THE LINK BETWEEN FOREST CERTIFICATION AND RESEARCH

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WHY SPONSOR RESEARCH?

- Knowledge gaps
- Changing management practices
- Ensure management is sustainable
- Science-based policies
- Relationships with experts
- Integrated into certification
- Incremental science-based improvement
CHANGING FOCUS THROUGH TIME

• 1970’s – response of game species (deer, turkey, bear, quail) to intensive forest management

• Today – expanded focus on non-game species, plant community, landscape
STRENGTH THROUGH PARTNERSHIPS
ROLE OF NCASI

- Independent non-profit research institute
- Focused on environmental and sustainability issues relevant to forest management
- Began with manufacturing impacts
- Coordinates and executes research
- Collates data across companies
OBJECTIVES AND STANDARDS

• SFI- Performance Measure 4.2. “Program Participants shall apply knowledge gained through research, science, technology and field experience to manage wildlife habitat and contribute to the conservation of biological diversity.”

• SFI- Objective 15: “To support forestry research, science, and technology, upon which sustainable forest management decisions are based.”
  – Water quality and BMPs
  – Wildlife at stand and landscape-levels
  – Conservation of biological diversity

• FSC- Principle 8.2: “Forest management should include the research ... to monitor...”
  – Observed changes in flora and fauna
  – Environmental impacts of harvesting and operations
RESEARCH EXAMPLES

• Black bears in southeastern forests

North Carolina
Black Bear Occupied Range Expansion
1971 - 2010
FOREST HERBICIDES

- Symposium at The Wildlife Society Annual Meeting
- Special issue of Wildlife Society Bulletin
- Intensive management project
- Burn-herbicide project
BURN-HERBICIDE PROJECT

- Examine: Plant and Animal Response to Burning and Herbicide Treatments in Thinned Pine Plantations
- High species diversity: 78 birds, 21 reptiles, 15 amphibians, 9 orders/classes invertebrates, approx. 390 plants
CURRENT FOCI

- Sensitive species with knowledge gaps
- Aquatic/semi-aquatic species
- Landscape scale conservation
SENSITIVE SPECIES: EASTERN DIAMONDBACK RATTLESNAKES

- Little knowledge regarding species and intensive forestry
- Collaboration with Panama City FO

193 total observations in 78 counties
SENSITIVE SPECIES: GOPHER TORTOISES

- Surveys for GT across >11,000 ha of loblolly and slash pine plantations in western portion of range
- Substantial GT burrows observed in a range of stand structural conditions and soil types
- Active burrows across plantations aged 13-41
- Results detailed in Wigley et al. SJAF 2012
SENSITIVE SPECIES: SPOTTED TURTLES

- Population and habitat ecology study on intensively managed pine landscape in NC
- 280 turtles marked, 31 radio-marked, 2012-2013
- Turtles associated with extensive systems of historic drainage ditches
- Thesis forthcoming

Photo: C. O’Bryan
Objective: Enhance ability of managers to consider conservation of at-risk species and communities

Explained NatureServe info resources to forest managers

Enhanced NatureServe website to allow downloads of information about at-risk spp and communities

Developed and tested a habitat-based approach for conserving at risk species
AQUATICS: REMOTE DETECTION

Used remotely sensed data to identify probable vernal pools in low-topography, forested landscapes
AQUATICS: EPHEMERAL HABITATS

• Objective: Compare landscape scale and local site factors affecting occupancy of ephemeral aquatic habitats by herpetofauna
• On-going work has identified 40 amphibian and reptile species across 52 study sites
• Will bring understanding how forested landscapes contribute to regional diversity

Small Ephemeral Pools

High-Value Ponds

Roadside Ditches
AQUATICS: SALAMANDERS IN SMZS

- Examining relationships between SMZs and occupancy of streamside salamanders in AR
- Effects of local and landscape scale influences on occupancy and survival
- Initial phases of project
AQUATICS: CRAYFISH IN MISSISSIPPI

• Objective: To examine presence/absence of Yalobusha Riverlet Crayfish and Shutispear Crayfish in an intensively managed watershed
• Both species identified in field sampling, 2011-2013
• Populations of both G1 species persist on this managed landscape
• Cooperative study with USDA-FS
LANDSCAPE: RETAINED STRUCTURES

- Two phase project examining (1) amount of retained structures in pine stands and (2) relationships with avian species
- Area of green tree retention via SMZs or other set-asides averaged 20%
- 94 bird species detected
LANDSCAPE: STAND ADJACENCY

- Effects of adjacency of forest stands (i.e., edge effects) on avifauna in relation to vegetation characteristics at the plot, stand, and landscape scale
- 64 species detected across 20 sites in MS
LANDSCAPE: ARKANSAS LANDSCAPE

• Collaborative study with USDA-FS that examined 4 forested watersheds across a range of intensity of use and relationships with bird species

• Examining hypothesis that richness positively associated with interaction between local habitat characteristics and mature hardwood at the landscape level

• Results indicate richness was associated with local, and not landscape, conditions
CONCLUSIONS

• Wealth of knowledge regarding contributions of managed forests to conservation of biological diversity

• Forest certification provides an important link between applying research in a management framework

• New management techniques and environmental concerns will always lead to new research needs

• Forest industry and their partners remain well-poised to contribute to these gaps