

**Date:** August 15, 2002  
**Project Name:** Porter Levee Restoration Project  
**Non-Federal Sponsor:** King County, Washington  
**Location:** Green River, King County, Washington  
**Congressional District:** 8, 9  
**Project Completion:** November, 1999  
**Project Cost:** \$265,000  
**Authority:** Section 1135 of WRDA 1986, PL 99-662  
**Project Manager:** Corey Loveland, 206 764-3488

**Project Location:**

The project is located upstream of Auburn on the right bank at approximately rivermile (RM) 35 of the Green River, King County, Washington. The Porter Levee was installed by private landowners sometime in the 1950's to prevent the Green River from meandering into adjacent property. The levee does not provide any significant flood control to adjacent land (adjacent land floods nearly every winter). King County has maintained the levee infrequently since the 1970's. Behind the levee is a large former meander/pond that occupies approximately eight acres. This pond has no connection to the River except during flood flows. Levees throughout the Green River basin have cut off many such off-channel or side channel habitats and rearing and wintering habitat for juvenile salmon is currently a limiting factor to survival and production. Additionally, due to the presence of Howard Hanson Dam (operated by the Corps) at RM 64, the river no longer has peak flood flows that can naturally create off-channel and side channel habitat.

**Project Description:**

The Porter Levee site is a 30-acre parcel adjacent to the Green River. The local sponsor King County, contributed approximately \$390,000 for this property, funding came from the Natural Resource Damage Assessment and Restoration Program:

<http://www.darcnw.noaa.gov/eb-rest.htm#sites>. The project restored the Green River's connection to an isolated channel, providing fish access to an eight-acre side channel and 13 acres of riparian wetland, and allows for salmon refuge from high flows and overwintering habitat for juveniles. This type of habitat is extremely limited along the middle Green River. Upstream and downstream connection between the Porter Levee Restoration Site and to the middle Green River appears to occur at flows of 1100 cfs as measured at the USGS Gage 12113000, Auburn, WA. One expressed concern is that the project potentially traps smolts in ponded areas and die when the pond turns utrophic in the summer time. Also the exit from the pond is now blocked by a beaver dam, which may or may not be an issue. The Porter Levee Restoration Site has successfully provided for juvenile use of an off-channel location in the middle Green River that was formerly disconnected by the creation of a flood prevention levee.

The intent of the project was to provide off-channel rearing and winter refuge habitat for juvenile salmon (chinook, coho, steelhead and chum). Additionally, the floodplain would be revegetated with native tree and shrub species and additional wetland habitat created for amphibians and wildlife.

The project design included breaching the levee at the upper end to provide flushing flows into the meander/pond to improve water quality. Flows above 1500 cfs flow through the notch in the levee (occurs frequently from November - May each year). The downstream end of the pond is connected directly to the river at flows above 400 cfs to provide access for juvenile salmon from approximately October - July each year. Additional connections were made from the meander/pond to an existing swale on the upland side of the meander/pond. Large woody debris was placed in the pond and at the outlet channel to provide additional habitat for salmon. Approximately 3 acres of land was revegetated with native trees and shrubs.

**Project Results/Monitoring Status:**

A post-treatment experimental design was used to determine the response of juvenile salmonids, whereby comparisons were made between test and control sites over time. A pre-project control site was established in a seasonally inundated side channel to the middle Green River during the spring of 1999, 0.25 miles downstream from the Porter Levee Restoration Site. Post-project evaluation of juvenile salmonid use was first monitored in 2000 and continued throughout the spring of 2002. Juvenile salmonid catch indices were consistently similar to the control site. A beaver dam, located in the downstream portion, prevented juvenile salmonids from using this section of the project from mid-June through late July in 2001. Young-of-year coho were present in the project site during the first survey conducted on 13 February 2000, indicating year-round use by overwintering salmonids. While not monitored directly, chum salmon redds constructed during the falls of 1999 and 2000 in the downstream section of the Porter Levee Restoration Site produced chum fry. A final monitoring report describing salmon use of this site will be completed by March 2003. Monitoring will continue to be conducted in 2004 to assess use of the meander/pond by juvenile salmon.





