

Lake Spokane Shoreline Goes Au Naturel

What happens when you return to the basics?



The Staggs' shoreline before the start of the project

Introduction

Why would anyone strip away a concrete bulkhead and expose their property to erosive forces? Well, because a couple living along Lake Spokane (also known as Long Lake) recognized that their existing bulkhead was failing. It did not provide habitat for fish and wildlife, and could not filter pollutants from runoff before it entered the water. They also understood that bulkheads can cause problems for neighbors by increasing erosion further down the shoreline. For these reasons, Eric and Alycia Staggs agreed to install a naturalized shoreline as a demonstration project to other Lake Spokane homeowners.

Problem

Lake Spokane is known for low levels of dissolved oxygen and algae blooms. In 2010, the Department of Ecology completed a water quality improvement plan for the lake. The plan identified run-off and other non-point source pollution from homes as contributors to the water quality problems. To help address these impacts, in the spring of 2012 Ecology began working with local partners to identify potential property owners interested in naturalizing their shoreline on Lake Spokane. The project team pursued developing a demonstration project so landowners could see how a naturalized shoreline can protect their property from erosion and provide other benefits. Those benefits include increased safety by providing a gradual slope rather than a drop-off at the water, increased aesthetic value of the property, privacy, and compliance with water quality regulations.

Project or Event Goals

The Staggs decided their property, located on the southeast side of Lake Spokane, was the perfect guinea pig for the project. Their bulkhead was breaking down and they were excited about making the change to a naturalized shoreline.

The Spokane Conservation District (District) was the key to success of the project. Their staff provided technical assistance by working with the project engineer on the design, providing additional funding, applying for permits, and supervising construction contractors. After obtaining all the required permits, the project began in February 2013 following reservoir drawdown. The District spent four days on-site overseeing bulkhead demolition and re-grading of the shoreline, returning in the spring to plant shoreline vegetation, and later repairing erosion caused by high lake levels and rain. The homeowners used time-lapse video to show the project transformation from start to finish, which is available to view at:

http://www.youtube.com/watch?v=luT0RZShJoY&feature=youtube_gdata.



The failing bulkhead prior to removal

Milestones and Outcomes

One of the biggest challenges to this project was timing. The project had to occur when the Avista Corporation, the dam owner, lowered lake levels to make room for spring flows. The contractor, project designs, and permits had to be ready when the lake was ready. This time period is not the same every year and the amount of drawdown can vary. For some time the project team was not sure a drawdown would occur at all. Fortunately, it did and the project proceeded.

The permitting required a high level of coordination because four different agencies had five authorizations or exemptions to issue. Each agency had different concerns about, and requirements for the project, such as the placement of rock and plants to dissipate wave energy and shoreline slope. The project engineer ended up creating two designs before all the agencies could agree to the project. In addition, three of the agencies needed to complete a cultural resources consultation with the Spokane Tribe, but because this was unknown at the time, two separate consultations occurred. Despite a short timeline, the agencies issued all the permits so construction and planting occurred as planned.

Since completing the project, the Staggs have discussed their project and answered questions from neighbors who live along the lake. Their next door neighbor also had the Spokane Conservation District plant native vegetation along their shoreline to help filter runoff and reduce erosion. The Staggs reported an abundance of small fish just off their shoreline. One year later, the Staggs need to replace some sedges that died and finish other minor maintenance, but they report the shoreline is doing great.



The Staggs' shoreline after completed construction

Partners

Ecology would like to thank the Staggs family for providing a time-lapse video of their project to share. Thanks also to the Lake Spokane Association, Spokane Conservation District, Stevens County Conservation District, Governor's Office for Regulatory Innovation and Assistance, Washington Department of Fish and Wildlife, US Army Corps of Engineers, Spokane County, and Avista Corporation for helping make this project possible.



One year later

Funding

Funding for this project came from Ecology's Water Quality Program's Direct Implementation Fund. This fund is a subset of federal grant funds dedicated specifically to addressing nonpoint sources of pollution such as residential runoff and erosion. The Spokane Conservation District supplied engineering and design grant funds, and the Staggs family purchased the plant material.

For more information

For more information on this particular project, Lake Spokane, bulkhead removal, and green shorelines visit:

- Lake Spokane Association - www.lakespokaneassociation.org/
- Spokane Conservation District - <http://sccd.org>

- WA State Department of Ecology - www.ecy.wa.gov/programs/sea/greenshorelines/index.html
- Stevens County Conservation District - www.co.stevens.wa.us/cons_district/Partners/partners.htm
- Avista Utilities - <https://www.avistautilities.com/environment/spokaneriver/Pages/default.aspx>

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