



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: Rick Kruger, ODFW

FROM: Michele DeHart

DATE: January 5, 2010

RE: Juvenile Fall Chinook timing in the Columbia River

In response to your request the FPC staff summarized juvenile fall Chinook timing data in the Columbia River for summer migrants. The annual Smolt Monitoring Program (SMP) has been collecting passage timing, duration and travel time data through the mainstem Columbia and Snake Rivers since 1984. The FPC has summarized summer migrant passage data in several memorandums that are posted on the Fish Passage Center website, which we attach by reference. In addition we have summarized historical passage timing data from the SMP.

- Historical fish passage data collected at John Day, McNary and Bonneville Dams on the Columbia and Lower Granite Dam on the Snake River show that juvenile fall Chinook salmon are present in these river reaches through September and sometimes into October. Historically sampling continued through October at John Day Dam. Fall Chinook were present in the sampling throughout September and into October. (Historic Review of Fish Passage Data, 10/23/2003, Status of 2004 Fall Chinook Migration, 8/16/2004, Passage timing of juvenile sub yearling Chinook above Lower Granite Dam, 8/27/2008, [www.fpc.org](http://www.fpc.org))
- There is a relationship between juvenile fall Chinook travel time, survival and flow. Low river flows and low spill proportion increase fish travel time and decrease fish survival. (Fish Passage Center 2008 Annual Report, Chapter 3. [www.fpc.org](http://www.fpc.org))
- The Snake River fall Chinook ESU is comprised of two population components, the Snake River and the Clearwater River. The Clearwater River component of the ESU comprises approximately 25% of the Fall Chinook ESU. The Clearwater River

component of the ESU is present at Lower Granite Dam throughout August and into September. (Status of 2004 Fall Chinook Migration, 8/16/2004, www.fpc.org) (Biological Assessment of Incidental Impacts on Salmon Species Listed Under the Endangered Species Act in the 2008-2017 Non-Indian and Treaty Indian Fisheries in the Columbia Basin, Table 11, US v Oregon Technical Advisory Committee, April 21, 2008)

- Although spill for fish passage ends on August 31, fish passage, particularly of the Clearwater component of the ESU, continues into September at Lower Granite Dam. The NOAA Fisheries 2008 Biological Opinion continues the draft of Dworshak Reservoir through September to increase flow and decrease water temperature for summer migrants. These reservoir releases benefit downstream migrants throughout the Lower Snake River during their downstream migration.
- Travel time of juvenile fall Chinook from Lower Granite to McNary Dam gives an indication of when Snake River fall Chinook could be expected to arrive in the McNary to Bonneville Reach of the Columbia River. In low flow or low spill conditions travel time can be expected to increase. Based on PIT tagged fall Chinook groups passing Lower Granite Dam after the July 15, fall chinook juvenile median fish travel time from Lower Granite to McNary has ranged from 32 days in a low flow year to 20 days in a high flow year. Based upon these travel times, juvenile fall Chinook passing Lower Granite Dam in August and September can be expected to be present throughout September and October in the McNary to Bonneville reach of the Columbia River.
- Late migrating juvenile fall Chinook make a significant contribution to adult returns. For data from 1995 to 2004, most years (7 out of 10) showed that the majority of the returning adults that migrated in-river as juveniles were detected at McNary Dam between August and December. (Juvenile Passage Timing at McNary for in-river and transported Snake River sub-yearling Chinook, 7/18/2007, www.fpc.org)
- Protecting the tails of the fish passage distribution is recognized as important in protecting the diversity in life histories, particularly of fall Chinook.