

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

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This is the sixth 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 has been conducted since December 12 for Steller sea lion preying on sturgeon, 2 to 5 days a week, and has continued for California sea lions to date at least 5 days a week (see Status Report from Bryan Wright, ODFW). Dam based harassment by USDA WS agents began on March 3, and will be 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.

The states will be attempting to trap and transport several animals later this week. Judge Mosman ruled to allow the states to pursue trapping and lethal take last week, but the HSUS will or has appealed to the 9th Circuit Court to review the Judges ruling. Trap and haul to Sea World or other locations will be the first option. Three additional traps were built last week and are being deployed Monday, April 21st.

PRELIMINARY RESULTS

Data presented here are up through April 20, 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 risen over the last week and we observed a record 17 on April 16 (Figures 1 and 10). The number of California sea lions (*Zalophus californianus*) continues to grow and reached 46 on April 16 (Figures 1 and 11). The most number of pinnipeds total for one day so far was 63 on April 16, which is a new one day record high since we began observations in 2002 (Figure 12), the previous record being 54 animals last year. A preliminary look at individuals identified at Bonneville Dam so far suggests we have seen about 55 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.

Of the 60 animals listed for potential lethal take, 31 have been seen at Bonneville Dam so far this year, with about 19 of those being seen on the single trap already, and several others hauled out nearby. An additional 4 branded animals and possibly 7 others that we can identify now qualify

to be added to the list, having been hazed, seen to eat at least one salmon, and having been here more than 5 days.

PREDATION FIGURES

Fish counts are showing another late run, as we have seen for the last three years (Figure 9).

Unexpanded numbers for fish observed taken between January 11 and April 20 are:

- 1,791 Chinook, 258 steelhead (see Figure 2)
- 605 sturgeon (21 larger than 5 feet)(see Figures 2, 3 and 4)
- 8 lamprey
- 541 unidentified (see Figure 2)

Steller sea lions are the primary predators of white sturgeon (*Acipenser transmontanus*) in the Bonneville Dam tailrace (Figure 5). Only six sturgeon were taken by California sea lions in past years; 9 this year and 2 by harbor seals (<2'). California sea lions have been heavily targeting Chinook in recent weeks (Figure 7). The sea lions are on a pace to equal or exceed the take of 2004 and 2007 (Figure 8). 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 half (846 of 1,994 or 42%) of the salmonid prey taken by California sea lions have been attributed to specific individuals. There has been a noticeable increase in the number of observations of Steller sea lions stealing salmon caught by California sea lions as well as what appears to be direct catches themselves, which may account for the slowing of sturgeon taken over the past few weeks.

Most sturgeon have been caught at the spillway followed by PH2, while most steelhead and Chinook have been caught at PH1 and PH2 (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).

Observations from the area of Tanner Creek to Ives Island by PSU student volunteers has been collected also, and between January 13 and April 14, an additional 24 Chinook, 25 steelhead, and 7 sturgeon have been observed taken (plus 6 unknown) from 209 hours of observation at this site. The area between our observers at the dam and Tanner Creek will be observed by WDFW/ODFW personnel as well from now until the end of the season, but this data will take more time to process and may not be available for updates.

HAZING IMPACTS

Full hazing from both boat and dam began on March 3rd. After March 15, the tailrace of PH2 was not to be hazed with above water pyrotechnics to allow for animals to haul out more on the traps for capture and for other potential activities in the future. However, on April 7 it was determined to resume hazing as far too many sea lions were becoming active in the PH2 tailrace, and this was far enough away from the trap. Chinook counts exceeded 1,000 per day on April 11, and therefore seal bombs are no longer allowed to be used inside the boat restricted zone (Bonneville dam near tailrace area) for protection of the fish. SLEDs were installed at PH2

entrances on January 28. Cascades Island SLEDs were installed the week of February 10, and PH1 and B-branch SLED's were installed the week of February 24. Acoustics were deployed at all major fishway entrances by January 10. Some animals have been observed to be successfully chased downstream while others have not responded to multiple crackershells or rubber bullets.

OTHER ITEMS OF INTEREST

Night predation - We have conducted some before dawn and after daylight observations (about 16 hours so far). I don't want anyone to panic and start calculating expanded catch estimates without more information, but we have noticed hunting activity and catch occurring during these periods, both by California sea lions and Steller sea lions. This may explain why we see many animals only hauled out during the day and not hunting. Whether this is a result of daytime hazing activities, less dominant animals being pushed from daytime predation by larger numbers of dominant animals, or if it extends throughout the night has yet to be determined. So far, we have observed an average of just over 2 animals present for those hours and they have taken a total of 1 salmonid, 1 sturgeon, and 18 unknown fish (about 1.25 fish per hour observed). Sometimes animals are present at the start or the end of the hour, but often they arrive or leave during the hour of observation. We have yet to determine if this is an all night phenomenon, or just the early and late hours.

SUMMARY

Pinniped numbers are now averaging between 40-50 a day, as more California sea lions are showing up. Predation on Chinook has greatly increased over the past few weeks. Boat and dam based harassment continues. Some night-time predation has been observed.

Figure 1. Daily minimum pinniped abundance.

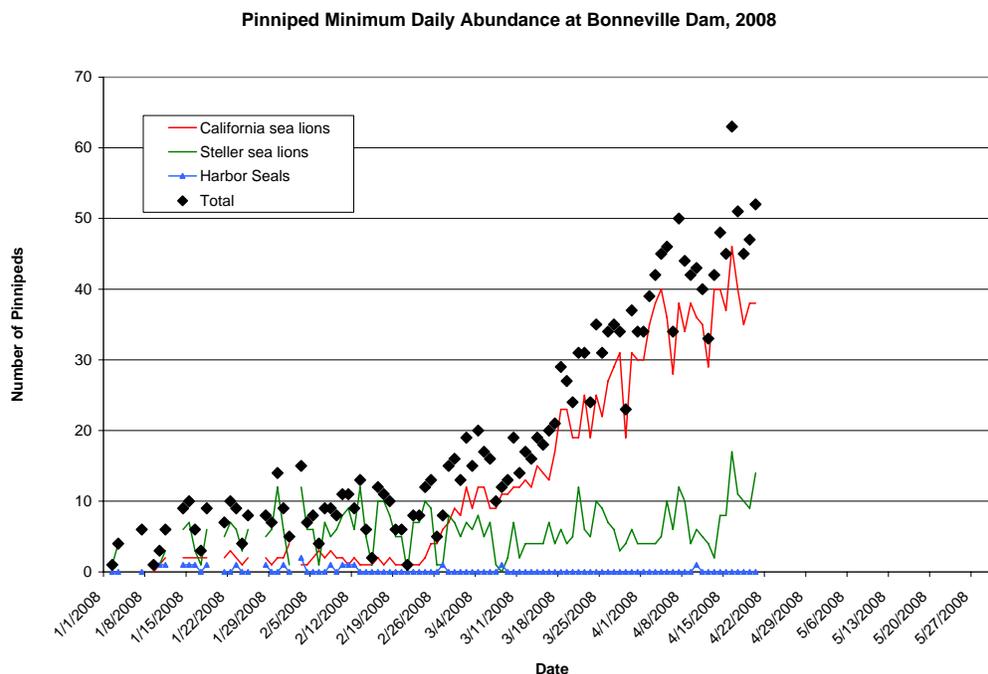


Figure 2. Daily salmonid, sturgeon, and unknown fish predation by pinnipeds, unexpanded observations.

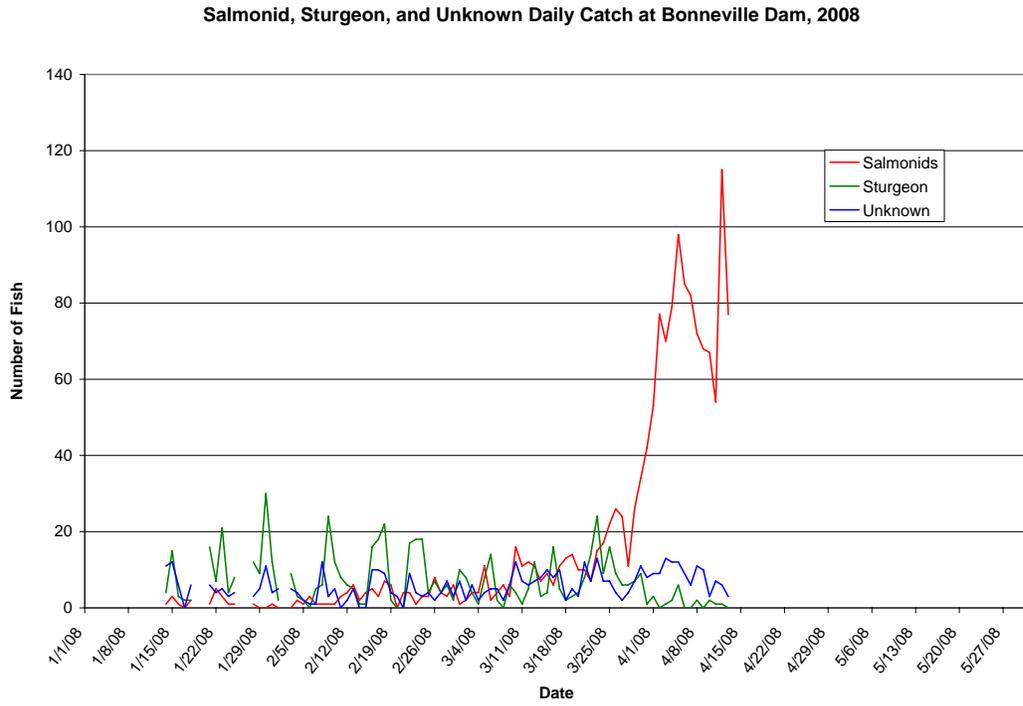


Figure 3. Cumulative estimated daily sturgeon catch by pinnipeds at Bonneville Dam, 2006-2008. 2008 data are not expanded and are preliminary.

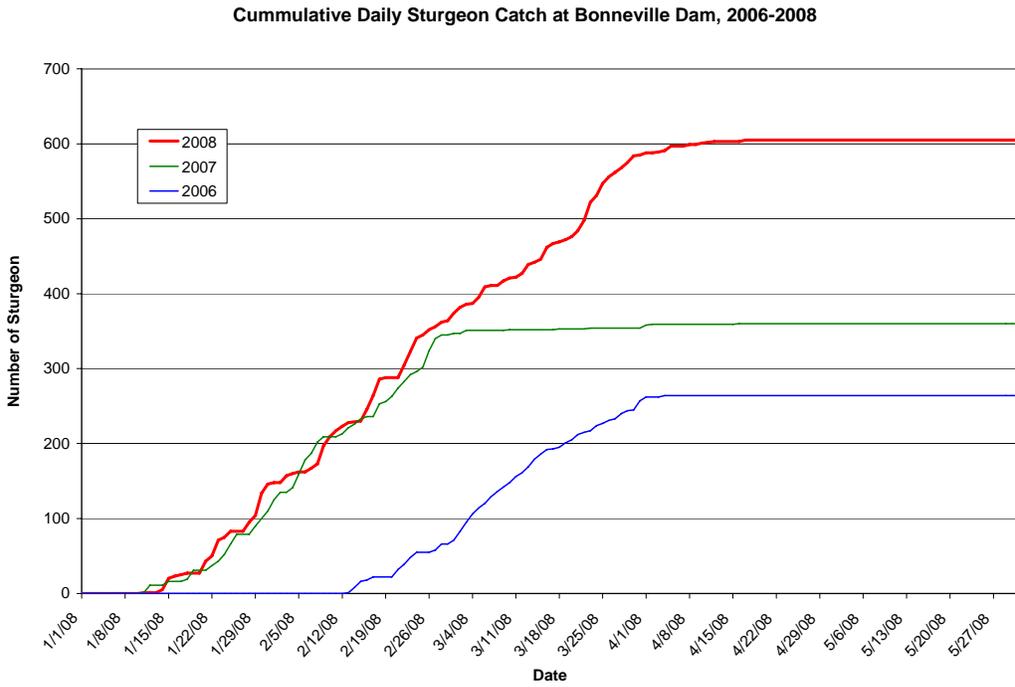


Figure 4. Size distribution of sturgeon caught at Bonneville Dam, 2002-2008.

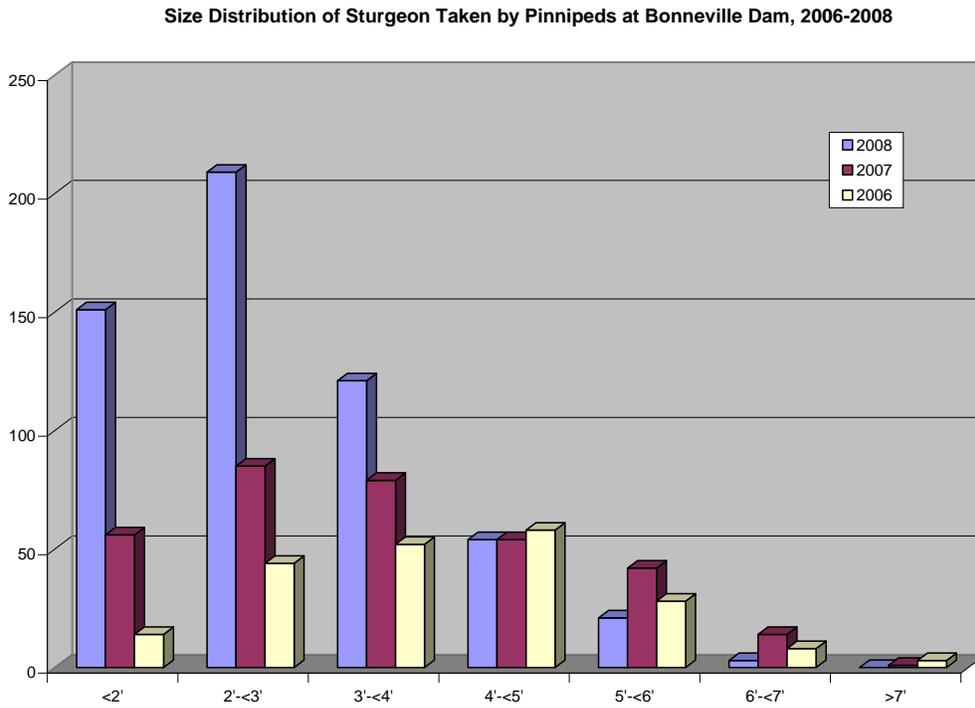


Figure 5. Prey taken by species of Pinniped at Bonneville Dam, 2008.

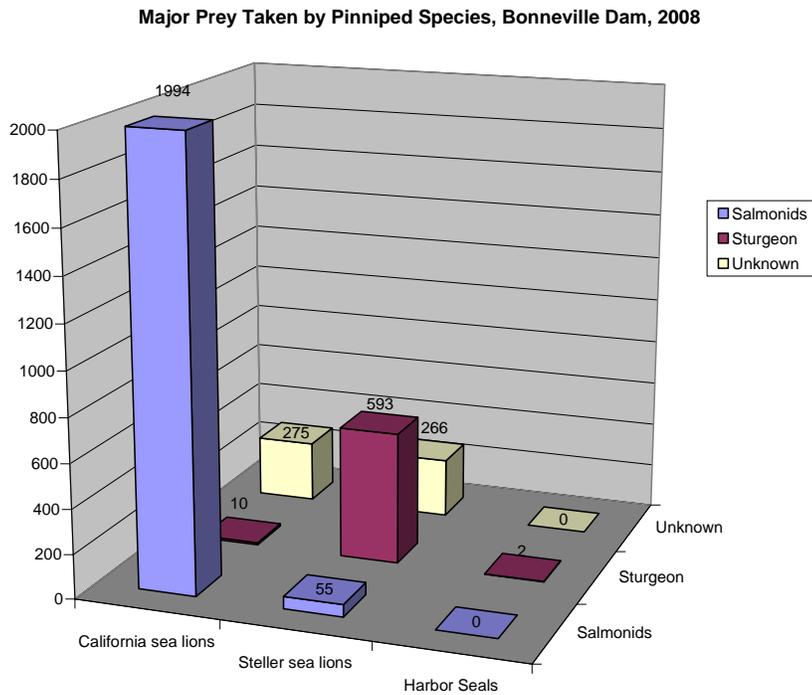


Figure 6. Location of prey taken at Bonneville Dam, 2008.

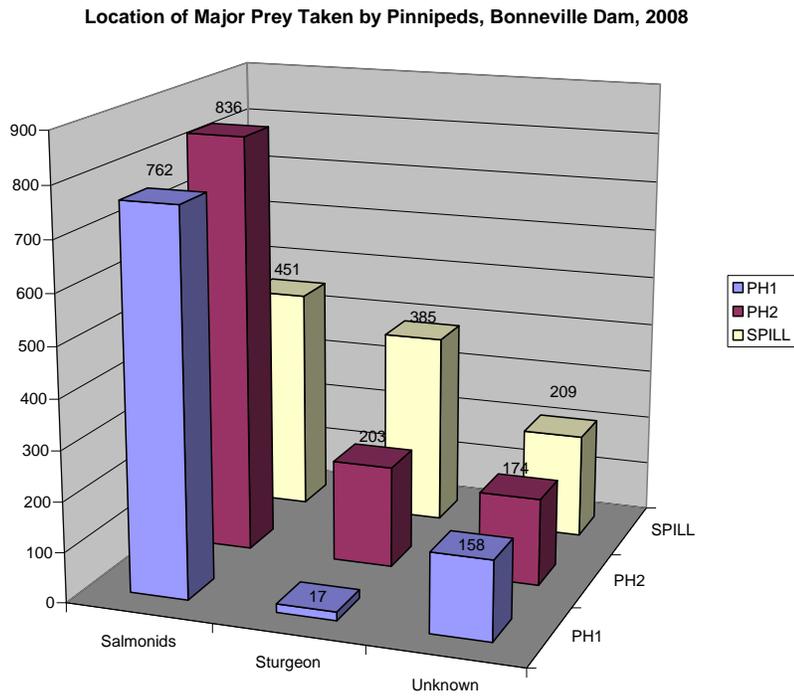


Figure 7. Daily Steelhead and Chinook take at Bonneville Dam, 2008. Data are unexpanded and preliminary.

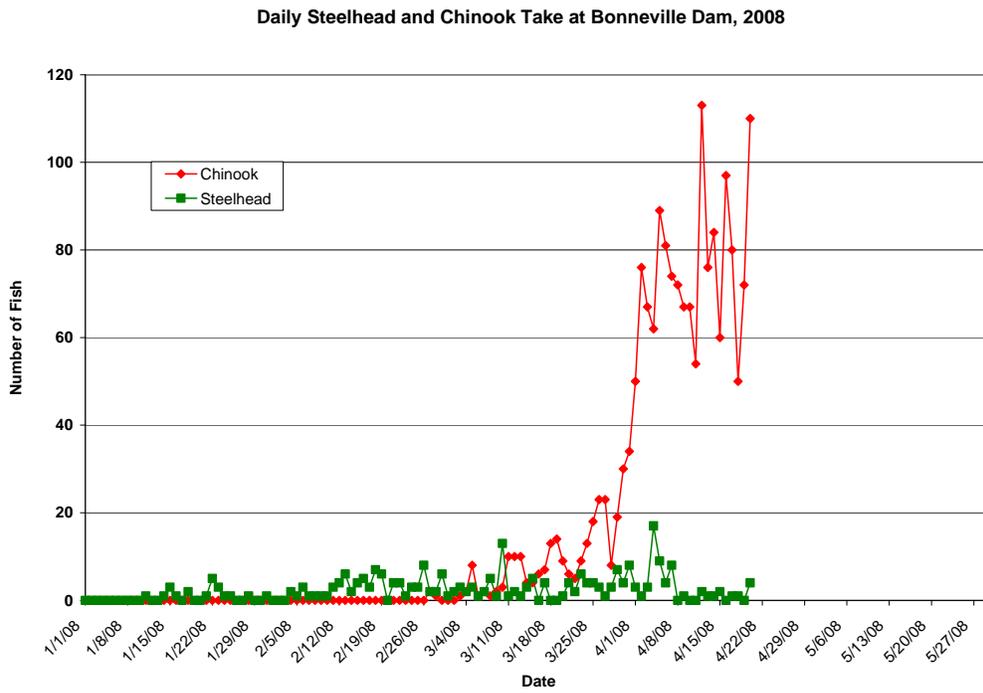


Figure 8. Cumulative estimated daily salmonid catch by pinnipeds at Bonneville Dam, 2006-2008. 2008 data are not expanded and are preliminary.

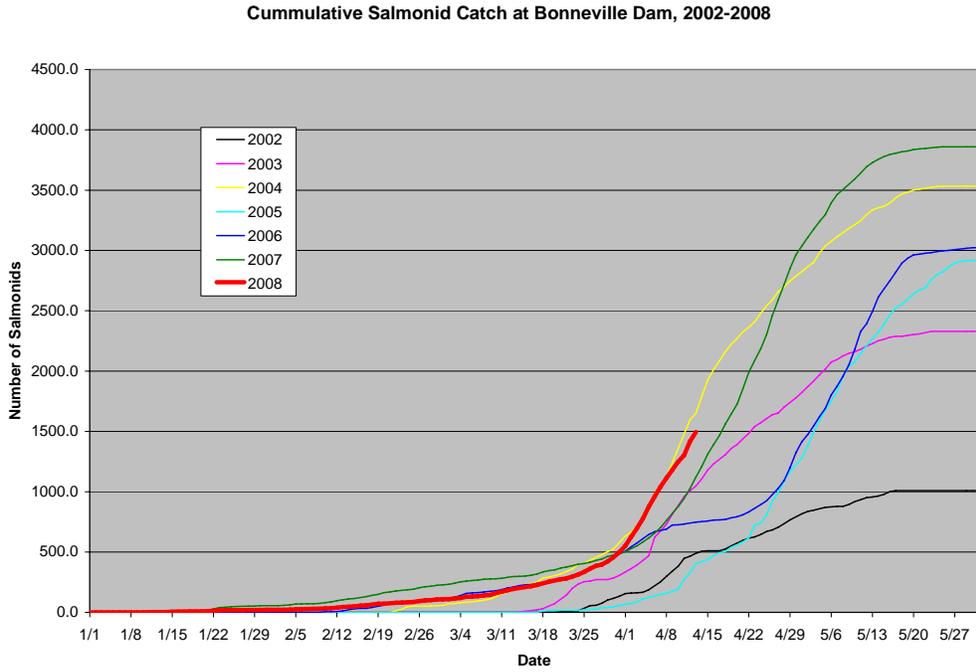


Figure 9. Cumulative total daily salmonid counts at Bonneville Dam, 2002-2008.

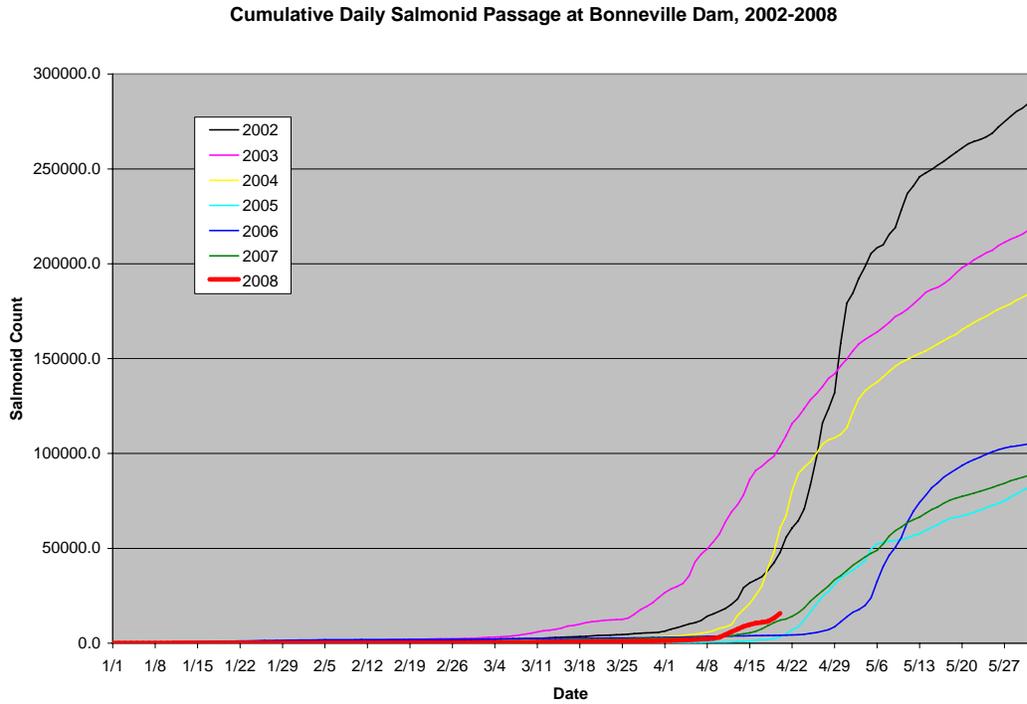


Figure 10. Steller sea lion abundance at Bonneville Dam, 2002-2008.

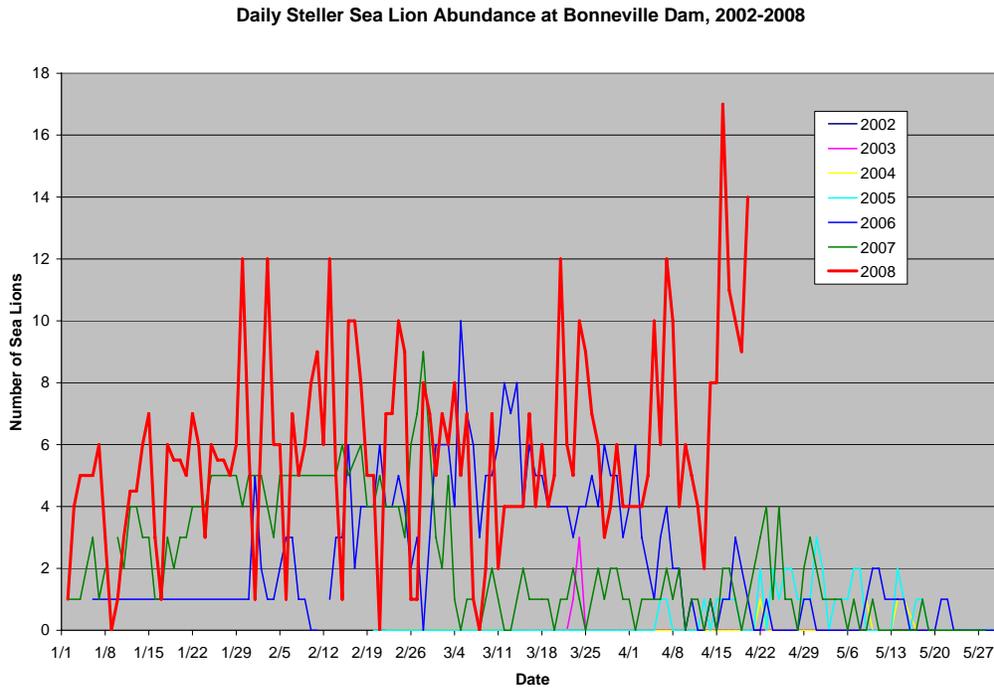


Figure 11. California sea lion abundance at Bonneville Dam, 2002-2008.

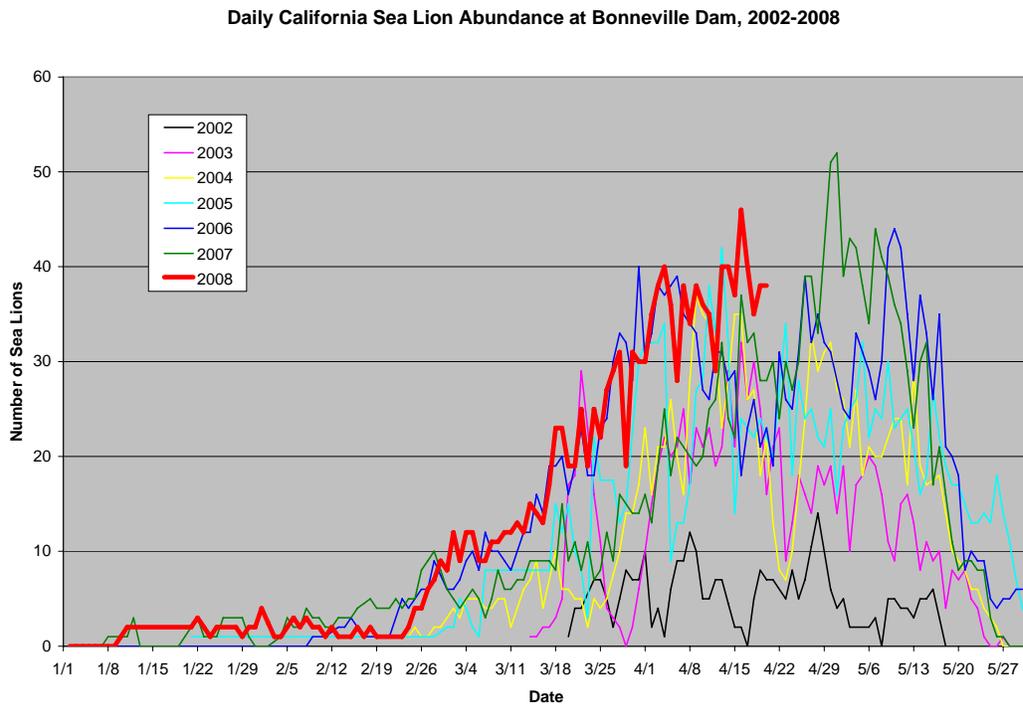


Figure 12. Total Pinniped abundance at Bonneville Dam, 2002-2008.

