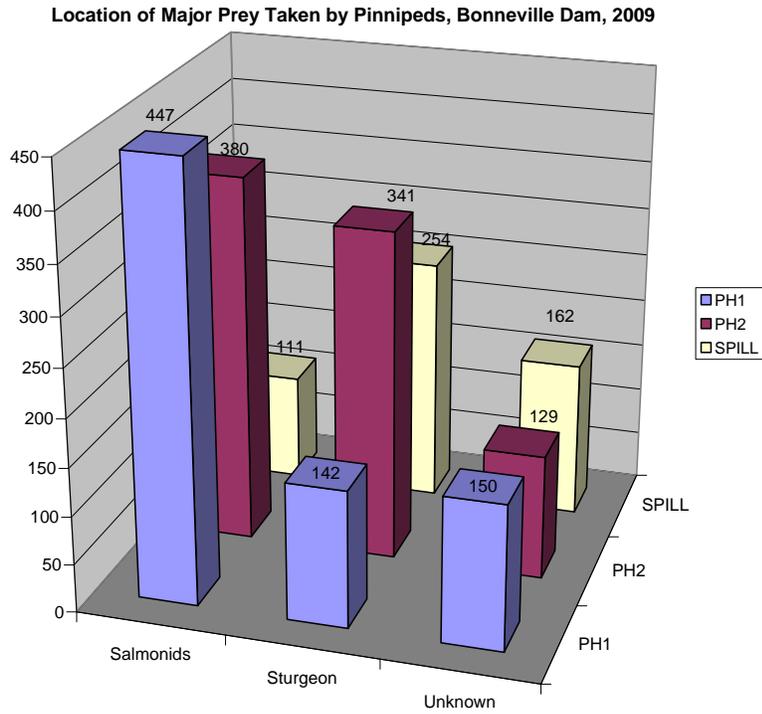


Figure 6. Average daily presence of pinnipeds, by species, to date (April 15) for each year at Bonneville Dam.

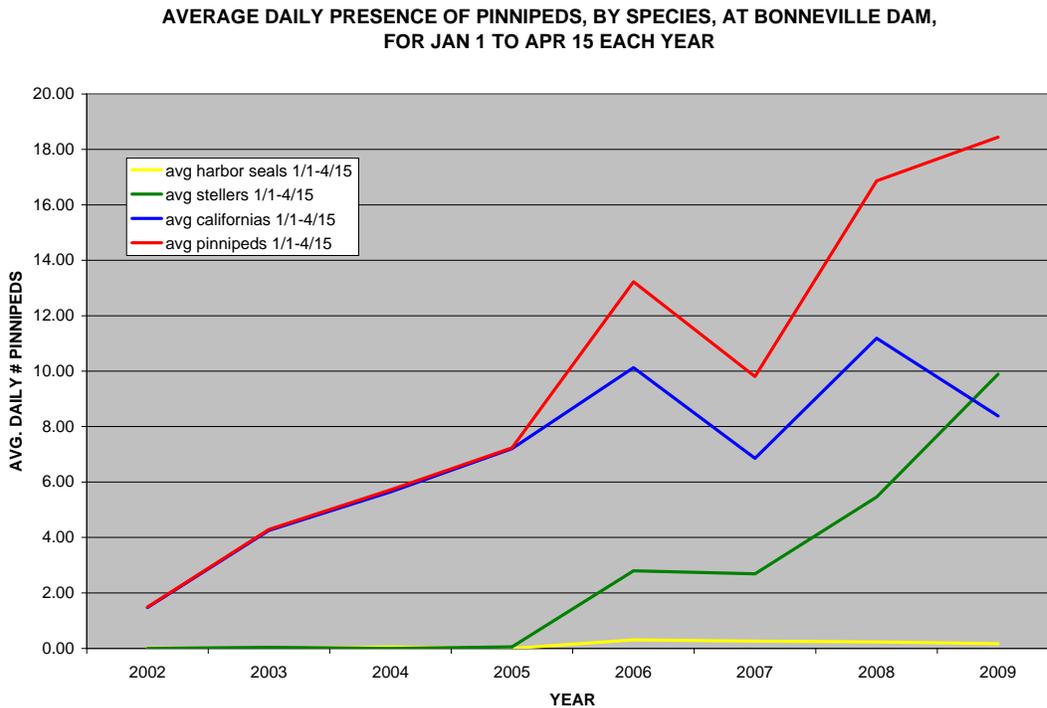


Figure 7. Daily cumulative salmonid catch at Bonneville Dam, 2002-2009. Please note 2009 data presented are unexpanded for weekends not observed.

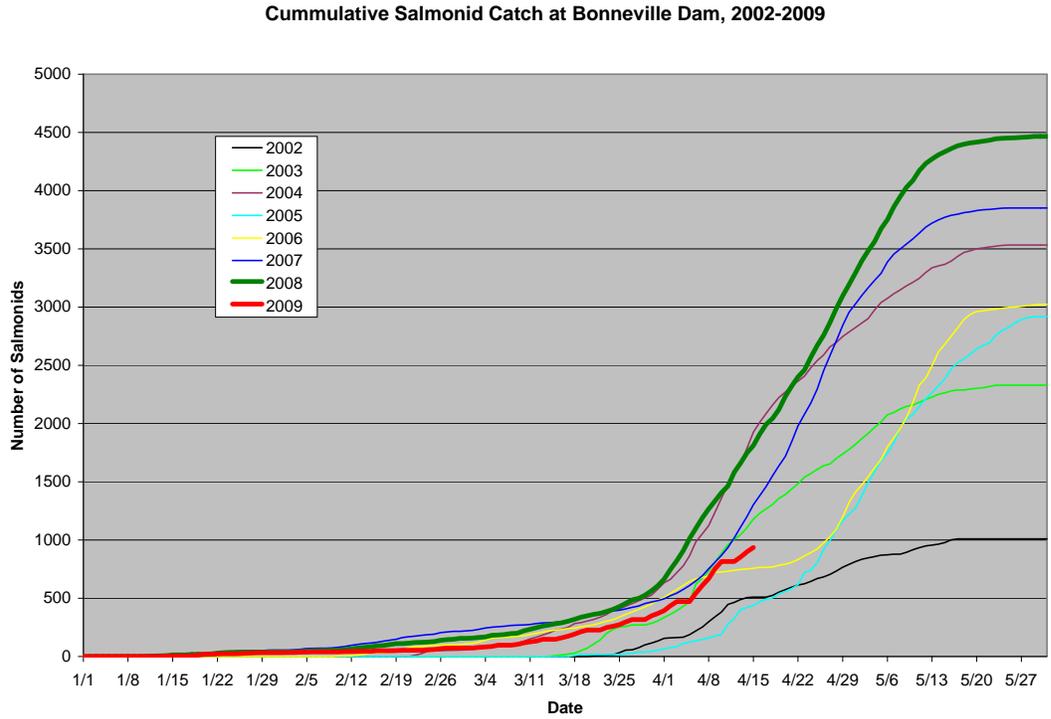


Figure 8. Daily cumulative salmonid passage at Bonneville Dam, 2002-2009.

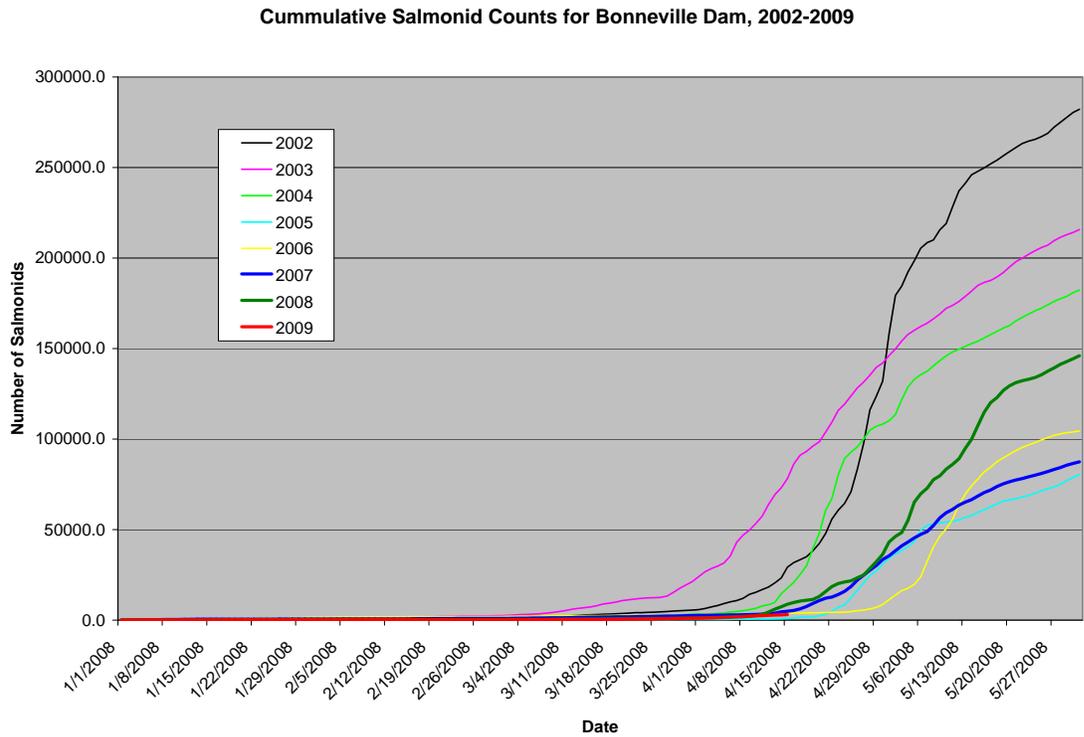


Figure 9. Daily salmonid passage at Bonneville Dam, 2002-2009.

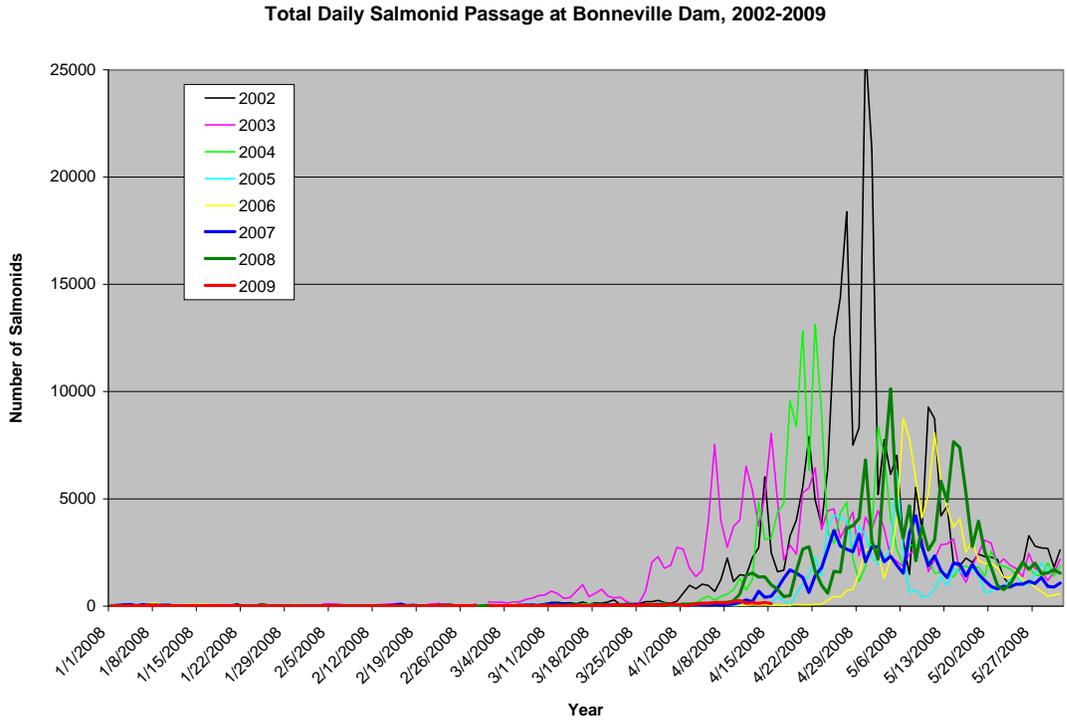


Figure 10. Size distribution of sturgeon observed caught at Bonneville Dam, 2006-2009.

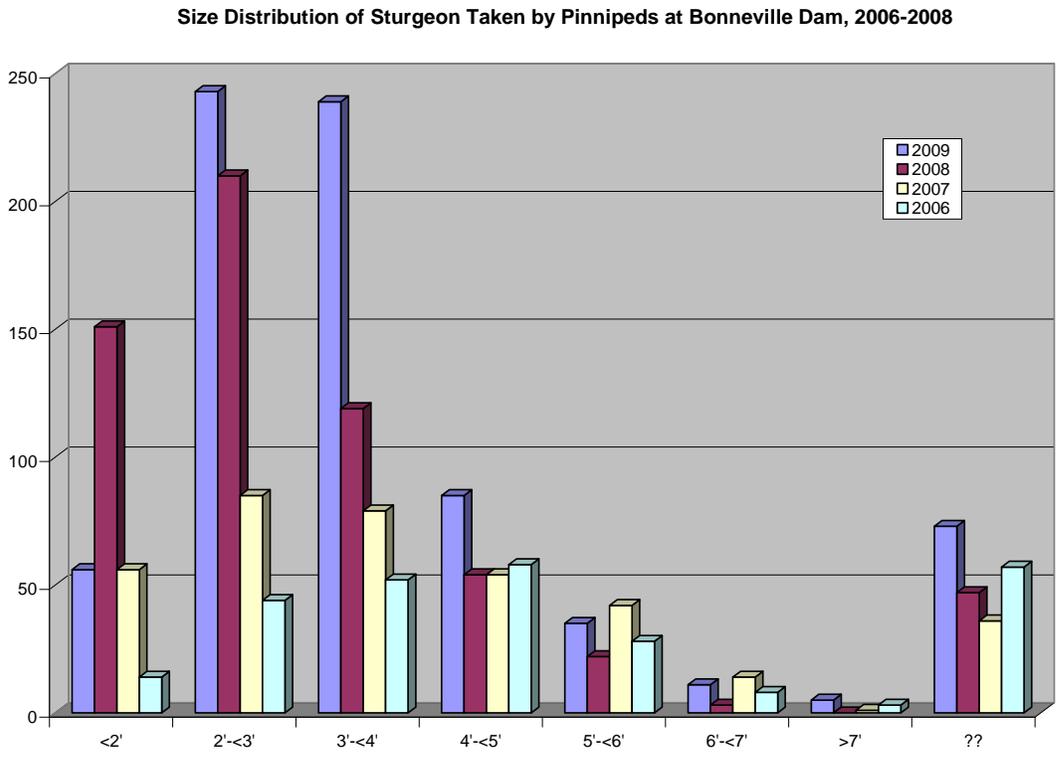


Figure 11. Movements of two acoustic tagged sea lions at Bonneville Dam a few weeks ago. Data and figures courtesy of Bryan Wright, ODFW.

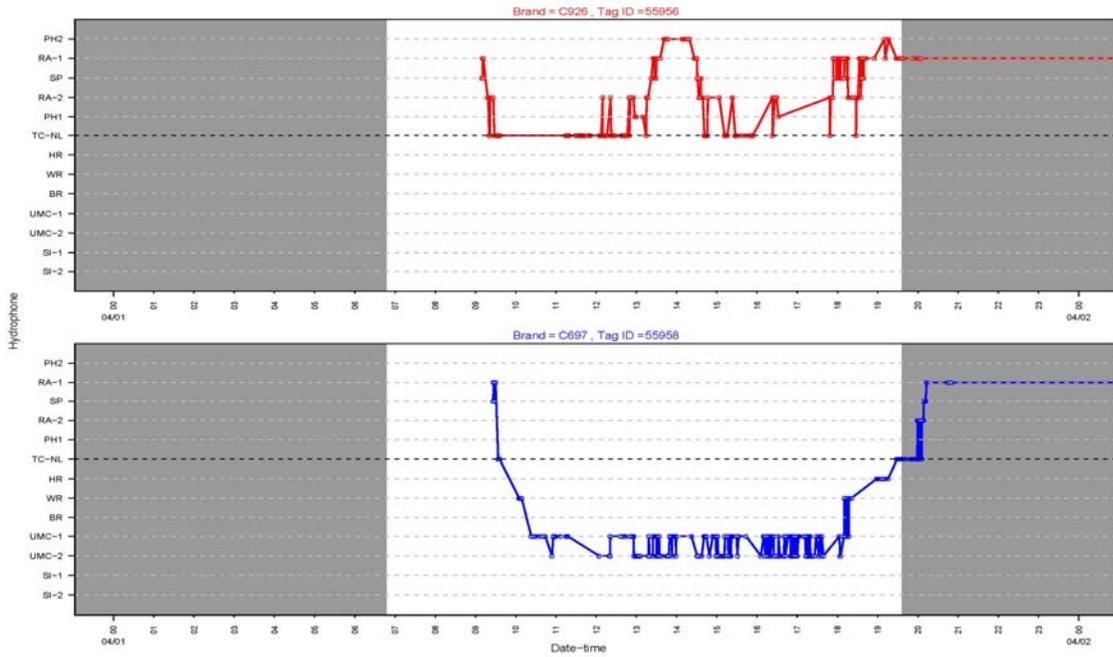


Figure 12. Photo showing locations of acoustic receivers at and just below Bonneville Dam. Photo and graphics courtesy of Bryan Wright, ODFW.

