

metropolitan

Greenspaces

program

Summary of Accomplishments 1991-2003



METRO

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Purpose of this Report

This report provides a summary of Metropolitan Greenspaces Program projects and accomplishments. It includes short descriptions of grant projects funded, summarizes Green City Data Project sites studied from 1991 through 1996, and lists other projects, products and publications that have resulted from the Metropolitan Greenspaces Program. All of the accomplishments in this report are the result of unique partnerships between the U.S. Fish and Wildlife Service, Metro, other public agencies, local governments, non-profit organizations, businesses, schools, and citizens.

Metropolitan Greenspaces Program Overview

Background

In the late 1980's, a group of representatives from Metro, the regional government for the Portland metropolitan area, non-profit organizations, local governments and citizens formed to collaborate on greenspaces protection in the Portland/Vancouver region. As a result of their efforts, Congress and the President allocated Federal funding to establish a formal partnership between the U.S. Fish and Wildlife Service (Service) and Metro to initiate the Metropolitan Greenspaces Program (Program). The Program focuses on habitat restoration, conservation, environmental education, public outreach, and regional natural resources-related planning throughout the bi-State, four-county, Portland, Oregon/Vancouver, Washington metropolitan area. The Metro region and its actively engaged stakeholders are nationally recognized for these efforts and the Program accomplishments described herein.

Summary of Accomplishments

- Natural area inventories, mapping and development of the Greenspaces Master Plan, a strategic conservation plan to establish a cooperative system of parks, natural areas, trails and greenways for fish, wildlife and people in the Portland metropolitan region that lead to citizen passage of a \$135.6 million bond measure and subsequent local government acquisition of over 8,000 acres of high priority habitats. The Service's Tualatin River National Wildlife Refuge is a recognized component of the regional greenspaces system.
- Nearly 300 grants have been awarded to support habitat restoration, natural resource conservation, and environmental education projects throughout the Portland/Vancouver metropolitan area. The grants have leveraged Federal funds by over 4:1 in local contributions, developed mutually beneficial partnerships, supported a wide range of local conservation efforts, built awareness and understanding of urban natural areas, encouraged active citizen participation in the care and management of greenspaces, and improved habitats for threatened, endangered, and sensitive fish and wildlife, including migratory birds, and the ecosystems on which they depend.
- Green City Data Project support from 1991 through 1996. During this period, 48 middle school and high schools were involved in collecting field data to map natural areas, identify and assess habitat, conduct species inventories, take water quality measurements and make management and restoration recommendations.
- Master planning and habitat restoration at regional parks, including Blue Lake, Whitaker Ponds, and Oxbow Regional Park.

- Publications and outreach tools including: a) *Metropolitan Greenspaces Habitat Restoration Grants Program Project Reviews*, b) *Community Partnerships for Urban Environmental Education; Environmental Education Grant Summaries*, c) *Nature of Metropolitan Greenspaces* video and slide show, d) Map of Conservation, Habitat Restoration and Environmental Education Projects, e) numerous issues of the *GreenScene* and *Trip into Nature*, f) eight brochures about the region's local watersheds, g) Metropolitan Greenspaces brochures, h) two *Natural Areas* tabloids, i) a *Naturescaping* manual, j) *Greenspaces Adventures, A Teacher's Guide to Using Portland-area Greenspaces for Environmental Education* funded by a grant awarded to OMSI, and k) the *Urban Natural Resources Directory* funded by a grant awarded to the Audubon Society of Portland.

U.S. Fish and Wildlife Service Benefits:

The mission of the U.S. Fish and Wildlife Service is to work cooperatively with others to protect, restore, and enhance natural habitats, supporting fish, wildlife, and plants for the continuing benefit of the American people. The Metropolitan Greenspaces Program has enabled the Service to carry out its mission through a pro-active and comprehensive approach not available through traditional Service programs, while simultaneously integrating and streamlining Federal regulatory tools such as the Endangered Species Act, Migratory Bird Treaty Act and Clean Water Act. Through the Program, the Service has worked in partnership with local entities to conserve both listed and native unlisted species and their habitats through landscape-based land use planning strategies and a variety of conservation, restoration, and educational projects designed to benefit the Service's trust resources. Program-related work has added to our knowledge about urban ecology, engaged constituents in environmental learning and stewardship, and protected and restored important fish and wildlife habitats. The Program has also increased Service recognition and supported the public's interest in conservation in a population center that includes the Metro region, home to 37% of Oregon's population in portions of three counties and 24 cities (including Portland), plus over 360,000 people in Clark County, Washington. The Program successes currently serve as a national model for local efforts in other urban areas, and could be used as a model for a new regional or national Service program focused on a comprehensive approach to promoting the conservation of our trust resources.

Metro Benefits:

Metro is the regional government that serves more than 1.3 million residents in Clackamas, Multnomah and Washington counties and 24 cities in the Portland, Oregon, metropolitan area. Metro's mission is to work cooperatively with local governments, businesses and citizens to conduct land use planning and set policy direction that establishes livable communities in the region for its current residents and future generations. Metro is also working cooperatively to establish an interconnected regional system of parks, natural areas, greenways and trails for fish, wildlife and people. The Metropolitan Greenspaces Program partnership between Metro and the U.S. Fish and Wildlife Service has provided instrumental funding and technical support for this effort through natural resource-related data collection and analysis, public outreach, and conservation-focused land use planning. In addition, the grant-funded habitat restoration, natural resource conservation, and environmental education projects implemented by local partners have been vital, effective tools to build and foster a sustained understanding, appreciation and stewardship of the region's metropolitan greenspaces.

Publications, Products and Greenspaces Projects

Metropolitan Greenspaces Program Summary of Accomplishments: This is the document you are holding now. It is updated annually to provide a current compilation of projects and products that have stemmed from the partnership between the U.S. Fish and Wildlife Service and Metro. It includes an overview of the Program, summaries of all Greenspaces grant projects, Green City Data Project activities, and a listing of publications and products produced.

Metropolitan Greenspaces Master Plan: Until the Greenspaces Program was initiated in 1991, there was virtually no existing field data describing on-the-ground conditions of the Metro region's natural areas. Initial Service funding was used to pay for natural area inventories, GIS digitization and mapping, and data analysis. Public outreach and workshops were used to gather more information, compile local knowledge about important sites, and to allow the public to review and comment on the findings identifying regionally significant sites. In addition, Service funds supported financial studies and strategic planning, and ultimately, the development of the Greenspaces Master Plan which outlined a plan for creating a regional "system" of natural areas important for ecological and community values. The Greenspaces Master Plan led to the Open Spaces Bond Measure passed by citizens in 1995 to provide \$135.6 million that local governments used to acquire over 8,000 acres for trails and greenspaces in targeted areas.

Regional Park Master Planning and Restoration: Service funds were used for master planning and habitat restoration at several regional parks, including Blue Lake, Whitaker Ponds, and Oxbow Regional Park. These natural areas provide important habitats for fish and wildlife, and are visited by thousands of citizens from across the region each year. Additionally, they serve as anchor sites for outdoor learning and a wide variety of environmental educational programs.

Metropolitan Greenspaces Habitat Restoration Grants Program Project Reviews: This notebook describes projects that have been completed under the Habitat Restoration Grant Program. Each project description includes the project goals; activities implemented; a summary of problems addressed; before and after photos; the budget; a list of partners involved; helpful hints from the project manager; and a project contact. The notebook is used to provide information about the grant program to interested parties, promote networking between those involved with restoration efforts, and to share guidance and helpful hints that may be useful to other project managers.

Community Partnerships for Urban Environmental Education; Environmental Education Grant Summaries: This notebook describes projects that have been completed under the Environmental Education Grant Program and provides guidance to others involved in similar activities. Each project description includes the project goals; the community reached; project description and action; Oregon educational benchmarks addressed; activities implemented; challenges; the budget; and a project contact. The notebook is used to provide information about the grant program to a broad audience, promote networking, and to share experiences and advice from project managers and other professionals.

The Nature of Metropolitan Greenspaces video and slide show: A video was developed in June 1996 to educate both the public and private sectors about the benefits of Greenspaces. It includes information about regional efforts to plan for and protect Greenspaces in the Portland, Oregon/Vancouver, Washington metropolitan area. The video has been used to revise and expand upon a slide show that was developed earlier for the same purpose.

Map of Habitat Restoration and Environmental Education Projects: This map is updated annually to show the location of Greenspaces grant projects. Projects are located in Multnomah, Washington, and Clackamas County, Oregon as well as Clark County, Washington.

GreenScene (previously Trip into Nature): The Service has contributed funding to support the GreenScene, a publication produced and distributed by Metro three times each year. Although in past years it was produced in printed form only, it is now most widely distributed via e-mail. This publication serves as a clearinghouse for regional environmental news and events, including a listing of tours, hikes and classes, as well as articles about local Greenspaces and related issues.

Watershed Brochures: Program funding has been provided to support the development and publication of brochures for the general public that include descriptions and maps of local watersheds, the natural resources found there, key contacts for healthy watershed issues, and ways citizens can get involved in urban stream protection and recreational activities. The following titles have been produced in this series:

- Exploring the Columbia Slough
- Exploring Oswego Area Watersheds
- Exploring Salmon Creek
- Discovering the Tualatin River
- Kellogg Creek, Mt. Scott Creek: Wetlands, Wildlife and Water Quality
- Fanno Creek, Urban Streams: Wetlands, Wildlife and Water Quality
- Johnson Creek, Urban Streams: Wetlands, Wildlife and Water Quality
- Fairview Creek: Wetlands, Wildlife and Water Quality

Metropolitan Greenspaces brochures: Two brochures have been produced to describe the vision for protecting a regional network of natural areas, open spaces, trails and greenways for fish, wildlife, and people and to encourage citizen involvement. One was produced for Vancouver, Washington called, "Vancouver Greenspaces." The other, entitled "Metropolitan Greenspaces," includes the entire Portland/Vancouver metropolitan region including portions of Multnomah, Clackamas and Washington Counties in Oregon and Clark County, Washington.

Natural Areas Publications: Two tabloids were produced in 1992 and 1995 to describe the values of natural areas to fish, wildlife and people, and to promote public support for the protection and expansion of the regional network of natural areas. Distribution included approximately 440,000 through *This Week Magazine* and more through local stakeholder agencies and organizations.

Naturescaping Manual: A manual was developed for use at workshops to teach environmentally friendly landscape principles to homeowners, businesses and school groups. Naturescaping focuses on the use of native plants and natural materials to create backyard wildlife habitat, reduce the use of fertilizers and pesticides, and because native plants are adapted to local conditions, they do not generally require regular watering or special care.

Greenspaces Adventures, A Teacher's Guide to Using Portland-area Greenspaces for Environmental Education: This is a publication that was produced through an environmental education grant awarded to the Oregon Museum of Science and Industry in 1993. It is a guide that includes a listing of public parks and greenspaces throughout the region and how each one can be used by schools and other groups for environmental education.

Urban Natural Resources Directory: This publication was produced through a 2002 Conservation and Restoration grant. It is an updated version of an Urban Natural Resource Directory originally published in 1996. It is being produced by the Audubon Society of Portland, and is designed to help citizens and agencies in the Portland-Vancouver metropolitan region to protect and restore natural resources by providing a comprehensive listing of pertinent

public and private organizations, and information about relevant issues, projects, programs, resources, regulations, contacts, and "how to" information.

Urban Ecological Research Consortium (UERC): The UERC is an informal group of individuals working throughout the Portland/Vancouver metropolitan area on natural resource-related studies, projects and programs. The group formed in 2001 to promote networking, partnership building and the exchange of information related to urban ecology and its application to natural resource conservation, natural area management, environmental planning, habitat restoration, and the social sciences. The UERC mission is *“To advance the state of the science of urban ecosystems and improve our understanding of them, with a focus on the Portland/Vancouver metropolitan region, by fostering communication and collaboration among researchers, managers and citizens at academic institutions, public agencies, local governments, non-profit organizations, and other interested groups.”* UERC goals are to a) provide direction and support for urban ecosystem research, b) create an information-sharing network for data collection and application, c) track, house and provide access to information, and d) promote a greater understanding of urban ecosystems and their importance. A symposium held in January 2003 drew 200 people and 78 abstracts submitted for presentations and publication. Oregon State University is hosting a list-serve for the group, and Portland State University has set up a web site at <http://www.esr.pdx.edu/uerc/>. The UERC received the 2003 “Excellence in Faculty and Community Engagement” award from Portland State University.

Urban Conservation Treaty for Migratory Birds Program in Portland: The City of Portland (City) is the fifth city after New Orleans, Chicago, Philadelphia, and Houston to pilot the Service’s national Urban Conservation Treaty for Migratory Birds program. A Treaty signing ceremony with Dave Allen, Regional Director and City Commissioner Jim Francesconi was held during the International Migratory Bird Day event at the World Forestry Center on May 10, 2003. A coinciding Partner Treaty was signed by 23 additional organizations to express their commitment to migratory bird conservation. Upon signing, each partner organization received a certificate from the Service and the City to recognize their important role in the program.. It is planned that new partners will be added each year during a Treaty recognition event. The Service’s Washington D.C. office will provide \$50,000 to the City to develop and implement bird conservation projects in four categories: 1) education and outreach; 2) habitat creation, protection and restoration; 3) hazard reduction; and 4) non-native, invasive or nuisance animal and plant species management. Federal funding will be matched by a minimum of 1:1 with non-Federal sources of cash and in-kind contributions from the City, the Audubon Society of Portland, and a variety of other partners. The Service’s Oregon Fish and Wildlife Office and Regional Office will provide technical assistance and program support, and will participate on a national team of pilot area representatives to guide the future of this program.

Metro Regional Wildlife Species-Habitat Association Model (2002): The Service’s Oregon Fish and Wildlife Office funded the Oregon Natural Heritage Information Center (ONHIC) to develop a species-habitat model for the greater Portland metropolitan region. The project provides an analysis of habitat and synthesizes terrestrial vertebrate distributions as part of a multi-agency effort to build on the best available science used to inform land use planning, species conservation and habitat restoration efforts. Individual distributions for 365 species were developed using landscape models, which utilize a coarse filter (hexagon), and habitat associations to identify potential significant habitats. Models incorporated parameters such as adjacent habitat types and edge effects. Species-habitat relationships were modified from a binary assignment, as used in Gap Analysis, to habitat selection gradients with values of 0-10 (no selection to high selection). A map of potential species distribution was developed based on habitat description maps supplied by Metro and additional information from ORHIC on wetland distributions in the southern metro region, and predicted riparian types. A subset of vertebrate models was analyzed using the program Marxan to develop an optimized model of conservation priorities. The advantage of such a modeling scenario is the inclusion of prioritized species

distributions with the land value in a conservation design that meets the goals set for each species at the lowest cost. Staff from Metro and the Oregon Department of Fish and Wildlife worked with the Service and ONHIC to provide technical input and guidance for the project.

Conservation and Restoration Grant Projects

1991-92 Restoration Projects

Mt. Scott Creek at North Clackamas Park: Used bioengineering methods for bank stabilization and erosion control. Removed invasive blackberries and reed canary grass and revegetated with native trees and shrubs. Recontoured a drainage swale to create shallow water habitat. Total budget: \$34,166. Greenspaces grant: \$14,455. Partners: *North Clackamas Parks & Recreation District and City of Milwaukee Parks Department.

Bybee-Howell Territorial Park on Sauvie Island: Increased biological diversity and demonstrated low impact pasture management practices at a wetland site. Plowed pasture lands, replanted with grasses and herbaceous species and installed fencing so the site could be managed to both allow grazing and provide wetland protection. The project also involved digging a well used to pump water to maintain the ponds at four to five foot levels. Total budget: \$49,500. Greenspaces grant: \$10,000. Partners: *Multnomah County Parks Department, Oregon Department of Fish and Wildlife, Wetlands Conservancy, and the Sauvie Island Conservancy.

Little People's Park on Beaverton Creek: Enhanced an urban stream corridor for fish and wildlife by planting native vegetation, adding soil amendments, and installing wood duck boxes. Total budget: \$138,079. Greenspaces grant: \$7,500. Partners: *City of Beaverton, Tualatin Hills Park and Recreation District, Beaverton High School and local residents.

Fernhill Wetlands in the Tualatin River Basin: Created an emergent marsh with a mosaic of islands designed to provide waterfowl habitat in the public park. Total budget: \$72,133. Greenspaces grant: \$20,000. Partners: *City of Forest Grove, Fernhill Wetlands Council, the Unified Sewerage Agency, Oregon Department of Fish and Wildlife, Oregon Waterfowl and Wetlands Association, Forest Grove Chamber of Commerce, Oregon Hunters Association, the Wetlands Conservancy, Pacific University, and local schools and residents.

Binford Lake/Butler Creek Greenway: Enhanced an urban pond, wetland and forested upland area by removing debris and Himalayan blackberries; revegetating banks with native shrubs and trees to stabilize the soil and to prevent erosion; and constructing and posting bird nesting boxes. Total budget: \$38,426. Greenspaces grant: \$7,500. Partners: *City of Gresham, East Multnomah Soil and Water Conservation District, and Friends of Trees.

Jackson Bottom Wetlands in the Tualatin River Basin: This project was a cooperative research effort lead by the Oregon Graduate Institute. Removed reed canarygrass and planted native vegetation. Created a new wetland and diversified existing wetland habitat. Total budget: \$71,374. Greenspaces grant: \$15,000. Partners: *City of Hillsboro Planning Department, Jackson Bottom Steering Committee, Oregon Graduate Institute, the Unified Sewerage Agency, Friends of Jackson Bottom, Audubon Society of Portland, Oregon Department of Fish and Wildlife, Soil Conservation Service and the West Multnomah Soil and Water Conservation District.

Newell Creek Wetland: Created a one-acre wetland to provide low cost biofiltration of stormwater runoff from the college campus. This project demonstrated the use of new methods for treating runoff using products derived from recycled materials. Total budget: \$38,390. Greenspaces grant: \$14,925. Partners: *John Inskeep Environmental Learning Center, Clackamas Community College, Oregon State Corrections/Columbia Corrections Institution, Oregon Youth Conservation Corps, Oregon City Municipal Corps, Oregon Department of Fish and Wildlife, Wichita Nursery, City of West Linn and Larry Skou Excavating.

Ball Creek: Enhanced degraded sections of the stream by controlling erosion and stabilizing the channel with rock check dams and native vegetation. Removed blackberry bushes, planted native shrubs and trees and protected dead tree snags for habitat diversity in the riparian area. Total budget: \$72,621. Greenspaces grant: \$7,500. Partners: *City of Lake Oswego (Planning Department, Surface Water Utility and Maintenance Services), Lake Oswego Land Trust, Natural Resources Commission, and neighbors.

Johnson Creek at Leach Botanical Gardens: Removed weedy vegetation and other debris; planted native riparian and wetland vegetation; created a small wetland and swale to filter and slow stormwater runoff from the Leach Botanical Garden parking lot to protect Johnson Creek; and installed an interpretive sign so the project would be used as a demonstration. The site is immediately adjacent to the creek, and the project was conducted as part of the Johnson Creek Corridor Project. Total budget: \$19,000. Greenspaces grant: \$4,650. Partners: *Portland Parks and Recreation, Portland Bureau of Environmental Services, Friends of Leach Garden, Boy Scouts, David Douglas High School, U.S. Forest Service, Eagle Scouts, Girl Scouts, and Fishman Environmental Services.

Fowler School Wetlands Restoration in Tigard: Established an environmental education center at the site by clearing invasive plants; planting native shrubs, trees and wetland vegetation; creating an arboretum-style area, installing bird houses, and creating a "living laboratory" for students and the community. Total budget: \$21,825. Greenspaces grant: \$10,000. Partners: *Fowler Middle School, Tigard Public Schools and the Wetlands Conservancy.

Willamette Park Wetlands: Restored a wetland meadow and pond for wildlife habitat and environmental education. Removed drain tiles and constructed a weir for water control to re-establish a pond at the site. Total budget: \$206,069. Greenspaces grant: \$15,620. Partners: *City of West Linn.

Balch Creek in Forest Park: Improved habitat for wildlife and fish by securing large woody debris in the stream, coordinating clean-up events; stabilizing banks by using erosion control measures; removing invasive plants and replanting native riparian species; and cleaning up illegal dump sites along the creek. Involved at-risk youth in on-the-ground work. Total budget: \$58,592. Greenspaces grant: \$16,000. Partners: *Portland Parks and Recreation, West Multnomah Soil and Water Conservation District, Friends of Trees, Friends of Forest Park and Balch Creek, Oregon Department of Fish and Wildlife and Oregon Department of Agriculture.

Total Funding Requested: \$306,805

Number of Funded Projects: 12

Greenspaces Grant Funding Awarded: \$143,150

Leveraged: \$4.73 local match for every \$1 of Greenspaces grant funding

[Note: A total of \$163,650 was originally awarded to fund 13 projects; 1 project was withdrawn and is not included in the descriptions above.]

1992-93 Restoration Projects

Binford Lake/Butler Creek Greenway: This is the second phase of a grant project funded in 1991-92. Improved the natural resources of the Greenway, including water, native flora and wildlife. Increased the detention capacity of Binford Lake to reduce downstream flooding and erosion along the Greenway. Installed an irrigation system and employed summer youth crews to revegetate the site. Total budget: \$ 192,166. Greenspaces grant: \$ 17,500. Partners: *City of Gresham, Southwest Neighborhood Association, Friends of Trees, Centennial High School, Gresham High School, Urban Streams Council, Eagle Scout Troop 544, Oregon Youth Conservation Corps, and Leach Botanical Garden.

Turner Creek Park: Enhanced upland woodlands in the park to complement the previously restored riparian zone along the creek. Replanted denuded areas with native trees and understory plants; removed invasive non-native plants; cleaned up junk that had been illegally dumped at the site; built a low stone wall to act as a barrier to keep

people out of sensitive areas; built and installed wood duck and bird boxes. Total budget: \$14,850. Greenspaces grant: \$7,050. Partners: *City of Hillsboro Parks Department, Oregon Department of Forestry, Washington County Sheriff's Department, local youth groups, boy and girl scouts and schools.

Jackson Bottom Wetlands in the Tualatin River Basin: This project was funded as another phase of the grant project funded in 1991-92. Removed non-native plants, particularly reed canarygrass, from the site in an attempt to find an effective, cost-effective and permanent eradication method. Planted native wetland plants to increase habitat diversity and value, including an area planted to restore a deschampsia wet prairie plant community. Unfortunately, the site is still dominated by reed canarygrass, but the monitoring data from this project has been used to develop and test new strategies. Total budget: \$21,275. Greenspaces grant: \$10,800. Partners: *Jackson Bottom Wetlands Preserve, Jackson Bottoms Steering Committee, Oregon Graduate Institute, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, City of Hillsboro Planning Department, West Multnomah Soil and Water Conservation District, Unified Sewerage Agency, Friends of Jackson Bottom, Audubon Society of Portland, school groups and other volunteers.

Clackamas River South Shoreline near the Willamette River confluence: Enhanced the river bank on the regional River Resources Museum property. The project involved riparian zone and upland habitat improvement by planting native vegetation and controlling erosion. Total budget: \$46,005. Greenspaces grant: \$17,430. Partners: *John Inskeep Environmental Learning Center, Boy Scouts, Friends of Glanlands, Oregon National Guard Construction Battalion, Stop Oregon Litter and Vandalism, Oregon Department of Fish and Wildlife, Gladstone and Oregon City School Districts, City of Oregon, City of Gladstone, Clackamas County Stormwater Management Program, Columbia River Corrections Facility, Youth Conservation Corps of Oregon, KWJJ, Albertsons, United Grocers, Bud's Towing, Evan's Farms and Nursery and Enviro-Urban Landscapes.

Ball Creek in the drainage basin of Fanno Creek: Enhanced a degraded urban stream in a residential subdivision through stream channel erosion control and stabilization work using rock check dams and vegetation. Installed natural streambed gravel. Removed invasive non-native plants. Planted native vegetation in the riparian corridor. Total budget: \$33,575. Greenspaces grant: \$10,000. Partners: *City of Lake Oswego and the Lake Oswego Land Trust.

Scott Park/Spring Creek: Enhanced a degraded natural area surrounding Spring Creek and a pond adjacent to a library in the City of Milwaukee. Installed erosion control measures, planted native vegetation, improved waterfowl habitat at the pond, and redirected pedestrian access which has damaged the site. Total budget: \$37,640. Greenspaces grant: \$15,000. Partners: *City of Milwaukee, North Clackamas Parks and Recreation District, Milwaukee Boy and Girl Scouts, Milwaukee Junior High, Friends of Kellogg and Mt. Scott Creeks, and the Friends of Ledding Library.

Beggars Tick Marsh: Improved an urban wildlife refuge by creating walking trails to limit and manage pedestrian access in the park, protecting the site from vehicular access and illegal dumping, and restoring wetlands by removing fill material and re-establishing wetland conditions. Fill was placed on upland areas to create viewing areas for the public. Native vegetation was planted throughout the site. Total budget: \$51,999. Greenspaces grant: \$25,845. Partners: *Multnomah County Parks Department and the David Douglas High School Ecology Club.

Stella Olsen Park along Cedar Creek: Enhanced a remnant wetland along the creek. Removed non-native vegetation and revegetated with native plants in the riparian corridor and adjacent to the trails in the park. Purchased and installed bird and bat boxes. At-risk youth from the Washington County Service Corps were employed to assist with this project. Total budget: \$56,630. Greenspaces grant: \$22,500. Partners: *City of Sherwood, Washington County Service Corps, Sherwood School District and Chavez Lumber.

Sandee Palisades Detention Basin: Converted a 1.5 acre neighborhood pocket park from a grassy bowl-shaped stormwater detention area with a concrete trench running through it into a meandering artificial stream surrounded by native vegetation. The project resulted in improved filtration of urban stormwater runoff to protect the Sandy River downstream. The native vegetation supports backyard wildlife habitat and has transformed the area into a much more aesthetically pleasing site. A short trail and bench made of recycled materials were also installed to

improve and manage public use at the park. Total budget: \$29,775. Greenspaces grant: \$13,500. Partners: *City of Troutdale (Parks Department and Public Works), Scout Troop 174, local schools and around 100 neighborhood volunteers.

Mill Creek Corridor: Rehabilitated the riparian corridor and uplands at the site. Performed erosion control work to reduce silt and improve water quality in the stream. This was accomplished by removing non-native species, planting woody native species along the streambanks, and reducing pedestrian use on sensitive areas at the site. Total budget: \$105,399. Greenspaces grant: \$ 15,900. Partners: *Washington State University, Friends of Salmon Creek, Pleasant Valley Middle School, Mt. Vista Homeowner's Association, Washington Department of Fisheries, Lower Columbia Fish Enhancement Group, Bureau of Land Management, and JD White Co., Inc.

Gabriel Park: Converted a mowed grass turf area by planting native vegetation in a forty foot wide zone immediately adjacent to a forested natural area on the south side of the park. This was done in part to create a buffer to limit access into the natural area by hikers, mountain bikers and dogs which had been causing erosion and severe damage to natural vegetation. Temporary fencing was installed to prevent trampling of the newly planted vegetation. Native grasses were also planted in an open meadow portion of the park. Total budget: \$232,660. Greenspaces grant: \$20,000. Partners: *City of Portland Parks and Recreation and Portland Bureau of Environmental Services.

Oaks Bottom Wildlife Refuge: This project was designed to improve site conditions and establish native meadow species on approximately six acres of a former fill area. The project area is on the northwest corner of a former landfill that had been capped with clay soil after it closed. Exotic vegetation that dominated the area was removed, and a mix of topsoil and compost was used to improve the soil quality and growing conditions. Native grasses and forbs were then seeded to create an open meadow habitat. Total budget: 32,451. Greenspaces grant: \$8,000. Partners: *Portland Parks and Recreation, East Multnomah Soil and Water Conservation District, U.S. Soil Conservation Service, Sellwood-Moreland Improvement League, Multnomah County Vector Control, and the Friends of Oaks Bottom Wildlife Refuge.

Total Funding Requested: \$286,548

Number of Funded Projects: 12

Greenspaces Grant Funding Awarded: \$183,525

Leveraged: \$3.66 local match for every \$1 of Greenspaces grant funding.

[Note: A total of \$254,513 was originally awarded to fund 17 projects; 5 projects were withdrawn and are not included in the descriptions above.]

1993-94 Restoration Projects

Beacon Hills Wetlands Park in south Beaverton: Restored degraded wetlands adjacent to Beaverton's Johnson Creek. Planted native trees and grasses in the riparian zone to improve wildlife habitat and water quality. Total budget: \$6,688 Greenspaces grant: \$2,700. Partners: *Tualatin Hills Park and Recreation District (THPRD), Portland State University, Halstead's Arboriculture Consultants and neighbors.

Kelly Creek Greenway: Degraded portions of the Greenway were improved by stabilizing eroding sections of the stream channel to prevent further erosion and sediment discharge. Native vegetation was planted along the creek. The project was designed to improve fish and wildlife habitat and water quality. Total budget: \$36,184 Greenspaces grant: \$10,000. Partners: *City of Gresham Parks and Recreation Division, Northwest Service Academy, Kelly Creek Elementary, Connell Construction and Agro Works.

Oxbow Regional Park: The park is located in east Multnomah County along the Sandy River. A ten acre elk meadow was created within the park to reduce crop damage in nearby agricultural and nursery lands and to add wildlife habitat diversity at the park. Total budget: \$20,000 Greenspaces grant: \$10,000. Partners: *Multnomah

County (Park Services Division and Land Use and Planning Department), Oregon Department of Fish and Wildlife, Oregon Department of Forestry and the State Scenic Waterways Program.

Sunrise Nature Park Pond: Added features to the park to create a more natural environment by maintaining an upland meadow, installing native plantings, and revegetating around a stormwater detention pond to provide some wildlife habitat. Total budget: \$26,720 Greenspaces grant: \$10,000. Partners: *City of Troutdale, EnviroCorps, Friends of Beaver Creek, Cascade Communities, Inc., Columbia Gorge Mall, Reynolds School District and surrounding neighbors.

Forest Park: Remove English ivy and other non-native, invasive plants at two sites within Forest Park where native ground cover had been eliminated and western red cedar and Douglas fir trees were threatened. Native plants were planted in disturbed areas to bring the area back to a more natural state. Total budget: \$ 16,115. Greenspaces grant: \$ 3,450. Partners: *City of Portland Parks and Recreation, Friends of Trees, Friends of Forest Park, Northwest District Association, Forest Park Neighborhood Association, and the Audubon Society of Portland.

Woods Memorial Park: Stabilized eroding streambanks at Woods Creek, a tributary of Fanno Creek which flows into the Tualatin River. Created pools in the creek for fish habitat. Planted native trees and other plants. Total budget: \$11,720. Greenspaces grant: \$ 4,500. Partners: *Southwest Neighborhood Information, Inc., Oregon Youth Conservation Corps, the Boy Scouts and local churches.

Hillendale Park: Created a nature park out of an undeveloped open space that started as a grassy field and a culverted stream and pond. The site is approximately 15 acres, surrounded by residential development. Native shrubs and trees were planted and the water features were improved to provide additional fish and wildlife habitat. Total budget: \$10,250 Greenspaces grant: \$5,000. Partners: *Portland Public Schools, City of Oregon City (Storm and Sanitary Sewer Division and the Parks Department), the Hillendale Neighborhood Group, Crossroads Alternative School, and local Arbor Day volunteers.

Casee Center Wildlife Demonstration Gardens: Created a demonstration garden showing mostly native plants that can be used to support backyard wildlife habitat. The site is strategically located next to an educational center in Battle Ground, Washington. Total budget: \$104,291 Greenspaces grant: \$10,000. Partners: *City of Vancouver Parks and Recreation, NatureScaping, Master Gardeners, Sierra Club, Audubon Society of Vancouver, Boy Scouts and numerous local nurseries.

Headache Creek: The project site is located on public property adjacent to Bagley Park. The creek had been channelized to provide farmland, and unrestricted grazing caused compaction and damaged native plants in the riparian areas and associated wetlands. The site was dominated by a variety of non-native vegetation. Non-native species were removed and replaced with native vegetation. A portion of the wetland was deepened to allow for more water retention and the stream was restored to a more natural meandering pattern. Total budget: \$50,488 Greenspaces grant: \$10,000. Partners: *City of Vancouver Parks and Recreation, NatureScaping SW Washington, Audubon Society of Vancouver, Sierra Club, Master Gardeners, Cub Scout Pack 435, Bagley Downs Neighborhood Association, Shumway Junior High School, Evergreen High School, Columbia River High School and AmeriCorps..

Vancouver Lowlands West of Vancouver Lake: Worked to restore lowland oak forest to a site that had been reduced to a few remaining oak trees and weed-dominated groundcover due to human impacts and grazing. Fencing was installed to eliminate grazing at the site and species that were historically present, including Oregon white oak, black cottonwoods and Oregon ash, were planted. Total budget: \$17,965 Greenspaces grant: \$8,598. Partners: *Washington Department of Wildlife, Michael Servetus Universalist Unitarian Fellowship and citizens.

Butterfly Meadow/Washington State University Campus: A butterfly meadow was created on the campus. The project included the design work, site preparation, removal on non-native species and planting of native vegetation known to attract butterflies. Total budget: \$26,128 Greenspaces grant: \$5,500. Partners: *Washington State University, the Friends of Salmon Creek, AmeriCorps and interested citizens.

Dairy Barn Site and Wetlands/Washington State University Campus: Wetlands on the site were enhanced to improve wildlife habitat and water quality. Exotic species were removed and replaced with native vegetation. Plants were selected with consideration of their value to wildlife and use by Native Americans. Total budget: \$34,800 Greenspaces grant: \$8,000. Partners: *Washington State University, the Friends of Salmon Creek, Friends of Trees, Fort Vancouver High School, and interested citizens.

The Nature Conservancy Seed Project: A source of locally collected seeds was created for use in restoration projects in the Portland/Vancouver metropolitan area. Volunteers were recruited and trained. They collected seeds from 28 plants using best management practices to ensure that local populations were not adversely impacted. Total budget: \$14,000 Greenspaces grant: \$6,075. Partners: *The Nature Conservancy, Berry Botanic Garden, Leach Botanical Garden, City of Hillsboro, Oregon Department of Fish and Wildlife, Oregon State Parks, City of Portland Parks and Recreation and the Washington Department of Wildlife.

Whitaker Ponds: The 21 acre park is located in an otherwise park-deficient part of northeast Portland. The project site had been degraded by grazing which caused soil compaction and invasion by non-native species such as teasel and Himalayan blackberries. After the initial planning and design work, youth from Cascadia Quest representing over a dozen other countries worked with other partners to remove non-native vegetation and replant appropriate native species. Total budget: \$20,200 Greenspaces grant: \$5,000. Partners: *Portland Parks and Recreation, Cascadia Quest, Portland Public School District #1, Urban Streams Council, USDA Forest Service Urban and Community Forestry Program, Piedmont Neighborhood Association, Friends of Trees, Foundation for Global Community, United Nations Association - USA, and Cascadia Native Plant Restoration.

Total Funding Requested: \$114,553

Number of Funded Projects: 14

Greenspaces Grant Funding Awarded: \$100,363

Leveraged: \$3.00 local match for every \$1 of Greenspaces grant funding.

[Note: A total of \$117,303 was originally awarded to fund 16 projects; 2 projects were withdrawn and are not included in the descriptions above.]

1994-95 Restoration Projects

Beaverton Creek Technical Center Park: Enhanced wetlands and natural areas within the park by installing native trees, shrubs and plants, and dead trees/snags to create wildlife habitat. Total budget: \$9,755. Greenspaces grant: \$3,215. Partners: *Tualatin Hills Park and Recreation District.

Jackson Bottom Wetlands Preserve: Restored the Kingfisher Marsh site within Jackson Bottom by purchasing and installing native plants. The youth service corps provided the labor. Total budget: \$31,050 Greenspaces grant: \$5,500. Partners: *City of Hillsboro, Jackson Bottom Wetland Preserve, Cascade Education Corps, Washington County Soil & Water Conservation District, Northwest Service Academy.

Beaver Creek: A section of stream and streambank at Beaver Creek was enhanced by re-contouring the bank, installing native plants, and placing woody debris in the channel to enhance fish habitat. Total budget: \$18,380. Greenspaces grant: \$15,000. Partners: *City of Troutdale, Friends of Beaver Creek and the Oregon Department of Fish and Wildlife.

Burnt Bridge Creek: A section of the stream with virtually no vegetation except for a maintained lawn was planted with native shrubs and trees. Bird and bat boxes were built for placement in the vicinity of the project area. Total budget: \$30,000 Greenspaces grant: \$15,000. Partners: *City of Vancouver and AmeriCorps, Clark County Public Works Drainage Utility.

Fanno Creek: Developed a management plan for the project site and then carried out identified streambank enhancement activities including Himalayan blackberry removal, re-shaping the stream to restore natural meanders, and planting native shrubs and trees. Total budget: \$28,737 Greenspaces grant: \$15,000. Partners: *The Wetlands Conservancy, the Unified Sewerage Agency, Fans of Fanno Creek.

Main City Community Park along Johnson Creek: Stabilized eroding sections of the streambank using bioengineering techniques with native plant materials. Areas were revegetated with native plants to improve wildlife habitat. Storm water runoff was diverted into vegetated swales so that water would be filtered before entering the creek. Total budget: \$39,750. Greenspaces grant: \$15,000. Partners: *City of Gresham, Fishman Environmental Consultants, Gresham Rotary Club, Natural Resource Conservation Service, Brant Construction, Inc..

Lamont Spring and Creek: English Ivy and other nonnative plants were removed. Native shrubs and trees were planted in open and disturbed areas. Logs were strategically placed to redirect pedestrian and biker traffic away from sensitive streambank areas. Total budget: \$18,000. Greenspaces grant: \$7,000. Partners: *Lake Oswego Land Trust.

Total Funding Requested: \$88,081

Number of Funded Projects: 7

Greenspaces Grant Funding Awarded: \$75,715

Leveraged: \$1.32 local match for every \$1 of Greenspaces grant funding.

1995-96 Restoration Projects

Fairview Creek Headwaters: The park contains a 17 acre wetland area that serves as the headwaters of Fairview Creek, and flows towards Johnson Creek as well during high flow periods. An area along the stream dominated by reed canarygrass was revegetated to begin the creation of a diverse overstory canopy composed of black cottonwood, red alder, Oregon ash and a variety of native shrubs. The project will compliment previous restoration activities involving the meandering of a drainage ditch and revegetation. Total budget: \$13,500 Greenspaces grant: \$6,000. Partners: *City of Gresham Department of Environmental Services, EnviroCorps, Natural Resource Conservation Service, the Fairview Creek Watershed Conservation Group, Neighborhood GreenCorps, East Multnomah Soil and Water Conservation District, the Boy Scouts and neighbors.

Urban Wildlife Demonstration Project Phase 2: Created a demonstration area for homeowners to show how to attract wildlife in an urban setting while rehabilitating a degraded three acre upland site. Handicapped accessible pathways and trails were installed to allow viewing of each habitat garden demonstration plot. An informational kiosk was constructed by partners to provide information about the site. Total budget: \$68,800. Greenspaces grant: \$2,900. Partners: *NatureScaping SW Washington, CASEE Center, Vancouver Parks and Recreation, Washington Department of Fish and Wildlife, Audubon Society of Vancouver, Sierra Club, Washington State Native Plant Society, Boy Scouts of America, Battle Ground School District, Washington State University Master Gardeners and Master Composters, Vancouver Hummingbird Club.

Tualatin River Wetlands: Restored a six acre site that had been impacted from use as pasture land into a diverse system of wetlands with associated riparian forest corridors and upland hillsides. The project emphasized education and citizen involvement in the restoration process, utilizing the talents, skills and insight of children and young adults in all phases of project development and implementation. Trees, shrubs and groundcover species were planted to enhance habitat values, exotic plants were removed, areas that were eroding were stabilized with plantings on the river's edge, and minor grading was done to facilitate drainage into and through ponded areas. Total budget: \$31,050. Greenspaces grant: \$12,000. Partners: *City of West Linn Parks and Recreation and local schools.

Hedges Creek Greenway: Wildlife habitat, water quality and aesthetics of the greenway were improved through the removal of non-native plants and re-establishment of native species. The plan called for on-going maintenance to control future invasion of exotic species along the greenway. Total budget: \$34,300. Greenspaces grant: \$10,000.

Partners: *City of Tualatin Parks and Recreation, the Unified Sewerage Agency, Wetlands Conservancy CRUE and Oregon Department of Fish and Wildlife.

Balch Creek: Riparian and fish habitat were enhanced by stabilizing the streambed and banks through strategic hand placement of rocks and logs and revegetating disturbed areas. Areas showed signs of erosion and channel incision from poor stormwater management upland of the site. By providing educational opportunities to other organizations, local jurisdictions and citizens, the project served to demonstrate restoration techniques for sites in environmentally sensitive areas where heavy equipment may cause environmental degradation. Total budget: \$85,615. Greenspaces grant: \$13,000. Partners: *Audubon Society of Portland, City of Portland Bureau of Environmental Services, Aquatic Resource Consultants, Oregon Department of Fish and Wildlife and Friends of Forest Park.

Rosemont Bluff: Improved wildlife habitat and native plant communities by increasing plant diversity and controlling competition from non-native invasive species. The project focused on three areas: revegetating a flat area on the lower portion of the property with mixed deciduous and evergreen trees; restoring a woodland edge zone on the upper portion of site that had been heavily overgrown with blackberries; and introducing a native plant understory throughout existing wooded portions of the site where English ivy had become a problem. Total budget: \$16,520. Greenspaces grant: \$4,950. Partners: *Center Neighborhood Association, East Multnomah Soil and Water Conservation District, and Portland Parks and Recreation.

Cattail Marsh/Fernhill Wetlands: Enhanced the species diversity of the wetlands by adding native plant species. Aggressive cattail and reed canarygrass control measures were used to create space for more desirable plants. Bird, bat and wood duck houses were built and placed to attract a greater diversity of targeted species. Students from Pacific University were involved in planning, implementing and monitoring the project through classes specially designed to use the area for field-based learning. Total budget: \$43,381. Greenspaces grant: \$6,500. Partners: *Pacific University, Tom McCall Elementary School, Forest Grove High School, Unified Sewerage Agency, Oregon Division of State Lands, Fernhill Wetlands Council, City of Forest Grove, Smucker Manufacturing, Inc., IWP Sales and Distribution, Ace Hardware, Copeland Lumber Yards, Inc., Bi-Mart, and Dick's Evergreen Fence and Deck, Inc.

East Delta Park (Phase 1): A 425 foot long by 50 foot wide segment of the riparian zone along the northern most pond located in park was restored. Two ponds exist on the property as remnants of the natural slough environment. Activities involved controlling invasive vegetation, preparing the site and planting it with species that historically composed the communities within the Columbia Slough area, including multi-layered and shade producing canopy trees. The project included on-going maintenance through an establishment period to ensure success. Total budget: \$24,450. Greenspaces grant: \$13,000. Partners: *City of Portland (Parks and Recreation, the Bureau of Environmental Services and the Youth Environmental Action Team), the Wetlands Conservancy CRUE, and EnviroCorps.

Camassia, Little Rock Island, Sandy River Gorge: Habitat restoration occurred at three sites considered to be among the most important in the Metro area for biological diversity. At all three sites, exotic species were removed to eliminate threats to sensitive vegetative communities. Exotics removed included Scot's broom, English ivy, holly and Himalayan blackberry at Camassia; Scot's broom was the dominant non-native at Little Rock Island; and Scot's broom, English ivy and holly were the main targets in the Sandy River Gorge. All removal was done with manual labor using hand tools. Total budget: \$20,136 Greenspaces grant: \$5,000. Partners: *The Nature Conservancy, the Northwest Service Academy and EnviroCorps.

Total Funding Requested: \$100,555

Number of Funded Projects: 9

Greenspaces Grant Funding Awarded: \$73,350

Leveraged: \$3.60 local match for every for every \$1 of Greenspaces grant funding.

[Note: A total of \$80,350 was originally awarded to fund 10 projects; 1 project was withdrawn and is not included in the descriptions above.]

1996-97 Restoration Projects

City of Happy Valley Wildlife Park (Phase 1): The park contains approximately 15 acres of wetlands, 10 acres of upland habitat and the headwaters of Mt. Scott Creek. Historically, the property was drained with tiles and used as pasture land for grazing dairy cattle. This project involved the removal of invasive non-native plants and revegetation of disturbed areas and open pasture land using native riparian and upland species. Piezometers were installed to study the groundwater so that a plan to restore hydrology at the site and bring back the native wetland plant community can be developed. Total budget: \$25,100 Greenspaces grant: \$8,000. Partners: *City of Happy Valley, the Friends of Mt. Scott Creek and local schools and neighbors.

Main City Park: This project was a continuation of a previous Greenspaces grant. This phase of the project involved extensive revegetation and building local support for long-term stewardship of the site. Plantings included deciduous and conifer trees, shrubs and ground covers. Larger plants were used where available to provide immediate visual buffers and to discourage inappropriate foot traffic. Total budget: \$14,200. Greenspaces grant: \$6,500. Partners: *City of Gresham (Parks and Recreation and Department of Environmental Services), Multnomah Education Service District, Gresham Rotary Club, Friends of Trees, the Northwest Service Academy and local residents.

Glenn Otto Community Park, Beaver Creek (Phase 1): Approximately 500 linear feet of riparian area adjacent to Beaver Creek was improved. Himalayan blackberry was removed and replaced with native herbaceous and woody plants to provide fish and wildlife habitat, shade for the creek and other riparian functions. Bioengineering techniques were used on a section of the streambank to address erosion problems. Total budget: \$17,600 Greenspaces grant: \$8,500. Partners: *City of Troutdale Parks and Facilities Division, Friends of Beaver Creek and Sam Barlow High School.

Sandy River Gorge Preserve: This project used a holistic approach for restoring habitat along a 6.5 mile stretch the Sandy River between Oxbow and Dodge Parks. Under the direction of the Nature Conservancy, the Northwest Service Academy lead efforts to enhance fish and wildlife habitat and provide community outreach and public education on appropriate land use strategies and stewardship ethics. A significant portion of the restoration focused on the eradication of non-native plant species. One of the objectives was to draw landowners together into a partnership to develop a collective management strategy on private and public lands throughout the gorge. Total budget: \$60,709. Greenspaces grant: \$14,000. Partners: *The Nature Conservancy, Northwest Service Academy and landowners along the Sandy River.

Tideman-Johnson Park: The canyon section of Johnson Creek located within this heavily used park in southeast Portland has been described as the least urbanized site along the stream west of SE 117th Ave. The overall goal of the project was to improve riparian and in-stream habitat by stabilizing stream banks using bioengineering techniques and restoring native vegetation to riparian and upland areas. Non-native vegetation was replaced with native trees and shrubs to provide structural diversity, stream shade, and more complex fish and wildlife habitat. Total budget: \$28,407. Greenspaces grant: \$9,470. Partners: *Environmental Middle School, Portland Bureau of Environmental Services and EnviroCorps.

Little Wood Rose Nature Park: This 6.5 acre forested park was designated as passive recreation park. In 1993, 38 mature conifers were diagnosed with laminated root rot. Trees at risk of spreading the disease were felled and removed from the park. Pockets of non-native vegetation were removed, and then disturbed and open areas were planted with bare-root trees and shrubs. A native wildflower seed mix was planned for use by hydro-seeding as needed to stabilize steep and erodible slopes. Total budget: \$25,945. Greenspaces grant: \$7,135. Partners: *City of Tualatin Parks and Recreation and the Northwest Service Academy.

Moonshadow Park: This project enhanced fish and wildlife habitat and water quality in and around Ash Creek at Moonshadow Park. Removing invasive plants and replanting with native species returned the riparian corridor to a

more natural condition. Outreach for the project focused on increasing neighborhood understanding of the creek system to build a stewardship ethic for the park and to encourage streamside landowners to use best management practices on their property for a healthy stream. The City had removed large wood from the stream a couple of years prior to the project. Several pieces of woody debris were reintroduced to the channel to dissipate stream energy, reduce down-cutting and improve in-stream habitat. Total budget: \$25,888. Greenspaces grant: \$9,400. Partners: *Tualatin River Watershed Council, Washington County Soil and Water Conservation District, Pacific Habitat Services and neighbors from the surrounding community.

Mt. Scott Creek in North Clackamas Park: This project addressed a degraded section of Mt. Scott Creek that was heavily eroded with collapsing undercut banks due to foot traffic and the lack of vegetation to provide a solid root mass. In addition, a couple of mature existing trees were in danger of being lost and downstream areas were infested with Himalayan blackberry and reed canary grass. The project used bioengineering techniques to stabilize the eroding section of streambank, blackberries were removed, and native riparian vegetation was planted. The plan called for fencing and interpretive signs to protect newly planted areas and increase public awareness about the restoration activities. Total budget: \$17,489. Greenspaces grant: \$7,343. Partners: *North Clackamas Parks and Recreation, Friends of Mt. Scott Creek and Friends of Trees.

East Delta Park (Phase 2): This project was funded to continue a riparian restoration project around the northernmost of two ponds located within East Delta Park. The ponds are located in a more passive area of the park that allow for wildlife viewing and environmental education opportunities. Five hundred feet along the pond were enhanced by removing invasive plant species and revegetating with native species historically found in the Columbia Slough area. Existing non-invasive trees and shrubs were retained. Total budget: \$14,960. Greenspaces grant: \$7,300. Partners: The *City of Portland (Portland Parks and Recreation's Urban Forestry Division, Horticultural Services and the Bureau of Environmental Services) and Multnomah County Drainage District.

South Fork of Whipple Creek: The project area is owned by the school district and is located within walking distance of three public schools. Native plants were added to the understory of a forested area that had been impacted by past grazing practices. Project benefits include aiding in the infiltration of runoff into Whipple Creek, providing greater bank stability and improving habitat. A plan for educating students and the surrounding public was designed to raise awareness about natural greenways and the Whipple Creek watershed. Students and a variety of community and business groups have been targeted to promote long-term stewardship of the creek. Total budget: \$20,890. Greenspaces grant: \$1,895. Partners: *Vancouver School District and the community.

Total Funding Requested: \$201,200

Number of Funded Projects: 10

Greenspaces Grant Funding Awarded: \$79,543

Leveraged: \$2.16 local match for every \$1 of Greenspaces grant funding

[Note: A total of \$88,243 was originally awarded to fund 11 projects; 1 project was withdrawn and is not included in the descriptions above.]

1997-98 Restoration Projects

Engelwood Park: This project, which was identified in a watershed plan developed by the Unified Sewerage Agency, was designed to improve a 500 lineal foot section of Fanno Creek and adjacent wetland and riparian areas. Sections of the streambank were recontoured to reconnect the stream with the floodplain where incision resulted in disconnection. Large woody debris was added to the stream channel and floodplains to add habitat complexity, dissipate stream energy and reduce stream down-cutting. Approximately 2.5 acres were revegetated with native species to diversify an area dominated by reed canarygrass. About an eighth of an acre was revegetated with species targeted to provide native pollinator habitat. Different bioengineering techniques using native plant materials were used to compare methods for controlling reed canarygrass. Total budget: \$47,600. Greenspaces grant: \$12,000. Partners: *Fans of Fanno Creek and the Unified Sewerage Agency.

East Fork Lewis River Oxbow: The project is located along the river on a 371 acre park in Clark County. The site had been denuded of woody vegetation as a result of past grazing practices. This project is considered to be the first phase of many years of restoration. A 75 foot wide by 150 foot long section of the riparian area was planted with native trees and shrubs to provide benefits for wildlife and fish, control erosion from bare banks and provide an effective root structure for retaining soil and streambanks. Total budget: \$22,625. Greenspaces grant: \$10,000. Partners: *Vancouver-Clark Parks and Recreation, Clark County Water Resources, Fish First, Habitat Partners, and AmeriCorps.

Happy Valley Nature Park (Phase 2): This project is the second phase of a multi-year project to enhance and restore 24.5 acres of wetlands at the park that serve as the headwaters of Mt. Scott Creek. Approximately 75% of the project area was covered with non-native invasive plant species. The enhancement involved the removal of invasive species and revegetation with natives in the area that had the highest non-native plant cover and the most stable hydrology. Drain tiles were to be broken to restore natural hydrology to the site, and the conditions were to be monitored to provide information for future enhancement, but unfortunately this portion of the grant project was cancelled to provide a mitigation opportunity for Clackamas County. Total budget: \$19,080 Greenspaces grant: \$4,500. Partners: *City of Happy Valley, the Friends of Mt. Scott Creek and local schools. [WITHDRAWN]

Nofziger Property/Amberwood Park (Phase 1): The project occurred on a newly acquired 21 acre greenspace. It was a former farm site featuring upland pasture and a section of Rock Creek with associated functional floodplains. The project involved the removal of a defunct man-made in-stream crossing, removal of non-native invasive plant species, and revegetation with native riparian vegetation along the stream. A temporary irrigation system was installed to ensure adequate watering during the establishment period. Total budget: \$25,680. Greenspaces grant: \$12,840. Partners: *City of Hillsboro Parks and Recreation, Miller Education Center, the Jackson Bottoms Wetlands Preserve and citizens.

Beaverton Creek: A section of Beaverton Creek was improved by reintroducing native riparian vegetation to diversify an area dominated by reed canary grass. At-risk students that attend the residential boys school researched, designed, implemented and will actively maintain the project. The restoration ties into an environmental education program where the students take water quality measurements on a regular basis through the Student Watershed Research Project (SWRP). The students won an award at a SWRP conference for a poster they developed that describes the linkage between their water quality testing and the restoration project. Total budget: \$11,700. Greenspaces grant: \$3,340. Partners: *Levi Anderson School at St. Mary's Home for Boys, Friends of Trees, the Student Watershed Research Project, Unified Sewerage Agency and the Friends of Beaverton Creek.

Glenn Otto Community Park, Beaver Creek (Phase 2): Himalayan blackberry vines were mechanically removed to release native vegetation and allow for planting of trees and shrubs for stream cover, bank protection and habitat. Western red cedar, Douglas fir, willows and cottonwoods are expected to be the dominant species. In highly erodible areas, fascines were placed to stabilize banks using native willow and cottonwood cuttings. Because large woody debris was lacking in this section of stream, several pieces were placed in the channel and along the floodplain. Total budget: \$24,000. Greenspaces grant: \$12,000. Partners: *City of Troutdale Parks and Facilities Division, Friends of Beaver Creek and the Reynolds School District.

Strawberry Meadows: The project area is located in a 7 acre small canyon downstream of a housing development that was built in the few years prior to this project. In the winter months after the grant was awarded, stormwater runoff from the development during heavy rainfall events caused severe channel incision and siltation that clogged downstream wetlands and headed towards Beaver Creek. That triggered involvement by the City of Troutdale Public Works Department. They reconstructed and armored the small stream so that it would have the capacity and stability to carry future runoff from the development, forever changing the historical characteristic of the spring fed tributary. The grant project was then revised to focus on the area beyond the first 25 feet of the stream, and involved the removal of Himalayan blackberry vines and revegetation with native plants. Because of the extent of disturbance at the site and the difficulty of working within the steeply sloped areas of the canyon, a multi-year effort will be needed to restore the native plant community. Total budget: \$19,320 Greenspaces grant: \$9,660. Partners: *City of Troutdale Parks and Facilities Division, Troutdale Grade School, the Friends of Beaver Creek and Friends of Trees.

Total Funding Requested: \$186,063 for 20 proposals
Number of Funded Projects: 7
Greenspaces Grant Funding Awarded: \$64,340
Leveraged: \$1.64 local match for every \$1 of Greenspaces grant funding

1998-1999 Restoration Projects

Miller Property near Brown's Ferry Park: The park is 8.5 acres adjacent to Brown's Ferry park in Tualatin. Non-native plant species beginning to encroach in the area are Himalayan blackberry and English ivy. These species were removed from areas dominated by native species. Planting was done to expand the zone of native vegetation into a portion of an open area covered in lawn. Total budget: \$30,000. Greenspaces grant: \$10,000. Partners: *City of Tualatin Parks and Recreation Department, SalmonCorps and city volunteers.

Mt. Hood Community College Pond: Kelly Creek, a tributary to Beaver Creek and the Sandy River, runs through the campus of Mount Hood Community College. A 1.63 acre pond located on the campus property was created years ago when a dam was built on the creek. Because development in the watershed resulted in the pond filling in with silt, the City of Gresham and the college entered a partnership to remove the silt down to the originally constructed topography. The City then applied for a grant to create an emergent wetland area at the upper end of the pond. The grant project involved planting the shallow area with native wetland species. Total budget: \$46,700. Greenspaces grant: \$10,000. Partners: *City of Gresham (Department of Environmental Services and Stormwater Division) Mt. Hood Community College and SalmonCorps.

Glenn Otto Community Park, Sandy River: A 1.7 acre riparian area along the Sandy River was enhanced by removing non-native plant species. Native species were planted in bare and disturbed areas. Total budget: \$5,000. Greenspaces grant: \$2,500. Partners: *City of Troutdale Parks and Facilities Division, Reynolds School District and the Friends of Beaver Creek.

Sandy River Delta, Sundial Island Reforestation: The restoration site borders a gallery riparian forest of black cottonwood, willow species and Oregon ash. The project site consists of 13 acres with almost 100% coverage of invasive non-native plant species including Himalayan blackberries, teasel, reed canarygrass and exotic pasture grasses. An estimated density of 680 native trees and shrubs per acre were planted with the assistance of local volunteers. The future goal for the 600 acre property, which is owned by the U.S. Forest Service, is to restore native vegetation to the entire area. Total budget: \$47,820. Greenspaces grant: \$15,840. Partners: *Friends of Trees, U.S. Forest Service, Northwest Power Planning Council, the Portland House of Umoja, EnviroCorps and numerous volunteers.

Springwater Corridor: Six sites along the Springwater Corridor Trail totaling approximately 25 acres were planted with native plant species. The effort was led by a community member and supported by local schools, neighbors, Portland Parks and Recreation and Friends of Trees. The corridor was a rails-to-trails project, so the ground was compacted with a gravelly substrate. Volunteers pre-treated the area by removing invasive plant species, mechanically digging large holes in the compacted ground, and then mixing compost with the soil to improve conditions for plant growth and survival. Total budget: \$41,138. Greenspaces grant: \$7,500. Partners: *Friends of Trees, Portland Parks and Recreation, Oregon Department of Transportation, Clinton-Kelly Elementary School, a local activist that lead the effort and many citizens.

East Delta Park (Phase 3): This project is the third phase of a multi-year effort to enhance two ponds at the park. Work involved removing Himalayan blackberry and other invasive plant species from approximately 750 feet of the bank, installing erosion control fabric and revegetating with riparian species native to the Columbia Slough area. Total budget: \$20,000. Greenspaces grant: \$10,000. Partners: *City of Portland (Parks and Recreation Urban Forestry Division, Horticultural Services and the Bureau of Environmental Services Youth Program) and EnviroCorps.

Zenger Farm: The farm was an agricultural property that was publicly acquired by the City of Portland for open space, a community garden, and as a place for environmental education programs. The property consists of uplands and a large wetland that serves important flood storage functions in the Johnson Creek watershed. The goal of this project was to create a tree and shrub buffer along a portion of the eastern property line and between the wetland and farmed upland. The other goal was to involve Portland State University capstone students in all phases of the process from the design work to implementation. The plan called for adding rock and brush piles in the open upland for reptiles, amphibians and small rodents, in turn providing cover for a variety of species and a prey base for raptors and other predators. Total budget: \$9,300. Greenspaces grant: \$3,000. Partners: *Portland State University Capstone Program, Portland Bureau of Environmental Services, the Urban Bounty Farm, Johnson Creek Watershed Council, and the Environmental Middle School.

Nofziger Property/Amberwood Park (Phase 2): This 21 acre property is part of a contiguous publicly owned greenway along Rock Creek totaling approximately 53 acres. This project involved the enhancement of approximately .5 acres of the riparian zone to extend work supported by a previous Greenspaces grant. Himalayan blackberries were removed from the site, native trees and shrubs were planted in open and disturbed areas and erosion control materials were used as needed to retain soils on site. Students from an alternative high school were instrumental in the on-the-ground work. Total budget: \$20,000. Greenspaces grant: \$10,000. Partners: *City of Hillsboro Parks and Recreation, Miller Education Center, Jackson Bottom Wetlands Preserve, the Unified Sewerage Agency, and the Friends of Trees.

Total Funding Requested: \$133,000 for 11 proposals

Number of Funded Projects: 8

Greenspaces Grant Funding Awarded: \$68,840

Leveraged: \$2.20 local match for every \$1 of Greenspaces grant funding

1999-00 Conservation and Restoration Projects

East Delta Park (Phase 4): This project continues enhancement efforts around two ponds located at the park. Using methods that proved most effective in the previous project phases, another 750 feet of pond bank was restored to a native vegetative community. Invasive species such as morning glory and Himalayan blackberry were removed, and riparian trees and shrubs were planted. Erosion control materials were used as needed to retain soil on site. Total budget: \$25,000. Greenspaces grant: \$12,500. Partners: *City of Portland (Parks and Recreation Urban Forestry Division, Horticultural Services and the Bureau of Environmental Services Youth Program) and EnviroCorps.

Tualatin River National Wildlife Refuge: The project involved the restoration and enhancement of a 7 acre property used for agriculture and grazing before being acquired for the refuge. Work was broken into three components: 1) restoring five-acres of oak savanna habitat by reestablishing native grasses, forbs and Oregon white oak; 2) planting a vegetative buffer to minimize the visual impact of a neighboring auto recycling yard; and 3) planting riparian species to enhance wildlife habitat around an existing man-made pond. Extensive field preparation was needed to suppress weedy pasture plants. Total budget: \$23,325. Greenspaces grant: \$11,243. Partners: The *Friends of Trees, U.S. Fish and Wildlife Service, Tualatin Riverkeepers, Friends of the Refuge, and local volunteers.

Noble Woods Park: The goal of this project was to restore a transitional edge between a forest and a maintained grassy area to enhance habitat for native pollinators and various small birds and animals. In addition to plantings, habitat structures were installed, including boulders for basking, partially buried logs and other woody debris, and open bare areas with sand or exposed earth. The open areas were designed for use as nest sites by some insects, and as mineral licks and dust bath areas for birds and small animals. The project is within an existing nature park and serves as a demonstration site for environmental education. Total budget: \$10,000. Greenspaces grant: \$5,000. Partners: *City of Hillsboro Parks and Recreation, Miller Education Center, Hillsboro Rotary Club, Tualatin Valley

Garden Club members, girl scouts, boy scouts, Washington County Juvenile Crew, Centro Cultural, Tualatin Riverkeepers, Century High School student, Xerces Society, and the National Wildlife Federation.

Protection is Cheaper than Restoration, Control of Habitat Modifying Weeds (Phase 1): This project focused on eradicating noxious weeds from three targeted areas, and educating the public about the issues and solutions for a long-term fix. The largest area addressed was the Sandy River basin. Work to remove Scot's broom, Himalayan blackberry and other invasives in the area were continued, but a newly discovered threat to the basin, Japanese knotweed, was the focus as it was poised to become a major weed problem in the watershed by aggressively occupying riparian areas and spreading prolifically, permanently altering streambanks and floodplains. The second site addressed was Camassia, a Nature Conservancy preserve on the Willamette River where English ivy and Scot's broom were the targeted species for removal. The third site was Little Rock Island in the Willamette River, where 40 acres of Scot's broom were to be removed. Total budget: \$151,270. Greenspaces grant: \$19,810. Partners: *The Nature Conservancy, Northwest Service Academy, the Bureau of Land Management, the Sandy River Basin Watershed Council, Metro and numerous volunteers.

Total Funding Requested: \$96,000 for 6 proposals

Number of Funded Projects: 4

Greenspaces Grant Funding Awarded: \$48,553

Leveraged: \$3.32 local match for every \$1 of Greenspaces grant funding

2000-01 Restoration Projects

OMSI-Springwater Corridor Revegetation (Phase 1): This project is located along the Willamette River in southeast Portland along approximately 600 feet of a new section of the Springwater Corridor Trail. This project coincides with a rails-with-trails project. The trail is to be constructed adjacent to an existing railroad track in the near future. On-the-ground work covered by the grant involves improving native vegetation within the railroad right-of-way next to the proposed trail by clearing 14.5 acres of invasive non-native plants, seeding 10 acres with native grasses and herbaceous species, and planting native trees and shrubs on 2 acres. This is the first phase of a project that is expected to take several years to complete. Total budget: \$104,000. Greenspaces grant: \$20,000. Partners: *City of Portland Parks and Recreation, Bureau of Environmental Services, Portland State University, Friends of Trees, Friends of Oaks Bottoms, Cleveland High School and the Brooklyn Neighborhood Association.

East Delta Park (Phase 5): This project is a continuation of riparian revegetation efforts along a remnant section of the Columbia Slough. The site is a relatively secluded area within a heavily used urban park. On-the-ground work for this phase of the project involved the removal of invasive non-native species (primarily Himalayan blackberry and morning glory) on a new 750 foot by 50 foot section of bank, revegetation with native species, and installation of erosion control materials and mulch on the banks and around newly installed plants. Heavy equipment and manual labor were used to remove the invasive plants. Total budget: \$36,265. Greenspaces grant: \$17,000. Partners: *City of Portland Parks and Recreation, Portland Parks Horticultural Services, EnviroCorps, Friends of Trees and Oregon State University's Inner City Youth Institute.

Protection is Still Cheaper than Restoration, Control of Habitat Modifying Weeds (Phase 2): This project continued efforts to eradicate noxious weeds from the Sandy River watershed, Camassia preserve, and Little Rock Island in the Willamette River. Activities included educating the public about the issues and involving them in solutions for a long-term fix. Invasive non-native species removed included Scot's broom, Himalayan blackberry, Japanese knotweed, and English ivy. Total budget: \$60,000. Greenspaces grant: \$19,977. Partners: *The Nature Conservancy, Northwest Service Academy, the Bureau of Land Management, the Sandy River Basin Watershed Council, Metro, Multnomah Youth Corps, Salmon Corps, Sprngdale Job Corps, City of Troutdale, Multnomah and Clackamas Counties, Oregon Department of Agriculture local weed boards, Oregon State Parks, Oregon Watershed Enhancement Board, Portland Water Bureau, Portland General Electric, U.S. Forest Service Zig-Zag Ranger District, Blue Sky Rafting, over 30 private landowners and numerous volunteers.

Cornelius/Steamboat Park: The project site is located within a .85 acre pocket park in Cornelius, Oregon that borders the Tualatin River for approximately 430 feet. On-the-ground work involved the maintenance of areas where invasive non-native species have been removed, and disturbed and open areas were revegetated with native plants in the riparian zone and floodplain. Plant replacement was planned to occur as needed ensure revegetation success. Native vegetation was watered during the plant establishment period by tapping into irrigation lines installed on the site for landscaping around a newly constructed parking area. The total project site is approximately .75 acres. Total budget: \$32,160. Greenspaces grant: \$5,472. Partners: *City of Cornelius, Unified Sewerage Agency, SOLV, and Oregon Department of Forestry.

Hillsboro/Drake Lake Park: The project is located on a newly acquired 20-acre greenspace in Hillsboro, Oregon that was formerly used as a pasture for a hobby farm. The park contains the confluence of Dawson and Rock Creeks, and approximately half of the area lies within the 100-year floodplain. Portions of the site are wooded, although most is open and covered with a variety of non-native pasture grasses. Surrounding areas are rapidly urbanizing, with new residential developments located immediately adjacent to the park. Project activities involve the manual removal of invasive non-native species and revegetation with natives at two sites within the park totaling 1.3 acres. One site is along Rock Creek in an area approximately 1,200 feet long by 50 feet wide, and the other is around a wetland that appears to have been excavated for livestock watering in an area about 100 feet long by 25 feet wide. A temporary underground irrigation line was installed to water the plants through the establishment period. Invasive species will be suppressed by mowing and by placing weed-block fabric and mulch around the plants. Total budget: \$40,000. Greenspaces grant: \$19,900. Partners: *City of Hillsboro, SOLV, Intel, Miller Education Center and Unified Sewerage Agency.

Canby Community Park: This project is located within the Canby Community Park in Canby, Oregon. The park includes a section of a small unnamed tributary at its confluence with the Molalla River. A retention structure built years ago across the stream has resulted in the creation of a pond. The pond is stocked with rainbow trout annually each spring by the Oregon Department of Fish and Wildlife for community fishing events. The pond outfall is a culvert that goes under a road that leads into the park, and has a drop of approximately 6-8 feet in height that currently blocks fish passage into the tributary stream from the Molalla River. Project activities funded by the grant involve the manual removal of invasive non-native species and revegetation with natives at two riparian sites totaling approximately .25 acres along the tributary. One of the goals of the project is to build public awareness about natural resources at the park by involving and educating the community, local schools and businesses. It is hoped that this project will build public support for additional fish and wildlife habitat enhancement work at the park, such as a project to reduce the water quality impacts associated with the pond. Total budget: \$56,348. Greenspaces grant: \$14,500. Partners: *City of Canby Parks and Recreation Services, Canby School District, Eccles Elementary School, Oregon Division of State Lands and community volunteers.

Deer Creek: The Deer Creek project site is located in Clackamas County, Oregon near the Clackamas Town Center. A 465-foot section of Deer Creek, which is a tributary to Mt. Scott Creek, runs through the natural area. An Oregon Department of Fish and Wildlife (ODFW) survey indicated that the stream lacks complexity and a healthy riparian zone. Water Environment Services, the division of Clackamas County that manages the property, cleared Himalayan blackberry and trash off of the site and placed large woody debris in the creek with ODFW in July 2000. The Greenspaces grant was used to continue work at the site by revegetating the area with native plants. Some mature trees occur on the site, but there was very little understory vegetation. Trees and shrubs were planted on approximately 1.5 acres that had been overwhelmed by the highly invasive blackberries and trash before removal by the County. A watering truck is used to irrigate the plants during the establishment period, and corrections crews will be used to manually remove invasive species as needed to maintain the site. Total budget: \$28,200. Greenspaces grant: \$11,800. Partners: *Clackamas County Water Environment Services, Friends of Trees, Clackamas County Corrections Crews, and community volunteers.

Trillium Creek: The project site is on tax lots dedicated to Clackamas County during the initial development of a residential subdivision. Local regulations require the protection of 25 foot buffers on both sides of the stream. Activities allowed in the buffer are limited to environmental enhancement; no trails or ornamental vegetation (i.e., yards) are permitted. Trillium Creek is a small stream, approximately a mile in length that drains into the Clackamas River. It is intermittent in the project area, and due to development, it is now partially fed by stormwater runoff

treated in a detention pond located at the upstream end of the tax lot. The riparian area is currently dominated by lawn grasses with some Himalayan blackberry invasion. The grant project involves restoring native vegetation along both sides (totaling a 50 foot wide corridor) of a 275 feet section of stream. Volunteers will install the plants and conduct watering events in the summer until plants become established. Corrections crews will remove invasive species as needed to maintain the site using hand tools. Total budget: \$8,000. Greenspaces grant: \$4,000. Partners: *Clackamas County Water Environment Services, Friends of Trees, SOLV Team Up! and community volunteers.

Total Funding Requested: \$133,349 for 10 proposals

Number of Funded Projects: 8

Greenspaces Grant Funding Awarded: \$112,649

Leveraged: \$2.24 local match for every \$1 of Greenspaces grant funding

2001-02 Conservation and Restoration Projects

[**Note:** The “Conservation” project category was added to this grant program in 2001.]

Three Rivers Strategic Conservation Planning: Three Rivers Land Conservancy (TRLC), the only non-profit land trust of its kind focused on preserving a wide range of open spaces in the Portland metropolitan region, embarked on a six-month planning process to create a 3-year agenda. TRLC staff and board members completed an effort to clarify their organization’s vision, mission and values to set the stage for this project. Using their clarified mission, the aim of this effort is to develop a strategy to identify how, why and where they should protect land, with a focus on fish and wildlife habitat priorities that will supplement and compliment regional and local acquisition and natural resource protection efforts. The strategy will allow TRLC to pro-actively seek properties with significant ecological and social values, rather than operating in a reactive, opportunistic-focused mode. Total budget: \$36,500. Greenspaces grant: \$10,000. Partners: *Three Rivers Land Conservancy staff and board members, Tryon Creek State Park, Metro, U.S. Fish and Wildlife Service, and interested citizens.

Gresham Woods Revegetation: Gresham Woods is a 71-acre public property managed by the City of Gresham that contains 2 miles of Johnson Creek. Historic negative impacts to the site include logging (about 60 years ago) and encroachment of aggressive non-native vegetation, resulting in degraded vegetative communities and reduced habitat values. Reference plant communities including stands of ash/willow (*Fraxinus latifolia/Salix lasiandra*), cottonwood (*Populus trichocarpa*), mixed conifer-deciduous, wet meadow, and wetland shrub-scrub habitats serve as models for developing the revegetation plan. The City of Portland’s Watershed Revegetation Program is working in partnership with the City of Gresham and the community to enhance at least 20 contiguous riparian and upland acres of the site by removing and reducing invasive non-native species including Himalayan blackberry (*Rubus discolor*), reed canarygrass (*Phalaris arundinaceae*), and non-native pasture grasses. Disturbed and open areas will be revegetated with native species. Total budget: \$104,000. Greenspaces grant: \$40,000. Partners: *City of Portland’s Watershed Revegetation Program (Environmental Services), the City of Gresham, Johnson Creek Watershed Council, Friends of Trees and numerous volunteers.

PSU Determinants of Species Richness: Portland State University is studying the diversity and abundance of terrestrial vertebrates (i.e., birds, mammals, amphibians and reptiles) at Tryon Creek State Park, its satellite greenspaces and other natural areas in the metropolitan region. Goals include: 1) determining if avian diversity can act as a reliable measure of a habitat’s biological integrity and serve as an indicator of diversity for all vertebrates, and 2) to evaluate how features of the surrounding landscape (e.g., residential development, tree cover), macro-habitat (e.g., size, shape, and isolation of fragments), and micro-habitat (e.g., internal vegetation structure) affect vertebrate communities. Data about landscape features, macro-habitat, and micro-habitat variables will be collected and census techniques will be used to quantify the abundance of species studied. Wildlife censuses will involve methods including point counts and mist netting for birds; live-trapping, setting up infrared-triggered cameras, and recording signs of activity for mammals; and setting up and monitoring artificial cover (wooden boards) for amphibians and reptiles, listening for calling male frogs, and checking potential breeding pools for the presence of amphibian egg masses. Permanent census plots will be established for future study. Total budget: \$90,100.

Greenspaces grant: \$34,345. Partners: *Portland State University, the Friends of Tryon Creek, Metro Parks and Greenspaces, Metro Planning Department, Oregon Parks and Recreation, and Tualatin Hills Nature Park.

Newell Creek Restoration and Management Strategy: The John Inskeep Environmental Learning Center is coordinating activities of students and professors from three universities in their efforts to conduct a watershed assessment, and to then to develop a management and restoration strategy for the Newell Creek watershed. The assessment will reference existing data, identify data gaps, and prioritize future data collection needs. It will identify key areas and issues of concern, and assess hydrology; soils and geology; forest condition, successional patterns and invasive species; terrestrial and aquatic habitat; land ownership and use; scenic quality; and human access. Although much of this work will be classroom-based, field visits will be made to familiarize those involved in the project with the watershed, and as time allows, students may collect data in the field to fill information gaps that are identified as they produce the watershed assessment. Data collection may include vegetative surveys, an inventory of stormwater outfall pipes, water quality monitoring, an assessment of physical stream habitat, and/or other related environmental or land use conditions that may be affecting watershed health. The entire effort is planned to include several classes over an 18-month period. Total budget: \$65,885. Greenspaces grant: \$21,850. Partners: *John Inskeep Environmental Learning Center, Oregon State University, University of Oregon, Portland State University, City of Oregon City, Oregon Department of Fish and Wildlife, Department of Environmental Quality, Clackamas County Roads, Oregon Department of Transportation, Clackamas Community College, Metro, and the U.S. Fish and Wildlife Service.

Raindrops to Refuge: The City of Sherwood is the fastest growing city in Oregon, experiencing a 281% increase from 1991 through 2001. The City of Sherwood and local partners developed the Raindrops to Refuge program (R2R) to meet the "Environment and Open Spaces" goals of the Sherwood Sustainability Initiative, a multi-faceted community design strategy and vision developed for the City of Sherwood in 1995. The vision behind the R2R component of the initiative is to ensure the preservation of natural areas within the City of Sherwood and surrounding areas for the benefit of fish, wildlife and the community by developing an overall strategy to guide and coordinate natural resource conservation, habitat restoration, environmental education and community outreach efforts. Goals include: 1) gathering and analyzing information to identify and prioritize environmental issues and data gaps, 3) developing recommendations and strategies for improving watershed health, 3) identifying local assets and programs to address key watershed issues, and 4) promoting activities, seeking funding, creating partnerships and recruiting community involvement to address identified issues and needs. In October 2002, R2R received an award from the Tualatin River Watershed Council and Washington County Soil and Water Conservation District for "outstanding accomplishments in watershed stewardship" and "because the group has done an amazing amount of work for the first year and offers a promising model for action on a scale that is accessible to local residents." Another group, the Tualatin Riverkeepers, recently selected R2R as the winner of their 2003 Fifth Annual Community Group Green Heron Award for outstanding efforts 'to inspire, educate, and facilitate community actions to assess, restore and preserve the ecological health of Sherwood's three watersheds' in the Tualatin Basin" and "for significant efforts to educate the public; to bring together new partnerships; and to provide a model for other communities that would like to live more sustainably." In addition to the group award, Janet Bechtold won the Individual Green Heron Award for her work on R2R, and two other R2R members were nominated. Total budget: \$173,646. Greenspaces grant: \$40,000. Partners: *City of Sherwood, Sherwood School District, Sherwood Schools, Sherwood Sustainable Education Initiative, Sherwood Institute for Community Asset Development, Institute of Portland Metropolitan Studies, Audubon Society of Portland, Tualatin Riverkeepers, Clean Water Services, Metro, Three Rivers Land Conservancy, Friends of the Tualatin River National Wildlife Refuge, U.S. Fish and Wildlife Service, and interested local residents.

OMSI-Springwater Corridor Revegetation (Phase 2): This is the continuation of a project started in 2000 to restore native vegetation along a new section of the Springwater Corridor Trail, a rails-with-trails project. The site is located immediately east of the Willamette River in southeast Portland. In phase 1 of the project, approximately 14.5 acres was prepared for planting, and revegetation was initiated on 2 of those acres. Site preparation included clearing the area of Scot's broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus discolor*) and other invasive non-native plant species. Phase 2 involves a second year of site preparation work and revegetation of the 14-acre area over a three year period. The dimensions of the project area, which is within the rail line right-of-way, are 12,600 feet long with an average width of 50 feet. Proposed site preparation activities include flail mowing,

conservative herbicide applications, and soil mulching followed by ripping and cultivation to incorporate the mulch and reduce compaction. The site will be seeded with native grasses and wildflowers to establish cover and improve the native plant community, and then the site will be planted with native shrubs and trees. Volunteers will assist with hand weeding and re-mulching the site as needed, and the site will be watered in dry months until plantings become established. Total budget: \$63,000. Greenspaces grant: \$20,000. Partners: *City of Portland Parks and Recreation, Friends of Oaks Bottom, Friends of Trees, Winterhaven Middle School, Cleveland High School, Environmental Middle School, Portland State University, and the City of Portland's Bureau of Environmental Services Lower Willamette Watershed Basin.

Protection is Still Cheaper than Restoration, Control of Habitat Modifying Weeds (Phase 3): The Nature Conservancy is continuing a multi-year project involving the removal of invasive, non-native species in Multnomah and Clackamas counties in the Sandy River Gorge and its tributaries, and in the Willamette Narrows (including Little Rock Island in the Willamette River and Camassia preserve). The project areas contain some of the best remaining examples of native oak/madrone savannas and forests (Willamette Narrows), diverse Douglas fir-hemlock-cedar forest types (both areas), low elevation old-growth forest (Sandy), natural meadows (both areas) and relatively intact riparian areas and floodplains (both areas) in the Portland metropolitan region. Invasive species targeted for removal are the habitat degrading Japanese knotweed, English ivy, Himalayan blackberry and Scots broom. Nature Conservancy staff, a highly trained 4-person field crew, AmeriCorps members, Multnomah Youth Corps, and citizen volunteers have worked for several years to continue manual invasive species control efforts by hand cutting and digging. However, due to the scale of the problem, aggressive nature of the target species, and difficult access into project sites, the conservative use of herbicides is included in their control methods. The effectiveness of various removal methods are being determined through monitoring and assessment. The Nature Conservancy is using this information to develop Best Management Practices for their own use, and to share with other restoration practitioners. Total budget: \$110,000. Greenspaces grant: \$20,289 (plus an additional \$19,711 allocated to the project in 2002). Partners: *The Nature Conservancy of Oregon, Blue Sky Rafting, Bureau of Land Management, City of Portland, Clackamas County, For the Sake of the Salmon, Metro, Multnomah County, Multnomah Youth Corps, Northwest Service Academy, Oregon Department of Agriculture, Oregon Watershed Enhancement Board, Sandy River Basin Watershed Council, SOLV, U.S. Bank, U.S. Forest Service, various school districts, youth/service organizations, and citizens.

Validating Metro's GIS Model: Metro's Planning Department hired a four-member seasonal crew to conduct upland and riparian habitat assessments and aquatic macroinvertebrate sampling on properties primarily owned and managed by local park providers in Clackamas, Multnomah and Washington Counties in Oregon. Survey data will be used to refine Geographic Information System models designed to predict: 1) the current status of ecological functions and values within riparian corridors, and 2) wildlife habitat values of upland and riparian natural areas within the Metro region. Approximately 50 stream sites will be surveyed to conduct rapid stream assessments and collect aquatic macroinvertebrates to establish a Benthic Index of Biological Integrity (B-IBI). The second survey component involves conducting wildlife habitat assessments by visually characterizing physical habitat quality at approximately 60 sites. Total budget: \$83,246. Greenspaces grant: \$38,516. Partners: *Metro Planning Department, Metro Parks and Greenspaces, Portland State University, Oregon Department of Fish and Wildlife, Environmental Protection Agency, Department of Environmental Quality, Clean Water Services, various local parks departments, agencies, and organizations.

Total Funding Requested: \$804,758 for 30 proposals

Number of Funded Projects: 8

Greenspaces Grant Funding Awarded: \$225,000

Leveraged: \$1.98 local match for every \$1 of Greenspaces grant funding

2002-03 Conservation and Restoration Projects

Protection is Still Cheaper than Restoration, Control of Habitat Modifying Weeds (Phase 3): The Nature Conservancy is continuing a multi-year project involving the removal of invasive, non-native species in Multnomah

and Clackamas counties in the Sandy River Gorge and its tributaries, in the Willamette Narrows (including Little Rock Island in the Willamette River and Camassia preserve). See description provided for this project in 2001. In 2002, the remainder of the funding requested in 2001 was awarded to the project. [Total budget: \$110,000. 2002 Greenspaces grant: \$19,711 plus the 2001 grant award of \$20,289.]

Bat Survey of Metropolitan Region Riparian Sites: To effectively manage bat populations and protect roosts and foraging areas, information about the species present, reproductive activity, and knowledge of roost sites and roost preferences is needed. Within the Portland metropolitan region, little has been known about the presence, distribution and abundance of resident and migratory bats, even though six species considered to be Federal Species of Concern and at-risk by the State of Oregon may occur in the area. The goal of this project is to fill this data void through a two-year survey of bat distribution and abundance in relation to habitat variables (vegetative type and condition), levels of urbanization, insect availability, and bird diversity. Project biologists and volunteers will sample for free flying bats using mist nets and echolocation detectors, sample at potential night roosts, and survey for maternity colonies located in human structures. Data will be tabulated, analyzed, mapped, and made available to natural resource agencies, local governments, conservation groups, the Oregon Natural Heritage Program, and the Pacific Northwest Bat Research Team for use in conservation efforts. Total budget: \$108,146. Greenspaces grant: \$40,000. Partners: *Mt. Hood Community College professors and students, Pacific Northwest Research Team, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, citizen volunteers and local parks providers.

Open Meadows burn site, Willamette Bluffs: In 2001, an accidental burn affected approximately 40 acres of land known as Willamette Bluffs on the east bank of the Willamette River in north Portland. While the burn initially alarmed the public and put the land at risk of significant erosion, it also created an opportunity for re-establishing native vegetation in an area where invasive species have persisted for many years. This project will further on-going efforts to preserve and enhance remnant stands of Oregon white oak and madrone which have been historically present along the bluffs and are one of the most at-risk habitat types that has significantly declined in the Willamette Valley. Total budget: \$47,988. Greenspaces grant: \$23,141. Partners: The City of Portland's *Environmental Services Bureau, Fire Bureau, and Office of Planning and Development Review; Metro; Open Meadows School CRUE (Corps Restoring the Urban Environment) Program, and bluff landowners.

Employing Natural Disturbance Regimes: Metro's Regional Parks and Greenspaces Department is working on natural disturbance-based restoration projects at four open space properties totaling approximately 900 acres: Multnomah Channel, Coffee Lake Bottoms, Cooper Mountain, and River Island. Management at these sites is focused on restoring rare ecotypes by mimicking natural disturbance regimes such as fire and flooding on approximately 275 acres. Grant funds will be used to purchase plant materials and cover contracted services for monitoring and labor. Total budget: \$105,000. Greenspaces grant: \$40,000. Partners: *Metro Parks and Greenspaces, The Nature Conservancy of Oregon, the City of Portland's Bureau of Environmental Services, Tualatin Valley Fire District, Clackamas County Fire District, Ducks Unlimited, Natural Resources Conservation Service, Oregon Department of Fish and Wildlife, Portland State University, Oregon State University, and volunteers.

Analysis of Vehicular Incidents: Metro will work with other partners to gather and analyze existing data regarding wildlife-vehicular incidents in order to identify trends and patterns in wildlife hazard areas and relate this information to urban growth in the Portland metropolitan region. Specific goals of the project are to: 1) document wildlife-related vehicular accidents and determine the species most commonly impacted; 2) identify hot spots of existing wildlife-traffic collisions; and 3) disseminate and share data and analytical results with regional and local transportation planners responsible for planning, funding and building transportation projects with the aim of reducing and avoiding wildlife hazards. Total budget: \$23,530. Greenspaces grant: \$7,215. Partners: Metro's *Parks and Greenspaces, Transportation, and GIS Departments; Portland State University professors and a graduate student; the Audubon Society of Portland's Wildlife Care Center; the Oregon Department of Fish and Wildlife; and state and local transportation agencies.

Land Conservation Plan Implementation: This project will begin to implement a Conservation Plan completed in early 2002 to guide and focus the Three Rivers Land Conservancy's work in the Portland metropolitan region over the next three years. This grant will specifically be used to support a new Property Specialist staff position tasked

with identifying and initiating outreach and conservation strategies in newly identified focus areas, and initiating protection efforts on key parcels through conservation easements and acquisitions from willing landowners. Total budget: \$101,770. Greenspaces grant: \$20,203. Partners: The *Three Rivers Land Conservancy, Friends of Forest Park, Friends of Tryon Creek, Friends of Terwilliger, Johnson Creek Watershed Council, Clackamas River Basin Watershed Council, City of Portland, City of Lake Oswego, City of Wilsonville, Clackamas County, Portland General Electric, Clean Water Services, Raindrops to Refuge, and various citizen participation organizations and neighborhood associations.

Boeckman Creek Riparian Area Project: The City of Wilsonville is implementing this project to enhance upland and riparian areas on a parcel of public property adjacent to Boeckman Creek, a tributary to the Willamette River. The project will cover an area approximately 800 feet in length by a variable 250 to 300 feet in width (approximately 4.5 acres). Activities include removing invasive plant species (including Himalayan blackberry, English ivy, Japanese knotweed, and reed canarygrass), planting native trees, shrubs and wetland plants to enhance habitat structure and diversity, cleaning up trash and debris, establishing working partnerships with volunteer organizations and school groups, and developing a long-term maintenance and monitoring program for the site. The creek's entire riparian corridor is protected through a Goal 5 resource overlay district adopted by the City of Wilsonville in 2001. Total budget: \$29,813. Greenspaces grant: \$7,575. Partners: Several *City of Wilsonville departments (Community Development, Operations, Volunteer Services, and SMART Transit), students from the West Linn-Wilsonville school district, CREST (Center for Research in Environmental Sciences and Technologies), the Friends of Goal Five, and community volunteers.

Assessment of Habitat Quality & Fish Distribution: Clackamas County, Water Environment Services (WES) will work with the Oregon Department of Fish and Wildlife to: 1) evaluate the abundance and distribution of fish species in urban streams within two Clackamas County special districts, 2) conduct surveys to evaluate the effects of several previous habitat restoration projects, and 3) conduct aquatic habitat surveys within Clackamas County tributaries of the Tualatin River. WES provides stormwater management services and has jurisdiction over 22 urban tributaries to the Tualatin, Clackamas and Willamette Rivers. The streams have been sampled monthly for water quality parameters since 1993, and some habitat quality and fish survey work has been conducted. The biological surveys will provide additional information for the purpose of guiding and improving stormwater management practices to protect and restore stream health. Total budget: \$66,962. Greenspaces grant: \$20,000. Partners: *Clackamas County Service District #1, the Oregon Department of Fish and Wildlife, Clean Water Services, the Friends of Kellogg Creek, and the Friends of Mt. Scott Creek.

Assessment of Macroinvertebrate Communities: Clackamas County, Water Environment Services (WES) is conducting a macroinvertebrate survey and analysis to supplement water chemistry data that has been collected since 1993. The biological data will provide WES with more insight about the biological conditions of the streams under their jurisdiction, as macroinvertebrate communities can be a useful tool for measuring and monitoring the effects of environmental stressors including excess nutrients, toxic chemicals, high temperatures, sediment loading, and other variables. WES provides stormwater management services and has jurisdiction over 22 urban tributaries to the Tualatin, Clackamas and Willamette Rivers. The macroinvertebrate surveys and analyses will provide WES with additional information for the purpose of guiding and improving stormwater management practices to protect and restore stream health. Total budget: \$26,000. Greenspaces grant: \$12,000. Partners: *Clackamas County Service District #1, the Oregon Department of Fish and Wildlife, Clean Water Services, the Friends of Kellogg Creek, and the Friends of Mt. Scott Creek.

Upper Tualatin Fish and Wildlife Enhancement: The Tualatin Riverkeepers is coordinating a salmon carcass placement project to restore marine driven nutrients to 3-6 miles of salmonid spawning reaches on the main stem of the Tualatin River and two of its tributaries: Dairy Creek and Gales Creek. The primary goal is to enhance salmonid populations by providing juveniles with a source of marine driven nutrients and food chain support, thus increasing their growth and survival rates. Nutrient enrichment is also expected to enhance the overall ecology of the upper Tualatin by increasing fish and wildlife productivity. The project will be monitored in order to assess the effectiveness of salmon carcass placement as a restoration strategy. In addition, this project will provide an avenue for developing environmental leadership within the rural community by increasing citizen involvement in enhancement activities and awareness of the salmonid life cycle. Total budget: \$23,200. Greenspaces grant:

\$9,655. Partners: The *Tualatin Riverkeepers, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Department of Forestry, Washington County Soil and Water Conservation District, Northwest Steelheaders, Trout Unlimited, local service clubs, scouts, streamside landowners and other volunteers.

Urban Natural Resource Directory: The Audubon Society of Portland is updating an Urban Natural Resource Directory (Directory) originally produced in 1990 and last printed in 1996. The Directory is designed to support efforts of citizens and agencies in the Portland-Vancouver metropolitan region to protect and restore natural resources. The primary objective of the Directory is to help connect the reader with the appropriate citizen group or agency to discuss a particular issue by providing a comprehensive listing of pertinent public and private organizations, and information about relevant projects, programs, resources, regulations, contacts, and "how to" information. Total budget: \$15,000 [\$8,000 plus in-kind contributions of staff time]. Greenspaces grant: \$500. Partners: The *Audubon Society of Portland, Portland General Electric, City of Portland Bureau of Environmental Services, Metro Regional Parks and Greenspaces, Clean Water Services, U.S. Fish and Wildlife Service, Metro Data Resource Center, and Clark County Department of Assessment and GIS support.

Total Funding Requested: \$971,482 for 38 proposals

Number of Funded Projects: 11

Greenspaces Grant Funding Awarded: \$200,000

Leveraged: \$1.89 local match for every \$1 of Greenspaces grant funding

2003-04 Conservation and Restoration Projects

Camassia Natural Area Restoration Project: This project addresses the need to develop effective English ivy and Himalayan blackberry removal methods, and public outreach to raise awareness of the threats these noxious weeds pose to ecosystem functions in the Portland/Vancouver metropolitan region and beyond. Work will occur at the Camassia Natural Area, one of the most important extant examples of oak woodland habitat in the Metro area. Based on the results from earlier phases of this project, the approaches being tested show promise for widespread application by restoration practitioners and land stewards. Expected outcomes from this project include (a) the treatment and enhancement of approximately 15 acres, (b) the establishment of statistically valid study plots, (c) reaching 200 or more individuals to engage them in the project and educate them about its ecological benefits, and (d) producing written summaries to share information about the biology and effectiveness of control methods for Japanese knotweed, Himalayan blackberry, English ivy, and Scot's broom. Total budget: \$32,345. Greenspaces grant: \$15,090. Partners: *The Nature Conservancy of Oregon, Northwest Service Academy, Project YESS, Multnomah Youth Corps, Woftree Inc., and the Portland State University Eco-Criticism class.

Determinants of Vertebrate Species Richness in Portland's Parks and Greenspaces: Urbanization is recognized as the single leading cause of species loss within the continental United States, and with continued growth, there is great need to develop management programs for the preservation and restoration of native habitats within the urban landscape matrix. Urban environments within the Pacific Northwest are the least studied of all regions of the United States, and the need for research on urban wildlife-habitat relations is particularly acute for cities such as those in the Portland metropolitan region in Oregon. This project involves conducting research within Portland's rich diversity of parks and greenspaces to (a) inventory species richness of vertebrate animals, (b) identify critical habitat requirements for native species (especially forest dwelling vertebrates), and (c) use habitat (e.g., vegetation), biogeographic (e.g., park size, shape, and isolation), and landscape (e.g., nature of surrounding urban matrix) variables to develop statistical models that will predict the distribution and abundance of amphibians, reptiles, birds, and mammals across Portland's landscape. The goal is to generate data that will be useful for future urban planning efforts, and for establishing baseline conditions that restoration projects can use for establishing goals and priorities. Total budget: \$135,981. Greenspaces grant: \$34,164. Partners: *Portland State University, Portland State University students, the Friends of Tryon Creek, Oregon Parks and Recreation, Three Rivers Land Conservancy, Metro, Tualatin Hills Parks and Recreation District, Riverview Cemetery and several other private landowners, and the parks departments for the cities of Portland, Lake Oswego, Gresham, West Linn and Clackamas County.

Oaks Bottom Bluffs Habitat Restoration Project: This project involves the restoration of thirty-three acres of oak savanna habitat along Oaks Bottom Bluffs, which is located on an escarpment above the east side of the Willamette River in Portland, Oregon. Objectives are to (a) re-establish native grass, shrub and tree components of the Oregon white oak community, (b) initiate and sustain a neighborhood-based community stewardship program at the project site, (c) provide a location for long-term environmental education activities, ecological field studies, and research by area universities and schools, and (d) contribute to the on-going regional effort to restore oak woodland habitat along the Willamette River's eastside escarpment. Total budget: \$85,112. Greenspaces grant: \$30,000. Partners: *City of Portland's Bureau of Environmental Services (Watershed Restoration Program), Portland Parks and Recreation - Natural Resources, Friends of Oaks Bottom, Sellwood-Moreland Neighborhood Association, and Portland State University.

Distribution, Abundance, and Habitat Use of Freshwater Mussels: Freshwater mussels are found throughout the world and are most diverse in North America with approximately 300 native species. Of these, 55% are considered extinct or imperiled. The severity of this decline has only been recognized within the past 30 years and is highly disproportionate to the decline of bird and mammal species, of which 7% are considered extinct or imperiled. Currently, there is very little information on the distribution and abundance of freshwater mussels west of the Rocky Mountains, and only one report on their population status in southwest Washington. Freshwater mussels were once very abundant in southwest Washington streams and are now scarce, if present at all. Three genera of freshwater mussels are present west of the Rocky Mountains: Margaritifera, Anodonata, and Gonidea. Margaritifera falcata is currently under review for listing as a sensitive species in the state of Washington. The status of the other native mussels is undetermined. This project will provide a comprehensive survey of freshwater mussels in four urban streams located in Clark County, Washington. It will be comparable to a similar project that is planned for King County, Washington in 2003 that will be conducted by Washington Trout. Combining these two projects will increase the scope and robustness of the results. The findings will provide information as to the effects of urbanization on the populations of freshwater mussels, and much needed data that will inform mussel conservation efforts. Total budget: \$81,106. Greenspaces grant: \$23,222. Partners: *Washington Trout, U.S. Fish and Wildlife Service Columbia River Fisheries Program Office, Friends of Ridgefield National Wildlife Refuge, Lower Columbia River Estuary Program, Washington State University, Clark College, Northwest Service Academy, Clark County Watershed Stewards, and the City of Vancouver.

West Woods Project: This project will occur in a 12 acre area in the West Woods section of the Tualatin Hills Nature Park located in Beaverton, Oregon. Areas where the native plant community is currently degraded and further threatened due to invasive non-native species encroachment and impacts from unintended public uses will be enhanced and threats will be reduced to improve and protect vegetative diversity and structure. Habitat in this area is primarily a forested mosaic of western red cedars, ash-forested wetlands, and Beaverton Creek's riparian zone. Goals are to create contiguous high quality habitat for wildlife, decommission approximately 2,500 feet of "illegal" trails by planting native vegetation and obscuring them, preserve existing habitat by improving and demarcating managed trails, and enhance community linkages to citizens and groups through educational programs and involvement in restoration activities. Total budget: \$25,471. Greenspaces grant: \$5,040. Partners: *Tualatin Hills Parks and Recreation District, Five Oaks/Tripe Creek Neighborhood Association, Beaver Acres Elementary School, the Beaverton Optimist Club, MGH Planning and Engineering Associates, Tetsuka Associates, Inc, Fishman Environmental Services LLC and community volunteers.

Cedar Mill Wetland Enhancement: This project involves an effort to control invasive non-native plants and enhance the native vegetation and wildlife habitat within the 16 acre Cedar Mill Wetland Preserve located in west Portland, Oregon. The project includes testing and evaluating a variety of non-chemical invasive species removal and control techniques. This project is a component of a larger research and adaptive management program that is being carried out on this site and other properties managed by The Wetlands Conservancy. Total budget: \$60,000. Greenspaces grant: \$10,000. Partners: *The Wetlands Conservancy, Clean Water Services, Portland State University, Corps Restoring the Urban Environment, Salmon Corps, Merlo Station High School, Juvenile Justice Work Group, The Nature Conservancy, Jackson Bottom Wetlands Preserve, Friends of Cedar Mill and Johnson Creek, Tualatin Enhancement Coalition and community volunteers.

Powell Butte Wildlife Habitat Enhancement: This project involves the removal of invasive woody shrubs and revegetation in four priority sites within the designated wildlife habitat area at Powell Butte in Portland, Oregon. The sites total approximately 29 acres, and include upland grassland and forest, seasonal wet meadow, and first order stream and riparian habitats. Invasive, non-native species targeted for removal include Himalayan blackberry, *Rubus discolor* and English hawthorn, *Crataegus monogyna*. Native plant communities will be enhanced through revegetation efforts, reducing competition from non-native species and promoting natural recruitment. Total budget: \$25,000. Greenspaces grant: \$10,000. Partners: *City of Portland Parks and Recreation, Friends of Trees, Portland Water Bureau, Portland Environmental Services (Watershed Revegetation Program), Friends of Powell Butte, the Johnson Creek Watershed Council, Mt. Hood Community College, Powell Butte Heights Homeowners Association and Saint Francis Academy.

West Willamette Wildlife Corridor: This project supports implementation of the Three Rivers Land Conservancy's Site Conservation Plan for the mid-West Willamette Wildlife Corridor (WWWC), which is defined as the area from the Tryon Creek State Park to Forest Park located in southwest Portland, Oregon. Project outcomes include developing and distributing a report that contains (a) a Rapid Assessment Technique documenting the baseline conditions of invasive plant cover, (b) a statistical analysis and interpretation of data collected on 350 acres in the WWWW, (c) a summary of the data and findings, (d) recommendations for coordinated removal strategies to enhance and restore native vegetative communities, and (e) a plan to inform the public about the nature and extent of the problem, and ways they can get involved. Total budget: \$35,000. Greenspaces grant: \$5,000. Partners: *Three Rivers Land Conservancy, The Nature Conservancy, the City of Portland's Bureau of Environmental Services and Parks and Recreation, Portland State University Environmental Science intern, Riverview Cemetery, Oregon Health Sciences University, Friends of Tryon Creek State Park, and Friends of Terwilliger.

Mouth of Tryon Creek: The purpose of this project is to develop a restoration plan for the mouth of Tryon Creek from the Willamette River to Tryon Creek State Park. When implemented, the plan is expected to open up approximately eight miles of stream habitat to fish, and improve in-stream and riparian functions for both fish and wildlife. Fleshing out the opportunities to restore this critical linkage to the rest of Tryon Creek and developing a restoration plan is a complex undertaking due to the number and diverse interests of the property owners and stakeholders, overlapping governmental jurisdictions, the presence of threatened salmonids, and the anticipated cost of implementation. However, because the City of Lake Oswego recently partnered with Metro and the City of Portland to acquire property at the mouth of Tryon Creek, they are taking the lead to develop a restoration plan and coinciding funding request package. Total budget: \$64,237. Greenspaces grant: \$20,000. Partners: *City of Lake Oswego, City of Portland's Endangered Species Program, City of Portland's Bureau of Environmental Services, Tryon Creek State Park, Friends of Tryon Creek State Park, Oregon Trout, Tryon Creek Watershed Council, Clackamas County Endangered Species Program, Metro, Oregon Department of Transportation, Oregon Department of Fish and Wildlife, Oregon State Parks, Oregon Division of State Lands, NOAA Fisheries, Willamette Riverkeepers, railroad representatives and neighbors.

Damascus Concept Planning - New Urban Paradigm: In 2002, more than 12,000 acres in the Damascus, Oregon area were added to Metro's Urban Growth Boundary (UGB). This is the largest single addition since the original UGB was established in 1980. The area's half-dozen or so subwatersheds, characterized by an assortment of rural and agricultural land uses in various conditions, provide the perfect canvas for creating and testing a new urban paradigm, practically begging for a scientific experiment to answer the question: How can we urbanize so as to reduce the impacts on fish and wildlife? This project complements and furthers work that has been initiated by organizations such as the 1000 Friends of Oregon to use the Damascus area to test new urban land use planning and development concepts. The ultimate goal of this project is to reduce the cumulative and site-specific effects of urbanization by identifying existing conditions, relating those conditions to land use, and developing a long-term monitoring strategy to identify adaptive management possibilities. Metro will collect baseline ecological data (macroinvertebrates, physical habitat data, geomorphology, and GIS data) to provide the foundation for adaptive management strategies by linking specific land use changes to ecological changes. Some development strategies are likely to work better than others; this project is designed to scientifically investigate what strategies work, and where and why they work. In addition, the project will investigate the species-habitat relationships between winter birds and their habitats, including exploration of the spatial extent(s) of importance. Winter is a critical season for many resident bird species, and identifying these birds' resource needs can provide important new information that can be

used for local habitat enhancements and regional land use planning. Total budget: \$57,759. Greenspaces grant: \$25,000. Partners: *Metro Growth Management, Clackamas County Surface Water Management, Clackamas County Soil and Water Conservation District, Oregon Department of Environmental Quality, U.S. Geological Survey, 1000 Friends of Oregon and Clackamas River Basin Council.

Sensitive Species Habitat Enhancement at Smith and Bybee Lakes: This project involves redirecting human activity and providing relief from disturbance to sensitive species and habitats located at Smith and Bybee Lakes in north Portland, Oregon. On-the-ground work will involve demolishing an existing parking lot, entry road and short trail segment located near a slough that is known to be used by sensitive species. Topsoil will be imported to enhance existing altered soil substrate, and disturbed areas will be planted with riparian forest plants and other desirable native species. This project is part of an overall effort to move visitor facilities away from sensitive wildlife that utilize the habitat in and near the slough, to less environmentally sensitive areas. Total budget: \$552,950. Greenspaces grant: \$37,688. Partners: *Metro Parks and Greenspaces, City of Portland's Bureau of Environmental Services (Watershed Restoration Program), Port of Portland, Oregon Department of Parks and Recreation, Oregon Local Government Grant Program and volunteers.

The Headwaters of Tryon Creek: This project involves day-lighting a section of Dolph Creek, a second-order intermittent stream located within the Tryon Creek watershed. Approximately 450 feet of an existing 36-inch culvert, where the natural stream is currently piped underground, will be converted to an open streambed stabilized with log and boulder revetments. A 50-foot wide riparian zone will be revegetated with native plants, and the stream corridor will be protected in perpetuity through a deed restriction. This work will occur as a component of an environmentally-friendly housing project that will be built to redevelop a 2.86 acre parcel of land. The site is now covered with an asphalt parking lot and an abandoned building that has been closed for public use since 1999, slated for redevelopment in accordance with the current Commercial General zoning. The project is being implemented in partnership with the landowner, several City of Portland bureaus, conservation organizations, and businesses as a demonstration of how urban infill and redevelopment projects can be built to meet development goals while benefitting the natural environment by contributing to overall urban watershed rehabilitation efforts. Total budget: \$696,000. Greenspaces grant: \$30,000. Partners: *Portland Development Commission, City of Portland's Bureau of Environmental Services, Portland Parks and Recreation, Portland Office of Transportation, Portland Endangered Species Program, Oregon Housing and Community Services Department, Winkler Development Corporation, Sullivan Architecture, GreenWorks, InterFluve, Inc., MGH Associates, Inc.

Urban Conservation Treaty for Migratory Birds: This project supports the Audubon Society of Portland's key role in migratory bird conservation efforts related to their on-going bird conservation work throughout the Portland metropolitan region and beyond, and as a lead partner in the City of Portland's Urban Conservation Treaty for Migratory Birds (Treaty) program. Specific projects that meet both the Greenspaces Program's Conservation and Restoration objectives and Treaty program goals will be identified, developed and implemented. Projects will focus on education, outreach and/or bird hazard reduction. Total budget: \$20,000. Greenspaces grant: \$10,000. Partners: *Audubon Society of Portland, the City of Portland, and many Treaty partners to be identified as projects are selected.

Total Funding Requested: \$613,421 for 22 proposals

Number of Funded Projects: 13

Greenspaces Grant Funding Awarded: \$245,204

Leveraged: \$6.55 local match for every \$1 of Greenspaces grant funding

Environmental Education Grant Projects

1992-93 Environmental Education Projects

Fernhill Wetlands: A science education program was initiated at Fernhill Wetlands so that the area could be used to conduct field research and as an outdoor classroom for local schools. A local support base of interested and active residents was built to promote participation in the future development and use of Fernhill Wetlands. Total budget: \$19,421. Greenspaces grant: \$5,400. Partners: *The City of Forest Grove, Fernhill Wetlands Council, Unified Sewerage Agency, Washington County School District 15, Oregon Hunters Association and the Wetlands Conservancy.

Noble Woods Park: Worked with schools and citizens groups to plan environmental education and outdoor learning opportunities focused on the unique biological/ecological resources of Noble Woods Park. Interpretive information and educational programs were developed. Total budget: \$13,095. Greenspaces grant: \$3,700. Partners: *City of Hillsboro, Farmington View Elementary School, Jackson Bottom Wetland, Tualatin Valley Garden Club, the Girl Scouts, Brown Jr. High and the Hillsboro Chamber of Commerce.

Multnomah Education Service District Outdoor Program: This project involved several components. Access was provided for all Outdoor School students, regardless of physical limitations, to a stand of old growth Douglas fir forest as part of a plant study program. Alzheimer's family camp attendees were shuttled to study areas within Sandy River Gorge for environmental education programs. Field studies at Oxbow Park were arranged for "at risk" students. Total budget: \$11,839. Greenspaces grant: \$2,500. Partners: *Multnomah County Parks Department, Multnomah Education Service District, the Outdoor School, and Alzheimer's Solutions Inc.

Oregon Episcopal School Video: Elementary and secondary students wrote, produced, directed, and starred in an instructional video on urban wetland and development issues. Students gave presentations about the project and distributed the video to other schools and agencies. Total budget: \$6,450. Greenspaces grant: \$3,150. Partners: *Oregon Episcopal School, the Unified Sewerage Agency and Northwest Film Studies Center.

Highland Park Intermediate School: Water quality issues were studied at 25 different sites in the Fanno Creek watershed. Data was collected and analyzed to evaluate community impacts in the watershed. Students then made recommendations for realistic solutions to the problems they discovered and related those solutions to their own lives. Total budget: \$9,980. Greenspaces grant: \$4,495. Partners: *City of Tigard, Highland Park Intermediate School and PTA, Northwest Steelheaders (Beaverton and Tigard Chapters), the Unified Sewerage Agency, City of Beaverton and Fans of Fanno Creek.

George Middle School Columbia Slough Study: Students studied the historical and present day condition and human use of the Columbia Slough. They researched fish and wildlife in the slough and at Smith and Bybee Lakes. Students then used their findings to teach others about the natural environment. Total budget: \$18,242. Greenspaces grant: \$2,500. Partners: *City of Portland Bureau of Environmental Services, George Middle School, the National Wildlife Federation and the City of Portland Parks and Recreation.

Willamette Primary School: Students researched local urban greenspaces, including a portion of their school property that had been re-developed as a natural area. They looked into the human dimension by studying people's attitudes related to the protection and stewardship of greenspaces. Total budget: \$11,542. Greenspaces grant: \$3,390. Partners: *Willamette Primary School, West Linn High School, the City of West Linn, CH2M Hill and the Willamette Neighborhood Association.

Multnomah County Park Services: Provided hands-on environmental education and interpretive programs for school children and others at Oxbow Regional Park. Personnel from resource agencies, schools and interested non-profit groups were trained in how to develop informative and inspiring presentations of ecological concepts. Total

budget: \$10,464. Greenspaces grant: \$4,591. Partners: *Multnomah County Parks Department, Bureau of Land Management, Mt. Hood National Forest and The Nature Conservancy.

Lakeshore Elementary School: Created a native plant garden to provide habitat for birds and small animals. The site is used as an outdoor laboratory for science and environmental studies at the school. A handicapped accessible path was created for special education students to use the area. Total budget: \$4,400. Greenspaces grant: \$2,200. Partners: *Lakeshore Elementary School, Lakeshore PTA, and the Lakeshore Athletic Club.

Whitman Elementary School Garden: An under-utilized part of the school property was turned into garden with native plants and trees. Community members in the surrounding park-deficient area were involved in the project and provided access to the open space. Total budget: \$4,991 Greenspaces grant: \$754. Partners: *Whitman Elementary School, Fred Meyer, Kasch's Garden Center and the surrounding community.

West Clinton Habitat Demonstration Site: Developed and installed an interpretive exhibit to describe the intent and content of a backyard habitat created in the West Clinton Community Garden. The concepts used in the garden have been promoted for use by other neighborhoods and schools. Total budget: \$17,315. Greenspaces grant: \$2,500. Partners: *City of Portland Park and Recreation, the Friends of Portland Community Gardens and Hosford Abernathy Neighborhood Association.

Sunset Primary School Greenspaces Exploration: Created partnerships in the community to carry out ten different projects involving the exploration, study and enjoyment of nearby greenspaces. Each project was documented with a video, and results were shared with the community. Total budget: \$19,372. Greenspaces grant: \$7,610. Partners: *Sunset Primary School and PTA, West Linn High School, Oregon Educators for Social Responsibility, City of West Linn and Willamette Fall TV Studio.

Total Funding Requested: \$156,050

Number of Funded Projects: 12

Greenspaces Grant Funding Awarded: \$42,790

Leveraged: \$2.44 local match for every \$1 of Greenspaces grant funding.

[Note: A total of \$45,290 was originally awarded to fund 13 projects; 1 project was withdrawn and is not included in the descriptions above.]

1993-94 Environmental Education Projects

Wilsonville Primary School: Habitat was enhanced and monitored by students at a site near their school. Total budget: \$9,275. Greenspaces grant: \$2,800. Partners: *Wilsonville Primary School, Oregon Department of Fish and Wildlife, the City of Wilsonville, Bosky Deli and Freeze Frame.

Portland Education Network at Smith and Bybee: Portland State University and Roosevelt High School worked in partnership to do habitat restoration work and construct a nature path at Smith and Bybee Lakes. Total budget: \$19,183. Grant: \$4,345. Partners: *Portland State University, Portland Education Network, City of Portland Parks and Recreation, Roosevelt High School, Metro and the Friends of Smith and Bybee Lakes.

CE Mason School: Baseline environmental data was collected by students at a natural area adjacent to their school. Total budget: \$22,234. Greenspaces grant: \$4,000. Partners: *The City of Beaverton, CE Mason School and Tektronix.

Backyard Wildlife Habitat Manual: A “how to” manual on creating backyard wildlife habitat was produced. Total budget: \$15,830. Greenspaces grant: \$4,230. Partners: *City of Vancouver, Washington State University Master Gardeners, Clark County Environmental Information Center and *The Colombian* newspaper.

Merlo Station Boardwalk: Students were involved in creating an interpretive boardwalk at a public nature park. Total budget: \$32,380. Greenspaces grant: \$5,060. Partners: *Merlo Station Community School, Tualatin Hills Parks and Recreation Department, the Unified Sewerage Agency and the Oregon Graduate Institute.

West Sylvan Wetland Project: Students were involved in enhancing a wetland and monitoring the project. Total budget: \$7,589. Greenspaces grant: \$3,000. Partners: *West Sylvan Middle School, Catlin Gabel School and PTSA.

Berry Botanical Garden Puppet Show: A puppet show about the environment was created and produced for the public. Total budget: \$4,227. Greenspaces grant: \$2,045. Partners: *The Berry Botanical Garden, Hoyt Arboretum and Leach Botanical Garden.

Volunteers of America Curriculum: Curriculum was developed for pre-school students on water issues. Total budget: \$7,565. Greenspaces grant: \$3,000. Partners: *Volunteers of America, Jackson Bottom Wetland Preserve and the Oregon Museum of Science and Industry.

Jackson Bottom Wetlands Education: A field-based program and curriculum were developed for use at the preserve, and to serve as a model for other areas. Total budget: \$17,710. Greenspaces grant: \$3,500. Partners: *Jackson Bottom Wetlands Preserve, Washington County Educational Service District, the Unified Sewerage Agency, and the Friends of Smith and Bybee Lakes.

Irvington School Curriculum: A program was developed to provide environmental education on the water cycle, with a focus on urban areas. Total budget: \$16,234. Greenspaces grant: \$4,000. Partners: *Irvington School, Irvington PTA, Mt. Hood National Forest and the Portland Water Bureau.

Salmon Watch: The grant provided support for the field-based Salmon Watch program to teach youth about native fish. Total budget: \$60,735. Greenspaces grant: \$4,000. Partners: *Oregon Trout, Oregon Department of Fish and Wildlife, Multnomah County, Portland General Electric, and Mt. Hood Forest.

Laurelhurst Botanical Sites: Botanical identification sites were created within Laurelhurst Park, which is located in a densely urbanized area. Total budget: \$1,043. Greenspaces grant: \$520. Partners: *Friends of Laurelhurst Park, City of Portland Parks and Recreation, Portland Public Schools and Glencoe PTA.

Milwaukee Park Restoration: High school students were involved in restoration activities at a public park. Total budget: \$35,194. Greenspaces grant: \$3,200. Partners: *Milwaukee High School, City of Portland (Parks and Recreation and Bureau of Environmental Services) and Oregon Department of Fish and Wildlife.

Saturday Academy Training: Teacher training was provided on natural resource topics. Total budget: \$20,400. Greenspaces grant: \$4,000. Partners: *Saturday Academy, Oregon State Parks, Oregon Education and local schools.

Greenspaces Adventures: A guide that includes a listing of public parks and greenspaces throughout the region and how each one can be used by schools and other groups for environmental education was produced. The guide has been republished by Metro due to overwhelming demand. Total budget: \$18,392. Greenspaces grant: \$6,000. Partners: *Oregon Museum of Science and Industry and the Multnomah County and Washington County Education Service Districts.

Fernhill Wetland Curriculum: A curriculum on wetlands was produced to assist teachers and encourage instruction on wetland topics. Total budget: \$26,364. Greenspaces grant: \$5,300. Partners: *Fernhill Wetlands Council, Pacific University, the Unified Sewerage Agency and City of Forest Grove.

Total Funding Requested: \$121,734

Number of Funded Projects: 16

Greenspaces Grant Funding Awarded: \$59,000

Leveraged: \$4.33 local match for every \$1 of Greenspaces grant funding.

1994-95 Environmental Education Projects

Westview High School: Students in Beaverton inventoried, studied and analyzed natural features at the Tualatin Hills Nature Park. They developed and conducted tours and environmental activities for approximately 1,000 elementary students that visited the park. Total budget: \$24,291 Greenspaces grant: \$5,000. Partners: *Westview High School, City of Tualatin Parks and Recreation and local schools.

Washington County Educational Service District: Approximately 1,400 elementary school students from Hillsboro, Forest Grove and Tigard studied metropolitan greenspaces in the classroom. Each class then spent a day in the field at either Jackson Bottom, Rock Creek, or in one of the City of Sherwood's natural areas. AmeriCorps teams worked with the students to restore and enhance the community greenspaces during their site visits. The results of their work were recorded on video and in reports. Total budget: \$31,127. Greenspaces grant: \$5,000. Partners: *Washington County Educational Service District, Rock Creek Community College, Jackson Bottom Wetland Preserve, the City of Sherwood, EnviroCorps and schools throughout the district.

J.B. Thomas Jr. High School: Students inventoried, studied and analyzed a newly acquired 18 acre greenspace along Dairy Creek. They also provided input into the development of a master plan for the park and participated in identified restoration activities. The project was documented by the Northwest Film Center. Total budget: \$10,450. Greenspaces grant: \$5,950. Partners: *J.B. Thomas Jr. High School and the Northwest Film Center.

Tualatin Watershed Outreach and Stewardship: The Tualatin Riverkeepers involved river front property owners, watershed residents and river users in active stewardship and monitoring activities in both Washington and Clackamas counties. They provided volunteer training, produced a citizen guide to the Tualatin River watershed, and developed classroom materials for this broad education and outreach effort. Total budget: \$35,608. Greenspaces grant: \$4,000. Partners: *Tualatin Riverkeepers and numerous volunteers.

Milwaukee High School Conservation Fair: Students worked with Portland Parks and Recreation and the Oregon Department of Fish and Wildlife to implement streambank restoration activities at Johnson Creek Park. They also planned and conducted a neighborhood youth conservation fair and involved elementary and middle schools in educational activities to teach them about the Johnson Creek watershed. Total budget: \$35,660. Greenspaces grant: \$6,110. Partners: *Milwaukee High School, City of Portland Parks and Recreation, Oregon Department of Fish and Wildlife and schools in the watershed.

Camassia Outdoor Education: The Nature Conservancy worked with students from West Linn High School and the Oregon Episcopal School to study and monitor the ecological and hydrological systems in and around the Camassia Natural Area in West Linn. Surrounding development has altered the water flow patterns through the preserve. Students worked with natural resource professionals to identify solutions to adverse impacts from stormwater runoff. Total budget: \$12,686. Greenspaces grant: \$5,000. Partners: *The Nature Conservancy, West Linn High School, Oregon Episcopal School and EnviroCorps.

Cedar oak Park Primary School: Students studied a wetland adjacent to their school that had been subject to filling and illegal dumping. The school worked with the City of West Linn Parks Department, engineers and environmental specialists to restore the wetland and create an outdoor learning area for the school. Total budget: \$13,392. Greenspaces grant: \$3,390. Partners: *Cedar oak Primary School and the City of West Linn.

Neighborhoods: The East Multnomah Soil and Water Conservation District piloted a new project called "Neighborhoods." Project partners established sites in the Parkrose area in Portland to demonstrate landscaping and yard maintenance techniques that promote healthy water quality and backyard wildlife habitat. The project also demonstrated how activities at home affect the urban watershed. Total budget: \$91,500. Greenspaces grant: \$2,000.

Partners: *The East Multnomah Soil and Water Conservation District, Natural Resource Conservation Service and landowners.

Outdoor Learning at Blue Lake Park: Students studied wetlands at Blue Lake Regional Park in Fairview. They were involved in a variety of activities including collecting field data, park management planning, revegetation, and creating informational materials for visitors. The students will worked directly with natural resource specialists. Total budget: \$14,027 Greenspaces grant: \$3,700. Partners: *Mt. Tabor Middle School, Alameda Elementary School, Metro Regional Parks and Greenspaces, the Natural Resources Conservation Service and East Multnomah Soil and Water Conservation District.

Total Funding Requested: \$181,147

Number of Funded Projects: 9

Greenspaces Grant Funding Awarded: \$38,150

Leveraged: \$3.91 local match for every \$1 of Greenspaces grant funding.

[Note: A total of \$42,000 was originally awarded to fund 11 projects; 2 projects were withdrawn and are not included in the descriptions above.]

1995-96 Environmental Education Projects

Volunteer Healthy Watershed Leaders Program: Adult leaders and 4-H members were identified, recruited, trained and supported to serve as Volunteer Healthy Watershed Leaders. The program utilized existing programs and broke the training into four components: Salmon Trout Enhancement Project, Water Quality Monitoring, Streamside Enhancement, and Angler Education. The aim of the project was to develop awareness, knowledge and skills to promote responsible behavior, informed decisions and constructive actions related to environmental issues. Total budget: \$38,425. Greenspaces grant: \$2,000. Partners: *OSU Extension/4-H Youth and the Oregon Department of Fish and Wildlife, City of Portland Environmental Services, Portland Public Schools, Friends of Smith and Bybee Lakes, Oregon Steelheaders, SOLV, Friends of the Slough, Friends of Trees.

Brookside Wetlands: Students of Alice Ott Middle School conducted water quality sampling tests with the assistance of Streamwalk volunteers. The goal was to teach ecological principles and concepts that relate the connection between human behavior and the environment. Students used a local greenspace as a living laboratory and were encouraged to become active and involved stewards of local natural areas. Total budget: \$14,123. Greenspaces grant: \$3,283. Partners: *Alice Ott Middle School, David Douglas School District and Streamwalk, Bureau of Environmental Service, Stewardship team of the Northern Lights Neighborhood.

Northwest Service Academy Student Program: Three schools in two counties involved students in an urban habitat restoration project to promote an ethic of community service and achieve on-the-ground results. The Northwest Service Academy worked with students to develop curriculum, and they provided instruction and assisted students in planning and safely implementing restoration activities. Total budget: \$31,565. Greenspaces grant: \$4,850. Partners: *Northwest Service Academy, Clackamas High School, Gregory Heights Middle School and Seth Lewelling Elementary.

Access to Nature: Schools most in need of environmental education programs were identified within the Portland School District. Educational activities were then taken out to the schools, and students were bused out in the field to experience their environment through nature programs. Total budget: \$18,750. Greenspaces grant: \$1,000. Partners: *Audubon Society of Portland and the Sabin, Fernwood, Irvington, Beaumont and Abernathy schools, Portland Public Schools Administration, Portland Parks & Recreation.

Environmental Science Program: The grant supported the second year of a program designed to help high school students acquire leadership, communication and group problem solving skills. Students lead approximately 1000 students in grades 4-6 and 10-12 on wetland tours and environmental activities within local urban natural areas.

They learned about policies and regulations that affect their urban green spaces along with ecological concepts to build an understanding about how natural systems function. Total budget: \$49,839. Greenspaces grant: \$4,676. Partners: *Westview High School and other schools, Tualatin Hills Park & Recreation, Washington County Educational Service District, Portland Community college Rock Creek.

Tualatin River Wetlands Restoration: The City of West Linn worked with students and volunteers to develop a self-guided curriculum and interpretative signage to correlate with a wetland restoration project. Participants studied natural wetland sites and visited the restored site to provide the foundation for their work. Total budget: \$5,827. Greenspaces grant: \$2,000. Partners: *City of West Linn Parks and Recreation, Willamette Primary School, and the John Inskip Environmental Learning Center, Eagle Scouts, Tualatin River Watchers Group.

Beaver Creek High School: Students developed a thermal profile for the mainstem of Beaver Creek and its tributaries. The goal was to determine if the creek could support a self-sustaining population of salmon and steelhead. The results of the study were available for use by other schools, agencies and groups involved with the creek. Total budget: \$5,313. Greenspaces grant: \$1,854. Partners: *Reynolds High School, Oregon Department of fish & Wildlife, Sam Barlow High School, Centennial High School.

Midland Park Naturescape: Students in grades 6-12 worked collaboratively with Portland Parks and Recreation and the community to design and build a “naturescape” in a small public park. Students researched naturescaping principles, developed a plan for the area, and planted the site. Project activities were video-taped and outreach materials were developed to inform general public about the project. Total budget: \$42,500. Greenspaces grant: \$3,500. Partners: *David Douglas High School, City of Portland Parks and Recreation, the Hazelwood Neighborhood Association, NatureScaping for Clean Rivers and neighborhood volunteers Friends of Midland Park, Leach Botanical Garden, Multnomah county Library.

Tualatin Watershed Stewardship: This project fostered active public stewardship in the Tualatin Watershed, including Rock, Bronson, Willow and Cedar Mill tributary creeks. Watershed guides were developed to help volunteers work pro-actively with river and creek users and streamside landowners. The project was the continuation of a previous grant to promote watershed health. Total budget: \$5,827. Greenspaces grant: \$1,000. Partners: *Tualatin Riverkeepers and volunteers, Water master District 18, Unified Sewerage Agency, Friends of Rock, Brown, and Willow Creeks, Friends of Cedar Mill Creek.

Wild and Wonderful Discovery Guide: An interpretive and interactive field guide was developed with school and community participation for a 2 mile section of the southern edge of Forest Park. The guide highlights specific areas along the hiking route by describing notable natural features. The objective of the guide is to increase user understanding of the natural resource values of the area and the impact that human activities can have on natural systems. Total budget: \$3,100 Greenspaces grant: \$1,000. Partners: *Friends of Forest Park and local schools and neighbors, Portland Parks and Recreation, Friendly House of NW Portland, Audubon society of Portland, Portland Bureau of Environmental Services, Green city Data, the Oregon Historical Society.

The Bridge: The project tied together two on-going integrated science projects designed for students from kindergarten through third grade. Existing projects involving a garden and fish studies were expanded and linked using a common model river ecosystem and a naturescaped garden with a water feature in the school yard. Total budget: \$3,890. Greenspaces grant: \$1,000. Partners: *Hollywood Elementary School.

Native Plant Outreach: The program expounded the benefits of choosing native plants in landscape designs, with the target audience being commercial nurseries, landowners and other schools. The aim was to build relationships between native plant advocates and nurseries to establish a demand for and supply of native species. A promotional booth was set up on Saturdays during spring planting days lead by the Environmental Middle School. Total budget: \$10,737. Greenspaces grant: \$3,000. Partners: *Environmental Middle School and EnviroCorps, Portland State University, National Wildlife Federation, Natures Landscaping.

Arnold Creek: Principles of watershed assessment and stewardship were taught to 70 fifth grade students, 20 families, 10 community residents and 3 teachers. The participants observed, analyzed and compared conditions at

the headwaters of Fanno and Tryon Creeks. Participants developed water quality monitoring skills by learning chemical analysis, microbiology and macro invertebrate assessment techniques. Total budget: \$22,465. Greenspaces grant: \$3,200. Partners: *Markham Elementary School, National Geographic society, Project Adventure, Portland State University, Friends of Arnold Creek, city of Portland, The Natural Resources Conservation Service, Oregon Department of Fish & wildlife, Department of Environmental Quality, the Unified Sewerage Agency, the Saturday Academy, Lewis & Clark Neighborhood Green corps.

TAPROOT, A Service Learning Project: The project connected teen parents with community service at local green spaces. The goal was to strengthen traditional academic studies, connect learning to real-world issues, and introduce participants to science-related career opportunities. The teens participated in natural resource classes, field trips and landscape service projects. Teen parents learned about local wildlife while contributing to the community. Total budget: \$14,521. Greenspaces grant: \$3,828. Partners: *TAPROOT and Portland Public Schools, Oregon Forestry Educational Department, Audubon Society, Private Industry Cncl, Friends of Trees, Monroe H.S., Natures, Planned Parenthood, Parent Child Services, Portland Parks & Recreation, Trevon Bond, Franz Bakery, P.P.S., Nature Scaping.

NatureScaping Sunnyside Schoolyard: A nativescape was developed on the school grounds to serve as the focal point for incorporating environmental education and promoting a conservation ethic in the daily lives of students, families and neighbors. Indoor and outdoor natureScaping activities were incorporated into the classroom curriculum. The site serves as a demonstration area for neighborhood backyard habitat projects. Total budget: \$13,152. Greenspaces grant: \$3,108. Partners: *Sunnyside Elementary School, Portland State University, Oregon Department of Fish & Wildlife, Han Nicholson (master gardener-OHSU), the Mazamas, Portland Public Schools, Sunnyside Neighborhood Assn., backyard bird Shop, Powells Books, Bosky Dell Natives Nursery, Richard bush's Nursery.

Journey with the Salmon: Classroom education was combined with experiential learning to teach students about native fish. Approximately 120 students participated in hatching and releasing salmonid eggs while studying the salmon life cycle. Their work included studying habitat needs and problems that salmon face. They also participated in stewardship activities along Johnson Creek. At the end of the project, they took a trip to the coast where all of the pieces of their learning experience were brought together. Total budget: \$40,604 Greenspaces grant: \$3,700. Partners: *Kelly Elementary School, Bureau of Environmental Services, Cascade Geographic Society, Friends of Johnson Creek, Oregon Department of Fish & Wildlife, coastal Studies and Technology Center, Bonneville Dam, Hostelling International - Seaside.

Cascade Streamwatch: Schools in at-risk areas of north and northeast Portland were targeted to provide opportunities for student participation in this established program. Cascade Streamwatch enhances young people's awareness and appreciation of Pacific Northwest aquatic ecosystems while cultivating problem-solving skills in science and math. Natural resource specialists guide students on scientific investigations of watersheds and factors affecting stream health. Total budget: \$52,237. Greenspaces grant: \$3,000. Partners: *Wolfree Inc., Cascade Streamwatch and Portland Public Schools, U.S. Forest Service, BLM, Northwest Service Academy, Bureau of Environmental Services, Trout Unlimited, AT&T, OMSI.

Total Funding Requested: \$115,000

Number of Funded Projects: 17

Greenspaces Grant Funding Awarded: \$45,999

Leveraged: \$7.11 local match for every \$1 of Greenspaces grant funding.

1996-97 Environmental Education Projects

Oregon Outreach: At-risk students were involved in environmental education and restoration activities on several metropolitan greenspaces. Students developed, designed and installed a natureScaping project at a small site in Gladstone. They also provided volunteer labor and used native plants they salvaged from areas slated for

development to help with an enhancement project along Tryon Creek. This project provided service learning experiences for students to promote awareness of environmental issues. Total budget: \$4,427. Greenspaces grant: \$1,542. Partners: EnviroCorps, Willowell Nursery, Tryon Creek Watershed Council.
(*grant recipient?)

Oregon Trout/Salmon Watch: Salmon Watch provides opportunities for young adults to experience first-hand the relationship between humans and their environment. Activities are designed to instill in our urban youth a deeper appreciation of the value of preserving our natural heritage and the importance of being well-informed and responsible citizens. The program includes teacher and volunteer training, classroom instruction, experiential field trips to observe salmon and spawning beds, and community service projects. Total budget: \$163,000. Greenspaces grant: \$3,000. Partners: *Oregon Trout, Salmon Watch, U.S. Forest Service, Bonneville Power and the Portland State University Center for Science Education.

Headwaters to Ocean River Tours: The project allowed affordable and educational access to the Columbia and Willamette Rivers to increase the overall awareness of and appreciation for the natural environment. Topics covered included history, policy and culture in addition to science and environmental issues. It is hoped that participants will become the engines of river protection and enhancement by bringing their experiences back to their family and community and making small changes in their behavior on behalf of the rivers. Total budget: \$4,760. Greenspaces grant: \$2,000. Partners: *Headwaters to Ocean, the City of Portland Environmental Services and Audubon Society of Portland.

Binnsmead Adoption of Beggar's Tick: A sixth grade class adopted Beggar's Tick Wildlife Refuge. They studied botany, zoology, microbiology, ornithology, history and carpentry. Their projects included pond water and mud studies, building and installing nest boxes and creating portfolios of birds likely to use the refuge. Total budget: \$11,862. Greenspaces grant: \$4,200. Partners: *Binnsmead Middle School, Metro and the Audubon Society of Portland.

Gregory Heights Ecosystem Study: This project was designed to encourage a holistic thinking about ecosystems and the connections between ecosystems. Students studied organisms that move through more than one ecosystem, and they compared the life histories of salmon and humans over time. A water curriculum was used that integrates social studies, language arts, science, health and math. Total budget: \$46,185. Greenspaces grant: \$1,855. Partners: *Gregory Heights Middle School, the U.S. Forest Service, City of Portland Environmental Services, Portland State University and Portland Water Bureau.

Binnsmead Forest Stewardship Program: Eighth graders participated in a forestry stewardship program at the Hopkins Memorial Tree Farm in Clackamas County. The students collected and analyzed data related to Pacific Northwest forest trees and animals and participated in field projects. Focusing on management issues and the wise use of natural resources, students learned about tree planting methods, career options, marketing, and the use and waste of forest products. Total budget: \$13,619. Greenspaces grant: \$4,390. Partners: *Binnsmead Middle School, the Hopkins Memorial Tree Farm, Forests Forever, OSU Extension, Oregon Forest Resources Institute and the Friends of Trees.

George Middle School: Ninety middle school students and six teachers provided 270 hours of classroom instruction in preparation for approximately 2,000 hours of community service. Service projects included replanting at Ramsey Lake, downspout disconnect in North Portland, and projects at Smith and Bybee Lakes. Project goals were to prepare urban youth for life challenges, provide community service and maintain natural areas in North Portland. Total budget: \$11,435. Greenspaces grant: \$2,000. Partners: *George Middle School, Portland State University Center for Science Education, City of Portland Bureau of Environmental Services, Metro and the Office of Neighborhood Associations.

West Sylvan Study of the Shields Property: Students worked with Tualatin Hills Park and Recreation District staff to develop a plan for a new acquisition site called the "Shields" property. It is an upland site next to a wetland in the adjacent Raleighwood Park. Students created a topographic and vegetative map of the site as a community service project, assessed the needs of the community and the watershed, and drafted plans for future use and

restoration of the property. Students also collected water quality data in a section of Sylvan Creek that flows through Raleighwood marsh and formulated research questions about human activities and water quality issues. They presented their findings to public agencies such as the United Sewerage Agency. Total budget: \$7,175. Greenspaces grant: \$2,886. Partners: *West Sylvan Middle School, Tualatin Hills Park and Recreation District, Robert Gray Middle School and the Unified Sewerage Agency.

Lake Oswego Courtyard (Phase 1): A courtyard approximately an acre and a half in size was transformed from a lawn with a few trees and shrubs into an integral learning area filled with native vegetation, water features and nature-focused art. All research, design and implementation work to create the courtyard project was incorporated into the students' daily studies. Total budget: \$14,213. Greenspaces grant: \$4,500. Partners: *Lake Oswego School District, Middle School and Parent Club, City of Lake Oswego and community and business partners.

Kraxberger Detention Pond: A stormwater detention pond on the middle school grounds turned into a more ecologically interesting artificial wetland for outdoor education. The outfall was raised for additional water retention, the area was fenced, and the site was planted with native species. Teachers, the students and the community worked together to plan and implement the project. Students reached educational benchmarks by visiting other wetlands to investigate natural wetland characteristics and studying the plants, soils and hydrology of their project site. Total budget: \$5,335. Greenspaces grant: \$2,390. Partners: *Kraxberger Middle School, EnviroCorps and the Natural Resources Conservation Service.

Newell Creek Watershed Monitoring: A volunteer monitoring program was set up to provide baseline data and to study environmental trends in the Newell Creek watershed. The Environmental Learning Center provided coordination and leadership to student and citizen volunteers. Existing protocols from the Student Watershed Research Project and Green City Data Project were adapted and revised for this project, specifically designed for the target watershed. Total budget: \$21,660. Greenspaces grant: \$5,960. Partners: *John Inskip Environmental Learning Center, Saturday Academy, the City of Oregon City, the Newell and Abernathy Watershed Council, local schools and citizens.

Bethany Lake: Environmental science students from Westview High School participated in a restoration project at Bethany Lake. Students planned and implemented their project, evaluated its success and agreed to maintain the site. Their work included researching the area's land use history, surveying park users and nearby residents for ideas and opinions about their project, designing a planting plan and carrying out the on-the-ground work. Total budget: \$22,758. Greenspaces grant: \$2,500. Partners: *Tualatin Hills Parks and Recreation Department, Westview High School, Student Watershed Research Project and the Friends of Rock, Bronson and Willow Creeks.

Tualatin Nature Programs: A variety of nature programs, including tours, hikes, canoe trips and workshops, were conducted as part of a week-long event called Common Water, Common Ground to educate the public about the Tualatin River watershed and the importance of urban greenspaces. Grant funds were used to design, promote, implement and evaluate the series of activities. Events provided hands-on experiences and exposure to unique greenspaces and natural resources in the Tualatin Basin. Total budget: \$11,135. Greenspaces grant: \$4,400. Partners: *Tualatin River Watershed Council, Jackson Bottom Wetlands Preserve, Washington County Soil and Water Conservation District, Tualatin Basin Public Awareness Committee and the Tualatin Riverkeepers.

Northwest Regional ESD Greenspaces Activities: Twenty classes of thirty students each participated in interactive learning experiences that emphasized the importance of urban greenspaces and their individual role in preserving them. Students were engaged hands-on restoration activities, and they documented their experiences by writing and producing newsletters for nearby neighborhoods. Total budget: \$26,110. Greenspaces grant: \$4,500. Partners: *Northwest Regional Education Service District and associated schools, the Jackson Bottom Wetlands Preserve, Portland Community College at Rock Creek and the Northwest Service Academy.

Common Voice (Year 1): An educational and cultural project called "Common Voice" was designed as part of the annual spring celebration "Common Water, Common Ground." The work of students involved in a watershed education program (the Tualatin Watershed Involvement Program) was showcased in an artistic format through music and literature that they produced to relate their experiences. Total budget: \$13,910. Greenspaces grant:

\$5,380. Partners: *Jackson Bottom Wetland Preserve, Tualatin Basin Public Awareness Committee, the Northwest Film Center and local artists.

Lenox “Me and My Salmon” Study: Students studied the geographically and temporarily distant implications of local decisions. Specifically, students used the Chinook salmon life cycle and range to consider the variety of habitats used by the salmon and long-term human effects on each of those habitats. One of the main goals was to teach the students that local actions can have a global impact. Total budget: \$45,025 Greenspaces grant: \$3,745. Partners: *Lenox Elementary School, Washington County Education Service District, U.S. Forest Service, Oregon Geographic Alliance, Portland State University and AmeriCorps.

Jemtegaard Discovery Trail: A middle built a “Discovery Trail” designed to serve as a living laboratory for their students. The students helped build the trail, and they constructed benches and tables to be used for outdoor education programs. The students also participated in environmental field experiences within the Gibbons Creek watershed. Total budget: \$11,650. Greenspaces grant: \$1,700. Partners: *Jemtegaard Middle School teachers and students, Washougal High School, the Booster Club.

NatureScaping (Clark County) with Wildlife Habitat Stewards: The Wildlife Habitat Stewards program used the Master Gardener program format as a template to recruit trainees and provide them with 75 hours of training in habitat restoration and environmental issues in exchange for 75 hours of payback time doing a variety of related projects. The program helps citizens to develop a wide range of ecological and natural history skills that can then be applied towards educating others about the importance of preserving and restoring urban wildlife habitat. Total budget: \$32,375. Greenspaces grant: \$4,000. Partners: *NatureScaping (Clark County), City of Vancouver Parks and Recreation, Environmental Information Center, Clark County, Washington Department of Fish and Wildlife and Washington State University Extension.

Total Funding Requested: \$202,000 for 34 proposals

Number of Funded Projects: 18

Greenspaces Grant Funding Awarded: \$62,948

Leveraged: \$6.41 local match for every \$1 of Greenspaces grant funding.

1997-98 Environmental Education Projects

Camille Park: Fourth, fifth and eighth graders learned about wet prairies at Camille Park, a local urban greenspace. Students took field trips to other wet prairies to learn about the natural history of those systems. Their findings were translated to the park as students enhanced the plant communities there and monitored project success. Students will also propagate native wetland plants to use on the site and keep viability records. Total budget: \$26,750 Greenspaces grant: 6,650. Partners: *Tualatin Hills Parks and Recreation District, McKay Elementary, Whitford Middle School, Tualatin River Watershed Council, Berry Botanical, Willowell Nursery.

Common Voice (Year 2): This project is the second year of “Common Voice,” an educational and cultural project designed to showcase the learning of students involved in the Tualatin Watershed Involvement Program. Student’s wrote and published songs, and their entire project was documented for distribution to other interested groups. The students performed their music at the 1998 Common Water, Common Ground Celebration. Total budget: \$10,298. Greenspaces grant: \$4,775. Partners: *Jackson Bottom Wetland Preserve, Tualatin Basin Public Awareness Committee, City of Hillsboro, Tualatin River Watershed Council, Unified Sewerage Agency, David Hill Elementary School and Evergreen Middle School.

Portsmouth Student Native Plant Guide: Students wrote a guidebook on native plant species. The guide was disseminated through an Internet web page and on video tape in addition to the hard copy format. The goal was for students to learn how to propagate native plants, and to apply their skills and knowledge to nearby greenspaces by participating in enhancement projects at Whitaker Ponds and along the Peninsula Crossing Trail in north Portland.

Total budget: \$12,645. Greenspaces grant: \$3,075. Partners: *Portsmouth Middle School, Portland State University, Oregon Public Broadcasting, the City of Portland and Metro.

Tall Bugbane Conservation: Students studied and mapped a population of Tall bugbane (*Cimicifuga elata*), a Federal species of concern, at Powell Butte. The information they collected provided baseline data that will allow for population monitoring over time. They also conducted an analysis of the environmental and human impacts on the plant population. To add meaning to their work, they developed and presented recommendations for protecting the plants to park staff and interested community members. Total budget: \$2,323. Greenspaces grant: \$1,140. Partners: *Central Catholic High School, City of Portland Parks and Recreation, U.S. Forest Service, the Friends of Powell Butte and Portland State University.

Ainsworth Greenspace: Students, staff and parent volunteers designed and implemented a project to plant native species at the school's greenspace. They use the area as an educational amenity to provide hands-on outdoor learning experiences for science and environmental education programs. Total budget: \$9,080. Greenspaces grant: \$2,150. Partners: *Ainsworth Elementary School and PTA, Willamette Industries, Portland Community Gardens and Portland General Electric.

REACH Backyard Wildlife Habitat: An urban "Backyard Wildlife Habitat" was created on a low-income residential housing facility owned and managed by REACH Community Development, Inc. The site is accessible to the public, and now serves as a model for transforming traditional landscaping into an environmentally sound, wildlife-friendly and beautiful yard. The National Wildlife Federation uses the site for educational opportunities and tours for REACH residents and the general public. Total budget: \$18,345. Greenspaces grant: \$6,405. Partners: *The National Wildlife Federation, REACH Community Development, Inc., and Buckman Community Association.

Lake Oswego Courtyard (Phase 2): Phase 2 was the continuation of a project to transform a school courtyard covered by a lawn into a site alive with a variety of native grasses, trees and shrubs, water features and natural structures. Students, staff and community volunteers provided the labor to construct the project. Science, art, language, math and special education teachers worked together on the site, and developed an activity guide to integrate activities in the courtyard into their classroom lessons. Total budget: \$22,240. Greenspaces grant: \$5,750. Partners: *Lake Oswego School District, Lake Oswego Junior High School and Parent Club.

Deer Creek Outdoor Learning: A natural area on the property surrounding a newly built school was improved to provide accessible outdoor learning areas. Students, staff and community volunteers replaced ornamental landscaping with native plant gardens immediately adjacent to the school and created learning stations throughout the property for environmental studies and nature observations. Total budget: \$22,675. Greenspaces grant: \$6,700. Partners: *Deer Creek Elementary School and PSO, King City, Highlands Residential Neighborhood and the Tigard-Tualatin School District.

Wildlife Steward Schoolyard Habitats: The Wildlife Stewards Program recruits and trains individuals to assist schools with creating schoolyard habitats, outdoor learning labs and teaching strategies to cover environmental and habitat topics. Volunteers are placed in schools to work directly with the teachers and students on their projects. Schools are screened and selected based on their commitment to environmental education and the creation of schoolyard habitats. Total budget: \$29,006. Greenspaces grant: \$7,935. Partners: *OSU Extension/4-H Youth, National Wildlife Federation and the U.S. Fish and Wildlife Service.

Ockley Green Middle School: Students developed a restoration plan for the southern extension of Mock's Bluff, a public greenspace located near their school. Students used their field experiences to build ecological awareness and improve wildlife habitat in their neighborhood. They gathered information to design interpretive materials and develop a planting plan. Total budget: \$4,230. Greenspaces grant: \$1,420. Partners: *Ockley Green Middle School, Portland State University, Portland Audubon, Portland Parks and Recreation and Portland Bureau of Environmental Services.

Kelly Elementary School: Third, fourth and fifth graders learned about forest ecosystems in an outdoor program at the Sandy River. Older students from the Environmental Middle School mentored younger students as they explored

ecological concepts such as: species diversity, natural processes, and cause and effect cycles. Elementary school students were engaged in both classroom and field experiences that included an overnight stay at Camp Collins. Total budget: \$16,587. Greenspaces grant: \$2,200. Partners: *Kelly Elementary School, Portland Bureau of Environmental Services, Oregon State University Extension, Environmental Protection Agency and Portland State University.

Cascade Geographic Society, Inc.: Fourth and fifth graders from Sabin Elementary School participated in riparian enhancement work at an urban site and a rural site. Students learned about habitat in the classroom and applied their knowledge through their project. These students are from an under-served area, and most of them have had few opportunities to experience the natural world. Project activities were designed to promote an appreciation for natural resources and the value of stewardship. Total budget: \$6,420. Greenspaces grant: \$2,300. Partners: *Cascade Geographic Society, Inc., Oregon Department of Fish and Wildlife, U.S. Forest Service.

Northeast Community Development Corporation: This grant was to support the second phase of the Humboldt Learning Garden project. Students, school staff and members of the community worked together to research, design and construct a "Frog Bog" on a 100 foot by 100 foot property adjacent to the school. The simulated wetlands was to provide opportunities for hands-on environmental education about the value of wetlands and stewardship. Unfortunately, the grant for this project was withdrawn. Total budget: 23,500. Greenspaces grant: \$5,500. Partners: *Northeast Community Development Corporation, Humboldt Neighborhood Association, Northeast Coalition of Neighborhoods, Northwest Service Academy and the National Wildlife Federation.

Rex Putman High School: Students, staff and community volunteers focused on the removal of invasive non-native plants at two sites on the school property. Students researched removal methods, lead the on-the-ground work, and have monitored the effects of their enhancement project. In addition, an existing nature trail was improved by adding adjacent landscaping to attract wildlife, and it now provides improved study areas for students and passive recreation opportunities for the community. The Modified Living Skills class, other classes and community members learned about northwest plants and animals, and human impacts on the environment. Total budget: \$16,000. Greenspaces grant: \$4,000. Partners: *Rex Putnam High School, Northwest Service Academy, North Clackamas School District and Leach Botanical Gardens.

Total Funding Requested: \$145,402 for 25 proposals

Number of Funded Projects: 14

Greenspaces Grant Funding Awarded: \$60,000

Leveraged: \$2.67 local match for every \$1 of Greenspaces grant funding.

1998-99 Environmental Education Projects

Mt. Scott Elementary School: This project intended to serve as a springboard for students to experience hands-on learning and gain insights into life cycle concepts and habitat rehabilitation through the enhancement of a degraded wetland on the elementary school campus. However, due to land use issues related to the targeted site, the grant was withdrawn. Total budget: \$1,315. Greenspaces grant: \$500. Partners: *Mt. Scott Elementary School, Oregon State University Extension, North Clackamas Parks, and the Clackamas County Transportation and Development Department.

Wolftree, Inc.: Cascade Streamwatch is an aquatic ecology program serving elementary, middle and high school students in the greater Portland area. The program teaches young people about ecological principles underlying watershed science. Through in-class preparation, field studies and follow-up, Wolftree leads students and teachers in the process of scientific inquiry in the Sandy River Watershed and at locations near their schools. Students perform authentic research that contributes to an active database for the Wildwood education site. The Greenspaces grant was used to fund transportation costs for under-served schools. Total budget: \$24,000. Greenspaces grant: \$8,000. Partners: *Wolftree, Inc, U.S. Forest Service, Bureau of Land Management, Portland Water Bureau, and Portland General Electric/Enron.

Evergreen School District: The Evergreen School District has assumed the role of coordinating a K-12 environmental education program at the Evergreen Fisheries Park. The vision for the park was developed by four founding partner agencies: Clark Public Utilities, Washington State Department of Fish and Wildlife, Vancouver-Clark Parks and Recreation, and the Evergreen School District. High school students were involved in designing, building and maintaining an interpretive trail with signage, constructing viewing blinds, and teaching younger students about natural resource issues. Students received technical support from agency botanists and biologists. Total budget: \$23,625. Greenspaces grant: \$8,000. Partners: *Evergreen School District, Clark Public Utilities, Washington State Department of Fish and Wildlife, Vancouver-Clark Parks and Recreation, and the Evergreen School District.

The Gardner School: This project involved improving wildlife habitat and providing low-impact access to a degraded wetland on the five acre school site. The wetland offers the school on-site opportunities for ecological exploration and habitat enhancement. Pre-school to eighth graders were involved in the project. Total budget: \$22,961. Greenspaces grant: \$8,000. Partners: *The Gardner School, National Wildlife Federation, Wildlife Stewards, Western Natural Resource Center, Washington State University Extension.

Headwaters to Ocean: H2O is a boat-based education program operating on the Columbia and Willamette Rivers. This grant brought the program to Clark County schools, providing river-related environmental education to fourth through twelfth graders. The Clark County program was called "Spotlight the River," where students spent a full day learning about environmental issues related to the Columbia River. Total budget: \$15,000. Greenspaces grant: \$7,500. Partners: *Headwaters to Ocean, Water Resource Education Center, Education Service District 112.

Leach Garden Friends: Community members, high school students and the Leach Garden Friends created an outdoor breezeway display to build awareness about programs and resources offered at Leach Botanical Gardens. The display is designed to change to provide information about current and seasonal topics. The display includes cabinets and shelves to store materials and allow for hands-on activities. Volunteers use their talents to incorporate display materials such as watercolor paintings, photography, and herbarium collections to get messages across to a wide variety of learners and visitors. Total budget: \$3,000. Greenspaces grant: \$1,000. Partners: *Leach Botanical Gardens, Leach Garden Friends and David Douglas School District.

Northeast Community Development Corporation: The McCoy Village GROW (Generations Renewing Our World) project provided hands-on environmental learning opportunities for the children in this affordable living community. The aim was to create a project that would promote community involvement, build understanding of ecological values, and expand personal connections in and around the village. The need for the project was determined by a resident survey that called for more activities for young people. The community worked with a local horticulturist to design a butterfly garden, develop a recycling program and organize a summer school for youths focused on stewardship and shared responsibility. Total budget: \$14,100. Greenspaces grant: \$5,650. Partners: *Northeast Community Development Corporation, McCoy Village Resident Council and Northeast Coalition of Neighborhoods.

Portland State University Student Project at Gabriel Park: A self-guided nature walk was created in Gabriel Park along with hands-on environmental learning experiences for neighborhood youths. The walk focused on three themes: the importance of varied habitat for urban wildlife, incorporating habitat in residential landscapes, and the role people play in watershed health. Local youth learned how to identify and observe wildlife, and they researched the park management history, current environmental projects on site, and the ecological value of the park within a landscape context. Youth then brought parents to a workshop to design backyard projects for their own homes. An opening event was held at the park to celebrate the guide and share information gathered during the project. Total budget: \$15,683. Greenspaces grant: \$3,625. Partners: *Portland State University, Environmental Club at Wilson High School, Neighborhood House Westside Youth Center and the Backyard Bird Shop.

Northwest Regional ESD: The grant supported the initiation of an eight week summer day camp program at Scoggins Valley Park and Henry Hagg Lake. Fifth through eighth graders were targeted for a week long summer experience centered around watershed education and data collection for a year-long human capacity study being

carried out by Washington County parks. New groups of about 60 youths were involved in the program each week. The grant was primarily used to cover the tuition for 55 low income students. Total budget: \$61,765. Greenspaces grant: \$8,000. Partners: *Northwest Regional Educational Service District, Washington County and the Tualatin Valley Irrigation District.

SOLV: A pilot workshop was held to educate up to 40 teachers about ecological restoration techniques. Participants were encouraged to use the information by developing projects with their students. Topics covered included: habitat enhancement techniques, community outreach, volunteer involvement, media strategies, and developing sponsorships. Total budget: \$10,200. Greenspaces grant: \$3,400. Partners: *SOLV, Oregon Trout, Friends of Trees, and the Tualatin Hills Nature Park.

Camille Park: This grant supported the second phase of an enhancement project started at Camille Park with a previous Greenspaces grant. Eighth graders used the park for outdoor studies of lichens and the relationship between precipitation, soils and wetlands. They also continued their observations of study plots set up the previous year and their monitoring of earlier revegetation efforts. Additional native wildflowers, grasses, sedges and rushes were planted in the park, some of which were raised by sixth graders from seeds for the project. Total budget: \$16,425. Greenspaces grant: \$2,555. Partners: *Tualatin Hills Park and Recreation District, McKay Elementary and Whitford Middle School.

Total Funding Requested: \$63,970 for 12 proposals

Number of Funded Projects: 11

Greenspaces Grant Funding Awarded: \$56,230

Leveraged: \$2.70 local match for every \$1 of Greenspaces grant funding.

1999-00 Environmental Education Projects

RiverBend Youth Center: An environmental education/science program was developed for youth that reside at the RiverBend Youth Center. The program utilized a mature forest and a two-acre pond located within the Center's 35-acre forested property. Curricula from the World Forestry Center and Oregon Department of Fish and Wildlife guided classroom and outdoor investigations. Students created interpretive signs, studied native and non-native flora and fauna, and removed non-native species. Total budget: \$9,276. Greenspaces grant: \$3,596. Partners: *Riverbend Youth Center, Northwest Native Plants and the World Forestry Center.

Riverside Elementary School: The school is located approximately 300 feet from the Willamette River. Elementary students researched information about what constitutes a wetland. They tracked the flow of water into and out of a natural area that exists on their school grounds. Neighbors were interviewed about water issues in their community. Students mapped their natural area and set up study sites to monitor wildlife use, collect physical data and conduct other investigations. Based on the data collected, the students determined that a portion of their natural area qualified as a wetland. Students then created an enhancement plan and a map to show the proposed changes. Greenspaces grant: \$6,200. Total project \$34,480. Partners: *Riverside Elementary School, Portland State University-CSE, Audubon Society of Portland and Clackamas County Recycling.

OSU/Clackamas County Extension/4-H: The Wildlife Stewards Program recruits and trains community volunteers in a 40-hour session covering topics such as: Elements of a Successful Schoolyard Habitat, Designing and Planting a Schoolyard Habitat, Using the Schoolyard Habitat as an Outdoor Learning Lab, and more. Wildlife Stewards are placed individually or in teams to work with schools to create schoolyard habitats. Schools are screened and selected for their commitment to education and program objectives, and they must ensure that their project will be planned, designed, planted and maintained by the students. Schools receive a minimum of 100 hours of volunteer support from their Wildlife Stewards. Greenspaces grant: \$8,000. Total budget \$16,633. Partners: *OSU/Clackamas County Extension/4-H, Multnomah County Extension Service/4-H and the National Wildlife Federation.

John Inskeep Environmental Learning Center: This pilot project allowed John Inskeep to design, offer and evaluate a 10-week environmental field science class for at-risk students ages 15-21. Students studied and gathered data on water quality, wildlife populations, plants, aquatic insects and soils of the Newell Creek watershed, with an emphasis on the upper watershed. Students then completed four projects: a small-scale restoration project, a public presentation, a portfolio of their work and a teaching engagement. Experts in the environmental field volunteered their time to co-teach at least six classes on specific environmental science topics. Greenspaces grant: \$4,659. Total budget \$12,266. Partners: *John Inskeep Environmental Learning Center at the Clackamas Community College, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality and the City of Oregon City.

Friends of Tryon State Park: A new school-based program called Nature Explorations Through Art allowed students to explore natural history education through the creation of fine arts projects. Students produced art from nature using observation, questioning strategies, experimentation and organization. The program integrated the production of finished pieces of art with the presentation of a detailed natural history curriculum incorporating habitat, morphology, adaptations and life cycles. Students explored Tryon State Park or other natural areas near their school and participated in four classroom sessions lead by a trained instructor. A teacher's workshop was developed for the program and self-guided materials were developed. Greenspaces grant: \$7,500. Total budget \$17,645. Partners: *Friends of Tryon Creek State Park, Oregon Trout, Lake Oswego Public Schools, and Oregon Parks and Recreation.

Environmental Information Cooperative (EIC): The EIC developed, coordinated and presented five core teacher-training workshops for K-12 teachers in Clark County. Topics covered: Birds Go To School, Bugs Go To School, Care for Air, Trash 'n' Toxics and Worms Go To School, and related field trips. These workshops integrated the concepts of environmental education into theme-based units, stressing urban natural area protection. Activities are aligned with the Washington State Essential Academic Learning Requirements. Workshops were designed to connect teachers with information and education resources to facilitate the development of related projects at their schools. Greenspaces grant: \$8,000 Total budget \$30,025. Partners: *Environmental Information Cooperative, Washington State University-Vancouver, City of Vancouver Public Works, and Clark County.

The Xerces Society: Two pilot workshops were held on native pollinators. The workshops covered the survey and identification of pollinator groups, principles of habitat enhancement for pollinators, and how to create nesting sites. The target audiences were land managers and educators. Participants received training in exchange for a commitment to integrate pollinator conservation into restoration projects, and to take action to promote pollinator conservation by the summer of 2001. Greenspaces grant: \$6,500. Total budget \$15,820. Partners: *The Xerces Society, USDA Bee Biology and Systematics Lab, and the Tualatin Hills Parks and Recreation District.

Portland State University Center of Science Education: The Children's Clean Water Festival is an interactive, day-long event that culminates the water education efforts of students and teachers during the academic year. The academy-like conference has an attendance of approximately 2,000 4-6th graders. It provides hands-on opportunities for students to learn directly from water resources experts representing more than 70 partnering organizations. This event reinforces concepts and studies that students have worked on all year, and introduces new topics regarding watershed resource conservation, management, protection and other related issues. Students also have an opportunity to showcase and share their own projects with the community organizations and other students. Greenspaces grant: \$7,475. Total budget \$50,308. Partners: *Portland State University, City of Portland Water Bureau, Oregon Department of Environmental Quality, and the Columbia-Willamette Water Conservation Coalition.

Mt. Hood Community College Pond: Mt. Hood Community College students worked with a local restoration expert to plan a streambank and wetland revegetation project and research wildlife habitat needs. A living laboratory site was developed for college classes to learn about the propagation of native plants and to study functions and values of wetland ecosystems. This project complimented a Habitat Restoration grant. Students also designed educational signs for placement at three locations around the project site. Local schools were also invited to work on the project, learning from college students that served as their mentors. Greenspaces grant: \$8,000. Total budget: \$15,820. Partners: *City of Gresham Stormwater Division, SalmonCorps and Mt. Hood Community

College. (Note: This project was withdrawn, revised and resubmitted by Mt. Hood Community College, and funded in 2002.)

Oregon Humane Society (OHS): The project involved the enhancement of a 1.4 acre upland and degraded wetland site on OHS's property in the Columbia Slough watershed. Goals were to restore native vegetation, enhance wildlife habitat, improve water quality and provide hands-on outdoor opportunities for youth. Participants were recruited from OHS's Youth Community Service program that serves public schools, Albertina Kerr, the Christie School, OSU-Extension 4-H, Scouts and other community youth. The program allowed students to assist with developing project plans, plant and maintain plants, build wildlife enhancement structures, study wetland ecology and much more. Youth now have the opportunity to monitor the project through the years. Greenspaces grant: \$6,331. Total budget \$13,362. Partners: *Oregon Humane Society, the Portland Bureau of Environmental Services and numerous schools.

Concordia University: The Community Educational Northwest Garden Project involved Concordia students, staff and faculty in a community project centered around the creation of a native plant garden on the university's campus. University students mentored and interacted with nearby elementary and pre-school teachers and students along with interested neighbors. Activities involved planning the project, preparing the site, planting and maintaining native plants. University students developed interpretative signage and informational materials about the benefits of landscaping with native plants. Learning experiences were developed for pre-service elementary and science teachers enrolled at Faubion Elementary and St. Michael's Pre-School. Greenspaces grant: \$3,710. Total budget \$9,727. Partners: *Concordia University, Portland General Electric, Widmer Brothers Brewing Company, Faubion Elementary School and St. Michael's Lutheran Church and Pre-School.

Gregory Heights Middle School: This project was designed for biology and geography field studies of the urbanized portion of the Willamette River, translating river observations and research findings into a mural painted on one of the school's most visible hall walls. The mural depicts the river from the Willamette Falls to its confluence with the Columbia River. Working in groups, the students were assigned a section of river where they conducted field studies. Their activities incorporated many disciplines, for example: math classes calculated the scale of the mural; science classes collected water quality data, river ecology and human impacts; social studies and language arts classes used Metro's Planning for a Livable Future curriculum; computer classes designed a web page. The project included all students and faculty at the school and many parents in some aspect of the project. Greenspaces grant: \$8,000. Total budget: \$21,150. Partners: *Gregory Heights Middle School, Oregon Geographic Alliance and the City of Portland Bureau of Environmental Services.

Roosevelt High School Garden: Roosevelt High School Latino student that participated in the 4-H Hermandad Latina Program were recruited and trained to become 4-H Youth Garden Leaders. These students developed a wildlife habitat and community garden on the school grounds that reflects a multi-cultural community. The 4-H Youth Leaders completed a 20-hour training course, for which they earned school credit. Classes were taught in both English and Spanish. Education stations and signs were written using both Spanish and English. The program links high school student mentors with middle school students, offering educational and recreational programming and positive role models. The garden project also provided students the opportunity to plan, organize and lead a project for the benefit of the community. Greenspaces grant: \$7,998. Total budget \$16,196. Partners: *OSU Extension Service/4-H, Multnomah Master Gardeners and Roosevelt High School.

National Wildlife Federation: This project involved Habitat Stewards, a training program for volunteers and the mentoring arm of the National Wildlife Federation's Backyard Habitat program. The goal of this project was to increase the number and quality of wildlife habitat sites at the community gardens in Portland. This program created a partnership between the National Wildlife Federation and the Portland Community Gardens program to educate community gardeners in the importance of gardening for wildlife, and how to incorporate habitat in community gardens. The program involved children in gardening for wildlife activities at the community gardens through summer and after-school programs. Greenspaces grant: \$3,150. Total budget \$12,057. Partners: *National Wildlife Federation, City of Portland Parks and Recreation, and the Clinton and Berrydale Community Gardens.

The Nature Conservancy Amphibian Study: This project created an environmental education program linked to a long-term ecological monitoring program investigating amphibian populations in the Sandy River Gorge. Nature Conservancy biologists guided a broad range of student and community volunteers through hands-on studies. Their activities included mapping streams, seeps, vernal pools and other wetland features; measure and mapping structural forest features; establishing a network of amphibian sampling stations; and monitoring and recording amphibian population data. Data was collected on the abundance and diversity of amphibians, and a system for tracking long-term population trends was established. Students learned techniques for conducting research and field work. Greenspaces grant: \$8,000. Total budget \$48,160. Partners: *The Nature Conservancy, Barlow High School and Oxbow Regional Park.

Centennial High School: Students researched the question, “Where does the water from the Gresham Southwest Community Park really flow?” Over the years, there have been two theories: 1) the site is the headwaters of Fairview Creek and flows only north, and 2) the flow goes north, as well as south into Johnson Creek. As students look into this question, they will consider the policy implications of who has local jurisdiction (the City of Portland vs. the City of Gresham), and how future development may impact one or both watersheds and associated fish and wildlife. Students designed and conducted the field studies, and they monitored a past restoration project at the park. They found that water flows from the site into both watersheds. Greenspaces grant: \$700. Total budget \$1,822. Partners: *Centennial High School, City of Gresham and the Fairview Creek Watershed Conservation Group.

Deer Creek Elementary: Curriculum was developed to support both in-class and after-school stewardship activities. The activities were designed to increase student understanding about how the local environment is affected by human behavior and activities. About 20-25 lessons were developed to teach ecological principles and concepts that meet state benchmark standards. The lessons directly use wooded upland and wetland areas on the school grounds. Kits and instructional materials were put together that are accessible to all teachers. Art, music, science and literature were all incorporated into the program to help tie the concepts together. Students were also taught mentoring skills to lead small groups of students and adults in activities around the wetlands. Greenspaces grant: \$2,400. Total budget \$7,970. Partners: *Deer Creek Elementary School, OSU-Extension Wildlife Stewards, Project Learning Tree, Project WET, Tigard-Tualatin School District, Tigard Music Company and Deer Creek Parent School Organization.

Friends of Tualatin River National Wildlife Refuge: The Friends group worked with fifth and sixth graders and educators from the Sherwood School District to produce a Seasonal Field Guide to the Refuge. The field guide is designed for use by all ages to build an appreciation for nature and the importance of urban natural areas. Students learned about wetland characteristics, their ecological importance, and species that occur there. Students also learned about land-use issues facing the refuge and ways to protect its natural qualities. The project offered an opportunity for the public to interact with the refuge, since access to the area is currently limited. Refuge staff, professionals and other natural resource volunteers will be used as mentors to the students. Greenspaces grant: \$5,000. Total budget: \$15,708. Partners: *Friends of the Tualatin River NWR, Sherwood School District and the U.S. Fish and Wildlife Service.

Total Funding Requested: \$140,471 for 23 proposals

Number of Funded Projects: 18

Greenspaces Grant Funding Awarded: \$105,219

Leveraged: \$2.31 local match for every \$1 of Greenspaces grant funding.

2000-01 Environmental Education Projects

Columbia Springs Environmental Education Center (CSEEC): The CSEEC is the joint venture of a five-member partnership consisting of Clark Public Utilities, Washington Department of Fish and Wildlife, Vancouver-Clark Parks and Recreation, Clark College and the Evergreen School district. The mission of the group is to provide opportunities for environmental education within an urban setting. This project is designed to improve access and

interpretive features at the CSEEC, enhance wildlife habitat and native vegetation around a wetland at the site, promote stewardship, and provide restoration and monitoring training for teachers and students. Greenspaces grant: \$8,000. Total budget: \$16,000. Partners: *Evergreen School District, CSEEC staff and board members, AmeriCorps volunteers, Washington Department of Fish and Wildlife, Clark Public Utilities, Vancouver-Clark Parks and Recreation, Vancouver Trout Hatchery, Clark College and consultants.

Wetland enhanced by neighboring school: Two sixth grade classes from Seth Lewelling will be growing their own wetland plants to help restore a wetland shared by neighbors and the school. Students will study about the structure and function of wetlands in class and apply their knowledge and skills directly to their project. Families, students and community members will be invited to come out and learn about wetlands as they help remove invasive plants and prepare the site for plantings. Greenspaces grant: \$1,078. Total budget: \$3,500. Partners: *Seth Lewelling Elementary School, Johnson Creek Watershed Council, OSU Extension, North Clackamas School District.

Protecting school "backyard" habitat: Fourth through 8th grade students of Welches School will identify, restore and protect valuable natural areas in the school's "backyard" that will become an environmental study area. The subjects taught will include history and culture of the area, surveying and mapping techniques and restoration practices. Students will be involved in habitat restoration such as invasive plant removal. Greenspaces grant: \$4,200. Total budget: \$12,426. Partners: *Oregon Trail Education Foundation, Cascade Geographic Society, U.S. Forest Service, and YMCA Earth Service Corps.

Homeschool at the John Inskeep Environmental Learning Center: Homeschool families will visit the Environmental Learning Center (ELC) on the campus of Clackamas Community College two Mondays per month to conduct natural resource research and collect environmental data. The baseline data coincide with ELC's multi-year restoration plan. Students will be involved in collecting information on water quality, flora and fauna. Students and families also will analyze the data to determine possible trends and make management recommendations. Greenspaces grant: \$8,000. Total budget: \$21,936. Partners: *LinkUp/Oregon City School District, John Inskeep ELC, Clackamas Community College, Oregon City SD.

Summer Science Institute set in Canby: A five-day summer science institute for teachers and community members in the Canby area will feature a service learning curriculum and other resources to help participants plan hands-on classroom activities and outdoor projects in their community. Service learning engages students in educational activities in "real world", community application. Greenspaces grant: \$4,900. Total budget: \$11,000. Partners: *Canby School District, SOLV, City of Canby, and Portland State University.

Creating an outdoor classroom for students and community: Palisades Adult Leadership (PAL) group will work with students from Palisades Grade School to create a water-wise, wildlife enhanced area in front of the school using native plants. Students will work with PAL to plan a series of garden beds to display a variety of native plants and learn about the insects, birds and other animals that rely on them for food and shelter. The school will serve as a demonstration site for community-wide education to help citizens understand how native plants help wildlife, reduce water usage and minimize the need to add chemicals in their yard. Greenspaces award: \$5,245. Total budget: \$10,500. Partners: *Palisades Grade School, Lake Oswego School District, OSU Master Gardeners Program.

Students innovative backyard rain water systems: DaVinci Middle School will team with Keepers of the Water organization to research with local scientists effective ways to delay rain water runoff. Students will combine stormwater retention techniques with art to create solutions in their own backyards. Students will explore "green building" solutions, visit wastewater treatment facilities and survey their neighborhood regarding runoff. Greenspaces grant: \$7,260. Total budget: \$19,467. Partners: *Keepers of the Water, DaVinci Middle School, Sustainable Systems Designs, Portland Bureau of Environmental Services.

Awareness project brings students up close to nature: Students will be immersed in nature awareness skills, animal tracking, bird language and wilderness survival skills. Two hundred students from elementary to alternative high school will participate in these studies over the school year. Students will use the tools of animal tracking to develop an understanding of the ecology of forest and floodplain ecosystems at Metro's Oxbow Regional Park.

Greenspaces grant: \$8,000. Total budget: \$34,780. Partners: *Cascadia Wild!, Metro Regional Parks and Greenspaces, Evergreen School District, Portland Public Schools, Reynolds School District.

Madison High School EcoSummit: Students, teachers and staff all participate in a school-wide day of environmental activities. Attendees will choose from a wide variety of workshops and activities presented by natural resource agencies and organizations. Metro Regional Services will play a major role in setting out current regional issues (e.g. land use, transportation, air and water quality, greenspaces) for participants to explore and provide recommendations. Greenspaces grant: \$5,000. Total budget: \$22,930. Partners: Madison High School, Metro, Portland Bureau of Environmental Services, Northwest Service Academy.

Reynolds Schools and City of Fairview study wetland park: Students from Reynolds schools will work with city staff and local experts to create interpretative signs and a brochure for Salish Ponds Wetlands Park. Students will conduct research and gather data on site to support materials for interpretation. Teachers will attend training sessions in wetlands, urban issues, data collection and stewardship. Greenspaces grant: \$4,000. Total budget: \$34,161. Partners: *Reynolds School District, City of Fairview, SOLV, Saturday Academy.

Interpreting the journey of salmon: "Interpreting the Journey" will be a multi-task study for the 180 students at Sunnyside Co-op School. Students will study current Pacific Northwest environmental issues including a look at watershed health, the salmon life cycle and their survival. Traveling to the Oregon coast, students will learn about the connection between local streams, rivers and the ocean. Students will create a prototype interpretive sign for Metro's Oxbow Regional Park to inform park visitors about salmon. Greenspaces grant: \$5,865. Total budget: \$37,863. Partners: *Sunnyside Family Co-op School, Metro Regional Parks and Greenspaces, Oregon Dept. of Fish and Wildlife, Seaside High School.

Overnight at the Oregon Zoo: Urban Nature Overnights at the Oregon Zoo strives to inspire respect and understanding for urban and wild ecosystems. The program provides under-served; inner city children with a safe, hands-on experience with the natural world, and strives to foster an appreciation and awareness of wildlife conservation and stewardship. About 300 children will participate in the program and continue activities throughout the year. Greenspaces grant: \$5,250. Total budget: \$17,626. Partners: *The Oregon Zoo Foundation, Bureau of Land Management, Portland Parks and Recreation, Boys and Girls Clubs.

Procession of the Species parades through the streets of Portland: Art and science combine to make a gala event for an anticipated 8,000 spectators showcasing 400 students in animal regalia. The Procession of the Species is not only an event but also a program that goes into the classroom to teach about important environmental issues. It links the creative arts with environmental education for K through 12th grades. Students share their creativity and environmental learning during Earth Day in a parade through downtown Portland. Greenspaces grant: \$8,000. Total budget: \$30,732. Partners: *Earth and Spirit Council, Regional Arts and Culture Council, Portland Public Schools, Multnomah County Libraries.

Gregory Heights Middle School brings the river inside: A 640-foot mural painted along the main hallway of Gregory Heights Middle School is part of how students will spend the year studying the Willamette River. Every student will go out on the river to make observations and learn about current environmental issues in and around the Willamette River. Back at school, students and local artists will draw and paint the river mural while incorporating math, language arts, social studies and science into the program. Greenspaces grant: \$8,000. Total budget: \$20,400. Partners: *Gregory Heights Middle School, Headwaters to Ocean, Artist in Resident Program, Portland State University.

Teachers to monitor wildlife: About 100 middle and high school teachers will be trained on the techniques of NatureMapping. The program goal is to inform and motivate people capable of assessing wildlife diversity and finding conflict solutions where humans and wildlife interact. Teachers will be trained in map reading and interpretation, Geographic Positioning Systems technology, wildlife identification and observation skills as well as how to integrate the program into the classroom to meet Oregon Education Benchmarks. Greenspaces grant: \$8,000. Total budget: \$32,858. Partners: *Jackson Bottom Wetland Preserve, Deerdance, Defenders of Wildlife, Portland State University.

Students stay after school for wildlife: Along with the Friends of the Refuge, US Fish and Wildlife Service and expert volunteers, Sherwood Middle School is working to establish an after school environmental education club. The Refuge Club will work weekly on learning the natural wonders of the Tualatin River National Wildlife Refuge and prepare materials and conduct field trips to share with their peers and public. The Refuge Club will study birds, wildlife tracks, amphibians and reptiles of the refuge along with mentoring elementary and middle school teachers in classroom activities. Greenspaces grant: \$3,875. Total budget: \$17,152. Partners: *Sherwood School District, U.S. Fish and Wildlife Service, Friends of the Refuge, Oregon Department of Fish and Wildlife.

Teacher training for natural area enhancement: Workshops will target 5th grade teachers from Clark County schools to engage in hands-on learning about habitat enhancement projects. Information will include working with administration and grounds maintenance staff, selecting a location, mapping and inventorying sites and other details important to enhancement projects. Greenspaces grant: \$7,875. Total budget: \$17,065. Partners: *Environmental Information Cooperative, Evergreen School District, Clark County Public Utilities, Washington Dept. of Fish and Wildlife.

Testing the waters: The Water Quality and Habitat Monitoring program will support a network of volunteer monitors in Clark County. This program involves citizens of all ages with local streams, wetlands and lake habitats. The information collected will be shared among local governments, agencies and interested citizens at the Watershed Congress. Greenspaces grant: \$7,995. Total budget: \$33,227. Partners: *Water Resource Center, City of Vancouver, Clark County Environmental Services, Hewlett-Packard, Environmental Information Cooperative.

Learning about healthy watersheds: Dorothy Fox Elementary School in Camas, Washington will take surveys and inventories of three distinctly different wetland areas near their school including a water retention site, a disturbed wetland and a managed turfed area. Students will inventory flora and fauna in each area along with mapping and making other observations. Students will make inferences, compare and contrast the three sites and bring their information to local agencies and peers. Greenspaces grant: \$8,000. Total budget: \$16,000. Partners: *Dorothy Fox Elementary School, City of Camas, Water Resource Center, ESD 112, Columbia Springs Environmental Center. [WITHDRAWN]

New curriculum for art-based natural history program: Friends of Tryon Creek State Park will introduce 100 elementary teachers in Multnomah and Clackamas counties to a curriculum integrating sciences and the arts to teach students about endangered species, especially salmon and critical habitat. The activity is based on a successful park program. Greenspaces grant: \$7,500. Total budget: \$18,460. Partners: *Friends of Tryon Creek State Park, Oregon Parks and Recreation, Portland Bureau of Environmental Services, OSU Extension Service.

Youth crews for habitat: Three Rivers Land Conservancy will train local youth to become active stewards in their community. Five natural areas owned or managed by the conservancy will be subject to habitat restoration and enhancement activities by the youth crew team. Three private landowners also will be working closely with the youth crew to demonstrate the importance of good land stewardship. Greenspaces grant: \$8,000. Total budget: \$17,070. Partners: *Three Rivers Land Conservancy, Portland Park and Recreation, West Linn Homeowners Association, Portland General Electric, City of Lake Oswego.

Outdoor classroom offers look into stream ecology: Cascade Streamwatch and Highland Ecology programs offer students a deeper understanding of the science of ecology on a one-day intense field study. The program involves students in studying complex systems like habitat diversity, species relationships and adaptations. The two programs focus on terrestrial and aquatic ecosystems for over 1,900 students from the Portland/Vancouver metropolitan area. Greenspaces grant: \$8,000. Total budget: \$175,440. Partners: *Wolfree, Inc., U.S. Forest Service, Bureau of Land Management, Portland/Vancouver Public Schools.

Students take on water quality monitoring: The Student Watershed Research Project (SWRP) provides both high quality reproducible data on watershed health and a high level of understanding of watershed structure and processes by teachers, students and the community. SWRP engages in long term watershed monitoring and trains 8th through 12th grade teachers water quality collection methods working with local scientists. An annual student watershed summit is held every year to provide students with an opportunity to present their findings to peers, local agency and

university staff. Greenspaces grant: \$8,000. Total budget: \$154,059. Partners: *Oregon Graduate Institute, Oregon Department of Environmental Quality, Tualatin Riverkeepers, U.S. Geological Survey, and local watershed councils.

Total Funding Requested: \$165,068 for 25 proposals

Number of Funded Projects: 23

Greenspaces Grant Funding Awarded: \$150,043

Leveraged: \$4.16 local match for every \$1 of Greenspaces grant funding.

2001-02 Environmental Education Projects

Invasive Species Curriculum: The Nature Conservancy will provide lesson plans, training and access to natural area restoration projects to give students an opportunity to work with environmental professionals and see principles of ecosystem science applied in a real situation. Students will use their math, writing and analytical skills to assist in the effort to improve watershed and habitat health. Lesson plans will include plant identification, plant growth cycles, measuring weed density, designing weed monitoring, presenting data and implementing restoration plans. Total budget: \$27,572. Greenspaces grant: \$8,100. Partners: *The Nature Conservancy of Oregon, West Linn High School, Reynolds High School

Pollinator Conservation Handbook: A Pollinator Conservation Handbook will be produced to help people gain a better understanding of the vital role local insect pollinators play in both managed and wild greenspaces. Illustrated with color photos and drawings, the 40-page handbook will include information on the natural history of native bees and other pollinator insects, advice on creating foraging habitat for them, and more. Backyards, planting strips, riparian areas, school grounds and parks can be easily be enhanced with pollinators. Total budget: \$30,000. Greenspaces grant: \$10,000. Partners: *The Xerces Society, Bee Works.

Green Field Trips: Ten middle school classrooms will receive Protecting Our Watershed (POW) materials to help students and teachers in preparing local watershed projects near the schools. Students will learn about watersheds and develop a community project to address an issue they care about in the watershed. Students will assess the selected watershed to include chemical water quality monitoring, biological water quality monitoring and land use assessment. Total budget: \$22,203. Greenspaces grant: \$5,000. Partners: *Cascade Earth Force / Portland State University, Metro, Portland Water Bureau, Lower Columbia River Estuary Program, Water Resources Education Center, Native American Youth Association, Portland Community College, Oregon Water Resources Department, Regional Water Providers Consortium.

Wildlife Tours: Each class will select a public natural area to work with, such as Smith and Bybee Lakes Wildlife Area. Each class will develop a site specific aquatic ecosystem curriculum to share with younger students from a local school. The younger students will be invited to an all day Wildlife Tour. Families and community members will be invited to a weekend Wildlife Tour event to encourage awareness and stewardship of local natural areas. Total budget: \$28,720. Greenspaces grant: \$2,925. Partners: *Environmental Middle School (Portland Public Schools), Portland Nursery, Portland Bureau of Environmental Services, SOLV, Abernathy Neighborhood Association.

Wetland Prairie Study Project: High school students enrolled in the Corps Restoring the Urban Environment program (CRUE) will assist The Wetlands Conservancy to restore, protect and enhance the functions and values of a 3.5-acre tufted hairgrass prairie located in the Washington County. This wetland plant community is disappearing in the Willamette Valley and a study of study three locations in the wetland will support the development of a restoration strategy. Students also will learn about propagation techniques and deliver public presentations on the results of the study. Total budget: \$13,828. Greenspaces grant: \$4,260. Partners: *Open Meadow Alternative School, The Wetlands Conservancy, Portland Public Schools District, Oregon Youth Conservation Corps, Oregon Division of State Lands, Vigil Agrimis, Inc.

Nature Awareness Project: The Nature Awareness Project will immerse students in the natural world to inspire a life-long passion and positive relationship with mammals, birds and plants. Students will practice pattern recognition and memory recall, learn nature awareness skills, animal tracking, language of birds and wilderness survival skills. They will keep journals and create wildlife profile notebooks. Total budget: \$40,934. Greenspaces grant: \$8,000. Partners: * Cascadia Wild!, Metro, Clarendon, James John, Sunnyside, Fircrest elementary schools; Clear Creek Middle School, Madison High School, Reynolds Learning Center

Salish Ponds Brochure and Sign: This 70-acre natural area park in Fairview serves as a home to a variety of wildlife and an important environmental learning site for adults and school children of all ages. A written guide or brochure and interpretive signs are needed to help people better understand the nature of Salish Ponds Wetlands Park. The City of Fairview, SOLV and students from the Reynolds School District will research and produce a guide or brochure and interpretive signs for the park. Total budget: \$61,356. Greenspaces grant: \$4,500. Partners: *Reynolds School District, City of Fairview, SOLV, Saturday Academy, U.S. Fish and Wildlife Service, Mt. Hood Community College, Holt and Haugh, Animal Tracks by Steve.

EcoRoof: Students and teachers will disconnect the downspouts on their school and construct an ecoroof and naturescape around the parking lot to rainwater on the school grounds. An ecoroof is an actual vegetated landscape used instead of conventional roof materials. It reduces water runoff, insulates the building and improves air and water quality. NatureScaping around the parking lot will serve as a biofilter for stormwater runoff. Students will also solicit volunteer help from three neighborhood associations. Total budget: \$114,693. Greenspaces grant: \$4,900. Partners: *Gregory Heights Middle School (Portland Public Schools), Bureau of Environmental Services, Friends of Trees, Portland Water Bureau.

DaVinci Water Garden, Phase 2: Students, teachers and parents will assist Keepers of the Waters in the construction of a water garden on the grounds of Da Vinci Middle School. This schoolyard urban watershed will demonstrate how to capture rain water and storm water runoff to produce a greenspace as a community gathering space, outdoor classroom and visible, natural water treatment system. Total budget: \$50,839. Greenspaces grant: \$5,000. Partners: *Da Vinci Middle School, Keepers of the Waters, Ocean Arks International, Flowforms America, CH2MHill, Portland Bureau of Environmental Services, Total Work of Art, Kerns Neighborhood Association, Northwest Service Academy, Water Cycles.

Art of Mentoring Workshop: The Art of Mentoring Workshop explores how to combine modern science education with traditional mentoring tools and incorporate the natural world as the teacher. The workshop is designed for classroom teachers, youth leaders, community leaders, outdoor educators and home schoolers. The workshop draws on the traditions of native people, who conveyed understanding of the natural world to their children with time honored teaching methods: stage-setting, questioning, critical discussion, observation, introspection, contemplation, storytelling and community relationships. Total budget: \$25,395. Greenspaces grant: \$2,150. Partners: * Jackson Bottoms Wetland Preserve, Deerdance, Metro, Cascadia Wild, Tryon Creek State Park, City of Hillsboro, Clean Water Services, Oregon Division of State Lands, Audubon Society of Portland.

Cybertracking - Using Computers to Study Wildlife Movements: Cybertracking combines Global Positioning system and personal palm computer technology with wildlife tracking skills to monitor wildlife movements within and between habitats. Teachers, students and interested citizens will be trained in the use of Cybertracker. Participants will investigate habitat use and movement of animals between ecologically significant areas in the metropolitan region. These habitat areas are identified and mapped, but little is known how animals use these areas. Cybertracking can be an important wildlife conservation tool. Total budget: \$45,439. Greenspaces grant: \$10,000. Partners: * Jackson Bottoms Wetlands Preserve, Deerdance, Metro, Portland State University, Cascadia Wild.

Bug Discovery Lab: A Bug Discovery Lab will take people into the world of insects and other creatures with no spines. This new component of Bug Fest will offer hands-on activities, crafts and guided walks in a lively and informative manner that will reveal the amazing lives of invertebrates. People will learn how bugs are important to a healthy environment and why we can't live without them. Total budget: \$7,279. Greenspaces grant: \$3,415. Partners: *Tualatin Hills Park and Recreation District, Xerces Society, Metro.

Vancouver's Friendship Park: Friendship Park is a 28.5-acre natural area in Vancouver, Washington that features Burnt Bridge Creek and the Ellen Davis Trail. Friends of Trees will work with Minnehaha Elementary School and other local schools to remove invasive plants, plant native vegetation and produce interpretive signs and a restoration curriculum. The park will be used as an outdoor classroom to develop lasting, caring friendships between students and the park. Total budget: \$25,000. Greenspaces grant: \$8,150. Partners: * Friends of Trees, Bonneville Power Administration, Washington Dept. of Transportation, Vancouver Audubon, City of Vancouver, Minnehaha Elementary PTA, Minnehaha Neighborhood Association, Minnehaha Garden Club, Chinook Trails, Clark County Weed Control, Northwest Service Academy, Pacific Rock Products, Washington State University

Total funding requested: \$285,472 for 34 proposals

Number of Projects Funded: 13

Greenspaces Grant Funding Awarded: \$80,000

Leveraged: \$5.35 local match for every \$1 of Greenspaces grant funding

[Note: A total of \$80,000 was originally awarded to fund 14 projects; 1 project was withdrawn and is not included in the descriptions above.]

2002-03 Environmental Education Projects

Alsop-Brownwood Monitoring: Aquatic science students of Central Catholic HS will support habitat restoration work along Johnson Creek near Powell Butte in SE Portland. Students will collect water, vegetation and soil condition data to monitor the effects of the habitat enhancement activities. Total budget: \$17,162. Greenspaces grant: \$5,200. Partners: *Central Catholic High School Portland Bureau of Environmental Services, Diack Ecology Education Program, Project Learning Tree, Oregon Department of Fish and Wildlife, Johnson Creek Watershed Council.

Butterfly Education and Stewardship: Students and other volunteers will be trained to identify butterflies and monitor their populations in the Portland metropolitan region. In addition to conducting monthly butterfly field surveys, the butterfly stewards will conduct a mid-summer butterfly census at three metropolitan greenspace locations (i.e. Multnomah Channel wetland, Cooper Mountain, Clear Creek Canyon). The general public will be encouraged to participate in the summer census and learn about how these insects serve as an indicator of healthy environments. Total budget: \$17,576. Greenspaces grant: \$7,150. Partners: *The Xerces Society, Portland State University, Clackamas High School, Metro.

Eating and Ecology at Zenger Farms: This former farm and adjacent wetland in southeast Portland will give students the chance to understand the affects of cultivation practices on natural environments. Students will grow a vegetable garden and monitor the water quality and plant diversity in neighboring wetlands. It is a special opportunity to learn about agricultural practices and watershed health. Total budget: \$28,368. Greenspaces grant: \$8,950. Partners: *Friends of Zenger Farm, Portland Bureau of Environmental Services, Mt. Scott Park Center for Learning, Juan Young Trust, Boeing Employees Community Fund, Marshall High School, David Douglas High School, Environmental Middle School, Lent Elementary, Kelly Elementary, FamilyWorks.

Gresham Woods Education and Outreach: Alpha High School students will engage a comprehensive habitat restoration effort on a 3-acre section along Johnson Creek known as Gresham Woods. Activities will include a habitat inventory, restoration planning, clearing non-native invasive plant species, planting native vegetation, and monitoring plant survival and water quality. Total budget: \$61,153. Greenspaces grant: \$7,300. Partners: *Multnomah Education Service District, City of Gresham, Portland Bureau of Environmental Services, U.S. Fish and Wildlife Service, Johnson Creek Watershed Council, Gresham Butte Neighborhood Association, Friends of Trees, Oregon Watershed Enhancement Board, National Fish and Wildlife Foundation

Gresham-Barlow Schoolyard Habitat: Grant funds will support teacher training, planning and materials to establish schoolyard habitats at five middle schools in the Gresham-Barlow school district. The project will

establish two schoolyard habitats in the first year with goal to serve nearly 3,000 students in all locations in the future. Total budget: \$23,560. Greenspaces grant: \$6,000. Partners: *Gresham-Barlow School District, City of Gresham, Flat Creek Garden Center, Skipper and Jordan Nursery, J.F. Schmidt Nursery, Oregon State University Extension Agency, Springwater Trail High School

Homeowner Education and Stewardship: To promote awareness and action for watershed health, Raindrops to Refuge will conduct four "neighbor-to-neighbor" workshops, two natureScaping workshops and produce a neighborhood guidebook for homeowners in the Sherwood area. Total budget: \$31,290. Greenspaces grant: \$7,000. Partners: *Raindrops to Refuge (Sherwood watershed stewardship group), Naturesheds Northwest, Metro, U.S. Fish and Wildlife Service, City of Sherwood, Clean Water Services, East Multnomah Soil and Water Conservation District, Audubon Society of Portland, Tualatin Riverkeepers, Sherwood Public Schools

John Jacob Astor Courtyard Greenspace: Students, teachers and parents will engage in planning and converting over ¼-acre of schoolyard asphalt into a living greenspace. This schoolyard urban watershed will demonstrate how to capture rain water and storm water runoff to produce a greenspace as a community gathering space, outdoor classroom and visible, natural water treatment system. Total budget: \$21,560. Greenspaces grant: \$8,500. Partners: *Portland Public Schools - Astor Elementary School, Keepers of the Waters, CH2MHill, Portland Bureau of Environmental Services, University Park Neighborhood Association, National Wildlife Federation, Friends of Trees, Water Cycles, US Army Corps of Engineers, University of Portland.

Kelly Butte Restoration Planning Project: Students from Marshall High School will research and write habitat management plan for the Kelly Butte Natural Area in southeast Portland. Total budget: \$32,400. Greenspaces grant: \$5,000. Partners: *Wolfree, Inc., Marshall High School, Friends of Trees, Portland Water Bureau, Portland Bureau of Environmental Services, Columbia Sportswear, Oregon Forest Resources Institute, The Nature Conservancy, US Forest Service, U.S. Fish and Wildlife Service, World Forestry Center.

Monitoring and Stewardship Model, Tualatin River Watch: Twenty-four volunteers will be trained to help in monitoring activities at Gotter Bottom near Scholls and Killin Wetlands near Banks. The volunteer recruits will learn bird identification and photo monitoring skills and organize and conduct habitat restoration activities and nature tours. Total budget: \$21,070. Greenspaces grant: \$4,000. Partners: *Tualatin Riverkeepers, Tualatin River Watershed Council, Ash Creek Forest Management, Metro, Student Watershed Research Project.

Slough School: Six classroom study kits will contain wildlife field guides, replica tracks, wildlife photos, skulls, plant samples and a study guide of the Columbia Slough watershed. Each kit will support environmental studies for 30 students and be available for 25 schools (3,000 students) within the watershed. Total budget: \$12,111. Greenspaces grant: \$3,400. Partners: *Columbia Slough Watershed Council, Portland Bureau of Environmental Services, Portland State University, Lower Columbia River Estuary Partnership, and Portland Public Schools.

Village of the Ancients Summer Camp: Wildlife tracking, nature awareness and wilderness survival activities are among the skills youth (8-12 years old) will use in this unique interactive theater camp to learn about the natural world. Select camp staff will play the role of the "ancients" (e.g. wind, sun, water, land, etc). Total budget: \$156,878. Greenspaces grant: \$5,000. Partners: *Cascadia Wild!, Myth Media.

Procession of the Species Arts and Science Education: Combining science learning with art work, students from kindergarten through 3rd grade will create plant and animal costumes, masks and banners to participate in the Procession of the Species parade in Portland during earth day. Students will also take a field trips to a nearby wildlife habitat to better understand wildlife needs and participate in a habitat improvement activity (e.g. native vegetation planting). Total budget: \$33,300. Greenspaces grant: \$3,000. Partners: *Earth and Spirit Council, Portland Public Schools, Multnomah County Library, SOLV, Columbia Slough Watershed Council, Columbia River Intertribal Fish Commission, Community Reuse Action Program.

Mt. Hood Community College Pond: Mt. Hood Community College students worked with a local restoration expert to plan a streambank and wetland revegetation project and research wildlife habitat needs. A living laboratory site was developed for college classes to learn about the propagation of native plants and to study

functions and values of wetland ecosystems. This project complimented a Habitat Restoration grant. Students also designed educational signs for placement at three locations around the project site. Local schools were also invited to work on the project, learning from college students that served as their mentors. Greenspaces grant: \$8,000. Total budget: \$26,657. Partners: *Mt. Hood Community College, City of Gresham Stormwater Division, SalmonCorps. (Note: This project is from a 1999 grant that was withdrawn, revised and resubmitted, and funded in 2002.)

Total funding requested: \$223,729 for 27 proposals

Number of Projects Funded: 13

Greenspaces Grant Funding Awarded: \$78,500

Leveraged: \$5.15 local match for every \$1 of Greenspaces grant funding

2003-04 Environmental Education Projects

No environmental education grants were awarded in 2003 due to the proposed termination of the Greenspaces Program in fiscal year 2004. All 2003 grant funds were used for Conservation and Restoration projects.

Salmonid Education and Enhancement Projects

1998-99 Salmonid Projects

Water Environment Services: A 70-acre site located along Mt Scott Creek was enhanced by Clackamas County, the Friends of Kellogg/Mt Scott Creeks and neighbors. Large woody debris was placed in selected locations of the creek to improve fish habitat and dissipate stream energy. Banks were revegetated to restore a native riparian community and reduce erosion. Bank treatments included the use of erosion control materials, fascines, live stakes and native plantings. Mt Scott Creek has been identified by the National Marine Fisheries Service as Critical Habitat for Steelhead, and it is also known to support coho salmon and coastal cutthroat trout. Total budget: \$12,490. Greenspaces grant: \$5,000. Partners: *Clackamas County Water Environment Services, Clackamas County Development Agency, Friends of Kellogg/Mt Scott Creeks, North Clackamas Parks and Recreation, and Precision Castparts.

City of Washougal: The Washougal and Columbia Rivers are within and adjacent to the City of Washougal. The City's goal for this project was to contribute to restoration and enhancement efforts to improve wild fish runs. Citizens worked with the City of Washougal to remove invasive non-native species and plant native riparian species along a section of Campen Creek. The project also involved designing signage with contact numbers, salmonid information and stream names to place at road and pedestrian crossings over streams. Total budget: \$3,350. Greenspaces grant: \$1,425. Partners: *Camas/Washougal Fish and Habitat League, Clark County and the City of Washougal. [WITHDRAWN]

Environmental Information Center: Funds were used to sponsor a two-day event as part of the Salmon Creek Water Festival held in Clark County, Washington. Fourth and fifth grade teachers attended a one-day workshop to introduce them to the Salmon in the Classroom Program and ways of integrating environmental education into their existing curricula. Over sixty classes of fourth and fifth graders attended the Festival and participated in a variety of hands-on activities related to salmon. The grant covered teacher costs to attend the workshop and to take students to the Festival. Total budget: \$10,545. Greenspaces grant: \$5,000. Partners: *Environmental Information Cooperative, City of Vancouver, Clark County, Clark Public Utilities, Southwest Air Pollution Control Authority and Washington State University.

Camas-Washougal Fish and Habitat League: The League partnered with the City of Washougal on a stream signage project. The goal was to place signs at all stream crossings to inform people that the streams support native salmonids. The League has been working with citizens to educate them about salmonid habitat requirements and what they can do to minimize their impacts on streams. Total budget: \$2,012. Greenspaces grant: \$1,000. Partners: *City of Washougal Parks Department, Clark County Public Works, City of Camas Parks and the Camas School District. [WITHDRAWN]

Lewis and Clark High School at Headache Creek: The long-term goal of this project is contribute towards re-establishing a healthy, natural and balanced ecosystem in Headache Creek Wetlands were enhanced by aggressively removing non-native invasive vegetation and revegetating with native species. The work was completed by Lewis and Clark High School students, the Bagley Downs Neighborhood Association and community partners. Lewis and Clark High School is on a new campus, and it targets students that are unconventional learners. This is one of several long-term projects that the students and community will be working on together. Total budget \$15,440. Greenspaces grant: \$4,200. Partners: *Vancouver School District, Lewis and Clark High School, Vancouver-Clark Parks, Mabry Nursery, Bagley Downs Neighborhood Association.

Environmental Middle School (EMA): The EMS taught school and community groups about the salmon life-cycle and connections between personal conservation actions, watershed health and the viability of salmon populations. School and community groups participated in on-site tours of environmentally-friendly land-use practices at EMS, student tours of local urban stream sites, and an informational festival concerning watershed issues. Total budget \$13,912. Greenspaces grant: \$4,092. Partners: *Environmental Middle School, Portland Public Schools, the City of Portland Bureau of Environmental Services and the Johnson Creek Watershed Council.

National Wildlife Federation Small Fry Walk: The Small Fry Walk was developed to reach community members along the Johnson Creek stream corridor. It featured information and activity tables hosted by agencies and groups with the expertise and the ability to provide high-quality materials and hands-on learning experiences about salmon and stream habitat for children and families. Attendees participated in an easy ½ mile walk along the Springwater Corridor trail that ended at Tideman-Johnson Park, where they then attended a festival and helped with a revegetation project. Total budget: \$9,905. Greenspaces grant: \$4,845. Partners: *National Wildlife Federation, Friends of Trees, Northwest Native Plants, Oregon Trout, the U.S. Fish and Wildlife Service, Metro and City of Portland.

The Oregon Environmental Council (OEC): OEC put together an informational campaign called SPAWNS (Simple Pollution Prevention Alerts for Wildlife and Native Salmon) to inform citizens about actions they can take to play a role in saving salmon and stream habitat. SPAWNS featured tips out of the “50 Ways to Love Your River” booklet. To reach a broad audience, individual SPAWN tips appeared as inserts in water bills, public service announcements on radio and television, printed on paper grocery bags, newspaper advertisements, and as Tri Met and MAX advertisements both inside and outside of the vehicles. Total budget: \$17,000. Greenspaces grant: \$5,000. Partners: *Oregon Environmental Council and the City of Portland.

Tualatin Valley Chapter of the Northwest Steelheaders: The project expanded and improved an existing volunteer education program offered to various schools by the Northwest Steelheaders. Coldwater aquariums are purchased and set up in classrooms so students can learn about salmonid life cycles and habitat requirements. Students monitor the growth of the eggs as they mature into fry and take data including temperature, pH, and dissolved oxygen. Northwest Steelheaders works directly with classroom teachers and supplies curriculum to support their indoor learning experiences called “Fish Eggs to Fry-Helping Kids Raise Fish.” Total budget: \$4,700. Greenspaces grant: \$1,800. Partners: *Northwest Steelheaders and Oregon Department of Fish and Wildlife.

Total Funding Requested: \$51,310 for 13 projects

Number of Projects Funded: 9

Greenspaces Grant Funding Awarded: \$32,362

Leveraged: \$1.76 local match for every \$1 of Greenspaces grant funding.

1999-00 Salmonid Projects

Happy Valley Nature Park: Cutthroat trout, coho salmon and steelhead have been documented in the urban Mt. Scott Creek in the last two years. This project targets these species by providing resting places and increasing streamside cover for temperature regulation. Patches of Himalayan blackberries will be removed streamside and native riparian planting will replace these invasives. There will be in-stream structures added to create stream diversity where channel has been straightened and erosional processes have down-cut. Streambanks will also be stabilized. The project will promote public awareness through work parties and media coverage. Total budget: \$26,430. Greenspaces grant: \$5,000. Partners: *City of Happy Valley, Happy Valley Elementary School, Oregon Department of Fish and Wildlife and SOLV. [WITHDRAWN]

Environmental Information Cooperative: EIC will plan and coordinate a two-day Columbia River watershed festival to be held in the fall of 2000. The festival will be an outdoor environmental education event for 60-70 fourth and fifth grade classes in Clark County. The festival will have 20-25 activity stations where student will spend two hours rotating through a variety of activities. Participating schools will be enrolled in Salmon in the Classroom and Salmon Go to School programs and workshops. These are teacher training programs and classroom activities that teach about salmonid issues, such as Endangered Species Act species listings and recovery, in a proactive and hands-on method. Total budget: \$44,700 Greenspaces grant: \$5,000. Partners: *Environmental Information Cooperative, City of Vancouver, Clark County, Clark County Public Utilities, Washington State University-Vancouver.

Centennial Learning Center (CLC): CLC is an alternative school that serves students and families who cannot meet their learning needs in the traditional environment and want a more personalized education. CLC students will study, propagate and supply native plants for local stream restoration sites where sponsors have limited budgets. Students will grow plants during this pilot year for the headwaters of Fairview Creek project and for projects along Mt Scott Creek. When the plants are ready for delivery the students will plant them in joint celebration with the restoration projects. The students will work with community members, and local plant experts to learn about plants, horticulture and restoration techniques. The students will begin the project by visiting the sites with friends groups to learn about endangered species and watershed issues. Total budget: \$27,458 Greenspaces grant: \$4,200. Partners: *Centennial Learning Center, Friends of Fairview Creek, OMSI and SOLV.

OSU Extension/4-H Youth: The Wildlife Stewards program trains and utilizes volunteers to assist students and teachers in the development and use of schoolyard as wildlife habitats. This project will use the Wildlife Stewards training 2000 to design, plan, and build a wildlife habitat demonstration on the OSU Extension office grounds as preparation for their work at school sites. Extension Master Gardeners and Master Recyclers will also be invited to participate in the design and implementation. The site will include a shade garden, bird and pollinator habitat, nest boxes, compost demonstration station, a small water feature and wildlife viewing area. They will look at water conservation methods like downspout disconnect and other watershed friendly practices. The project will focus on watershed health and the site will be signed with ways of making your landscape fish friendly. Total budget: \$10,500 Greenspaces grant: \$5,000. Partners: *OSU Extension/4-H Youth, Master Gardeners, Master Recyclers, National Wildlife Federation.

Central Catholic High School: Students will design and undertake a water quality assessment at Powell Butte Nature Park using topographical maps and aerial photographs to predict how water drains off the 620-foot butte. Students will design a monitoring protocol to evaluate the water quality of runoff. They will record and measure data to create a baseline for runoff of the area and to augment existing data existing collected for Johnson Creek. Students will identify the major impacts to the watershed, identify key areas of disturbance and designate areas suitable for action projects in the future. The purpose of the project is for students to evaluate the impact of Powell Butte runoff water has on the capacity for Johnson Creek to support threatened salmon and steelhead runs. Total budget: \$12,942 Greenspaces grant: \$4,509. Partners: *Central Catholic High School, Portland State University, City of Portland Parks and Recreation, Johnson Creek Watershed Council.

Association of Northwest Steelheaders: Students from selected North and Northeast Portland schools will participate in a program that will include classroom activities focused on salmonid issues and watershed health, receive an in-class incubator to raise rainbow trout and take field trips to Whitaker Ponds Learning Center. The program will teach the importance of watershed health and what the average person can do to help preserve and improve it. The program incorporates a wide variety of views and lets the students draw their own conclusions and form action plans for their family. Students will learn about the Columbia Slough watershed and some of the unique issues surrounding it. Total budget: \$174,847 Greenspaces grant: \$2,697. Partners: *Association of Northwest Steelheaders, Oregon Department of Fish and Wildlife, Columbia Slough Watershed Council, Portland Bureau of Environmental Services, Salmon Corps.

Total Work of Art, Inc.: A 20,000-square foot warehouse roof top, located on the east bank of the Willamette River, will serve as a working laboratory for the development of alternative to stormwater run-off reduction and water quality improvements. The project will develop a series of test plots with varying combination of soils and plant materials. These will be monitored for stormwater absorption, transpiration and filtration potential. Eco-Roof *plus* is an innovative demonstration of bio-engineered technology and low-tech landscape principles. The potential for water quality improvements from stormwater runoff with such an innovation could prove a substantial positive impact on salmonid species in the Willamette River reach in the Portland area. Total budget: \$214,200 Greenspaces grant: \$5,000. Partners: *Total Work of Art, Inc. (now Lando and Associates), Synder Roofing, Coastal Atlantic, Total Energy Concepts.

Oregon Environmental Council (OEC): OEC will continue their collaboration on an environmental education program designed to reach the public about reducing water pollution. OEC has worked with water providers, grocery stores, media outlets, the Willamette Restoration Initiative and other organizations to promote awareness of water quality and encourage pollution prevention. Outreach will be based on the booklet “50 Ways to Love Your River”. The target audience for this grant will be watershed councils, Ecumenical Ministries of Oregon and other friends groups. Total budget: \$14,220 Greenspaces grant: \$5,000. Partners: *Oregon Environmental Council, Fox 49 Television and Ecumenical Ministries of Oregon.

Total Funding Requested: \$36,406 for 8 projects

Number of Projects: 8

Greenspaces Grant Funding Awarded: \$36,406

Leveraged: \$13.43 local match for every \$1 of Greenspaces grant funding.

2000-01 Salmonid Projects

Keepers of the Waters at Da Vinci: Keepers of the Waters worked with interested neighbors and the students, parents and teachers at Da Vinci Arts Middle School to facilitate the design of an innovative natural stormwater treatment system that disconnected roof runoff, cleaned it, and used it in an artistically designed greenspaces on school property. The collaborative design was presented to the public at a neighborhood watershed celebration held at Da Vinci Arts Middle School in late spring 2001. The purpose of the project was to ensure that current and future generations understand that protecting and promoting healthy water is a key environmental issue that has connections with the Endangered Species Act listings of steelhead and Chinook salmon, the City of Portland’s Combined Sewer Overflow problem, and the future viability of clean drinking water. Non-point source pollution is a major contributing factor in all of these issues, especially that caused by urban stormwater runoff. This project promotes individual action and education about these key issues. Total budget: \$11,160 Greenspaces grant: \$4,790. Partners: *Keepers of the Waters, Sustainable System Designs, Kerns Neighborhood Association, Portland Community Gardens, and a variety of artists, graphic designers, and other creative volunteers.

50 Ways to Love Your River - Tualatin Basin: The “50 Ways to Love the Tualatin River” campaign was initiated by the Oregon Environmental Council to encourage suburban residents of the Tualatin watershed to reduce their contribution to non-point source pollution. The project utilized a variety of outreach strategies, including school outreach, workplace contacts, canvassing, collaboration with local watershed organizations, and broad scale

advertising promotions, to deliver pollution prevention information to watershed residents. The campaign builds on the popular and effective “50 ways to Love Your River” guide, and provides a model for similar programs in other watersheds. Three specific objectives of this project were to 1) reduce phosphorus, temperature, and bacterial pollution from urban non-point sources, 2) provide urban and suburban residents with pollution information to empower them to play a significant role in improving the Tualatin basin’s water quality, and 3) build public support for broader Tualatin River restoration efforts by educating citizens about ecological issues. Total budget: \$75,190 Greenspaces grant: \$5,000. Partners: *Oregon Environmental Council, the Willamette Restoration Initiative, Tualatin Riverkeepers, Tualatin River Watershed Council, Fans of Fanno Creek, Friends of Beaverton Creek, Cedar Mill Creek Watershed Watch, local schools and a variety of community, business, and advertising organizations.

Clackamas High School Ecology Class: This project expanded on existing monitoring and habitat enhancement work that the Clackamas High School ecology class was doing in the Clackamas River Basin. The class was engaged in the removal of non-native invasive species and revegetation with natives, and long-term monitoring on both Tickle Creek and a site known as A-1 wetland. This project allowed this effort to expand by funding GIS monitoring and mapping, and the development of student projects to implement additional GIS data collection and analysis projects to evaluate the success of their enhancement work, and any changes in flora and fauna caused by development and mitigation efforts. They also developed a new partnership with Concordia University to begin co-monitoring University owned land at the confluence of Eagle Creek and the Clackamas River, with high school and graduate students working together to learn about local ecosystems and the older students mentoring the youth. Total budget: \$25,000 Greenspaces grant: \$5,000. Partners: *Clackamas High School, SOLV, Concordia University, and a private landowner that opened up his property for field studies.

Columbia River Watershed Festival: The Environmental Information Cooperative planned and coordinated a two day Columbia River Watershed Festival to be held in the fall of 2001. The focus was to provide fourth and fifth graders and teachers in Clark County with an opportunity to participate in interactive, hands-on environmental education activities in a natural outdoor setting. Teachers were invited to bring their classes to experience 2-3 of 20-25 activities offered by local partners. This experience was geared towards teachers already involved in the Salmon in the Classroom Program, those that participated in Salmon Go to School workshops focused on Endangered Species Act (ESA) and salmon recovery issues, those seeking creative ideas about how to integrate environmental education into their existing curricula, and those with less access to environmental programs such as home school students. Themes of the activity stations included ESA and salmon recovery, water quality, native fish and wildlife habitats, macroinvertebrate sampling and identification, fish species identification, groundwater flow, recycling and waste reduction, air quality, naturescaping, environmental stewardship, water conservation, water cycle and use, public transportation, and natural resource appreciation. Total budget: \$43,380 Greenspaces grant: \$5,000. Partners: *Environmental Information Cooperative, City of Vancouver, Clark County, Clark Public Utilities, Southwest Clean Air Agency, Washington State University (WSU) Cooperative Extension, WSU Vancouver, Bonneville Dam Visitors Center, C-TRAN, Clark County Conservation District, Clark County Marine Patrol, Educational Service District 112, Fort Vancouver Regional Library, Habitat Partners, Lewis River Fish Hatchery, Master Composter/Recycler Program, National Marine Fisheries Service, Northwest Natural, Northwest Service Academy/AmeriCorps, Sierra Club, U.S. Coast Guard, U.S.D.A. Forest Service, Vancouver Audubon Society, Vancouver-Clark Parks and Recreation, Washington Department of Fish and Wildlife, Ridgefield National Wildlife Refuge, and the Water Resources Education Center.

Oxbow Park Salmon Interpretive Flip Book: Metro Regional Parks and Greenspaces and Oregon Zoo staff worked with 6th, 7th, and 8th grade students from the Sunnyside School to develop and produce an outdoor interpretive display about salmon at Oxbow Regional Park. The completed trailside display is in the form of a weatherproof “flip-book” featuring student-created text and illustrations, installed along a trail that overlooks the Sandy River. The display provides information about salmon at a viewing area where visitors observe fall chinook salmon on their spawning grounds. In the process of developing the display, students had a meaningful opportunity to work closely with naturalists and other specialists in the field as they learned about salmon, ecology, watershed health, and the importance of communicating effectively about these topics. The display now provides much-needed trailside interpretive information about salmon for more than 20,000 visitors that visit Oxbow Park each fall. Total budget: \$10,611 Greenspaces grant: \$4,740. Partners: *Metro Regional Parks and Greenspaces, Metro Creative Services, Sunnyside School, and the Oregon Zoo.

Total Funding Requested: \$24,530 for 5 projects
Number of Projects: 5
Greenspaces Grant Funding Awarded: \$24,530
Leveraged: \$5.74 local match for every \$1 of Greenspaces grant funding.

Green City Data Project

The Green City Data Project is an environmental education program that partners middle school and high school students with conservation resource management groups in an effort to inventory select urban natural areas. Green City teams map natural areas, identify and assess animal habitat, conduct species inventories, take water quality measurements and make management and restoration recommendations. The Green City Data Project sites listed below were studied with Metropolitan Greenspaces Program support from 1991 through 1996. During this period, 48 middle and high schools were involved in collecting field data and recording observations to learn about urban natural areas.

1992 Green City Data

David Douglas High School (SE Portland) - Grant Butte, Johnson Creek and Jenne Butte (Portland Parks and Recreation and Portland Environmental Service).

George Middle School (N. Portland) - Heron Lakes Golf Course (Heron Rookery), Smith and Bybee Lakes Forest and Smith and Bybee Lakes Meadow (Portland Parks and Recreation and Metro Greenspaces).

J.B. Thomas High School (Hillsboro) - Jackson Quarry Co. Gravel Site (City of Hillsboro Parks).

Lake Oswego High School (Lake Oswego) - Beth Ryan Nature Preserve, Fielding Rd/Willamette River, Iron Mountain Park and the Dartmouth Property (Lake Oswego Land Trust).

Prairie High School (Vancouver WA) - Salmon Creek/Pleasant Valley and Salmon Creek Center (Clark County Parks Department).

1993 Green City Data

Wood Middle School (Wilsonville) - Arrowhead Creek Wetland Mill Creek/Canyon Creek Forest (Oregon Division of State Lands).

Lake Oswego High School (Lake Oswego) - Beth Ryan Nature Preserve, Sun Creek Wetland and the Iron Mt. Trail (Lake Oswego Land Trust).

David Douglas High School (SE Portland) - Bundy Park, Scotchberry Park, and Tideman Johnson Park (Portland Parks and Recreation).

George Middle School (N. Portland) - Burlington Bottoms and the Powerline Site (Bonneville Power Administration, Oregon Department of Fish and Wildlife, and Metro).

Fernwood Middle School (NE Portland) - Columbia Correctional Institute Open Space (Multnomah County Sheriffs Office).

Grant High School (NE Portland) - Whitaker Pond Site and Rocky Butte State Park (Portland Public Schools, Metro, and Oregon State Parks).

Columbia River High School (Vancouver WA) - Coy Park and Salmon Creek (Clark County Parks Department).

J.B. Thomas Jr. High School (Hillsboro) - Dairy Creek Park, Evergreen Wetland, and Jackson School Homeowners Assoc. Open Space (City of Hillsboro Parks and Jackson School Homeowners Association).

Ridgefield High School (Ridgefield WA) - Gee Creek and Whipple Creek Park (Clark County Parks).

Gresham High School (Gresham) - Genel Site, Gresham Butte, and Johnson Creek (Gresham Parks Division).

Jefferson High School (N. Portland) - Heron Lakes Golf Course and Smith and Bybee Lakes (Portland Parks and Recreation and Metro).

Glencoe High School (Hillsboro) - Rock Creek Park (City of Hillsboro Parks Department).

1994 Green City Data

All Saints Middle School (SE Portland) - Oaks Crossing and Rocky Butte State Park (Portland General Electric and Oregon State Parks).

Brown Jr. High School (Hillsboro) - Rood Bridge Road Site and Evergreen Park Site (Hillsboro Parks).

Evergreen High School (Vancouver WA) - Evergreen Park Site and Evergreen Trail Site/Mimsi Marsh (Clark Co. Parks).

Franklin High School (SE Portland) - Kelly Butte and Minthorne Springs (City of Portland and The Wetlands Conservancy).

Gresham High School (Gresham) - Fairview Creek (Gresham Parks).

Harriet Tubman Middle School (N. Portland) - Mocks Crest and PDC Site (City of Portland and Portland Development Commission).

Jefferson High School (N. Portland) - Virginia Lakes (Oregon State Parks).

Lee Middle School (NE Portland) - Sandy River Delta (USFS).

Lewisville Intermediate (Battleground WA) - Ridgefield National Wildlife Refuge and Casee Site (USFWS and Battleground School District).

Metropolitan Learning Center (NW Portland) - Butterfly Park and Marquam Parks (Portland Parks and Recreation and Friends of Marquam Park).

Mt. View Intermediate (Beaverton) - Tualitin Hills Nature Park (THPRD).

Oregon City High School (Oregon City) - Newell Creek Canyon (ODOT).

Reynolds High School (Troutdale) - Beaver Creek Canyon (City of Troutdale).

Roosevelt High School (N. Portland) - Forest Park Old Growth Site and the Haborton Site (Friends of Forest Park, PGE and Portland Parks and Recreation).

Wood Middle School (Wilsonville) - Wilsonville Site (Oregon Division of State Lands).

1995 Green City Data

Metropolitan Learning Center (NW Portland) - Marquam Woods site 19 acres (Friends of Marquam Park)

Oregon City High School (Oregon City) - Newell Creek Canyon (Metro)

Mt. Tabor Middle School (SE Portland) - Whitaker Pond Site (Metro)

George Middle School (NE Portland) - Willamette River/Oaks Bottom (Portland Parks and Recreation)

Portland Jewish Academy (SW Portland) - Portland Housing Authority Wetland Site and the Wilson Neighborhood Association)

Jefferson High School (N Portland) - Virginia Lakes (Oregon Department of Fish and Wildlife)

Clear Creek Middle School (Gresham) - Clear Creek Mitigation Site (Gresham School Dist.)

Lake Oswego High School (Lake Oswego) - NIKE campus wetlands (Nike)

Crossroads Alternative School (SE Portland) - Newell Creek Canyon (Metro and Friends of Newell Creek Canyon)

Madison High School (NE Portland) Russell Lake (Portland Bureau of Environmental Services)

Wood Middle School (Wilsonville) - Rock Creek/Wilsonville site (Oregon State Division of State Lands and Friends of Goal Five)

Tom McCall Middle School (Forest Grove) - Fernhill Wetlands (Pacific University and Friends of Fernhill Wetlands)

Whitaker Middle School (NE Portland) - Fernhill Park/Urban Treehouse (Portland Parks and Recreation)

Lee Middle School (Gresham) - Sandy River Delta Site (U.S. Forest Service)

Fernwood Middle School (NE Portland) Vancouver Lakes (Clark County Parks Department)

Sam Barlow High School (Troutdale) Beaver Creek Canyon (Friends of Beaver Creek Canyon and the City of Troutdale)

Harriet Tubman Middle School (N Portland) - Willamette Cove (Metro)

Evergreen High School (Vancouver) - Mimsi Marsh (Clark County Parks Department)

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Abernethy Environmental Middle School (SE Portland): Oaks Bottom (Portland Parks and Recreation and Recreation)

Crossroads School (Oregon City): Newell-Abernathy Creek

Evergreen High School (Vancouver, WA): Vancouver Lakes Lowlands (Clark County Parks and Recreation)

George Middle School (N Portland): Stenzel Property (Forest Park Ivy Removal Project)

Grant High School (NE Portland): Whitaker Ponds (Metro)

H. Tubman Middle School (N Portland): Howell Territorial Park (Metro)

Jefferson High School (N Portland): Virginia Lakes, Sauvie Island (Oregon State Parks)

Lake Oswego High School (Clackamas County): Arnold Creek (Metro)

Metropolitan Learning Center (NW Portland): Lower Macleay Park (Forest Park Ivy Removal Project)

Pacific Power & Light (NE Portland): Whitaker Ponds (Metro)

Sam Barlow High School (Gresham): Beaver Creek Canyon (Troutdale Parks and Rec)

Tom McCall Upper Elem (Forest Grove): Fernhill Wetlands (City of Forest Grove)

University Park Comm Center (NE Portland): Children's Arboretum (Portland Parks and Recreation)

Vancouver Water Resource Center (Vancouver, WA): Water Resources Education Wetland (City of Vancouver)

Westview High School (Beaverton): THPRD Nature Park/Rock Creek Env. Lrng Center (THPRD and PCC-Rock Creek)

Wood Middle School/Wilsonville High School (Clackamas Co): Boozier Property (Wilsonville Parks and Rec)