



**Friends of Lincoln Park  
Come Work With Us.**



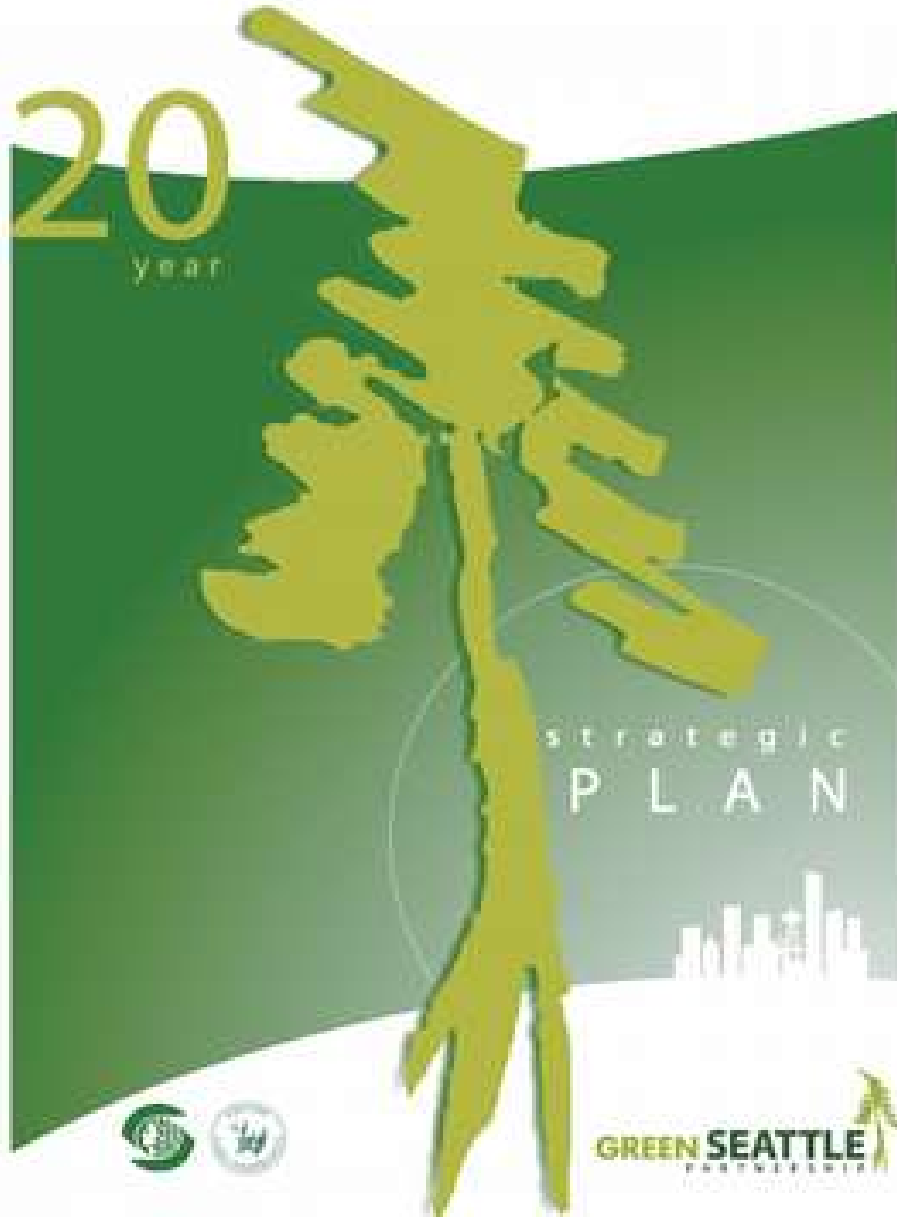
Friends of Lincoln Park



The Green Seattle Partnership is a unique public-private venture dedicated to promoting a livable city by re-establishing and maintaining healthy urban forests. Formed in 2004 by a Memorandum of Agreement between the City of Seattle and the Cascade Land Conservancy (now Forterra), the Green Seattle Partnership is a one-time, 20-year investment in the restoration of our forests.



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## GSP Goals:

1. Restore all 2,500 acres of Seattle forested parklands by 2025.
2. Establish financial and volunteer resources to provide long-term maintenance and ensure the sustainability of forested parklands.
3. Galvanize an informed, involved, and active community around forest restoration and stewardship.



## What would happen if we didn't do forest restoration at Lincoln Park?

### If forested natural areas are not restored

Aggressive non-native vegetation will dominate the urban forest unless removed. In 100 years, the trees will be gone. City officials estimate that potentially billions of dollars in services such as stormwater control will be lost.



#### PRESENT

Forested natural areas are dominated by deciduous trees, mainly big-leaf maples and alders, nearing the end of their life. After decades of neglect, non-native invasive plants, such as English ivy and wild clematis, cover the ground and grow up into the tree canopy.

#### IN 20 YEARS

Invasive plants outcompete and grow over existing native vegetation, blocking the sunlight plants and trees need to thrive. English ivy now dominates the tree canopy, making the trees weak, top heavy and susceptible to windfall. Eventually, trees die or fall over.

#### IN 50 YEARS

The trees are gone. Only a few native shrubs struggle to survive the stress of competition with invasive plants.

#### IN 100 YEARS

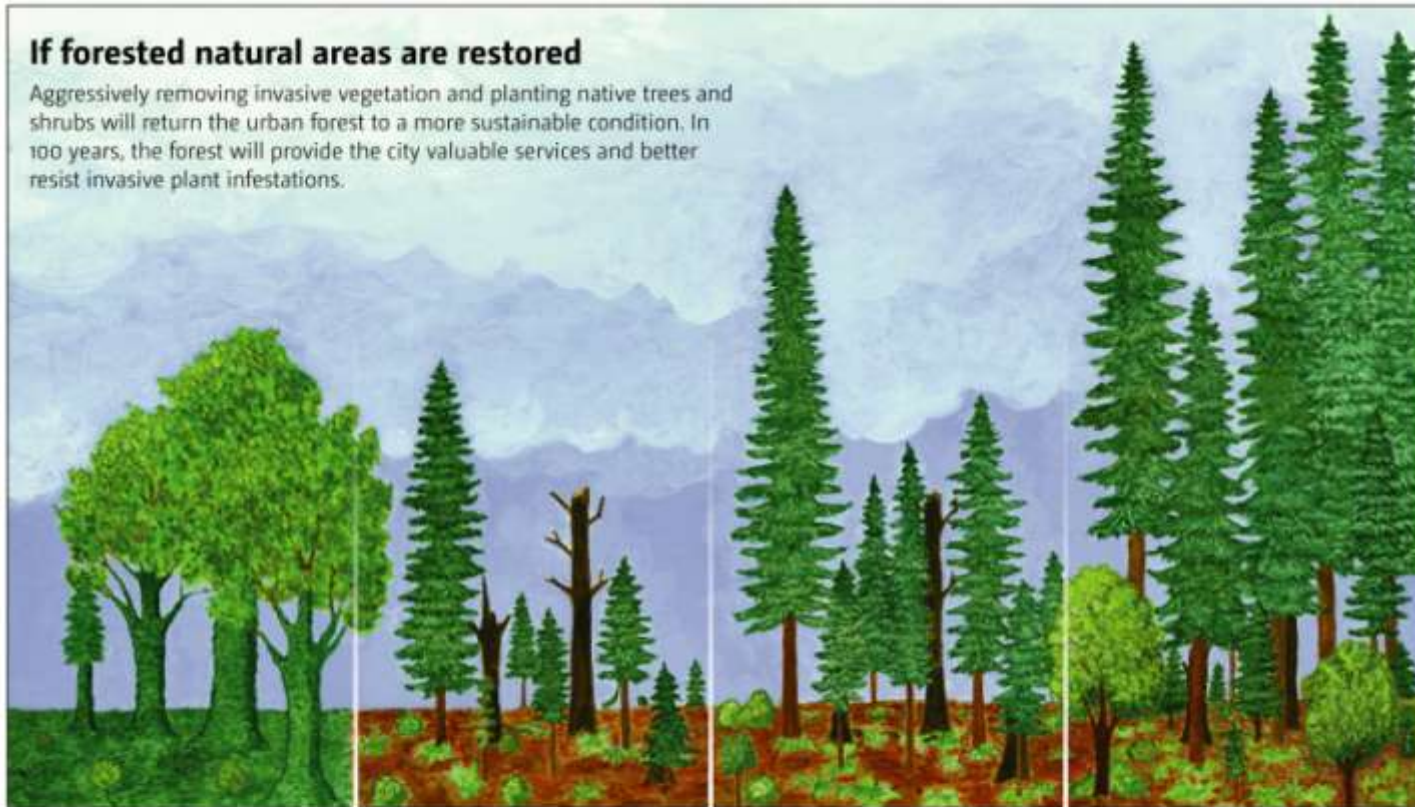
The forest is destroyed. Native trees can no longer establish on their own. We are left with a dense "ivy desert." Very few plant species can live, and forest biodiversity is gone. Such conditions provide homes for rats and scarce habitat for more desirable urban wildlife.





## If forested natural areas are restored

Aggressively removing invasive vegetation and planting native trees and shrubs will return the urban forest to a more sustainable condition. In 100 years, the forest will provide the city valuable services and better resist invasive plant infestations.



### PRESENT

Forested natural areas are dominated by deciduous trees, such as big-leaf maples and alders, nearing the end of their life. After decades of neglect, non-native invasive plants such as English ivy are smothering native vegetation and weakening native trees.

### IN 20 YEARS

Through restoration efforts and long-term maintenance, the non-native plants are removed. Native groundcovers, shrubs and evergreen trees such as Douglas firs and Western red cedars and hemlocks are planted.

### IN 50 YEARS

As the evergreen trees grow, they shade out sun-loving invasive plants such as blackberry. Native understory plants thrive.

### IN 100 YEARS

With continued stewardship, the maturing forest requires less care and provides greater benefits to the city.

# Benefits of Healthy Urban Forests

<b>Reduces Storm Water Runoff</b>	Tree canopies reduce the fast rate at which rain falls to the earth. Water enters the ground more slowly under trees and is better absorbed and filtered into groundwater than when it runs off surfaces. Conifers and other evergreen plants and trees grow year-round. This process moves water up from the ground, through plant tissues, and into the atmosphere as water vapor. The amount of water in the top 2 feet of the soil is reduced, leaving more room for additional rain water to flow into the soil.
<b>Improves Water Quality</b>	Tree roots absorb soil water that contains both nutrients and pollutants. Some pollutants are transformed by plants through metabolism, and others are trapped in woody tissues released only when a tree decomposes.
<b>Reduces Erosion</b>	As the canopy of trees slows the speed of rain falling on the earth, that rain water has less energy to displace soil particles. Soils under a canopy and the thick layer of leaf litter are protected from the erosive energy of rain water.
<b>Increases Property Values</b>	Homes that back up to greenbelts may be valued at up to 15% more than comparable homes not near a nearby a park. Forested parklands provide residential properties an adjacent natural area for walking and passive recreation activities such as bird watching.
<b>Improves Air Quality</b>	Tree leaves absorb carbon dioxide and produce oxygen through photosynthesis. The surface of leaves trap airborne dust and soot.
<b>Makes Communities More Attractive</b>	Trees and other plantings provide visual relief from the built environment. Trees and stretches of parkland can soften the angular edges of buildings, while the natural tones of bark and foliage are easy on the eyes.
<b>Reduces Global Warming</b>	Trees absorb “greenhouse gases” like carbon dioxide and store the carbon in woody tissues. Trees also modify “albedo,” the reflectivity of sunlight on the earth’s surface. The combination of the two effects can make the urban forest a remarkably cool spot in the urban heat island.
<b>Provides Wildlife Habitat</b>	Wild animals have unique requirements for food and shelter. Raccoons and crows adapt well to urban environments. Many native species don’t. They require a variety of plants and multiple layers of canopy to forage and nest.
<b>Buffers Noise</b>	Tree canopies dampen sound by intercepting sound waves.



## Recent research findings relating to nature and human health and wellbeing

### Experiences with nature can:

- Aid cognitive fatigue recovery
- Improve worker attitudes and wellbeing
- Lower blood pressure and heart rate following stressful experiences
- Reduce domestic violence in families
- Lead to less school aggression and violence

# How do these benefits apply in Seattle?

## Executive Summary of the Report

### Urban Forest Structure

- The **number of trees** and tree-like shrubs in Seattle is estimated to be 4.35 million. This equates to a density of nearly 80 trees and tree-like shrubs per acre.
- The three **most common species** measured were red alder, big leaf maple, and beaked hazelnut, which are all native to the region. In total, there were 192 different species identified in the research plots.
- The **replacement value** of the urban forest in Seattle is estimated at \$4.9 billion. Though not always recognized as such, the city's trees are an important capital asset. (Over \$1000/tree)

### Ecosystem Functions and Values

- An estimated 2 million metric tons of **carbon** dioxide equivalent is stored in Seattle's trees and tree-like shrubs with an additional 140,000 metric tons of carbon dioxide equivalent sequestered annually. These carbon benefits are estimated to equal **\$10.9 million in savings** from carbon storage and **\$768,000 annually** from carbon sequestration.
- The forest in Seattle removes 725 metric tons of **pollution** from the environment every year, providing a pollution removal value of **\$5.6 million annually**.
- Seattle's urban forest reduces **energy** use in residential buildings by roughly 166,000 million British thermal units of natural gas and 43,000 megawatt hours of electricity, for an annual savings of **\$5.9 million** dollars.





## Threats to the Urban Forest

An assessment of susceptibility to **pest species** indicates Seattle's forest is at risk. As an example, if Asian long horned beetle were to reach Seattle it could affect 39.5% of urban forest plant population, which has an estimated impact of \$2.58 billion dollars.



**Source:** The Green Cities Research Alliance (GCRA) was initiated by the USDA Forest Service, Pacific Northwest Research Station in 2009 to build a program of research about urban ecosystems in the Puget Sound region.

## Threats to the Urban Forest



**Invasive plants** threaten the health and diversity of Seattle's urban forest. This research included additional analysis of two common invasive tree species, cherry laurel and English holly, confirming their escape from cultivation and the need for aggressive removal and management.

# A Conversation... (photos by Judy Lane)





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**It's Our Legacy...**