

III. Strategic Themes and Issues

The resource assessment of Michigan was organized by the three national themes: 1) Conserve working Forest Landscapes; 2) Protect Forests for Harm; and 3) Enhance Public Benefits from Trees and Forests. For each of these themes the MDNRE used a collaborative process to identify priority issues. The collaborative process was achieved through the engagement of existing MDNRE advisory committees and other partner organizations, including the U.S.D.A. Forest Service, the U.S.D.A Natural Resource Conservation Service, and the U.S.D.I. Fish and Wildlife Service. Michigan Native American tribes were invited but declined to participate in the collaborative process.

Overview of Spatial Analysis

For each priority issue, a separate geospatial analysis was conducted to identify areas across the landscape it will be important to focus Cooperative Forestry efforts. Geospatial analysis, or simply spatial analysis, is a way of making sense of how various types of information (e.g. natural resource, environmental, or cultural) are related geographically and expressed visually as a map.

Spatial analysis involves geospatial layers, or themes. A layer is a thematic set of spatial data representing one type of information, such as land use, cover type, roads, census tracts, or streams. When only two or three layers are overlaid and are made somewhat transparent, the apparent relationship between the two layers can be easily seen and understood. However, as more layers are added, comprehension becomes more difficult, if not impossible. Spatial analysis is a means to simplify and quantify these relationships.

Spatial analysis can be performed in many ways. In producing the priority maps for this state assessment, weighted overlay analysis was used. This technique involves assigning a weight to each of several geospatial layers, overlaying them, and summing the weighted values of coincident pixels for all the layers. A pixel is a square unit that represents a specific spot on the ground and is the smallest unit of resolution of geographic area used in the analysis. For the Michigan assessment, all analyses were done at the 30- by 30-meter pixel size (0.22 acres).

A guiding principle used for all analyses was to take advantage of existing spatial data layers. For each issue, the layers to be included and the weights assigned to each layer were determined by DNRE cooperative program leaders, working collaboratively with existing cooperative program and forestry advisory committees. Weights were assigned such that they summed to 100 percent. Thus, an individual weight for a particular layer is the percent contribution of that layer to the overall model output.

The weighted values for coincident pixels of the inclusive input layers were then summed resulting in values ranging from 0 to 100 percent of the maximum possible. To simplify results, the composite output index layer was classified into five classes using the Natural Breaks method. This method uses the data to determine where breaks between classes should occur by minimizing variation within classes while maximizing variation among classes. On the maps

produced, the classes are referred to as Very Low, Low, Medium, High, and Very High. In addition, the range of pixel values that occur within each class are given. These values range from 0 to 100 percent of maximum possible.

Theme 1: Conserve Working Forest Landscapes

Issue 1: Divestiture and Parcelization of Private Forestlands

1. Issue Description

- **Forest Resource**--What specific physical forest resource is the source of public benefits that are at issue here?
- **Public Benefit**--What benefit from this resource makes this important to the public?
- **Key Attributes**--What key condition(s) or attribute(s) of the Forest Resource is/are critical for producing the public benefit(s).
- **Direct Threats**—What factor(s) is/are directly affecting Key Attributes in a way that is threatening Public Benefits?
- **Contributing Factors**—What factor(s) are contributing to making Direct Threats strong and difficult to manage?
- **Opportunities**—What opportunities are available for directly improving Key Attributes (generally without addressing Direct Threats and Contributing Factors).
- **Geographic Attributes** _ Identify priority areas or criteria for prioritizing work within the state, using GIS maps (where appropriate) to determine where areas of greatest public benefit intersect with issue-relevant direct threats, contributing factors and/or opportunities. Priority area maps will likely be needed to more directly guide Goals, Objectives, and Strategies.

2. Goals, Objectives, and Strategies

Goals, Objectives, and Strategies for addressing the issue are presented in nested outline form

Goal 1:

Objective 1.1:

Strategy 1.1.1:

Strategy 1.1.2:

3. Performance Measures

Identify performance measures to be used to assess progress at meeting goals and objectives for this issue. These may be new or existing outcome measures related to goals and objectives, such as relevant resource attributes, or levels of direct threats or contributing factors; or, they may be new or existing measures of activity or accomplishment associated with implementing strategies.

Issue 2: High Cost of Owning Forestland (taxes, insurance, etc.)

1. Issue Description

2. Goals, Objectives, and Strategies

3. Performance Measures

Issue 3: Reduce Impacts of Urbanization and Conversion of Forested Lands

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 4: Sustainable Active Management of Public & Private Forests

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 5: Provide Incentives for Private Landowners to Maintain Forestlands

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Theme 2: Protect Forests from Harm

Issue 1: Maintaining and Restoring Aquatic Ecosystems and Watersheds

1

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 2: Threats and Mitigation of Invasives that are Competing with Native Forest Species

1

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 3: Maintain and Restore Terrestrial Ecosystems

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 4: Wildfire Risk and Public Safety

1

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 5: Impact of Recreational Activities & Overuse of Resources

1

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 6: Planning for Climate Change & Minimizing Effects

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Theme 3: Enhance Public Benefits from Trees and Forests

Issue 1: Maintain Markets for Utilization of Forest Products

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 2: Provide and Quantify Ecosystem Services from Forests as Public Benefits (i.e. water quality, air quality, etc.)

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 3: Effective Conservation Outreach

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 4: Build Local Community Capacity to Manage Urban Forest Resources

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 5: Community Quality of Life and Economic Resiliency

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 6: Maintain & Enhance Scenic and Cultural Quality Associated with Forestland

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 7: Provide for Biodiversity and Priority Wildlife Species

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 8: Improve, Maintain, and Enhance Access to Recreational Activities in Forestlands

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures

Issue 9: Reforestation of Urban and Ex-Urban Areas

1. Issue Description
2. Goals, Objectives, and Strategies
3. Performance Measures