2014 Urban Forest Symposium: Climate Change and the Urban Forest

Matt Kuharic, King County Department of Natural Resources and Parks (DNRP) Director’s Office

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Learn more: www.kingcounty.gov/climate
King County’s Strategic Climate Action Plan

Reducing Greenhouse Gas Emissions

• Transportation and Land Use
• Energy
• Forests and Agriculture
• Consumption and Materials Management

Preparing for Climate Change Impacts

Each goal area covers two different scales:

County Services and County Operations
PART I: Forests and King County Climate Action – County Services

**County Services Goal:** King County will support healthy, productive farms and privately owned forests that maximize biological carbon storage, promote public health, and are resilient to changing climate conditions.

**County Operations Goal:** King County will acquire, manage and restore its parks and other natural lands in ways that maximize biological carbon storage and are resilient to changing climate conditions.
Forests and Climate Change

Forests help reduce local climate change impacts

Forests absorb and store climate pollution
PART I: Forests and King County Climate Action – County Services

STRATEGIC CLIMATE ACTION PLAN

CONSERVE WORKING FORESTS
(Strategy O.S.3.1.A)

Measure
• Privately owned forest lands permanently conserved through easements that remove the development rights

Target
• 200,000 acres by 2016

Progress Report
• 2013: 158,000 + acres conserved
  • 142,000 + acres through King County’s Transfer of Development Rights (TDR) Program
  • 15,500 acres protected by forestland purchase
Support sustainable forestry practices...
(Strategy O.S.3.1.B)

- **Forest Stewardship in 2013**
  - Over 100 forest landowners attended Forest Stewardship courses and trainings
  - Now more than 850 private forest stewardship plans have been developed and approved

- **Firewise**
  - 14 communities have now adopted Firewise Community Plans covering more than 7,000 acres (2013)
PART I: Forests and King County Climate Action – County Services

Provide incentives, technical assistance... (Strategy O.S.3.1.B)

Measure
• Privately owned rural acreage that has stewardship plans or is enrolled in Open Space and Forest Land designated current use taxation incentive programs

Target
• 500 addition acres per year

Progress Report
• 2013: 660 new acres added to open space taxation programs (Public Benefit Rating System (PBRS) and Timberland)
  – Now more than 65,600 acres in Open Space and Forest Land current use taxation incentive programs
PART I: Forests and King County Climate Action – Government Operations

PROTECT AND IMPROVE THE HEALTH OF KING COUNTY OWNED FORESTLANDS (Objective O.3.2)

Measure
• Number of native trees and shrubs planted in restoration of King County Parks forest lands

Target
• A combined total (trees and shrubs) of 30,000/year

Progress Report:
• 2013: more than 126,500 trees and shrubs were planted on King County Parks lands.
PROTECT AND IMPROVE THE HEALTH OF KING COUNTY OWNED FORESTLANDS (Objective O.3.2)

Measure

• Percentage of King County Parks forested sites over 200 acres in size that have developed and are implementing Forest Stewardship Plans

Target

• 100% by 2025

Progress Report

• 2013: 21% of King County Parks
  – 2013: Danville-Georgetown Open Space (near Maple Valley) and Island Center Forest (Vashon)
King County Parks
Forest Landscape Assessment Tool

2 million residents
14th most populous county
650,000 in Seattle
2,300 square miles
King County Parks
Forest Landscape Assessment Tool

1997 -- 16,239 acres

2014 -- 27,695 acres of parks, trails and open space at 200 sites

- 3,677 acres of working forest resource lands
- 13,099 acres of multi-use open space
- 7,934 acres of designated natural areas

24,710 acres of forest land

Other park lands
- 2,985 acres of active recreation parks
- 175 miles or 1,300 acres of regional trail corridors
In 2010, USFS grant funds supported a multi-agency partnership to obtain critical baseline data on King County Parks’ forest conditions, ecosystem services and volunteer stewardship.
FLAT is executed in three broad, sequential steps:

1- Forest Cover Type Mapping
   • Aerial imagery and Geographic Information System (GIS) tools are used to divide the site into polygons and delineate Management Units (MUs).
   • The MUs become the unit of observation and measurement.

2 - Forest Assessment
   • Trained field teams visit each MU to collect data

3 - Management Prioritization
   • FLAT database provides a standardized baseline of ecological data for a variety of landscape types;
     • Establish management priorities for each MU, site or geographic area.
     • Provides a starting point for developing stewardship plan and land management plans.
King County Parks
Forest Landscape Assessment Tool

**FLAT**
✓ Obtain baseline data on forest conditions
✓ Each site is typed into Management Units (MU)
✓ All data is geo-referenced by MU

Key attributes
- **Landcover**
  - Forest, open water, landscape and hardscape
- **Forest composition values**
  - Percentage of conifer tree cover and tree stocking density (trees/acre)
- **Dominant over story trees**
  - Species, diameter, age
- **Natural regeneration**
  - Species and stocking density (trees per acre)
- **Forest health indicators**
  - Disease (root rot)
  - Crown vigor
  - Mechanical failure
- **Native shrubs and ground covers**
- **Noxious weeds and invasive plants**

Moss Lake
Natural Area
King County Parks
Forest Landscape Assessment Tool

FLAT
Dominant tree species on 11 largest KC Parks sites
(9,186 acres)

36.3 % -- Big Leaf Maple -- 3,330 acres
29.9 % -- Douglas-fir -- 2,743 acres
22.4 % -- Red Alder -- 2,054 acres
4.1 % -- Black Cottonwood -- 375 acres
3.8 % -- Western Hemlock -- 348 acres
2.0 % -- Pacific Madrone -- 182 acres
0.9 % -- Willow spp. -- 79 acres
0.8% -- Western Red Cedar -- 75 acres
King County Parks
Forest Landscape Assessment Tool

Stewardship projects

Volunteers
• Planted over 22,000 native plants in 2013

Maury Island Marine Park
• Partnership with WA DNR
• Restore former gravel mine
• Planted over 60,000 native trees and plants

Danville – Georgetown Open Space (Maple Valley)
• Thinned 120 acres of 35 year old Douglas-fir plantation

McGarvey Park Open Space (Renton)
• Retention harvest on 70 acres
• Remove dying red alder
• Replace with conifers

Vashon – Maury Island
• Summer 2014 -- thinning 100 acres of former WA DNR forest lands

UW forestry students
• Currently drafting forest stewardship plan for 1000 acres of former Plum Creek commercial timber lands in Maple Valley – Black Diamond area
Forest stewardship goals

Conserve or restore the health and diversity of the forest ecosystem;

Conserve or restore ecological and hydrologic functions;

Demonstrate environmentally-sound forest management and the importance of conservation of the county’s forestland;

Provide opportunities for education and passive recreation for the public;

Conserve or restore fish and wildlife habitat for a diversity of species; especially sensitive, threatened, or rare species;

Use any revenue produced through ecologically sustainable management of the site to support the stewardship of King County Parks’ natural lands and open space.
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