

Beaver Creek Canyon

by Shelley Matthews

YEAR

4

in Troutdale, east of and parallel to Beaver Creek Lane between Chapman and 21st Street; project site is within the first stream mile, approximately 2,400 stream feet from the mouth



BEFORE

Invasive Himalayan blackberry covers the banks of Beaver Creek

AFTER

Blackberry vines removed and native seedlings planted to stabilize bank and restore riparian functions



The Beaver Creek Canyon project was a collaborative effort between the City of Troutdale, the Multnomah Youth Cooperative, and Friends of Beaver Creek. Begun in 1994, the intent of the project was to stabilize canyon slopes and improve fish and wildlife habitat by re-establishing native riparian plant species along the Beaver Creek Public Greenway in Troutdale.

Beaver Creek is a dynamic stream that frequently changes its course and experiences significant natural channel alterations. The 1995-96 winter flooding accelerated stream channelization and degradation. Twenty feet of bank sloughed off in the project area. The creek channel also changed from a meandering bend to a straighter, deeper cut, exposing shear sides of erodible silt. In addition, public trails and a pedestrian bridge, which provide access to the area, further contributed to soil and habitat loss.

A restoration specialist was contracted to develop a design to stabilize the creek banks. He considered the findings of a stormwater drainage study that the City of Troutdale commissioned for the Beaver Creek sub-basin. He also observed the restoration site over several seasons and determined that the stream's channel, course, velocity, and other characteristics would continue to change significantly and frequently over time due to urbanization in the watershed. The steep canyon walls made the project site inaccessible to heavy equipment, and existing conditions did not call for efforts to stabilize banks along the creek. The proposed action was to focus on and stabilize the area beyond the banks themselves. Specific recommendations included moving the trail 30 to 50 feet uphill away from the creek; discontinuing the bridge site, which was at-risk of being swept away during flood events; removing Himalayan blackberry, which do not hold soil during high water conditions; and replanting with native plants for increased soil stability and other riparian functions. Several different plants were used to reestablish a diverse native plant community. Those plants included seedling Douglas firs, red alders, western red cedars, and vine maples.

Continued monitoring was an important component for the long-term success of this project. Efforts included clearing blackberry resprouts, maintaining new vegetation and replacing failed plantings. Monitoring changes in the stream channel provided data for ongoing restoration efforts.

Benefits

- Construction plans accommodated the dynamic nature of the creek and allowed space for natural changes to occur within the stream corridor. This helped to avoid future financial losses due to loss of the trails and bridge due to wash-out, along with unnecessary equipment and labor costs.
- Decreased sediment runoff into Beaver Creek and trampling of vegetation from unnatural causes (trails, bridge, public access).
- Stabilized the canyon floor with plants native to the area.
- The new plantings provided improved fish and wildlife habitat and shade for the stream.
- The plant list and data gathered for this project can be used for other proposed restoration projects along Beaver Creek.
- Volunteers and youth crews received an education on stream dynamics and native plant communities, and an opportunity to enhance their surroundings.

Budget

Total proposed – \$18,380

Total actual – \$17,848

Metro/US Fish and Wildlife Grant awarded – \$15,000

Grant dollars spent - \$6,456

Helpful Hints – what worked, what didn't

- Determine which plants are best for your particular needs and circumstances, and order the plants well in advance from a reliable source. The best months to plant were October and November.
- If you are working with a dynamic stream, budget in adequate time to study the stream and gather data necessary for restoration efforts.
- Call well ahead of time to reserve the services of volunteer groups. Many of them are booked well in advance.
- Whenever possible, utilize in-house maintenance staff as project crew leaders. Both staff and volunteers benefit and learn from the experience, and staff will feel a greater sense of ownership and commitment to the project during the maintenance and monitoring phases.
- Educate yourself on basic stormwater engineering practices as they relate to urban streams so you are better equipped to integrate those practices with natural resource goals.
- Keep a project log to record the timeline and tasks as they occur, particularly for long-term projects.

Partners

City of Troutdale, Parks and Facilities Division

Multnomah Youth Cooperative

Friends of Beaver Creek

Dennis O'Connor, Stream Restoration Consultant

Contact

Valerie Lantz, Parks and Facilities Superintendent, City of Troutdale, (503) 665-5175

Timeline and tasks

January 1995 and December 1996	Sought and selected consultant for engineering/design
January 1995	Consultant began work
January 1995-December 1996	Monitored seasonal stream changes
January 1995-July 1996	Developed strategies and plans
January 1995	Applied for permits
August 1995	Sought labor sources
September 1995	Cleared berry vines – 1 st phase (Everett)
October 1995	Trained volunteers and planted
April 1996	Trained volunteers and picked up debris
April 1996	Friends of Beaver Creek and high school students planted
June 1996	Received permits
August 1996	Sought and contracted for additional labor source
October 1996	Procured materials
November 1996	Cleared Himalayan blackberry vines
November 1996	Transported materials to site
November 1996	Planted native vegetation
Ongoing	Monitored and observed
December 1996	Cleared resprouting blackberry
December 1996	Purchase replanting – maintenance after winter storms