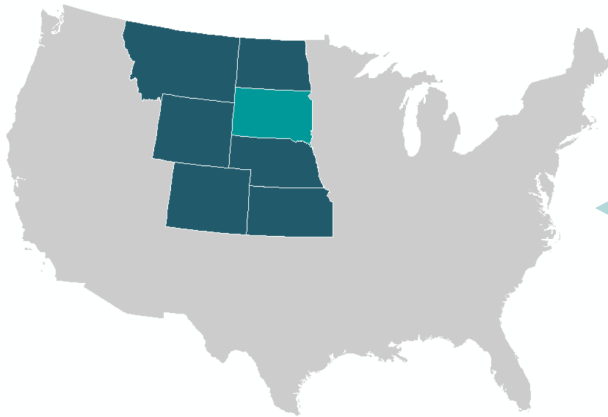




# SOUTH DAKOTA

South 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 SOUTH DAKOTA

# 42+

## 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 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

*Badlands National Park is an iconic site, renowned for its rugged landscape, rich deposits of mammal fossils, and native grasslands that provide critical habitat for wildlife and forage for livestock. Today, changing climate conditions are threatening the park's rich ecosystems and paleontological 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 Badlands National Park 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 climate scenarios were identified – including more frequent heavy rains or drier conditions – together with management actions that could be taken to protect resources under each scenario.

#### **IMPACT:**

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

