Willamette River Fish Recovery

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Habitat Above the Willamette's Fall Creek Dam Supports Spring Chinook Once Again

Fall Creek, located in central Oregon's Willamette River basin, is home to some of the region's most productive salmon habitat. Nearly 200 square miles drain into the creek, feeding the Middle Fork of the Willamette River just south of Eugene, Oregon. In 1965, the U.S. Army Corps of Engineers built Fall Creek Dam to protect communities, like Eugene, from the torrents of annual floods and since its erection, the dam has prevented more than $2.5 billion in potential flood damages. But the dam also has prevented spring Chinook salmon from reaching their once abundant, and still highly productive, habitat at the base of the Cascade Mountains—until now.

In 2008, NOAA Fisheries issued a Biological Opinion to guide the Corps of Engineers' operations of the Federal flood control dams in the Willamette River basin in a manner that protects listed salmon and steelhead. This includes spring Chinook that migrate to and from Fall Creek Dam, but have been impeded by the edifice from spawning and rearing above the dam. Some may question whether we can in fact restore salmon and steelhead above high head dams with huge reservoirs like Fall Creek. If we help adult fish pass above the dam and provide their offspring with safe downstream passage through the reservoir and dam, are they adaptable and resilient enough to survive? The Corps' recent operational changes at Fall Creek Dam, as guided by NOAA Fisheries' Biological Opinion, suggest that fish not only survive, but thrive.

The Corps of Engineers passes migrating adult spring Chinook salmon upstream via a trap located at the base of Fall Creek Dam—fish are guided into the structure, loaded onto a truck, and released into habitat upstream of Fall Creek Reservoir. Prior to 2009, the Corps of Engineers passed both wild and hatchery fish above the dam. Wild and hatchery fish seeded the vacant habitat that was lost for several generations. These same fish reproduced upstream of the dam and reservoir, their offspring migrated downstream

Looking downstream below Fall Creek Dam, with adult fish trap at the right and outlet flow on the left.

through the reservoir and dam, utilized habitat in the mainstem Willamette River, journeyed onto the ocean, and came back as healthy adults only to be passed above the dam, starting the cycle once again. But in 2009, the Corps of Engineers discontinued its traditional transport program and simply released wild adults above the dam. The Corps also altered its reservoir operations, drawing it down earlier and lower in the season to help young salmon pass through the reservoir and the regulating outlets of the dam. The number of returning wild fish speaks for itself, with 491 wild fish returning in 2010 compared to 73 in 2002. In 2010, when wild Chinook returns to key populations like the McKenzie and Clackamas were poor, returns to Fall Creek were high and represented more than 1/3 of the total return to the McKenzie River. By making strategic and minor changes to dam operations, wild spring Chinook have returned to some of the basin's most pristine habitat.

Looking downstream below Fall Creek Dam, on Fall Creek near Eugene, OR. Adult fish trap entrance on right of photo, and regulating outlet flow from reservoir released on the left.

The recent situation in Fall Creek provides demonstrated results that if we give fish a reasonable chance to survive upstream and provide downstream passage through the reservoir and dam many will survive and return in meaningful numbers. This is promising news as the region adopts a plan to recover listed salmon and steelhead in the Willamette Basin. If we learn anything from Fall Creek, it is that wild fish will seed the pristine habitat that awaits them if we simply provide the necessary passage at the dams and give the fish a chance to use it.