

Private Lands

Overall, the use of GIT by SFOs is increasing in private lands management as evidence is growing about how the technology can benefit individual landowners and help implement specific practices required by Forest Practices Acts and other regulations. Many forest stewardship programs are beginning to provide private land owners with digital data and GIS-based tools to help plan and assist in land management. GIT also is being used with FIA data to research forest parcelization and the effects of urbanization on private forest lands, such as at the USFS Pacific Northwest Research Station (Kline et. al. 2000).

The importance of such work is underscored by studies such as the one undertaken by the Society for the Protection of New Hampshire Forests, which concluded that smaller land holdings result in increased costs and a decline in the demand for foresters and management plans for these properties (Thorne 2000). To date, at least 28 SFOs use GIS in private land management. About half as many use RS, and just over half use GPS. Digital orthophotos are the predominant form of RS data used to date.



Georgia

The Georgia Forestry Commission's (GFC) primary use of GIT is for private landowner services. GIS is used to help create maps and drawings, based on GPS data collected by GFC staff. These maps and data are used as components of forest management plans to assist in forest stewardship and planning by private landowners.

GIT has also been used in Georgia to help accurately value private forested land. The Georgia Department of Revenue worked with Space Imaging to demonstrate internally and to the Georgia Association of Assessing Officials how satellite data could be used to increase the efficiency and accuracy of generating tax revenue from timber harvesting activities on private lands. This project was initiated by Space Imaging, but the application was adopted and expanded by the Department of Revenue. The most recent effort is an updated GIS application using additional vector data, such as Department of Transportation roads and county tax map layers, acquired through the Georgia GIS Data Clearinghouse. This new application is expected to be released in 2002.



Vermont

The Forestry Division's County Foresters use GIS and digital orthophotography-based parcel maps as a tool to assist private landowners as part of its Forest Stewardship Program. Property boundaries, roads data, topography data and forest stand information are superimposed on the orthophotography base map from the Vermont Mapping Program to create forest management maps.

The Division has recently initiated a pilot project using GIS to map the properties that are enrolled in Vermont's Use Value Appraisal (UVA) program. UVA 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. The UVA program provides "current use" assessments

which are based on the current productive use of the land rather than its fair market value. This methodology provides a more equitable property tax for enrolled parcels.

The primary purpose of the Division's project is to accurately locate and identify private forest parcels that are under management through this program. At present, the project is limited to the White River Watershed and Washington County. Although other County Foresters have begun to use GIS to map additional properties, the primary effort is the pilot project. Digital data are being acquired to apply UVA on these private lands. 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's orthophoto base map. 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.



Minnesota

The Division of Forestry uses GIT statewide for change analysis of silvicultural activities in riparian forests. Satellite imagery is used to monitor the effectiveness of forest practices guidelines in Riparian Management Zones (RMZs) through Guideline Implementation Monitoring (GIM), which tracks logger compliance with voluntary forest practices guidelines on timber sales.

Image below:

Source: Minnesota Division of Forestry

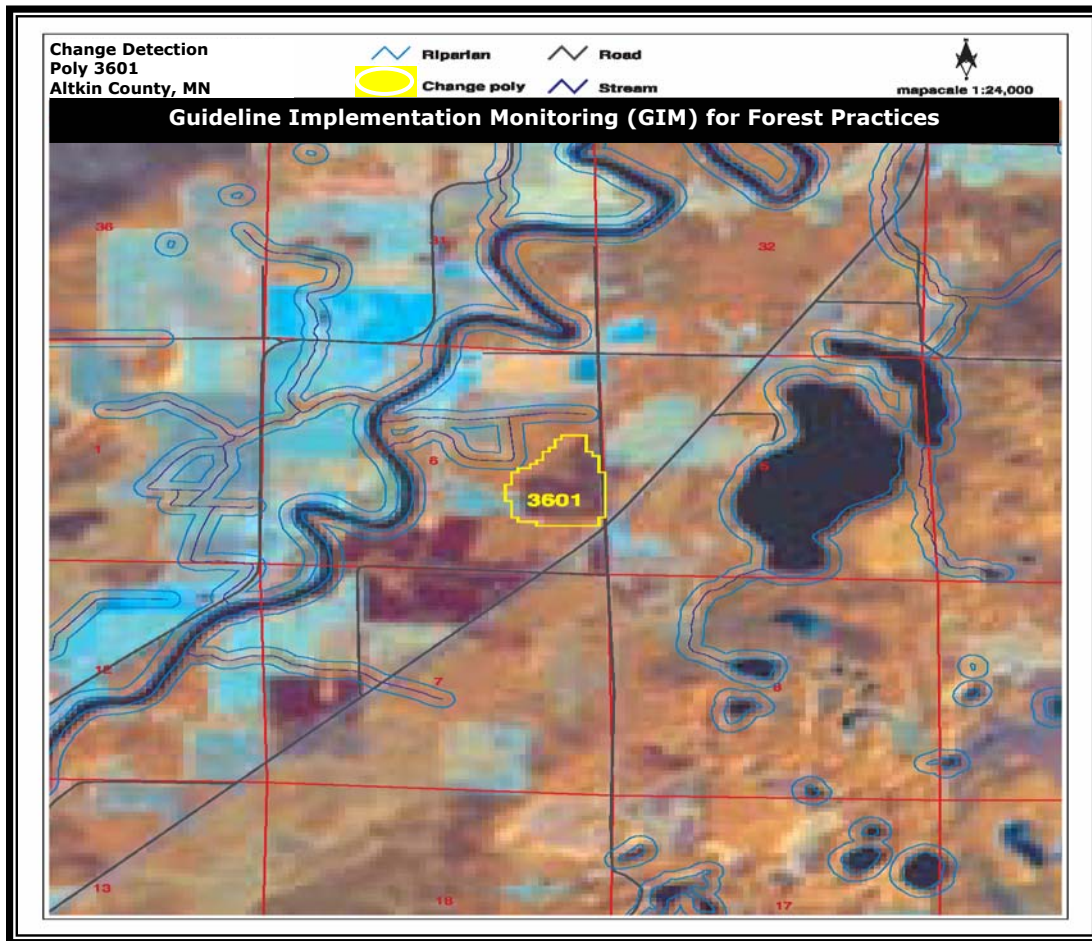
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Image below:

Timber harvest area in center (yellow) with nearby riparian zones enclosed by blue lines.



Maine

Maine has over 17.5 million acres of forested land, of which 96% is privately owned. It has the most private forest land of any state in the nation. The Forest Policy and Management Division of the Maine Forest Service (MFS) provides assistance and education to the public and landowners. Field foresters use GIS and GPS to assist in enforcing the rules of the Forest Practices Act (i.e., determining clearcut size, location, and separation distances), and assessing water quality, shoreland zoning, and watershed analysis pertaining to forest operations. Other GIS projects include assisting private landowners and educating them to make informed decisions about Maine's forests. GPS also is used in legal and regulatory matters, such as locating and documenting issues involving private lands such as timber trespass.



Missouri

The Forestry Division uses GIT to provide forest management assistance to private landowners. Black and white digital orthophotos from 1995 and digital raster graphics (DRGs) are widely used in the preparation of management plans to private landowners to better manage their lands. As a participant in the USFS's Northeastern Area State and Private Forestry Stewardship Impact Initiative pilot project, boundaries and attributes of stewardship plan tracts are being converted to digital form. In the future, boundaries and attributes of all private land tracts receiving significant attention from field foresters will be incorporated in a spatial database to be used in additional applications.



New York

The Division of Lands and Forests is involved in a collaborative effort to employ GIS-based management plans for private lands. The Division's parent, the Department of Environmental Conservation, is working with the State University of New York College of Environmental Science and Forestry (SUNY-ESF) to develop an ArcView™ template for stewardship plans to assist private land owners. These plans will be coordinated with watershed plans and other GIT work in the SFO and the Division of Fish, Wildlife and Marine Resources. The template will allow incorporation of up-to-date spatial and field- collected GPS data on private lands that are consistent with ongoing statewide public land formats. It also will establish a mechanism for reporting accomplishments in both tabular and spatial formats.



Virginia

The Department of Forestry (DOF) also uses GIT to monitor management activities on private lands that impact property tax assessments. DOF uses GIS to track riparian buffers established for tax credit on private lands. Additional projects involve detecting land cover change to monitor tax credit compliance on private lands, and in the future for identifying disturbed areas. DOF is working with Virginia Polytechnic Institute to define RS image classification methodologies to be used in these analyses.

DOF performed a statewide Forest Resource Assessment in 1995 using GIS analysis of land use and 1990 population densities. This forest assessment was designed to identify where commercially available timber exists, with focus primarily on private lands. DOF is currently examining ways to repeat and enhance this analysis using 2000 Census data in conjunction with the forest land use layer being generated by DOF using RS. The aim of this effort will be to address the importance of forest lands for ecological, economic, water quality, and recreational benefits to the Commonwealth. The results of this newer analysis will be used to address one of the agency's primary strategic goals: conservation of the forest land base.



Utah

GIT is used by the Division of Forestry, Fire and State Lands as a tool in the management of private as well as state lands. GPS is used for defining landowner and leaseholder boundaries on state and private lands and stewardship tracts. Utah's Forest Practices Act, enacted in 2000, is boosting the demand for GPS use and GIS analysis on private lands. Notice of Intent and other provisions of the act increase the need for prescriptions, harvest plans, and monitoring of voluntary compliance to the state's Forest Water Quality Guidelines.



South Carolina

GIS and GPS are used by the South Carolina Forestry Commission for monitoring private lands, and providing landowner assistance and mapping. Field foresters use GIS in combination with 1994 and 1999 digital orthophotos to develop forest management recommendations and prepare forest management maps for non-industrial private landowners and state lands. These maps are created after field checks are made using GPS and the most current aerial photography available.



Kentucky

The Division of Forestry uses GIS in several applications on private lands such as forest management and stewardship, where it is used to map and record attribute data of examined stands. GIS is used to assist in logging inspections by maintaining information on landings, skid trails and acres logged. These data are also used with GIS to determine locations of Best Management Practice (BMP) violations. Fire origin and acres burned data are also maintained for private lands. Data types used for these applications include DRGs, digital orthophotos and internally collected GPS data.