

Developing a Flood and Drought Early Warning Network for the Upper Missouri River Basin

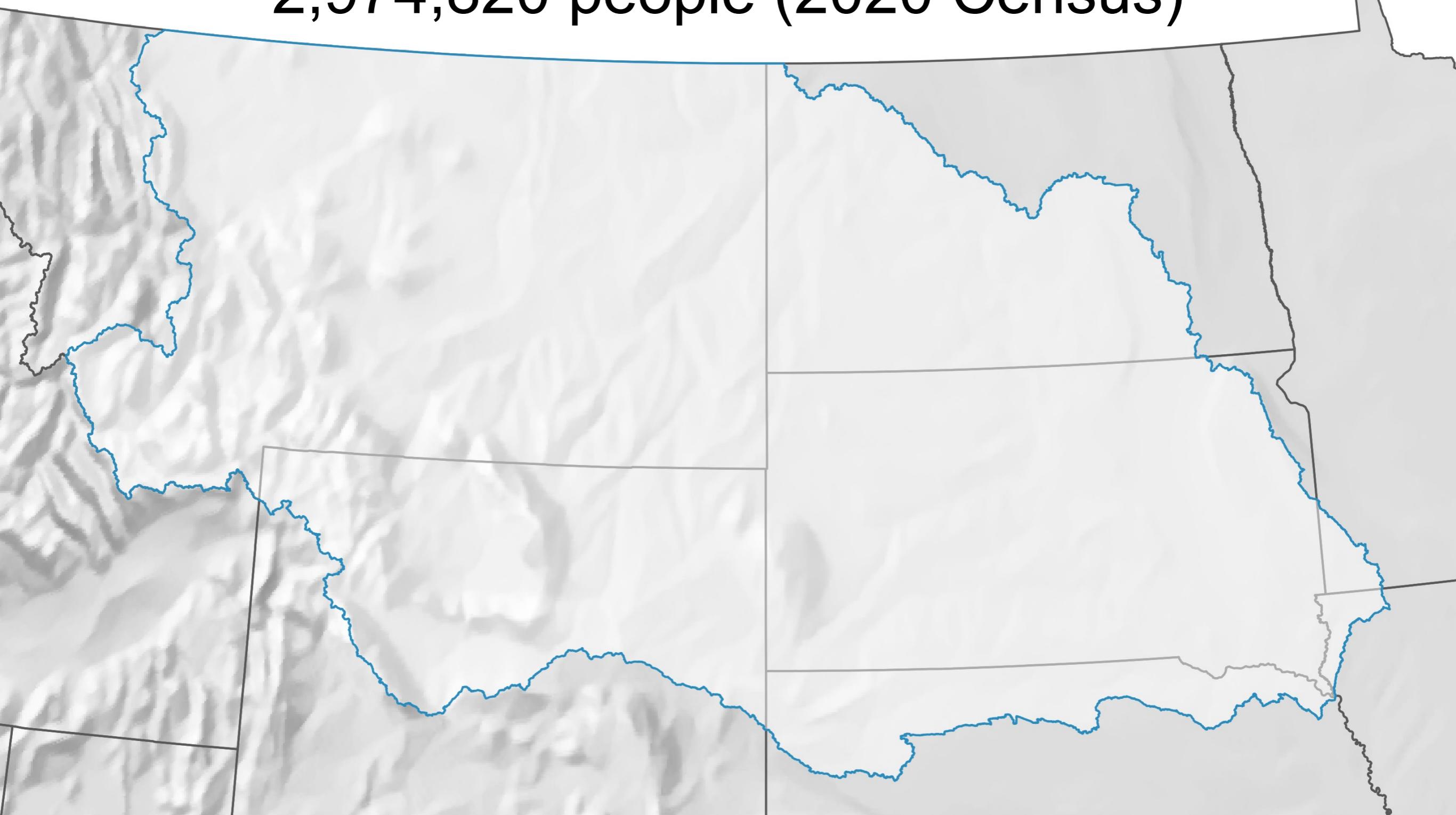
Seeking TCU Collaboration

Kyle Bocinsky
Director of Climate Extension
Montana Climate Office
University of Montana

Upper Missouri River Basin

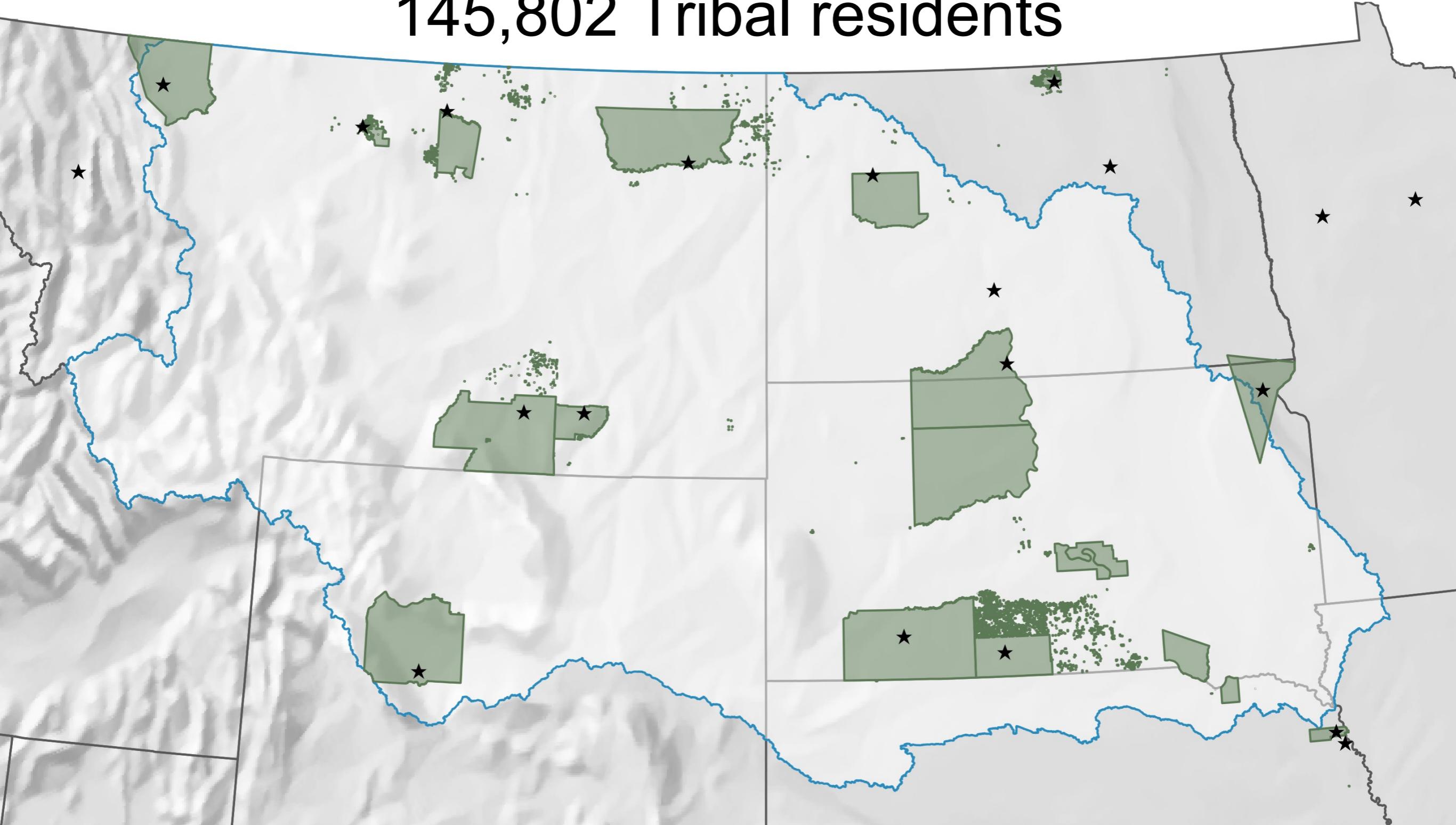


302,000 square miles
2,974,820 people (2020 Census)



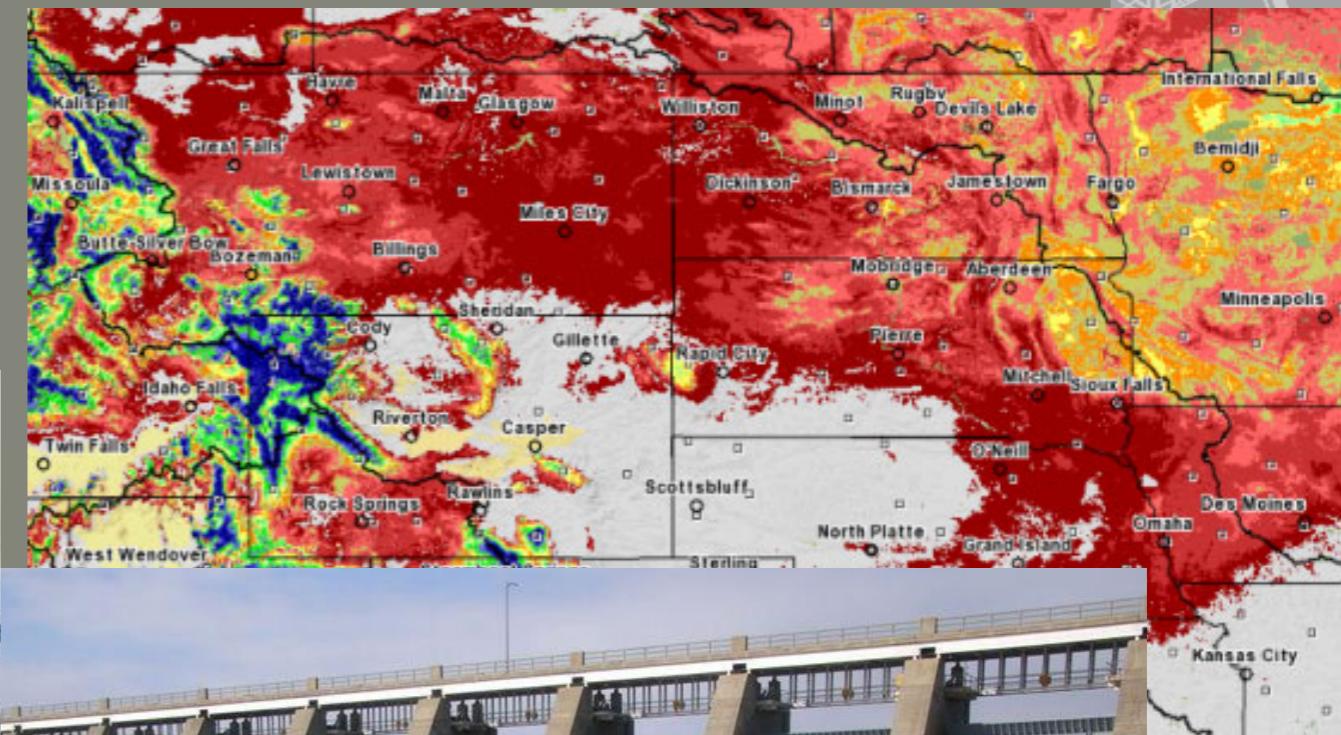
21 Tribal Reservations

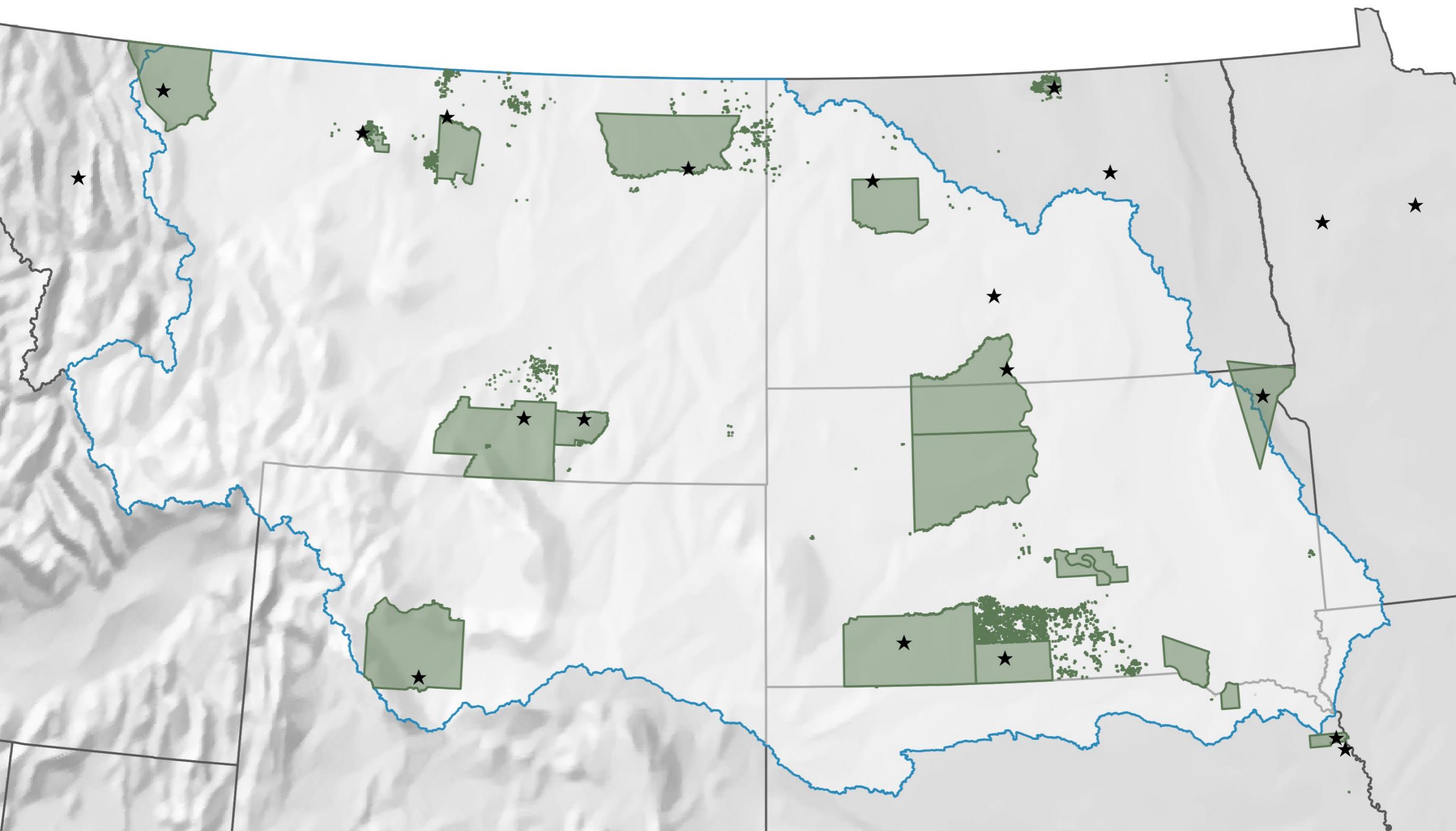
145,802 Tribal residents



UPPER MISSOURI RIVER BASIN PLAINS SNOWPACK & SOIL MOISTURE MONITORING NETWORK

USACE Omaha District





Montana Climate Office

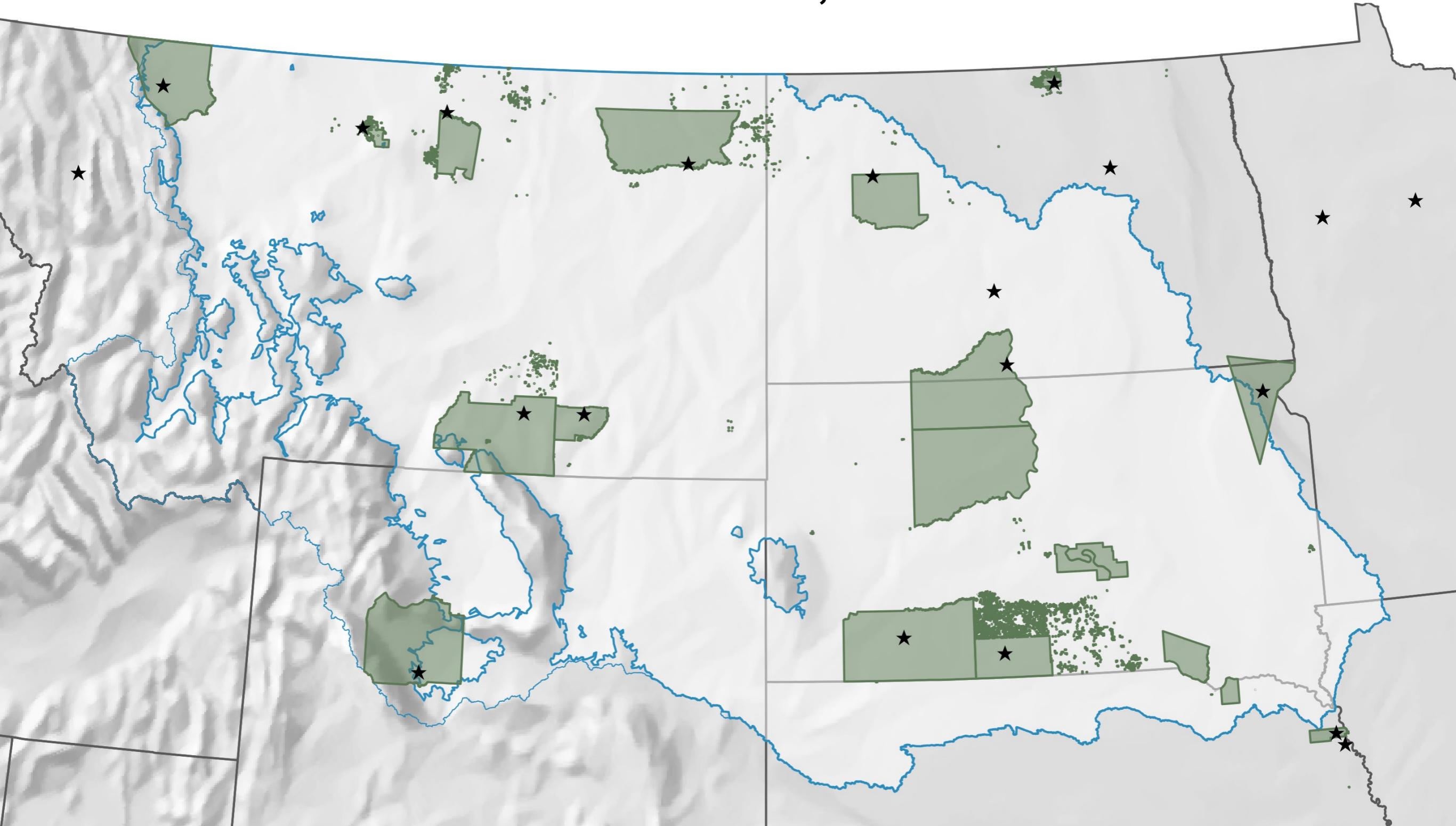


Kyle Bocinsky, Montana Climate Office

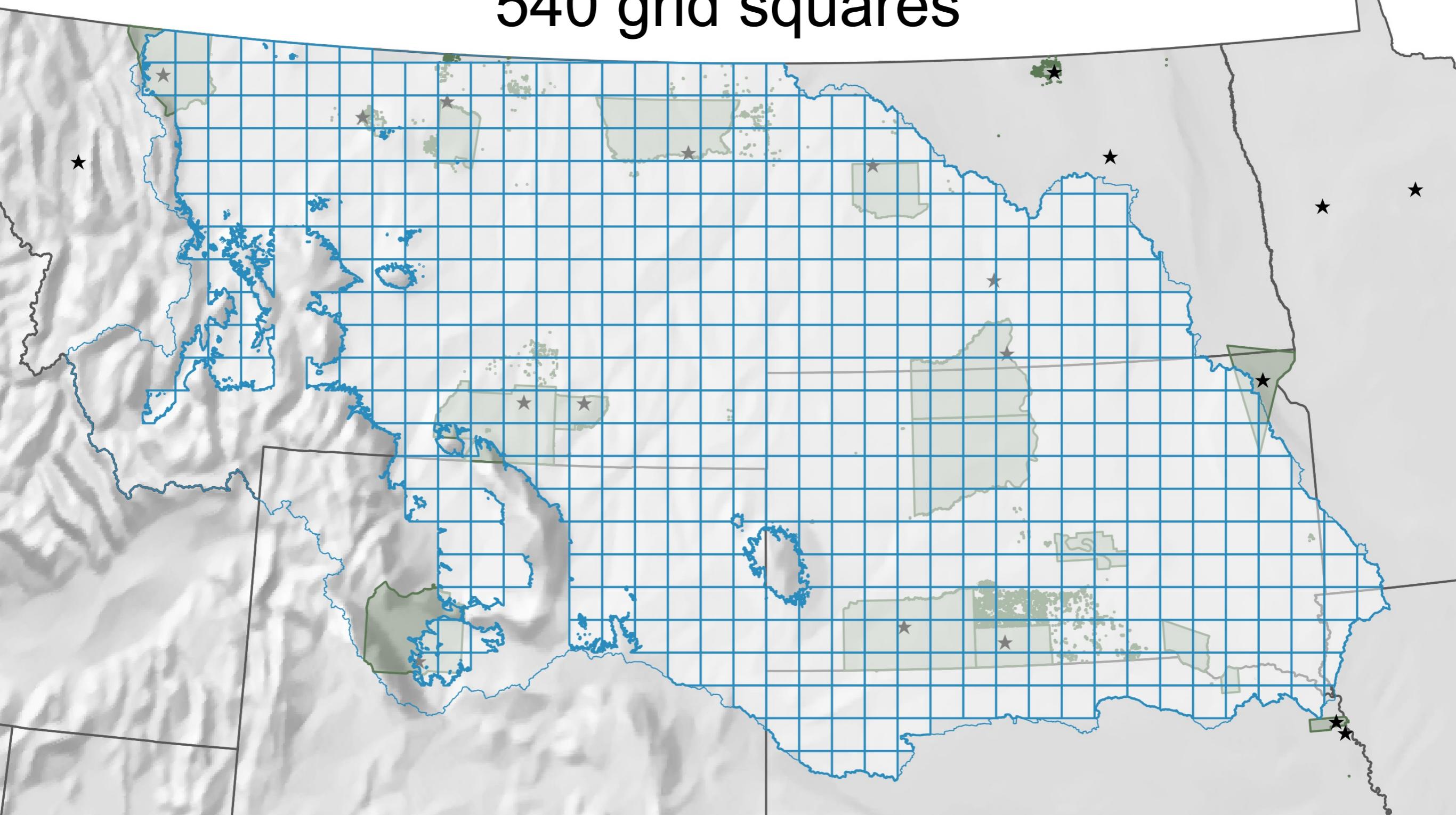
UMRB Flood and Drought Early Warning: Seeking TCU Collaboration

AIHEC UMRB Meeting, February 18, 2022

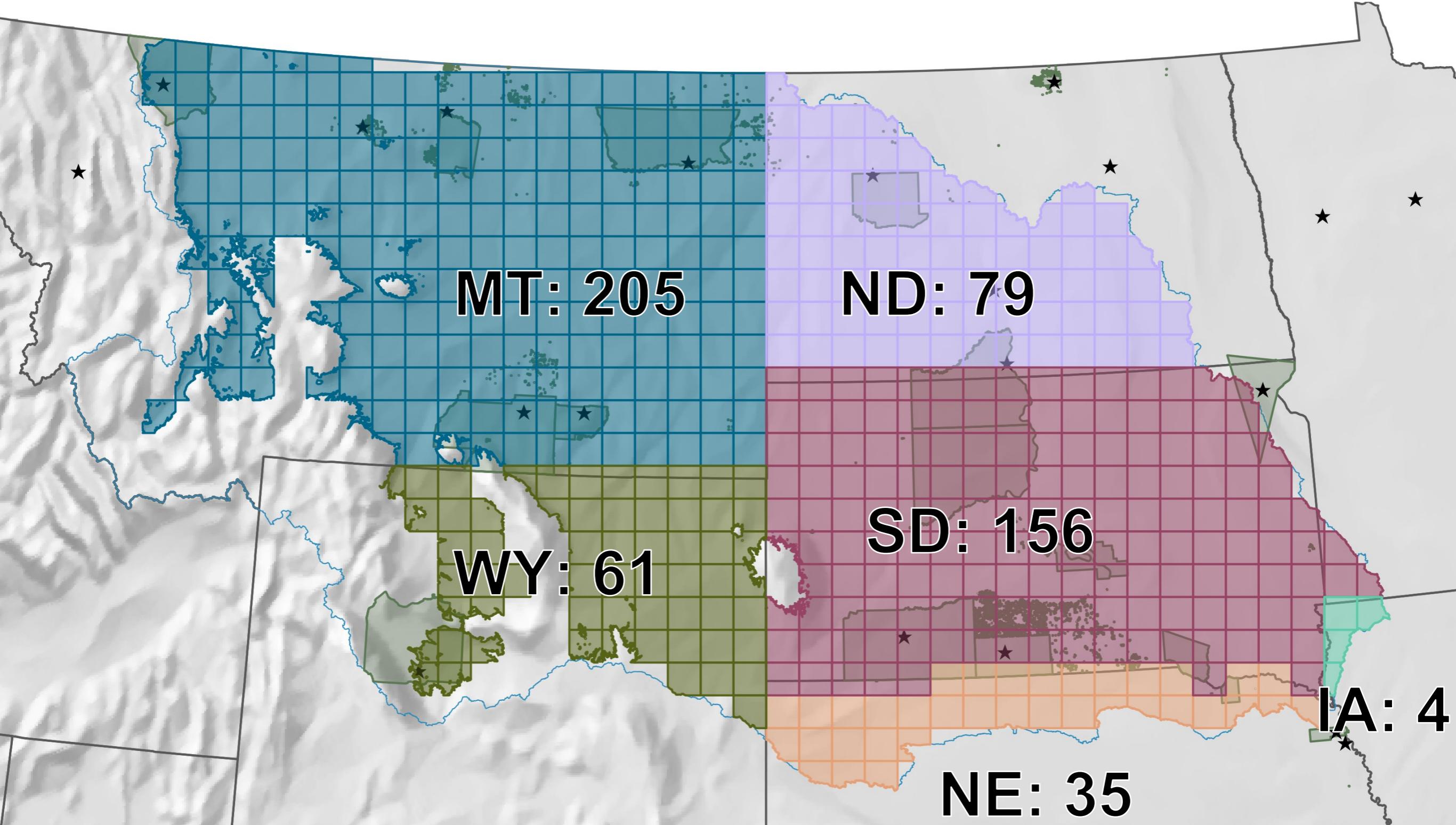
UMRB below 5,500 feet



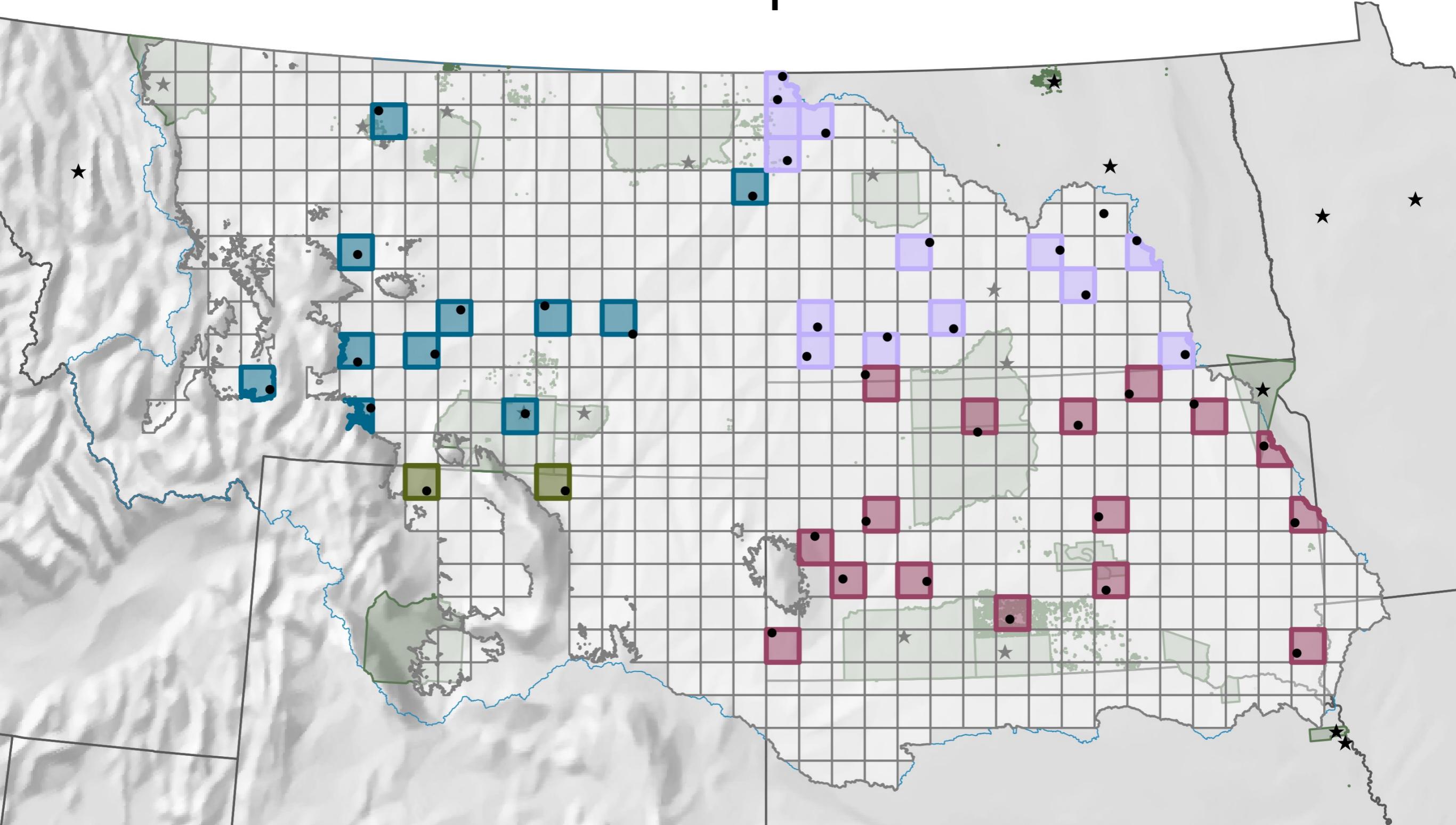
500 square mile grid 540 grid squares



6 State Mesonets



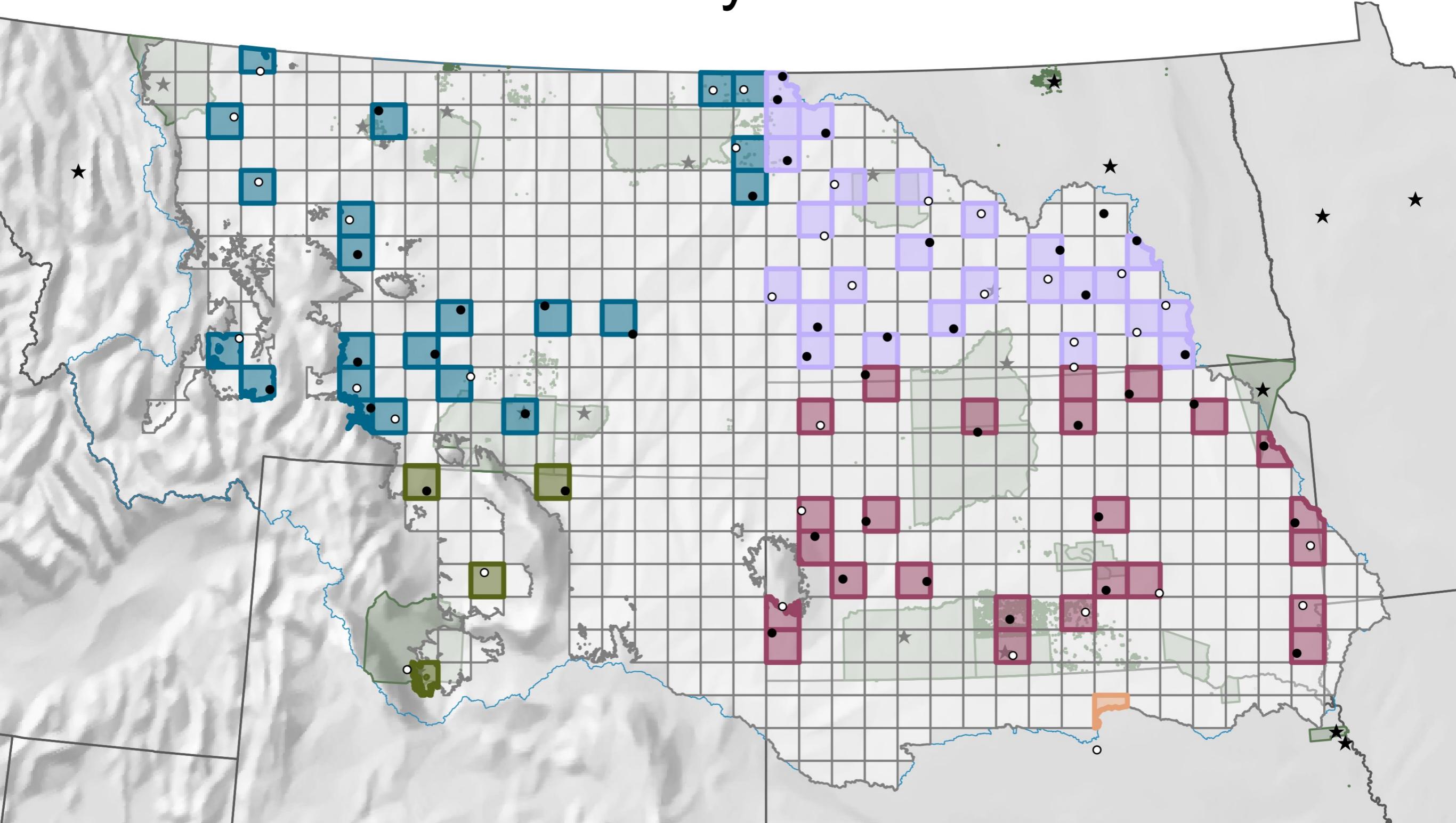
43 stations operational



Station Status • Operational ○ Summer 2022 △ Summer 2023

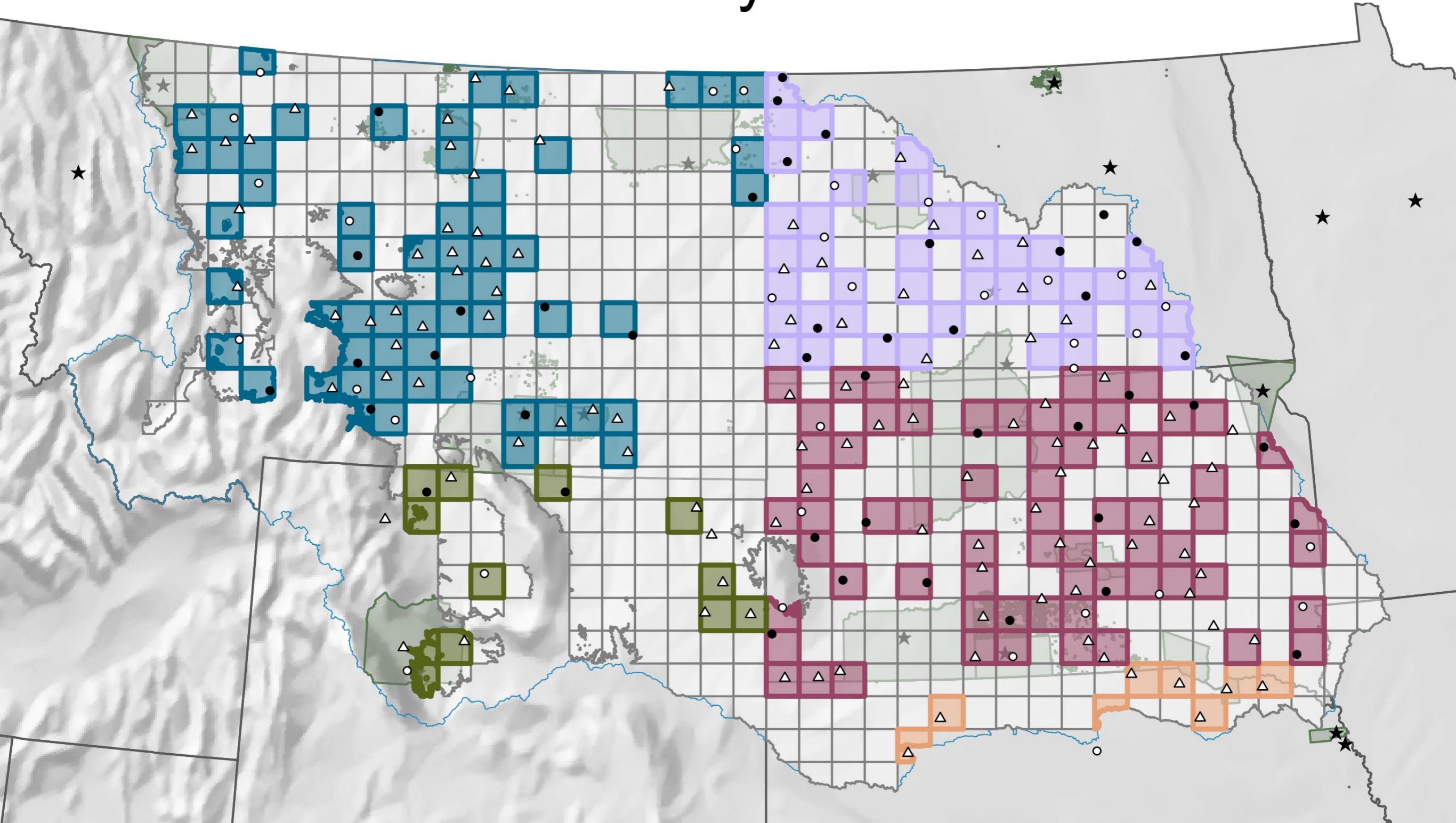


78 stations by winter 2022

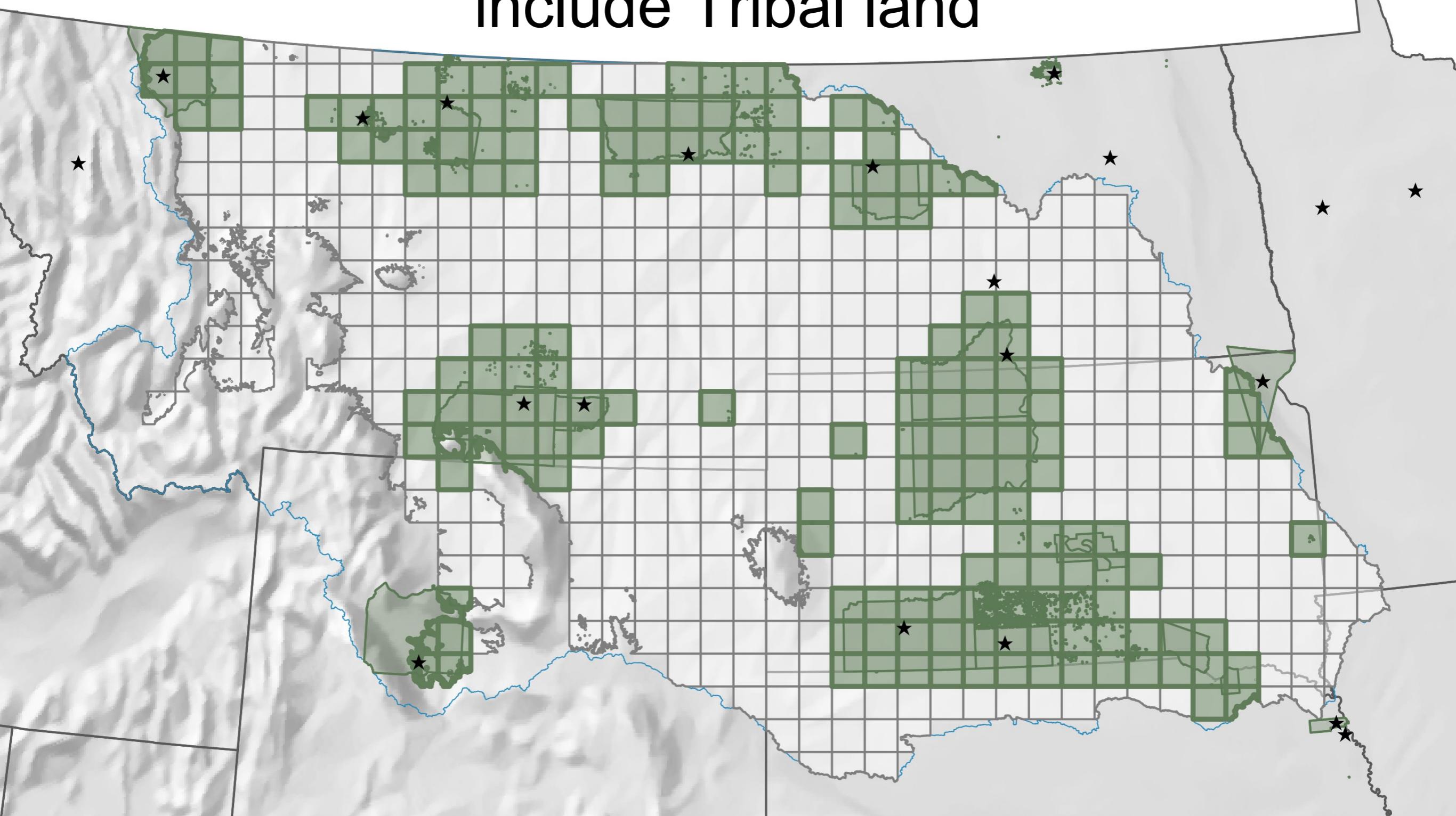


Station Status • Operational ○ Summer 2022 △ Summer 2023

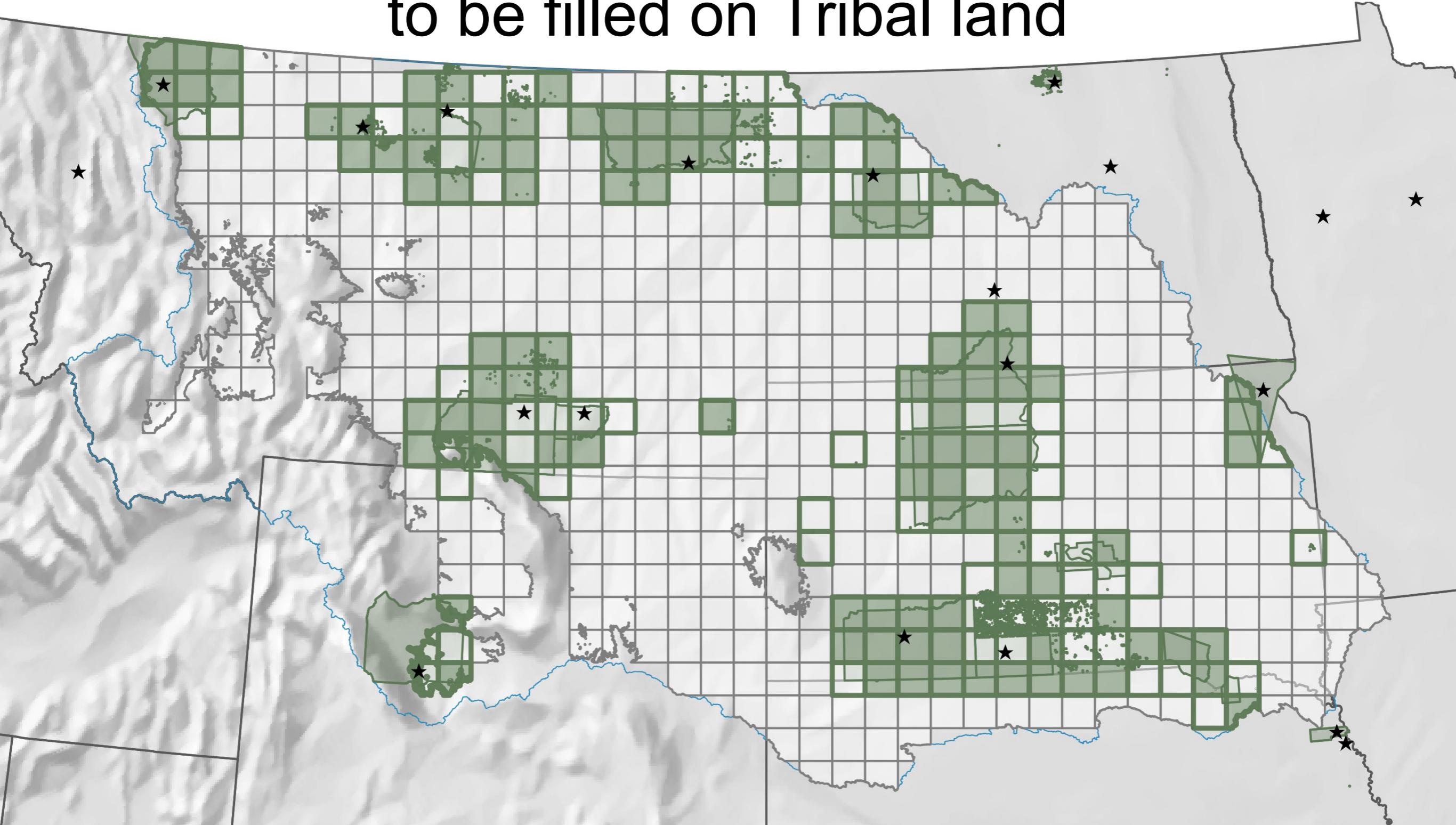
191 stations by winter 2023



174 grid squares include Tribal land

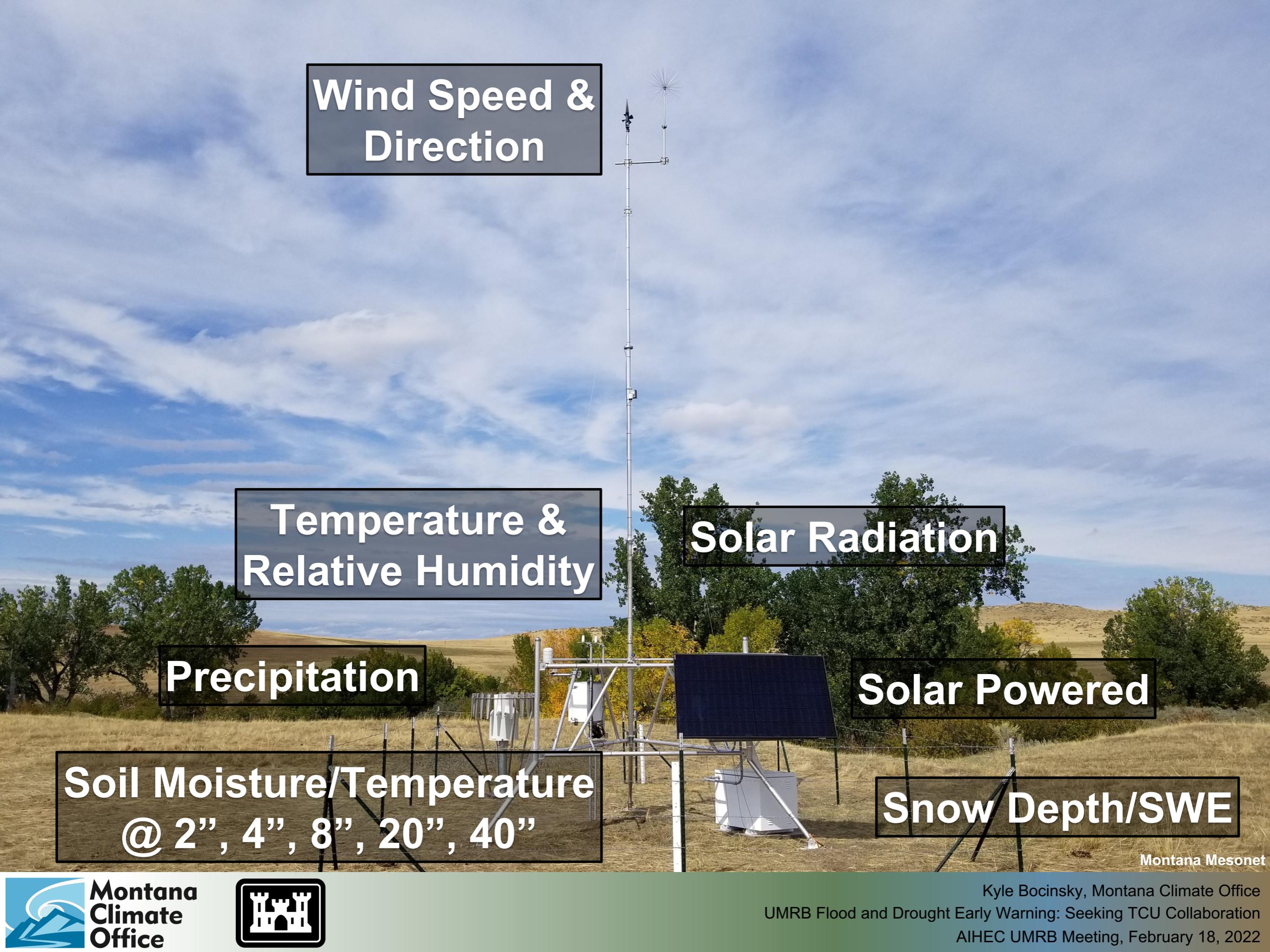


114 potential grid squares to be filled on Tribal land





Montana Mesonet



Wind Speed & Direction

Temperature & Relative Humidity

Precipitation

Soil Moisture/Temperature
@ 2", 4", 8", 20", 40"

Solar Radiation

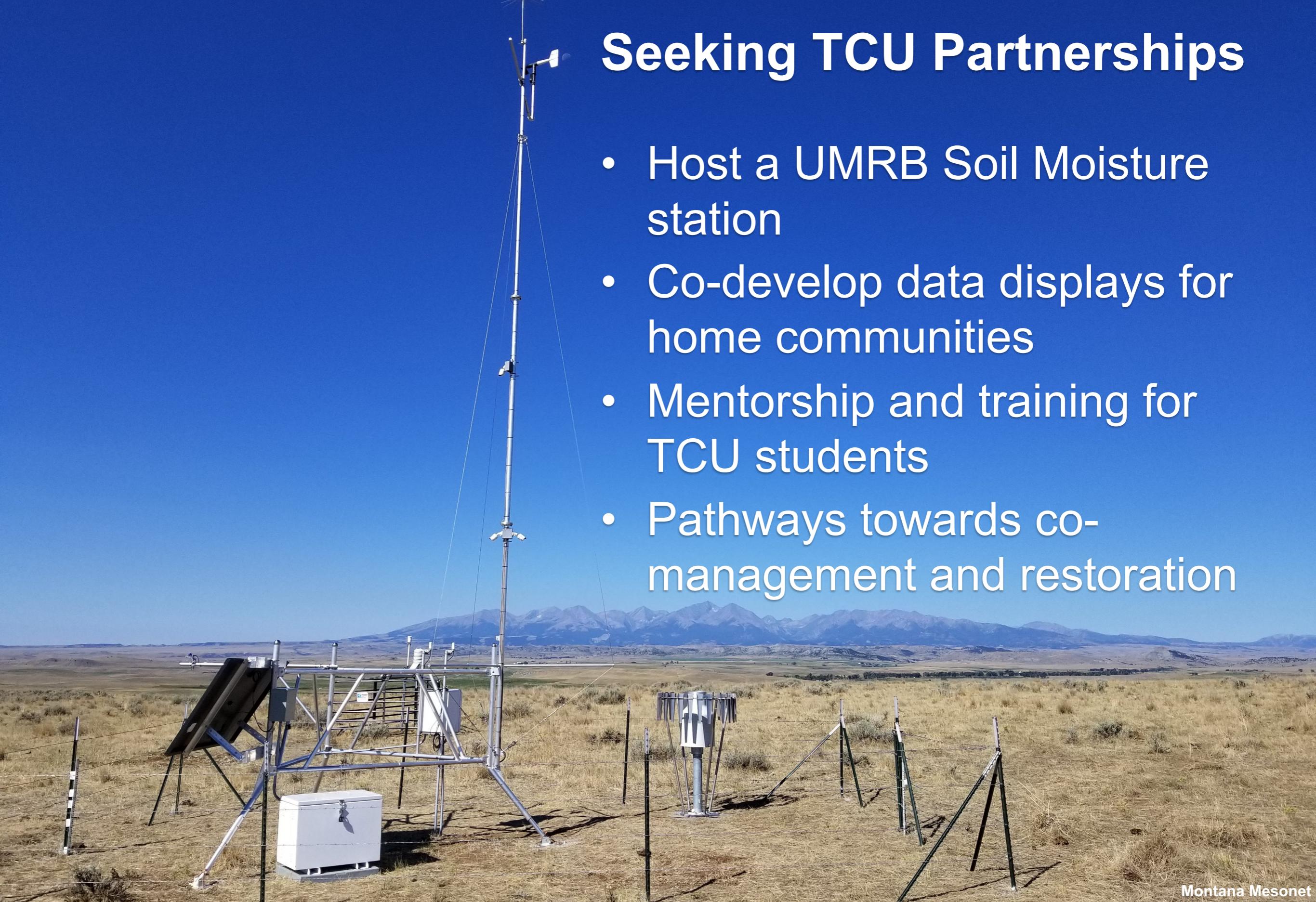
Solar Powered

Snow Depth/SWE

Montana Mesonet

Seeking TCU Partnerships

- Host a UMRB Soil Moisture station
- Co-develop data displays for home communities
- Mentorship and training for TCU students
- Pathways towards co-management and restoration



Montana Mesonet



Thank You!

Questions?

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Montana Mesonet