The Nature Conservancy

Prairie Coteau

Climate Adaptation Plan

Contributors:

TNC: Marissa Ahlering, Kristen Blann, Joe Blastick, Fernanda Kalena, Alison Long-Nebiolo, Mary Miller, Regan Ware

Partners: South Dakota State University, Audubon Great Plains, South Dakota Game Fish and Parks, Natural Resource Conservation Service

Overview

8,550 mi² | SD, MN, IA, ND

The Prairie Coteau is a high, glacially-formed plateau in the **northern tallgrass prairie**. It's located primarily in eastern South Dakota and southwestern Minnesota, though it extends into northwestern Iowa and southeastern North Dakota. This hilly, rocky region was carved out by glaciers 12,000 years ago and is part of the broader Prairie Pothole Region.

The Prairie Coteau is an important area for both **grassland and freshwater conservation**. It contains a high density of wetlands and ephemeral pothole lakes and it straddles two major watersheds—the Big Sioux and Minnesota Rivers (Mississippi River basin) and the Red River (Hudson Bay basin).

The Prairie Coteau faces significant threats from **conversion of grasslands** to row crop agriculture, energy development, and invasive species. Rivers and streams in this area are also impacted by pollution from **agricultural runoff and urban areas**, including from all three of South Dakota's largest cities.

Despite these challenges, the region offers opportunities to improve water quality and habitat. Because a large portion of the state's population lives and recreates here, conservation decisions can deliver **meaningful benefits for human health and livelihoods**. In fact, riparian buffer projects initiated in 2007 have already demonstrated positive results.

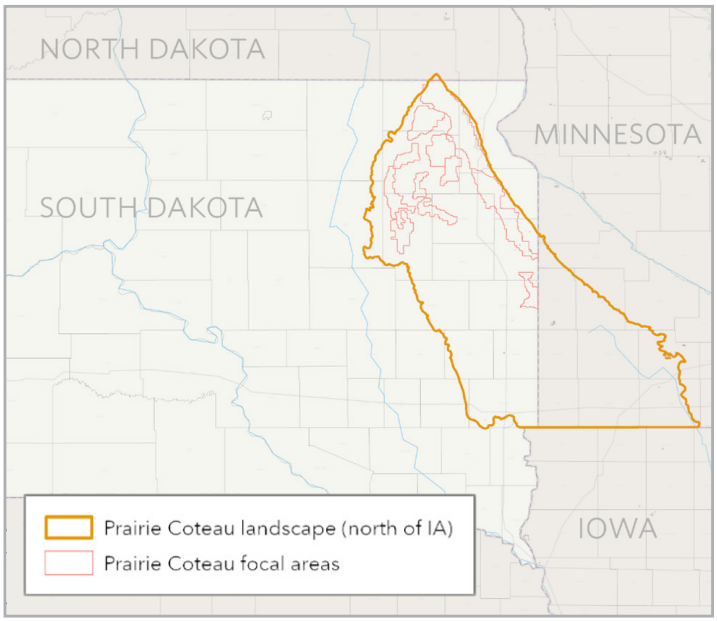

Fig. 1. Geographic scope of the Prairie Coteau in South Dakota; focal areas indicated where a higher density of tallgrass prairie remains.

Topeka shiner

Little bluestem

Blue-winged teal

Climate Impacts & Projections

Already observed climate trends:

South Dakota's average annual temperature has warmed nearly 2°F since the early 20th century, with most warming occurring in winter and minimum nighttime temperatures. Precipitation has increased, including more intense rainfall events, and peak stream flow has risen in eastern South Dakota. Despite this, severe drought remains a persistent problem.

Future climate projections:

The Prairie Coteau is projected to keep warming, even under lower emissions scenarios. Shorter winters, longer growing seasons, wetter springs, and more extreme precipitation and flooding are expected, alongside summer droughts and soil moisture loss.

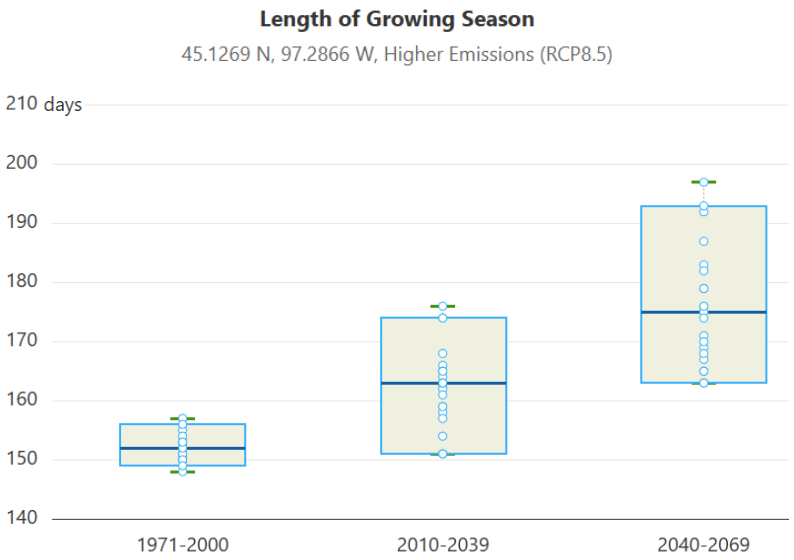

Fig. 2. Average length of growing season for the Prairie Coteau area under a high emissions scenario (RCP 8.5) for recent historic, current and mid-century time periods (Hegewisch and Abatzoglou, Climate Toolbox, 2025).

Climate Adaptation & Conservation Strategy

Our vision is a resilient and connected Prairie Coteau with **thriving wetlands, healthy grasslands managed by multiple generations, and economically vibrant rural communities**. By 2030, we aim to foster ecologically and economically resilient prairie and aquatic ecosystems.

Key conservation and climate adaptation strategies are summarized below. For the full plan with detailed objectives and metrics, contact mahlering@tnc.org.

1 Protect grasslands and wetlands

Example tactics:

- Protect 10,000 acres of native prairie through collaborative partnerships.
- Advance policies that support the economic viability of grass-based agriculture.
- Prioritize protecting diverse wetlands to adapt to changing moisture patterns and climate trends.

2 Restore for connectivity and diversity

Example tactics:

- Rebuild prairie and wetlands in strategic areas to enhance size, complexity, and connectivity.
- Use TNC's Resilient Land mapping tool to identify priority restoration sites.
- Adapt restoration practices to wetter springs and drier summers.

3 Manage ecosystems for biodiversity

Example tactics:

- Sustain prairie, wetland, woodland, and stream biodiversity by restoring ecological processes.
- Use fire and grazing to create habitat heterogeneity and control woody vegetation.
- Mitigate risks from invasive species.

4 Support local communities on regenerative practices and economic viability

Example tactics:

- Promote plant and animal compatible management practices on private rangelands.
- Continue working with partners to improve soil health of rangelands.

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Find climate adaptation plans for all of our priority landscapes at **nature.org/mnclimate**.