

Balch Creek

by Shelley Matthews

YEAR
5

in Portland, on Audubon Society property at 5151 NW Cornell Rd.

BEFORE

*Streambank
erosion and slope
instability
degrade fish and
riparian habitat*



AFTER

*Bank failures
were terraced
with logs and
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plants*

Balch Creek is approximately 3.5 miles long and flows through a 180-acre nature sanctuary owned and operated by the Portland Chapter of the Audubon Society. The sanctuary is an important outstanding urban natural feature with over 4 miles of forested hiking trails. It is used heavily for education and recreational purposes by the public and as habitat for wildlife (e.g., Pacific giant salamander, American dipper, raptors). The creek also provides habitat for a now isolated population of resident native cutthroat trout.

A 750-foot section of Balch Creek and 570 feet of Woodpecker Creek (a tributary of Balch Creek), were targeted for restoration. A study of the restoration site by Aquatic Resource Consultants identified several factors contributing to the build-up of sediment in these streams, poor water quality, and habitat degradation. They recommended addressing: 1) a deeply incised channel where erosion problems were threatening a foot traffic bridge; 2) areas of streambank erosion and slope instability; and 3) areas of low pool-to-riffle ratio (poor stream structure).

The goal of this project was to enhance riparian and fish habitat by stabilizing the streambed and banks in Balch and Woodpecker creeks, improving channel complexity and restoring native vegetation to the area. Woody material was salvaged and added to specific locations on both creeks to provide additional channel roughness, flow resistance, and soil stability within the stream and to provide overhead cover along the streambank. On Balch Creek, two large fallen trees were cut to 8 to 10 feet, uprighted to their previous positions along the channel, and secured in place with rock. Additional restoration efforts at Balch Creek included: 1) adding rock weirs at the tailouts of six pools to increase residual pool depth, and 2) adding rows of spaced rock to pools to increase flow resistance. On Woodpecker Creek, a culvert was removed and an existing trail and Eagle Scout bridge were relocated away from the streambank to a more stable area. Bank failures in two areas were terraced with bank logs and revegetated with native plant species. Other areas of bare soil were also replanted with natives.

To minimize costs, most materials required for the project were collected on site (logs and large rock) from debris left from recent winter storm events. The Audubon Society monitored the project weekly over a three-year period to evaluate the project's affect on water quality, erosion reduction, pool-to-riffle ratios, and to study the integrity and usefulness of in-stream weirs and crib structures over time.

Benefits

- Enhanced and restored fish, herptile, and riparian habitat.
- Improved water quality by controlling erosion.
- Provided educational opportunities for citizens, citizen groups, organizations, jurisdictions, and youth work corps.
- Trained and demonstrated restoration techniques for sites in environmentally sensitive areas where the use of heavy equipment would cause environmental degradation.
- Assist in meeting objectives of Forest Park Natural Resource Management Plan.

Budget

Total Proposed – \$85,615

Total Actual – \$52,388

Metro/U.S. Fish and Wildlife Service grant award – \$13,000

Grant Dollars Spent – \$8,484

Helpful Hints – what worked, what didn't

- Solicit input from many different sources in the planning phase.
- Have a personal contact at the City of Portland to secure examples of permit applications that have been awarded, to use as templates to apply for a permit.
- Be flexible.
- Hire an experienced crew supervisor.
- Secure funding for long-term education and monitoring.
- Take more photos than you anticipate needing – everyone wants them. Use a camera that prints the date on the picture.
- Don't expect the project to follow a perfect, tidy timeline; there are too many uncontrollable variables that impact progress such as weather, landslides, and availability of crews, etc.

Partners

Aquatic Consultants, Inc.
Audubon Society of Portland
Bureau of Environmental Services
Carl Menconi, Private Consultant
Cascade Education Corp
Friends of Forest Park
Mary Ruhl, Graphic Artist
Northwest Service Academy
Oregon Department of Fish and Wildlife

Contact

Jennifer Devlin, Education Director, Audubon Society of Portland, (503) 292-6855

Timeline and Tasks

March 13, 1996	Completed restoration plan and design
August 1996	Developed maintenance / monitoring plan
March 2, 1996	Began weekly education program
July 1996	Prepared and submitted permits
August 1996	Initiated weekly monitoring; permits approved
June – August 1996	Planned and marketed crew training and citizen demonstration workshops
August 1996 and 1997	Inventoried tools and supplies
September 1996	Rented and purchased equipment and supplies
September 1996 and 1997	Delivered plants, soil, and equipment; completed groundwork with youth crew; sponsored demo-workshops for agency personnel and public
Ongoing	Monitored restoration site
Over two years	Evaluation and maintenance