Climate-Smart Conservation: An Assessment of State Wildlife Action Plans from the Southeast United States

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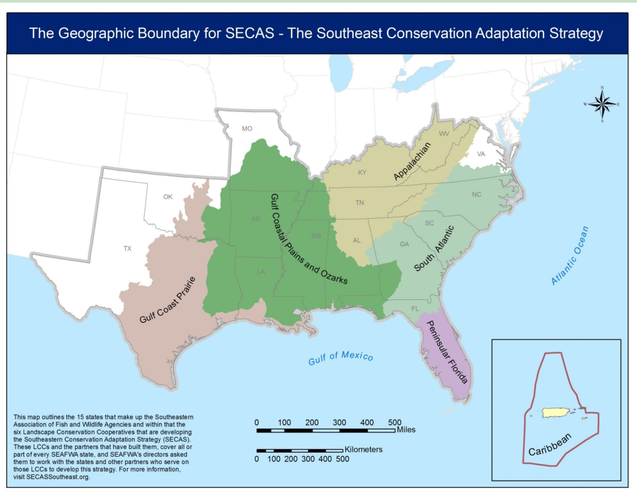
Overview and Approach



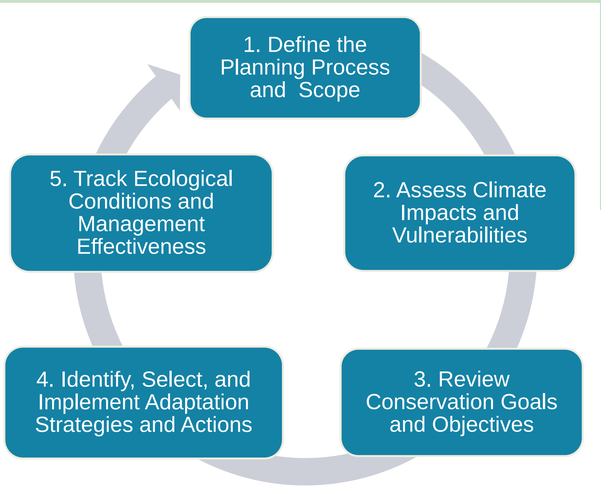
The project examined SWAPs from 15 southeastern states, Puerto Rico, and the US Virgin Islands.

The **Southeast United States** is experiencing high rates of population growth, urbanization, land use change, and shifting climate conditions. These changes present near and long-term challenges to the health and sustainability of the region's fish and wildlife populations and habitats.

This project was designed to support the **Southeast Conservation Adaptation Strategy** (SECAS) and its efforts to develop and coordinate regional conservation goals and actions, including those intended to address climate threats. As **State Wildlife Action Plans** (SWAPs) are important tools for the states to identify and protect declining species and their habitats, this project reviewed the ways in which SWAPs specifically incorporated climate change.

Objectives

- Document and assess the status of states' ongoing work to address climate change
- Improve understanding of challenges and needs related to climate change and conservation
- Identify successes and opportunities to facilitate future progress in state and regional conservation efforts



Methods included a detailed review of the SWAPs and associated documents, as well as follow-up interviews with SWAP coordinators and other relevant agency staff.

An adapted version of the "**climate-smart conservation cycle**" (left) from Stein et al. (2014) provided the conceptual framework for the analysis. Key observations and opportunities summarized here follow this cycle.

Step 1: Define the Planning Process and Scope

Key Observations: States varied considerably in their climate change related-planning approaches. Some assimilated climate change throughout their SWAP, while others considered it in separate chapters and/or documents. States do share a collective concern about climate change threats, but they developed SWAPs with limited interstate or regional collaboration, not surprising since SWAPs are mainly state focused.

Opportunities: Interviewees acknowledged that limited staff time, expertise, and funding hindered climate-related planning. However, most states were able to use a range of external experts and resources. Interviewees noted that supportive, internal leadership helped to advance climate planning in some states.

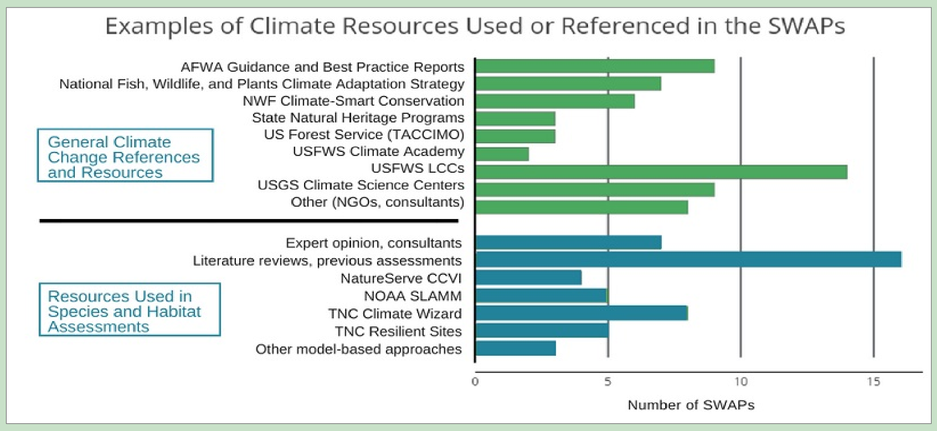
Examples of climate planning challenges and opportunities identified by interview participants

Challenges	Opportunities
• Lack of information for some state-specific habitats and species of concern • Lack of information on impacts, which reduced the sense of urgency to address the issue • Lack of resources to conduct more research • Limited staff • Lack of expertise within the agency • Difficulty planning on long time frames • Long-term climate change considered less urgent than other threats (e.g., agriculture, urbanization)	• Availability of information for some topics and species • Availability of trainings to increase familiarity with the issue • Assistance from the LCCs, the Southeast CSC, and other outside experts • Ability to engage staff when they realized that addressing climate change could be linked with other ongoing activities

Step 2. Assess Climate Impacts and Vulnerabilities

Key Observations: States used a variety of resources as they considered climate threats. They primarily relied on existing information regarding climate impacts and vulnerabilities, although a few conducted vulnerability assessments designed for the purpose of informing the SWAP update. Most plans identify the synergies between climate change and other threats (e.g., urbanization, land use change) as particularly challenging.

Opportunities: The low number of dedicated climate change assessments appears to reflect lack of resources rather than lack of interest. Most states identified interest in, and importance of, further investment in state- and regional-level assessments.



Step 3. Review Conservation Goals and Objectives

Key Observations: The analysis paid particular attention to the extent to which plans a) incorporated efforts to manage for changing conditions, in addition to maintaining current or historic conditions and b) considered updates to conservation and management goals in light of climate change.

In general, SWAPs articulated management goals that tend to emphasize the persistence of existing species, habitats, and systems. Goals typically reflect, or are consistent with, those provided by legislative mandates or organizational missions. Only a few plans provide examples of change-related, future-oriented goals. Climate adaptation goals frequently reference the concept of resilience, although definitions of the term varied widely.

Opportunities: Interviews revealed that internal discussions that acknowledge the need to reconsider and update conservation targets are occurring. Furthermore, states are clearly engaging in "behind-the-scenes" conversations about the feasibility and achievability of existing conservation goals in light of climate change, and how those goals may need to be updated.

Step 4. Identify, Select, and Implement Adaptation Options

Oyster Restoration and Enhancement
Cape Romain, SC (Credit: SC DNR)

Dam Removal
Roaring River, TN (Credit: USACE)

Prescribed Burn
Big Bend WMA, FL (Credit: FL FWC)

Key Observations: Climate adaptation strategies tend to be stated in general terms, such as "enhance connectivity", "protect refugia", "reduce non-climate stressors", or "increase resilience". Few states demonstrated **intentionality** by specifically linking actions to observed or expected climate impacts.

Many plans describe actions, such as protect diversity or restore habitat, that reflect a "business-as-usual" approach. This suggests a perception that existing conservation practices will be sufficient into the future, when this might not actually be the case. Few states established climate-related priorities within their broader set of conservation actions.

Opportunities: For plans that do articulate intentional actions to reduce climate impacts and vulnerabilities, these actions fall under three main strategies: 1) develop habitat buffers and corridors to facilitate the movement of species to more favorable habitats and conditions; 2) protect aquatic habitats, such as through the enhancement of cold water stream environments, restoration of riparian areas, and management of instream flows; and 3) protect coastal habitats, through prioritization of efforts to conserve critical habitats or allow for marsh migration.

While interviewees confirmed that few climate adaptation actions are being implemented, several discussed recent or ongoing activities that may have benefits for climate change but were initially designed to address other concerns or threats. Integrating climate adaptation considerations into existing processes may make climate adaptation more feasible and acceptable into the future.

Step 5. Track Ecological Conditions and Management Effectiveness

Vegetation Monitoring
(Credit: FL FWC)

Key Observations: The SWAPs and interviewees identified needs for enhanced efforts to track climatic changes and ecological responses and to evaluate the effectiveness of adaptation actions. However, lack of sufficient resources, coupled with the long-term nature of climate change, makes it challenging to identify tipping points and triggers and to assess the effectiveness of management efforts.

Opportunities: States broadly recognize research and monitoring needs, many of which were highlighted as "adaptation actions." Interviewees noted how existing methods (such as adaptive management) and resources (such as the TRACS database, citizen science programs, Natural Heritage programs) could be used to enhance existing climate-related information and understanding.

Recommendations

The project team developed a set of recommendations intended to enhance existing opportunities and further advance the incorporation of climate change into wildlife conservation planning in the Southeast. These recommendations are intended for state fish and wildlife agencies, as well as the various governmental and non-governmental partners working to develop shared conservation goals and actions for the region

- *Enhance collaborative planning and implementation efforts* by capitalizing and building on existing regional activities, networks, resources and expertise.
- *Advance the application and use of both state and regional climate change impact and vulnerability assessments* by making use of existing assessments and strategically allocating time and funding to develop regional-scale assessments.
- *Facilitate the development and implementation climate adaptation strategies* through the creation of Southeast-specific guidance and being explicit as possible in linking climate impacts and actions.
- *Foster the adoption of climate-informed conservation goals* by exploring how climate change may affect the feasibility of existing goals and which species, habitats, and areas should be targeted for conservation action.
- *Enhance monitoring and evaluation efforts* by engaging with scientists and others to identify effective indicators of climate change and its effects on conservation targets and management outcomes.

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Reference

Stein, B., et al., eds. 2014. *Climate-Smart Conservation: Putting Adaptation Principles into Practice*. National Wildlife Federation: Washington, D.C.

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