

Leach Botanical Garden – Johnson Creek

6704 SE 122nd Ave., along the south side of Johnson Creek near stream mile 9



BEFORE

Stormwater runoff from the parking lot goes directly into Johnson Creek

The Leach Botanical Garden Johnson Creek water quality swale project was a component of the city of Portland's effort to improve water quality and wildlife habitat. Johnson Creek is officially listed as a "water quality limited" stream by the state of Oregon. The water quality swale employs natural water treatment techniques.

Several major elements were used to achieve water quality goals. A vegetated swale was created to enhance the quality of water from local runoff before it enters the stream. Non-native vegetation was removed and replaced with native vegetation that represents riparian and wetlands plant communities that are more attractive to wildlife, especially birds. The catch basin in the visitor parking lot was reconstructed to re-direct runoff through the vegetated swale for biofiltration. Human impact to the surrounding stream area was lessened by providing discrete access points, trails and perimeter barriers. The project demonstrated watershed management practices, water quality control techniques and the role of community stewardship in natural resource protection for the public education component of the project.

The project accomplished its objectives. The parking lot stormwater controls directed runoff into a catch basin and across a vegetated swale into a pond and wetlands area before entering Johnson Creek. The city of Portland's Bureau of Environmental Services conducted a sediment



AFTER

Native vegetation acts as biofilter for stormwater runoff

evaluation of runoff from the parking lot and found a 50 percent reduction of sediment in the runoff entering the wetlands area from the vegetative swale. The pond appears to be serving as an infiltration area as well as a settling pond. Tests made of samples taken after the completion of the swale indicated that no oil is entering the system, and the fecal coliform count was within health limits.

Native species planted in the riparian zone are well established and provide good cover. There has been minimal regrowth of non-native species such as Himalayan blackberry and morning glory, which should be easy to control with monitoring. Wetland plants are established and show evidence of forming a balanced wetlands community over time. There seems to be some foot traffic by children in restricted areas; more barriers need to be placed. Otherwise the narrow, meandering foot paths seem to be limiting human impact in riparian area.

The public education goals were met by volunteers who worked on the project. Some 315 volunteer hours were logged in by Boy Scouts, US Forest Service employees and David Douglas High School students along with 170 hours of BES staff time. Easy-to-read signs explaining streamside areas (bog, wetlands, riparian zone) enable self-guided tours and provided explanations about composition and functions of each of these areas.

Benefits

There were direct environmental benefits to water quality and wildlife habitat resulting from the projects' vegetated swale. There were also benefits for flood reduction through the infiltration in the swale. The chief benefit was improved water quality and wildlife habitat, through the adoption of improved management practices by other property owners. A significant value was the establishment of the idea that property owner need to accept responsibility for doing what they can to improve the situation in the watershed. The project documented the process to serve as a guide for problems and issues using a

multi-objective approach. Information was published and distributed by the city of Portland explaining how the city's resource protection plans and management plans can be used to make site improvements.

Budget

Proposed – \$19,000

Actual – \$24,936

Metro/US Fish and Wildlife grant award – \$4,650

Helpful hints – what worked, what didn't

- Need to do as much up-front planning before submitting project.
- This project went from big to small as the planning process was completed after the proposal was submitted.
- There was much refinement of plan needed as the project progressed.
- Volunteer help was invaluable.

Partners

Boy Scouts

David Douglas High School

Portland Parks and Recreation

City of Portland Bureau of Environmental Services

US Forest Service

Eagle Scouts

Girl Scouts

Paul Fishman Environmental Services

Contact

Jim Sjulín, Portland Parks and Recreation, 823-5122

Timeline and tasks

June 1991	Correspond or meet with local, state and federal officials to determine or confirm permits required; develop a detailed site plan and other information needed for permitting agencies; submit necessary permit applications: Building Bureau, Office of Transportation, Planning Bureau
July 1991	Develop a project work plan and monitoring program plan incorporating staff and volunteer from Leach Botanical
July 31, 1991	Receive Metro grant
August 1991	Prepare specifications; accomplish site cleanup
Spring 1992	Begin site work, construct swale
Nov. 30, 1992	Complete site construction
November -	
December 1992	Complete revegetation of site
Winter 1992-93	Implement monitoring program
December 1992	Produce public information on project