

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

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This report is the ninth 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 51 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 54 on April 30 and May 1.

PREDATION FIGURES

Unexpanded numbers for fish observed taken between January 8 and May 3 are:
2,824 salmon/steelhead (see Figure 2)
360 sturgeon (55 larger than 5 feet)(see Figures 2)
18 Lamprey, 3 smolt, 472 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 154 salmonids were observed taken on April 27. 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). If the current rate of fish take continues (Figure 5), we may surpass the number of fish estimated taken in 2004 (3,533).

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 (1,118), now followed by the spillway (918) and PH 2 (788). An additional 472 unidentified fish species have been caught at the project so far. At least 30 salmonids and 10 unidentified fish have been seen caught elsewhere below the project (Tanner Creek, downstream tips of Robins, Bradford, and Cascades islands), and more likely (data not fully entered). Steller sea lions account for 354 of the 360 sturgeon seen taken. California sea lions account for all but 9 of the 2,824 salmonids observed taken. California sea lions took approximately 300 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.

I expect lamprey and shad take to increase over the next few weeks, as has occurred in the past.

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 ladder and fish count window and in the tailrace area on most days. He is still present but no longer seen getting into the fishway. He may be too heavy to jump over the FOG's! See attached photos.

Trapping did not occur this week. To date, 9 California sea lions and 3 Steller sea lions have been trapped and transported to Astoria. All but the Steller sea lions and one California sea lion trapped on April 25 have returned to the dam. Between 0-4 animals have been seen hauled out on the trap in the morning this past week. Most are hauling out on the concrete apron to the corner collector, and as tailwater is rising, the trap is situated farther from dry concrete sites. At least 50 sea lions were hauled out on the concrete May 1 with four more observed hunting in the tailraces!

SUMMARY

California sea lion numbers and salmonid take have increased dramatically over the past week. Chinook counts are staying in the 2,000 to 3,000 fish per day range. 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. Preliminary evidence (Figure 5) suggests that the increase harassment program this year is not having a substantial impact on reducing predation in the tailrace below Bonneville Dam nor the number of sea lions present.

Figure 1. Daily minimum pinniped abundance.

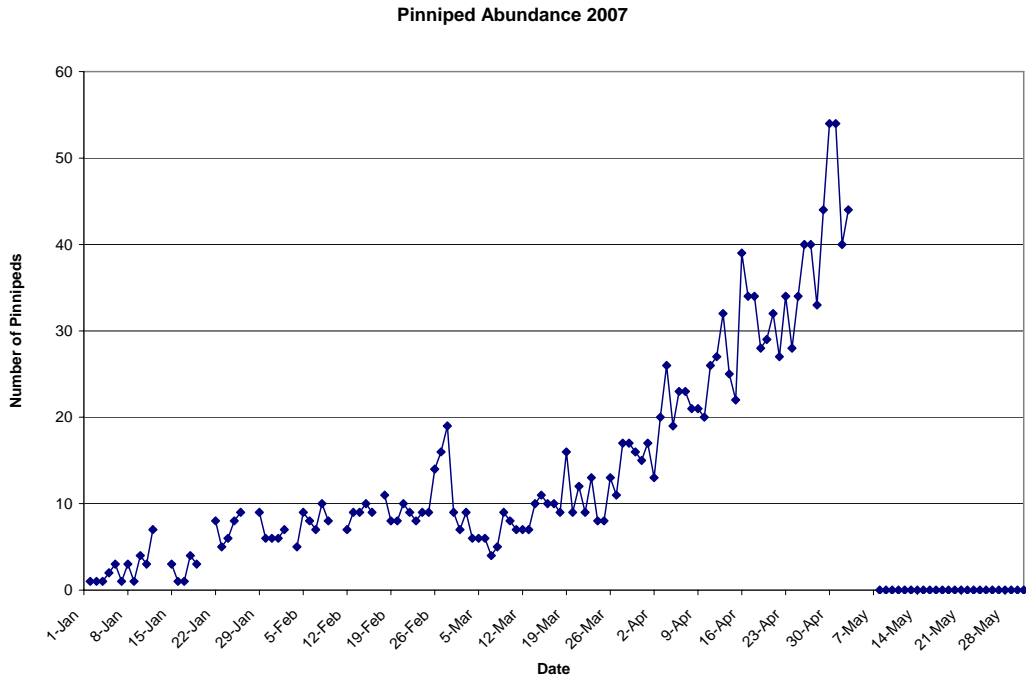


Figure 2. Daily salmonid, sturgeon, and unknown fish predation by pinnipeds

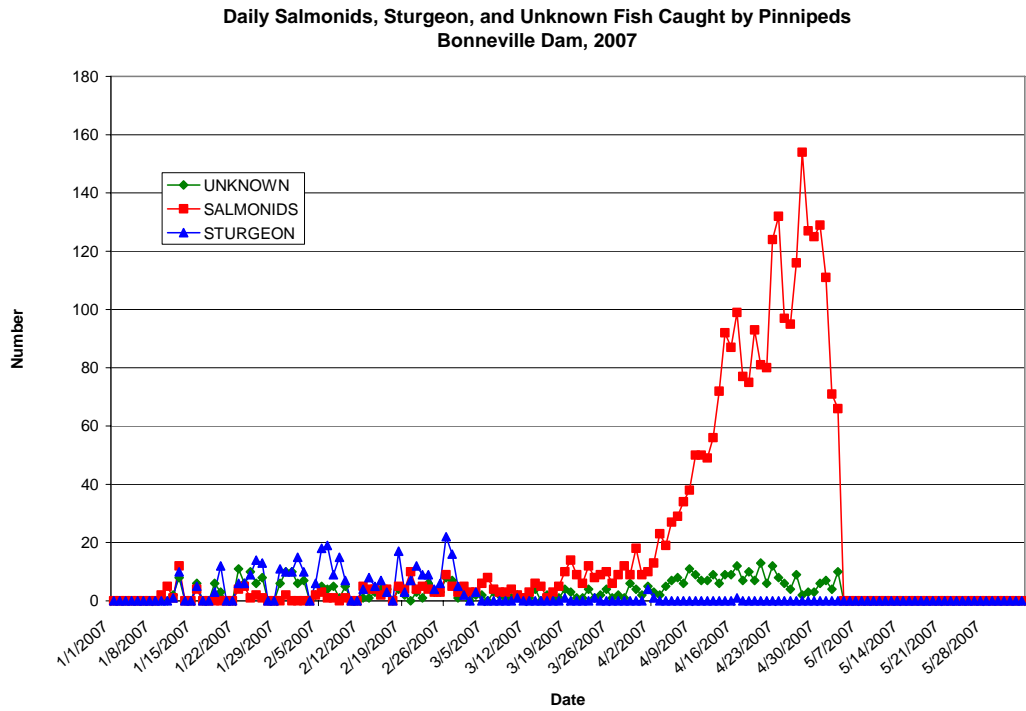


Figure 3. Total daily salmonid passage (steelhead and Chinook) at Bonneville Dam, 2007.

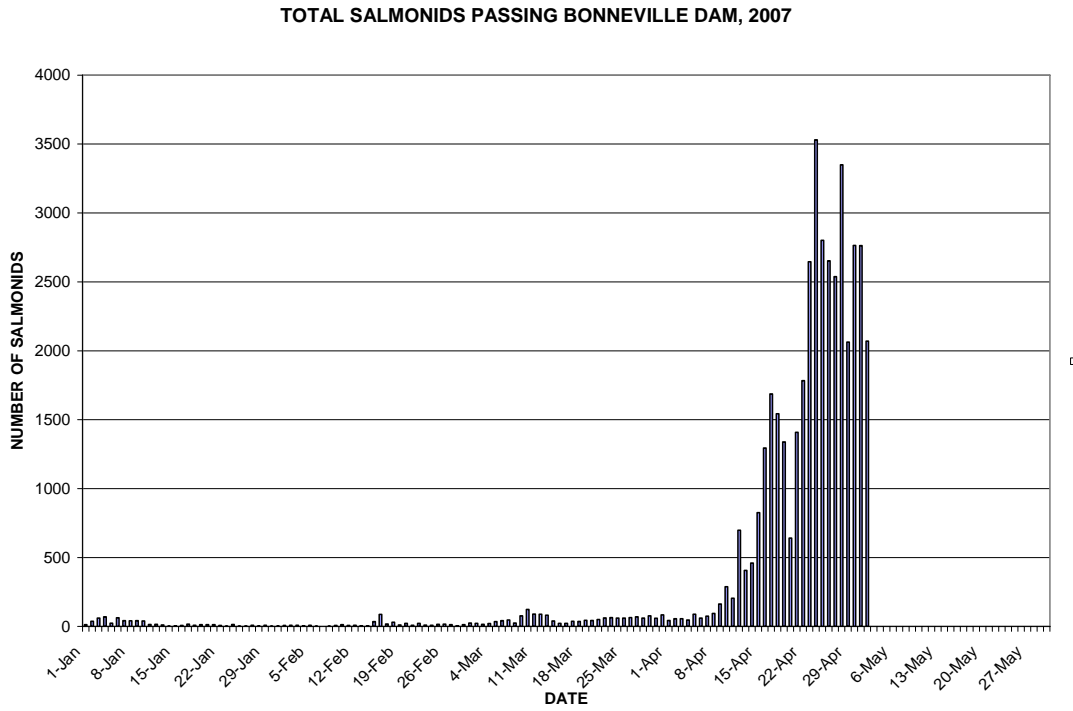


Figure 4. Daily Chinook passage at Bonneville Dam in 2005, 2006, and the 10 year average.

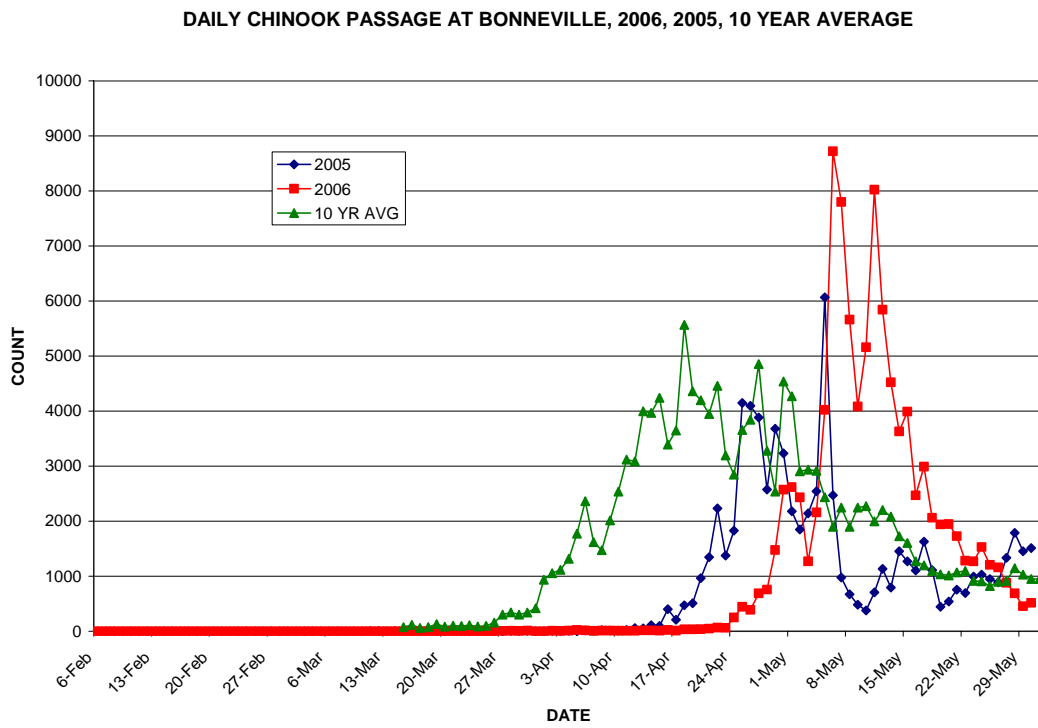
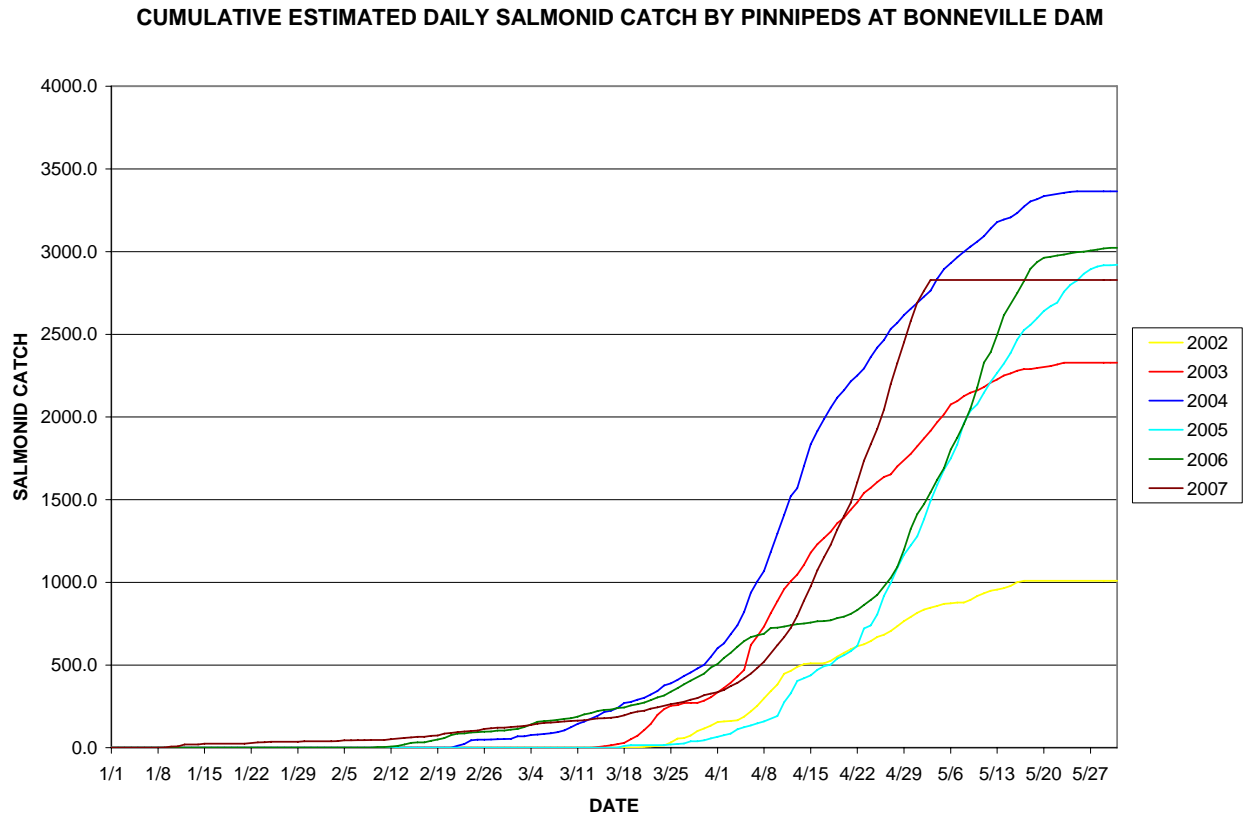


Figure 5. Cumulative estimated daily salmonid catch by pinnipeds at Bonneville Dam, 2002-2007. 2007 data not expanded yet and preliminary.





C404 exploring the AFF ladder.



C404 exploring the AFF ladder.



C404 climbing the Washington shore fish ladder.



C404 resting in the Washington shore fish ladder.



C404 hauled out on the concrete apron below the powerhouse 2 corner collector.



Poor quality still frame of C404 exiting over one of the floating orifice gates.

