

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

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May 22, 2009

This will be the final weekly status report of 2009 summarizing all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through yesterday, May 21, 2009. As always, copies of these reports can be seen at: [http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2009/sea\\_lion\\_hazing2009.html](http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2009/sea_lion_hazing2009.html)

Regular daylight observations began on January 19 and will continue to the end of May, five days per week. Weekends were only monitored twice 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

The number of California sea lions has dropped to single digits over the past week as they move out in advance of their annual trip to the breeding grounds (Figures 2, 6, 11, and 12) and no Steller sea lions have been seen since May 15. Average daily number of California sea lions present from January to the present is virtually the same as for Steller sea lions this year. The highest daily abundance estimate for all pinnipeds at Bonneville dam was 47 on April 21, lower than the previous two years and halting the trend of increasing every year. California sea lion numbers peaked at 26 animals, lower than every year since 2002, while Steller sea lion numbers

also peaked at 26 animals, much higher than any previous year (Figures 1, 11, and 12). Average daily number of California sea lions present to date is 10.4 this year, the lowest since 2004. It is very likely the removal program by the states is a major reason for the decrease in California sea lion presence. We have seen at least 53 different California sea lions, 26 Steller sea lions, and 2 harbor seals since full-time monitoring began. The number of Steller sea lions may rise for the final report as we began to identify individual Steller sea lions this year as we do with California sea lions, rather than just counting the highest number present at any given time. However we have not yet had the time to review all the video and photos to finalize our figures. Up to 19 of the California sea lions appear to be new visitors to Bonneville Dam, with the remainder being repeats from previous years. It is interesting that one of the newly identified animals appears to have just showed up last week and an animal seen last year just showed up three days ago for the first time this year (as far as we know).

**PREDATION DATA**

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

	California Sea Lions	Steller Sea Lions	Total
Chinook	2375	258	2633
Steelhead	287	40	327
Sturgeon	37	721	758
Lamprey	55	6	61
Shad	7	12	19
Other	3	1	4
Unknown	233	374	607

Steller sea lions have taken at least 298 salmonids this year, making up about 10% of the salmonids observed caught this year (Figure 3). This is much higher than the 3.8% observed last year. No sturgeon were observed caught this past week, but sturgeon catch exceeded the catch of previous years (Figure 4) with a record 50 being observed caught on February 23. Size distribution of sturgeon seen caught has been similar to the past few years (Figure 10). 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 two years (Figures 7 and 13) even when now extrapolated for the weekends we did not observe (however these preliminary figures still exclude some hours not observed each day).

Salmonid passage so far peaked at 9,212 on May 19, and the run continues to rise steeply, second only to 2002 for the past 8 years (even though a large part of this is due to the huge jack Chinook counts). This is now the fourth highest to date total since we have been observing sea lions back in 2002 and may finish third (Figures 8 and 9).

Although salmonid predation figures will be lower than last year and about equal to 2007, the percentage of the run taken will be even lower (it is currently at 2.3% and will only drop as more fish pass and few fish are taken between now and the end of the month, Figure 14). It will likely drop below 2% for this year, but the number of salmonids taken will likely be the second or third highest over the past 8 years. This is at least partially due to the aforementioned high, but late spring Chinook run passage. Two main points are to be taken from Figure 14. The first is that it

is meaningless to report the percentage of the run taken until the end of May. The second is that it does point out that salmonid stocks that arrive at the dam earlier than the peak spring Chinook passage period can be disproportionately predated upon by the sea lions.

### **DETERRENTS/TRAPPING**

Trapping by the states began March 10 and has now ended for the season at Bonneville. A total of 14 animals were trapped and removed this year (Table 1). To properly assess the impact to salmonid take, we need to remove the Steller salmonid take component. Full analysis of the impact of the removal of sea lions over two years will have to wait until the final report, which we hope to get out by August or September.

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.

### **OTHER ITEMS OF INTEREST**

A report of a California sea lion being locked upstream of Bonneville Dam (riding on the stern of a tug) was reported on May 16. No additional sightings or reports of him passing back downstream have been reported.

<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	No	-	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
C858	5/11/09	Yes (09)	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C645	5/13/09	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C674	5/14/09	Yes	No	Euthanized	Infected with Gammaherpes virus and unsuited for zoos/aquariums
C934/B300	5/14/09	No	-	Released	Tagged with acoustic transmitter for research (ODFW), branded C934
C935	5/14/09	No	-	Released	Tagged with acoustic transmitter for research (ODFW), branded C935

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

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

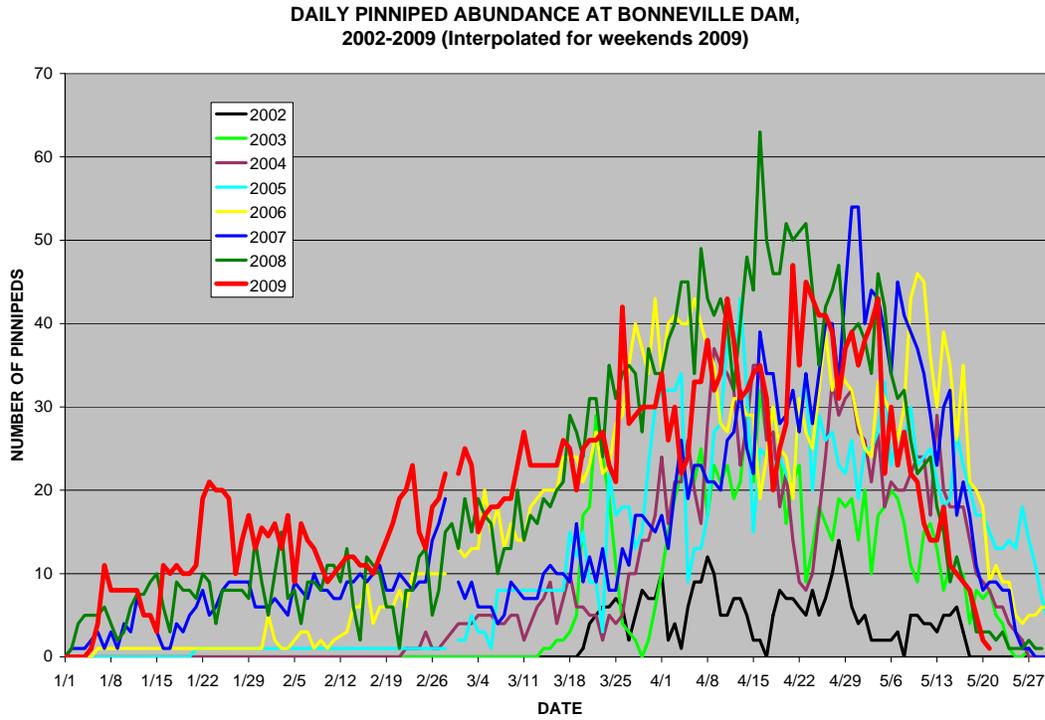


Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2009.

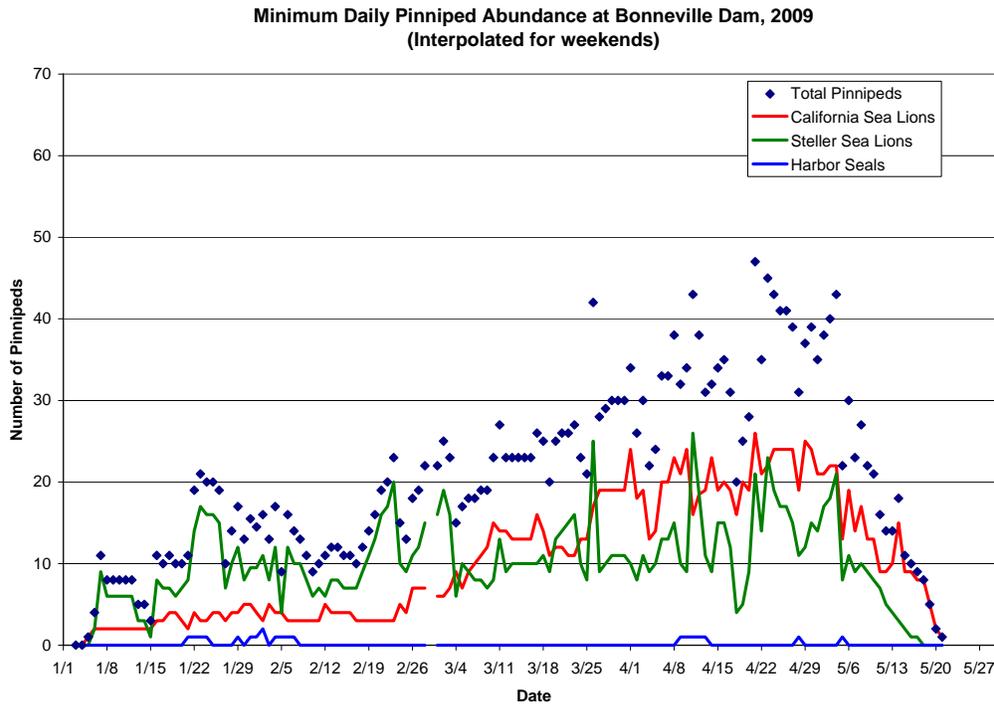


Figure 3. Major prey species taken by Pinniped species at Bonneville Dam, 2009.

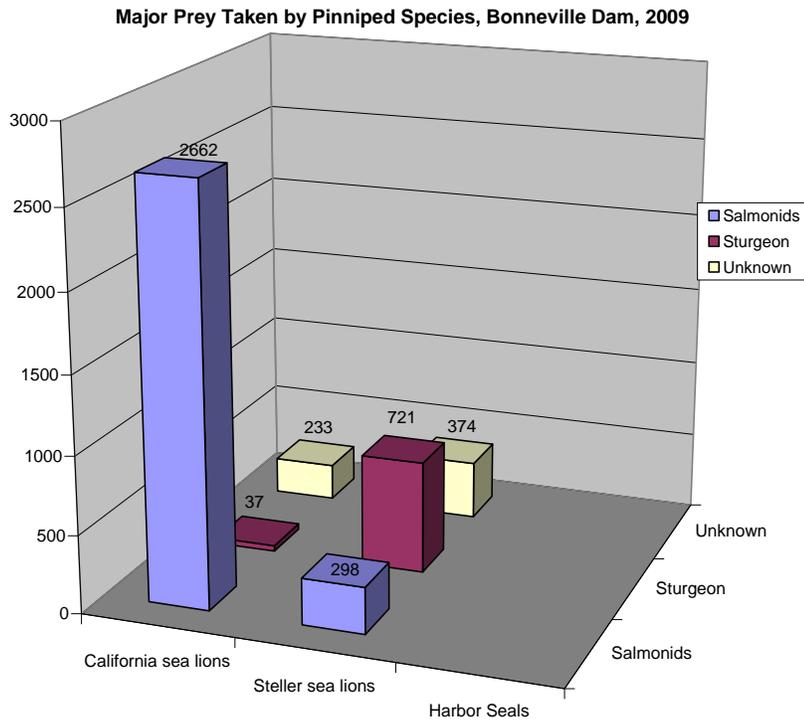


Figure 4. Daily cumulative sturgeon catch at Bonneville Dam, 2006-2009. All data unexpanded.

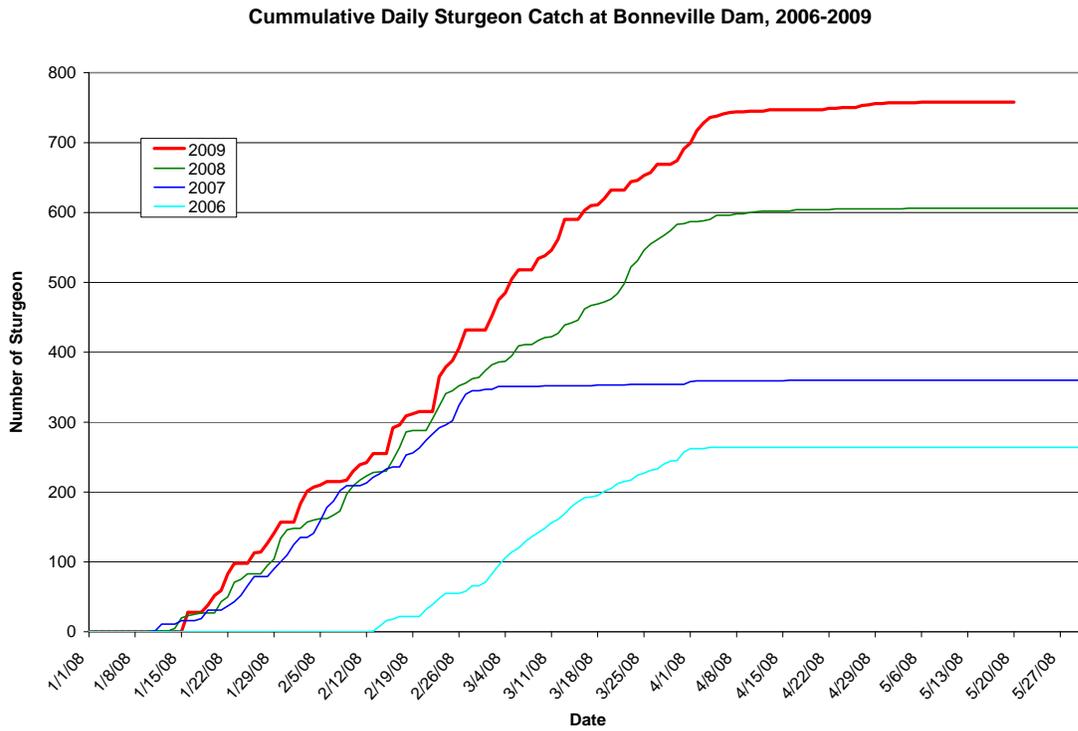


Figure 5. Major prey species taken by Pinnipeds by location, 2009.

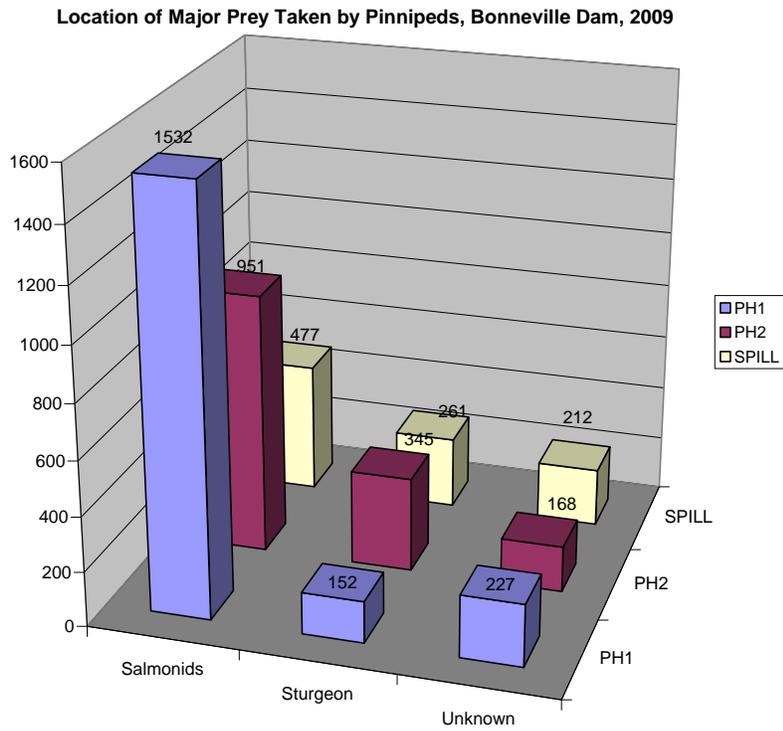


Figure 6. Average daily presence of pinnipeds, by species, to date (May 21) for each year at Bonneville Dam.

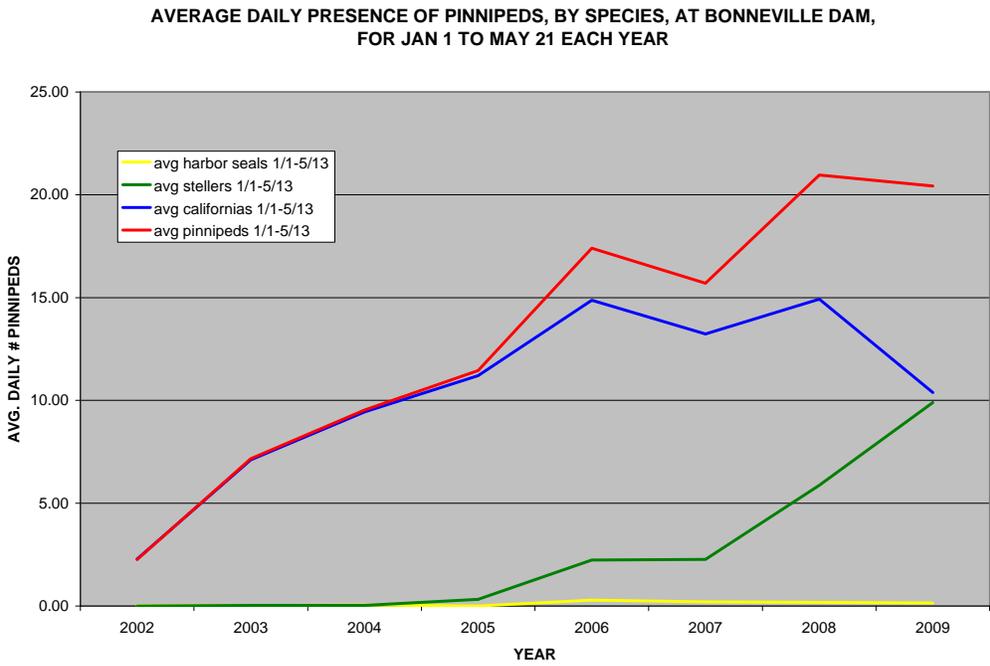


Figure 7. Daily cumulative salmonid catch at Bonneville Dam, 2002-2009 (weekends interpolated).

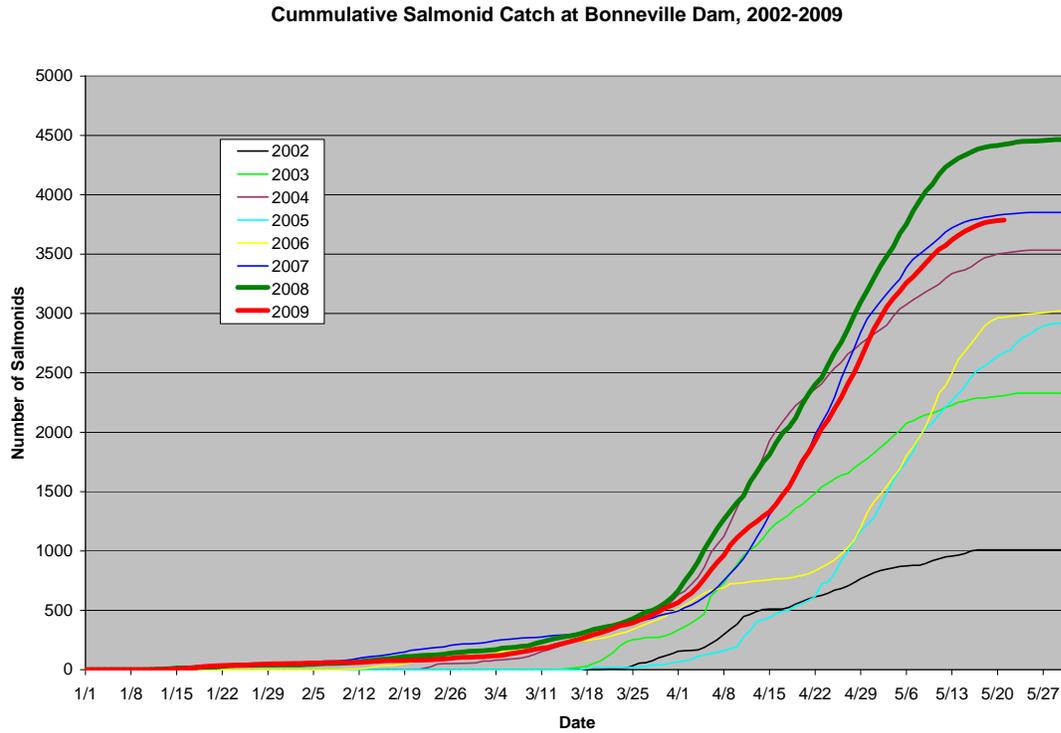


Figure 8. Daily cumulative salmonid passage at Bonneville Dam, 2002-2009.

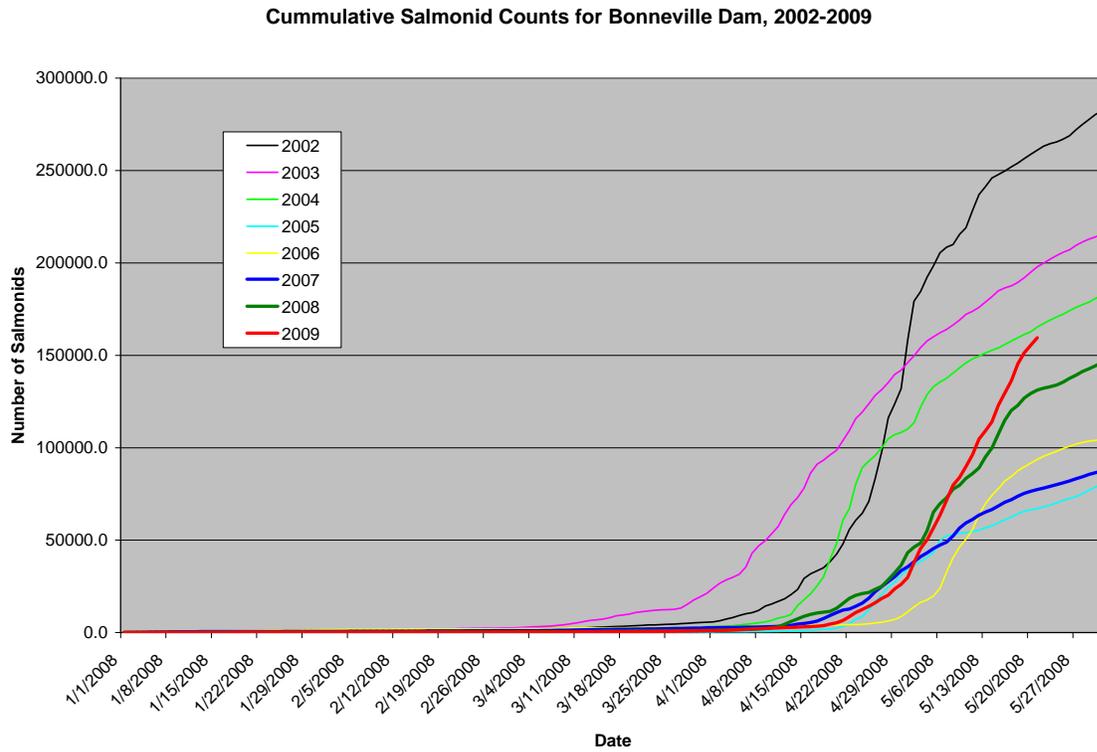


Figure 9. Daily salmonid passage at Bonneville Dam, 2002-2009.

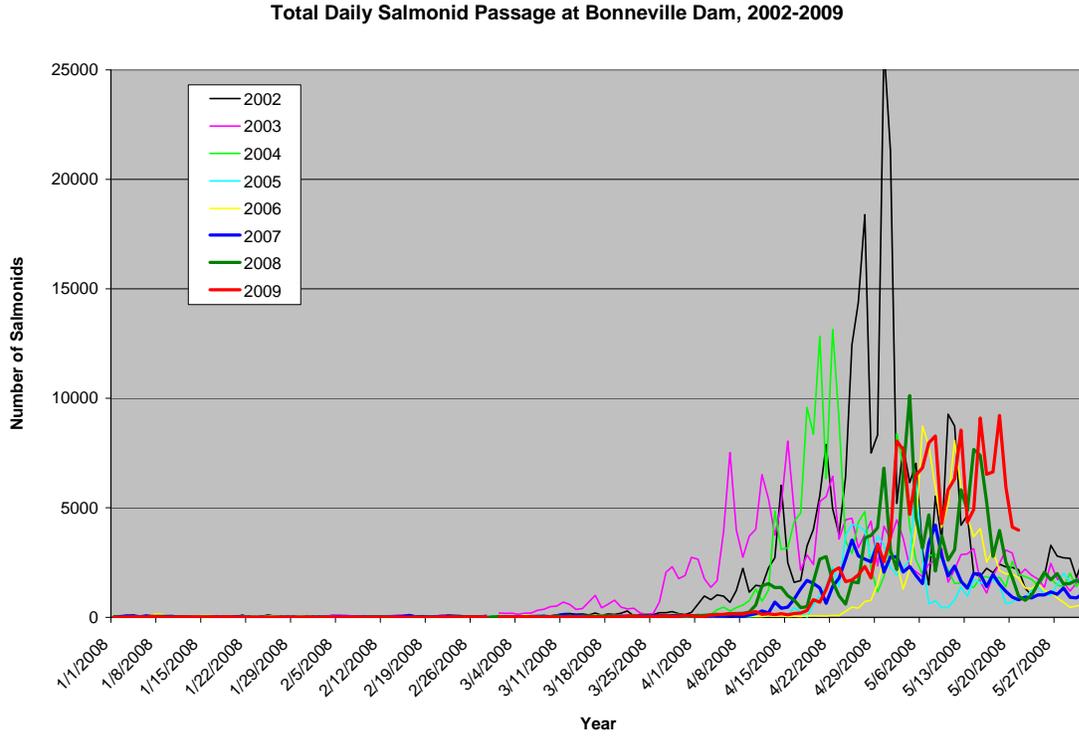


Figure 10. Size distribution of sturgeon observed caught at Bonneville Dam, 2006-2009.

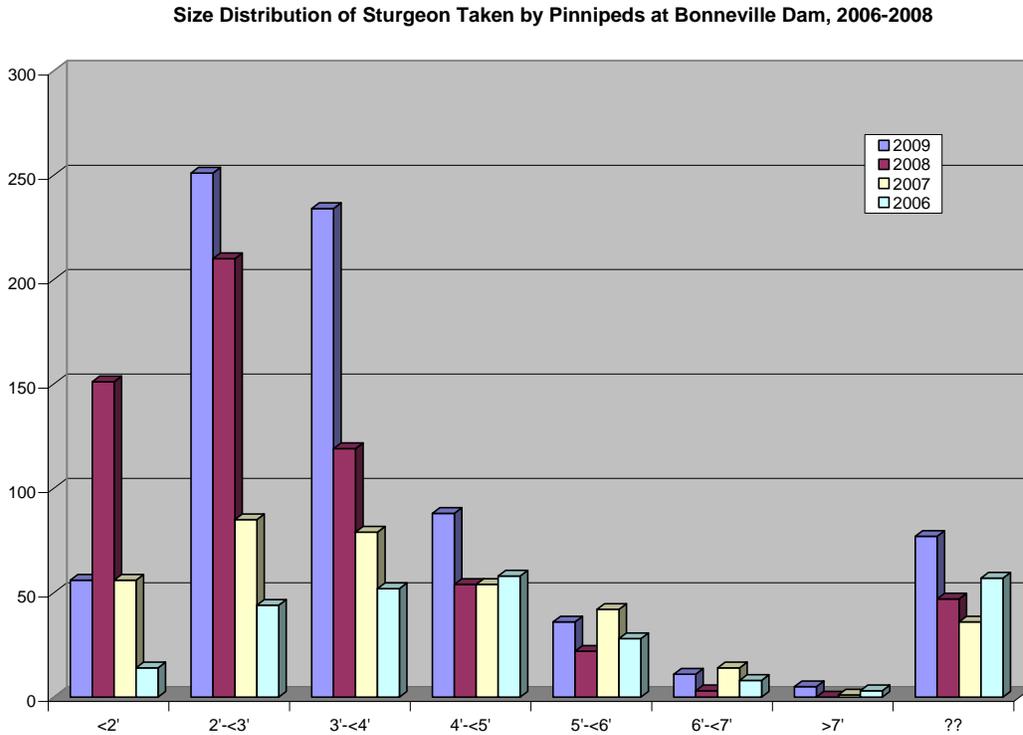


Figure 11. Daily minimum California sea lion abundance (weekends interpolated) at Bonneville Dam, 2002-2009.

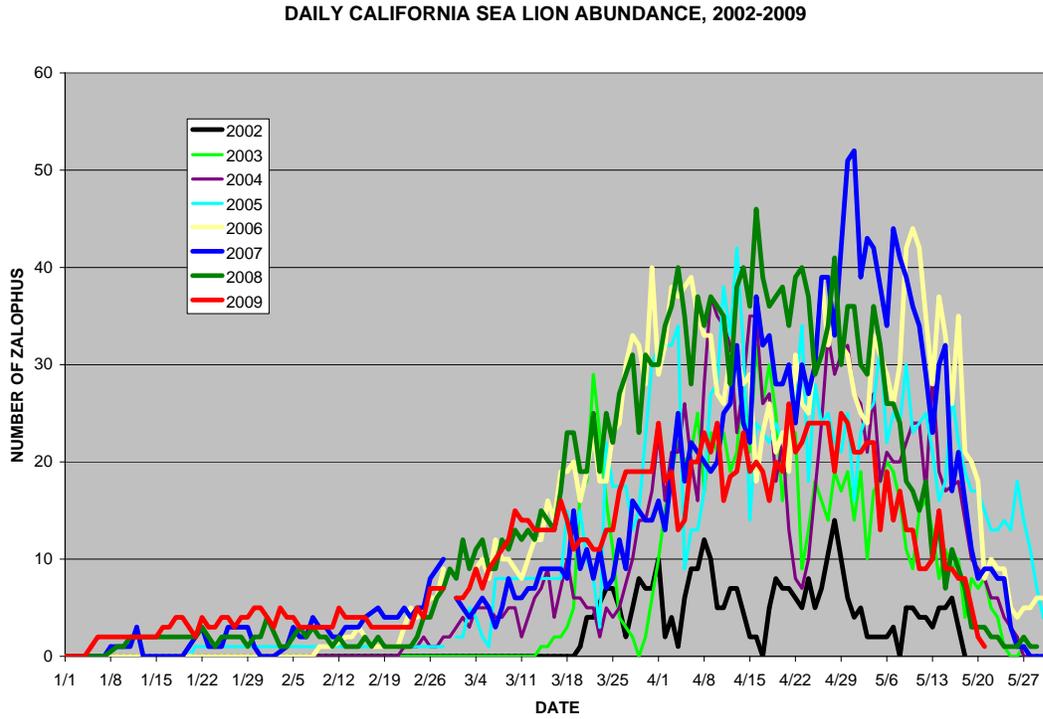


Figure 12. Daily minimum Steller sea lion abundance (weekends interpolated) at Bonneville Dam, 2002-2009.

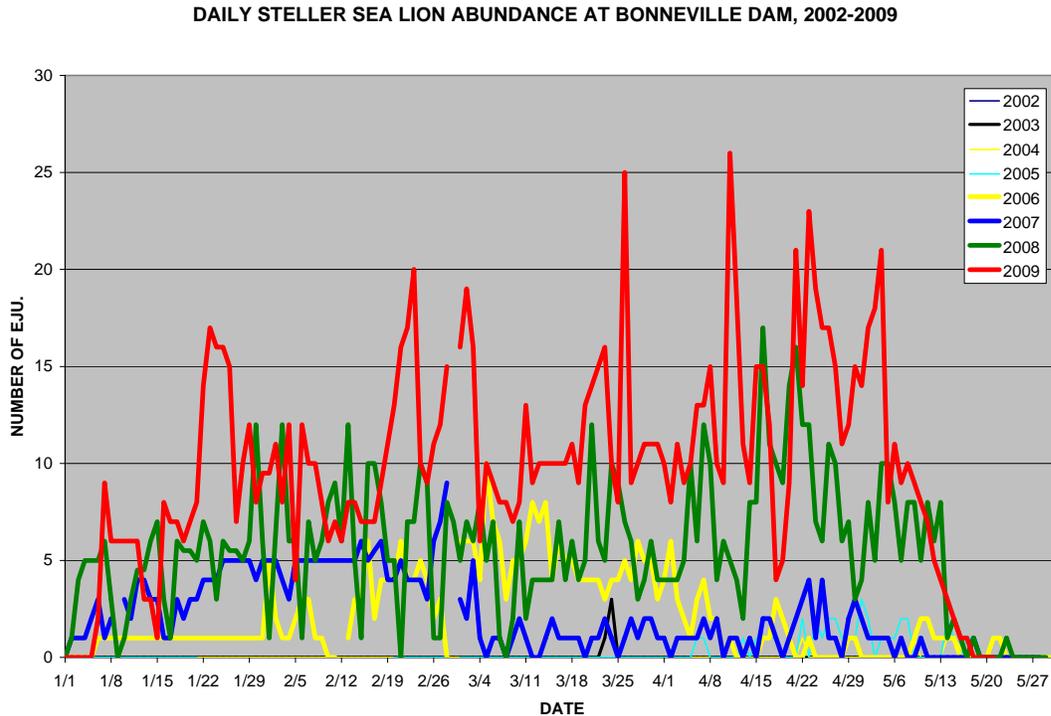


Figure 13. Daily observed (2009 unexpanded) salmonid take at Bonneville Dam, 2002-2009.

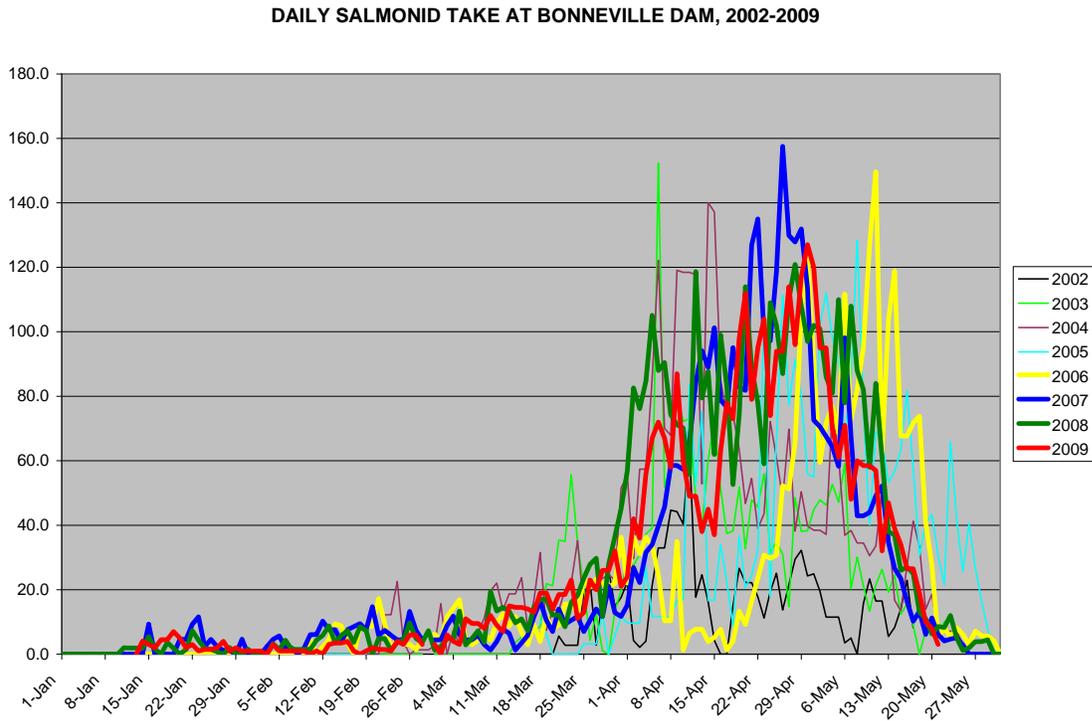


Figure 14. Cumulative percentage of salmonid run passing Bonneville Dam taken by all Pinnipeds, 2002-2009.

