



Advisory Committee Meeting Summary – 7/12/2023

Welcome and Introductions

In the Zoom meeting chat, AC members optionally provided answer to ice breaker question: “What is your favorite summer outdoor activity in the NC region?”

Aparna Bamzai-Dodson, Acting Regional Administrator, briefly oriented AC members to the NC CASC mission, vision, and staff.

Meeting attendees were divided into two breakout groups. Participants were asked to share their name, agency, location and discuss why they decided to join the AC or what they are excited to contribute to the AC. The goal was for AC members get to know each other and provide feedback to NC CASC staff.

Tribal Liaison Introductions

Kynser Wahwahsuck and Stefan Tangen, [NC CASC Tribal Resilience Liaisons](#), shared information about their BIA-funded positions with the Great Plains Tribal Water Alliance. They described the background of the liaison program and their goals and priorities.

NC CASC Regional Science Plan Overview

Nadine Golden, Acting Assistant Regional Administrator, provided a 10-minute overview presentation of the NC CASC Regional Science Plan, which introduced the Plan’s background, structure, priority ecosystems, science priorities, and objectives.

Ascertaining partner needs was an in-depth process starting with interviews with regional resource management partners. Data from those interviews was processed to identify information gaps and conduct follow up topical listening sessions, face-to-face and virtual tribal engagement activities, and workshops and webinars. Out of that process evolved the four NC CASC priority habitats and six priority management issues.

The **four priority habitats** are:

1. **Freshwater and riparian** including aquifers, ponds, lakes, rivers, drainage ways, streams, and the riparian landscapes shaped by these surface and subsurface features.
2. **Grasslands** within the region include both tall, short, and mixed grass prairies.

3. **Sagebrush steppe** includes areas dominated by sagebrush, other shrubs, and perennial grasses.
4. **Mountainous ecosystems** include alpine, subalpine, meadow, and forested ecosystems with large changes in elevation, slope, and aspect.

The **six priority management issues** include:

1. **Habitat Loss, Connectivity, and Transformation:** Habitat loss represents the reduction in total area or the area of individual patches of habitat. Connectivity represents both structural and functional connectivity of habitat patches as well as the connectedness of the landscape. Transformation entails the comprehensive change of ecosystem composition, structure, and function that affects habitats.
2. **Water Availability and Drought:** The focus on “ecological drought” is defined as the ecosystem-wide response to drought which has dramatic impacts on ecological and human systems. Ecological drought is driven by exposure to drought conditions and the sensitivity and adaptive capacity of systems experiencing the drought conditions.
3. **Wildlife Disease:** Populations affected by disturbance like climate change, are more vulnerable to disease emergence and impacts. While challenging, the complexity of disease dynamics coupled with sensitivity to changing conditions creates opportunities for predicting and managing wildlife disease.
4. **Invasives and Encroachment:** The distributions of invasive and exotic species may expand with changing climate due to areas of newly suitable climate conditions and if ecosystems become more vulnerable to invasion. Changing climate will present both new challenges and new opportunities for where and how the risks associated with invasive and exotic species are managed.
5. **Wildfire:** All known major drivers of fire behavior are expected to change in the future, as urbanization increases ignition potential and climate change impacts fuel availability and weather conditions. Fire regimes and the landscapes prone to these regimes are likely to change, having large ecological, economic, and human-health related impacts.
6. **Phenology:** Phenology refers to the study of the timing of plant and animal life cycle events, such as fruiting or migration, and how these are impacted by environmental conditions. Plants and animals can adapt in relation to changing weather and climate conditions, but not all species adapt concurrently or in compatible ways. Rapid climate change is anticipated to exacerbate phenological disruptions in the timing of life cycle events for interdependent species. Recognizing the influence of changing climate conditions on phenology is imperative to assessing ecosystem function and strategizing adaptive management.

In addition to core scientific activities, such as research and synthesis, there are critical support activities, goals, and objectives that round out the NC CASC strategic approach. These include building partnerships, skill building for scientists and managers, supporting people and tools, and communicating the science.

NC CASC Regional Science Plan Discussion

Elise Elliot-Smith, Northwest CASC Training Coordinator, led the entire group in an activity and discussion based on the question: “What are your top climate-related management challenges?” A word cloud based on attendee responses is shown below:

What are your top climate-related management challenges or concerns?



Members were then divided into two breakout groups to review, comment on, and discuss the plan priorities and objectives. Each breakout group entered comments on a Padlet community comment board at: https://padlet.com/nc_casc/north-central-climate-adaptation-science-center-science-plan-5p092ngd9ncx9fi4

Below is a summary of the comments added for each priority on the North Central Climate Adaptation Science Center - Science Plan Padlet board.

1. **Habitat Loss, Connectivity, and Transformation:** Finer scale modeling is required to identify climate refugia areas, considering the species-specific nature of the problem. This might entail substantial investment to prioritize species. NC CASC might be able to play a crucial role in leading the process by integrating ecological guidance into a multi-entity decision-making framework encompassing diverse landscapes across the North Central region.

2. **Water Availability and Drought:** There is interest in modeling water conservation or sequestration throughout the year. This includes considering tradeoffs related to water availability, extreme events like hydrologic droughts, and resource allocation. There is a desire to explore the impact of climate-informed management actions, like process-based restoration approaches, and assess the benefits and tradeoffs of different water management methods in a changing climate.
3. **Wildlife Disease:** To clearly address the link between wildlife disease and climate impacts and the necessary management actions to mitigate these effects, consider wildlife disease as an indicator of overall ecosystem health under climate change, with a specific focus on defining and managing harmful pathogens or disease processes affecting wildlife, livestock, and human health.
4. **Invasives and Encroachment:** The focus should expand to cover current and emerging invasive species, along with associated risks. Identifying resistant areas and predicting future changes are vital for prioritizing treatment efforts effectively.
5. **Wildfire:** Post-fire recovery and identification methods are of great concern in Colorado, especially for the state Department of Transportation. Priorities include dealing with post-fire debris flow, landscape changes, and climate impacts to manage events effectively and handle emergencies.
6. **Phenology:** Investigate historical research differences between phenology, invasives, and encroachment to understand their relationship. Modeling phenology shifts to support species in neighboring habitats that may no longer be sustainable. Additionally, there were questions about introducing or relocating species and considering culturally relevant species from an indigenous perspective, along with exploring cultural aspects in related topics.
7. **Other:** A few comments identified that the science plan overlooks human-centered topics and their connection to climate adaptation in the region, including addressing land use changes. There's a need to assess the effectiveness of adaptation actions, considering anticipated outcomes, and making the information actionable.

Wrap-up

The group briefly wrapped up the meeting prior to adjourning. Aparna Bamzai-Dodson also provided brief updates on the new permanent Regional Administrator hire, the FY24 full proposal review process, the regional host agreement re-competition, and a future in-person meeting.