



Llandover Woods Survey Completed

This October marked the completion of field surveys in Llandover Woods by SUNP staff. The work was part of a Seattle Department of Neighborhoods grant approved in August 2005. The survey is the first step in establishing baseline information on the current state of the woods. This data will be used to assess forest conditions and develop management recommendations for use by the Friends of Llandover Woods.

Approximately 10% of the total area of the 9.1 acre park was sampled, using nine vegetation assessment plots.

The information collected will be entered into a database where it can be summarized and analyzed. We will be looking for trends in tree regeneration, invasive species presence and abundance, and other aspects of forest composition and structure.

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Native Plants of Seattle



Lonicera hispidula, or pink honeysuckle berries in Seward Park.

How Invaded are Seattle's Urban Forests?

In 1999-2000, SUNP surveyed vegetation on 8,000 acres of public land in Seattle. Recently, we were asked to provide an analysis of this data for Lisa Stiffler at the Seattle Post-Intelligencer for an article that appeared on November 7th (see related article below). This was a great opportunity for us to look in depth at our data on Seattle's forestlands and share some interesting information with the public. Here is a more detailed look at what we found.

The city of Seattle owns approximately 8,000 acres of public land. Of that total, 2,700 acres are forested. The city's forested areas are covered by seven different forest types (See Table 1 on page 4). During the 1999-2000 survey, each similar patch of forest was mapped as an individual unit and transferred to GIS. These individual areas of forest are called polygons.

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SUNP on the Web

www.seattleurbannature.org

- SUNP services
- Habitat maps of Seattle
- Information on habitat types found in Seattle
- Links to other restoration-related websites
- Donate to SUNP with Paypal
- Deadhorse Canyon Report

Right: Ella Elman of SUNP meets with Glenn Austin, Friends of Llandover Woods and Lisa Stiffler, Seattle P-I.



Irana Hawkins removing invasives at the Deadhorse Canyon work party/barbecue on September 17th. See Page 2.

SUNP in P-I Article

SUNP was featured in an article on the state of Seattle's urban forests in the November 7th edition of the Seattle Post-Intelligencer. P-I environmental reporter Lisa Stiffler covered a variety of urban forestry issues, including invasive species. It is available online at: http://seattlepi.nwsourc.com/local/247350_urbanforest07.html



Deadhorse Canyon Project Completed

SUNP is pleased to announce the completion of the Deadhorse Canyon Project. For over a year, SUNP has worked with the Friends of Deadhorse Canyon (FDC) to develop tools that will help the group focus their restoration work in the park. The project included a review of past work performed by FDC, a survey of the current vegetation in the canyon, establishment of monitoring plots, and training of volunteers.

The centerpiece of these efforts is the Deadhorse Canyon Vegetation Management Plan (VMP), which will be available on our website and at local libraries by the end of the year. The plan features detailed information about the park and management recommendations for restoring native plants to the area.

SUNP also conducted two work parties with the Friends of Deadhorse Canyon in April and September 2005. These events included a public tour (April) and a free community barbecue (September). Neighbors were able to learn about the FDC and the park at these events. Outreach tools developed for the FDC included a new brochure with map, a new map for the park kiosk, and informational posters.

This project was made possible with funding from King County, the Washington DNR and the USDA Forest Service through a grant from the Natural Resources Stewardship Network. Funding for the printing of the VMP was provided by the Washington Foundation for the Environment.



Friends of the Deadhorse Canyon removed a variety of invasive plants during the September 17th Work Party and Barbecue. Over forty people participated in the event. SUNP provided maps of the area, a park brochure, and a draft of the vegetation management plan to attendees.



SUNP's Seattle Habitat Assessment

This fall, staff ecologists Ella Elman and Nelson Salisbury completed the first part of the Seattle Habitat Assessment. The goal of this project is to gather in-depth information about the vegetation composition and stand structure of the forested habitats identified by the original 1999-2000 survey.

A total of 23 monitoring plots were established - five plots in Conifer Broadleaf Evergreen Mixed Forest and 18 plots in Conifer Deciduous Mixed Forest. The number of sampled plots is based on the acreage of each habitat type present in Seattle (24 acres of Conifer Broadleaf Evergreen Mixed Forest and 366 acres of Conifer Deciduous Mixed Forest). Plots spanned the geographic extent of Seattle.

Right: Photo of a 50-m tape stretched along a transect in the Arboretum

A preliminary report analyzing the two sampled habitat types will be released this winter. SUNP plans to complete sampling of the remaining 6 forest types next year. Contact Ella Elman or Nelson Salisbury, SUNP Ecologists for additional information on this project.



Llandover Woods (continued from page 1)

In addition to the forest assessment plots, SUNP worked with Glenn Austin of Friends of Llandover Woods to establish a series of photo-monitoring points. The photographs taken at these points will help the group track the progress of their restoration efforts over time. In fact, an additional area in need of restoration was "discovered" during the course of the survey. Prior to our efforts, the location of the park boundary was often difficult for the group to ascertain. With the use of GPS, the boundary was accurately delineated, revealing that an area in need of restoration was indeed located on park property.

Other information collected during the survey included locations of restoration areas, trails, habitat types, trail erosion bars and slide areas. All of these location data have been entered into a GIS application which can be used to create maps. These maps will assist Friends of Llandover Woods in planning, prioritizing, and tracking their restoration projects. In addition, a map based on this information will be placed at the trailhead for use by all patrons of the park.

With the field work portion of the project completed, SUNP staff will begin developing a site-specific restoration plan for Friends of Llandover Woods, which will also contribute to efforts by the Seattle Parks Department. For more information on this project, contact Nelson Salisbury, SUNP Ecologist at (206) 522-0334 or e-mail nelson@seattleurbannature.org.



Douglas fir trees tower above the trail at Llandover Woods.

Interested in a Habitat Map of your part of Seattle? SUNP Maps cover the entire city of Seattle.

For additional details, contact us at (206) 522-0334 or download a form to order individual maps at www.seattleurbannature.org

Want to Reach a Wide Variety of Natural Resource Professionals in the Seattle Area?

Advertise in the Understory.

For details, contact Jeff Bash at (206) 522-0334

Welcome New Board Members

SUNP added two new board members in October, to grow the board to 10 members. Welcome aboard to Nancy Whitlock, Executive Director of The Nature Consortium and Josh Wozniak, Biologist for Herrera Environmental Consultants, Inc.

SUNP has also elected new officers for 2006:

President	Peggy Gaynor
Vice-President	April Mills
Treasurer	Matt Mega
Secretary	Louise Alexander

Thanks to our outgoing President, Bryan Baker and Treasurer, Herb Curl for their service to the organization!



Anna's Hummingbird at Llandover Woods. Photo courtesy of Glenn Austin.

Analysis of 1999-2000 SUNP Data (from page 1)

Table 1. Forest types and percentage of each type present in Seattle’s urban forests

Forest Type	Percentage of forest types in Seattle
Deciduous Forest	69.9 %
Conifer Forest	11.9 %
Conifer Deciduous Mixed Forest	13.7 %
Broadleaf Evergreen (Madrone) Forest	.9 %
Deciduous Broadleaf Evergreen Mixed Forest	1.9 %
Conifer Broadleaf Evergreen Mixed Forest	.8 %
Riparian Forest	.9 %

Quantifying invasive species

One of the goals of the 1999-2000 survey was to measure the types and amounts of invasive species present in Seattle’s urban forests. During the vegetation surveys of the forests, SUNP ecologists recorded the percent cover of all of the plant species found in each mapped polygon. Of those species, SUNP has chosen twenty that we consider to be the most invasive in the city’s forests. English ivy (*Hedera helix*), English holly (*Ilex aquifolium*), Himalayan blackberry (*Rubus discolor*), European mountain ash (*Sorbus aucuparia*) and field bindweed (*Convolvulus arvensis*) are examples of species on the list.

Results

To get a comprehensive picture of how invaded our forests are, SUNP combined the percent covers for all 20 invasive plant species for each forested polygon. Polygons were then assigned to one of six categories, based on the amount of invasive plant cover in that polygon. Categories range from trace (1-10% invasive cover) to very high (>100% invasive cover).

The reason that the very high category exists is that spatial strata are present in forested lands. For example, if the forest floor has 100% cover of ivy but also has blackberry and holly growing above it, the total invasive cover will add up to over 100%. There can also be climbing vines, such as Clematis, growing in the canopy of the trees, which further increase the total percent cover of invasive species.

Table 2 shows the number of acres in each of six categories, ranging from very low to very high invasive cover.

Table 2. Percent cover of invasive species present in Seattle’s urban forests

Percent Cover of Invasive Species	Number of Acres	Percent of Total Forested Acres in Seattle
Trace (0-10%)	286	11%
Low (11-30%)	676	25%
Medium (31-50%)	462	17%
Moderately High (51-80%)	492	18%
High (81-100%)	246	9%
Very High (>100%)	548	20%
Totals	2710	100%

Management implications

This type of data analysis can help forest stewards to prioritize restoration activities in their local parks and open spaces. For instance, we can see from this data that 20% of the forested lands in Seattle have over 100% cover of invasive species. These highly invaded areas are good candidates for intensive restoration activities.

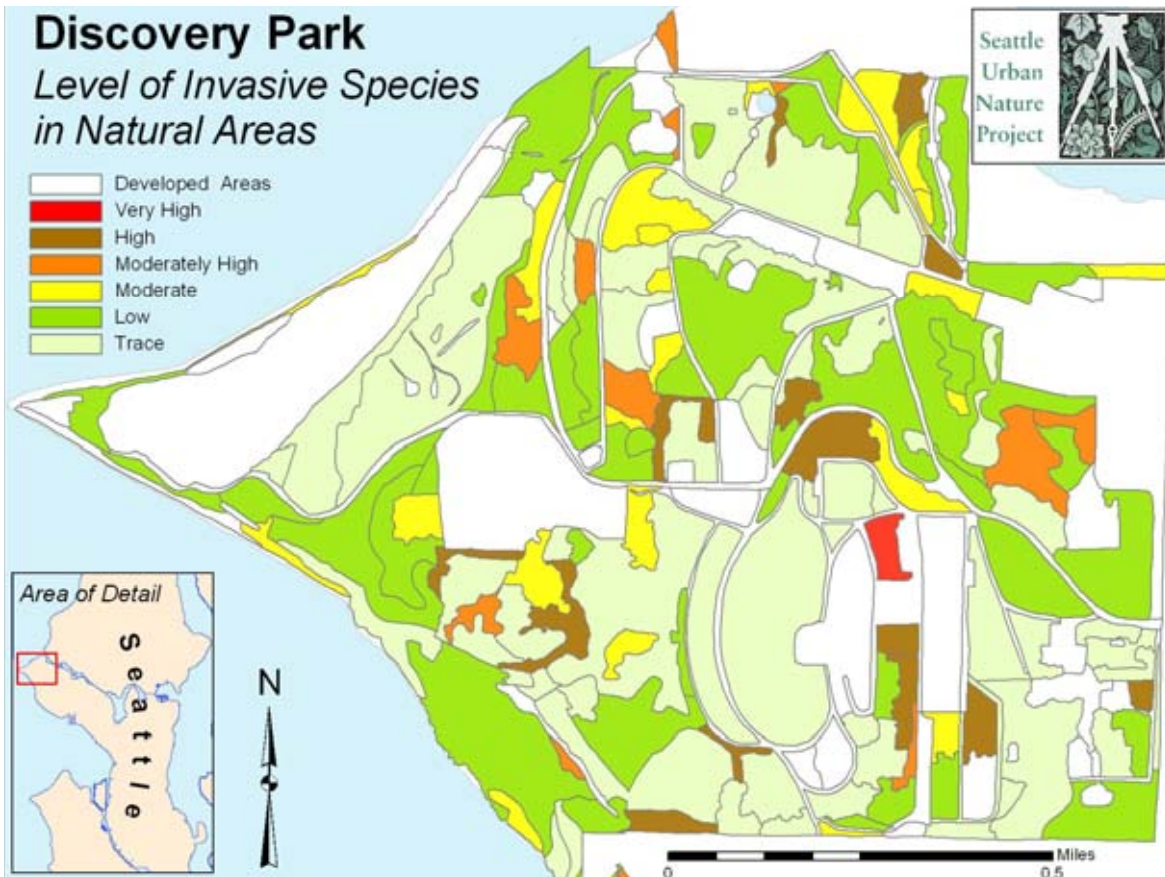
Alternatively, we can also see that 11% of the forested lands have very low cover of invasive species. These ecologically intact areas should be protected from encroachment whenever possible. Therefore, a forest steward could target restoration activities in surrounding areas to create a buffer and extend these intact areas.

The true value of this data is the ability to create maps showing the distribution of invasive species within a particular park to help managers set priorities. As an example, see the map on page 5, which illustrates the invasive species categories for Discovery Park.

The main theme to draw from this data is that Seattle faces a huge challenge in the years ahead. 1,286 acres (47% of all forested public land) have 50% or greater cover of invasive species. Tackling this problem will take a coordinated effort from government, dedicated citizens, communities and private and non-profit organizations – in other words, all of us. For more information, contact Ella Elman, SUNP Ecologist, at ella@seattleurbannature.org.



Yellow Archangel (*Lamium galeobdolon*) - an invasive species.



Left: Six levels of invasive species in forested areas of Discovery Park. These designations are based on the presence and cover of twenty species identified by SUNP as invasive species of importance.



Discovery Park

Kapala Hoge, New SUNP GIS Intern



Welcome to Kapala Hoge, SUNP's new GIS Intern! Kapala earned a Master of Arts degree in Geographic Information Sciences for Development and Environment from Clark University in Massachusetts.

Kapala worked as a GIS and Natural Resources Management Assistant for two years in Africa for the Namibia Nature Foundation, a non-governmental organization that works with local communities to map and conserve wildlife resources. Her experience includes maintenance of a wildlife game count database and production of GIS maps for use by local communities to assist them in managing their natural resources. Kapala also provided training to community leaders about general natural resource management concepts and biodiversity monitoring. She recently interned with People for Puget Sound in Seattle where she researched GIS and imagery data to be used for the Puget Sound Shoreline Assessment Project.

SUNP Services

SUNP offers a number of services to assist public, private, and non-profit organizations.

Ecological Services

- Habitat Mapping and Assessment
- Vegetation Inventory and Management
- Restoration Planning and Monitoring
- Vegetation Monitoring

GIS Services

- Custom Mapping of Project Sites
- Mapping for Grant Reporting Purposes
- GPS Data Collection
- Printing Large Size Maps or Posters

Training and Education

- Habitat Survey and Assessment Methods
- Monitoring Restoration Sites
- GPS and GIS Training
- Plant Identification
- Habitat Restoration Techniques

Please contact us at (206) 522-0334 for more information.

SUNP Calendar

December 16

SUNP Board Meeting

January 20

SUNP Board Meeting

January 31

Seattle Habitat Assessment Report

March 31

Completion, Llandover Woods Project

Help SUNP Achieve its Mission

Consider contributing to the Seattle Urban Nature Project. It's tax deductible.

A contribution to the Seattle Urban Nature Project helps SUNP provide survey and mapping services to community groups. With your donation, you will receive a quarterly newsletter highlighting SUNP's activities. For a donation of \$100 or greater, you will receive a 2' x 3' SUNP map of your choice from our catalog (see our website). We will send you an acknowledgement of the gift for your tax records.



SUNP Working Vision

Empower people to improve urban habitats through science-based information and methods.

Yes, I would like to help the Seattle Urban Nature Project to empower people to improve urban habitats through science-based information and methods. Here is my donation.

_____ \$100 _____ \$75 _____ \$50
_____ \$25 _____ Other

Please make your check out to Seattle Urban Nature Project

And mail to:

Seattle Urban Nature Project

5218 University Way NE

Seattle, WA 98105

Or donate at www.seattleurbannature.org

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Kapala Hoge	GIS Intern

Comments, questions, or submissions? Please contact Jeff Bash, Executive Director at via e-mail at jeff@seattleurbannature.org. If you would like to receive this newsletter in a different format or would like to be removed from the mailing list, please let us know. Learn more about SUNP at www.seattleurbannature.org. **Seattle Urban Nature Project © 2005**

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