

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

Robert Stansell and Karrie Gibbons - (541) 374-8801

Fisheries Field Unit
U.S. Army Corps of Engineers
Bonneville Lock and Dam
Cascade Locks, OR 97014

April 2, 2010

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

This is the seventh weekly status report of 2010 and summarizes all pinniped predation monitoring and deterrent activities at Bonneville Dam from January 1 through March 31, 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.

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 (Figure 10) and numbers of California sea lions are down substantially (Figure 9). The highest daily abundance estimate for all pinnipeds at Bonneville dam was 43 on March 1. We have seen at least 28 different California sea lions, 33 Steller sea lions, and one harbor seal (*Phoca vitulina*) since monitoring began. At

least 21 of the California sea lions (C287, C417, C653, C697, C706, C779, C797, C805, C926, C934, U31, B63, B81, B194, B254, B258, B267, B295, B299, B301, B303) have been seen in previous years. Nineteen individuals seen this year are currently on the list for removal. To date, 8 of those have been removed. Several new individuals have shown up the past few weeks.

B63 and a few others have begun to haul out or partially haul out on the rocks below the PIT tag building to the corner collector in the powerhouse two tailrace this week.

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:

	<u>California Sea Lions</u>	<u>Steller Sea Lions</u>	<u>Total</u>
Chinook	236	41	277
Steelhead	180	24	204
Sturgeon	4	1079	1058
Lamprey	0	0	0
Shad	21	11	32
Other	4	3	7
Unknown	24	179	203

It is likely that most unknown fish caught by Steller sea lions were sturgeon before this last week, 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 (1,656 expanded by interpolating for weekends), however Stellers have begun 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 exceeded 100 (166) on April 1 (4,118 steelhead, 653 Chinook, -11 coho through April 1), but this is much more than what had passed by this point in the past six years. Total salmonid catch to date (680 expanded by interpolating for weekends) is now more than in any past year at this point (Figure 8). Salmoinds taken over the past week was higher at this point in the season than previous years (Figure 11). Chinook have now become the predominant prey species taken by both species of pinnipeds (Figure 12).

DETERRENTS/TRAPPING

ODFW and WDFW deployed four sea lion traps at the corner collector of Bonneville powerhouse two on February 12. Eight animals were trapped this week (2 California sea lions and 4 Steller sea lions on March 30 and 2 Stellers on March 31). The California sea lions, C805/B208 and C934/B300 were on the list for removal and euthanized (Gladys Porter Zoo withdrew it's request for obtaining California sea lions for captivity). Two very large large Stellers were released while four other Stellers were given brands (O001-O004) and acoustic

tags and satellite tags before being release at Bonneville. Of interest, O004 was seen to enter powerhouse one tailrace and steal a Chinook from a California sea lion minutes after being released, and all but O001 have been seen since by our observers. One trap was damaged and removed from the others until repairs can be made.

To date, 10 California sea lions have been trapped, 8 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. 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

Prior to March 22 this year, we observed 10 events of cleptoparasitism (predators stealing prey from another predator). However, since then, we have observed 48 events, primarily Steller sea lions stealing Chinook from California sea lions. Over the past week, Steller sea lions were observed to take only 15 sturgeon, while they took 34 salmoinds (plus 11 unknown) and parasitized another 46 (plus 2 unknown). This is causing the California sea lions to catch more fish per individual.

Some preliminary acoustic tracking data on C00 showed him traveling from St.Helens area to Bonneville Dam in approximately 6 hours, upstream! He has now returned to Astoria, and ODFW/CRITFC are getting great information on travel times and depths along the Columbia River.

Stansell, Scott Clemans and Diane Fredlund (Public Affairs), Joyce Casey (Chief, Environmental Resource Branch), and Paul Cloutier (Tribal Liason) met with members of In Defense of Animals, Sea Lion Defense Brigade, Humane Society of the United States, and Portland Animal Defense League last week (March 25) in RDP. They were shown copious documents, photos, SOP's and training material regarding how we train our interns and our ability to identify individual pinnipeds.

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

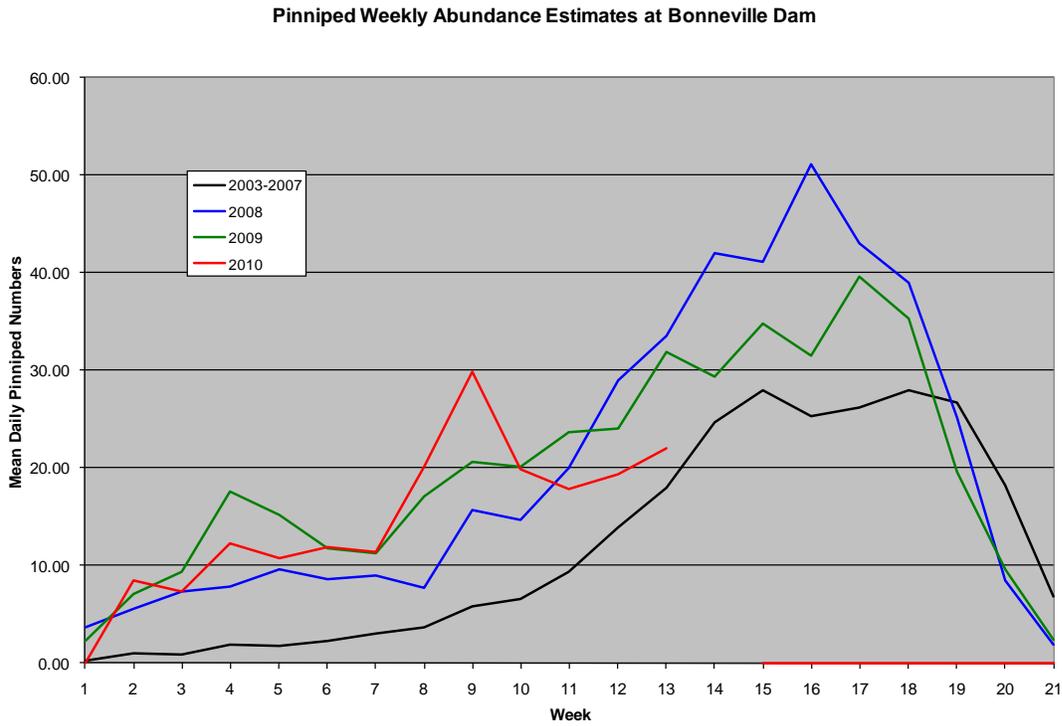


Figure 2. Daily pinniped abundance, by species, at Bonneville Dam, 2010.

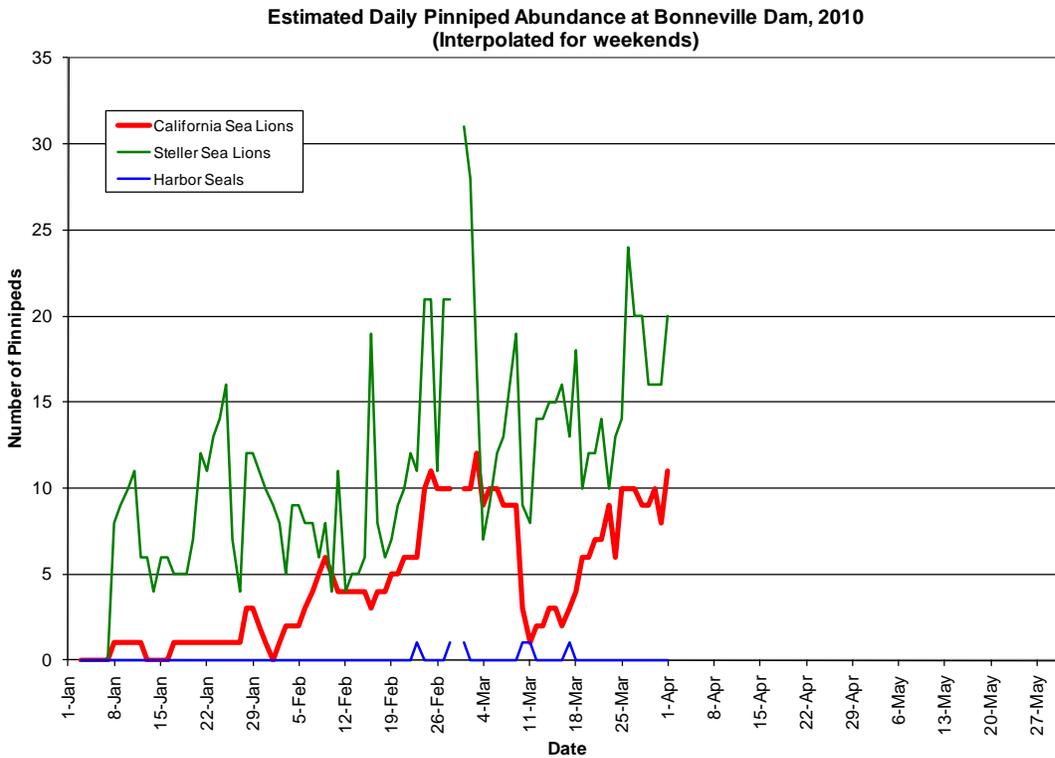


Figure 3. Average daily presence of pinnipeds, by species, to date (April 1) for each year at Bonneville Dam.

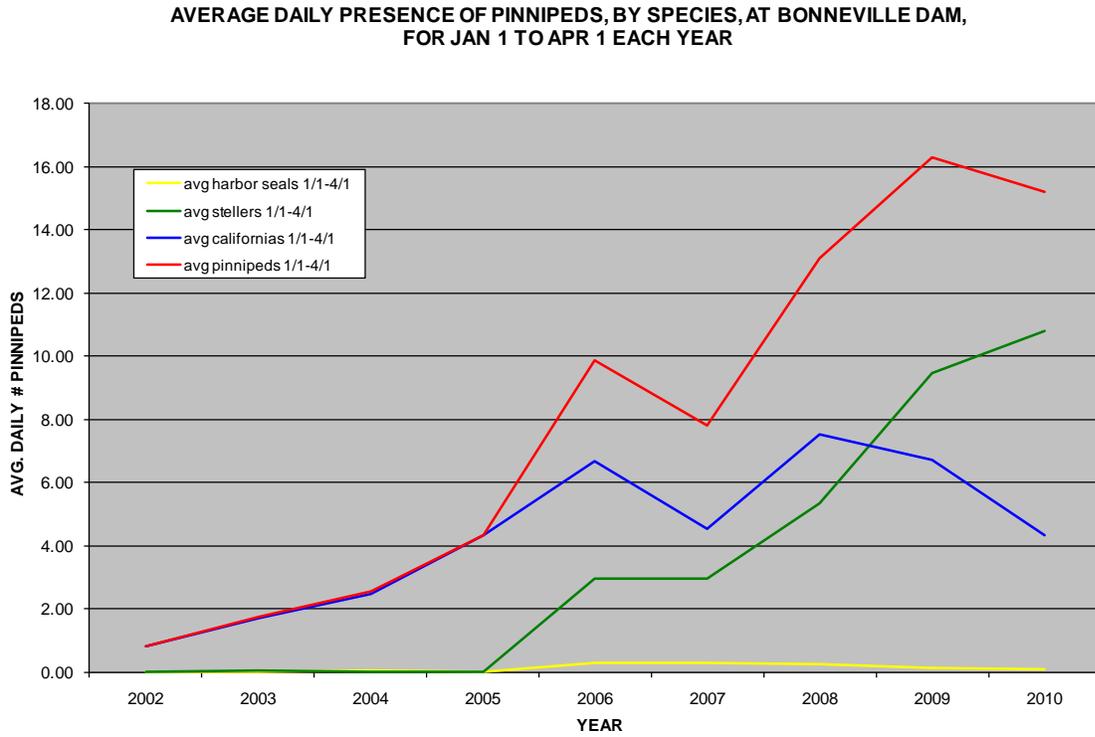


Figure 4. Major prey species taken by Pinniped species at Bonneville Dam, 2010.

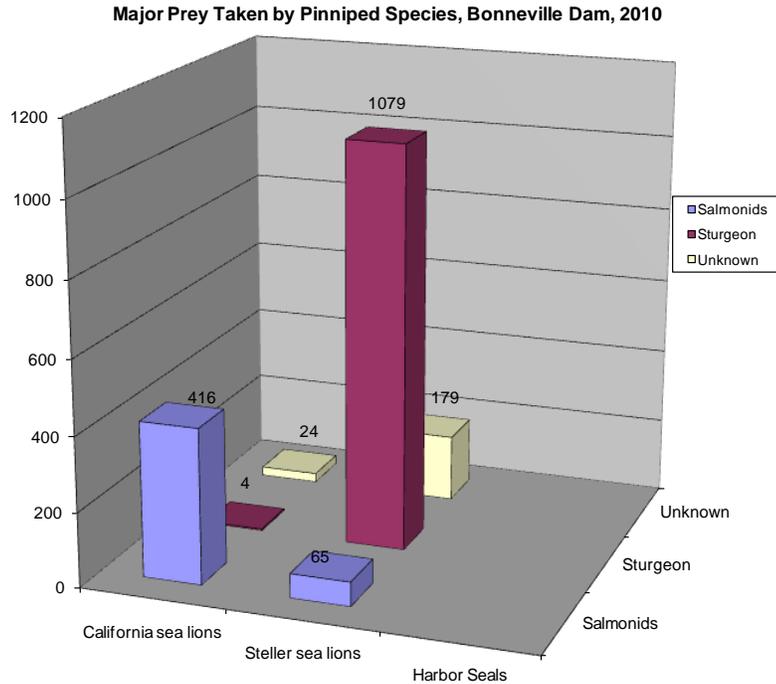


Figure 5. Major prey species taken by Pinnipeds by location, 2010.

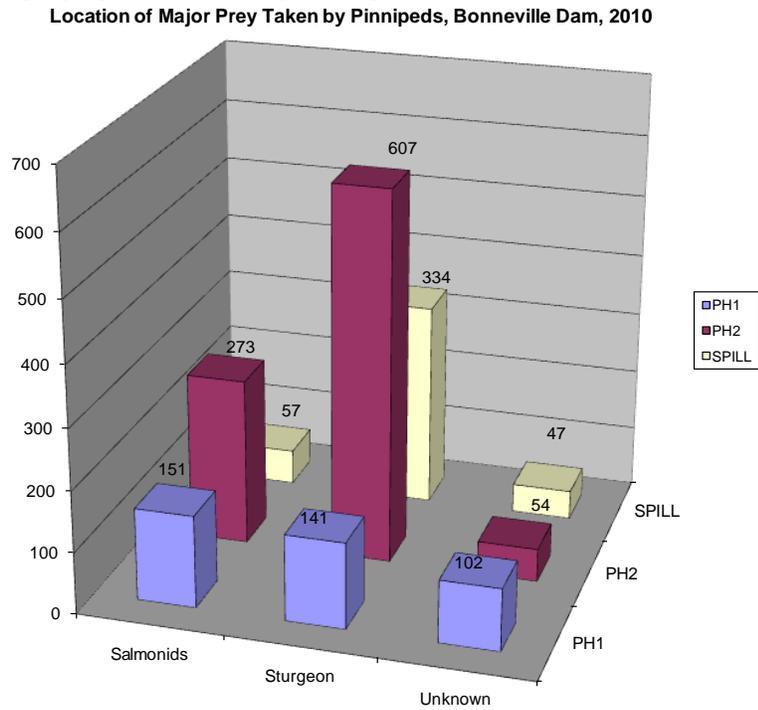


Figure 6. Daily cumulative observed sturgeon catch at Bonneville Dam, 2006-2010.

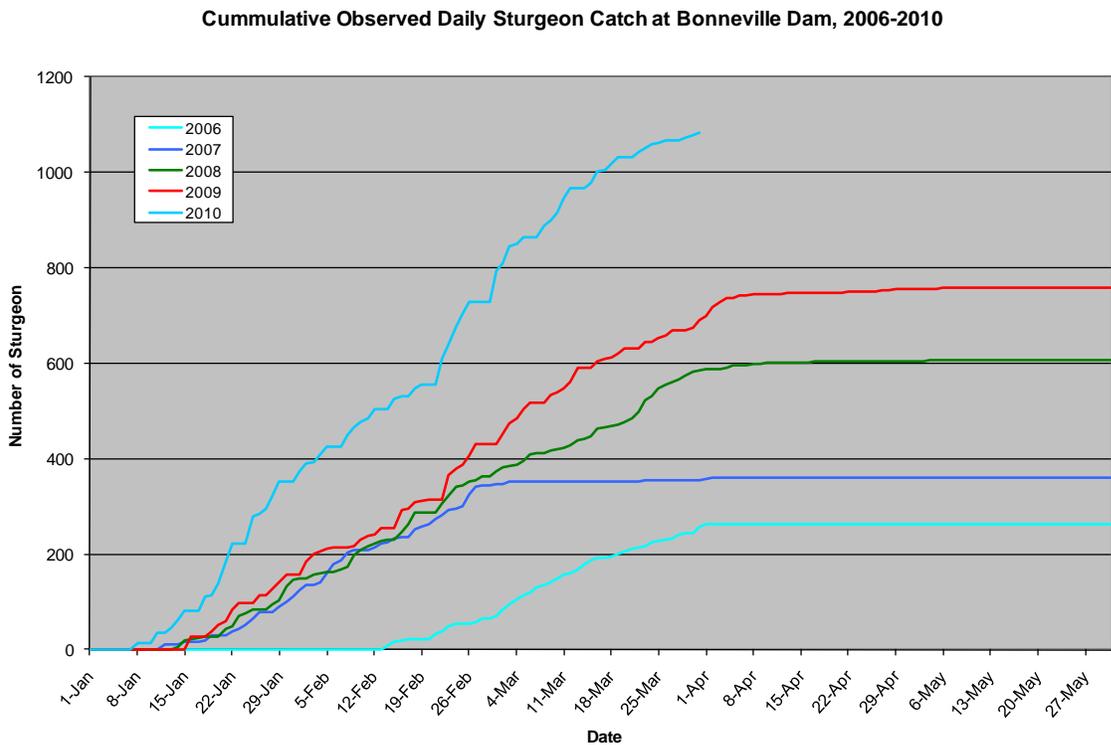


Figure 7. Size of sturgeon caught by pinnipeds at Bonneville Dam, 2006-2010.

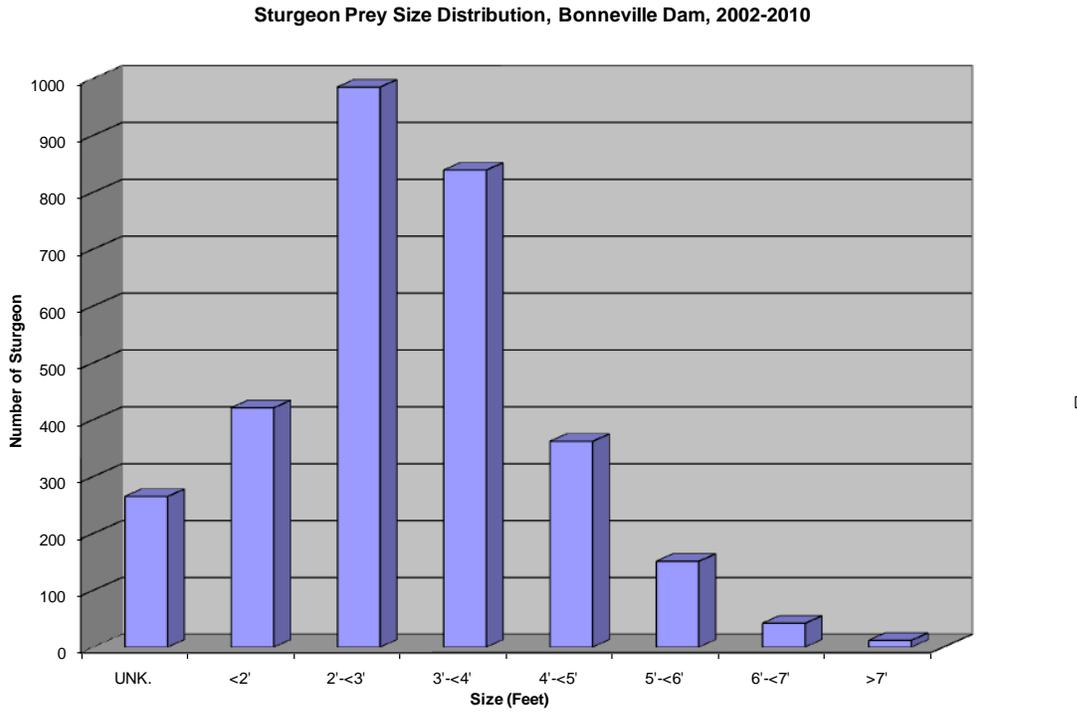


Figure 8. Daily cumulative salmonid catch (interpolated for weekends) at Bonneville Dam, 2002-2010.

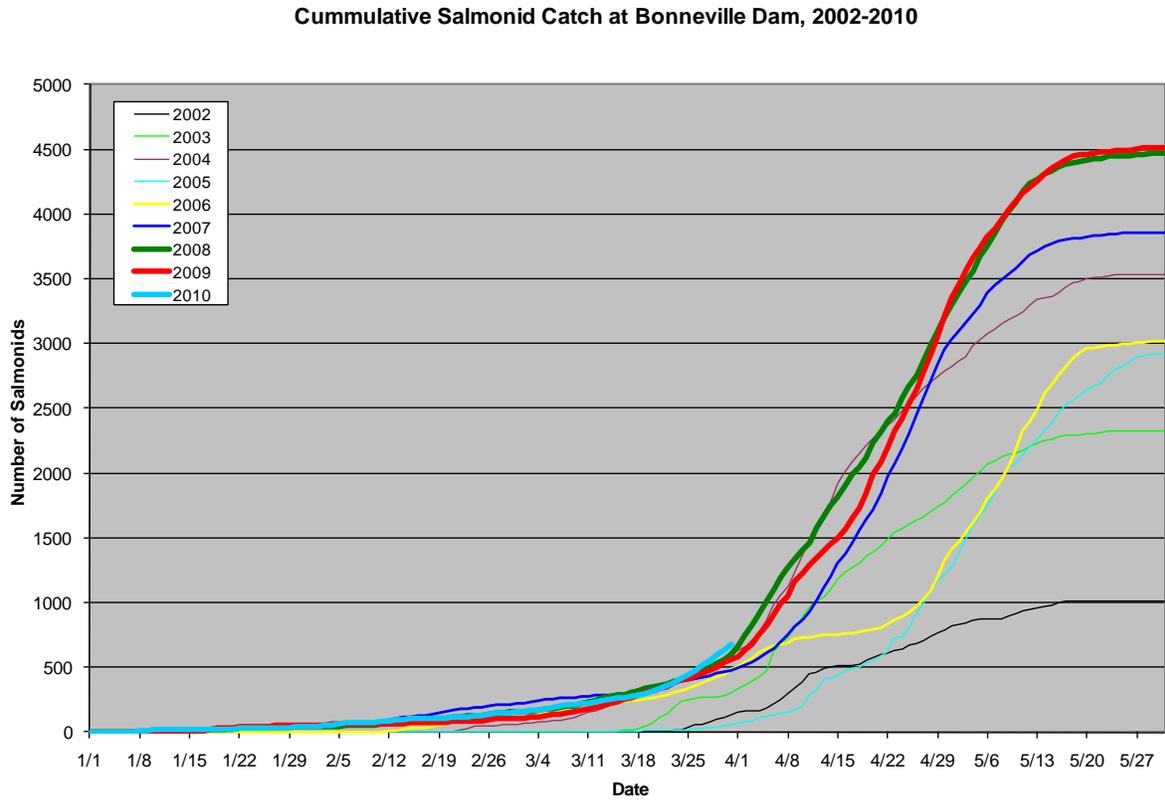


Figure 9. Weekly minimum California sea lion abundance at Bonneville Dam, 2002-2010.

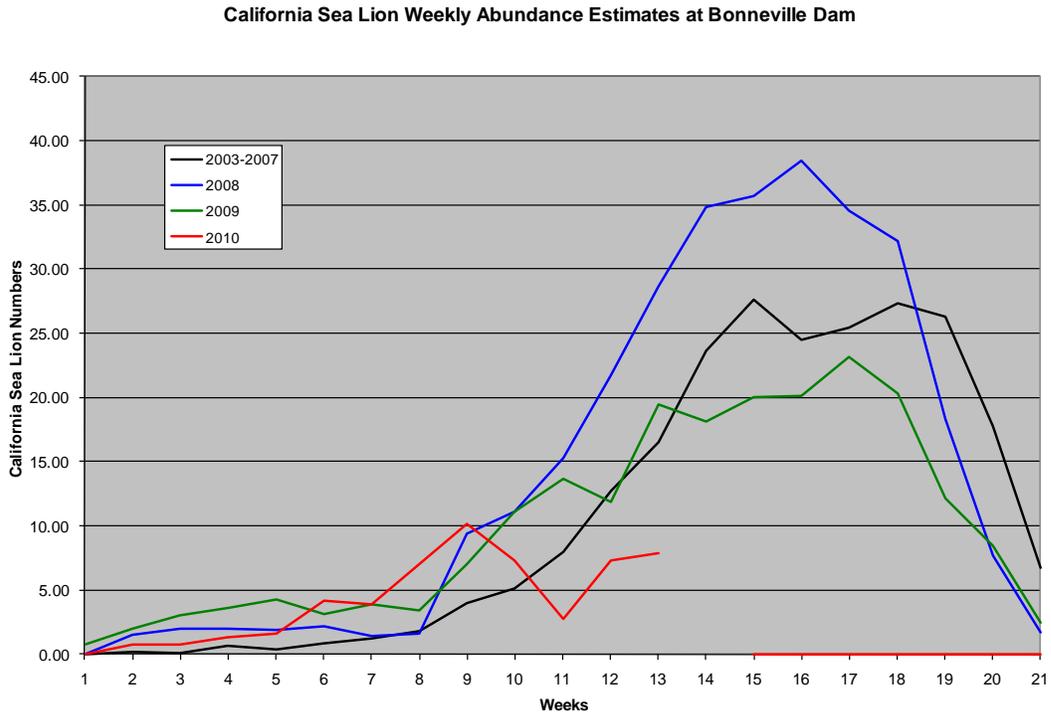


Figure 10. Weekly minimum Steller sea lion abundance at Bonneville Dam, 2002-2010.

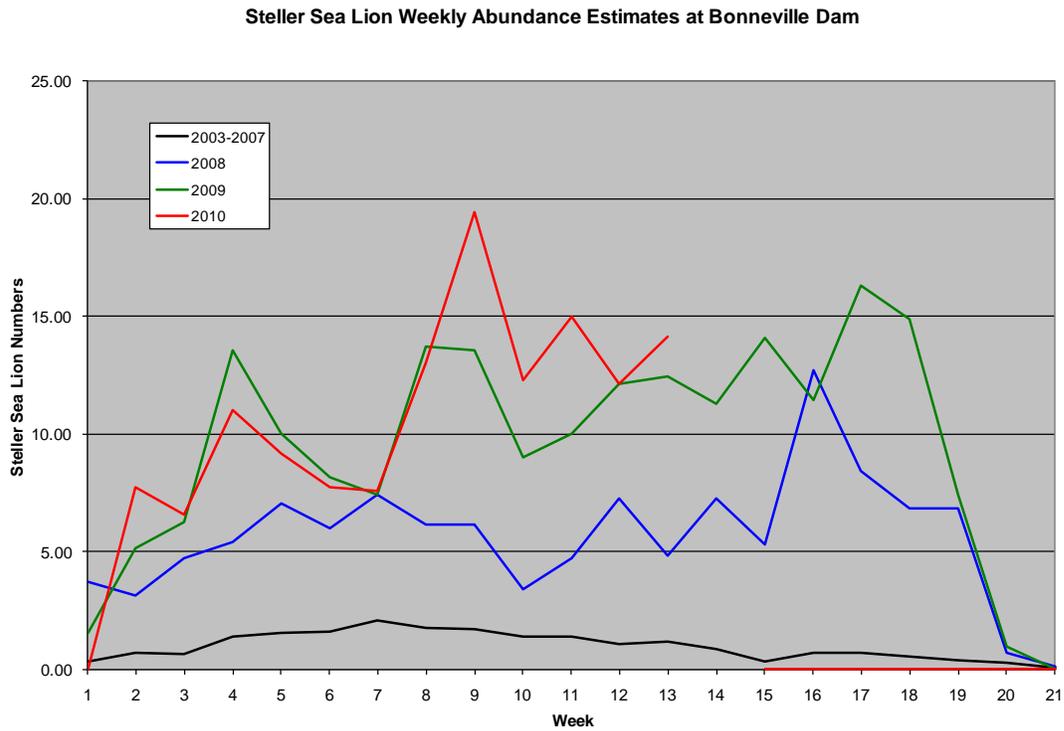


Figure 11. Weekly salmonid consumption estimates by all pinnipeds at Bonneville Dam, 2002-2010.

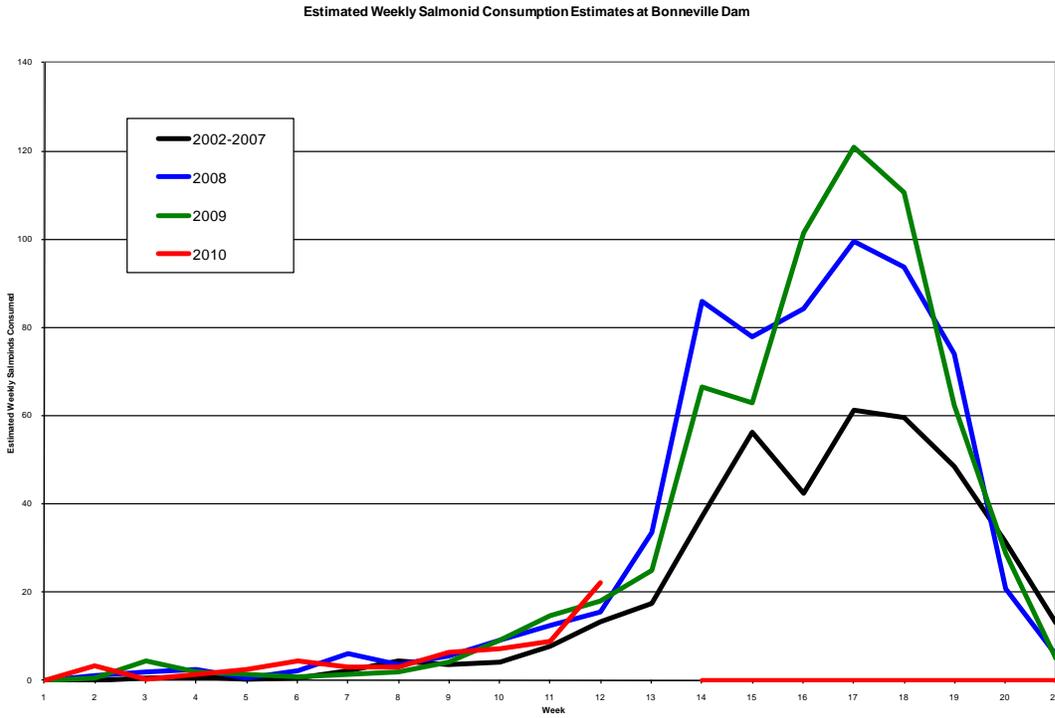


Figure 12. Unexpanded salmonid, sturgeon, and unknown prey caught by pinnipeds at Bonneville Dam in 2010.

