

The Urban Forest in Washington D.C.

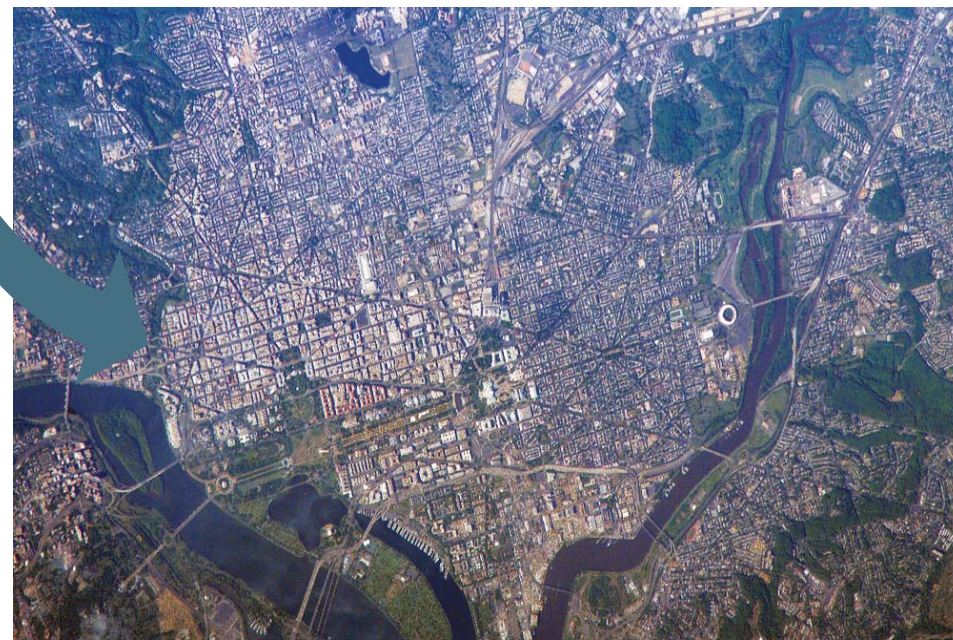
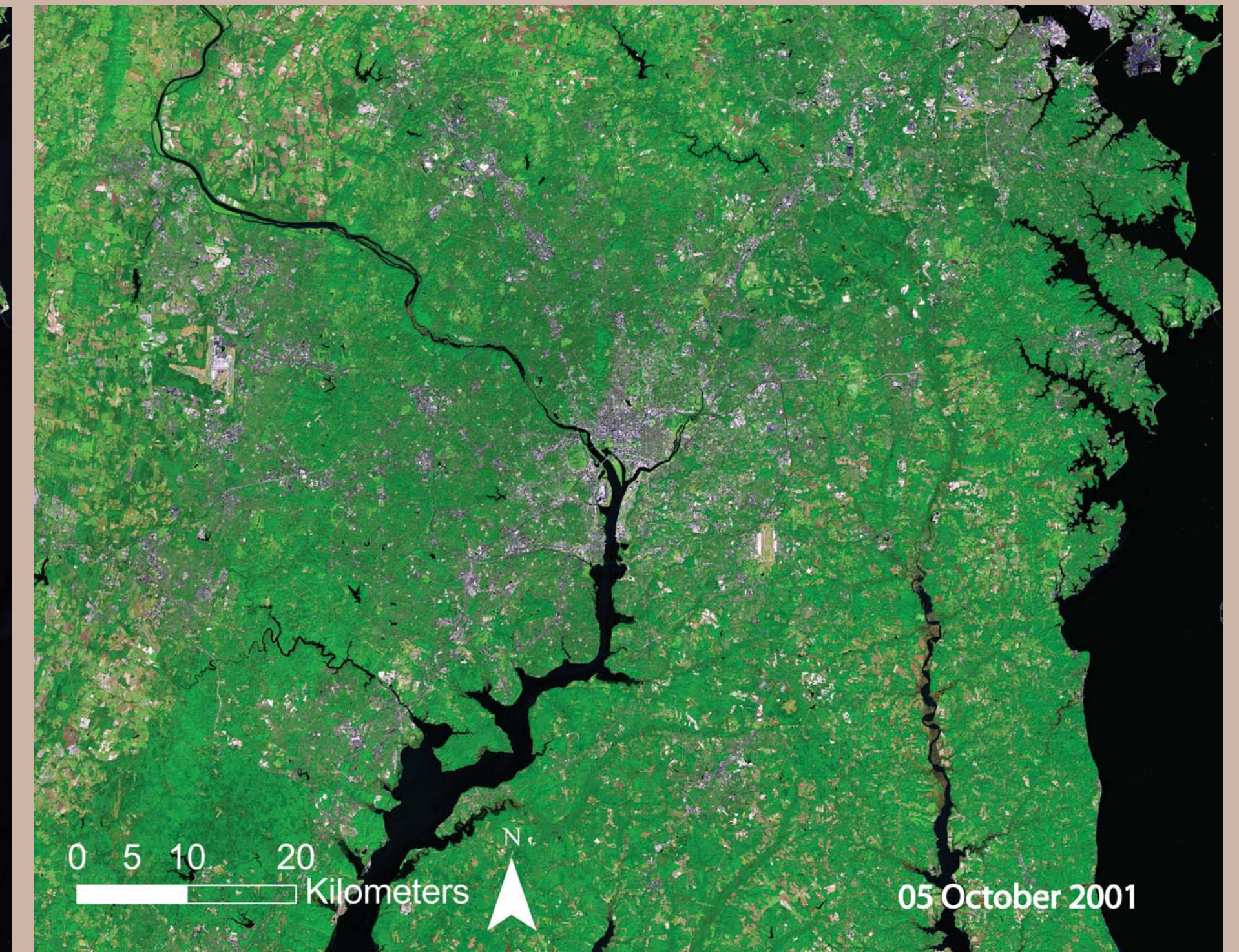


Photo of Washington, D.C. taken from the International Space Station.

Washington's Urban Forest

Washington, D.C. is the capital city of the United States of America. The population of the District of Columbia is estimated at 553 523 as of 2004. The greater Washington D.C. metropolitan area includes the District of Columbia and parts of Maryland, Virginia, and West Virginia. As of 2002, the federal government accounted for 27 per cent of Washington, D.C.'s jobs, and a significant portion of the metro area's population has some sort of connection to the federal government. According to the United States Census Bureau, the city has a total area of 68.3 square miles (177km²) with 61.4 square miles (159 km²) of it land and 6.9 square miles (18 km²) of it water.

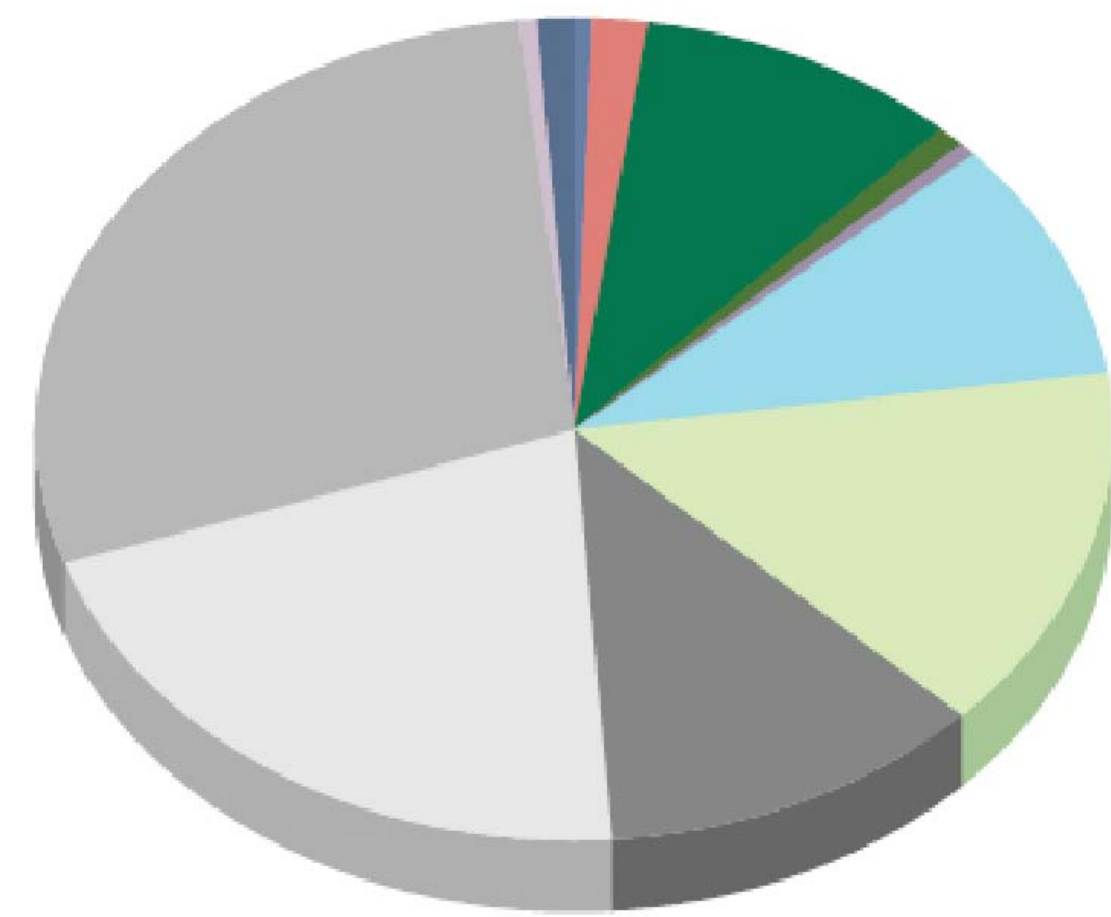
As more and more people move into Washington, D.C.'s metro area and the city expands, the ecological value of its urban trees is becoming more recognized. Urban forests help reduce air pollution, increase water quality, decrease storm-water runoff, reduce sound pollution, and cut-down on energy costs. However, nutrient deficiencies, lack of space for roots to grow, low levels of oxygen in the soil, and improper pruning add to the stress in much of the urban forest. Nationwide, the average life span of a tree in a downtown area is less than 10 years. Only proper planning and species selection can decrease the impacts of these stresses.



Using satellite data can prove to be valuable for land use planning by providing information on areas showing tree loss. Benefits to using this data is that it is capable of being subdivided to fit any political or natural boundary of interest within the study area, or having each analysis being addressed to different local issues. Communities that use this data can evaluate the

environmental benefits and impacts of various growth, development, or management scenarios, including the benefits of strategic tree planting and maintenance programs. In the images above of the Washington, D.C and surrounding areas, dark green represents tree cover, light green represents grass and open space, and gray designates impervious surface.

The City of Washington, D.C. Rapid Ecosystem Analysis for 2001



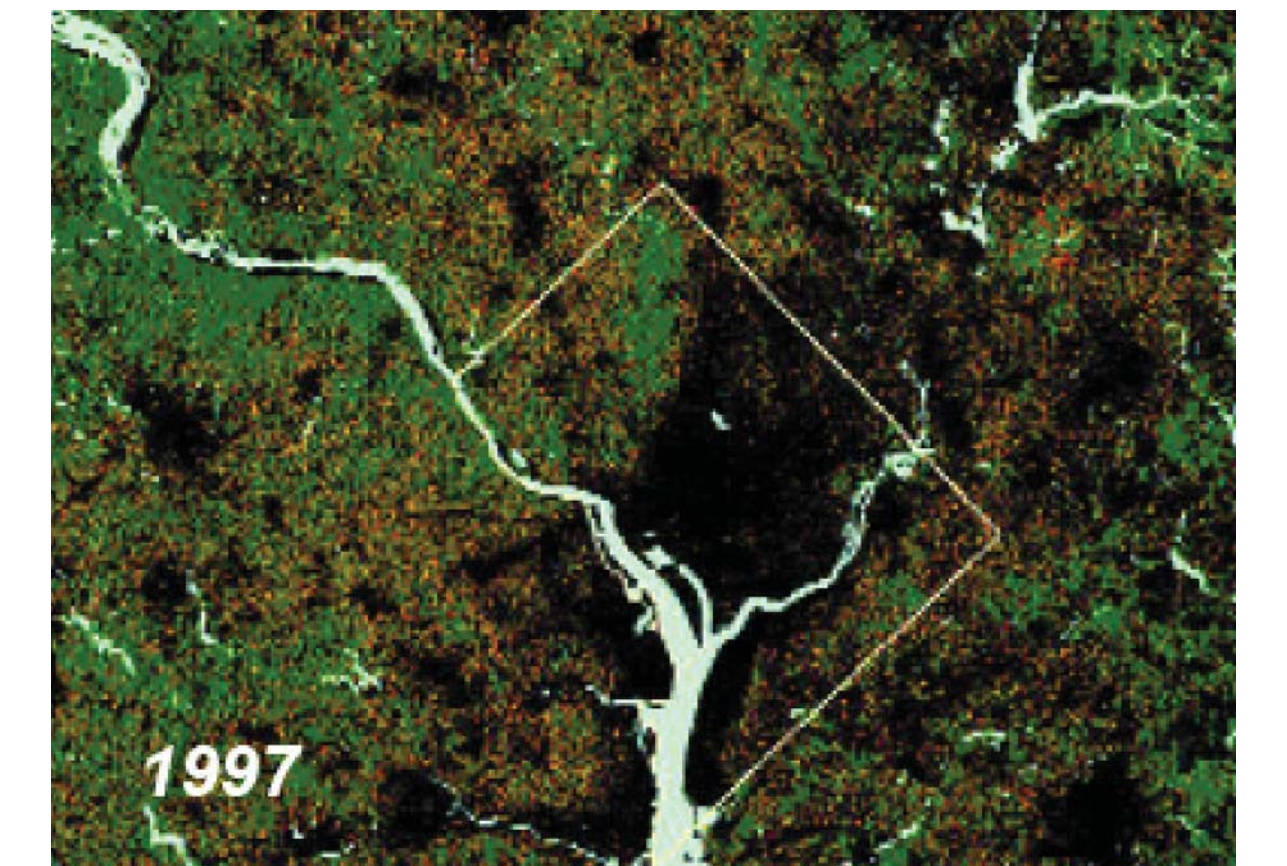
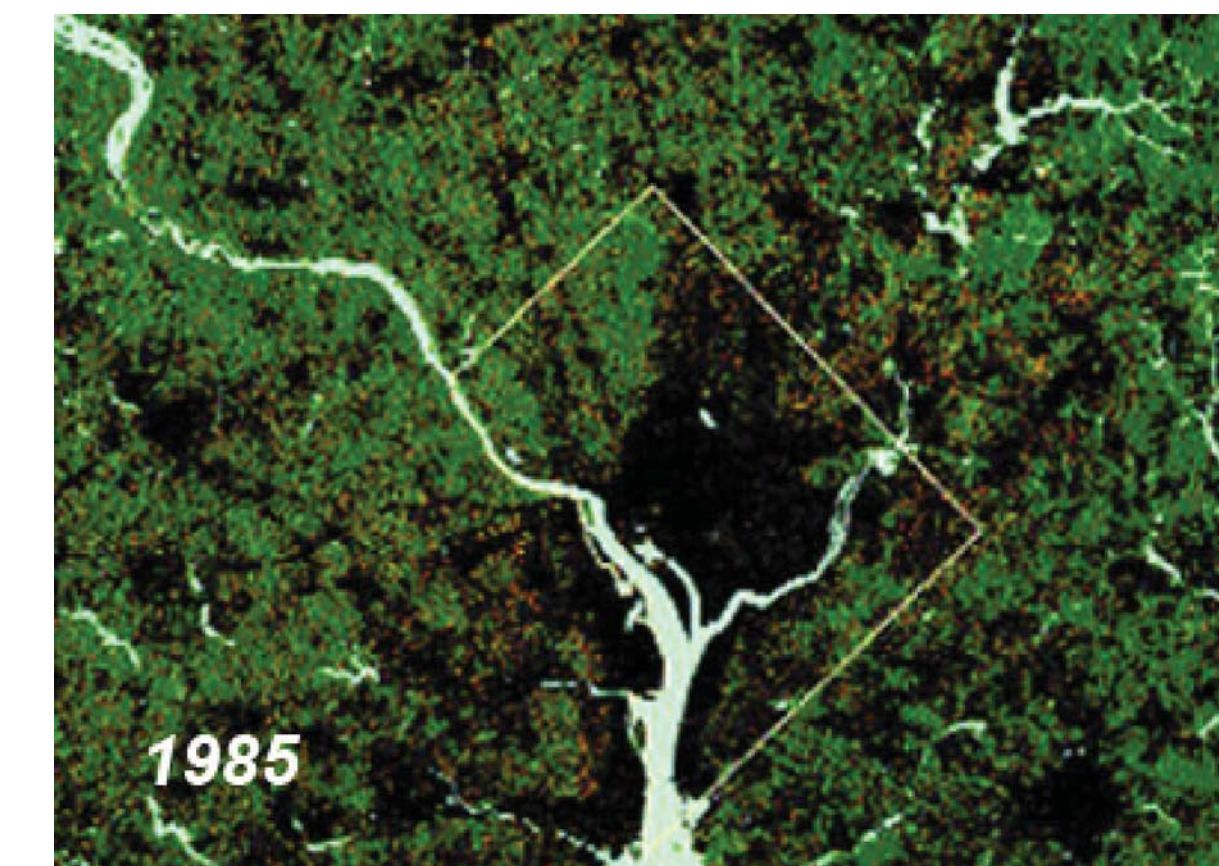
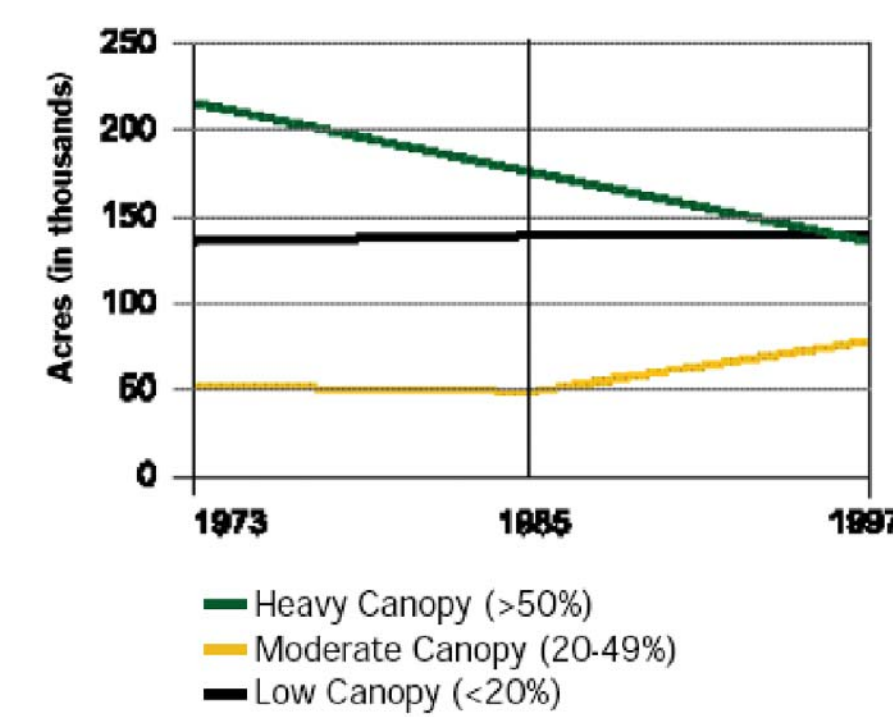
Cropland: Cultivated Crops	276.7	0.6%
Cropland: Pasture/Hay	647.0	1.5%
Forest: Deciduous Forest	4,313.1	9.9%
Forest: Evergreen Forest	324.9	0.7%
Forest: Mixed Forest	8.3	0.0%
Naturally Bare Rock, Sand or Clay	249.2	0.6%
Open Water	4,153.4	9.5%
Urban: Developed Open Space	6,292.8	14.4%
Urban: High Intensity	5,161.2	11.8%
Urban: Low Intensity	9,126.0	20.9%
Urban: Medium Intensity	12,504.4	28.6%
Wetlands: Emergent Herbaceous Wetland	218.9	0.5%
Wetlands: Woody Wetland	458.4	1.0%
Total:	43,734.3	100.0%

Source: American Forests/CUES/USGS

Land cover areas are in acres

Total Tree Canopy: 4,646 acres (10.6%)

Tree Cover Change in Washington, DC Metro Area



Satellites and Forests

Studies conducted in recent years using satellite images and aerial photography show serious problems and concerns over the condition of urban forests. American Forests' November 1999 study of tree cover used three carefully selected Landsat images from the years 1972, 1985 and 1997 to determine how the vegetation had changed in the Washington DC Metro area. The study found that heavy tree cover had declined more than 30 per cent (green areas) while the low canopy areas (black) had increased by more than 20 per cent. The red areas show where the greatest rates of tree loss have occurred and indicate where urban sprawl has been the most pronounced. This trend was even more pronounced within the District of Columbia which showed a 64 per cent loss of areas with heavy tree cover.

Inspired by these images, Casey Trees Endowment Fund was created in 2001, following a generous donation by philanthropist Betty Brown Casey, to establish an organization that would work to restore the tree cover of the District of Columbia. Their Tree Inventory program brings in volunteers that go out into the streets of Washington D.C. to evaluate and plot the location of current trees and scout for possible new tree locations. With a database of information, the endowment can better plan their tree projects.



Visitors walk along the tidal basin at Cherry Blossom time in Washington, D.C. The Jefferson Memorial in the background. Ken Hammond/USGS

Images courtesy of the Casey Trees Endowment Fund