



# Research Needs for Urban Forestry in the Pacific Northwest Region



What scientific knowledge is needed to better plan for and manage urban forests in the states of Alaska, Oregon and Washington?

An exploratory process was used to assess and understand urban forestry research needs in the region. Participants represent industry, non-profits, academia, and local, state, and federal agencies.

Many issues were identified. This fact sheet is a summary of the full project report.

## Sustainable Urban Forests & Knowledge Needs

Street and park trees were once the focus of forestry programs in cities and towns. More recently urban ecologists have described urban forests as patches of native forest ecosystems. Here, urban forests are considered to be all trees on public and private property, and can be a part of all places where people live, work, learn, and play in cities.

A model of urban forest sustainability (Clark et al. 1997, *J of Arboriculture*) was the source of basic questions for the project, and includes three themes:

- Forest Resources
- Management Practices
- Human Dimensions

The model illustrates how to achieve sustainable urban forests through community cooperation, quality care, continued funding, and personal involvement. It emphasizes the need for vision and responsibility, for direct intervention with the resource, and for programs of care that are on-going and responsive.

## Project Approach

A two phase Delphi process was used by the coordinating team (U of WA and the US Forest Service). The Delphi method is a sequential interactive technique for obtaining information from a panel of independent experts without the need to meet face-to-face. It is used to help identify issues, set goals and priorities, clarify positions and differences across groups, and identify solutions. About 60 stakeholders were recruited and asked to respond to two sets of web-based questions. Their answers revealed a wide range of research issues, and emphasized that most are of high priority. Participants' responses were sorted into a collection of research need statements, based on sustainability themes.

# What are the Urban Forest Research Needs in the Pacific NW?

Within and between the three themes of Forest Resource, Resource Management, and Human Dimensions are many issues (see table), and most were judged to be of high priority for scientific study. Research needs range from the scale of visioning across multiple large governmental agencies, to practical tree and forest care by small property owners. Recommendations for study of the resource range from biodiversity of interconnected green spaces across the region, to how to provide positive growing conditions for individual trees in the most hardscaped environments.

## Urban Forest Research-Sustainability Themes with Issues

Forest Resource Issues	Resource Management Issues	Human Dimensions Issues
urbanization & development impacts	adequate funding & staff	improve public appreciation & understanding
health conservation & retention	integrate forests with other city systems	lack of public & elected leadership
aquatic resource quality & stormwater management	develop/implement best practices	understand & recognize human & economic benefits
habitat loss & fragmentation	inadequate policy, code & regulations	integration across institutions & agencies
invasive species detection & management	inadequate vision/awareness & knowledge	volunteers & citizen stewards
climate change & carbon dynamics	implement ecosystem services/green infrastructure	private property action & user conflicts
adequate tree spaces	conduct consistent & routine management	enable appropriate uses & interactions
loss of biodiversity & ecological complexity	conduct inventory, assessment & monitoring	
	comprehensive programs at regional/landscape scale	

## What Are the Next Steps?

The range and scope of research ideas provides many opportunities to build a research program. As funding initiatives are announced sets of issues can be integrated to prepare research proposals. The needs are so great that science start-ups can address any number of scientific disciplines, and generate much needed contributions. Next actions should include:

- draft a portfolio of preliminary research questions and program ideas,
- identify potential collaborative groups or coalitions, and
- assess and begin to assemble the people and resources needed for the best ideas,
- incorporate urban forestry into the regional natural resources research agenda.



### Acknowledgements:

**FUNDING:** US Forest Service, Pacific Northwest Research Station

**PROJECT TEAM:** Linda Kruger (USFS), Barbara Hollenbeck (USFS), Richard Haynes (USFS), Kathleen Wolf (U of WA)

### For more information, contact...

**PROJECT COORDINATOR:** Kathleen L. Wolf, Ph.D.; College of Forest Resources, University of Washington

**PHONE:** (206) 616-5758 **E-MAIL:** kwolf@u.washington.edu **WEB SITE:** www.cfr.washington.edu/research.envmind