

Green Infrastructure Program

Community Partner Profiles

2011 Partners

REGION 10: Puyallup, Washington

Community Background

Located in the City of Puyallup in western Washington, Clarks Creek is an urban stream that provides recreational opportunities for city residents and important habitat for salmon and trout. Clarks Creek is about five miles in length and has a watershed area of about 13 square miles. The creek drains into the mighty Puyallup River, which in turn flows into Puget Sound. Clarks Creek flows through two local parks and supports five species of salmon and trout. Salmon are an important food and cultural resource for the Puyallup Tribe of Indians of the Puget Sound region, and the Puyallup Tribe has operated a salmon hatchery on the creek since 2004.

EPA Contact

Krista Mendelman
US EPA Region 10
1200 Sixth Ave
Suite 900
Seattle, WA 98101

Stormwater is a significant and growing source of environmental degradation in Clarks Creek and downstream waters. According to the Washington State Department of Ecology's (Ecology's) 2004 assessment, Clarks Creek is impaired for bacteria, pH, fish habitat, fish passage, and dissolved oxygen. Analyses conducted by Ecology identified stormwater as a major driver of the high levels of bacteria and low levels of dissolved oxygen in Clarks Creek. Stormwater washes wildlife and pet wastes into the creek, elevating levels of fecal coli form bacteria. Stormwater also washes nutrients from fertilizers into the creek's waters, causing excessive growth of elodea (or waterweeds). The dense beds of waterweeds in Clarks Creek not only cause dissolved oxygen levels to plummet when the weeds decompose, but also increase flooding and sedimentation. As the City of Puyallup and Pierce County become more urban, these environmental pressures will only grow. County planners estimate that the population in the Clear and Clarks Creek basins will increase by 15 percent from 2000 to 2020 (from 61,700 to 71,000), and that effective impervious area could increase by 40 percent (from 25 percent of the basin to 35 percent).¹

The Clarks Creek Initiative is a cooperative team consisting of business, community and government members dedicated to restoring and protecting Clarks Creek. Members of the initiative include the City of Puyallup, Pierce County, the Puyallup Nation and Washington State University. EPA is

¹ [Clarks Creek Watershed Fecal Coli form Bacteria, Total Maximum Daily Load – Water Quality Improvement Report](#)

partnering with the Clarks Creek Initiative to explore green infrastructure alternatives for reducing the impact of stormwater on Clarks Creek.

Drivers for Green Infrastructure

The members of the Clarks Creek Initiative are hoping to achieve the following goals through applying green infrastructure techniques:

- Meet total maximum daily load requirements for fecal coli form bacteria and dissolved oxygen.
- Support the Puyallup Tribe in improving salmon spawning conditions in the creek.
- Educate the public about stormwater and about practices they can adopt at home to improve water quality and habitat in Clarks Creek.

Green Strategies and Programs

The members of the Clarks Creek Initiative have already implemented a variety of green infrastructure improvements. Since its rain garden program began in 2009, the City of Puyallup has installed 54 rain gardens through public-private partnerships. The city hopes to expand on this program through a project in the public right-of-way funded by a competitive grant from Ecology. A redesigned city block will include several rain gardens to absorb runoff from the road, permeable pavement, and permeable pavers to line the sidewalks. The city has also established an education campaign to inform its citizens about the effects of letting wastewater from car washing drain into the storm sewer. In 2009, the City of Puyallup and Washington State University Puyallup received a \$1 million grant from Ecology to retrofit the campus with permeable pavements, rain gardens, and rain harvesting systems, and research the effectiveness of these green infrastructure practices. Finally, the Puyallup Tribe received a Puget Sound grant in 2010 to develop low impact development solutions to address the sediment problems plaguing their salmon hatcheries.

The initiative plans to conduct workshops on rain gardens and other green infrastructure techniques. Some of these workshops may be offered through Washington State University's Washington Stormwater Center, established in May of 2011.

For more information: [City of Puyallup – Stormwater Management Program](#)

[Introduction to the Clarks Creek Watershed](#)