

Science Priorities and Principles of Operation (2018-2023)¹

Southeast Climate Adaptation Science Center

Executive Summary

The Southeast Climate Adaptation Science Center (SE CASC) was established in 2010 at North Carolina State University (NCSU) in Raleigh, North Carolina under a cooperative agreement with the U.S. Geological Survey (USGS). This executive summary presents science priorities and principles of operation for SE CASC that guides its activities. [More details and background are provided in the full document.](#)

SE CASC ***develops and delivers science-based information to support adaptation decisions by natural and cultural resource managers.*** In the southeastern United States, the management partners consist primarily of US Fish and Wildlife Service, National Park Service, and state & tribal fish and wildlife agencies faced with the impacts of changing climate and land use in the region. Consultation with these partners in 2018 identified three broad science priorities:

SE CASC Science Priority 1 - Exposure: Improve partner understanding of what climate and land use change processes and associated biophysical stressors will look like on the land and water they manage.

SE CASC Science Priority 2 - Impacts: Improve partner understanding of ecosystem, habitat, and species impacts of climate and land use change, as well as the understanding of how these changes affect resources of specific concern to resource managers.

SE CASC Science Priority 3 - Adaptation: Increase partner understanding of, and access to, practical guidance for framing and making smart climate and land use change adaptation decisions.

Strategic Science Priorities & Goals

For each of the three partner science priorities, a brief summary of DOI and other partner science interests, along with one or more potential science goals, follows. These priorities, goals, and science opportunities will focus annual SE CASC funding opportunities.

Science Priority 1 - Exposure: Improve partner understanding of what climate and land use change processes and associated biophysical stressors will look like on the land and water they manage.

SE CASC Science Goals:

- **Advance partner understanding of regional climate-related stressors.** SE CASC will provide federal and state partners with guidance on the appropriate uses of the steady flow of new information about climate-related stressors such as sea level rise and wildfires.

¹ September 2021 revision for formatting – no changes to priorities or content.

- **Advance partner understanding of regional land use change-related stressors.** SE CASC will provide federal and state partners with up-to-date information about land use changes as well as science-based projections of change.

Science Priority 2 - Impacts: Improve partner understanding of ecosystem, habitat, and species impacts of climate and land use change, as well as the understanding of how these changes affect resources of specific concern to resource managers.

SE CASC Science Goals:

- **Improve partner understanding of how habitats and ecosystems will be affected by changing climate and land use.** SE CASC science will assist federal, state, and tribal resource management agencies understand the impacts of changing climate and land use in the Southeast on habitats and ecosystems that are important for meeting agency management goals.
- **Improve partner understanding of how species of conservation concern will be affected by changing climate and land use.** SE CASC will work as a science partner with federal and state conservation agencies and with other researchers to meet agencies at-risk and species of conservation concern science needs.

Science Priority 3 - Adaptation: Increase partner understanding of, and access to, practical guidance for framing and making smart adaptation decisions.

SE CASC Science Goals:

- **Improve partner understanding and characterization of why natural and cultural resources matter in the face of climate and land use change.** SE CASC science efforts should help those making management decisions understand how those decisions affect the resources that matter to them.
- **Improve partner understanding of the portfolio of potential adaptation actions available to managers in the Southeast.** SE CASC science efforts should support managers who are seeking the best possible portfolio of adaptation strategies for the resources they manage.
- **Improve partner understanding and use of tools for assessing competing adaptation options.** SE CASC will support the development and use of science knowledge needed by managers to make smart management decisions related to climate and land use change.
- **Work with partners to define an ongoing research and implementation strategy for the Southeast Conservation Adaptation Strategy.** SE CASC science will support efforts by federal and state natural resource management partners to coordinate adaptation efforts.
- **Prepare the next generation of scientists to better understand and address adaptation and resource management challenges.** SE CASC university and federal and state management partners will support efforts to train the next generation of natural resource managers and researchers so that they are well prepared to develop science that makes a difference for managers.
- **Build the capacity of professional natural resource managers to access and use climate and land use change science.** SE CASC staff and funded research will facilitate the understanding and wise use of climate and land use science products.
- **Improve understanding of communication needs for all stages of co-produced actionable science.** SE CASC will support researchers and managers to promote appropriate, effective communication throughout their project's life cycles.

SE CASC Operational Principles

Nine principles will guide SE CASC activities addressing these partner priorities. Together these principles suggest important expectations that SE CASC partners, including its Advisory Committee, should have regarding how SE CASC operates. Background and details of these principles is provided in Appendix B.

1. Resource management priorities drive SE CASC science activities.
2. Resources are biocultural, derived from interacting natural and human systems.
3. SE CASC science should be actionable, co-produced and useful.
4. SE CASC co-produced actionable science should acknowledge the “wicked” nature of most adaptation problems.
5. SE CASC co-produced, actionable science depends on collaboration among partners.
6. Successful SE CASC partnerships requires communication.
7. Successful SE CASC partnerships requires capacity building.
8. Successful SE CASC partnerships require coordination.
9. Success in addressing SE CASC partner priorities depends on collaborations between USGS and the NC State university consortium.