

An Overview of

North Carolina's Forest Resources Assessment

A statewide analysis of the past, current and projected future conditions of North Carolina's forest resources
2010



www.ncforestassessment.com



Presented to the
APNEP Scientific and Technical Advisory Committee

*January 27, 2011
Washington, NC*

Outline

- 🌲 **Project Background**
- 🌲 **NC's Approach & Process**
- 🌲 **Lessons Learned**



Background & Purpose

- ✿ **Required as an amendment to the Cooperative Forestry Assistance Act, as enacted in the 2008 Farm Bill**
 - 💧 Integral to the State & Private Forestry (S&FP) Redesign
 - 💧 Required each state to complete a forest resource assessment & develop strategies to address resource conditions & trends



Guidance

State-wide Assessment of Forest Resources

- 💧 Analysis of forest conditions and trends
- 💧 Identify priority rural and urban forest landscape areas

State-wide Forest Resource Strategy

- 💧 Long-term strategies (5-years) for investing state, federal & other resources to manage priority landscapes identified in the Assessment

Annual Report on Use of Funds

- 💧 Describe how S&PF funds were used to address the Assessment & Strategy



What does that mean?

- 🌲 **Assess the resource**
 - 💧 What's the deal?
- 🌲 **Develop strategies to address resource conditions, trends & threats**
 - 💧 What are you going to do about it?
- 🌲 **Account for funding use & document that programs & projects were directed at strategies & priority issues**
 - 💧 Self-assessment...Did it work?



Guidance – National Themes

Conserve Working Forest Lands

- 💧 Conserve & manage working forest landscapes for multiple values & uses.

Protect Forests from Harm

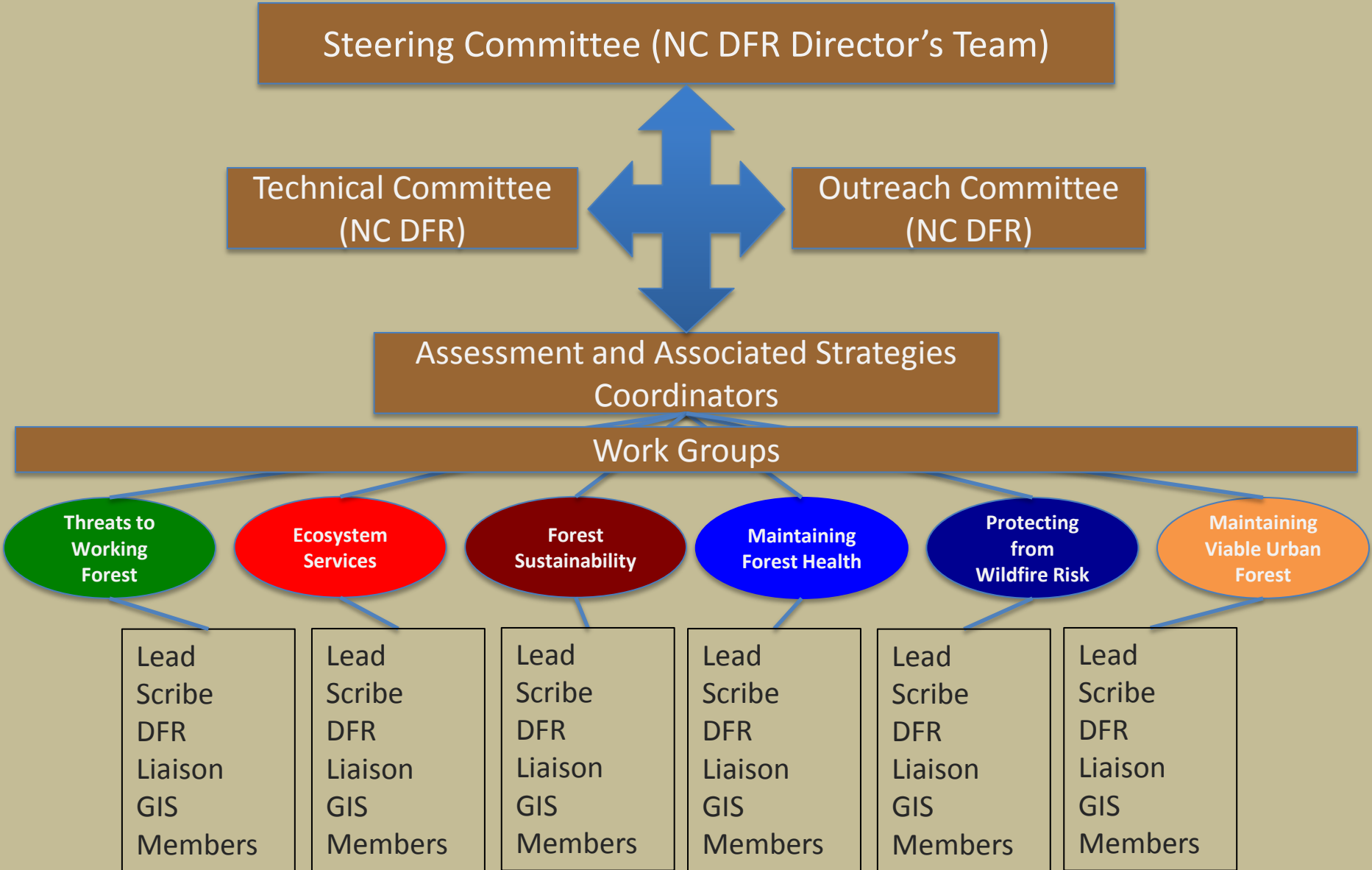
- 💧 Protect forests from threats, including catastrophic storms, flooding, insect or disease outbreak & invasive species.

Enhance Public Benefits from Trees & Forests

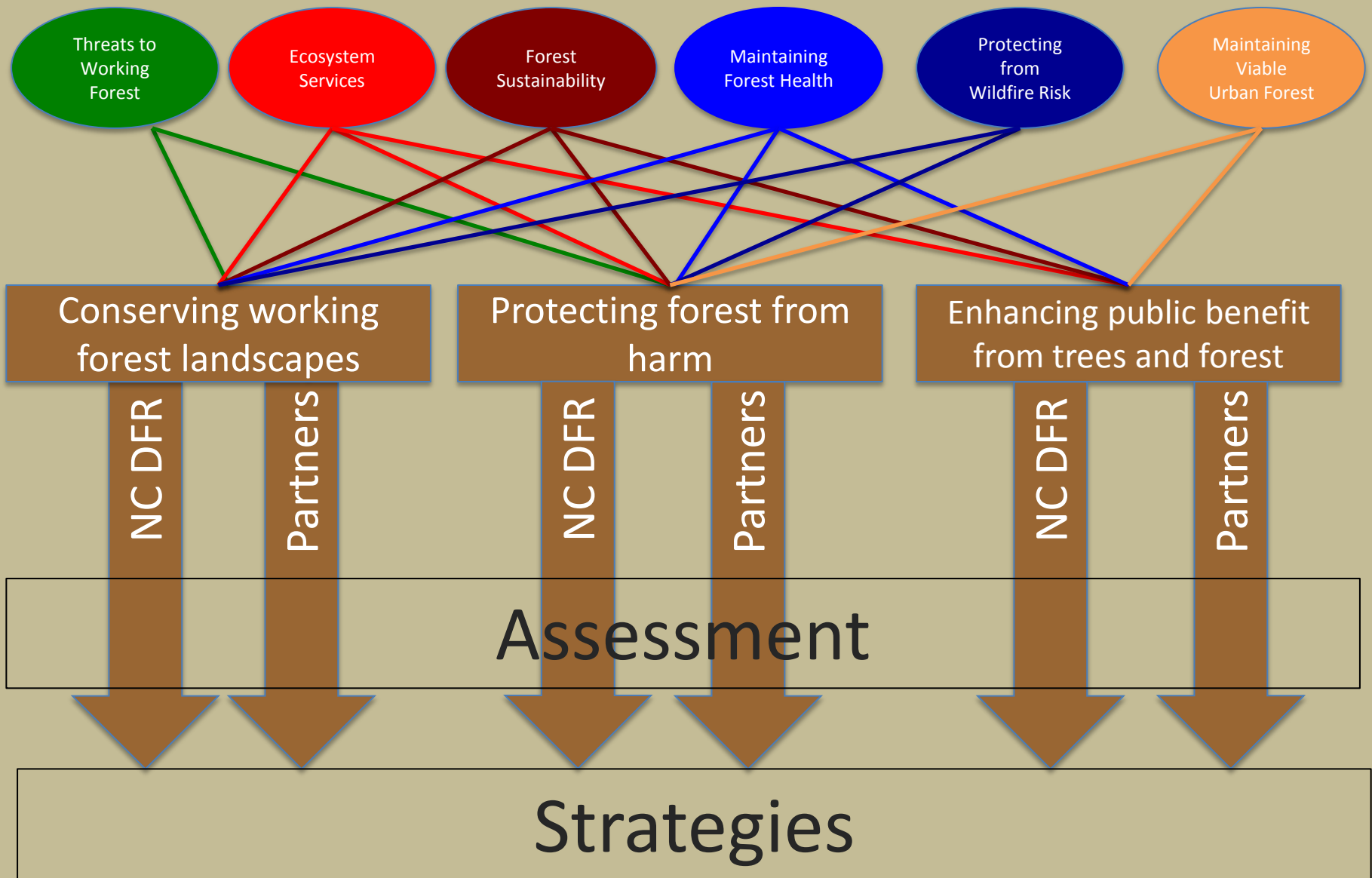
- 💧 Enhance public benefits, including air & water quality, soil conservation, biological diversity, carbon storage, forest products, forestry-related jobs, production of renewable energy, & wildlife.



North Carolina's Approach



North Carolina's Process






Conserve Working Forests

- 🌲 **North Carolina's Forests 2007**
- 🌲 **Declining Forest Types**
- 🌲 **Family & Minority Forests Ownership**
- 🌲 **Population Growth & Land Use Change
Impacts on Forest Resources**
- 🌲 **Forest Management Practices for Forestry
& Wildlife Management in North Carolina**
- 🌲 **Emerging Markets in Ecosystem Services**



Protect Forests From Harm

-  **Insects, Diseases, and Non-Native Invasive Plant Threats to Forest Health**
-  **Fire and North Carolina's Forests**
-  **Climate, Atmosphere, and Natural Disasters**



Enhance Public Benefits

- 🌲 **Forestry Employment**
- 🌲 **Timberland Property Values**
- 🌲 **Timber Stumpage Values**
- 🌲 **Primary Wood-Using Industries**
- 🌲 **Non-Timber Forest Products**
- 🌲 **Water Quality & Quantity**
- 🌲 **Forest Wildlife Habitat**
- 🌲 **Bio-energy in North Carolina**
- 🌲 **Recreation Resources**
- 🌲 **Heritage Resources**
- 🌲 **Maintaining Viable Urban Forests**



Example Assessment Chapter

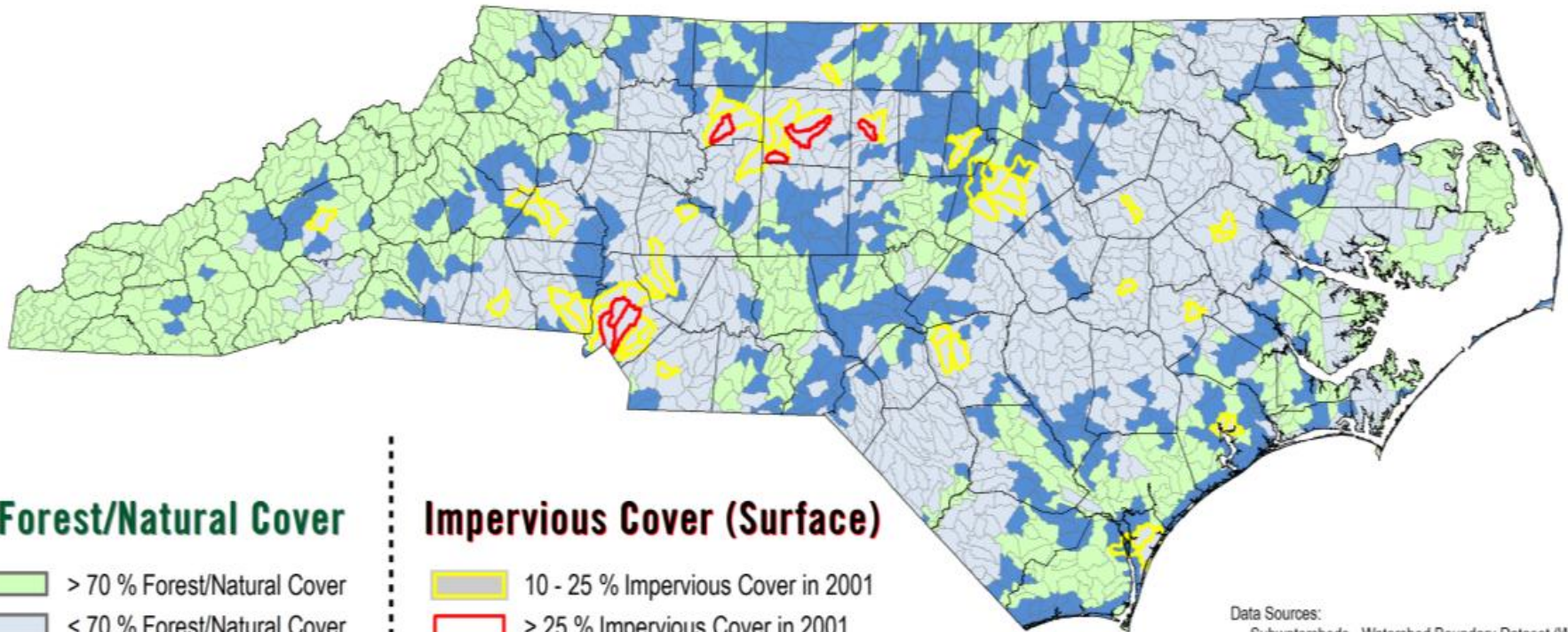
Water Quality & Quantity (WQQ)

“Assessments should identify watersheds where continued forest conservation and management is important to the future supply of clean municipal drinking water, or where restoration or protection activities will improve or restore a critical water source.”



Trends in Forestland Cover

Figure 4f-5, page 191



Forest/Natural Cover

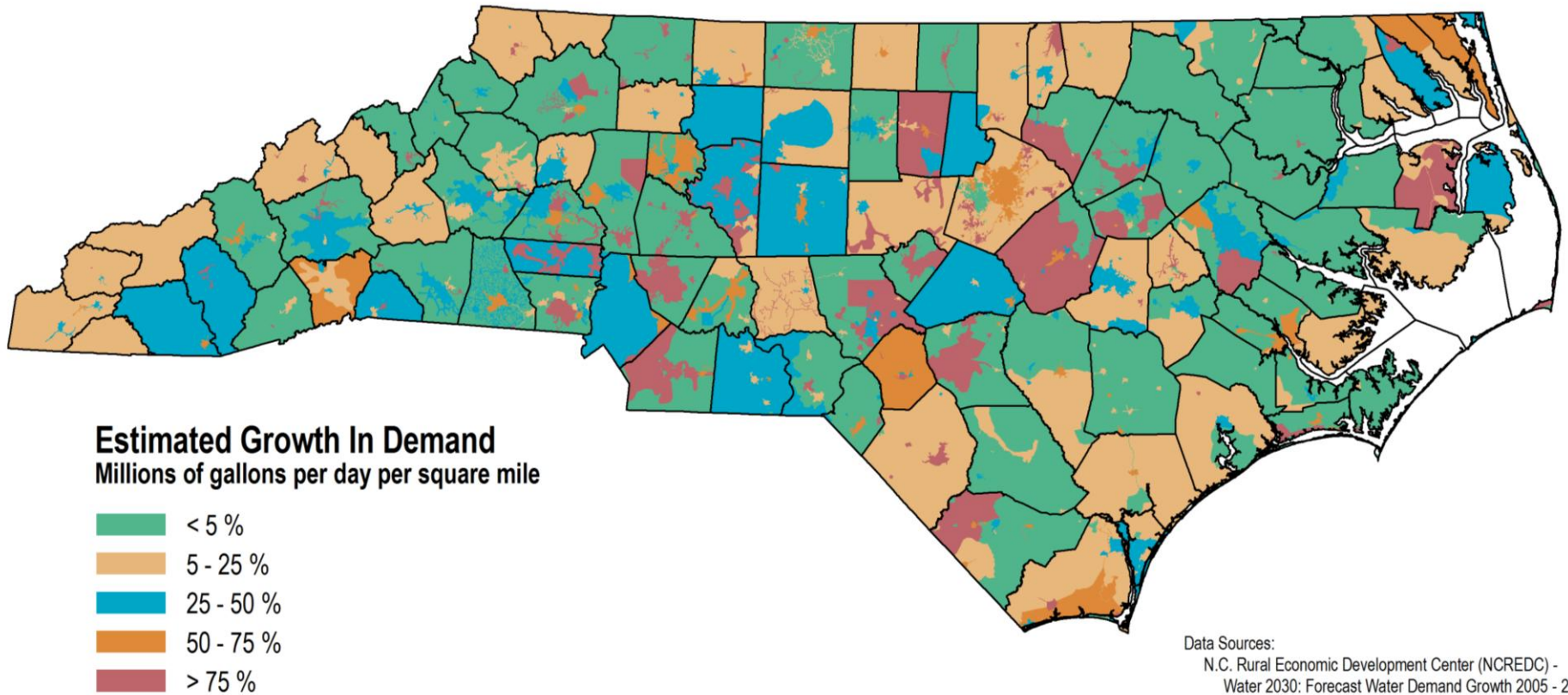
- > 70 % Forest/Natural Cover
- < 70 % Forest/Natural Cover (below 70 % in 1992)
- < 70 % Forest/Natural Cover (dropped below 70 % since 1992)

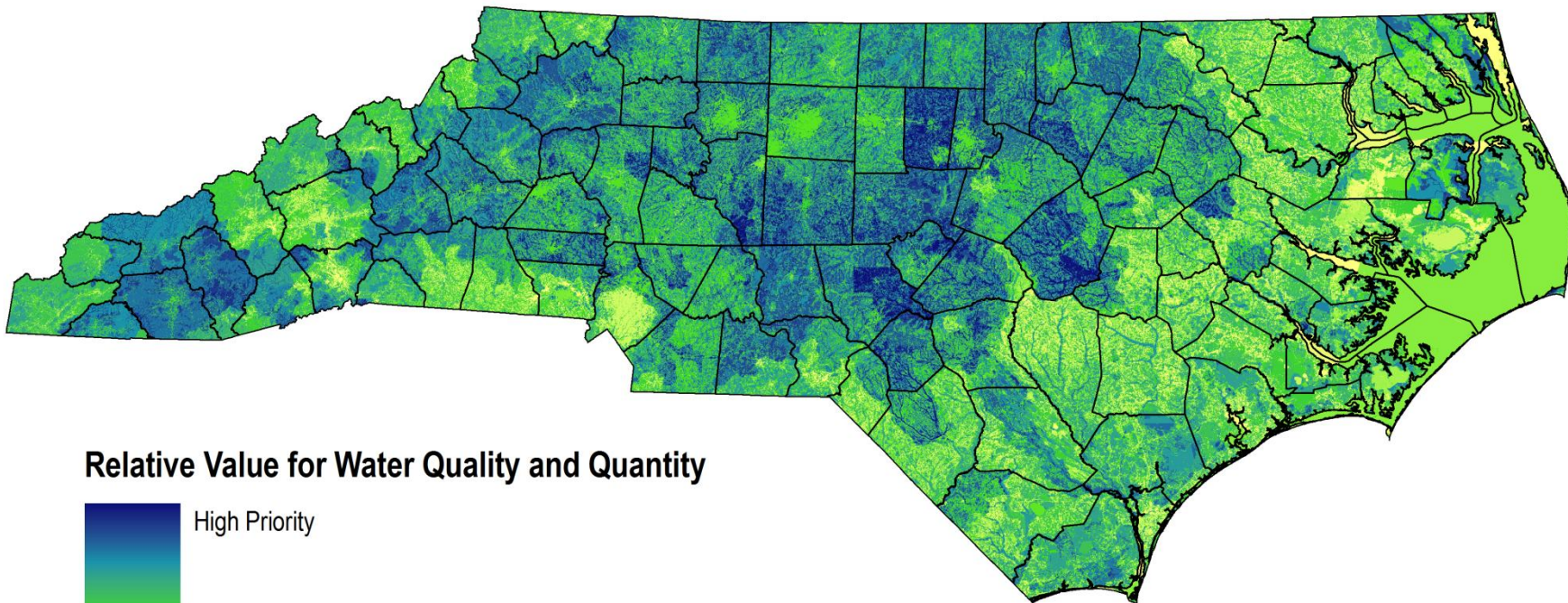
Impervious Cover (Surface)

- 10 - 25 % Impervious Cover in 2001
- > 25 % Impervious Cover in 2001

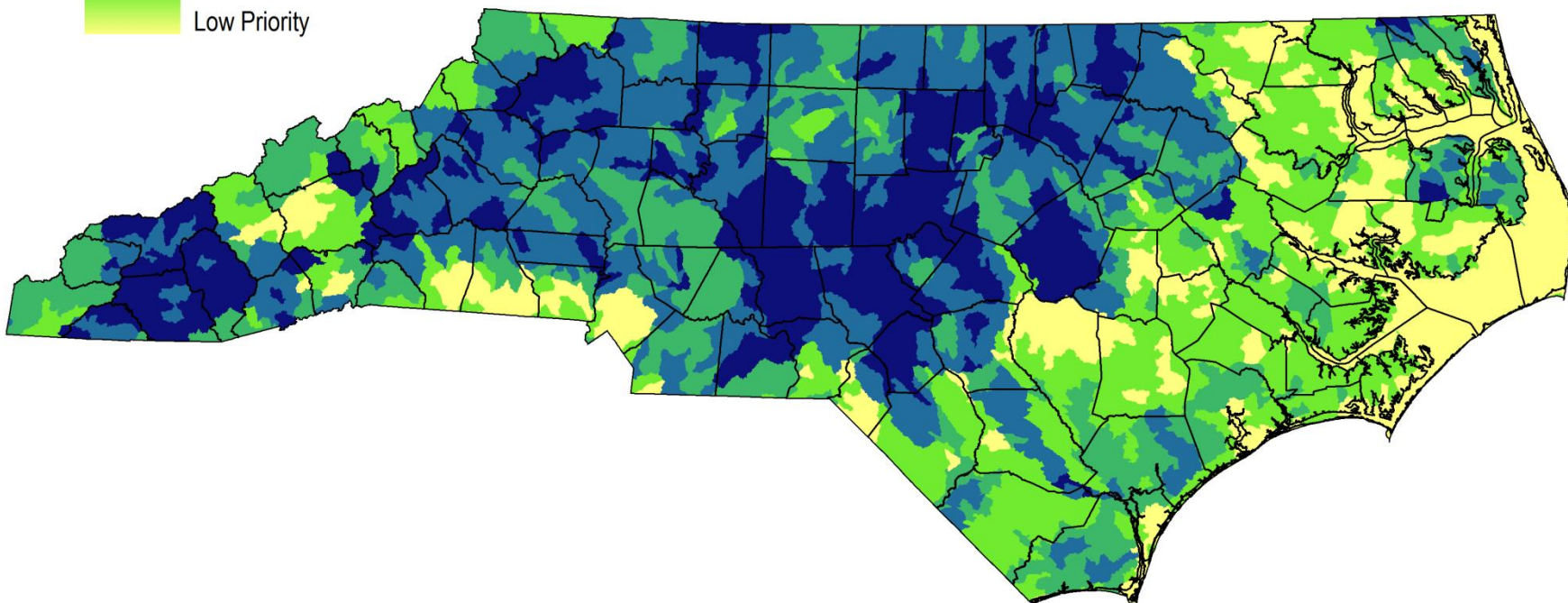
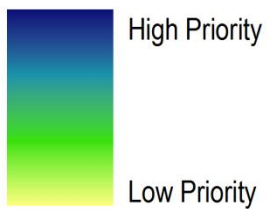
Data Sources:
Subwatersheds - Watershed Boundary Dataset (WBD)
Forest/Natural Cover - National Land Cover Database (NLCD)
1992 and 2001 Land Cover Datasets
Impervious Cover - NLCD
2001 Impervious Cover Dataset

Water Supply & Demand





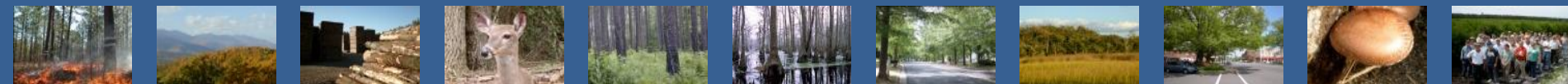
Relative Value for Water Quality and Quantity



Key Findings

- 🌲 **NC's surface water supply watersheds are 60% forested.**
- 🌲 **Groundwater wellhead protection areas are 36% forested.**
 - 💧 So What? Forests and forest management practices play a vital role in sustaining clean, abundant, and affordable supplies of drinking water.
- 🌲 **Approximately two-thirds of the subwatersheds in NC have less than 70% forest or natural land cover.**
 - 💧 So What? Research shows when a watershed's land cover falls below this threshold percentage, water quality conditions worsen.

CONCLUSION: Based upon the relatively rapid expansion of urbanizing areas, an emerging opportunity exists to re-evaluate and transform the role that forest management can serve in those subwatersheds that are located across urban, suburban, and rural transition areas.



Water Goal & Objectives

GOAL 6 – Manage, conserve, restore, and enhance forestlands important to current and future supplies of clean water for economic, social, and ecological uses.

Objective 6.1. – Increase implementation of forestry BMPs and compliance with water-quality regulations.

Objective 6.2. – Retain or increase the area of forestland within priority watersheds.

Objective 6.3. – Conduct education and outreach on the relationships between forests and water resources.

Objective 6.4. – Offer landowners technical assistance that incorporates water-resource management with forest management.

Lessons Learned

- 🌲 **Put someone in charge! A single person should have “ownership” of the overall project.**
- 🌲 **Stakeholder input is critical, but the agency charged with the task must be willing to synthesize viewpoints & move the project forward!**
- 🌲 **Pick a project name & stick with it!**
- 🌲 **Create product standards & templates for documents & figures early on!**
 - 💧 Use DENR Creative Services to package the final report.



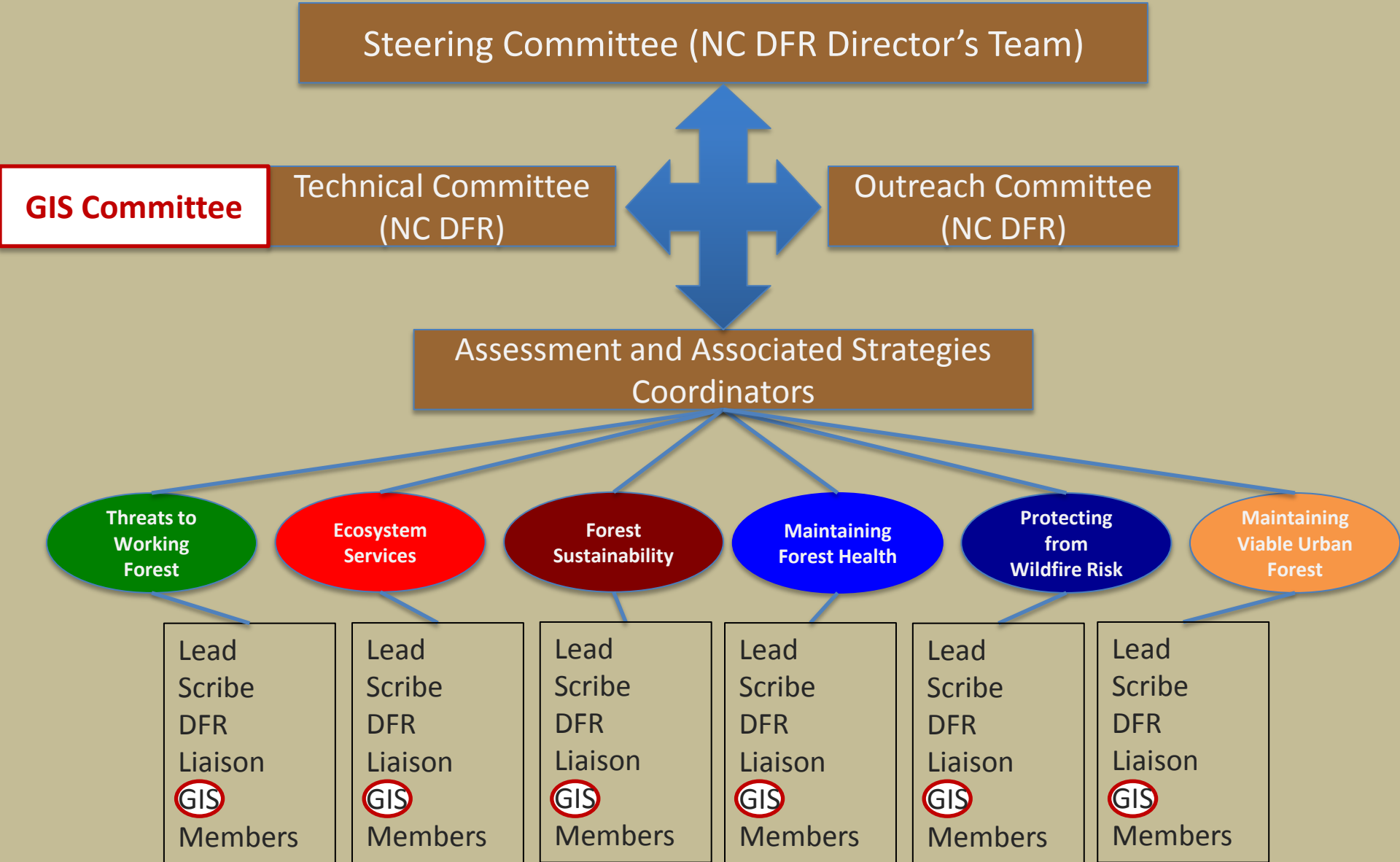
More Lessons Learned

Large scope resource assessments across large geographic areas...


- 💧 Define your geographic region, including a spatial file. Make the file available to all GIS analysts making maps!
- 💧 Make sure the GIS folks are heavily involved from the beginning!
 - ❖ Need to know what analyses are feasible given available data.



North Carolina's Approach



More Lessons Learned

 **Don't speed through the Assessment on the way to the Strategies!**



Questions?

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NC Forest Resource Assessment – Priority Landscapes

Priority Landscapes*

Rural Forest Priority Landscape

Urban Forest Priority Landscape

Selected input data layers and issue maps were used to create the priority landscape maps

Programmatic Priority Areas*

Conserving Working Forest Lands

Protecting Forests and Communities from Wildfire Risk

Threats to Forest Health

Maintaining Viable Urban Forests

Each of the input data layers or issue maps below were used in the creation of programmatic priority area maps

Input Data Layers and Issue Maps from Assessment



* For details on input layers and weighting (if any), see the individual maps. Further details can also be found in the mapping and GIS analysis appendix.