



# Climate Change and Conservation in the Southeast:

## A Review of State Wildlife Action Plans

Report Summary  
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### Introduction

The southeastern United States is experiencing high rates of population growth, urbanization, land use change, and rapidly shifting climatic conditions. Collectively, these changes present considerable near and long-term challenges to the health and sustainability of the region's fish and wildlife populations. Employing a collaborative, forward-looking conservation approach represents a key step towards addressing these challenges and was the impetus for the establishment of the Southeast Conservation Adaptation Strategy (SECAS). SECAS consists of diverse state, federal, non-profit, and private organizations, working together to identify and coordinate shared conservation goals and actions for the southeastern United States and Caribbean.

The federally-funded State Wildlife Grant (SWG) Program, and required State Wildlife Action Plans (SWAPs), are important resources that help states identify

and protect declining species and their habitats. SWAPs also provide a framework and opportunity to foster the proactive strategies necessary to achieve the vision established under SECAS, and to help ensure that ongoing and future conservation efforts across the region will be as effective as possible. To help set the stage for this continuing work, the Vital Futures Project — a collaboration among the National Wildlife Federation, North Carolina State University, and University of South Carolina — assessed how states have addressed current and projected climate change in their recently updated Wildlife Action Plans. This examination is intended to illuminate elements of success in these plans and facilitate further progress in both state and regional conservation efforts. This executive summary highlights the key observations and recommendations from the full report. The intended audience for these recommendations includes state fish and wildlife agencies, SECAS partners, and others making decisions that will shape the region's future landscapes.

*This report aims to illuminate successes in regional State Wildlife Action Plans and facilitate further progress in state and regional conservation efforts.*

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Access this summary report at <http://go.ncsu.edu/pgzal1> and the full report at [http://go.ncsu.edu/se\\_swap\\_review\\_report](http://go.ncsu.edu/se_swap_review_report).

## Assessment Approach

We examined Wildlife Action Plans across 15 southeastern states and Puerto Rico to: 1) identify the various approaches used to address climate change in the 2015 SWAP updates; 2) highlight key commonalities and differences among the states; and 3) improve understanding of the challenges and opportunities that state fish and wildlife agencies face as they deal with climate-related risks. Research methods entailed detailed reviews of the SWAPs and companion materials, as well as follow-up interviews with action plan coordinators and other relevant agency staff to both ground truth and improve our interpretation of the written documents. An adapted version of the “climate-smart conservation cycle” from Stein et al. (2014) provided the conceptual framework for the data analysis.<sup>1</sup> We paid special attention to whether and how states addressed the following climate adaptation principles:

- ▶ **Act with “intentionality.”** To what extent are management actions in the plans specifically linked to addressing projected climate impacts?
- ▶ **Manage for change.** To what degree do plans incorporate efforts to manage for changing conditions, in addition to maintaining current or historic conditions?
- ▶ **Reconsider goals.** To what extent are states considering needed updates to conservation and management goals in light of climate change?
- ▶ **Integrate adaptation into existing processes.** How have states integrated climate considerations into ongoing conservation planning and resource management?

## Key Observations

### **States applied a diversity of climate change-related planning approaches, while coping with limits to their capacities**

States varied in their climate change-related planning approaches. Some states assimilated climate change throughout their wildlife action plans while others considered it in separate chapters and/or documents. Staff capacity, availability of resources and expertise, and consistency with other planning approaches had a significant influence on both the methods and extent to which states integrated climate change into the plans. A number of interview participants acknowledged that limited staff time and funding hindered their climate-related planning capacity. However, most states were able to capitalize on a range of external resources and experts, including the

regional Landscape Conservation Cooperatives and the Southeast Climate Science Center (CSC)<sup>2</sup> which were seen as especially helpful. Internally, supportive leadership helped to advance climate change-related planning efforts within some states, while interviews verified that the political environment in other states made it difficult to address climate change directly.

### **Development of the updated State Wildlife Action Plans involved minimal interstate and regional collaboration**

Many interviewees noted a lack of interstate and regional collaboration in both the broader SWAP planning process and on addressing climate change threats specifically. The primary reasons identified for a lack of interstate collaboration included differing priorities among states; variation in the scope, scale, and timing of plan updates; and, in some cases, a sense of competition for federal funding. These findings are not surprising, given that SWAPs and guidelines for their development are mainly state focused. That said, many participants acknowledged the importance of regional cooperation given the broad-reaching challenges posed by climate change. Several pointed to important opportunities for multi-state collaboration, such as where species of concern or habitat types are common across state borders.

### **States share a collective concern about the threat of climate change**

The updated SWAPs universally acknowledge climate change as a threat to species and their habitats. Most plans identify the synergies between climate change and other problems, such as urbanization and land use change, as especially challenging. States primarily relied on existing information about climate change impacts and vulnerability, although a few conducted vulnerability assessments expressly designed to inform their SWAP updates. The low number of dedicated assessments appears to reflect limitations in agency capacity rather than a lack of interest in gathering more detailed information. Indeed, most states identified the importance of and need for further investment in vulnerability assessments at the state and regional levels.

### **Adaptation strategies tend to be general and often vague, with relatively few examples of actions explicitly linked to climate impacts**

Most climate adaptation strategies included in the action plans and/or companion materials are highly generalized

<sup>1</sup> Stein, B. A., P. Glick, N. Edelson, and A. Staudt, eds. 2014. *Climate-Smart Conservation: Putting Adaptation Principles into Practice*. Washington, DC: National Wildlife Federation.

<sup>2</sup> In 2018 the Southeast Climate Science Center was renamed the Southeast Climate Adaptation Science Center.

(e.g., enhance connectivity, protect refugia, reduce non-climate stressors, increase resilience). A few states demonstrated the concept of intentionality by specifically linking actions to impacts. However, many of the actions described in the plans reflect a “business-as-usual” approach (e.g., protect biodiversity, restore habitat), suggesting a perception that existing conservation practices will be sufficient as climate adaptation even though such might not actually be the case. Few states set climate-related priorities within the broader suite of conservation actions, and interviews suggest relatively little progress towards implementation of adaptation actions. Those adaptation actions that have been carried out (e.g., land acquisitions and dam removals) have tended to capitalize on available opportunities and approaches rather than represent strategic or novel responses to climate-related impacts.

**Management goals tend to emphasize the persistence of species and habitats, with only a limited number of examples focused on managing for future system changes**

Overarching conservation goals articulated in the updated action plans tend to emphasize the persistence of existing species, habitats, and systems, reflecting a combination of legislative mandates, organizational missions, and continuity of efforts. When highlighting goals specific to climate adaptation, states frequently emphasized the concept of resilience, although their definitions of that concept varied. Only a few examples of change-related, future-oriented goals occur within the plans themselves. However, several interviewees acknowledged the need to reconsider and update conservation targets (e.g., Species of Greatest Conservation Need [SGCN]), if not goals altogether, in the future. Internally, states are clearly engaging in discussions about the feasibility and achievability of existing conservation goals in light of climate change, and whether and how those goals might need to be updated.

**States articulate broad support for climate-informed monitoring and evaluation**

As reflected in both the action plans and interviews, states widely recognize that monitoring and evaluation are essential for climate adaptation. This includes efforts to track climatic changes and ecological responses, and to evaluate the effectiveness of adaptation actions. However, many interview participants acknowledged that implementing effective monitoring and evaluation in general is often hindered by a lack of sufficient resources. Monitoring and evaluation in an era of climate change faces added challenges because of the long-term nature of climate change, and because the results of some adaptation actions will not be known for years, if not decades. Several interview participants emphasized the need to better understand how to

identify potential tipping points or other triggers to inform when, where, and how to modify management approaches or apply new adaptation strategies.

**Recommendations for Addressing Challenges and Capitalizing on Opportunities**

Given these observations, we recommend the following actions to enhance existing assets and opportunities, and to further advance the incorporation of climate change into wildlife conservation planning in the Southeast. While most of these recommendations are envisioned for action by state fish and wildlife agencies, some are targeted toward funders and federal policy makers; all will require collaboration with a range of governmental and non-governmental partners. Our hope is that the actions highlighted below will help bolster the SECAS vision for region-wide collaboration to ensure “thriving fish and wildlife populations and improved quality of life for people” in the face of the dramatic changes affecting the southeastern United States.<sup>3</sup>

**Enhance collaborative planning and implementation efforts through regional resources and expertise**

- ▶ Increase emphasis on formal and informal communications within and among state agencies, and with non-governmental partners, to share experiences and ensure that intra- and interstate efforts are connected.
- ▶ Work with partners to enhance regional collaborations in species and habitat planning and conservation, building on similar work conducted in other regions (e.g., Northeast Association of Fish and Wildlife Agencies). Identifying a list of “regional species of greatest conservation need” (RSGCN), for instance, would be useful to inform shared priorities and promote cross-state collaboration.
- ▶ Capitalize and build on existing regional frameworks and efforts, such as SECAS, the Southeast Aquatic Resources Partnership, and the Joint Ventures, which can be catalysts for further cross-state collaboration.
- ▶ Support efforts to implement the recommendations of the Blue Ribbon Panel on Sustaining America’s Diverse Fish and Wildlife Resources, particularly calls for substantial increases in funding for SWAP implementation.
- ▶ Continue to promote and demonstrate the utility to state-based conservation from federally funded entities such as the Climate Adaptation Science Centers, which are dedicated to convening regional conservation partners, developing climate-related resources

*Internally, states are clearly engaging in discussions about the feasibility and achievability of existing conservation goals in light of climate change.*

<sup>3</sup> Southeast Conservation Adaptation Strategy. Available from: <http://secassoutheast.org> (accessed April 4, 2018).

and information, and facilitating climate adaptation.

- Seek to identify new, non-federal funding sources to facilitate state-based adaptation efforts and SWAP implementation.

### **Advance the application and use of both state and regional climate change impact and vulnerability assessments**

- Make use of the existing inventory of vulnerability assessments conducted by state agencies and other entities across the Southeast region, for example assessments conducted for the Gulf Coast<sup>4</sup> and Appalachian<sup>5</sup> regions. Better understanding of what has been done by other partners can help identify information needs, augment state- or regional-level efforts, and inform future assessments.
- Clearly identify information needs and pursue opportunities to fill those gaps. Dedicate sufficient funding and time for the development and use of vulnerability assessments in adaptation planning.
- Participate in efforts to further develop resources and methods to facilitate planning under uncertainty and over longer time frames, such as through scenario planning.

### **Facilitate development and implementation of adaptation strategies and actions**

- Continue to build state-based adaptation capacity by encouraging staff to take advantage of existing adaptation guidance and training opportunities.
- Strive to be as clear and specific as possible in identifying adaptation needs and actions, including through explicitly linking those actions to relevant climate impacts.
- Be anticipatory and forward-looking. Take an active role in managing for ecological transitions to ensure that the new conditions are more, rather than less, likely to meet societal expectations and values.
- Consider novel and innovative approaches when developing adaptation strategies and pursuing funding mechanisms, such as through the U.S. Fish and Wildlife Service State Wildlife Grant Competitive Program.

### **Foster adoption of climate-informed conservation goals**

- Explore how climate change may affect the feasibility of achieving existing conservation goals and objectives in given states and across the region. Consider whether revisions or updates of existing goals may be necessary to take into account expected or inevitable climatic and ecological changes.
- Consider how climate change may affect the focus of conservation efforts, including selection of priority species (e.g., SGCN) and habitats, the location and connections among conservation lands and waters, and the time frame during which existing goals and objectives may be feasible.
- Broaden the discussion within and among state fish and wildlife agencies, their partners, and the public to ensure that conservation goals reflect both desired and achievable conditions now and into the future.

### **Enhance monitoring and evaluation efforts**

- Engage with scientists and others to enhance the identification of effective indicators of climatic changes, including those that capture thresholds and tipping points of associated ecological responses.
- Improve capacity to monitor across broader areas and improve consistency in approaches by establishing new partnerships, including enhanced citizen-based monitoring programs, and ensuring that specific data and information needs are met.
- Evaluate the effectiveness of adaptation strategies. As adaptation efforts continue to progress, understanding the factors that contribute to favorable or unfavorable outcomes will help inform adaptive management and improve opportunities for success.

<sup>4</sup> Watson, A., et al. 2015. *The Gulf Coast Vulnerability Assessment: Mangrove, Tidal Emergent Marsh, Barrier Islands, and Oyster Reef*. Available from: <http://gulfcostprairielcc.org/science/science-projects/gulf-coast-vulnerability-assessment/> (accessed June 22, 2018).

<sup>5</sup> Sneddon, L. and H. Galbraith. 2015. *Climate Change Vulnerability Assessments in the Appalachian LCC Region*. NatureServe, Arlington, VA.