



FOUNDATION

CASE STUDY

2008 AWARDS OF EXCELLENCE
COMMUNITY TREES

PROJECT AT A GLANCE

Location

Seattle, Washington

Lead Partners

Cascade Land Conservancy
City of Seattle
(Parks and Recreation, Public
Utilities, Office of Sustainability &
Environment)

Award Category

Large City (population > 100,000)

Timeframe

2005-2008 (ongoing to 2025)

Total Cost

The project will cost \$52 million over 20 years, with \$49 million provided by the City and \$3 million raised by the Cascade Land Conservancy.

Size and Scope

Restore 2,500 acres of Seattle's forested parklands by removing invasive species and planting 200,000 trees within the next 20 years. In its first 5 years, the program has already measurably increased restoration of the City's urban forest.

Outstanding Accomplishments

- Planted 20,000 trees
- Restored 264 acres of forested parklands
- Inspired Seattle residents to donate 150,000 volunteer hours to the project
- Increased restoration rate from an average of 9 acres per year to 100 acres per year in 2007
- Trained 45 Forest Stewards to run volunteer work parties and monitor long-term maintenance of the parks
- Prioritized park restoration projects using a Tree-iage system that evaluates value and threats
- Recognized as Seattle's most significant civic engagement effort and one of the largest urban reforestation projects in the nation

The Green Seattle Partnership

Cascade Land Conservancy & City of Seattle



Once a thriving forest of deciduous trees, Seattle is quickly becoming a city of weeds. Of the 3,200 acres of forested parkland within the City, 2,500 acres are heavily covered with invasive plant species such as English ivy and Himalayan blackberry. These invasives are strangling the forest's under-story and, without intervention, it is estimated that 70% of trees in Seattle's parklands will be dead within the next 20 years.

A joint effort by the Cascade Land Conservancy and the City, the Green Seattle Partnership is working to reverse this trend. Their goal is straight-forward, but ambitious: to restore all 2,500 acres of Seattle's degraded parkland by 2025. Since its formation in 2005, the Partnership has increased the rate of parkland restoration from 9 acres per year to more than 100 acres per year. They have planted 20,000 trees and restored 264 acres of parkland.

The Partnership is Seattle's most significant civic engagement effort. One hundred groups partner with the project as volunteers every year. In 2007 alone, Green Seattle held 773 work events at 69 parks, and Seattle residents logged a collective 57,000 hours of volunteer time. The Partnership has trained 45 Forest Stewards to run volunteer events and will rely on engaged Seattle citizens to continue caring for the City's parks after the project's completion.

Green Seattle has developed unique, replicable best management practices to plan and track their progress. The Tree-iage system allows them to prioritize among 300 park properties by evaluating sites in terms of both their tree composition value and the threat of invasive species. Sites are then placed into categories for prioritization, and the Partnership can focus on high-value, low-threat parks first, eventually moving on to low-value, high-threat parks as they accrue more resources. The four-stage restoration approach allows the Partnership to track parks' progress and emphasizes restoration as a years-long process rather than a one-time planting event. Paired with city-wide education on the value of maintaining the City's forested areas, these management practices are enhancing Seattle's reputation as an environmentally healthy, livable city.



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Project Description

Pre-Existing Conditions

The City of Seattle is home to 574,000 people, with an additional 2.5 million inhabiting the greater Seattle metropolitan area. For a century, large deciduous trees and forested parklands have defined Seattle as one of America's most livable cities. However, as the City has grown, tree canopy has declined from about 40% to 18% cover. Between 1972 and 1996, Seattle lost 46% of its heavy tree cover and 67% of its medium tree cover. Development, traffic, compact soils, inadequate maintenance budgets, and lack of community appreciation for trees have all contributed to tree loss.

Of Seattle's 3,200 acres of forested parkland, 2,500 acres are heavily infested with invasive species such as English ivy that are strangling aging deciduous trees and suffocating the under-story of native evergreens. More than half of all parklands have a 50% or greater cover of invasive species. Without major human intervention, seven out of 10 trees in Seattle's parklands will be dead within the next 20 years. In the late 90s and early 00s, volunteers were restoring and re-planting about 9 acres of Seattle's parklands per year. At this rate, it would take well over 200 years to restore all 2,500 threatened acres. In other words, until the implementation of the Green Seattle Partnership in 2004, invasive species growth was far outpacing reforestation efforts.

The Green Seattle Partnership is a key element of the City's Urban Forest Management Plan, which was approved by Mayor Gregory Nickels in September of 2007. This Plan calls for increasing Seattle's canopy cover from 18% to 30% and the planting of over 640,000 trees. The Mayor has made it a requirement that any tree removed by the City on city property must be replaced with two trees.

Project Components

Purpose: To restore all 2,500 acres of Seattle's degraded parkland by 2025 through control of invasive species and large-scale reforestation.

Process: The Green Seattle Partnership utilizes a Tree-iage system of prioritization to decide which of Seattle's 300 forested park properties to tackle first. Modeled after the health care triage, Tree-iage sorts forests into nine categories based on two factors: value, measured by the percentage of native and evergreen tree cover, and threat, measured by the percentage of invasive cover. The Partnership will focus first on protecting high-value conifer forests with a low threat of invasives, then on restoring high-value conifer forests with a high threat of invasives, and finally on tackling lower-value sites that will require a full scale conversion of the plant community.

The Partnership follows best management practices and has adopted a four-phase approach to restoration activities: (1) invasive plant removal; (2) planting and secondary invasive removal; (3) plant establishment including weeding, mulching and watering; and (4) long-term monitoring and maintenance. Each park property selected for restoration efforts will progress through these four phases.

Outreach: The Partnership holds hundreds of volunteer events every year, attracting thousands of volunteers. They have developed a volunteer recruitment video and, in late 2007 and early 2008, many of the City's Metro buses featured an advertisement for volunteering with the Green Seattle Partnership. The Partnership has also initiated Green Seattle Day, an annual event during which more than 500 volunteers join Mayor Nickels in planting trees at nearly a dozen Seattle parks.



PROJECT GOALS

- Restore all 2,500 acres of Seattle's forested parklands by 2025
- Reach a restoration rate of 150 acres per year within 2 years and continue restoration at this pace until the project's completion
- Increase canopy cover from 64% to 80% in natural areas
- Plant 200,000 or more trees
- Implement restoration in four phases to ensure the long-term eradication of invasive species
- Build long-term park stewardship by training 200 Forest Stewards in best management practices
- Engage 10,000 youth and adult volunteers in hands-on restoration events each year
- Mobilize Seattle residents to donate 2 million volunteer hours by 2025
- Promote corporate volunteerism and recruit volunteers through Seattle's largest employers
- Pass on a legacy of community service to future generations
- Create healthier, more livable communities
- Create broad understanding of the tree crisis and promote the Green Seattle Partnership as the solution
- Awaken community members to the value of trees and forests in the urban areas of the Northwest



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Benefits

Community and Economic Benefits

Well-maintained urban parklands provide Seattle’s citizens with welcoming places to walk, bike, and connect with nature. They increase social interactions among neighbors, relieve stress, and decrease the need for community policing. They provide habitats for birds, small mammals, and amphibians as well as more biodiverse plant systems. Parklands mitigate air pollution, sequester carbon dioxide from the atmosphere, reduce erosion, enhance stormwater infrastructure, and lessen the negative effects of peak flow into local salmon streams. Urban forests also provide cool refuges from urban heat islands and buffer city noise. Conifers along roadways trap soot in their leaves, which reduces incidents of asthma and other respiratory disease. Overall, healthy forested parklands are a key to making Seattle a livable city.

Economic Vitality: Forested parklands adjacent to residential areas increase the property values in those areas by an estimated 15%. A study conducted by American Forests found that tree loss in Seattle between 1972 and 1996 cost the City \$1.3 million per year in rainwater storage and management and \$226,000 per year in air pollution-related health costs. City officials estimate that, if Seattle lost all of its urban forest, it would cost the City up to \$1 billion in stormwater treatment facilities and drainage systems.

Citizen Engagement: Prior to the formation of the Green Seattle Partnership, Cascade Land Conservancy consulted with more than 100 volunteer groups already working to restore the City’s parklands. Since its inception, the Partnership has strived to cultivate a lifetime ethic of community volunteerism in Seattle. They recruit a diverse group of volunteers through businesses, service clubs, religious organizations, schools, etc. who work together at hundreds of tree planting and maintenance events every year. At these events, volunteers gain an understanding of the importance of trees and develop a sense of pride and ownership of their parks.

Education: The success of the Green Seattle Partnership depends upon the community’s understanding that Seattle’s parklands do not “take care of themselves” and that most of the City’s trees will die in the next 20 years without wide-scale restoration efforts. The Partnership has recruited and trained 45 Forest Stewards in best management practices who are qualified to lead other volunteers in restoration projects. The Partnership’s website (www.greenseattle.org) includes information on everything from proper invasive plant removal to how to run a volunteer event using best management practices. In addition to its website, the City has documented education efforts with a “reLeaf” community outreach campaign which includes a three-minute video on the work of the GSP, as well as an informational brochure that is distributed to residents at key decision points such as when pursuing a tree removal permit or purchasing a home.

Funding

The Partnership promotes the idea of trees as a capital investment that requires an ongoing operations and maintenance budget. GSP’s total 20-year parklands restoration project will cost \$52 million.

The City’s urban forestry efforts are funded through departmental capital, operations and maintenance budgets. Urban forest budgets are prepared based on level of service goals for tree maintenance and planting, community engagement, and management tools.

Seattle has agreed to provide \$1 to \$3.5 million annually for a total of \$49 million over 20 years. Since the founding of the Partnership, the City has increased annual funding for the restoration and maintenance of forested parklands from \$500,000 to \$1.8 million.

To supplement this funding, the Cascade Land Conservancy is committed to raising \$3 million in private money through a broad community fundraising campaign. So far, the Conservancy has succeeded in raising \$1.2 million.

Of course, in-kind contributions to the Green Seattle Partnership – by thousands of resident volunteers, local businesses, and many non-profit community organizations – will continue to be critical to its success. Over the course of the 20 year program, these in-kind contributions will likely be the same order of magnitude as the total GSP budget.

MEASURABLE BENEFITS

Seattle Public Utilities studies show that the existing urban forest saves the City of Seattle an estimated \$1 million or more annually in stormwater management costs by eliminating the need for expensive drainage control facilities. The restoration of forested parklands by the Green Seattle Partnership will also increase the amount of CO2 removed from the atmosphere; 2,500 acres of conifer forest would capture about 32,500 tons of CO2 annually. In addition, Seattle’s conifer trees remove tens of thousands of tons of conventional air pollutants. Though street trees are not a central part of the Partnership’s focus, they estimate that each urban street tree planted provides \$149 in green infrastructure benefits per year.



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“Since the creation of the Green Seattle Partnership [in 2004], we feel we have stepped into a new frontier where we share close bonds and develop shared goals. The GSP long range planning has inspired our organization to work together with the larger community to protect the forested parklands of Seattle. The Green Seattle Partnership has provided our group with needed training, equipment, materials, consulting, organization of volunteers, and most importantly, inspiration to support the good works.... We could have lullled into complacency and possibly despaired at the monumental task of caring for our urban forests, but the GSP took a needed leadership role.... The restoration of urban forests is also the restoration of urban communities.”

- Member, Friends of Frink Park

Contacts



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Looking Ahead

Project Monitoring and Evaluation

The Green Seattle Partnership is managed by a nine-member Executive Council made up of representatives from the four partners – Cascade Land Conservancy, Seattle Parks and Recreation, Seattle Public Utilities, and Seattle Office of Sustainability and Environment – as well as representatives from the community. The Council meets quarterly to oversee and evaluate the progress of the project.

The Partnership has adapted the “Balanced Scorecard,” originally a business planning tool, to monitor their progress across three areas: restoration field work, recruitment and training of volunteers, and building community support for the long-term care of the parklands. They have a database of all 2,500 acres which will keep track of the restoration work carried out across the City. Partnership staff will also perform formal experiments to determine which restoration techniques are most cost effective and successful.

Project Maintenance

Phase 4 of the Green Seattle Partnership’s four-step approach to invasive plant removal and tree planting is “long-term monitoring and maintenance.” This step involves periodic site walk-throughs and light weeding to ensure that invasive species do not reestablish themselves. The Partnership recognizes that maintenance is site-specific: some parklands may need a Phase 4 treatment every year, while others only need treatment every five to 10 years. Every acre restored as a part of the project will be maintained and monitored by the Partnership until 2024. At this point, the City of Seattle and the thousands of volunteers already committed to urban forest restoration will take over maintenance efforts. In 2007, almost half of the 773 volunteer events were run by Seattle citizens with little to no direct support from paid GSP staff.

Challenges Faced

One of the greatest challenges the Green Seattle Partnership faced at the inception of its reforestation program was the public misunderstanding of the threat of invasive species. To the untrained eye, English ivy, clematis, morning glory, bindweed, and Himalayan blackberry look literally and figuratively “green,” and people often had no idea that they were destroying the under-story of Seattle’s forests. Convincing the public that “natural” areas do in fact require active management is perhaps the Partnership’s most daunting but important task.

Over the next 20 years, 250,000 people are expected to move to Seattle, creating 47,000 new households. The City will need to figure out how to accommodate this growth while maintaining its greenspace.

Innovation Applied

The Green Seattle Partnership is one of the few urban forestry programs that focuses specifically on parklands. The Partnership employs innovative best management practices such as the Tree-iage system of restoration prioritization, the four-phase restoration approach, and the Balanced Scorecare evaluation method, all of which are easily replicable (and already are being utilized by other cities in the Puget Sound region). The program recruits volunteers from all age, ethnic, and socioeconomic backgrounds, making planting and maintenance projects true community events.