

A taxidermy specimen of a bison is shown in profile, facing left. The bison has a thick, dark brown coat and a large, dark, shaggy head with small, curved horns. The background is a deep blue, starry night sky. The text is overlaid in the center of the image.

Sicangu Lakota Oyate  
Facing the Climate Crisis



**ROSEBUD SIOUX TRIBE**  
PO Box 430  
Rosebud, SD 57570  
Phone: 605.747.2381  
Fax: 605.747.2905  
Website: [rosebudsiouxtribe-nsn.gov](http://rosebudsiouxtribe-nsn.gov)

Rodney Bordeaux, **President**  
Scott Herman, **Vice President**  
Louis Wayne Boyd, **Treasurer**  
Linda L. Marshall, **Secretary**  
Edward Clairmont, **Sergeant-at-Arms**

August 6, 2019

MEMORANDUM

To: Phil Two Eagle, SLTC  
Syed Huq, Water Resource  
Ivan Crow Eagle, Environmental Office  
Paula Antoine, Sicangu Oyate Land Office  
Ken Haukaas, RST Forestry  
Frank Vanderwalker, Natural Resources  
Tony Rogers, RST Utility Commission  
Ken LeDeaux, Sicangu Resource Development

From: Rodney M. Bordeaux, RST President

Re: Climate Change Working Group

I am hereby authorizing individuals listed above as the Rosebud Sioux Tribe Climate Change Working Group. Also, to present a resolution to the Rosebud Sioux Tribe Council for approval. The RST resolution shall mention a change on developing climate change strategic plan and assign a meeting facilitator or chairperson for the Rosebud Sioux Tribe. At this time, you will be the initial group and may have other tribal programs to assist with this project. There will be regular meetings held to keep making progress with this project. Please add any additional information in the resolution. James Rattling Lead a tribal member will be a part of this group. Mr. Two Eagle will initiate the process of this project on the behalf of the Sicangu Lakota Oyate.

I am authorizing the RST Climate Change Working Group to request funding from the Bureau of Indian Affairs or any federal, state, or national resource. The group is required to submit monthly reports and updates to the President's Office. Please keep me informed of any issues needing my attention to my office or RST Council. We need to be proactive in preparing what lies ahead regarding climate change. There are many reports on adverse climate change that may affect our tribe as well as the Oceti Sakowin and other tribes. There may be severe weather changes such as droughts, tornadoes, and floodings that we need to prepare for.

# Tokatakiya Wowayanke - Vision Statement

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***“Unkiye ca lel unkanihi pi. Wakinyan heunca pi. Wiwila hena unkowaja pi nahan unkitawa pi. Mni hena unkiye etan u.”***

***“It was us who brought you here. We are Thunder-Beings. The springs are here because of us and belong to us. This water comes from us.”***

--Statement from a Thunder-Being in purification ceremony

In 1878, the Sicangu Bands settled at what was to be their final Agency at Rosebud Creek, located at present day Rosebud, South Dakota. It was the Thunder-Beings who guided the Wicasa Wakan or Holy Men to the Maka Izita Opaya Wakpala, or the Smoky Earth River Valley, because of the abundance of spring water. The Little White River Valley is understood to be the “Wizipan” or the buffalo hide container used to store the necessities of life. This environmental Wizipan ecosystem contains water and aquatic life, plants for food and medicine, wildlife and winged, and forests for wood and shelter. It is held in the same high regard as the Black Hills with sacred sites and unmarked burials.

# Ancestral Homelands of the Oceti Sakowin



# Extinction of the American Bison

## William T. Hornaday (1889)

### Bison Extermination WT Hornaday

- Boundary of the area once inhabited by the American Bison (Mainly after J.A. Allen)
- Range of the herds 1880
- Range of two great herds 1870

# Fort Laramie Treaties



# Fort Laramie Treaty of 1851

- **ARTICLE 6.**

- The parties to the second part of this treaty having selected principals or head-chiefs for their respective nations, through whom all national business will hereafter be conducted, do hereby bind themselves to sustain said chiefs and their successors during good behavior.

# 1868

- ARTICLES OF A TREATY MADE AND CONCLUDED BY AND BETWEEN
- Lieutenant General William T. Sherman, General William S. Harney, General Alfred H. Terry, General O. O. Augur, J. B. Henderson, Nathaniel G. Taylor, John G. Sanborn, and Samuel F. Tappan, duly appointed commissioners on the part of the United States, and the different bands of the Sioux Nation of Indians, by their chiefs and headmen, whose names are hereto subscribed, they being duly authorized to act in the premises.



# 1868

- ARTICLE I.

From this day forward all war between the parties to this agreement shall for ever cease. The government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace, and they now pledge their honor to maintain it.

- If bad men among the whites, or among other people subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will, upon proof made to the agent, and forwarded to the Commissioner of Indian Affairs at Washington city, proceed at once to cause the offender to be arrested and punished according to the laws of the United States, and also reimburse the injured person for the loss sustained.
- If bad men among the Indians shall commit a wrong or depredation upon the person or property of any one, white, black, or Indian, subject to the authority of the United States, and at peace therewith, the Indians herein named solemnly agree that they will, upon proof made to their agent, and notice by him, deliver up the wrongdoer to the United States, to be tried and punished according to its laws, and, in case they willfully refuse so to do, the person injured shall be reimbursed for his loss from the annuities, or other moneys due or to become due to them under this or other treaties made with the United States; and the President, on advising with the Commissioner of Indian Affairs, shall prescribe such rules and regulations for ascertaining damages under the provisions of this article as in his judgment may be proper, but no one sustaining loss while violating the provisions of this treaty, or the laws of the United States, shall be reimbursed therefor.

# Article II - 1868

- ARTICLE II.

The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri river where the 46th parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the 104th degree of longitude west from Greenwich, thence north on said meridian to a point where the 46th parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations of the east bank of said river, shall be and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do, and except such officers, agents, and employees of the government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, shall ever be permitted to pass over, settle upon, or reside in the territory described in this article, or in such territory as may be added to this reservation for the use of said Indians, and henceforth they will and do hereby relinquish all claims or right in and to any portion of the United States or Territories, except such as is embraced within the limits aforesaid, and except as hereinafter provided.

# Article 5

- The territory of the Sioux or Dahcotah Nation, commencing the mouth of the White Earth River, on the Missouri River: thence in a southwesterly direction to the forks of the Platte River: thence up the north fork of the Platte River to a point known as the Red Bute, or where the road leaves the river; thence along the range of mountains known as the Black Hills, to the head-waters of Heart River; thence down Heart River to its mouth; and thence down the Missouri River to the place of beginning.

# Creation Stories - Out of Many, One

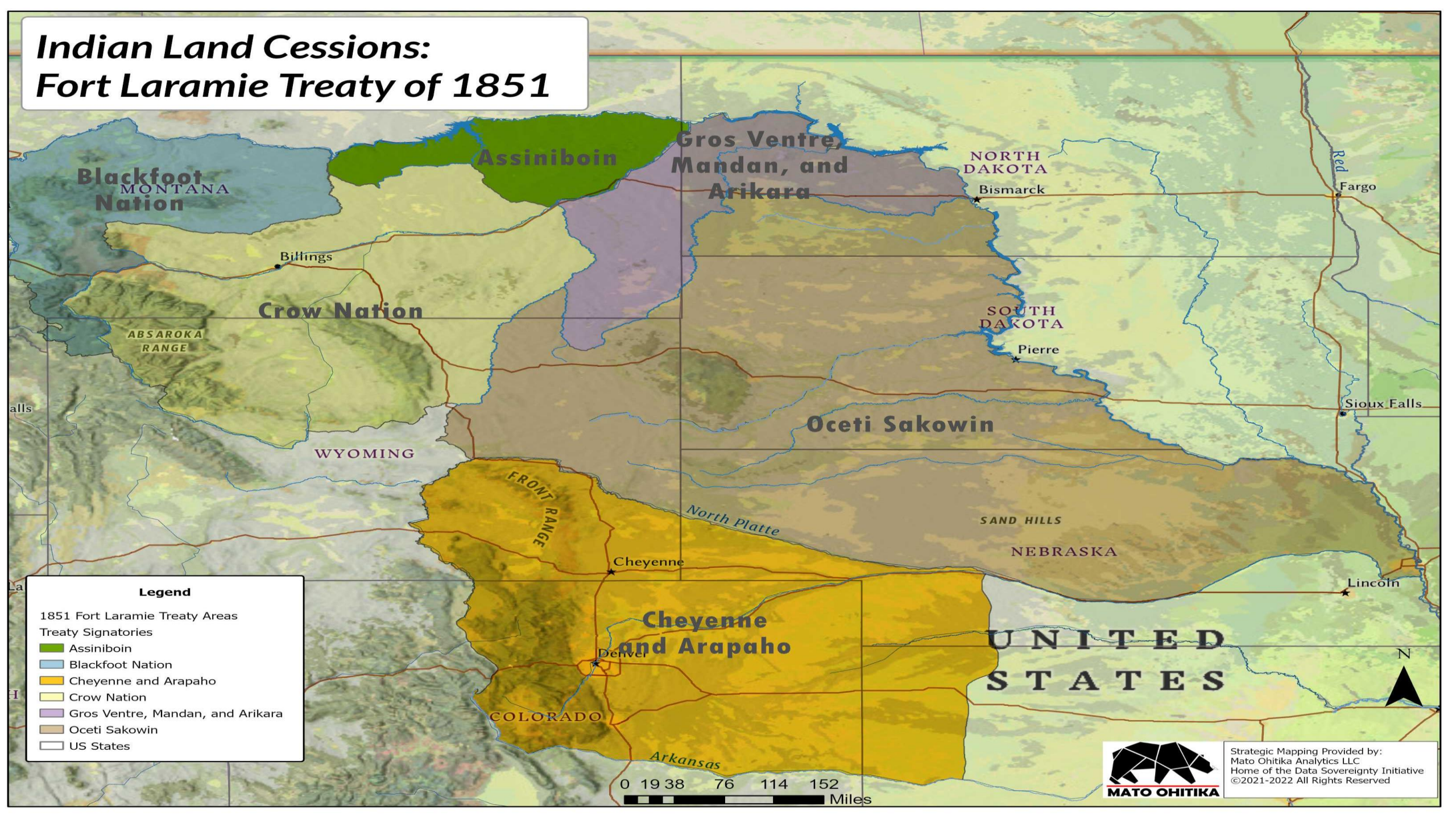
Teaching the importance of protecting Unci Maka and all living life forms from greed and domination

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## Inyan Kaga and the Creation of Unci Maka

"The making of Unci Maka (Grandmother Earth) and Mahpiyato Skan (water). In the beginning, there was nothing, except for Inyan (rock), wrapped in the deepest han (darkness). Inyan had great spiritual powers, especially in his blue colored blood, but he longed for companionship. He let his blue blood flow from him to create Maka (earth), and as he watched his blood flow out to the ends of the earth, he called it Mahpiyato Skan, the blue mover. As his powers flowed out, Inyan became an eerie stand of molten rock called Tunkan and when the humans were created from what was left, they called this Tunkansila (grandfather). Tunkansila is the oldest thing known to humans and this term was appropriate. The humans call Unci Maka (grandmother), the next oldest thing, and this was appropriate. The act of creating Unci Maka and Mahpiyato Skan is called Inyan Kaga.

# Indian Land Cessions: Fort Laramie Treaty of 1851

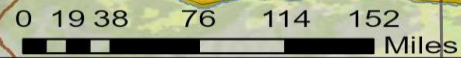


**Legend**

1851 Fort Laramie Treaty Areas

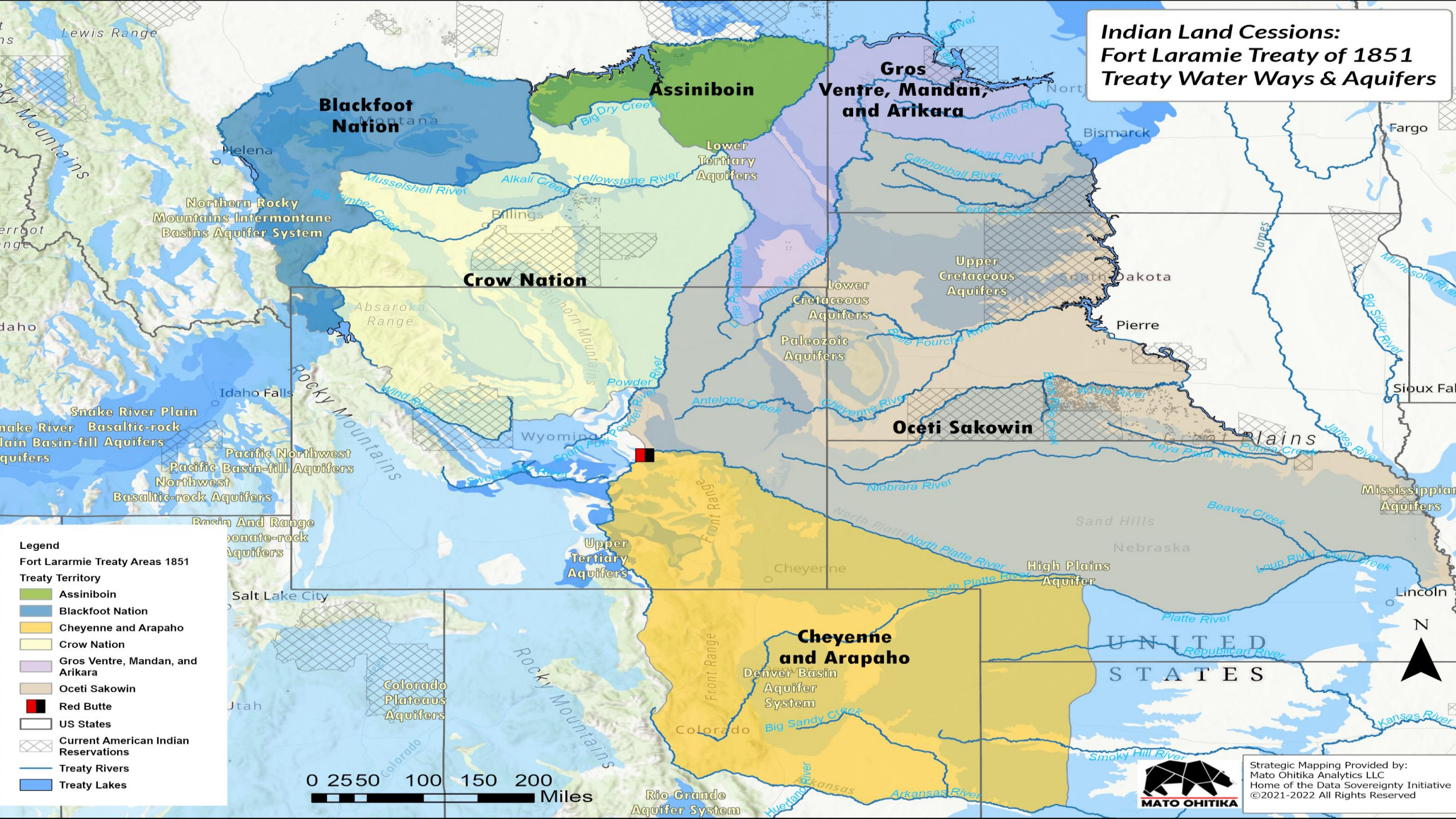
Treaty Signatories

- Assiniboin
- Blackfoot Nation
- Cheyenne and Arapaho
- Crow Nation
- Gros Ventre, Mandan, and Arikara
- Oceti Sakowin
- US States



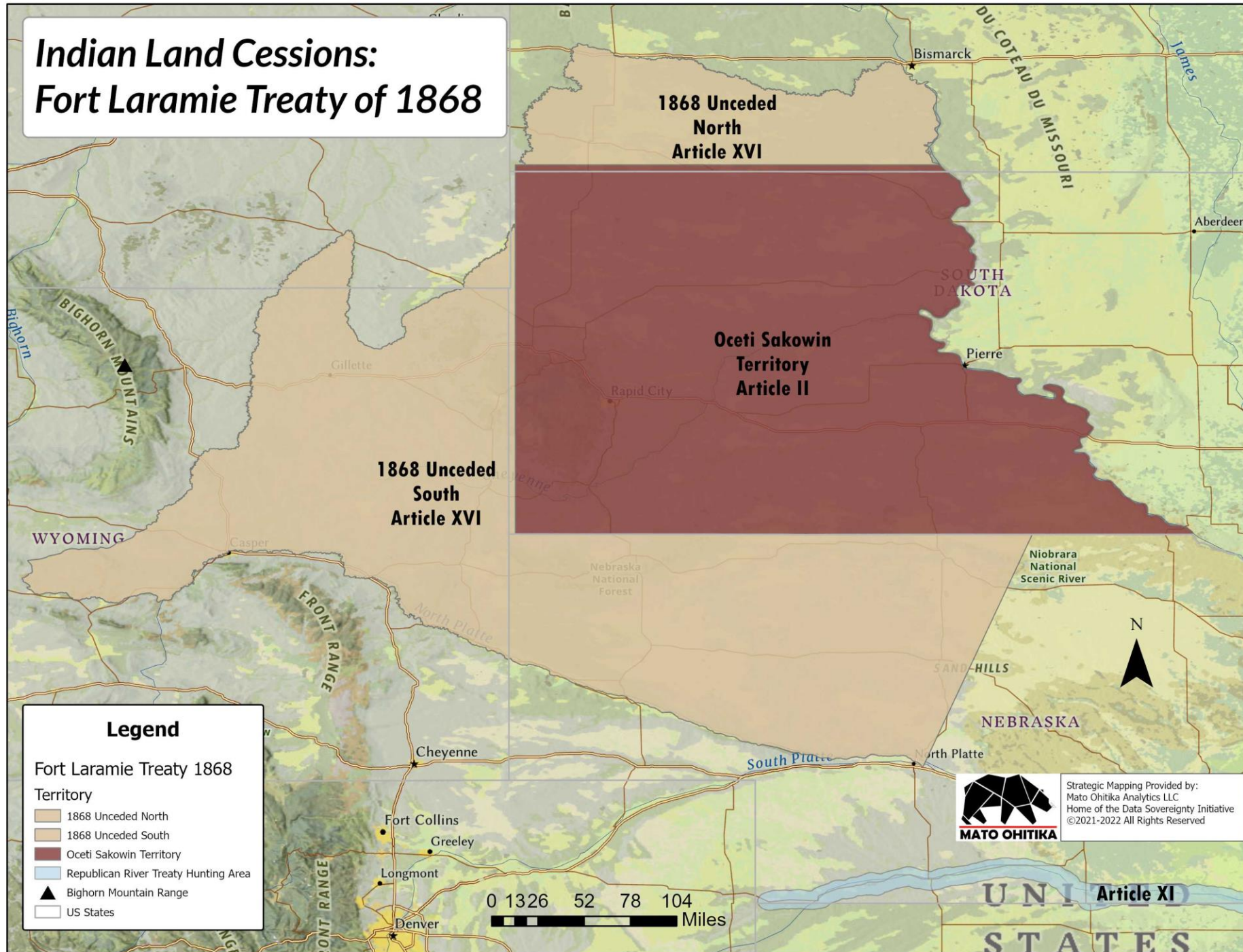
Strategic Mapping Provided by:  
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**Indian Land Cessions:  
Fort Laramie Treaty of 1851  
Treaty Water Ways & Aquifers**



- Legend**
- Fort Laramie Treaty Areas 1851
- Treaty Territory**
- Assiniboin
  - Blackfoot Nation
  - Cheyenne and Arapaho
  - Crow Nation
  - Gros Ventre, Mandan, and Arikara
  - Oceti Sakowin
  - Red Butte
  - US States
  - Current American Indian Reservations
  - Treaty Rivers
  - Treaty Lakes

# Indian Land Cessions: Fort Laramie Treaty of 1868



### Legend

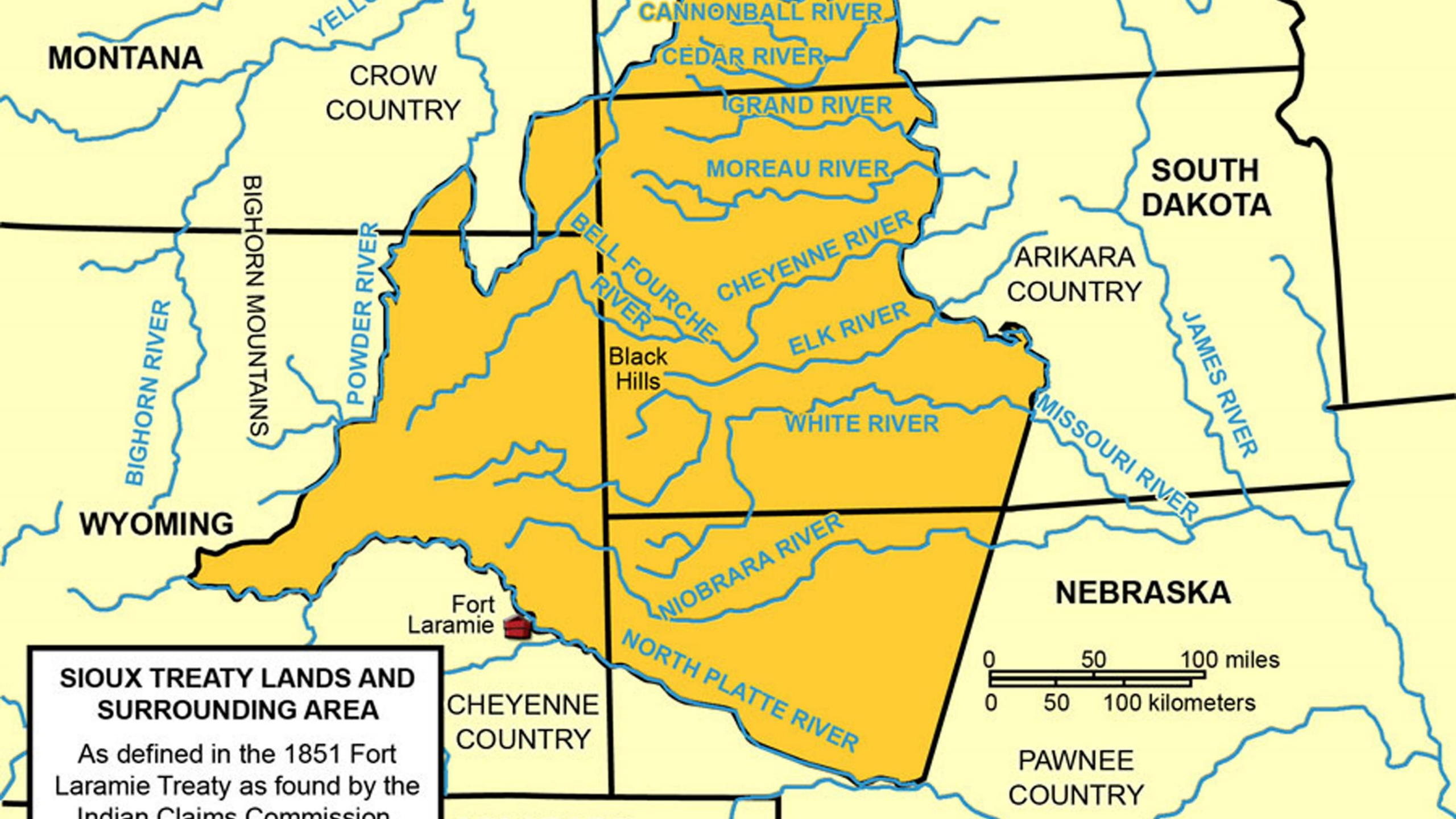
Fort Laramie Treaty 1868

Territory

- 1868 Unceded North
- 1868 Unceded South
- Ojete Sakowin Territory
- Republican River Treaty Hunting Area
- Bighorn Mountain Range
- US States



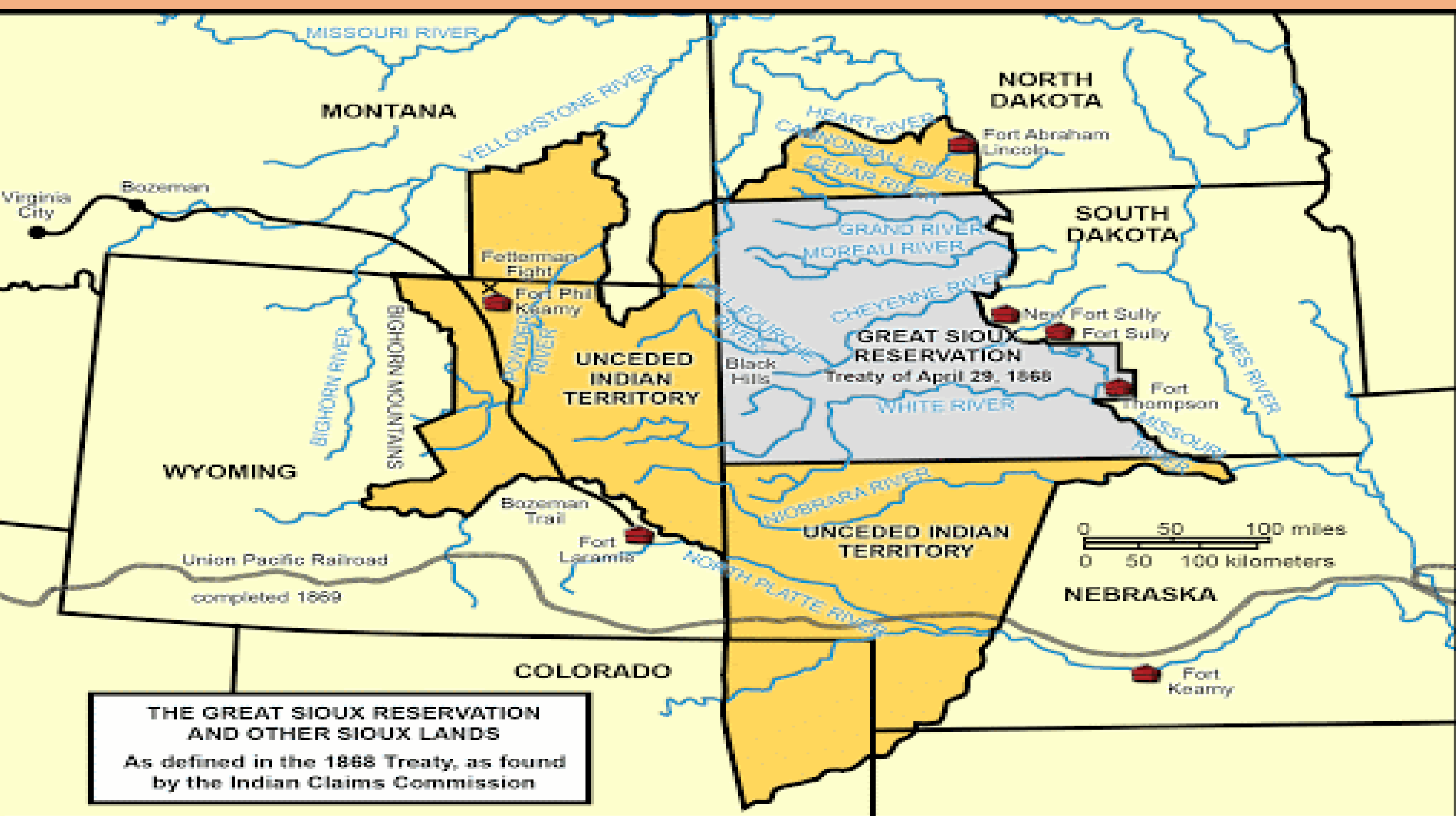
Strategic Mapping Provided by:  
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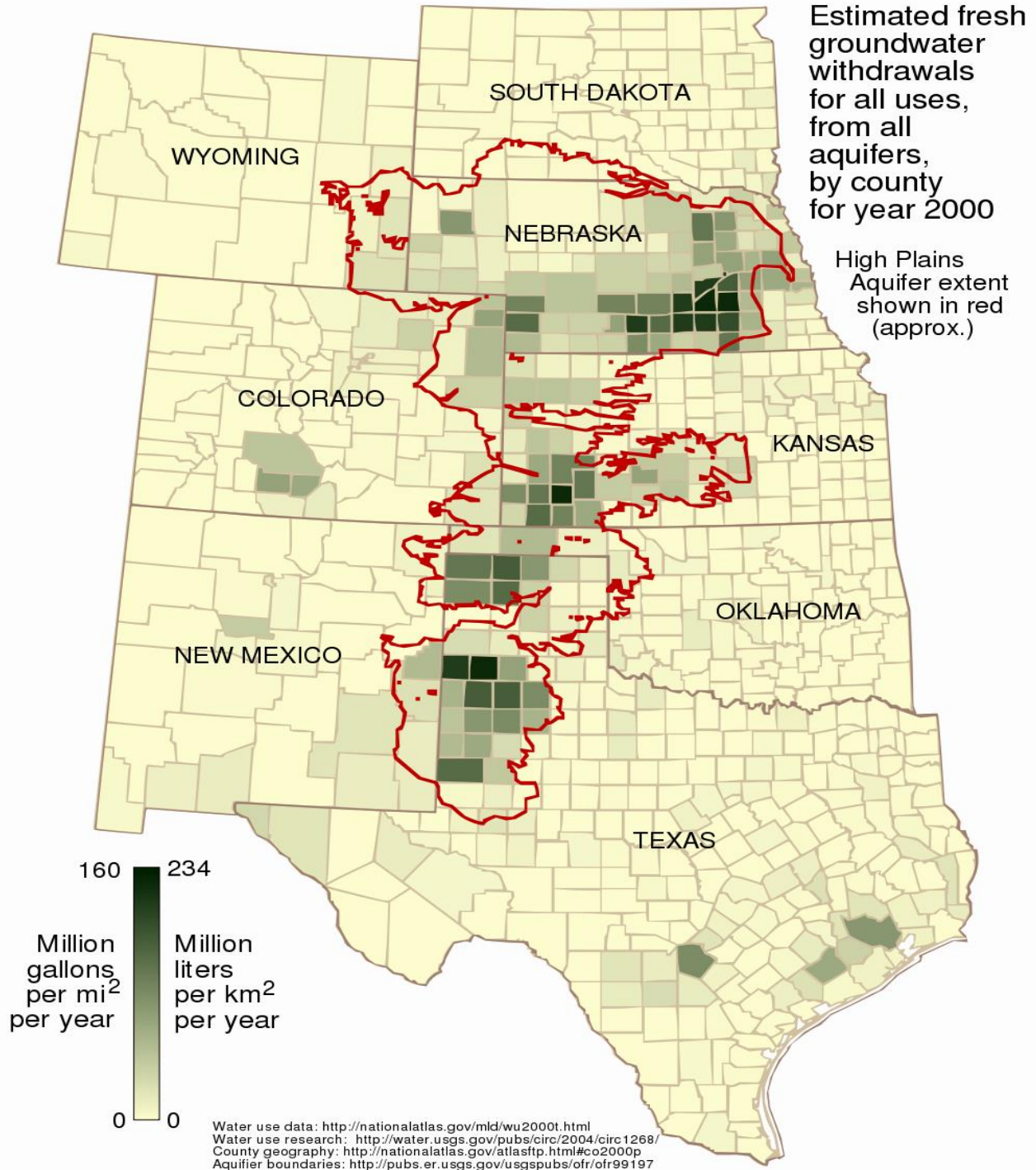


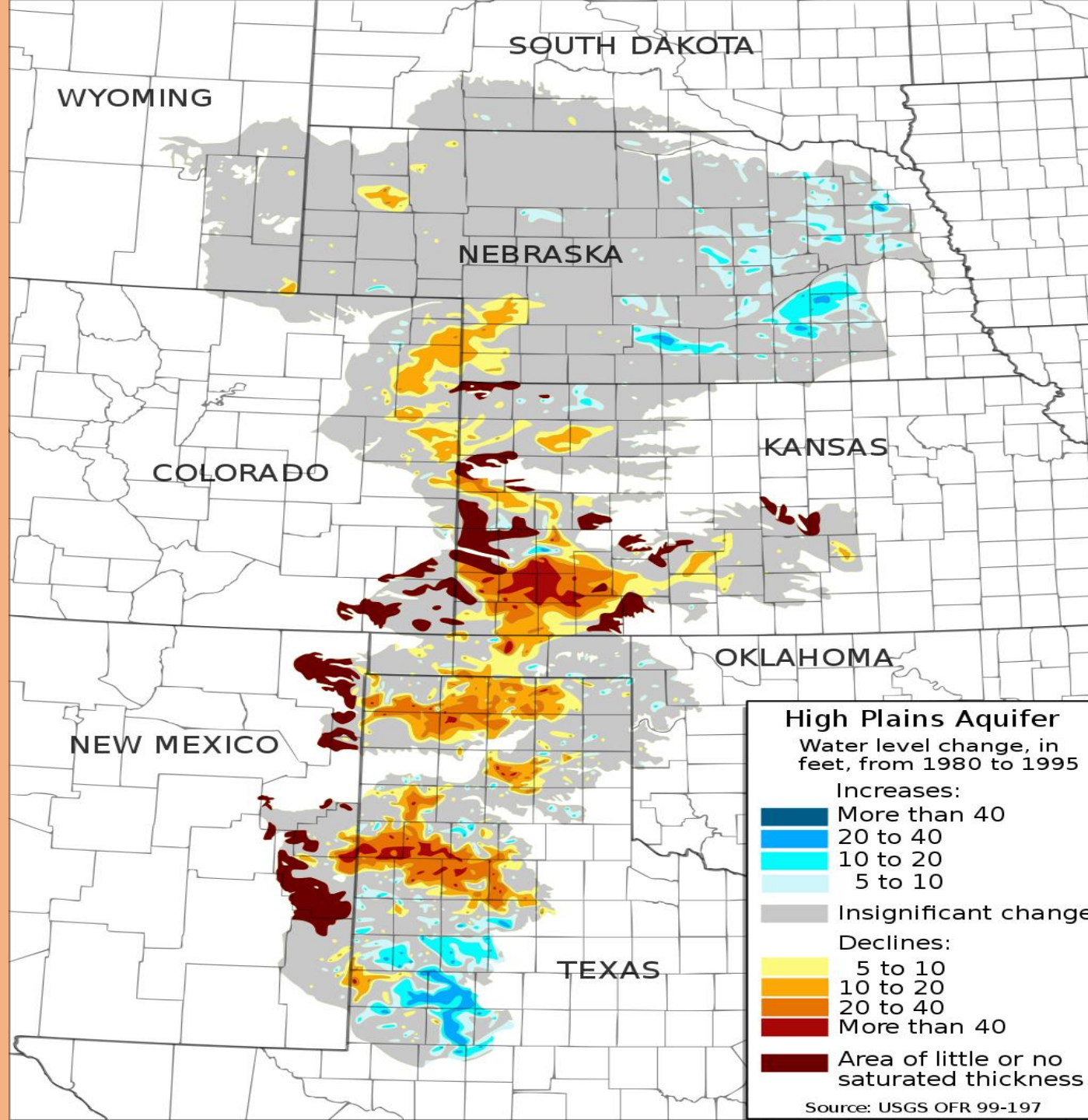
**SIoux TREATY LANDS AND SURROUNDING AREA**

As defined in the 1851 Fort Laramie Treaty as found by the Indian Claims Commission





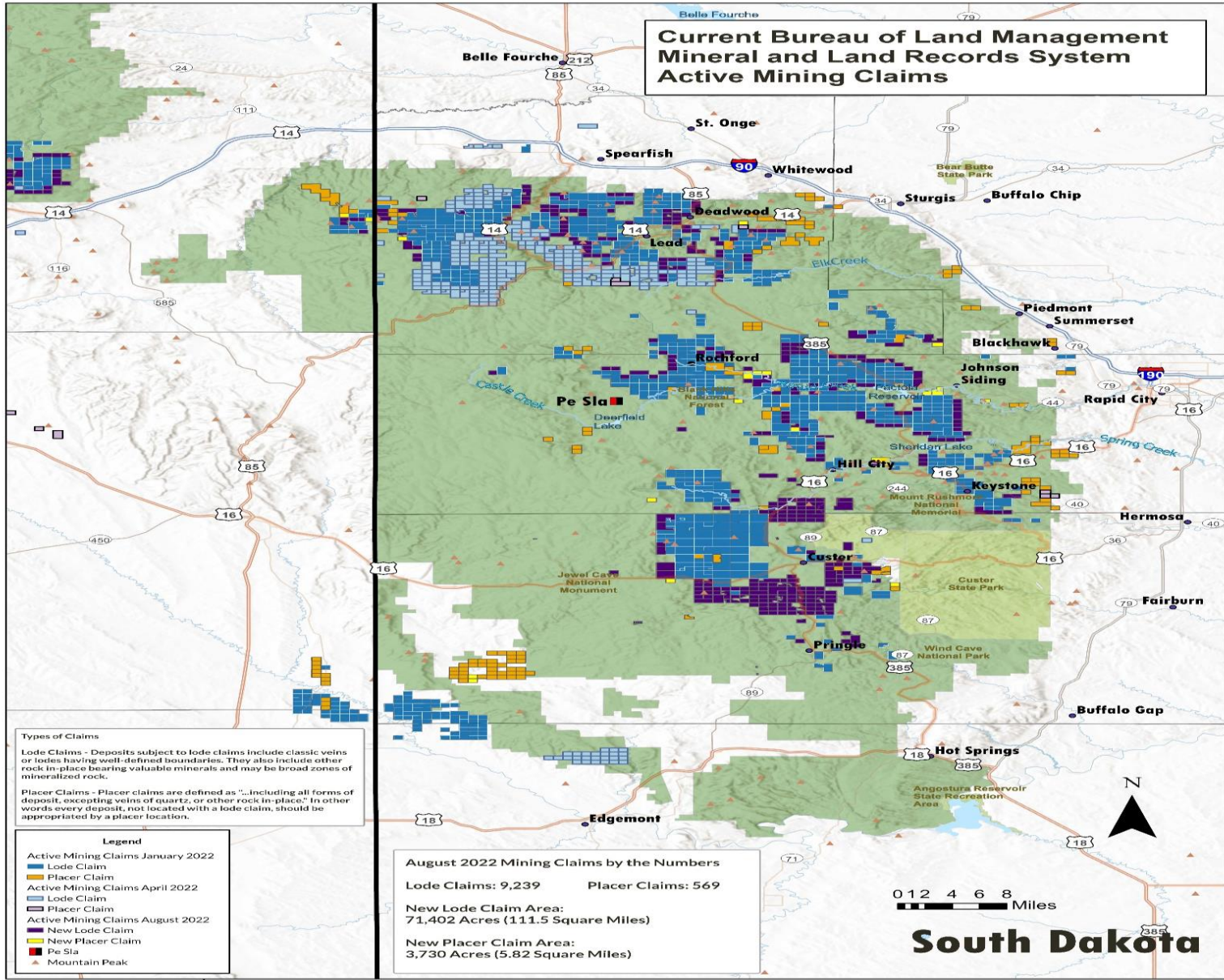




Source: USGS OFR 99-197



# Current Bureau of Land Management Mineral and Land Records System Active Mining Claims



**Types of Claims**

**Lode Claims** - Deposits subject to lode claims include classic veins or lodes having well-defined boundaries. They also include other rock in-place bearing valuable minerals and may be broad zones of mineralized rock.

**Placer Claims** - Placer claims are defined as "...including all forms of deposit, excepting veins of quartz, or other rock in-place." In other words every deposit, not located with a lode claim, should be appropriated by a placer location.

- Legend**
- Active Mining Claims January 2022
  - Lode Claim
  - Placer Claim
  - Active Mining Claims April 2022
  - Lode Claim
  - Placer Claim
  - Active Mining Claims August 2022
  - New Lode Claim
  - New Placer Claim
  - Pe Sia
  - Mountain Peak

**August 2022 Mining Claims by the Numbers**

Lode Claims: 9,239      Placer Claims: 569

New Lode Claim Area:  
71,402 Acres (111.5 Square Miles)


New Placer Claim Area:  
3,730 Acres (5.82 Square Miles)

0 1 2 4 6 8 Miles

## South Dakota



Strategic Mapping Provided by:

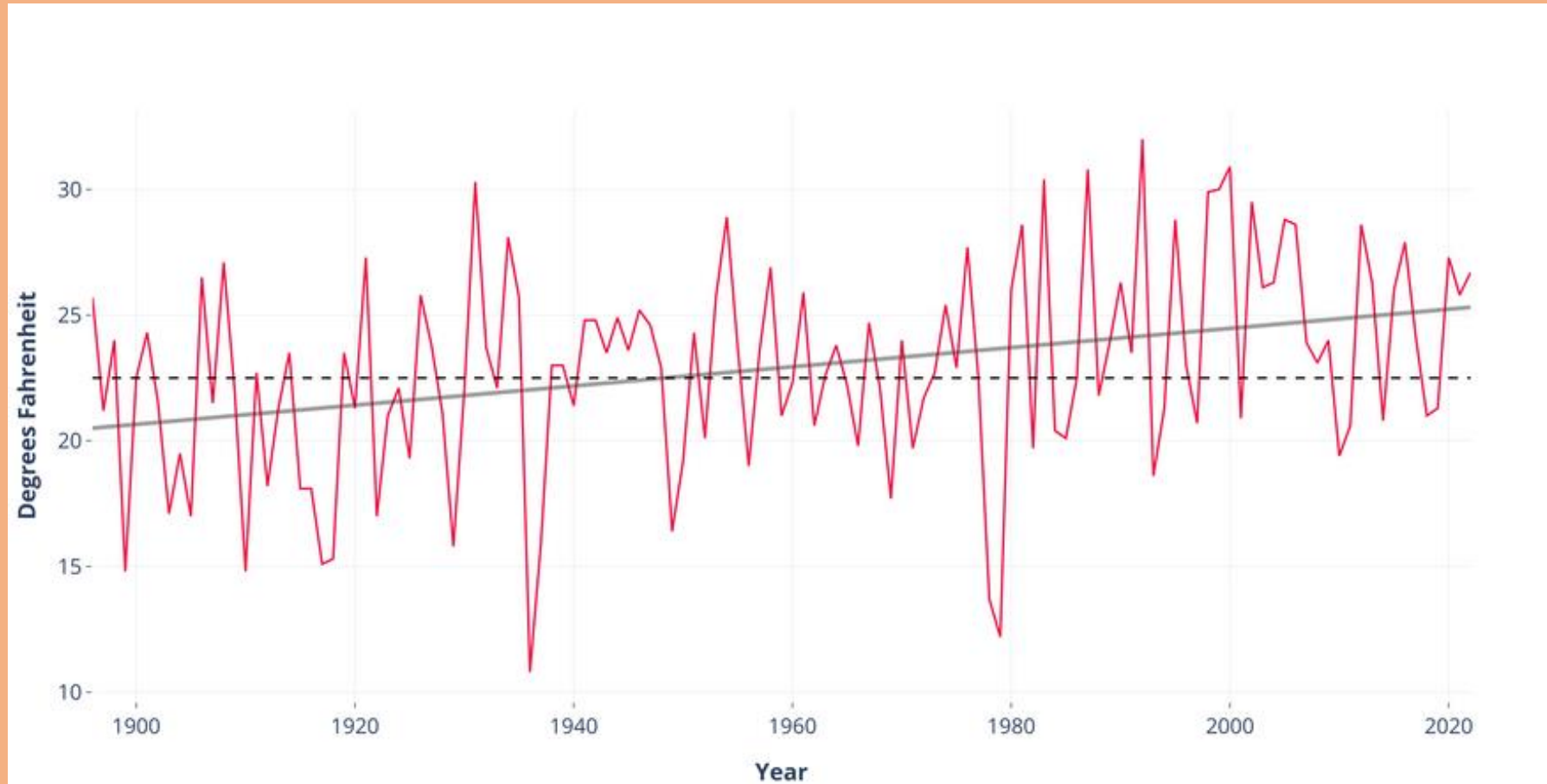
 Mato Ohitika Analytics LLC  
©2022 All Rights Reserved.



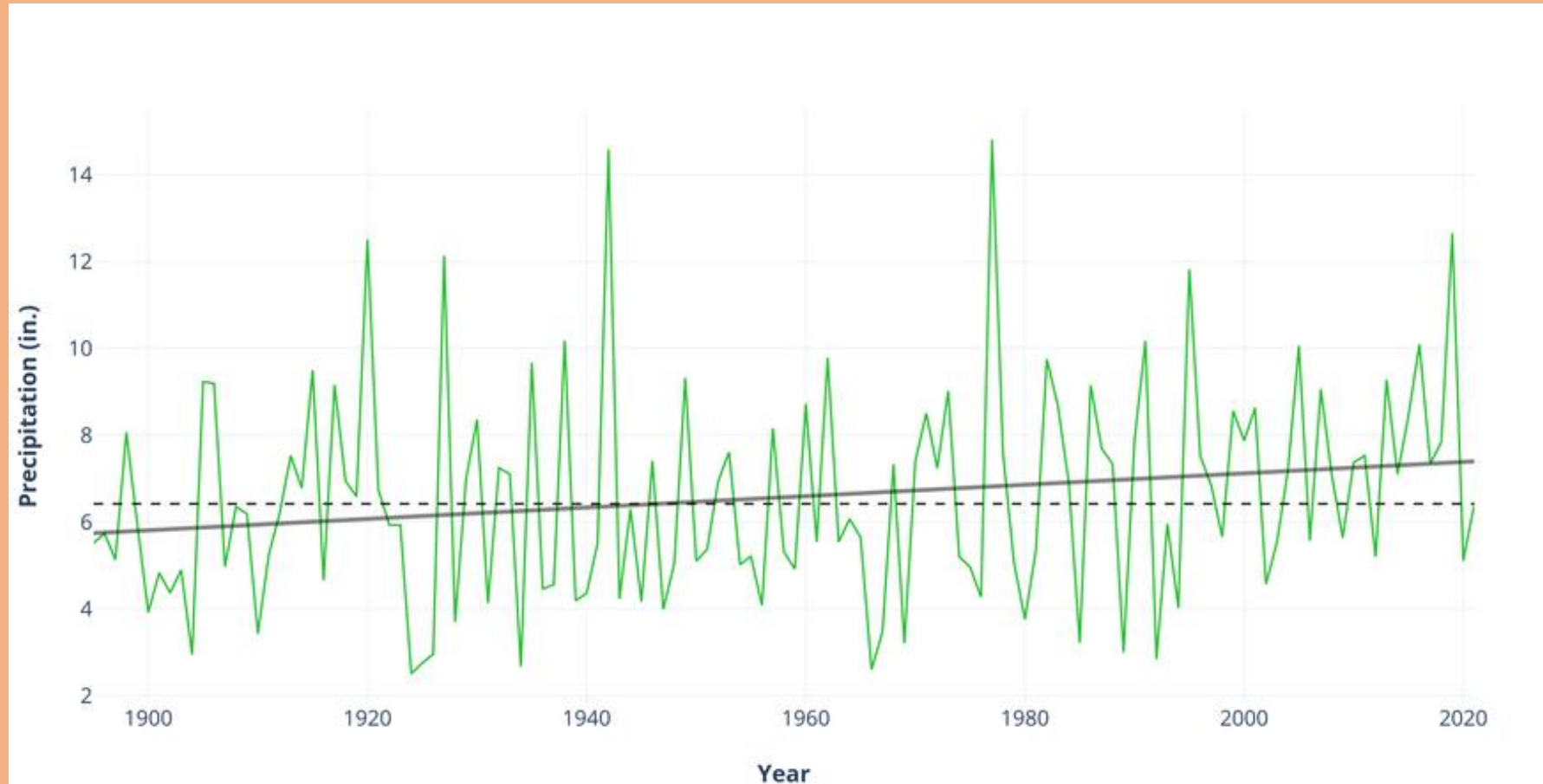
South Dakota Study Area  
BLM Mining Claims  
Paha Sapa  
(Black Hills, South Dakota)  
August 3, 2022

MAPBOOK  
BLM Mining Claims  
Lode Claims / Placer Claim  
Updated Claims  
Q3 2022

# THE PAST – TEMPERATURES RISING AT ROSEBUD



# THE PAST – RAIN AND SNOW RISING AT ROSEBUD



Heat  
Indices/Decade

>90 degree  
F

>100 degree  
F

>105 degree  
F

## More hot and very hot days to come

1990s

25 days

2 days

0 days

2025s

43 days

7 days

2 days

2055s

63 days

19 days

6 days

2085s

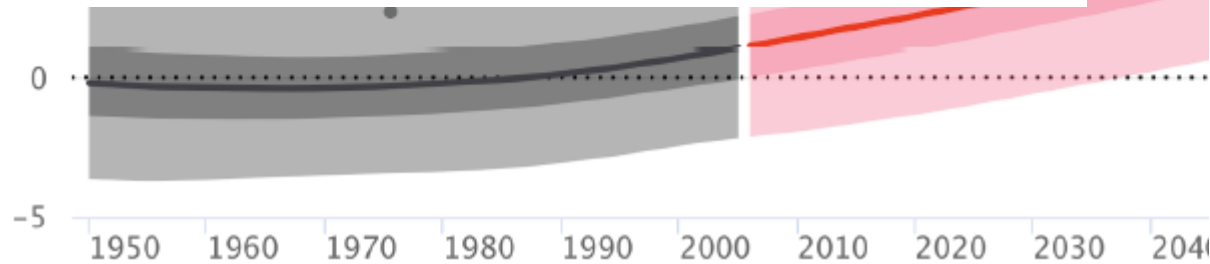
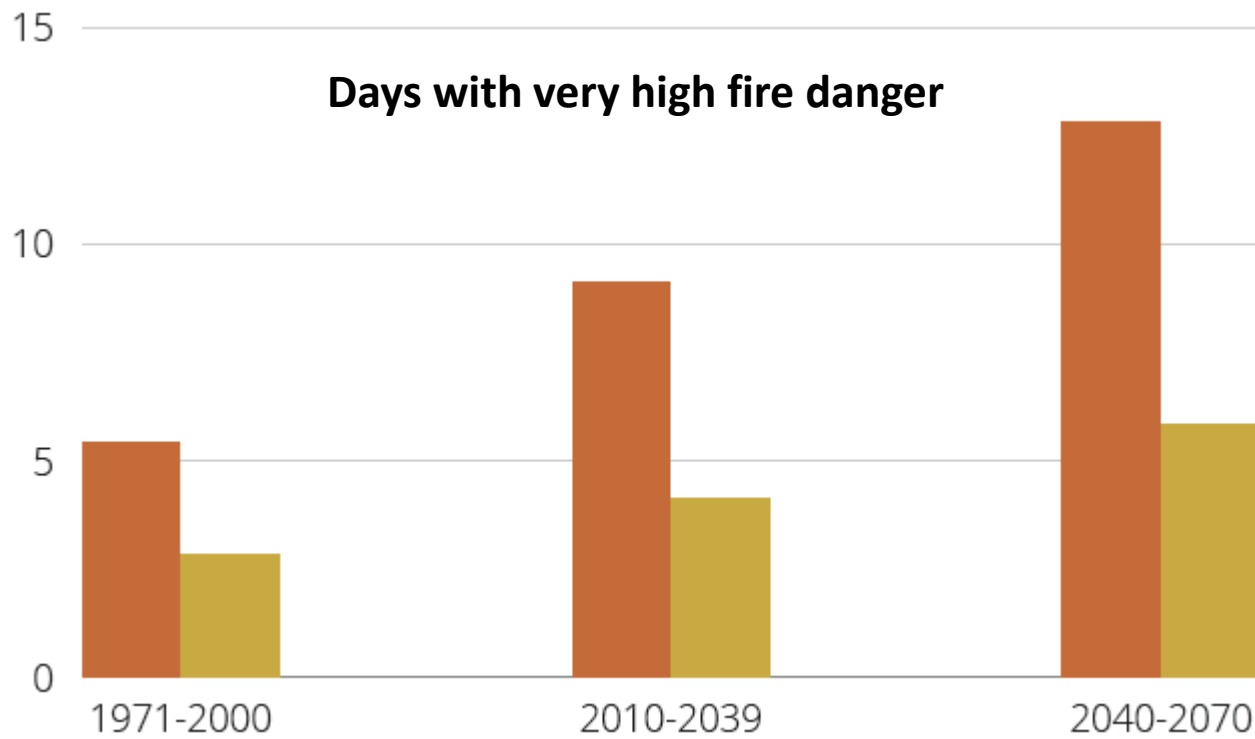
85 days

43 days

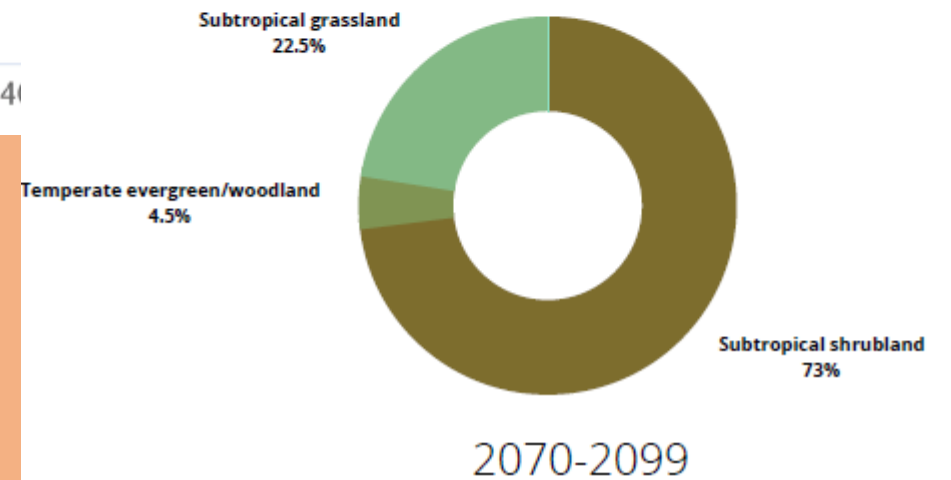
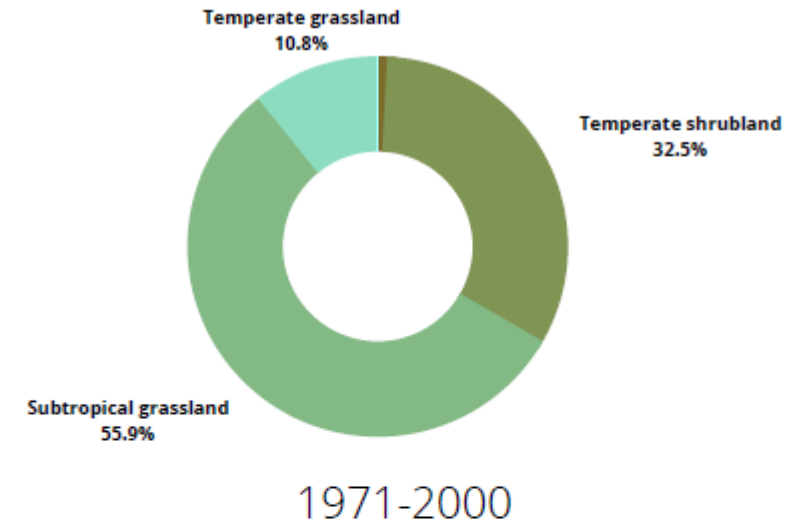
23 days



## Days with very high fire danger



## Grass to shrub transition



# INPUT FROM THE OYATE (despite Covid)

1) Community Meetings

2) Community Survey

3) Tribal Government

4) Elder Interviews



Oyate Input with SCCWG Guidance

**THIS WEEK!  
VIRTUAL COMMUNITY  
MEETINGS ON CLIMATE  
CHANGE**

**IDEAL - Tuesday 5/25  
@ 10am**

**BUTTE CREEK -  
Wednesday 5/26 @ 10am**

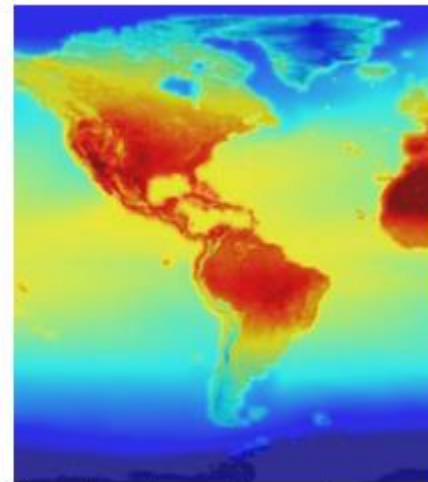
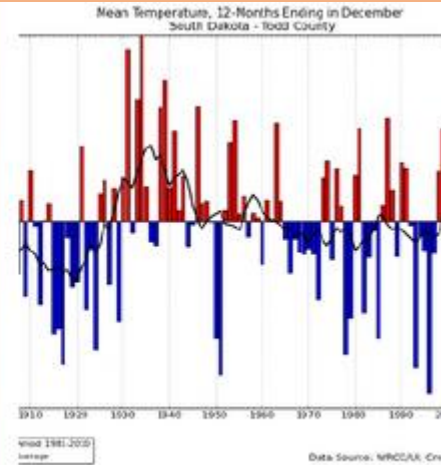
**OKREEK - Wednesday  
5/26 @ 2pm**

**ANTELOPE - Thursday  
5/27 @ 10am**

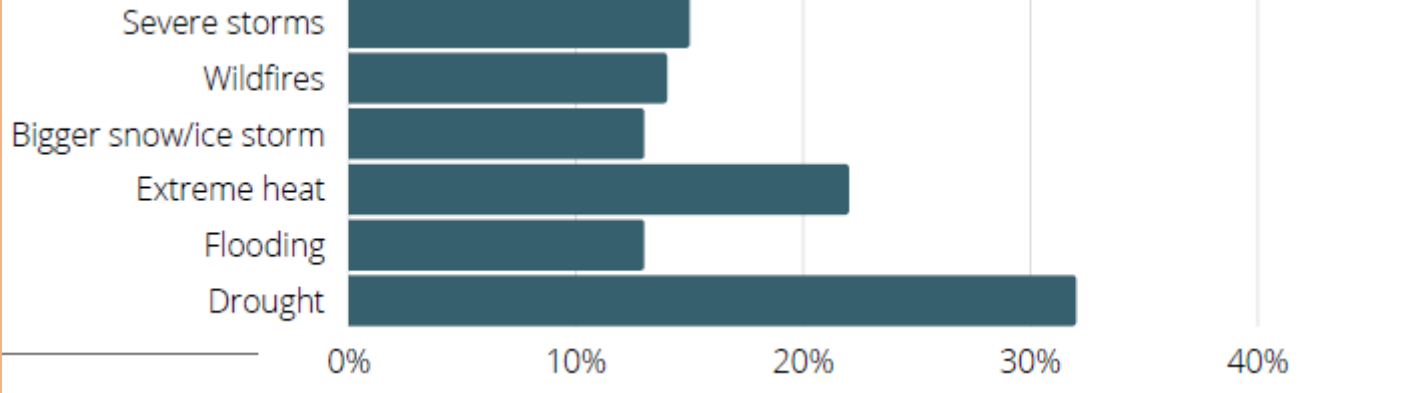
*Join the ZOOM Call via the  
Sicangu Climate Crisis Working Group Facebook Page*

*Or +1 812 626 6799 X 450-125 2185*

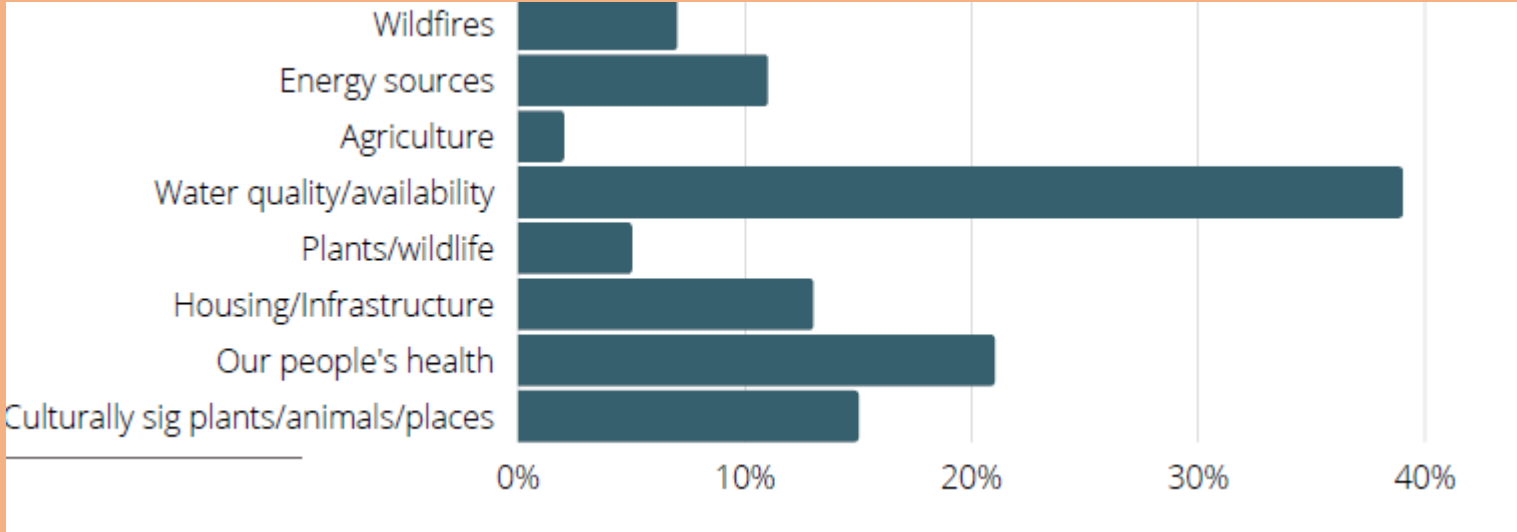
*DURING THE MEETING TIMES ABOVE*



# CONCERNS



# WHAT TO FOCUS PLANNING ON



# RST Government expertise

Syed Huq Director, Water Department

Joe Ross, RST Ranch Manager

Paula Wopilawin Antoine, Director, Sicangu Oyate Land Office

Pam Giroux, Director, Rosebud Elder Care

Ken Haukaas, Director, Forestry Department

Alexander Swalley, Director, Environmental Protection Department

Wayne Bear Shield, Director, Facilities Management,

Caroline Horse Looking, Director, RST Enrollment

Ione Quigley, Tribal Historic Preservation Officer

Robert Oliver, Director, Dam Safety, Emergency Response

Wizipan Little Elk, Executive Director, REDCO [now with BIA]

Tony Rogers, Director, Tribal Utility Commission

Skyla Fast Horse, Director, Health Department

Protect the Oyate

Protect and Wisely use our Water

Protecting the Land and Living Relatives

## **Four Highlighted Recommendations**

**Establish a permanent tribal office led by a Chief Climate Officer**

**Plan and build capacity to address human needs in weather emergencies.**

**Implement the Rosebud Drought Adaptation and Mitigation Plan**

**Establish a Sicangu Lakota Oyate Environmental Data and Decisions Center for focused information and sovereignty for the land and living relatives**

# PROTECTING THE OYATE

**Establish a permanent tribal department and Oyate Climate Itacan**

**Enhance tribal capacity to protect life and property among the  
Sicangu Lakota Oyate**

Weather emergencies – plan for flooding and tornadoes

Local weather warning system

Reliable heating and cooling

Community centers as warm/cooling stations

Wellness checks

Consider rooftop solar

Consider higher building codes



# PROTECTING AND WISELY USING OUR WATER

RST has legal access to Missouri River water

Reservation sits atop major aquifer

BUT -- contamination, control, over-use, drought impacts, pose dangers

**Adopt and implement the Rosebud Tribal Water Code**

**Fully implement the Rosebud Drought Adaptation and Mitigation Plan**

**Expand characterization and monitoring of Rosebud water**

# PROTECTING THE LAND AND LIVING RELATIVES

## Establish a Sicangu Climate Center for focused information and sovereignty for the land and living relatives

Clean up the Reservation

Expand food sovereignty, local markets, processing facilities

Promote habitat conservation

Reduce overgrazing

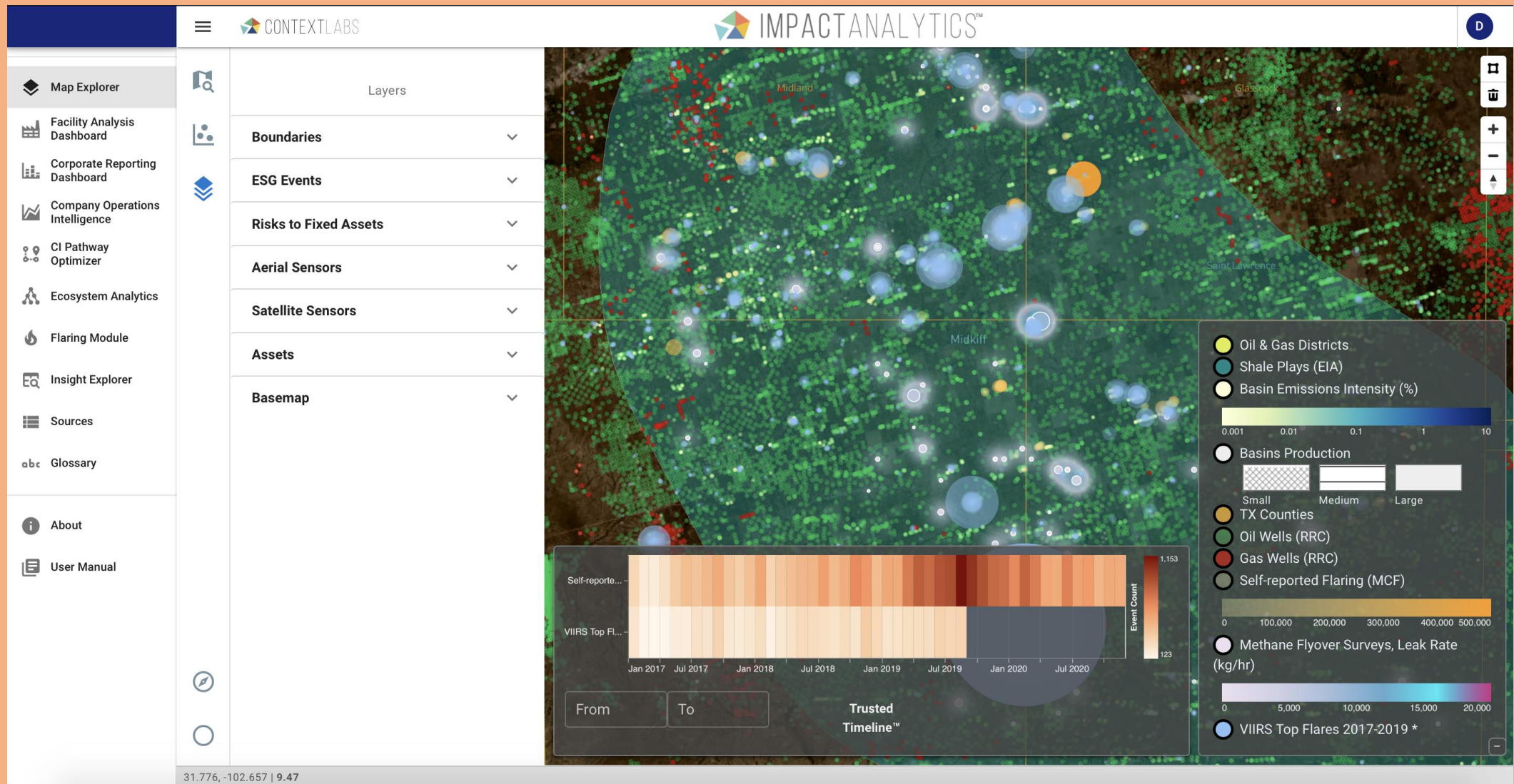
Understand the impacts of climate change on forests and grasslands

Plant more trees

Track forage production and use

Preserve sacred plants, at-risk species, and consider when development occurs

# CREATING THE 'DIGITAL TWIN' OF OUR LAND, OUR WORK, OUR FUTURE



# THE SOFTWARE WILL MANAGE ANY DATA, ANY OUTCOME WE DESIGN

## Core Platform Technology- Commercialization of MIT Research

Platform Technology that Underpins the TRIBAL CLIMATE CENTER DIGITAL SOLUTIONS



Context Labs



**Immutably** Technology Foundation

Data Fabric Enablement

### Ingest

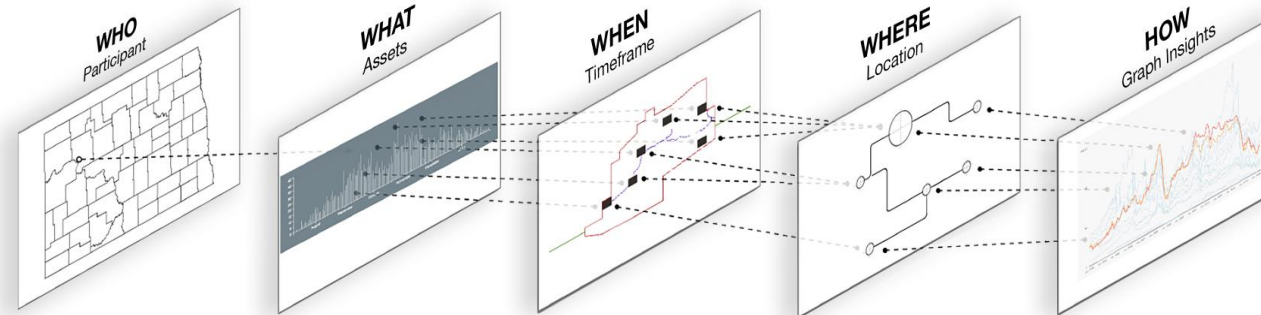
Real-time or Batched  
Processing of Disparate Big Data Sources

### Enrich

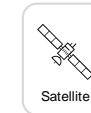
Trusted Contextual Metadata  
AI & ML augmentation  
Secures 3<sup>rd</sup> Party Data & Attestations  
Blockchain Secured Audit

### Analyze

Deeply Descriptive & Predictive Signals, Indices,  
Cohort Analyses, Market Prediction



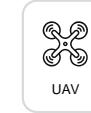
AI-enabled Network Graph Analytics Reveal Insights by Connecting Disparate Data



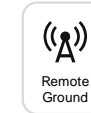
Satellite



Airborne



UAV



Remote Ground



CEM



SCADA

# OUR SOFTWARE, OUR DATA WILL BE AS SECURE AS ANY PARTNERS'

## Community, Climate, Energy & Food Security

The TRIBAL CLIMATE CENTER Platform will share core technology with external stakeholders



Context Labs' Immutably™ deployment was selected in 2021 to satisfy The National Geospatial Intelligence Agency's Mission

We will:

- ✓ Best in class performance for satellite imagery chain of custody services
- ✓ Platform for digital identity, image /metadata manipulation detection
- ✓ Ensure provenance and veracity of any satellite data



Context Labs' was selected as one of 35 permanent partners of the National Institute of Standards and Technology (NIST)

We will:

- ✓ Develop and define best practices for critical infrastructure cyber resilience
- ✓ Safeguard the protection of the US energy, water/wastewater and transportation grids

### Furthering our climate and energy security partnerships:



US National Lab

- ✓ Solar Inverter Digital Twin Program
- ✓ Cyber & climate performance integrity
- ✓ Risk management functional support



Smart Energy Power Alliance (SEPA)

- ✓ Critical Cyber Physical Asset Interoperability Program for Solar Assets

