

Accessing Carbon Markets

The California Climate Action Registry (Registry) protocols are considered the current industry standard for management of community and urban trees counted and marketed as carbon offsets. Before projects can be included in the Registry, urban forestry programs are required to attain sustainability by demonstrating "no net loss of trees." On-going inventories are essential in tracking management operations and providing required documentation.

Any municipality contemplating access to carbon markets by managing trees for consideration as carbon offsets must:

- implement a tree inventory and assessment to develop baseline data for existing community forest resources within potential program boundaries
- develop a tracking tool to document ongoing resource management activities
- achieve the standard of "no net loss" of trees within program boundaries

While communities explore the feasibility of carbon markets by designing sustainable programs, urban forests continue to function to moderate carbon indirectly; reducing energy consumption through shade, acting as wind barriers and, at the end of a long productive life, producing energy that offsets use of other fuel sources.



Next Steps

State funding for implementation of the UCF inventory and assessment was eliminated in the current budget. When funding becomes available DNR will:

- complete the state-wide UCF assessment by collecting and analyzing ground inventory data
- partner with University of Washington, developing tools to utilize detailed imagery to assess and analyze canopy cover at the local level in two pilot counties
- encourage communities within the pilot areas to participate by collecting ground data
- develop standard electronic data collection form(s) for use in communities collecting tree inventory data
- develop model templates for forestry data collection services requests; ensuring consistent state-wide data standards

References

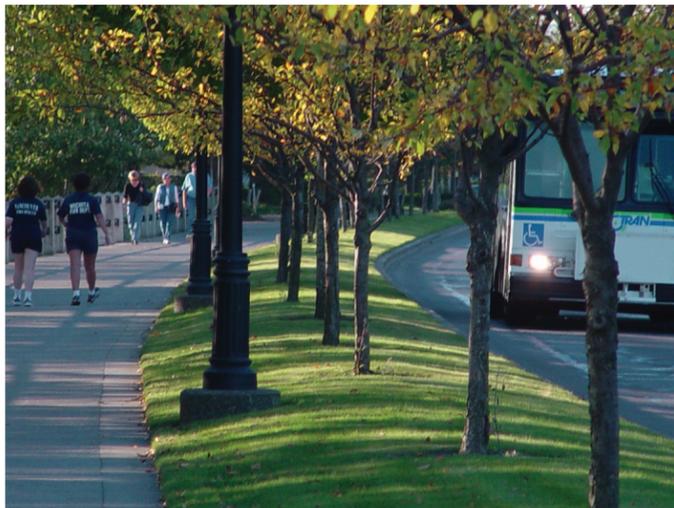
David Nowak, Research Forester, April 2009, personal communication, United States Forest Service Northern Research Station

State of WA 60th Legislature, Engrossed second substitute house bill 2844, 2008, Section 1.1.b, p.2

Vargas, Kelaine E.; McPherson, E. Gregory; Simpson, James R.; Peper, Paula J.; Gardner, Shelley L.; Xiao, Qingfu 2007. Temperate Interior West community tree guide: benefits, costs, and strategic planting Gen. Tech. Rep. PSW-GTR-206. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station. 108 p.

Urban Forest Project Reporting Protocol Version 1.0, August 2008, Climate Action Reserve

California Climate Action Registry: <http://www.climateregistry.org>



Community & Urban Forestry



WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Evergreen Communities Act Criteria and Implementation Progress Report 2009

Introduction to Community and Urban Forestry

Community forests are, collectively, the trees and vegetation lining our streets, growing in our parks and back yards; the forest where we live, work and play. E2SHB 2844, the Evergreen Communities Act (the Act), adopted in 2008, recognizes the many contributions that community and urban forests make to communities throughout the state, specifically their role in mitigating air and water pollution. The Act, states that the "preservation and enhancement of city trees and community and urban forests is one of the most cost-effective ways to protect and improve water quality, air quality, human well-being, and our quality of life." It was enacted to provide assistance to cities, towns, counties, and tribes in Washington that wish to improve or enhance their community and urban forests in order to reap the many social, aesthetic, ecological, and economic benefits provided by community trees.



Purpose and Overview of Report

The Act directs Department of Natural Resources (DNR), assisted by a Technical Advisory Committee (TAC), to develop a criteria and implementation plan for a statewide community and urban forest inventory and assessment.

Inventories are essential to planning for and managing the community tree resource. Analyzed data reveals the economic, social and environmental benefits of the resource, and provides information crucial to creating management plans, and policies and ordinances intended to protect and expand the urban and community forest.

This document summarizes a sixteen page technical report, prepared by DNR and the fifteen-member TAC. It identifies core elements which are key to implementing urban tree inventories and assessments, at both the state and local level, and includes recommendations to standardize data collection protocol.

The full report complements policy and management tools developed by Department of Commerce, in compliance with other sections of the Evergreen Community Act.



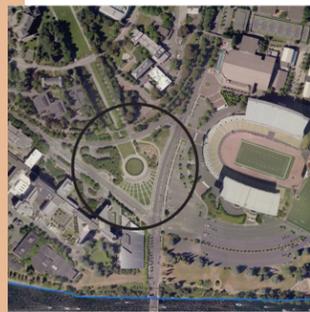
Discovering the Economic Benefits of Urban and Community Forests

Urban trees provide real benefits to communities. The United States Forest Service recently completed a nation-wide Urban and Community Forest (UCF) canopy analysis based on satellite imagery collected in 2000. The data demonstrates the value of UCFs in Washington, including carbon storage capacity estimated at \$515,300,000, annual carbon sequestration valued at \$16,986,000, and air pollution removal valued at \$156,100,000.

Spatial Analysis

The use of aerial photos or satellite images, defined as remote sensing or "spatial analysis" tools, is recommended in order to identify the range and percentage of

existing tree canopy cover, future planting sites, define the economic value of the tree resource, and provide information for long range planning and management of the UCF. One advantage of spatial analysis, is that it presents a complete picture of the forest resource, including privately managed trees that make up well over 60% of the total urban forest canopy.



Ground-Based Data Collection

Ground-based data collection is integral to assessing the UCF, providing information (species, age, size, condition, etc.) necessary for analysis, planning, and management of the resource. To complete a state-wide UCF analysis, ground data needs to be collected from randomly located plots using statistically accurate sampling protocols developed by the United States Forest Service (USFS). Data will be analyzed with public domain UCF inventory analysis software (i-Tree) to characterize the structure, value and function of the resource.

Local Analysis and Inventory

Every community should be inventorying trees for local management purposes. Collecting ground inventory data, preferably in combination with highly detailed aerial imagery, provides information essential to developing a sustainable community forest management plan. Data analysis illustrates and defines the associated benefits of the resource and provides a base from which to develop strategies and goals leading to a sustainable program.

Collecting Consistent, Accurate Data

DNR and the TAC developed standardized data elements to guide communities designing tree inventories. This standard defines common values, so that data can easily be shared or aggregated locally, regionally or statewide. The core data set includes the minimum elements necessary to write a basic



management plan, and includes those essential for reporting carbon credits. Additional data sets were developed to address specific resource management variables, (street or individual tree management versus park or natural area management).

Data Collection and Volunteers

To assure accurate and consistent information, initial inventory data should be collected by experienced, trained arborist staff or professional urban forestry consultants. Data collection for the state-wide inventory and county-wide inventory pilot projects can be accomplished in partnership with local city forestry staff, DNR foresters, (if available) and/or professional urban forestry service providers. Local community inventories should be undertaken by forestry staff or urban forestry service providers.

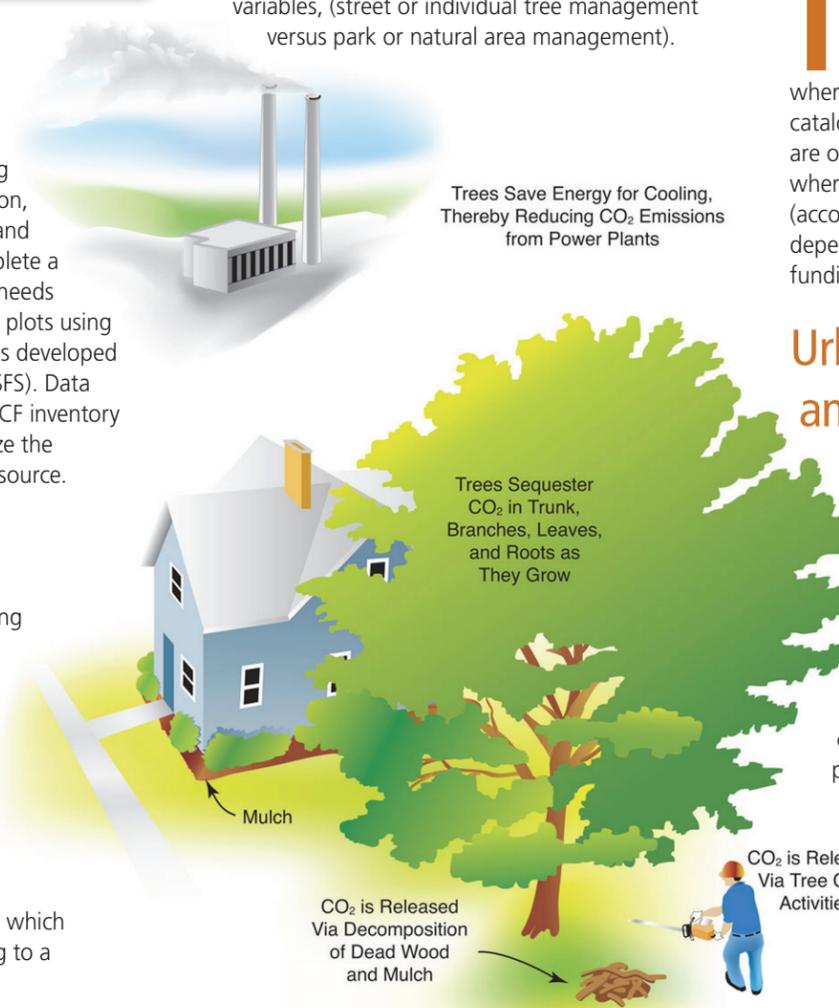
In most cases the use of volunteers is recommended only for subsequent, rather than initial, data collection and then only after appropriate training. Volunteer organizations with strong stewardship training programs, such as Washington State Extension Master Gardeners or the Washington Native Plant Society, can be considered for inventory data collection, but need to be provided with specialized training to assure reliable, consistent data.

Current Data Needs to be Maintained

In order to remain relevant to management, it is necessary to update inventory data on a regular basis. This is accomplished by recording pertinent tree information as maintenance occurs and scheduling an ongoing inventory, where from 20 to 30 percent of the forest is catalogued each year. These types of inventories are often easier to write into an annual budget, where periodic, complete resource inventories (accomplished every 5 to 7 years), are often dependent on the allocation of special project funding, and may not be prioritized as a budget item.

Urban Forests, and Ecosystem Services

Resource inventories provide information essential for budgeting, planning and tracking program activities. Because trees growing in urban settings often face hostile environments, it takes active management and dedicated resources to ensure the viability of urban trees and create a sustainable program. The pay-off for investing in healthy urban forests comes through the ecosystem services they provide including, energy savings, offset carbon emissions, improved air quality, reductions in stormwater run-off, increased property values, safer neighborhoods, green industry jobs, etc. Average annual net benefits increase with tree size and differ based on location: from \$12 (public) to \$24 (yard) for a small tree and from \$49 (public) to \$63 (yard) for a large tree.



The Economy and the Role of DNR

As part of *continued* but reduced Federal Funding, DNR Community and Urban Forestry staff will:

- Provide technical, educational assistance to communities.
- Administer federally funded community assistance grants to encourage inventory implementation and the development of UCF management plans, policies and ordinances.
- Seek additional funding to continue implementation of the state-wide inventory project.

The Washington Urban and Community Forestry Program is made possible with assistance from the USDA Forest Service Urban and Community Forestry Program. One purpose of the program is to educate citizens and decision-makers about the economic, environmental, psychological, and aesthetic benefits of trees. Another important purpose is to assist local governments, citizen groups and volunteers in planting and sustaining healthy trees and vegetation wherever people live and work in Washington State.

