Forest Assessment, Planning, Protection, Conservation and Acquisition

This broad category goes beyond forest assessment and inventory analysis (characterization) to include biomass and economic analysis, monitoring, and legislated efforts such as the federal Forest Legacy Program and state Forest Practices Acts, which use such information.

Mounting public concern over the environmental effects of logging activities has resulted in increasingly strict regulations and monitoring regarding timber harvesting. For example, in British Columbia, regulations regarding the harvesting of trees require pre and post logging views of areas under consideration. In recent years, the forest industry in British Columbia has adopted special visualization software from the motion picture industry that utilizes data from GIS, GPS and RS technology to improve the quality and usefulness of their harvest proposals, which has resulted in higher rates of harvest approval (Antenucci 2002).

In this context, GIT is generally used by SFOs to improve planning and analysis efforts at bothsmall and large scales, particularly for projects that cross political and administrative boundaries. GIT use for analysis and planning was reported by 54% of SFOs, compared to 20% use reported in 1993 (Warnecke and Herrington 1994). Increasingly strong state and federal legislation, such as State Forest Practices Acts and the Federal Clean Water Act, have made a strong case for GIT use in these applications. Currently, at least 25 SFOs are used GIS for this application category. At least eight SFOs report use of GPS, while 13 indicate use of RS.

Vermont

The Forestry Division has recently initiated a pilot project for part of the state to identify individually owned private parcels with forest management plans using GIS. Vermont's Use Value Appraisal (UVA) program is a statewide, voluntary property tax abatement program for lands that remain in agricultural or forest use, rather than some developed use in the market place. It provides "current use" assessments which are based on the current productive use of the land rather than fair market value, providing a more equitable property tax for enrolled parcels.

The Division reviews, approves and monitors the forest management plans of parcels enrolled in the forest land portion of the program as a part of its planning efforts. One component of the management plan eligibility requirements is a parcel map keyed to the state orthophoto base map from the Vermont Mapping Program. Composite maps are being developed from these parcel maps. These maps will be administered by County Foresters, and will show parcel boundaries as listed in the UVA program.

Oregon

The Resource Planning Program of the Oregon Department of Forestry uses GIS for analysis and planning at the landscape level. The Program uses some digital orthophotos for site specific verification, but focuses on landscape level work using satellite imagery processed by private contractors and Oregon State University (OSU). Remotely sensed data are developed into ArcInfo™ coverages pertaining to vegetation classification and stand size. At some point in the

future, the Program may move towards LIDAR technology use for analysis and planning efforts, depending on availability of funds.

Mississippi

The Forestry Area Assessment Program is a major forest assessment project conducted by the Mississippi Forestry Commission. The assessment examines changes in forest land cover using LANDSAT TM imagery from about 1993 through 1997. Items assessed include species composition of forest land, forest regeneration and forest harvesting.

Utah

The Division of Forestry, Fire and State Lands has used GIS to support various programs, such as Forest Legacy. Additionally, the Forest Practices Act, enacted in 2000, is boosting the demand for GPS and GIS use on private lands because Notice of Intent and other provisions of the act increase the need for prescriptions, harvest plans, and monitoring of voluntary compliance to Forest Water Quality Guidelines

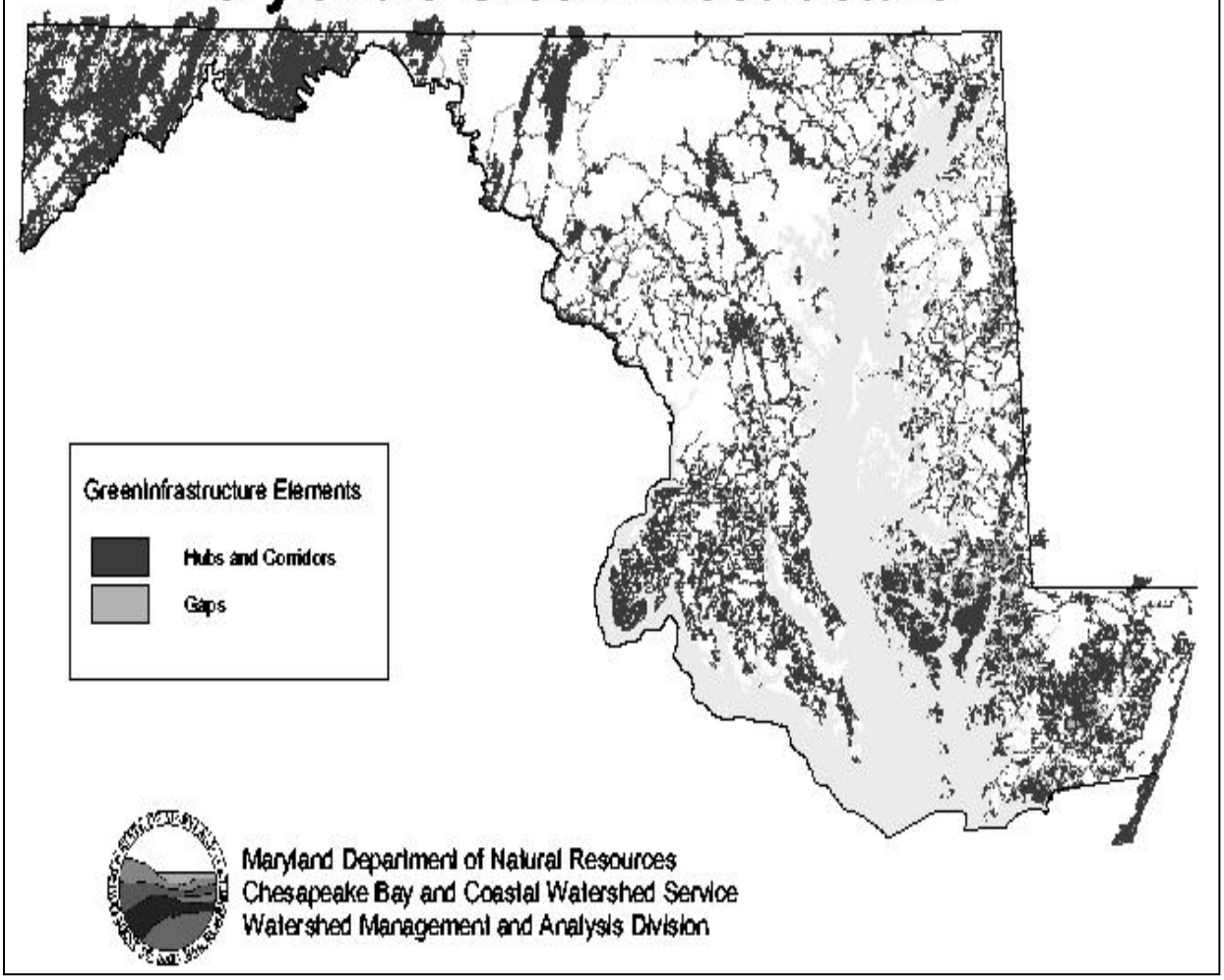
Maryland

Currently, the Maryland Forest Service and other parts of DNR are working with the USFS on the Strategic Forest Lands Assessment, an effort to identify ecologically and economically important forests statewide.

The project uses GIS to help conduct analyses for ecological, socioeconomic and vulnerability assessments to improve resource management activities in forest product based economies. The identification of these strategic forest lands will serve as a guide for DNR land conservation and stewardship programs. The Maryland Forest Service is extensively involved with this assessment at the planning, development and analysis stages. The project also includes a logging probability analysis that will be included in another DNR project involving strategic forest lands.

Image below:
Source: Maryland Department of Natural Resources
Contact: Christine Conn
410-260-8792, cconn@dnr.state.md.us

Maryland's GreenInfrastructure



Maryland Department of Natural Resources
Chesapeake Bay and Coastal Watershed Service
Watershed Management and Analysis Division