

**STATUS REPORT – PINNIPED PREDATION AND HAZING  
AT  
BONNEVILLE DAM IN 2008**

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This is the tenth status report for 2008 on the pinniped predation and hazing activities being conducted at Bonneville Dam. Regular observations began on January 11, Mondays through Fridays, and switched to 7 days a week on February 4. Observations begin roughly an hour before sunrise and end an hour after sunset. **Please remember all data are preliminary and final figures are likely to change some after further analysis and proofing, so be careful about quoting these figures.** Boat based harassment was not conducted all last week. Dam based harassment by USDA WS agents began on March 3, and has been conducted 7 days a week, through the end of May. Data collection will end after May 31, as will harassment activities. Some additional observations will occur as long as sea lions are still present after this date.

As mentioned in last weeks press release, federal authorities have attributed the cause of death for the four California sea lions and two Steller sea lions that died on the traps May 4 as hyperthermia, or heat prostration. The investigation continues into the cause of the gates becoming closed on the two traps.

## **PRELIMINARY RESULTS**

Data presented here are up through May 18, 2008. A final report of the 2005-2007 evaluation is now available on the Corps website.

### **PINNIPED ABUNDANCE**

Steller sea lion (*Eumetopias jubatus*) daily abundance has dropped to about one per day over the past few days (Figures 1 and 10). The number of California sea lions (*Zalophus californianus*) has also dropped to 10 or fewer animals the past few days (Figures 1 and 11). The bulk of the animals have left a week or two earlier than previous years, however, a few new animals including a branded one has shown up over the past week. Many Bonneville animals with brands continue to be seen in Astoria on their way down to the California breeding grounds. A preliminary look at individuals identified at Bonneville Dam so far suggests we have seen about 77 different California sea lions, and at least 17 Steller sea lions and 2 Harbor seals. At least 38 of the California sea lions have been seen in previous years.

### **PREDATION FIGURES**

Fish counts are still struggling to reach 150,000 by the end of the month, with daily counts bouncing between 2,700 and 7,600 per day last week (Figure 9). The Agencies have reduced the

anticipated spring Chinook run (which goes through June 15) down to 180,000. If the current daily passage rates trend continues, we may not even meet that estimate.

Unexpanded numbers for fish observed taken between January 11 and May18 are:

- 3,894 Chinook, 287 steelhead (see Figure 2)
- 607 sturgeon (21 larger than 5 feet)(see Figures 2, 3 and 4)
- 52 lamprey
- 702 unidentified (see Figure 2)

Steller sea lions have not been observed to take a sturgeon in weeks at Bonneville (Figure 5). California sea lions predation on Chinook has dropped off in the past week, steadily declining to only 11 taken yesterday (Figure 7). The sea lions have already exceeded the salmonid take of 2007 (Figure 8) with no expansion, topping 4,100. It is likely that most unknown fish observed caught by Steller sea lions are sturgeon, while those unknown fish observed caught by California sea lions are steelhead or Chinook. Just under 42% (1,654 of 3,991) of the salmonid prey taken by California sea lions have been attributed to specific individuals. One individual, B194, was observed to take at least 106 salmonids over 68 days or more, while C653 was seen to take at least 101 over 51 days or more. The most attributed to any individual in previous years was 79. Lamprey take has continued for the last two weeks, with a total of 52 observed taken during the season. In addition, we have seen 13 shad, 11 Northern Pikeminnow, five smolt, and one bass taken this year.

Most sturgeon have been caught at the spillway followed by PH2, while most steelhead and Chinook have been caught at PH2 and PH1 (Figure 6). Figure 3 shows that sturgeon take has far exceeded the take of last year as the presence of Steller sea lions continues. However, smaller sturgeon are being taken proportionally more this year than in previous years (Figure 4).

### **HAZING IMPACTS**

Few animals remain to be hazed and hazing activity has declined correspondingly.

### **OTHER ITEMS OF INTEREST**

We deployed the DIDSON camera at the PH2 north upstream entrance area and began recording, but unfortunately, with fewer sea lions around, we will be lucky to observe any in the beam. We have however seen several fish traces as they move near the entrance and should be able to adjust the camera viewing area to see how close to the entrance we can monitor and set up for next year to see if sea lions are taking fish as they are bunched up in front of the entrances, if that is the case.

Figure 1. Daily minimum pinniped abundance.

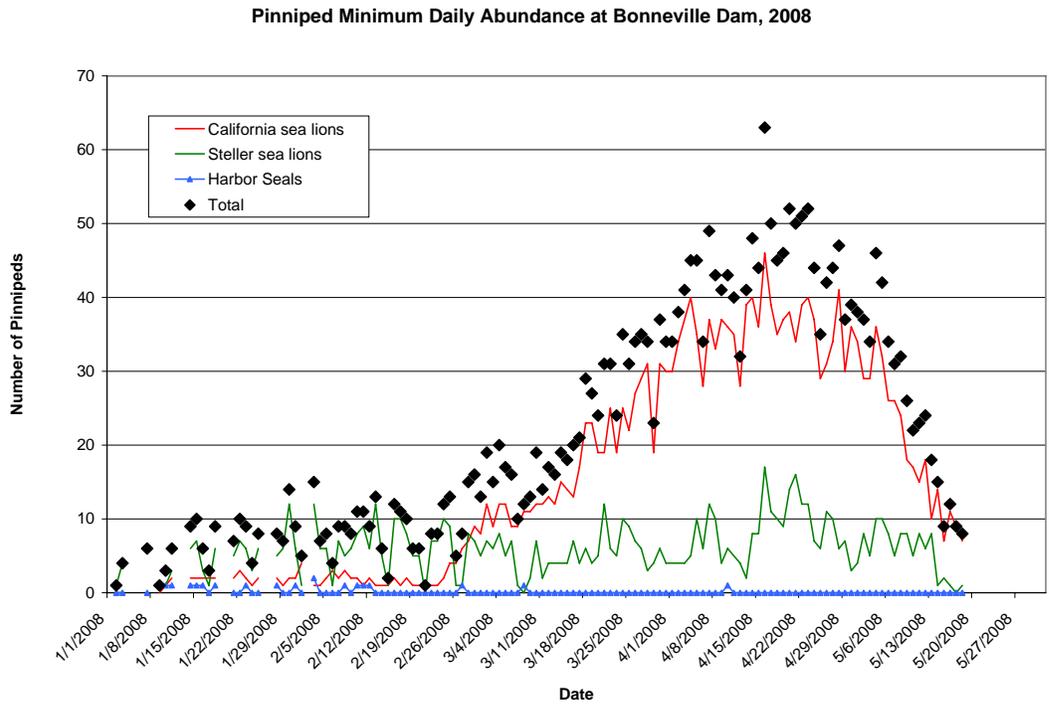


Figure 2. Daily salmonid, sturgeon, and unknown fish predation by pinnipeds, unexpanded observations.

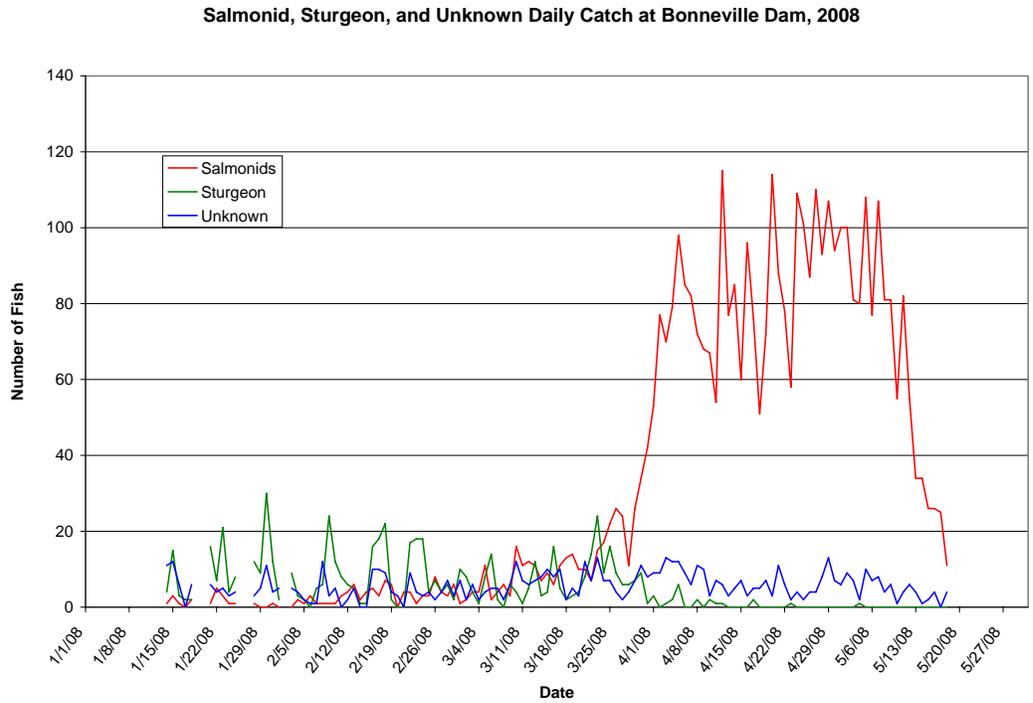


Figure 3. Cumulative estimated daily sturgeon catch by pinnipeds at Bonneville Dam, 2006-2008. 2008 data are not expanded and are preliminary.

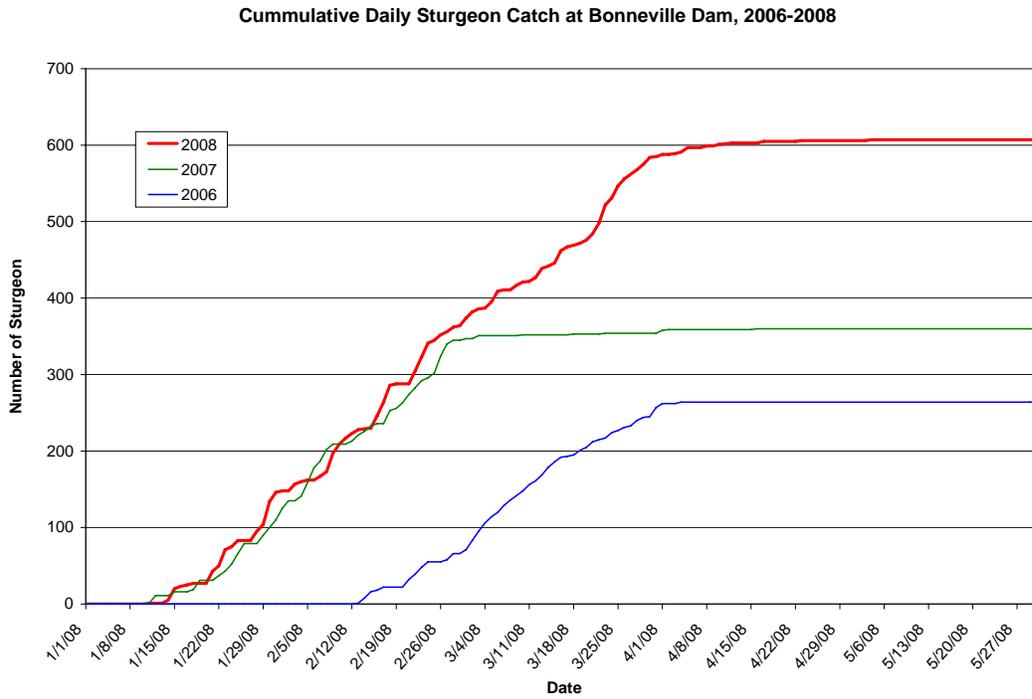


Figure 4. Size distribution of sturgeon caught at Bonneville Dam, 2002-2008.

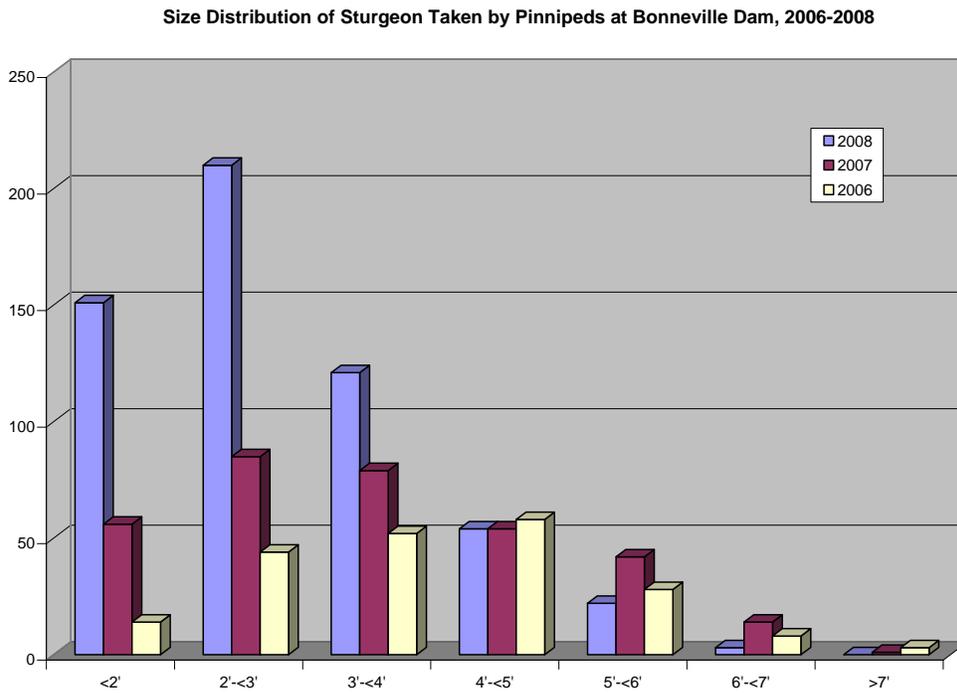


Figure 5. Prey taken by species of Pinniped at Bonneville Dam, 2008.

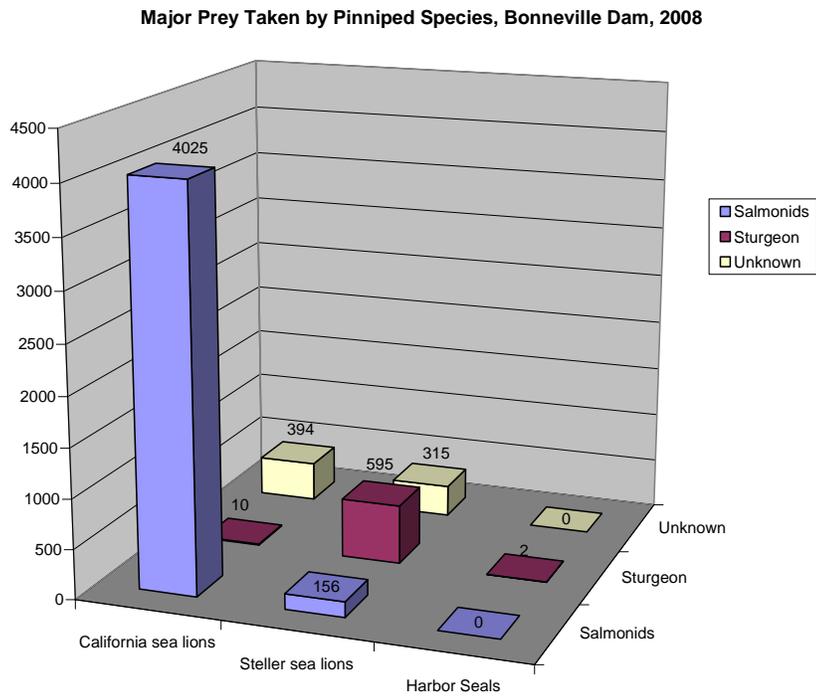


Figure 6. Location of prey taken at Bonneville Dam, 2008.

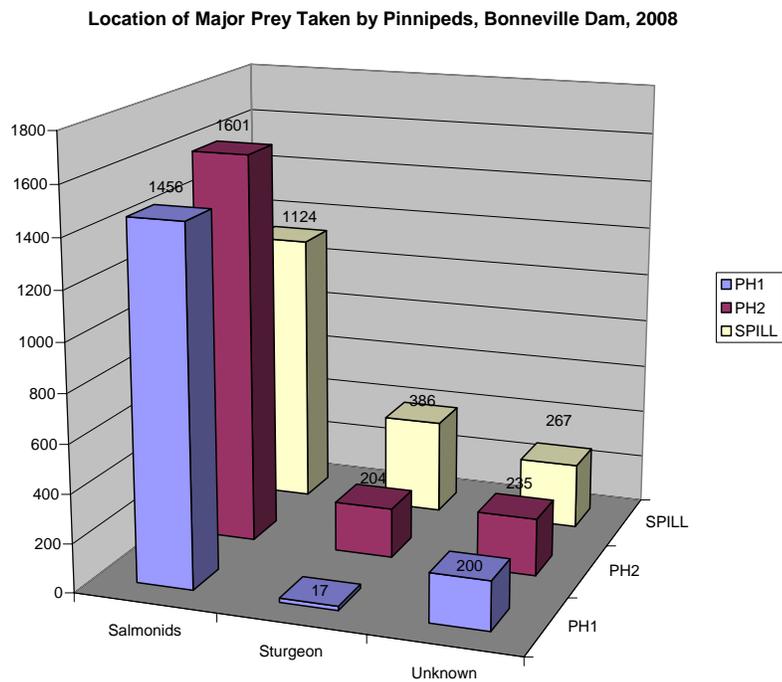


Figure 7. Daily Steelhead and Chinook take at Bonneville Dam, 2008. Data are unexpanded and preliminary.

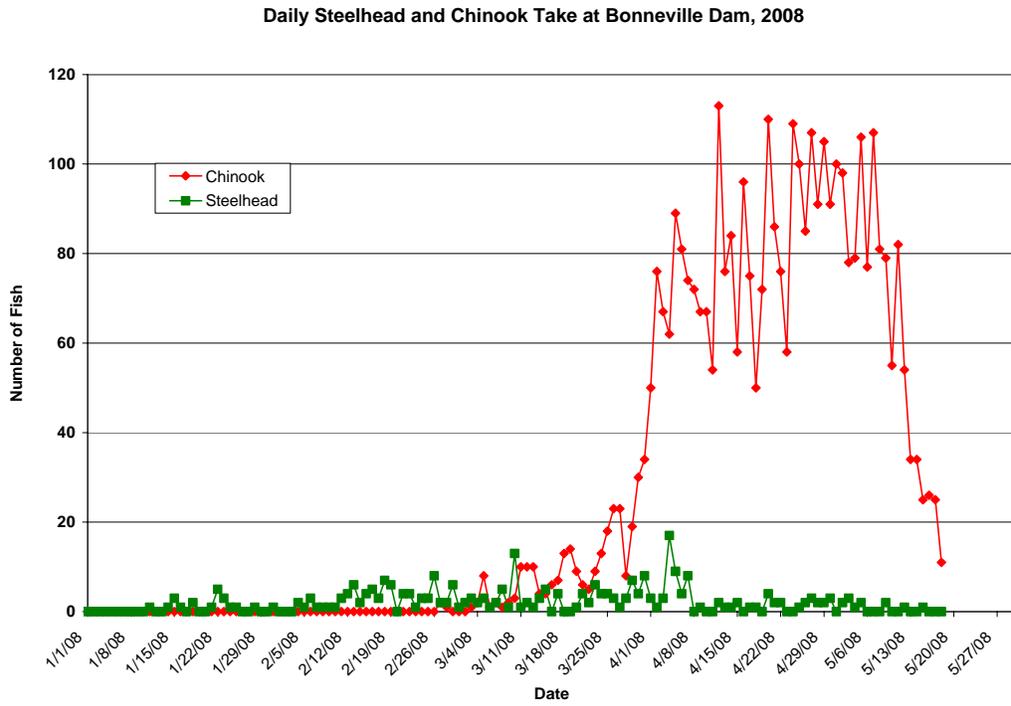


Figure 8. Cumulative estimated daily salmonid catch by pinnipeds at Bonneville Dam, 2006-2008. 2008 data are not expanded and are preliminary.

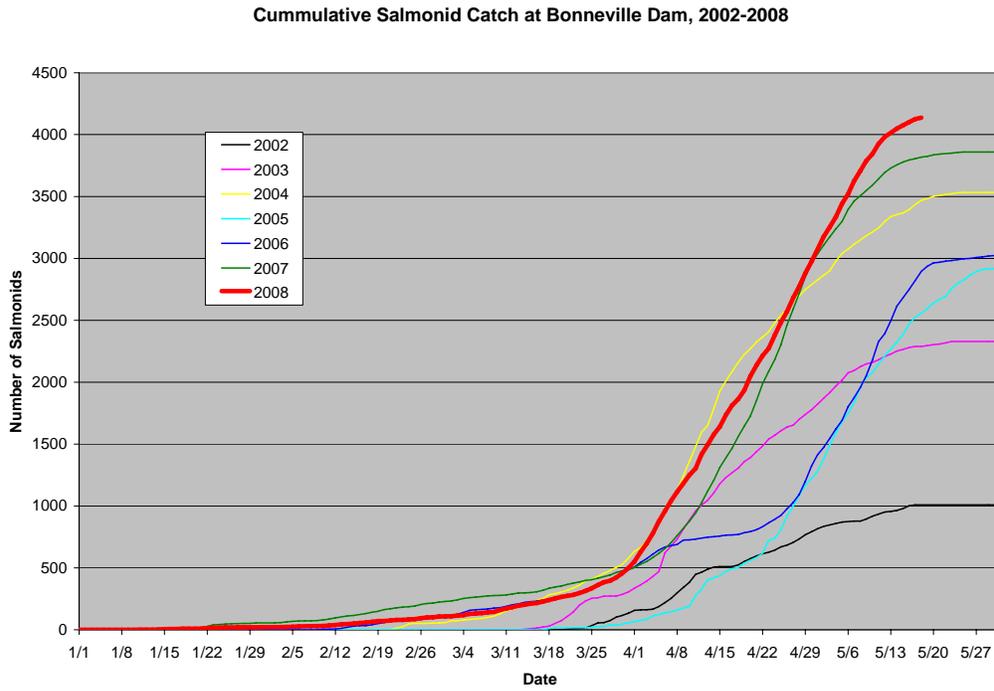


Figure 9. Cumulative total daily salmonid counts at Bonneville Dam, 2002-2008.

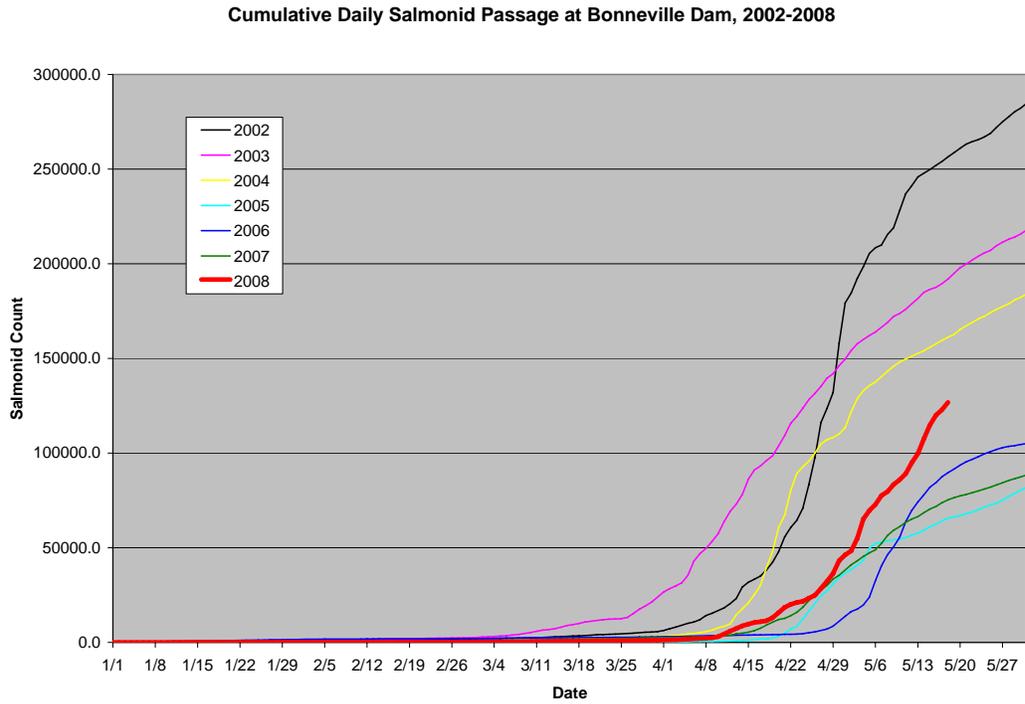


Figure 10. Steller sea lion abundance at Bonneville Dam, 2002-2008.

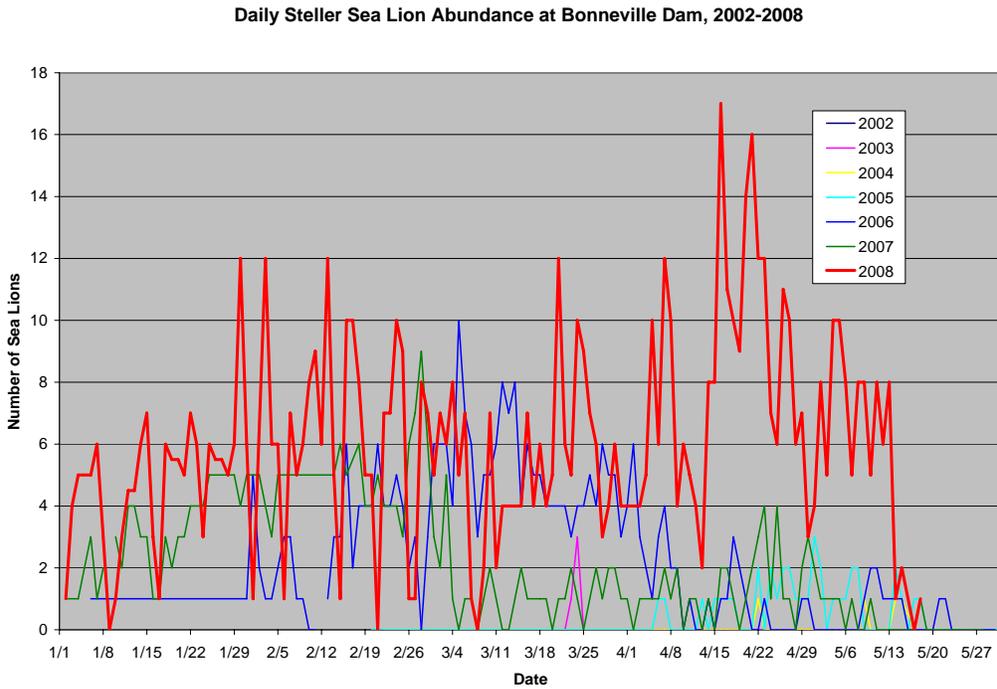


Figure 11. California sea lion abundance at Bonneville Dam, 2002-2008.

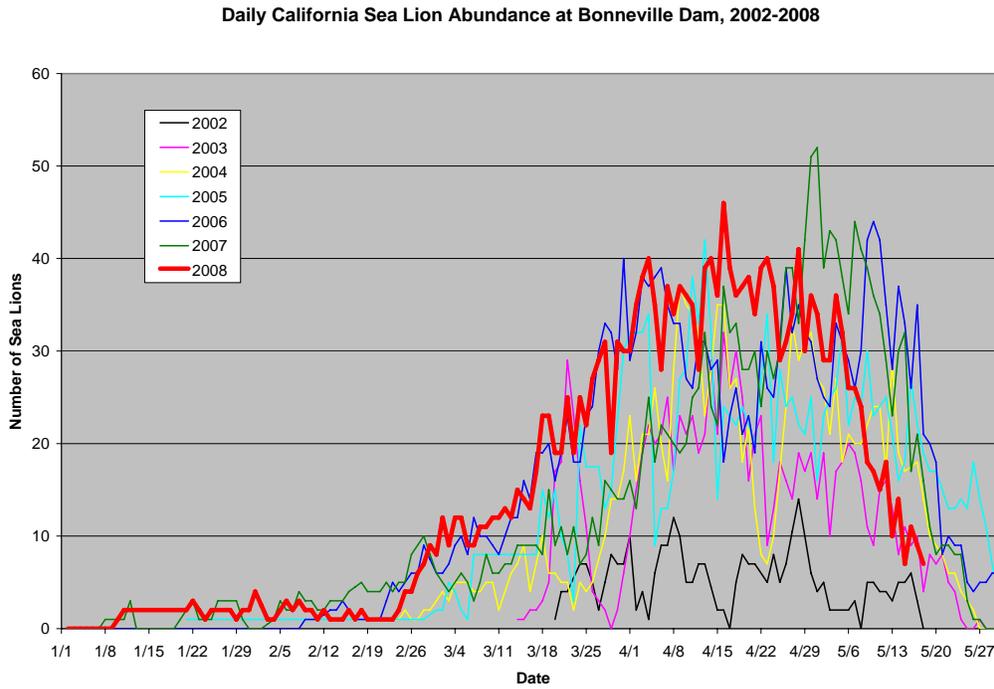


Figure 12. Total Pinniped abundance at Bonneville Dam, 2002-2008.

