

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

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This report is the twelfth and final status report on the pinniped predation and hazing activities being conducted at Bonneville Dam in 2007 for this year. **Please remember all data is preliminary and final figures are likely to change some after further analysis and proofing, so be careful about quoting these figures.** Dawn to dusk data collection will end after May 26, as will harassment activities. Some additional observations will occur as long as sea lions are still present. Data analysis will occur this summer and a final report will be out by this winter.

## **PRELIMINARY RESULTS**

The first Steller sea lion (*Eumetopias jubatus*) this season 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 on any given day (see Figure 1). The most number of sea lions total for one day was 54 on April 30 and May 1. A preliminary look at individuals identified so far suggests we have seen about 80 different marine mammals so far at Bonneville Dam, over half being observed in previous years.

Numbers of sea lions present has continued to decline over the past week (Figure 1), and many of the branded animals have been seen at Astoria and at least two satellite tagged animals are already headed down to southern California. However, at least two have returned to Bonneville this past week.

### **PREDATION FIGURES**

Unexpanded numbers for fish observed taken between January 8 and May 24 are:

3,557 salmon/steelhead (see Figure 2)

361 sturgeon (55 larger than 5 feet)(see Figures 2)

119 Lamprey, 3 smolt, 532 unidentified (see Figure 2)

Total catch has dropped off substantially last week, as can be seen in Figure 2. The Chinook run this year (Figure 3) dropped to under 1000 per day including jacks on May 20. The jack count has made up about 19% of the Chinook passing to date. The Chinook run peaked on May 9. It is another later than average run this year (Figure 4). We have exceeded the number of salmonids estimated taken in 2005 (3,533) this year and we have yet to expand the observed fish take for the few days and hours we did not observe (Figure 5). With the relatively low number of fish passing this season, the percentage of the January 1 through May 31 salmonid passage taken by pinnipeds this year will be about 4.1%.

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 only 19 of the sturgeon taken after hazing began.

Lamprey take has increased the past few weeks but this comprises a much smaller percentage of their diet compared to previous years (only 2.5%).

### **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. As fewer animals are present lately, the hazing seems much more effective at pushing animals out of the two powerhouse tailraces.

Hazing from boats and the dam will effectively end May 26, as will our dawn to dusk daily observations.

### **OTHER ITEMS OF INTEREST**

**C265** has now stolen the spotlight from C319 on which I reported last week about his phenomenal weight gain between November 14, 2006 and April 19, 2007 of 339 lbs. C265 was trapped by Matt Tennis of PSMFC in Astoria on March 6, 2007 and weighed 559 lbs. He was observed at Bonneville dam between March 9 and March 12, and again between April 6 and May 18. According to satellite fixes from Bryan Wright, ODFW, C265 was mostly at Astoria (10 days) and Cascade Head (3 days) north of Newport between March 12 and April 6. He was trapped again in Astoria on May 21 and weighed....drum roll please....wait for it....1,043 lbs! This is a gain of 484 lbs in about 2 ½ months, with most of that time spend at Bonneville Dam! Between March 9 and March 12, he was not observed taking any fish at Bonneville, but between April 6 and May 18 (43 days), he was seen to take at least 40 salmonids and one lamprey. Some before and after pictures are attached to the end of this document. Both C319 and C265 are animals that have been seen at Bonneville each year since 2002, when we began our monitoring program.

## **SUMMARY**

California sea lion numbers and salmonid take continued to drop the past week. It looks like most will be leaving a little earlier than last year. Chinook counts (including jacks) have now dropped below 1,000 fish per day. Evidence (Figure 5) suggests that the increase harassment program this year did not having an overall substantial impact on reducing predation in the tailrace below Bonneville Dam nor the number of sea lions, however it continues to be effective short term when working specific locations. Whether or not more salmonids would have been taken without this effort is unknown.

Figure 1. Daily minimum pinniped abundance.

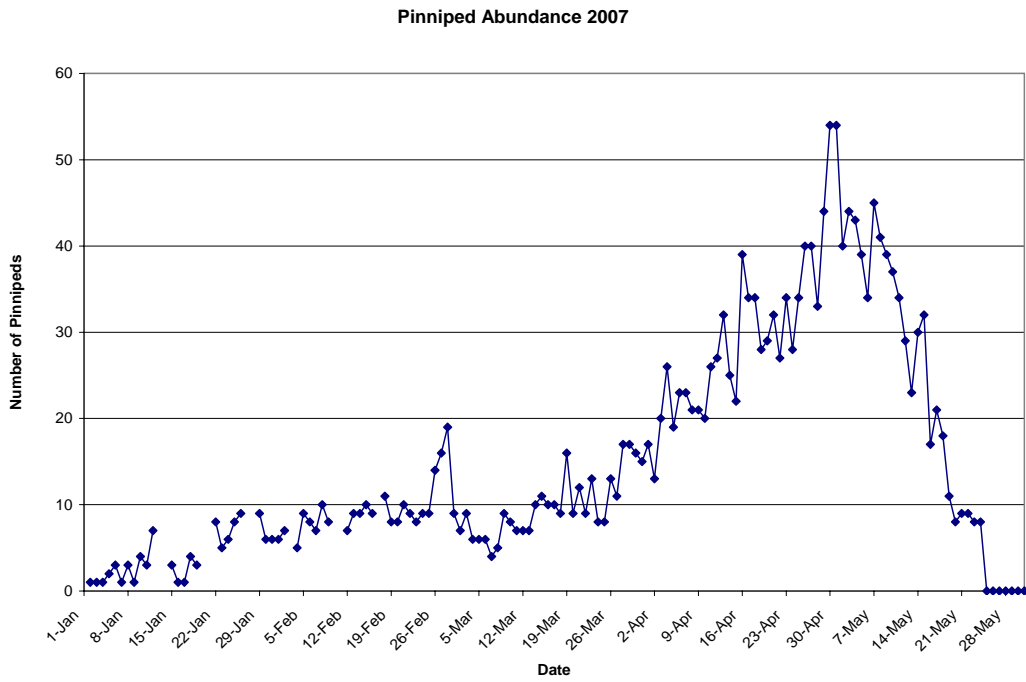


Figure 2. Daily salmonid, sturgeon, and unknown fish predation by pinnipeds

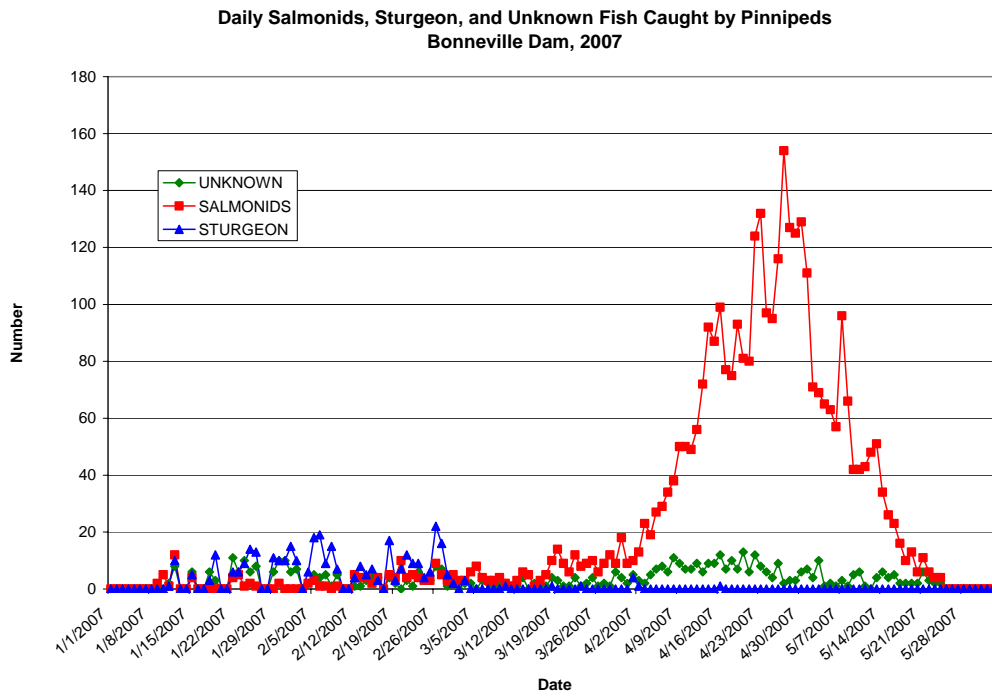


Figure 3. Total daily salmonid passage (steelhead and Chinook) at Bonneville Dam, 2007.

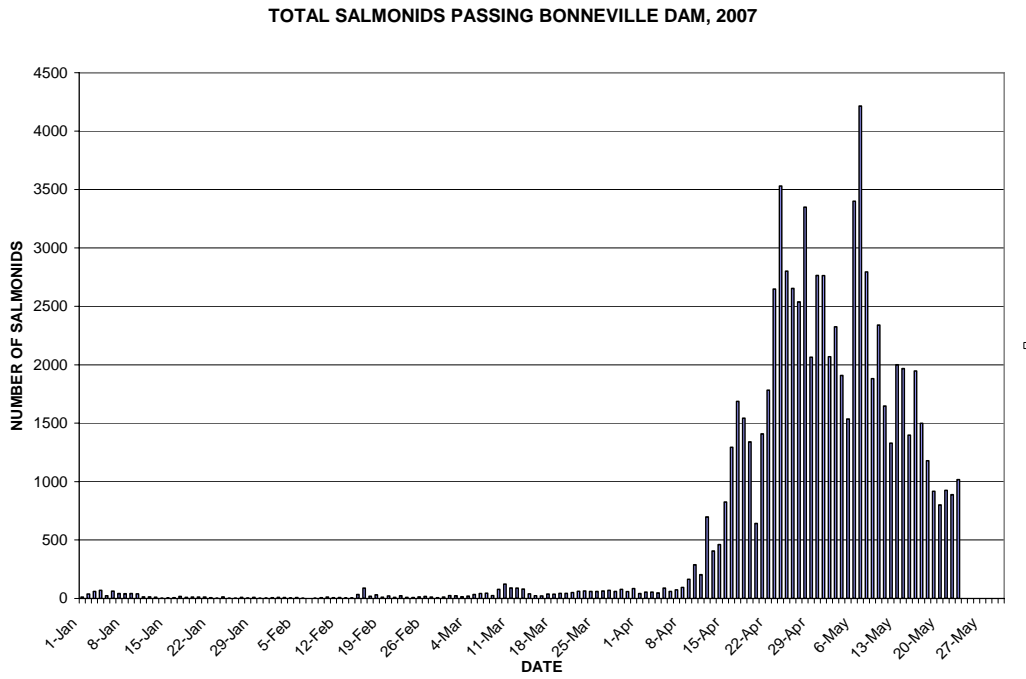


Figure 4. Daily Chinook passage at Bonneville Dam in 2005, 2006, and the 10 year average.

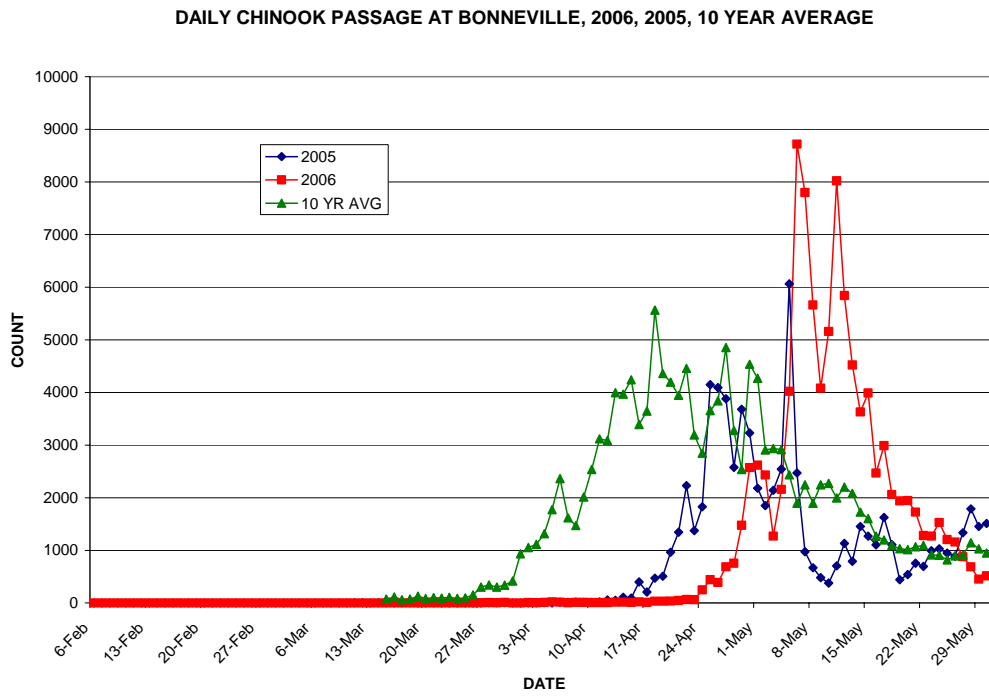
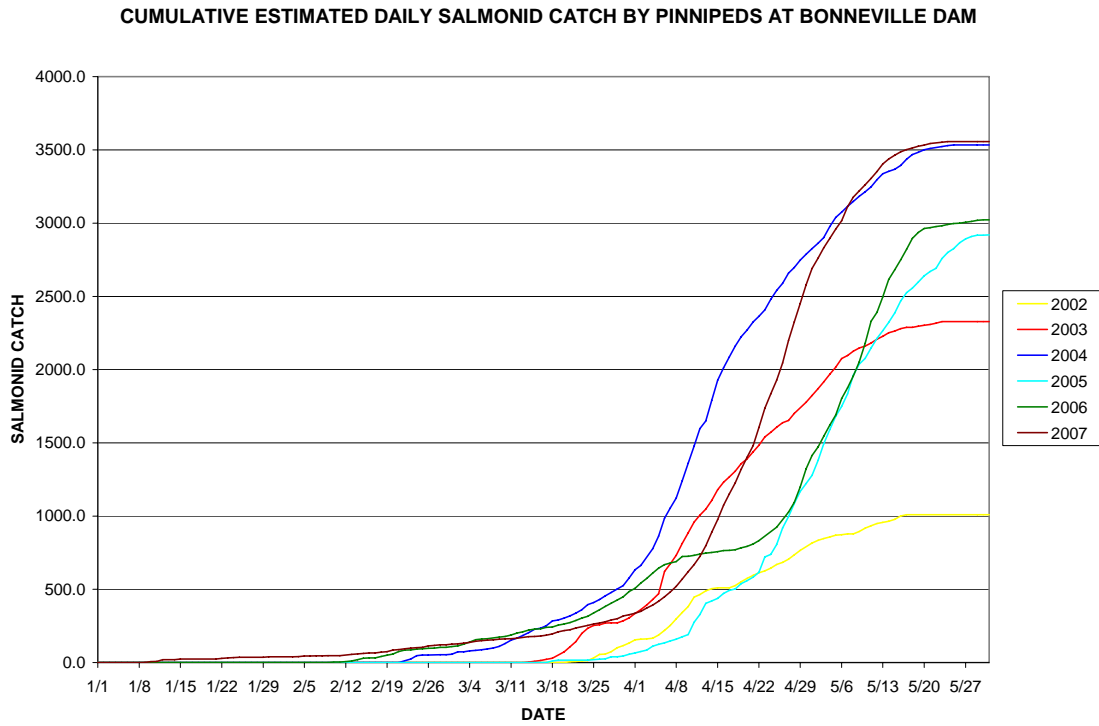


Figure 5. Cumulative estimated daily salmonid catch by pinnipeds at Bonneville Dam, 2002-2007. 2007 data not expanded yet and preliminary.



C265 in 2002, after being freshly branded at Astoria and returning to Bonneville Dam.



C265 at Bonneville Dam on April 16, 2007 looking fairly fit and trim.



C265 on May 2, 2007 already getting a bit chunky around the middle.



C265 on May 15, 2007 just three days before leaving Bonneville.



And C265 at Astoria after being trapped and weighed on May 21, 2007. Photo courtesy of Matt Tennis.



Finishing off a Chinook...and yes...it did successfully swallow the tail end.



Another favorite fish of some sea lions in May, the Pacific Lamprey.