

# Designing Sustainable Landscapes for Bird Populations in the Eastern United States

*The Designing Sustainable Landscapes for Bird Populations in the Eastern United States project was developed by North Carolina State and Auburn University, the Atlantic Coast Joint Venture staff and partners, and funded by the Association of Fish and Wildlife Agencies (AFWA) through their Multistate Conservation Grant Program.*

## Need

With the completion of national and regional bird conservation plans and the completion of State Wildlife Action Plans in each state, there is an immediate need for a consistent conservation design framework and set of tools at state and ecoregional scales that allow managers to make scientifically-based decisions about habitat conservation and evaluate progress relative to objectives stated in these plans. Current bird conservation planning does not allow for a quantitative assessment of the capability of landscapes to sustain populations at objective levels or the impact of net land use change. Current bird conservation planning also is hampered by the inability to assess holistically (i.e., for all species-habitat suites) the current or likely future landscape condition or its ability to support sustainable bird populations. This project will meet the need for consistent, widely-available conservation design tools, draw from the priorities in continental, BCR, and State Wildlife Action Plans and use the Regional Gap Analysis habitat data layers to build a framework and specific tools for conservation design that can be applied across the eastern United States and eventually across the country.

## Description and Objectives

This project is providing a framework and methodology for Atlantic Coast Joint Venture partners to conduct integrated conservation design at large spatial scales. The project is using the consistent habitat classification (Ecological Systems) and mapping being developed for the mapping regions in the eastern United States as the basis for a consistent, model-based, spatially-explicit approach to conservation design for migratory birds using these habitats. This methodology will apply to seven bird conservation regions (BCRs), three joint ventures (Atlantic Coast, East Gulf Coastal Plain, and Appalachian Mountains) and 23 states, with eventual application nationwide. Complete implementation of this approach is being piloted in the South Atlantic Migratory Bird Initiative (SAMBI) region (eastern part of the Southeastern Coastal Plain BCR in VA, NC, SC, GA and FL) and the modeling framework and approach will be applicable throughout the East allowing for implementation as mapping products as funding become available. The project would complement ongoing state, federal and NGO projects related to conservation design.

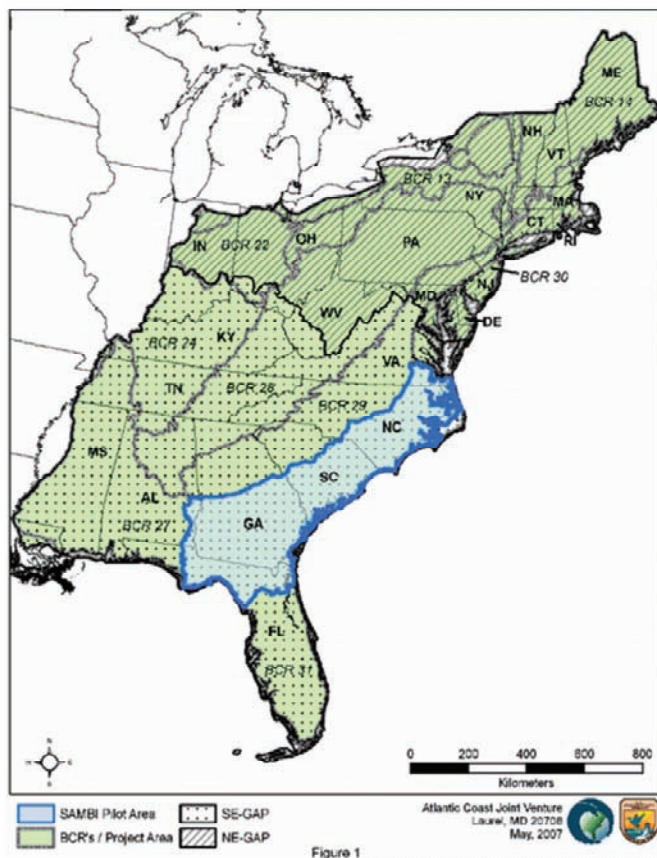


Figure 1  
*Potential extent of project in mapping areas in the eastern United States with pilot area in blue.*

## Project Objectives

- assess the current capability of habitats in ecoregions in the eastern United States to support sustainable bird populations;
- predict the impacts of landscape-level changes (e.g., from urban growth, conservation programs, climate change) on the future capability of these habitats to support bird populations;
- target conservation programs to effectively and efficiently achieve objectives in State Wildlife Action Plans and bird conservation plans and evaluate progress under these plans; and
- enhance coordination among partners during the planning, implementation and evaluation of habitat conservation through conservation design.



*Bottomland hardwoods. Clark Jones*

## Progress to Date and Related Projects

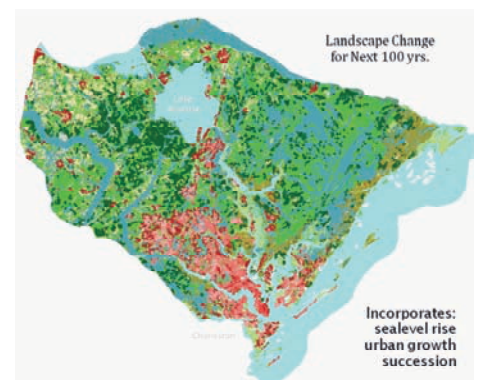
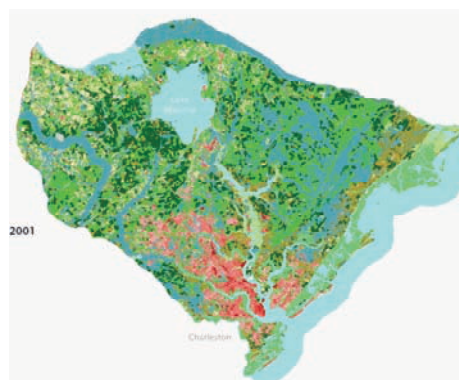
The project was initiated in January 2008 and completion of the pilot project in the SAMBI Region is expected in the December of 2010. Partner workshops have been conducted with state and local biologists and managers in each of the five SAMBI states to introduce the project and compile expert input on focal species selection and habitat characteristics. Follow-up partner workshops focused on management alternatives will be conducted in 2010. Initial species-habitat models have been developed including occupancy models to assess the capability of habitats to support selected bird populations. These are being linked to models of landscape change that include the effects of urban growth (Project Gigalopolis: url: <http://www.ncgia.ucsb.edu/projects/gig/>), sea-level rise, climate change, vegetation dynamics (Vegetation Dynamics Development Tool (VDDT): url: <http://www.essa.com/tools/vddt/>) and management alternatives that predict changes under various scenarios through 2100. Initial decision support tools for the SAMBI area are being derived from a range wide longleaf pine decision support tool and will be expanded to address conflict resolution soon. Related projects have been developed including a suite of projects under the Southeast Integrated Assessment for climate change and consistent habitat mapping in the northeast.



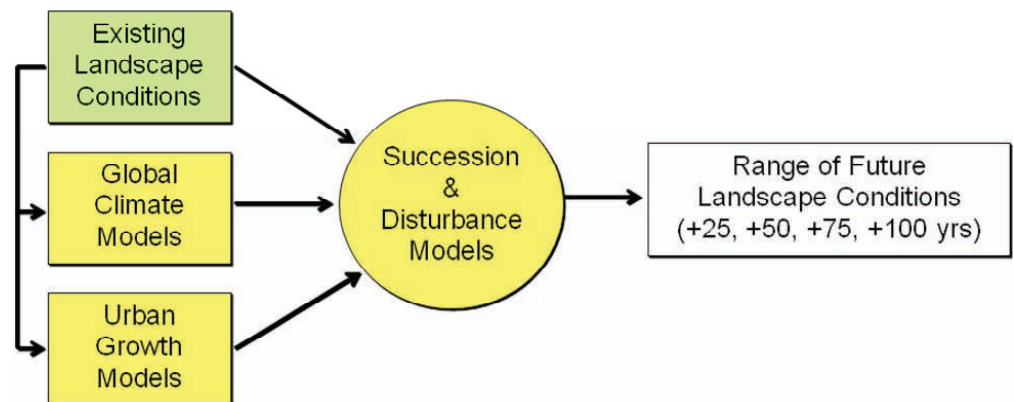
Painted Bunting. Steve Pittman



King Rail. USFWS



Map of landscape change in the Charlestown, South Carolina area



Modeling diagram for landscape change analysis

