

Statewide Assessment of Forest Resources

Comprehensive assessment leads to approved Statewide Forest Resource Strategy

Location: State of Montana

Partners: Montana Department of Natural Resources and Conservation; Geodata Services, Inc; and Montana Statewide Assessment Working Group



Context: Western forests are suffering from the effects of urban sprawl, insects and disease, invasive species, and large scale wildfires. In 2008, the scale and pace of change caused the US Forest Service to redesign one of its funding mechanisms, the State and Private Forestry Program (S&PF). The redesign required each state wishing to qualify for S&PF funding to develop a Statewide Forest Resource Assessment and a Statewide Forest Resource Strategy to shape forest land use to optimize public benefits from trees and forests now and in the future. The program identifies 11 national objectives focused on three

national themes: conserve working forest landscapes, protect forests from harm, and enhance public benefits from trees and forests. States have a great deal of flexibility in how to meet those objectives.

Forests, both traditional rural and urban, are a key factor in defining the character of Montana. The state holds an estimated 23 million acres of forest land, and the forest product industry, despite a recent industry decline, still ranks as an important basic industry. During 2009, the State of Montana Department of Natural Resources and Conservation (DNRC) conducted a statewide assessment of all forestland within the State, regardless of ownership type and including population centers where the majority of Montana's citizens reside. The assessment's purposes were to identify forested areas with the greatest needs and opportunities for stewardship and sustainable management, and to develop a comprehensive long-term strategy to address those needs and opportunities. The DNRC assembled a Statewide Assessment Working Group (SAWG) with over 40 stakeholders to help shape the assessment and subsequent strategy. SAWG members acted as a panel of independent experts. The DNRC retained Geodata Services, Inc. to help build a GIS assessment model using CommunityViz.

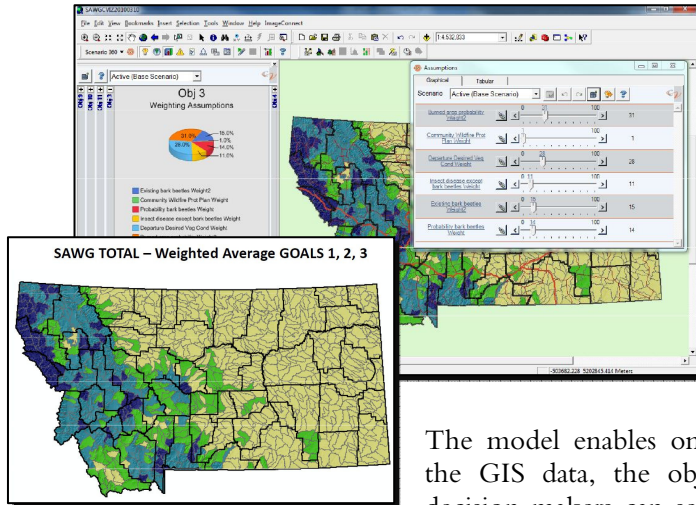
Project Description: The DNRC worked closely with the SWAG through a series of questionnaires, a collaborative wiki site, and in-person and online meetings. Geodata Services and DNRC staff developed Montana's Statewide Forest Assessment by using CommunityViz to create 11 different sub-models based on the 11 national objectives. They created the sub-models using 78 different data layers (all from public sources) and applied them to the approximately 1000 watersheds within the state. The sub-models were built to allow three different kinds of weighting. First, the technical team weighted data layers according to their geographic scale and quality of source data. Second, SAWG members used individual and collaborative weighting methods to adjust the relative importance of

"In state government and natural resource planning, having the ability to provide data model views, build comparison scenarios and make valid data changes on the fly are critically important in sustaining stakeholder relationships. CommunityViz Scenario 360 is a welcome tool, very user-friendly, and a considerable time and money saver."

—Dan Rogers, Montana Forest Stewardship Coordinator, Montana Department of Natural Resources &

individual data layers in each sub-model. And third, SAWG members weighted the importance of the 11 national objectives from their own perspectives.

The assessment model allowed for displaying results from several perspectives and resolutions. It also provided the ability to define critical landscapes and drill into data in a way that exposed threats and opportunities on the landscape. The model runs showed priority landscapes for each of the three national themes: conserving working forest lands, protecting forests from harm, and enhancing public benefit from trees and forests. In addition, it produced one final aggregate “Critical Landscapes” map. While this map may never be used on its own to direct forestry programs, it represents the model’s ability to classify and display watershed values at a large scale and aggregate level.



The model enables on-the-fly analysis, with adjustable weighting of the GIS data, the objectives, or both. This means that DNRC decision-makers can set it up using slider-bar enabled assumptions to match the parameters of a given funding program regarding particular objectives and/or themes. The future intent is to allow a forest manager to use the model in his/her computer to assess potential responses to funding programs. This will effectively move resource management analysis from the “back office” to the “front desk,” saving time and steps.

Technology and Tools: CommunityViz® Scenario 360™ Version 4.1 with decision tools including the Suitability Wizard; collaboration tools including in-person and web-based weighting sessions; SocialText Enterprise Wiki, WebEx GIS enabled conference calls; ArcGIS Online; ArcGIS Explorer; ArcGIS Server; and online surveys implemented in Survey Monkey.

Outcomes: *Montana’s State Assessment of Forest Resources* was adopted by the Montana State Forester in January, 2010, and submitted to the US Department of Agriculture in June, 2010. The data and models assembled and prepared for the *Assessment* provided key resource materials for the *Montana Statewide Forest Resource Strategy*, completed and submitted in June, 2010.¹ Both were approved by the Department of Agriculture in August, 2010. In the meantime, both pieces of work are already being put to use. The model developed for the *Assessment* is being used by the DNRC in watershed evaluations, in biomass feasibility marketing, in scoring grant applications, and in comparing prioritization models with other land management agencies.

¹ Both of these documents can be viewed at <http://dnrc.mt.gov/forestry/Assistance/SARS.asp>

KEY LINKS
CommunityViz
<http://www.placeways.com/communityviz>
Montana Department of Natural Resources and Conservation
<http://dnrc.mt.gov>
Geodata Services, Inc.
<http://geodatawiki.com/default.aspx>

Sources: Montana Department of Natural Resources and Conservation; Geodata Services, Inc; “Montana’s State Assessment of Forest Resources,” Montana Department of Natural Resources and Conservation June, 2010; “Montana Statewide Forestry Resource Strategy”, Montana Department of Natural Resources and Conservation June, 2010; “Decision Support with GIS, Montana DNRC Forest Stewardship,” presentation by Ken Wall, Geodata Services, Inc. at the Intermountain GIS Conference 2010, Bozeman, Montana. CommunityViz is a registered trademark of the Orton Family Foundation. Scenario 360 is a trademark of the Orton Family Foundation.