

Little Deschutes River Restoration and Fish Habitat Enhancement At Crosswater



Little Deschutes River at Crosswater as it appeared in April 2007.

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The site of Crosswater's resort is a diverse landscape setting that features forests, meadows and the Little Deschutes River valley. The development was started in the spring of 1993 and includes 100-acres of golf course with 200-acres of open space. Golf course construction and grow-in was completed in 1994 and the golf course opened in June 1995. The meadow that is

- River Facts -

Little Deschutes

- ***Approximately 50 miles long***
- ***Located within the Upper and Little Deschutes Watersheds***
- ***Known Trout Fisheries***
- ***A tributary to Deschutes River***

Deschutes River

- o ***10,500 square mile drainage area***
- o ***252 miles long***
- o ***Steelhead, Brown, and Rainbow trout fisheries***
- o ***A major tributary to the Columbia River***

Crosswater was an old homestead where cattle had grazed upon the grounds for many years. The cattle caused considerable damage, including soil erosion and destruction of native vegetation, to the meadow and especially to the banks of the Little Deschutes River.

The Little Deschutes River Restoration and Fish Habitat Enhancement program was part of the wetlands mitigation required by the county for construction of the community and golf course. The program consisted of three different bio-remediation techniques: river bank improvement and stabilization, dead tree placements, and riffle restoration. The river bank improvement and stabilization consisted of rebuilding broken down and sloughed off bank sections with a bio-degradable jute, tied down with willow plantings and rock. The dead tree placements consisted of trees taken from a golf course renovation project on the Sunriver Meadows course and using a helicopter to place them along the river banks in various places. The riffle restoration consisted of placing boulders and gravel beds in various places to create fish habitat and spawning beds.

Jay Bowerman, principal researcher for Sunriver Nature Center and a consulting ecologist on the project, was struck by the unusual level of cooperation and the enthusiasm among the people who were involved. Reflecting on the tricky job of placing the trees into the river; Bowerman observed:

“The day the trees were emplaced was cold and gray, and a chill southwest wind was blowing. Oregon Department of Fish and Wildlife had selected sites for the trees that would provide shade and cover for fish. The helicopter pilot and ground crew would carry the trees a mile or more from where they had been taken down and then carefully lower them to each individual site. Another ground crew, consisting of members of the Crosswater golf course maintenance team maneuvered the trees into precise locations and alignment under the direction of Ted Wise of ODFW. This process soon demanded that some of the guys, wearing waders, move into the river to push or pull the end of a tree to get it properly aligned, while others anchored the tree in place. It was not long before Crosswater staff, Wise, others from ODFW, and I were all in and out of the river. Everyone got wet and cold. But everyone could see what was taking shape and what the end result was going to be. It was a good day.”



Various stages of the bank stabilization in 1993



Willow cuttings were used hold and stabilize the bio-degradable jute fabric.

All of this work was done under the supervision of the Oregon Department of Fish and Wildlife. Areas requiring the different techniques were identified and adjusted according to field assessments. The biggest challenge was the timing of the work. Weather conditions needed to be just right in order to do the work without causing more damage to the fragile wetland environments. The winter of 1997/1998 provided us with the necessary conditions - firm, frozen ground with some snow cover.

The accompanying photos show how some of the work was done. All treatments have been very successful by providing better fish habitat and have stabilized the river banks. We notice the fish activity, especially in the riffle treated areas. Where the trees have been placed, increased wildlife activity is evident and the bank stabilization areas have prevented further erosion.

The development of a beautiful 600 acre meadow in conjunction with the Little Deschutes River Restoration and Fish Habitat Enhancement program has transformed this meadow and river corridor into a natural environment and green space. Wild flowers, native grasses, wildlife and fish habitat have been improved and now flourish.



Jim Ramey CGCS at the project site in April 2007.



This late 1990's photo matches the introductory photograph in 2007. It shows the completed bank stabilization, dead trees in place, and a created riffle on the top left side.