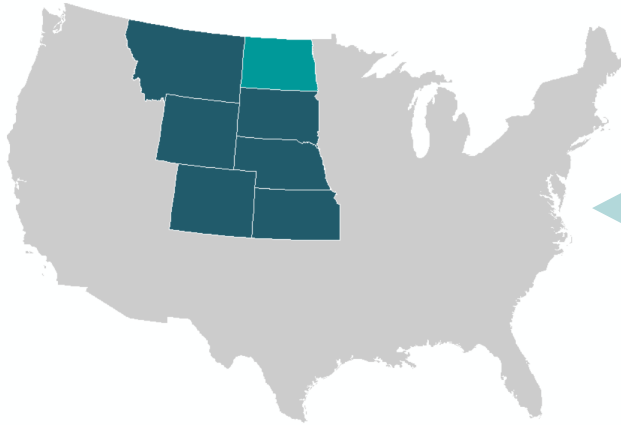




# NORTH DAKOTA

North Dakota falls within the domain of the North Central Climate Adaptation Science Center (CASC)



## North Central CASC Consortium Institutions

**Host:** University of Colorado at Boulder

**Consortium:**

University of Montana

Conservation Science Partners

South Dakota State University

Great Plains Tribal Water Alliance

Wildlife Conservation Society

## OUR WORK IN NORTH DAKOTA

**39+**

**Projects**

since **2011**

### Key Science Topics



Wildlife & Plants



Grasslands & Plains



Freshwater



Drought



Science Tools for Managers



# PROJECT HIGHLIGHTS

## Climate-Driven Shifts in Prairie Pothole Wetlands

*Stretching across the northern Great Plains, the Prairie Pothole Region contains wetlands that provide critical breeding habitat for 50-80% of North America's waterfowl. This ecosystem is sensitive to changes in temperature and precipitation, and studies have indicated that climate change could restrict waterfowl habitat, potentially requiring costly wetland restoration efforts.*

### WHAT:

The North Central CASC worked with land managers from the USFWS Chase Lake Wetland Management District to answer two key questions—how will precipitation and temperature in the region change over time, and how will the number and location of wetlands change?

### RESULTS:

Results show that average temperatures will likely increase throughout the Prairie Pothole Region, while precipitation could either increase or decrease. If a wetter future scenario pans out, the change in wetlands would be negligible. If a dry future scenario unfolds, wetlands could be reduced by 25%.

### IMPACT:

This project resulted in new, more robust predictions of future wetland habitat status in the Prairie Pothole Region, information which can directly inform climate adaptation planning for waterfowl habitat.



## Informing Climate Change Adaptation in the Northern Great Plains

*For thousands of years, the Missouri River supported permanent Native American settlements and thriving trade centers. Archaeological remnants of the Northern Plains Indians' culture and agricultural lifestyles are preserved today by the Knife River Indian Villages National Historic Site in North Dakota. Now, climate change is threatening the site's ecosystems and archaeological sites. While we know that changes are occurring, we're less certain about what conditions will look like in 10, 50, or 100 years.*

### WHAT:

The North Central CASC worked with managers at the Knife River Indian Villages National Historical Site to identify a range of possible climate futures – known as climate change scenarios – that may unfold in the region, and how resources might be affected.

### RESULTS:

Four different potential future climate scenarios were identified—such as severe sustained drought, or warm temperatures with wet summers— together with management actions that could protect resources under each scenario.

### IMPACT:

Managers at Knife River Indian Villages can use the results of these climate scenarios to evaluate whether current management plans will be sufficient to protect the site's resources under different possible futures, and to identify additional or alternative actions that may need to be taken.

