Urban Forest Health Monitoring

USDA Forest Service
Northeastern Area
State and Private Forestry

Description: The purpose of the Urban Forest Health Monitoring Pilot Project is to develop a model that enables the USDA Forest Service and State forestry agencies to document baseline information regarding urban forest conditions and assess the trend in these conditions over time and over all geographic scales. At this stage, we are developing statistical methods that will allow consistency in evaluating trends from one part of the country to another. The project is a cooperative effort involving the Urban and Community Forestry Program, the National Forest Health Monitoring Program, Forest Inventory and Analysis, Urban Forest Ecosystem Research, and State forestry agencies.

Key Issues:

- Assessing the urban forest resource.
- Monitoring changes within the urban forest resource.
- Understanding factors contributing to the condition of the urban forest resource.
- Detection of exotic pest problems in urban areas.
- Using consistent methodology across the Northeastern Area.

Accomplishments: The project has focused upon methods development, user needs, and pilot testing procedures for three stages: urban forest inventory, street tree health monitoring, and local urban forest health monitoring.

Urban Forest Inventory (Stage 1) - The Urban Forest Inventory seeks to extend the Forest Inventory and Analysis (FIA) national sampling grid to include urban nonforest plots. Nationally, it is estimated that 11,735 plots (forested and nonforested) fall within areas classified as urban by the U.S. Census and would be included in the urban forest inventory.

- The first pilot implementation took place in Indiana in 2001 and 2002. The pilot, conducted by the Indiana Department of Natural Resources, was designed to extend the ongoing FIA statewide inventory into urban areas. The pilot was timed to coincide with the first panel of data collection (20 percent of plots) from the statewide FIA grid. This resulted in 37 plots within urban boundaries. The pilot was implemented in 2001 and resulted in a field manual and refinement of data collection protocol. A report of the pilot has been prepared.

- A second pilot took place in Wisconsin in 2002 and was conducted through the Wisconsin Department of Natural Resources. One hundred nineteen "nonforest" urban plots were identified and measured within urban boundaries statewide. This data is now being merged with the forested plot data from the same urban areas in Wisconsin. A report is being prepared.

- A third pilot began in New Jersey in 2003. An estimated 285 FIA plots fall within Census-defined urban areas. This pilot is not scheduled to be completed until the fall of 2004.

Street Tree Health Monitoring (Stage 2) - Street tree health monitoring seeks to implement a statewide street tree assessment using plots established within the public right-of-way within Census-defined urban areas. Though street trees represent only a small portion of the urban forest, they are the trees that municipal foresters are responsible for and are often the most visible component of the urban forest. A street tree monitoring plot system provides information about the nature and condition of the street tree population and can be used for detection of new or exotic pest problems.

Pilots for this stage were implemented in Maryland in 2001 (300 plots), Massachusetts in 2002 (300 plots), and Wisconsin in 2002 (900 plots). Maryland implemented the first revisit of plots in 2002. Sample plots are distributed on a statewide basis and revisited on a rotating panel basis with overlapping plots used for trend information. Information from the statewide street tree monitoring plots can be

combined with information gained from the Urban Forest Inventory plots in order to generate a total picture of the urban forest. Reports from the Maryland and Massachusetts pilots are being prepared.

Local Urban Forest Health Monitoring (Stage 3) - This stage involves the development of protocols, field manuals, and data analysis packages to allow local municipalities to intensify sampling to generate locally specific data for policy development and forest management purposes. The sampling protocols and manuals will be specifically designed to provide users flexible and easy-to-follow instructions enabling municipalities, urban foresters, or volunteers to gather local information and analyze it in a comparable fashion to Stage 1 and 2.

Budget History:

Urban Forest Health Monitoring *($ Thousands)*				
	FY 2001	**FY 2002**	**FY 2003**	**FY 2004**
Stage 1	$50	$375		
Stage 2	$30	75	$30	$30
Stage 3				
Totals	**$80**	**$450**	**$30**	**$30**

*Deferred to FY 2003

Future Direction:

- Analysis of data and dissemination of final reports.
- Stage 3 tool development and stakeholders' workshop.
- Assessment of national implementation based upon pilot work.

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