Season 1: The Portable Floating Fish Collector samples Cougar Reservoir

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The Portable Floating Fish Collector (PFFC) is located on Cougar reservoir in Lane County, Oregon. It was commissioned in May 2014 and was operated until December 2014. The PFFC is being utilized to gain and collect information on juvenile salmonid movements near the intake tower at Cougar Dam. Although it is a much smaller version of typical Pacific Northwest fish collectors, it offers a cost effective means for research, monitoring, and evaluation purposes. In addition, it will provide and lead future important management decisions to fulfill obligations under the Willamette BiOp for downstream passage at Cougar Dam.

Official operations at the PFFC began on May 27, 2014. A block design study was initiated by the United States Geological Survey to assess variations in salmonid catch and behavior by adjusting weekly inflow settings on the vessel. Other collected information focuses on the behavior of juvenile salmonids in close proximity to the PFFC, water surface temperature at the trap, and fish collection efficiency.

The PFFC's inflow was adjusted weekly to a low and high setting, 50 and 100 cubic feet per second, respectively. The traps presumed optimal distance from the temperature tower was originally 50 feet. Due to constraints in the mooring system, the distance could not be achieved and therefore 150 feet was found to be the closest possible location.

The first season catch data suggests that the PFFC is successful at entraining and subsequently catching fry size spring Chinook salmon in the spring. However, it seems to struggle at catching larger subyearling juveniles late in the season that have stronger swimming abilities. Passive integrated transponder data shows fish entering the trap, getting detected, but quickly rejecting the ramped weir that is being utilized to decrease bypass flow into the hopper. Catch rates also correlate strongly with the seasonal stratification effect in the reservoir when the thermocline drops well below the entrance of the PFFC, 8 feet or lower. Moreover, fish catch was relatively low during the fall/winter migration at a time when juveniles are smolting and are typically leaving Willamette Valley Project dams in high numbers.