STATUS REPORT - PINNIPED PREDATION AND DETERRENT ACTIVITIES AT BONNEVILLE DAM, 2010

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March 26, 2010

http://www.nwd-wc.usace.army.mil/tmt/documents/fish/2010/sea_lion_hazing2010.html

This is the sixth weekly status report of 2010 and summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through March 24, 2010. Regular daylight observations began on January 8 and will continue to the end of May, five days per week. Weekends will not be regularly monitored this year, the same as for 2009. Final predation estimates will be expanded for hours and days not observed at the end of the observation season and these updated figures will be presented in our annual report.

Boat-based crews from Oregon Department of Fish and Wildlife (ODFW) and Washington Department of Fish and Wildlife (WDFW) began hazing sea lions within the Bonneville dam boat restricted zone (BRZ) and in downriver areas in January, and plan to continue through the end of May. The Columbia River Intertribal Fish Commission will add hazing efforts in early March. The Corps has contracted U.S. Department of Agriculture (USDA) Wildlife Services to haze sea lions from March 1 through May 31, 2010 from dam structures and adjacent lands seven days per week, eight hours per day, during daylight hours.

PRELIMINARY RESULTS

All data presented here are preliminary as of the status report date. Predation figures are unexpanded and sea lion abundance estimates will likely change as the season progresses and data are proofed and analyzed, so please use these estimates with appropriate caution. A final report summarizing the results of the 2007 through 2010 evaluation years will be available later this year.

I apologize for the formatting issues on the figures this week. The Corps switched over to Windows Office 7 over the weekend, and there seems to be some problem when copying from Excel and pasting to Word. I will try and have those ironed out for the next report.

PINNIPED ABUNDANCE

We have seen as many as 31 Steller sea lions (*Eumetopias jubatus*) and 12 California sea lions (*Zalophus californianus*) at the dam on any given day (see Figures 1 and 2). There are slightly fewer sea lions present per day on average so far this year compared to last year (Figure 3),

however higher numbers of Steller sea lions are present as numbers of California sea lions are down. The highest daily abundance estimate for all pinnipeds at Bonneville dam was 43 on March 1. We have seen at least 25 different California sea lions, 33 Steller sea lions, and one harbor seal (*Phoca vitulina*) since monitoring began. At least 17 of the California sea lions (C287, C417, C653, C697, C779, C805, C926, C934, B81, B194, B254, B258, B267, B295, B299, B301, B303) have been seen in previous years. Sixteen individuals seen this year are currently on the list for removal. To date, 6 of those have been removed. Several new individuals have shown up this past week and that trend may continue.

Some days several sea lions are observed hauled out on the traps, while on other days, no animals are hauled out. None have been seen to haul out at any locations other than the traps (and earlier inside the corner collector) so far this year.

CRITFC set up cameras and recording systems March 2nd near the traps under funding from BPA in an attempt to enumerate pinniped numbers and take by video cameras. If successful, this technology could be used at other sites farther down the river where there are no observers.

PREDATION DATA

Unexpanded numbers for fish observed taken in the Bonneville Dam tailrace for 2010 are:

	California Sea Lions	Steller Sea Lions	Total
Chinook	90	13	103
Steelhead	164	18	182
Sturgeon	4	1054	1058
Lamprey	0	0	0
Shad	21	11	32
Other	4	3	7
Unknown	21	168	189

It is likely that most unknown fish caught by Steller sea lions are sturgeon, while those unknown fish caught by California sea lions were Chinook or steelhead (Figure 4). Most sturgeon have been caught in powerhouse 2 tailrace, followed by the spillway then powerhouse 1 (Figure 5). Observed sturgeon catch has exceeded 1,000 already (1,620 expanded by interpolating for weekends), however Stellers are beginning to switch to salmonid prey as they Chinook become more abundant (Figure 6). A record high of 66 sturgeon were observed caught on March 1, most being in the 2 to 4 foot range (Figure 7). Chinook passage is beginning to pick up now and over 100 steelhead are passing daily the past week (3,168 steelhead, 167 Chinook, -11 coho through March 17) since January 1, but this is much more than what had passed by this point in the past six years. Total salmonid catch to date (414 expanded by interpolating for weekends) is on par with previous years, but increase substantially from last week (Figure 8).

DETERRENTS/TRAPPING

ODFW and WDFW deployed four sea lion traps at the corner collector of Bonneville powerhouse two on February 12. No animals were trapped this week. To date, 8 California sea lions have been trapped, 6 removed and 2 released. These traps will be used to mark California

sea lions and Steller sea lions not previously captured and to remove animals that meet removal criteria, per removal authority granted to the states of Oregon, Washington, and Idaho by NOAA Fisheries under Section 120 of the Marine Mammal Protection Act. Gladys Porter Zoo has now expressed interest in taking 2 healthy California sea lions when available. Acoustic tags may be fastened to some animals not on the list to help gain more information on movements and hunting behaviors from several acoustic sensor arrays that CRITFC will deploy and monitor between Bonneville Dam and the estuary.

SLEDs have been installed at all fishway entrances and no pinnipeds have breached these barriers.

Hazing by the states from boats began in January. Boat hazing continues to have some limited, local, short term impact in reducing predation in the tailrace, primarily by Stellers on sturgeon, during this time of year. USDA hazing began the first week of March and will continue for seven days a week until the end of May.

OTHER ITEMS OF INTEREST

ODFW has downloaded some data from the acoustic monitors showing movement and depth information on C00 between March 9 and March 15, 2010. Preliminary analysis shows he spent most of his time up in the near dam area of Bonneville, primarily Powerhouse Two tailrace, with a few excursions down to Tanner Creek before going farther downstream. This information matched well with our observations. The depth data showed him primarily 2 meters at night (likely rafting/sleeping near the surface), while almost equally distributed from the surface to 10 meters during the day. One point has him recorded at 20 meters depth, when he was near Tanner Creek, which corresponds to a “hole” boaters know to be about 60 feet deep in that area.

Figure 1. Weekly minimum pinniped abundance at Bonneville Dam, 2002-2010.

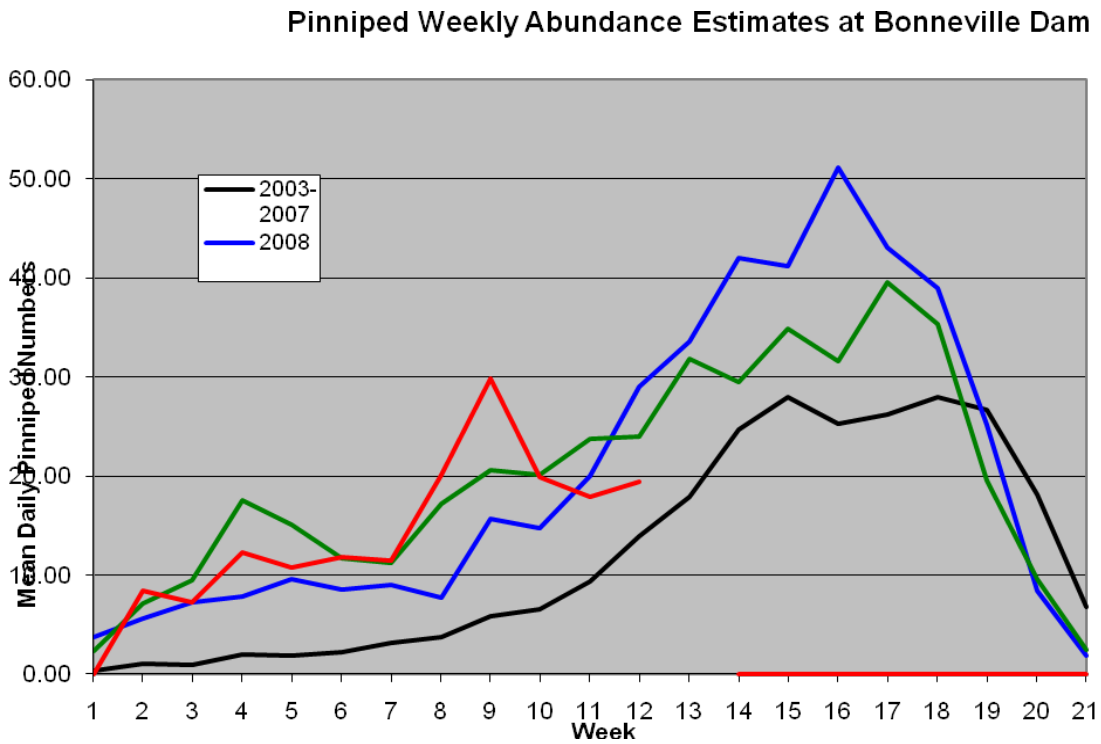

Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2010.

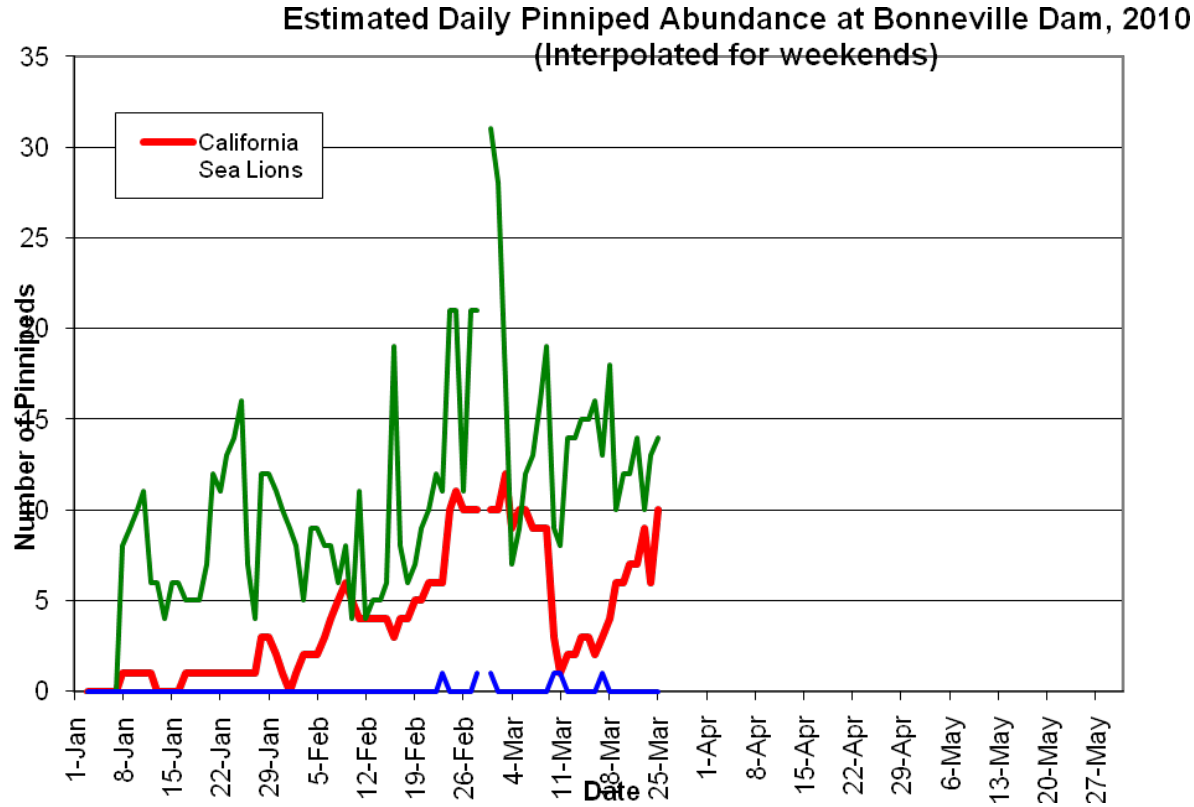

Figure 3. Average daily presence of pinnipeds, by species, to date (March 18) for each year at Bonneville Dam.

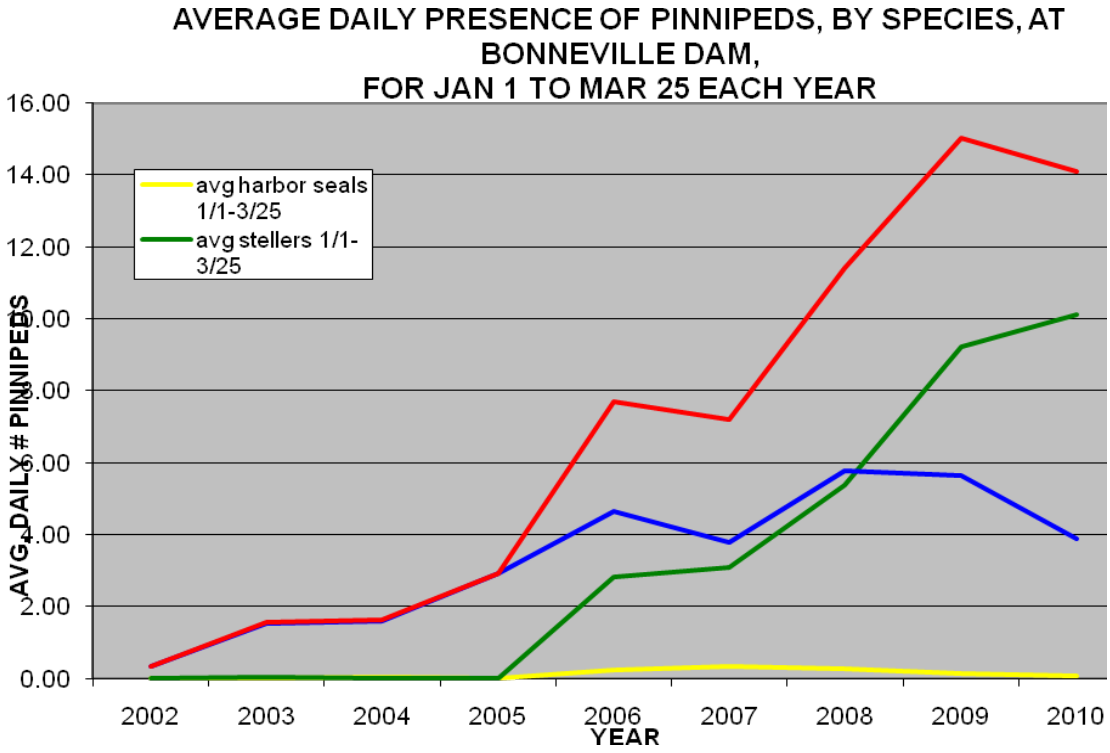

Figure 4. Major prey species taken by Pinniped species at Bonneville Dam, 2010.

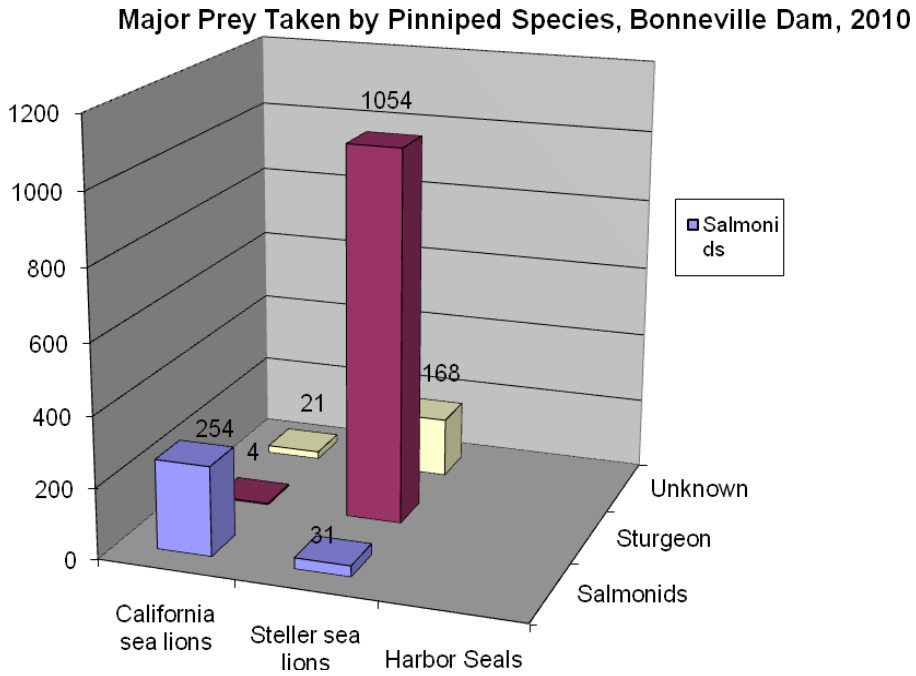

Figure 5. Major prey species taken by Pinnipeds by location, 2010.

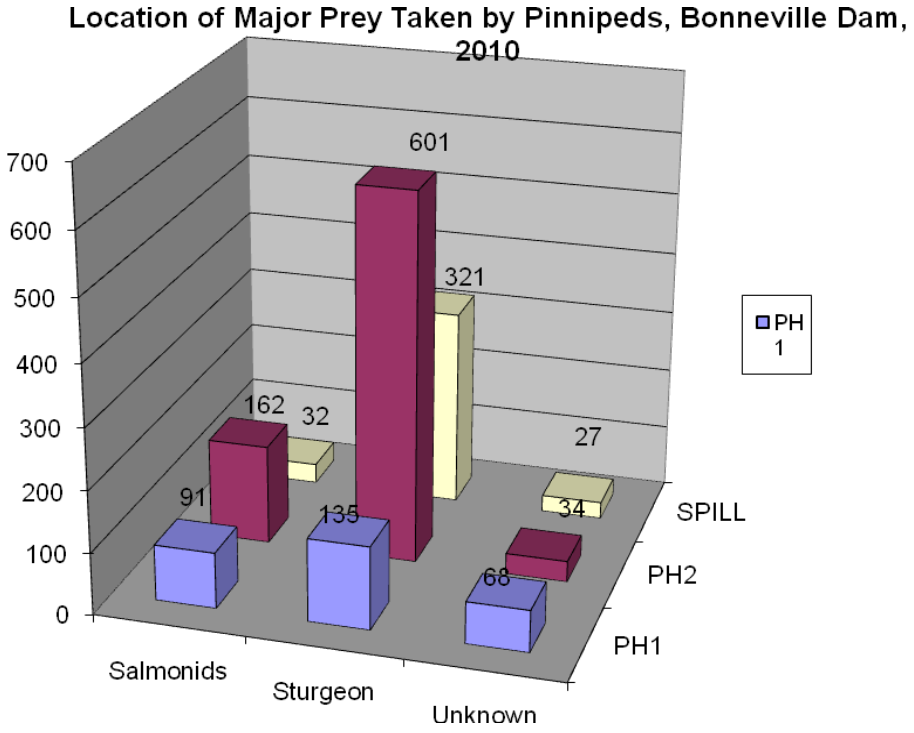

Figure 6. Daily cumulative observed sturgeon catch at Bonneville Dam, 2006-2010.

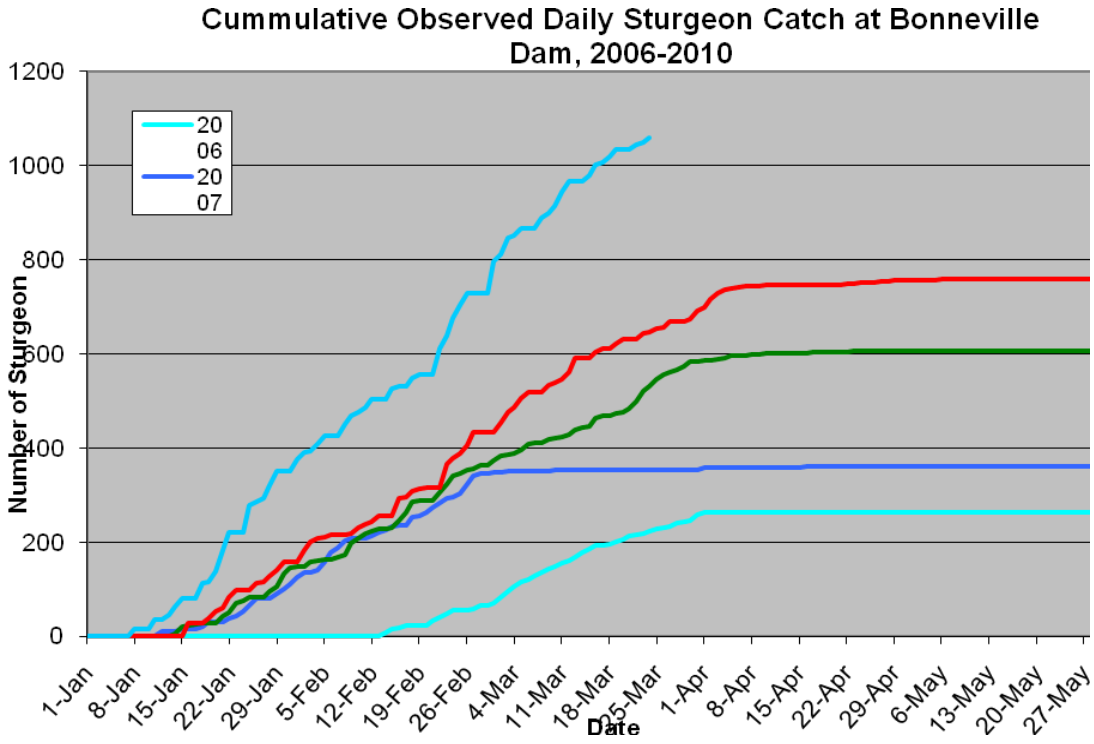

Figure 7. Size of sturgeon caught by pinnipeds at Bonneville Dam, 2006-2010.

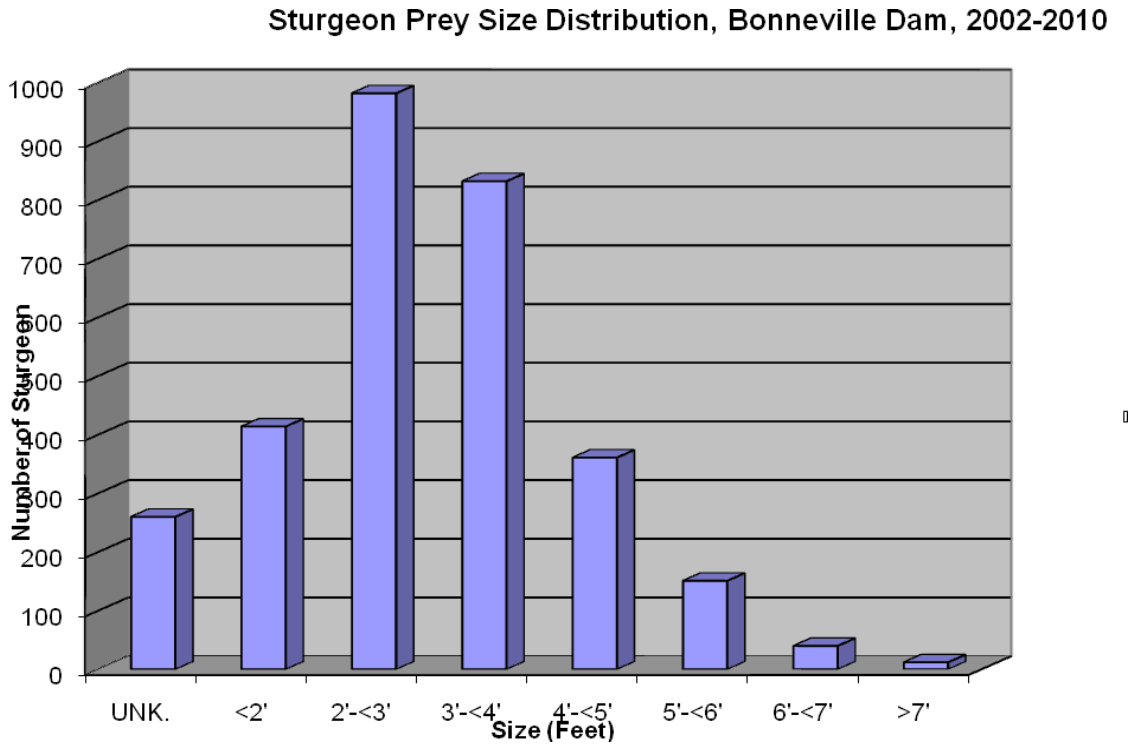

Figure 8. Daily cummulative salmonid catch (interpolated for weekends) at Bonneville Dam, 2002-2010.