

**STATUS REPORT – PINNIPED PREDATION AND HAZING
AT
BONNEVILLE DAM IN 2007**

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This report is the eighth of regular status reports on the pinniped predation and hazing activities being conducted at Bonneville Dam in 2007.

PRELIMINARY RESULTS

The first Steller sea lion (*Eumetopias jubatus*) was seen at Bonneville on December 10, 2006, the first California sea lion (*Zalophus californianus*) on January 8, 2007, and the first harbor seal (*Phoca vitulina*) on January 18, 2007. This is about one month earlier for the California sea lions to arrive than last year. We have seen as many as 9 Steller sea lions and 37 California sea lions at the dam so far on any given day (see Figure 1). The most number of sea lions total for one day so far was 39 on April 4 and 26.

PREDATION FIGURES

Unexpanded numbers for fish observed taken between January 8 and April 26 are:
2,014 salmon/steelhead (see Figure 2)
360 sturgeon (55 larger than 5 feet)(see Figures 2)
14 Lamprey, 2 smolt, unidentified (see Figure 2)

Total catch (Chinook in particular) has increased over the past few weeks, especially last week, as can be seen in Figure 2. At least 133 salmonids were observed taken on April 23. The Chinook run this year (Figure 3) is running good now and topped 3,500 on April 25. It looks like another later than average run, earlier than in 2006, and similar to 2005 (Figure 4).

Steller sea lions are the primary predators of white sturgeon (*Acipenser transmontanus*) in the Bonneville Dam tailrace (only six taken by California sea lions). As Steller sea lion numbers declined, so did sturgeon catches. Observers recorded only 19 of the 360 sturgeon takes after hazing began.

Most salmonid species have been caught at PH 1 tailrace so far this year (793), now followed by the spillway (620) and PH 2 (578). An additional 432 unidentified fish species have been caught at the project so far. At least 24 salmonids and 9 unidentified fish have been seen caught elsewhere below the project, and more likely (data not fully entered). Steller sea lions account for 354 of the 360 sturgeon seen taken. California sea lions account for 2,005 of the 2,014 salmonids observed taken. California sea lions took approximately 258 additional unidentified fish (likely salmonids) while Stellers were seen to take approximately 172 additional unidentified fish (likely sturgeon). Harbor seals were observed to take 2 unidentified fish and have not been seen since hazing began.

HAZING IMPACTS

Hazing began on February 28. The hazing was effective in reducing the number of Steller sea lions present and drastically reduced the number of sturgeon taken after this began (Figure 2). Hazing also altered the behavior of the California sea lions in that they stayed farther away from the dam and did not surface as much. However, now that the Chinook run has begun, fewer animals seem impacted by the hazing activities and remain in the tailrace. As the number of Chinook passing Bonneville Dam exceeded 1,000 per day on April 17, the boat hazing is no longer using seal bombs in the boat restricted zone to reduce the chance of harming or impacting salmon. In addition, with spill occurring, the boats are not allowed into that area for safety reasons, and many sea lions use this area as a sanctuary. Land based hazing at this location is mostly ineffective due to the distances involved. The spillway has become the area where most fish are taken over the past couple of weeks.

OTHER ITEMS OF INTEREST

C404 was observed on March 28, 29, 31, April 2, 4, 5, 7, 13, and 16 in the Washington shore fish count window and in the tailrace area on most days. We now have multiple observers with sightings of C404 climbing over one of the floating orifice gates at Powerhouse 2 to the fishway. The past few weeks he has not been spotted inside the fishway. He has been seen to haul out on the corner collector concrete apron, but not on the trap yet. He also appears to be in the fishways before 5:00h and after 20:00h, so he is likely active at night.

Trapping occurred again on April 25 with two California sea lion and two Steller sea lions caught. The animals transported to Astoria last week on the 19th were released as follows: one three miles north of Seaside released on the 19th (back in Astoria by 8am the next morning and at Bonneville this morning, April 27), and the other released on the 20th at Newport (back at Bonneville on April 26). This individual, already branded and a regular since 2002, weighed in at 1150 lbs, possibly a record! Yet he is not the biggest animals we have seen! The sea lions prefer to haul out on the concrete apron of the corner collector in large numbers, sometimes well over 30-40 have been seen.

SUMMARY

California sea lion numbers and salmonid take have increased dramatically over the past few weeks. Chinook counts are finally starting to climb now. Steller sea lion presence had been reduced after hazing began, however the past week or so about four have been seen around the trap and project (although two were trapped and hauled to Astoria). Hazing has been less effective at reducing California sea lion numbers and predation, but observers and hazing personnel have reported changes in sea lion behaviors. These changes include increased travel between tailraces in response to hazing, less time spent at the surface during foraging, and less time spent close to dam structures. Chinook salmon are the primary prey item for California sea lions at Bonneville Dam, and the cumulative number of salmonids taken this year (Figure 5) shows they are on pace to top 3,000 taken. We will have to see if the trend persists and what the fish run does in the next month to determine overall effectiveness of the harassment program.

Figure 1. Daily minimum pinniped abundance.

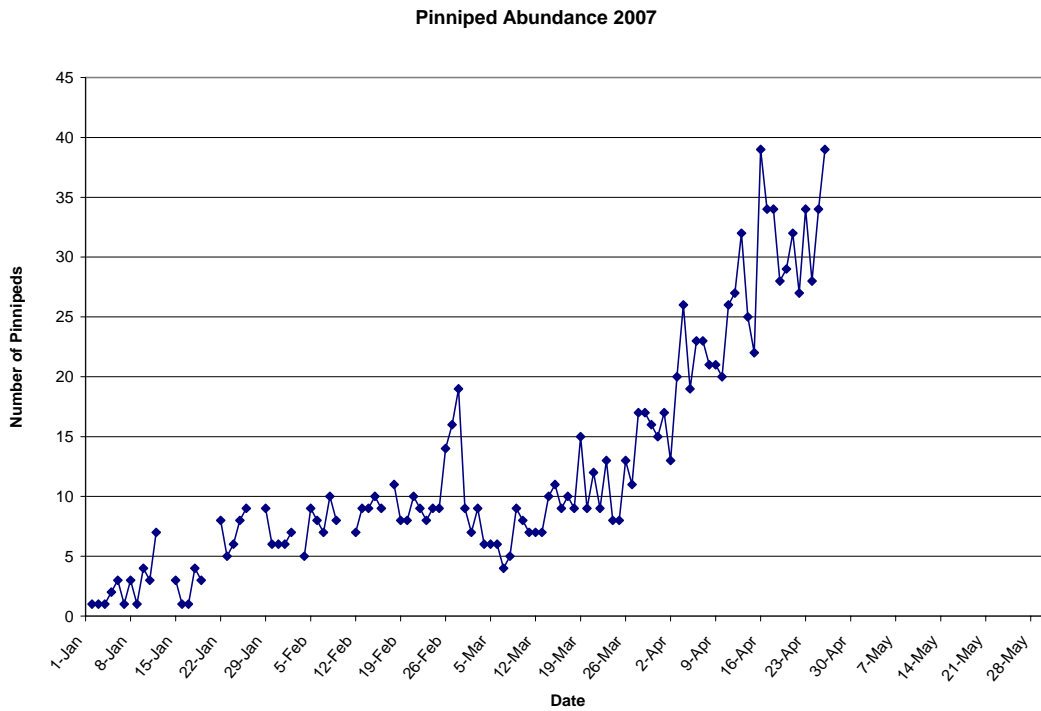


Figure 2. Daily salmonid, sturgeon, and unknown fish predation by pinnipeds

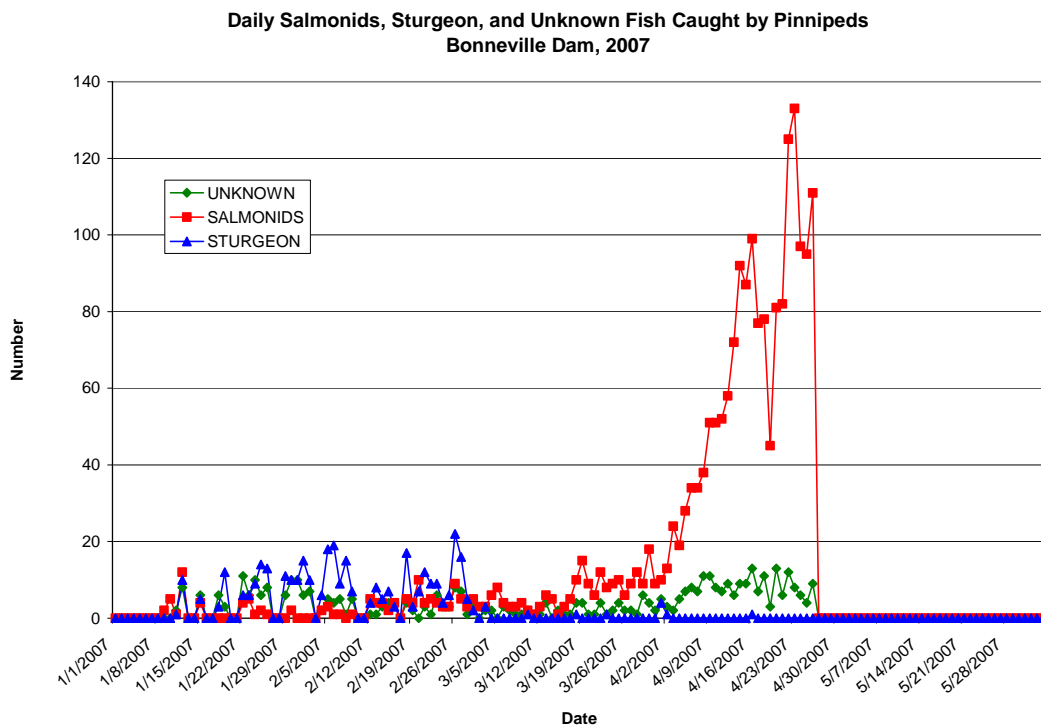


Figure 3. Total daily salmonid passage (steelhead and Chinook) at Bonneville Dam, 2007.

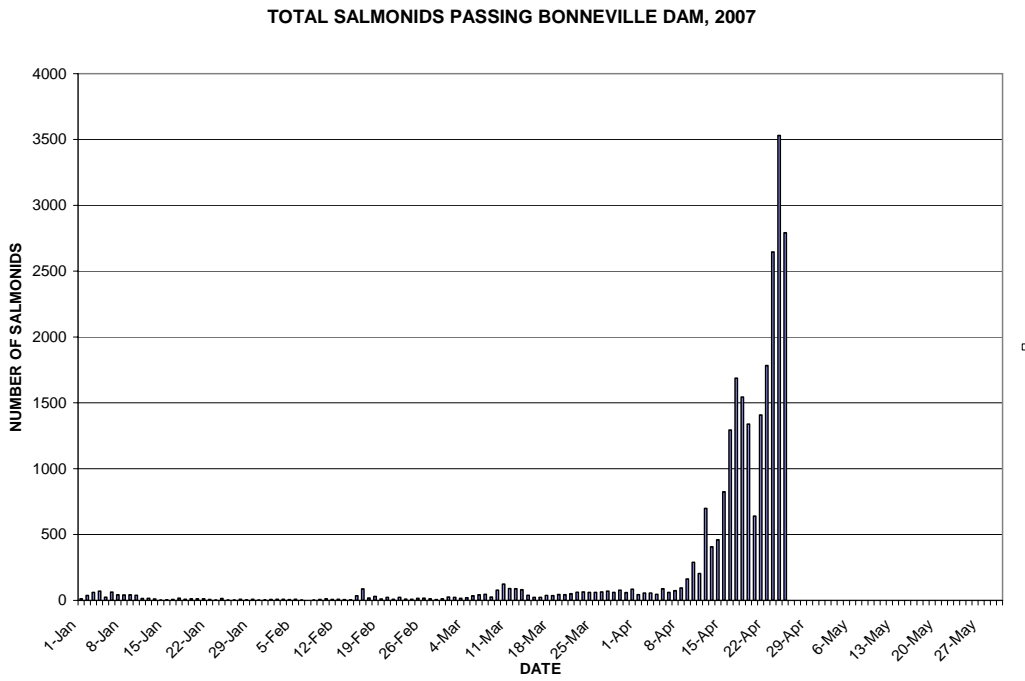


Figure 4. Daily Chinook passage at Bonneville Dam in 2005, 2006, and the 10 year average.

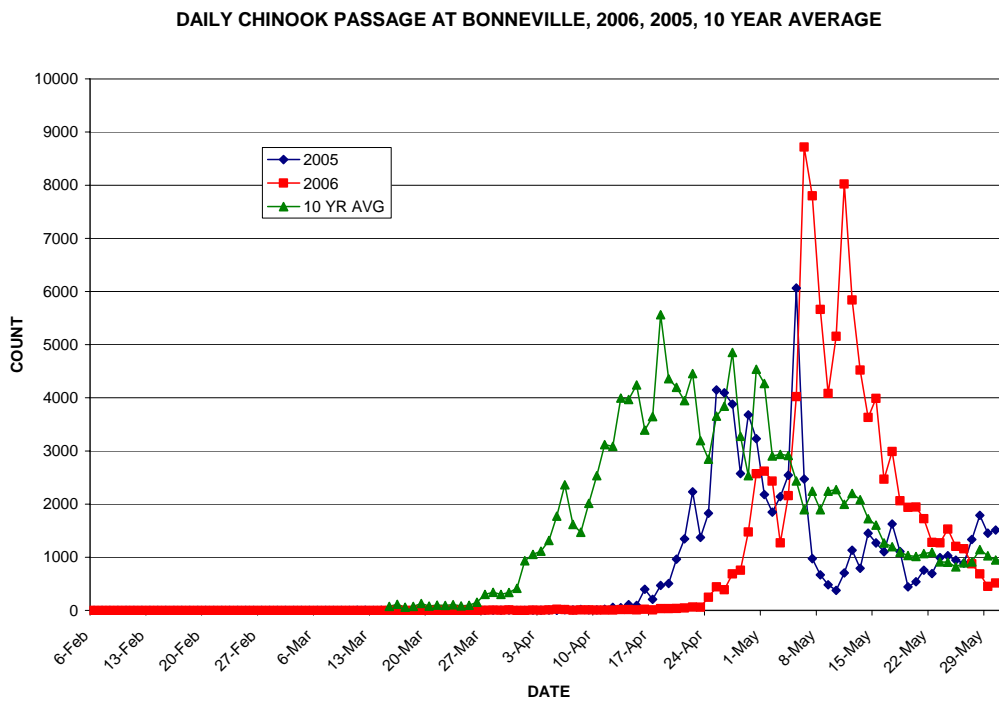


Figure 5. Cumulative estimated daily salmonid catch by pinnipeds at Bonneville Dam, 2002-2007. 2007 data not expanded yet and preliminary.

