

“Nueta Hidatsa Sahnish College’s Food and Water Sovereignty Initiatives”



NHS
COLLEGE

Successes, Challenges, and Opportunities for Managing Drought on Tribal Lands in the Upper
Columbia and Missouri Basins

September 26, 2023

Polson, MT

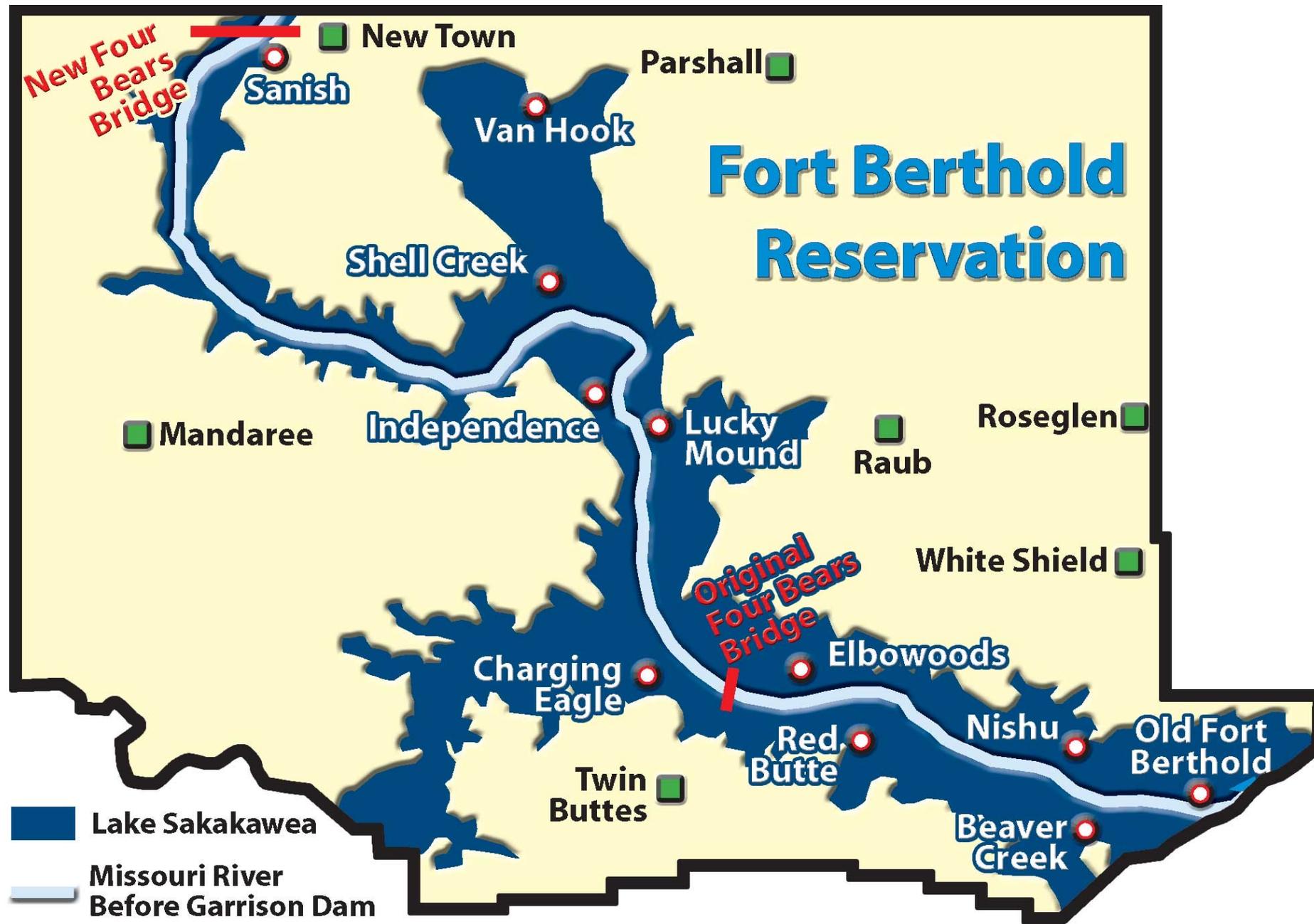
Ruth Plenty Sweetgrass-She Kills, PhD (Hidatsa, Nueta, Nakota, Dakota)

The Mandan, Hidatsa, and Arikara people lived in earthlodges along the river. The floodplains provided fertile soil for their large gardens of squash, beans, corn, sunflowers, and melons.





- Primary or major trade center
- ★ Significant permanent secondary centers
- ☆ Other permanent secondary centers
- Significant impermanent secondary centers
- Crossroads and local intertribal trade hubs
- ▲ Tertiary centers



“The single most destructive act perpetrated against an Indian tribe by the United States,”
Michael Lawson in
Dammed Indians

Justice





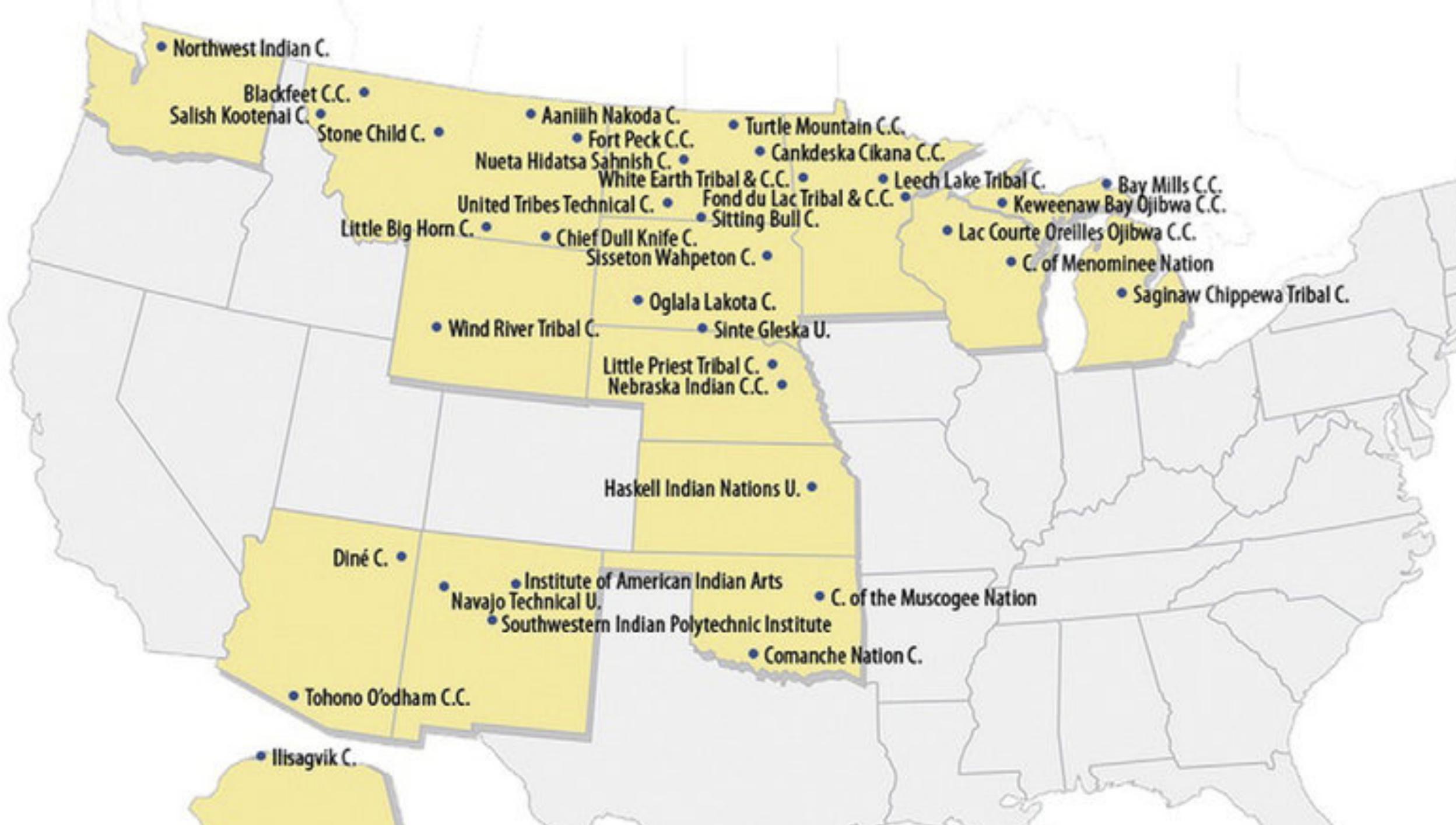












• Northwest Indian C.

Blackfeet C.C.

Salish Kootenai C.

Stone Child C.

Aaniiih Nakoda C.

Fort Peck C.C.

Turtle Mountain C.C.

Nueta Hidatsa Sahnish C.

White Earth Tribal & C.C.

Cankdeska Cikana C.C.

United Tribes Technical C.

Fond du Lac Tribal & C.C.

Leech Lake Tribal C.

Bay Mills C.C.

Little Big Horn C.

Chief Dull Knife C.

Sitting Bull C.

Keweenaw Bay Ojibwa C.C.

Lac Courte Oreilles Ojibwa C.C.

C. of Menominee Nation

Sisseton Wahpeton C.

Oglala Lakota C.

Saginaw Chippewa Tribal C.

Wind River Tribal C.

Sinte Gleska U.

Little Priest Tribal C.

Nebraska Indian C.C.

Haskell Indian Nations U.

Diné C.

Navajo Technical U.

Institute of American Indian Arts

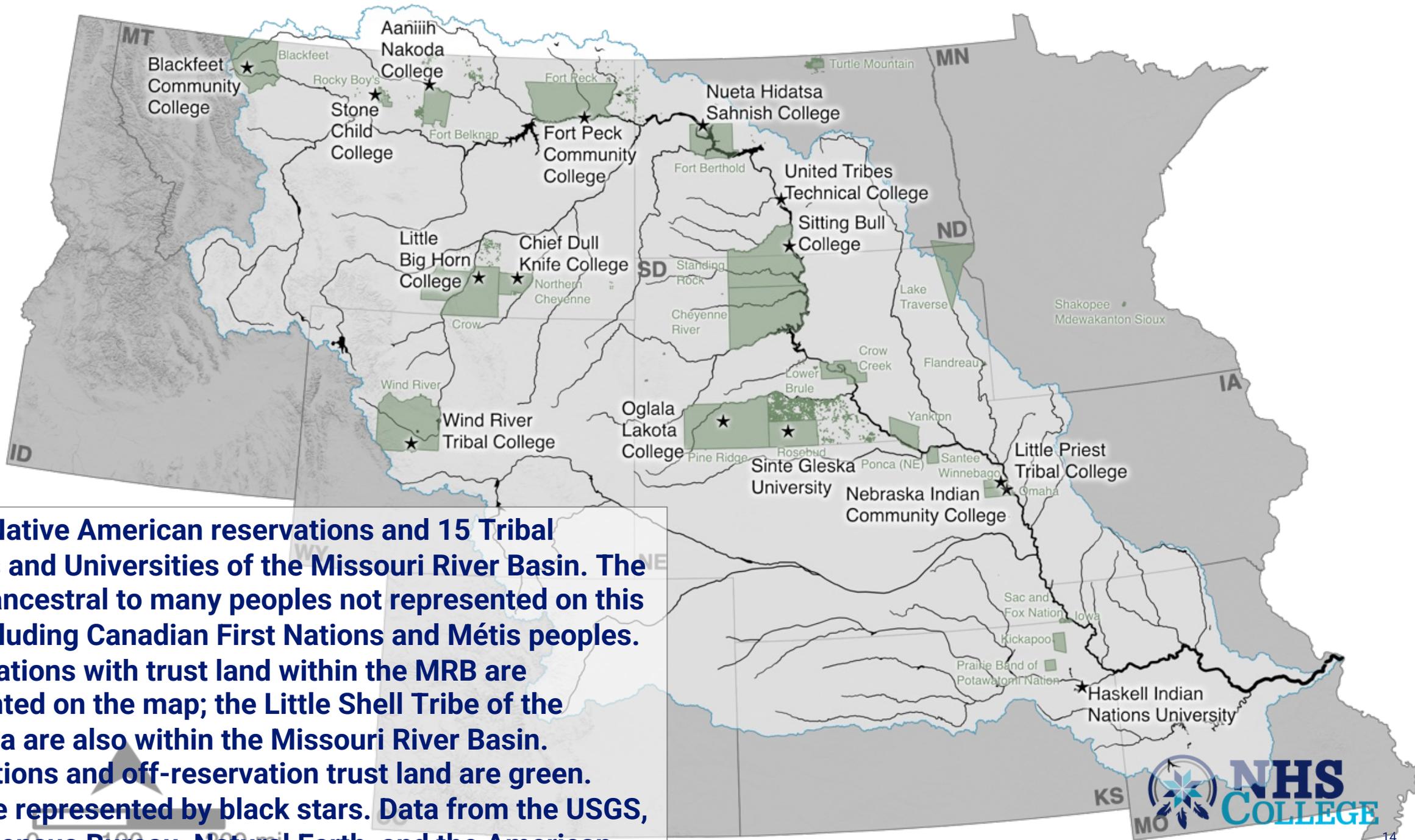
C. of the Muscogee Nation

Southwestern Indian Polytechnic Institute

Comanche Nation C.

Tohono O'odham C.C.

Ilisagvik C.



The 29 Native American reservations and 15 Tribal Colleges and Universities of the Missouri River Basin. The MRB is ancestral to many peoples not represented on this map, including Canadian First Nations and Métis peoples. Native nations with trust land within the MRB are represented on the map; the Little Shell Tribe of the Chippewa are also within the Missouri River Basin. Reservations and off-reservation trust land are green. TCUs are represented by black stars. Data from the USGS, the US Census Bureau, Natural Earth, and the American

Indigenous Data

Data, information and knowledge, in any format, that impacts Indigenous Peoples, Nations, and communities at the collective and individual levels

Our land, water, soil, plants, animals, traditional and cultural information, archives, oral histories, ancestral knowledge, stories

USINDIGENOUSDATA.ORG

Indigenous Data Sovereignty

The right of Indigenous Peoples and Nations to govern the collection, ownership, and application of their own data

Applying the 'CARE Principles for Indigenous Data Governance' to ecology and biodiversity research

Lydia Jennings, Talia Anderson, Andrew Martinez, Rogena Sterling, Dominique David Chavez, Ibrahim Garba, Maui Hudson, Nanibaa' A. Garrison & Stephanie Russo Carroll

 Check for updates

Indigenous Peoples are increasingly being sought out for research partnerships that incorporate Indigenous Knowledges into ecology research. In such research partnerships, it is essential that Indigenous data are cared for ethically and responsibly. Here we outline how the 'CARE Principles for Indigenous Data Governance' can sow community ethics into disciplines that are inundated with extractive helicopter research practices, and we provide standardized practices for evolving data and research landscapes.

Since time immemorial and across *intergenerational time scales*, Indigenous Peoples have been land stewards. Today, Indigenous Peoples govern about 40% of the most biodiverse terrestrial lands globally¹. Indigenous rights and title to land – paired with place-based knowledges – make Indigenous governance critical to the stewardship of global biodiversity and ecosystem services².

Indigenous Peoples have tracked climate change, changes in species composition and ecosystems for millennia, and are increasingly being sought out for research partnerships that incorporate Indigenous Knowledges (such as Traditional Ecological Knowledge, Traditional Knowledges and Indigenous Ecological Knowledges)³. However, settler colonial research and data collection methods often extract, distort and apply Indigenous Knowledges inappropriately, without meaningful recognition of Indigenous rights and responsibilities in relation to Indigenous data⁴. This can result in poor-quality data, restricted access to data and the inability to make evidence-supported decisions.

This Comment advocates for applying Indigenous stewardship methods over traditional and contemporary knowledges. The concepts described in this Comment inform practitioners of ecological disciplines about the data rights of Indigenous Peoples in digital environments. These recommendations support inherent sovereignty and reaffirm the United Nations Declaration on the Rights of Indigenous Peoples⁵.

Increase in demand for Indigenous Knowledges

Although engagement with data from Indigenous Knowledges has increased, most scientific training neglects the data rights, data

relationships and ethics protocols that Indigenous communities have regarding their knowledge systems. Researchers will benefit from recognizing that Indigenous Data Sovereignty can be exercised only by Indigenous Peoples as rights holders through the retention and control of their data⁶. Indigenous Data Sovereignty expands Indigenous jurisdiction to non-geographically bound relational contexts, including digital environments. Indigenous Data Sovereignty can be implemented through Indigenous Data Governance, which harnesses the values, applications, traditions and roles that communities have for the care and use of their knowledges⁷. Here we offer guidance for researchers, academic institutions, industry and data repositories on how Indigenous Data Sovereignty can be supported by embedding Indigenous Data Governance into mainstream data infrastructures, policies and practices within the fields of biodiversity and ecology.

Concerns in the era of open science. With increasing calls for open science, the FAIR (findable, accessible, interoperable and reusable) Principles aim to increase data usability and accessibility⁸. Applications of FAIR Principles have the potential to neglect the rights of Indigenous Peoples and their protocols for cultural, spiritual and ecological information⁹. Extractive data collection methods¹⁰ and open data practices¹⁰ can create tensions regarding sensitive Indigenous Knowledges¹¹.

Legal rights to reproduce or publish information raise questions about who the principal stewards and beneficiaries of Indigenous Knowledges are within databases, especially as large regional and global datasets merge multiple data sources – often losing the local intentionality of the data¹². As Indigenous Peoples continually seek methods to protect and control their knowledges (including data that are stewarded by nontribal entities such as governments, nonprofit organizations, universities and researchers), the question emerges of how scientists can embed the rights, interests, expectations and responsibilities of Indigenous Peoples into the creation of information infrastructures to enhance Indigenous governance of Indigenous data.

CARE principles

To address open science concerns and limited opportunities for Indigenous control, scholars developed the 'CARE [collective benefit, authority to control, responsibility and ethics] Principles for Indigenous Data Governance'¹³. The CARE principles (Fig. 1) guide data actors to include Indigenous Peoples in data governance to increase their access to, use of and benefit from data¹⁴.

The CARE principles shift the focus of data governance from consultative to values-based relationships and have enriched the discussion of collective rights that Indigenous Peoples assert in data¹⁵.







**GRATITUDE + RECIPROCITY = INTELLECTUAL HUMILITY
(HEARTWORK)**

Dr. Michelle Montgomery, 2023