USDA

United States Department of Agriculture

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Natural Resources Conservation Service

Current Projects to Improve Grazing Land Assessments and Planning

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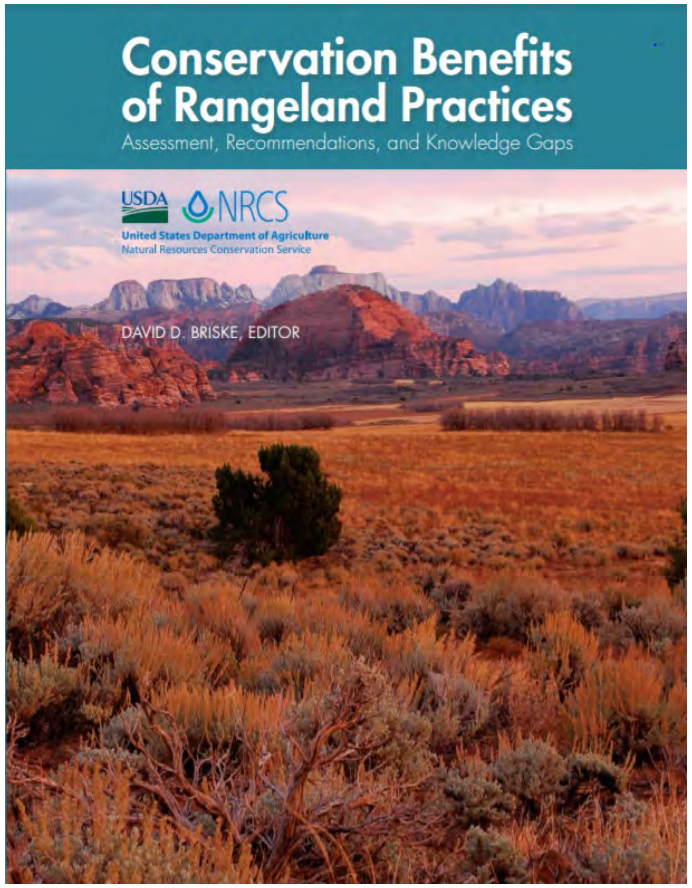
Natural Resources Conservation Service

nrcs.usda.gov/

Literature Synthesis, 2011



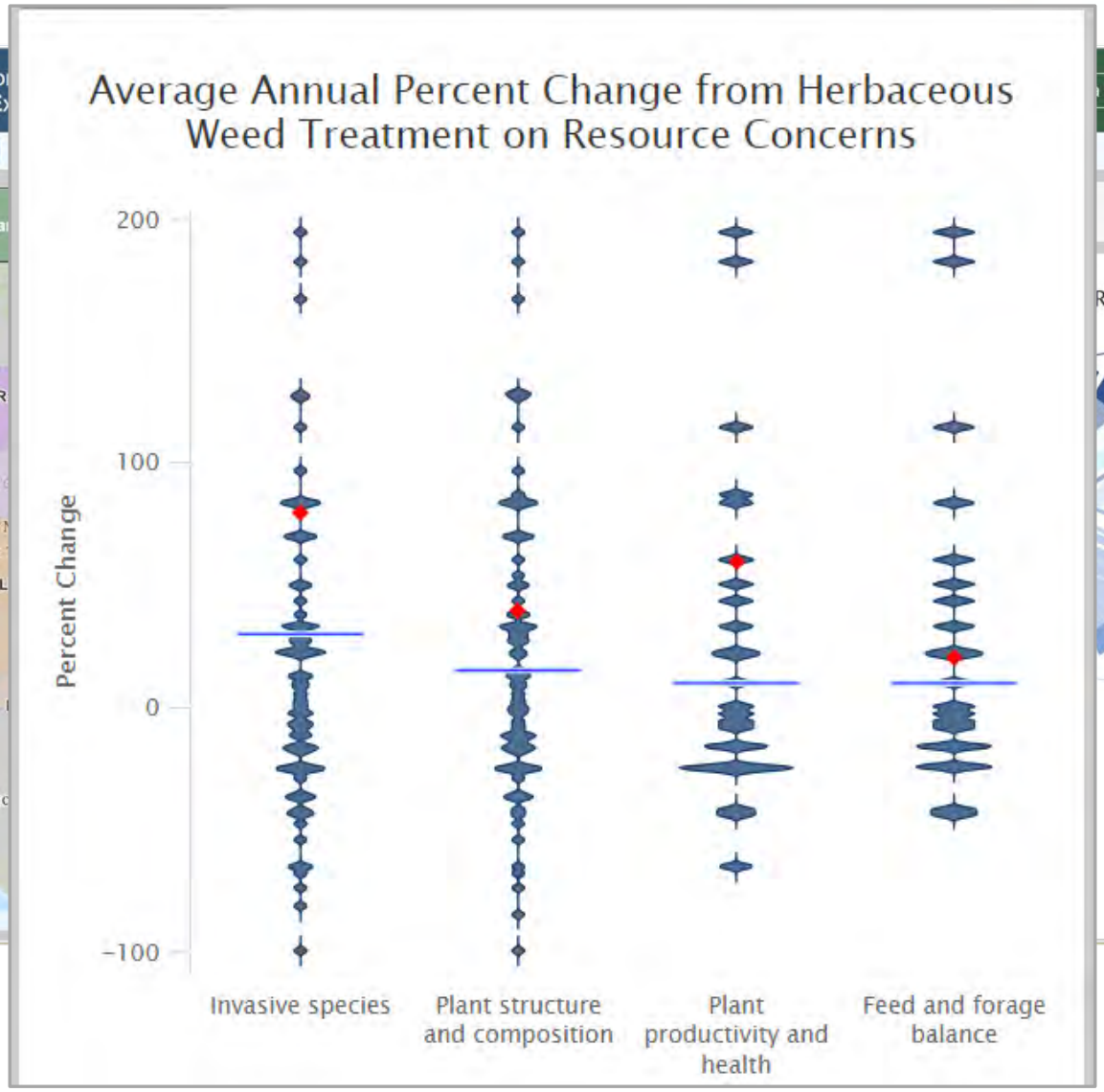
- Alignment of Practice Purpose statements with Science?
  - Prescribed Grazing
  - Prescribed Burning
  - Brush Management
  - Range Planting
  - Riparian Herbaceous Cover
  - Upland Wildlife Habitat Management
  - Herbaceous Weed Control
- Findings:
  - Broadly supports many NRCS purpose statements.
  - Unable to determine magnitude or trend of conservation benefits.
  - More long-term studies needed.

"This synthesis provides a foundation upon which the next generation of rangeland conservation practice standards can be designed and implemented."

CORE – Conservation Outcomes Research Explorer

- Query research findings that have been linked to:
  - Resource Concern Categories
  - Conservation Practices
- Provides:
  - Annual Percent-Change Rates extracted from research studies.
  - Probabilities and Uncertainty of conservation treatments.
  - Plots of research results vs. NRCS Practice Points and CPPE values.
- Can be used for:
  - CEAP for assessments and ecosystem service valuation work.
  - Updating practice standards.
  - Target the most effective treatment types.
  - Capture probable direction and magnitude of change.
  - Bunches of stuff!

CORE – Conservation Outcomes Research Explorer

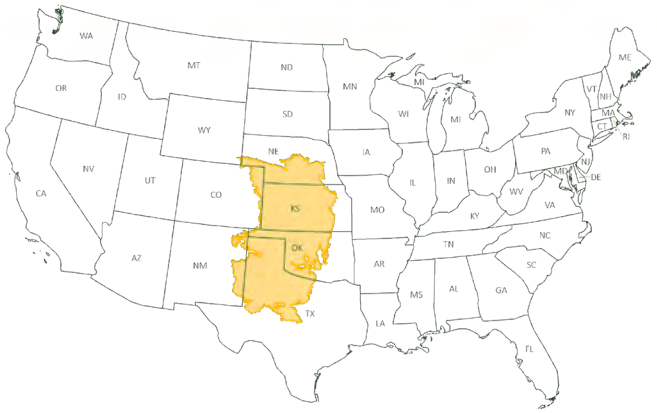


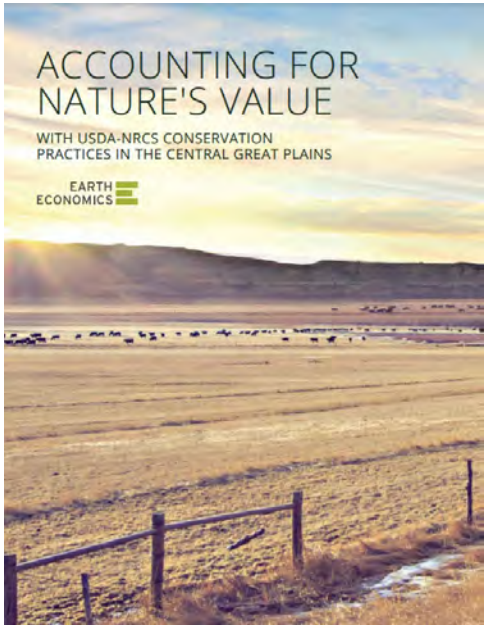
Draft; Subject to Change

Ecosystem Service Valuation on Rangelands

TABLE 9. ECOSYSTEM SERVICE AND GENERAL LANDCOVER COMBINATIONS VALUED IN THE STUDY AREA

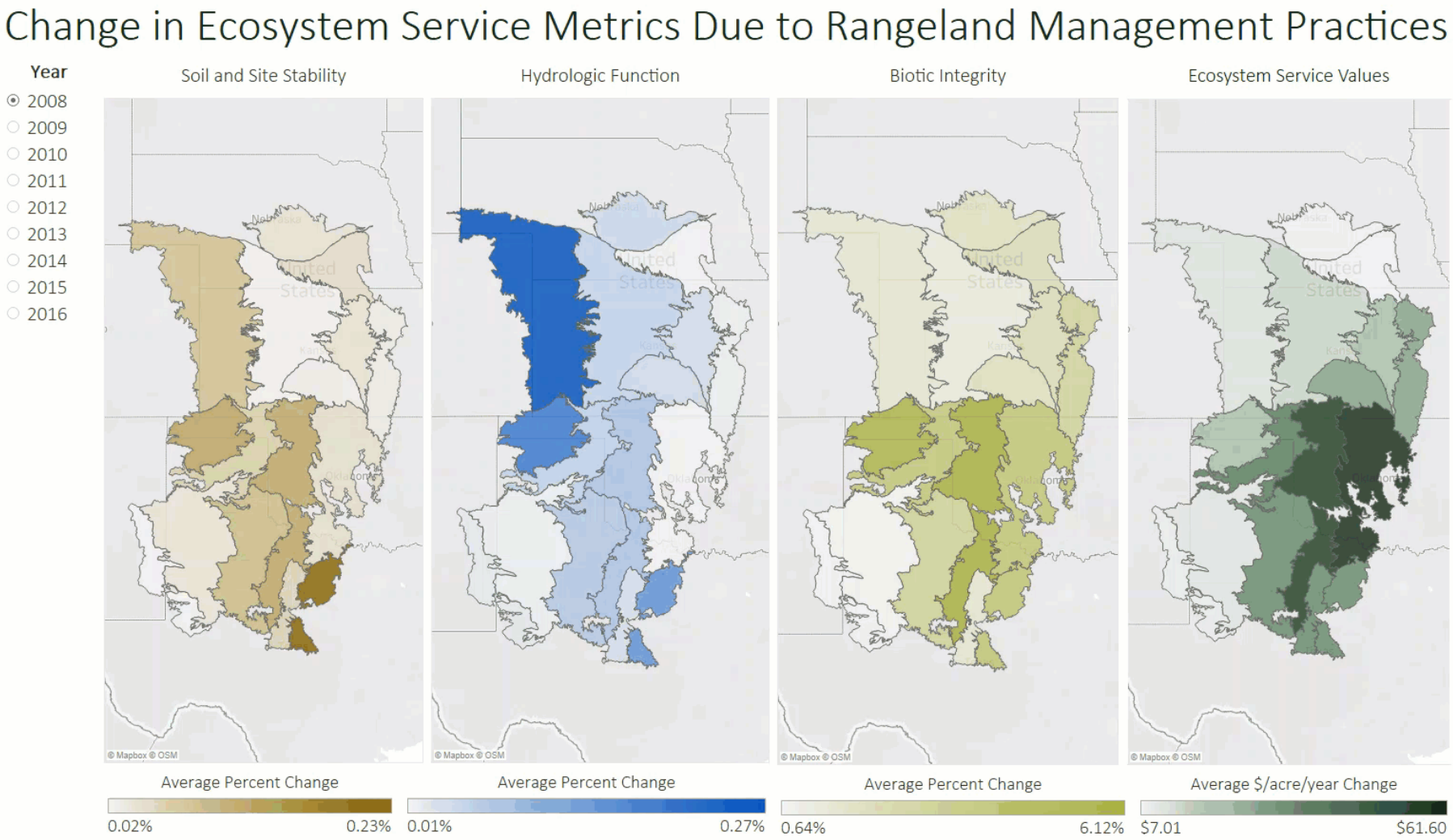
ECOSYSTEM SERVICES VALUED IN THIS STUDY	GRASSLAND	SHRUBLAND	WETLAND
Aesthetic Information	•		
Air Quality	•	•	
Biological Control	•		
Climate Stability	•	•	•
Disaster Risk Reduction	•		•
Habitat	•		•
Recreation & Tourism	•	•	•
Soil Retention	•		•
Soil Quality			•
Water Capture, Conveyance, & Supply			•
Water Quality	•		•
Water Storage			•





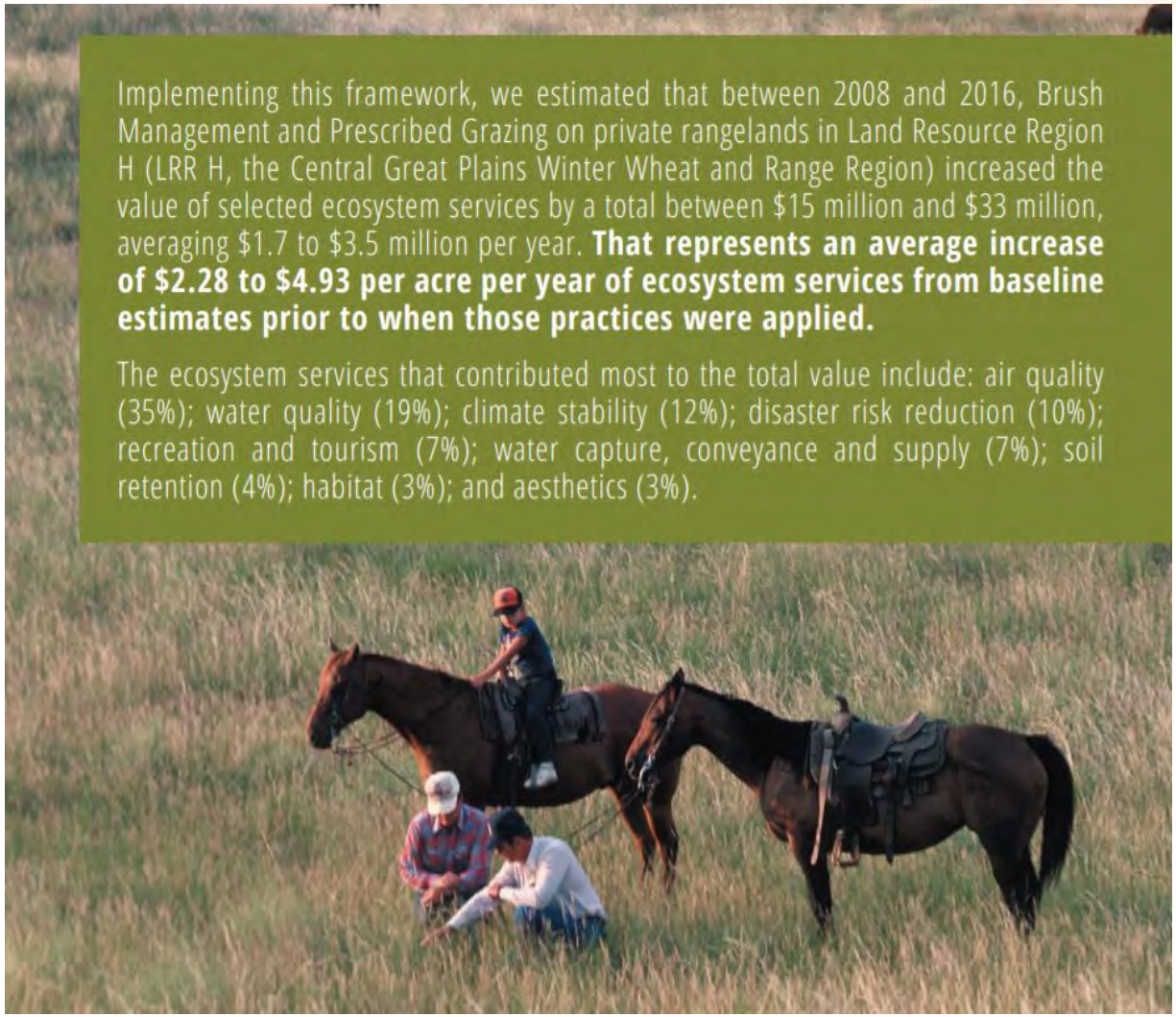
52-page electronic report

Ecosystem Service Valuation on Rangelands



https://www.eartheconomics.org/conservation-and-communities

Ecosystem Service Valuation on Rangelands



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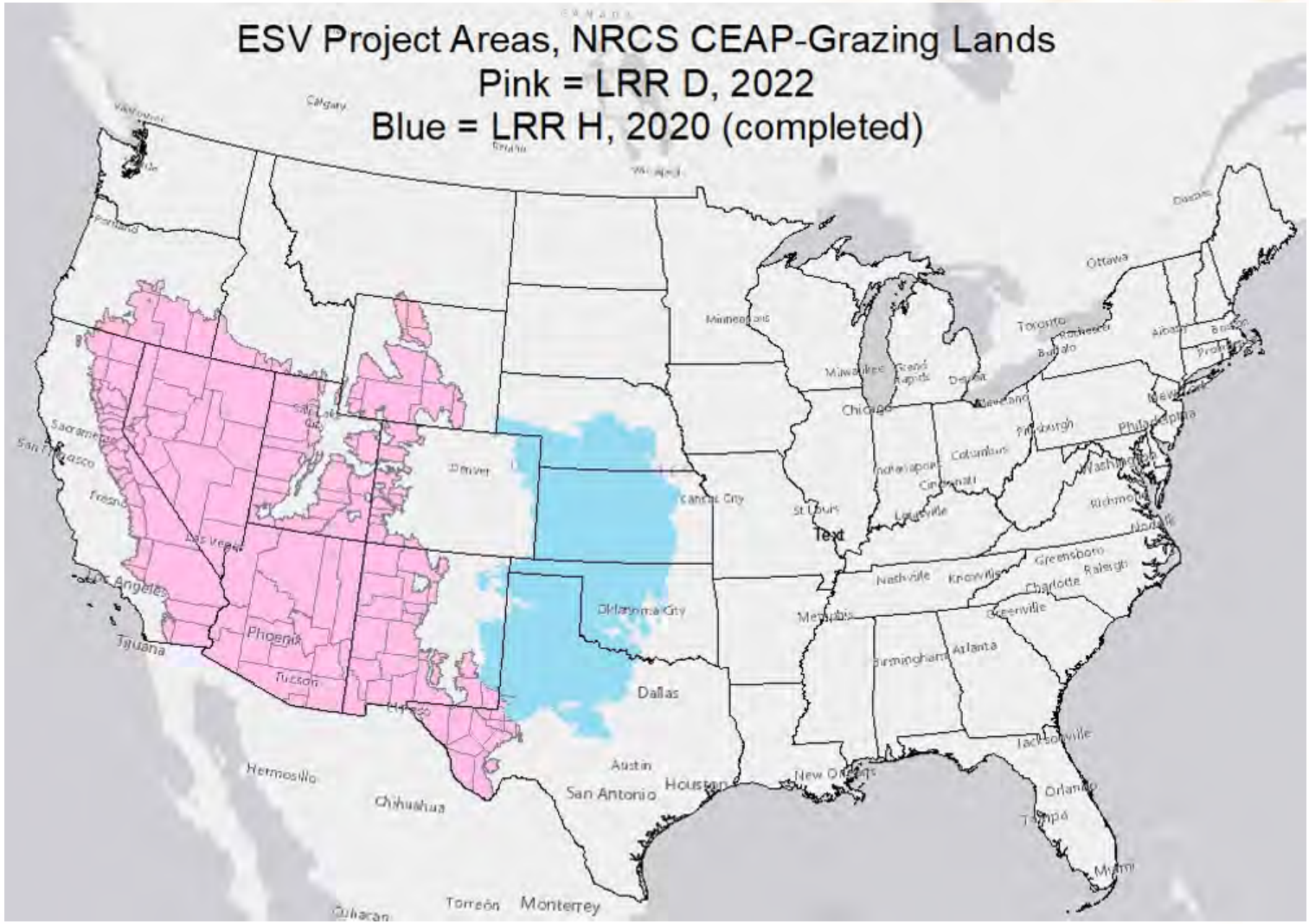
Ecosystem Service Valuation on Rangelands



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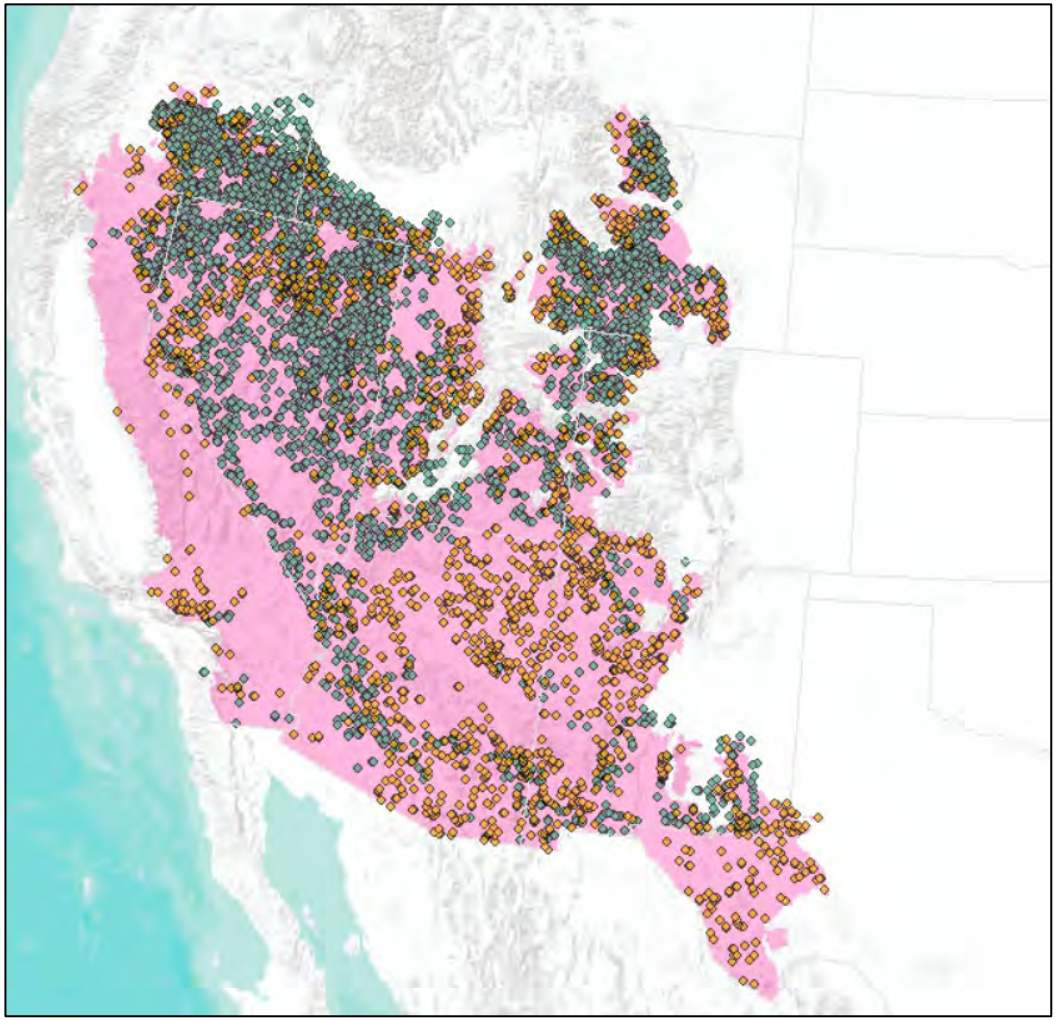
Ecosystem Service Valuation on Rangelands



Orange dots are NRI on non-federal rangeland.

Green dots are BLM on their rangeland.

156% more data points with BLM included.

Average of $171 million/year EQIP spent on federal lands.

https://www.eartheconomics.org/conservation-and-communities

Tools for Grazing Land Users

rSVI – rangeland Soil Vulnerability Index

rSVI (water)
rSVI (wind)

- Conservation planning layer to identify risk potentials for water and wind erosion on rangelands. Bare soil analysis (100% bareground).

- Uses official soil data from NRCS, RHEM (Rangeland Hydrology and Erosion Model) water erosion model runs, and wind erosion modeling with the Aeolian Erosion (AERO) model.

- Key soil properties used to determine soil vulnerability:
  - Surface Texture, both mineral and organic
  - Percent Slope
  - Percent Surface Rock Cover

- Integrated into planning and assessment tools such as CART to help identify vulnerable rangeland soils for more targeted and effective conservation delivery.

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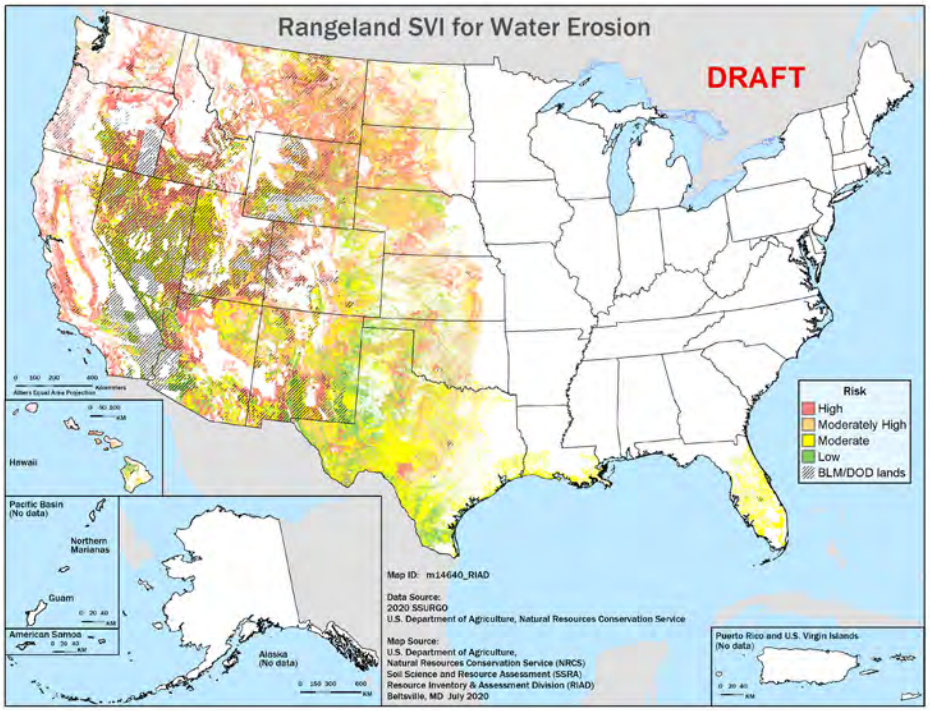
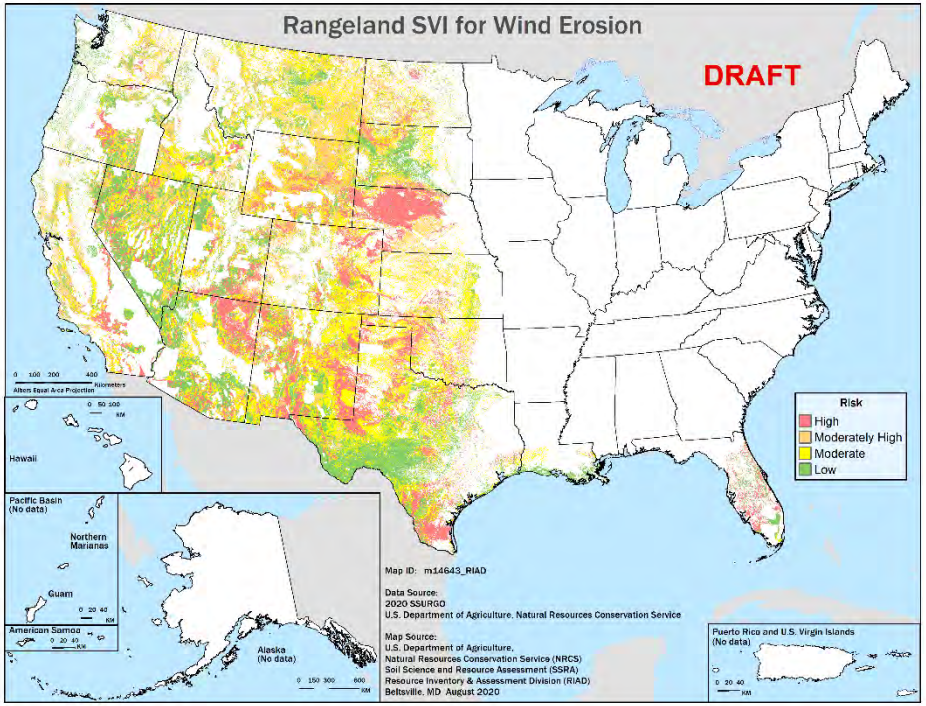


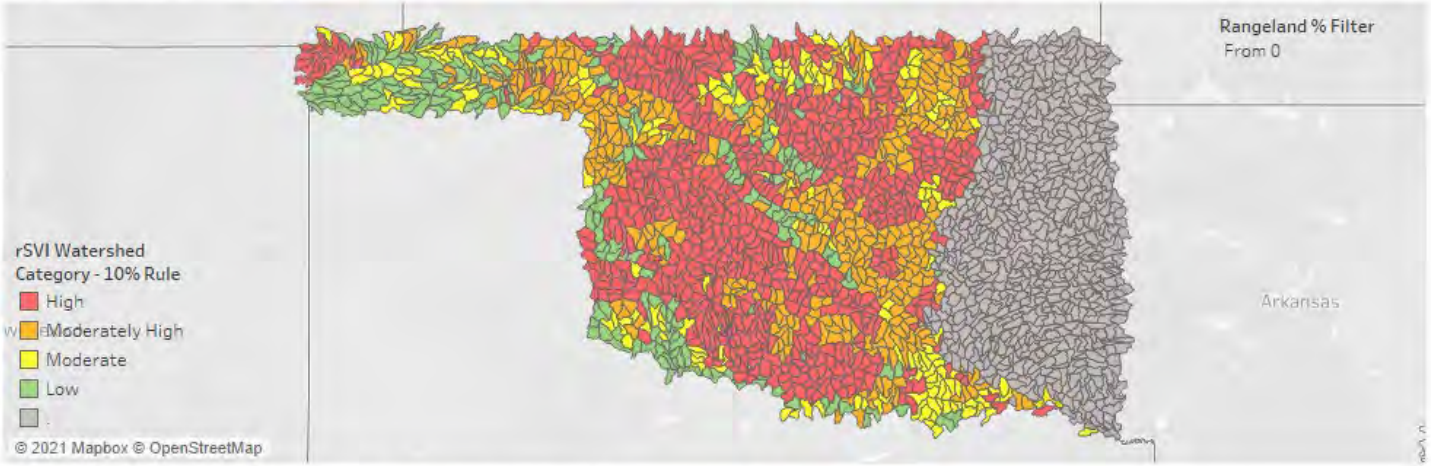


Pardon the Oklahoma maps!... You get the jist.

rSVI – rangeland Soil Vulnerability Index *rSVI (water)*

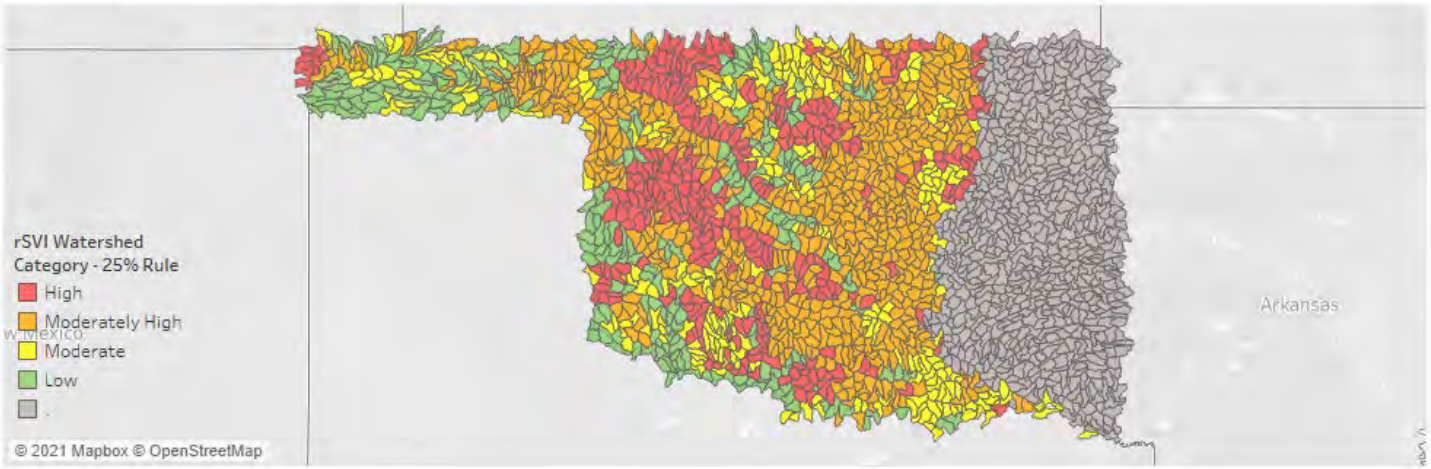
rSVI for Water Erosion - HUC12 Watershed Category 10% High Rule

Note: The rSVI for water erosion HUC12 watershed category is based on the 10% high rule - If 10% or more of the rangeland within a watershed is "High", then that watershed category is "High". If not, then the majority category is assigned.



rSVI for Water Erosion - HUC12 Watershed Category 25% High Rule

Note: The rSVI for water erosion HUC12 watershed category is based on the 25% high rule - If 25% or more of the rangeland within a watershed is "High", then that watershed category is "High". If not, then the majority category is assigned.



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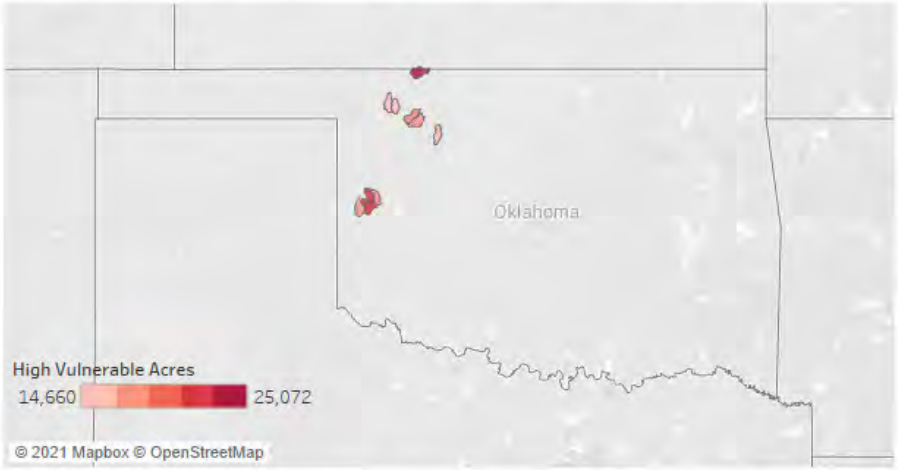
rSVI – rangeland Soil Vulnerability Index *rSVI (water)*

Rangeland % Filter
From 0

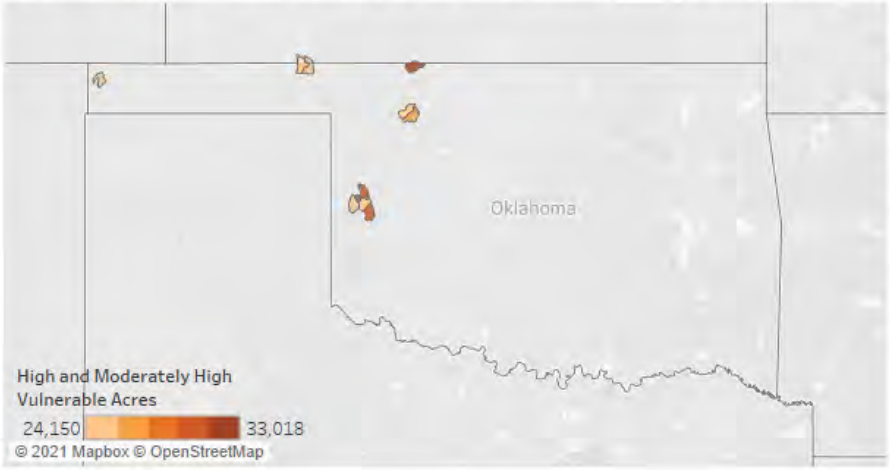
Top # of Watersheds
10

rSVI for Water Erosion - High Vulnerable Acres by HUC12



Huc12	Name	
110600020303	Yellowstone Creek	25,072
111303010304	Wild Horse Creek-Washita River	22,415
111303010307	Beaverdam Creek-Washita River	20,914
111303010302	Sergeant Major Creek-Washita R..	18,471
111303010502	Ninemile Creek	17,921
110500010505	Cuddy Creek-West Creek	17,172
110500010502	Ames Reservoir-Sand Creek	17,104
110500010401	Upper Traders Creek	15,282
110500010703	Barney Creek	14,680
110500010204	Sleeping Bear Creek	14,660

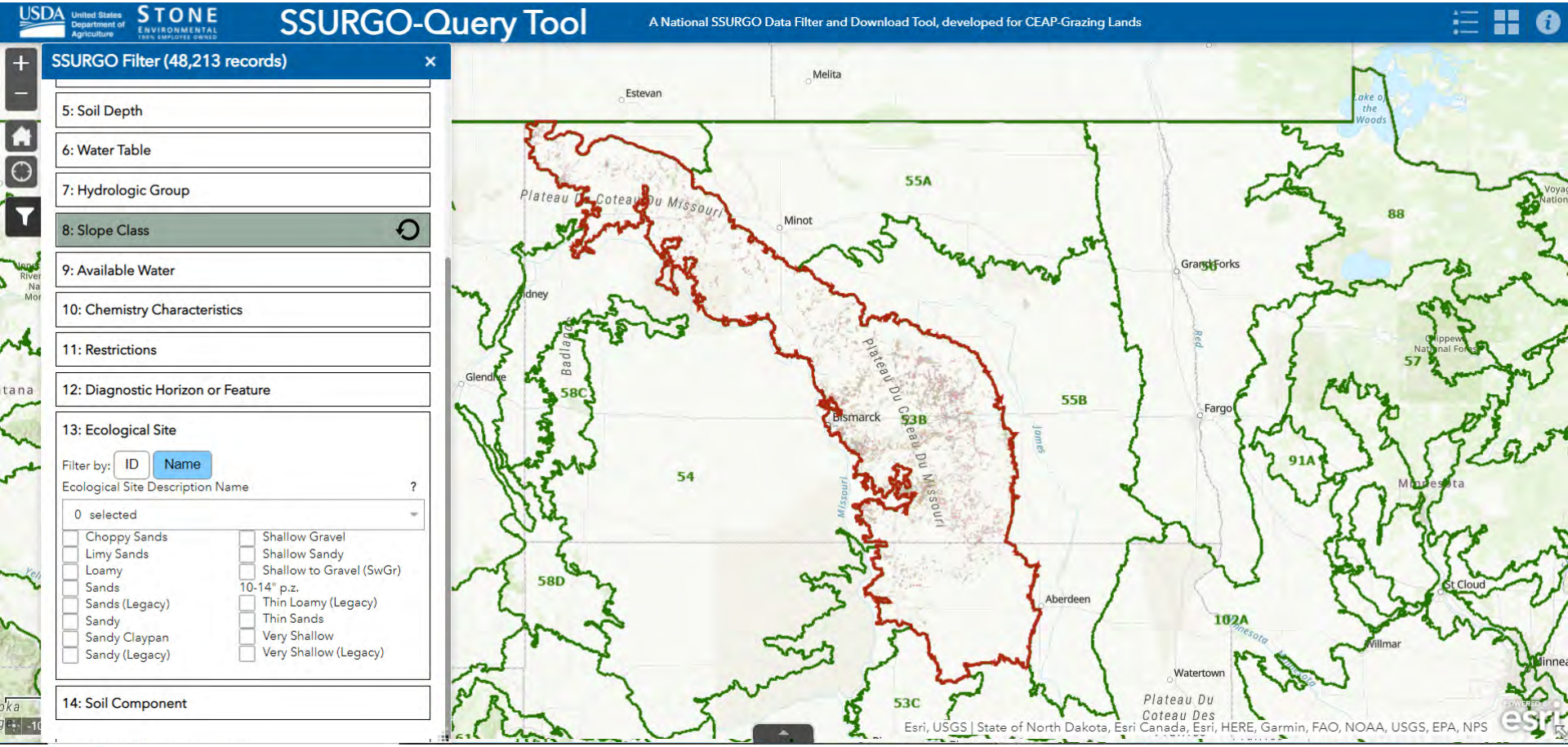
rSVI for Water Erosion - High and Moderately High Vulnerable Acres by HUC12



Huc12	Name	
110600020303	Yellowstone Creek	33,018
111303010306	Lower Sandstone Creek	30,571
111303010304	Wild Horse Creek-Washita River	29,997
110500010505	Cuddy Creek-West Creek	26,865
111303010307	Beaverdam Creek-Washita River	25,238
110400060604	Irish Flats-Cimarron River	25,057
110400060605	Taintor Creek-Cimarron River	24,613
110500010502	Ames Reservoir-Sand Creek	24,595
110400020203	Lower South Carrizo Creek	24,275
111303010302	Sergeant Major Creek-Washita Ri..	24,150

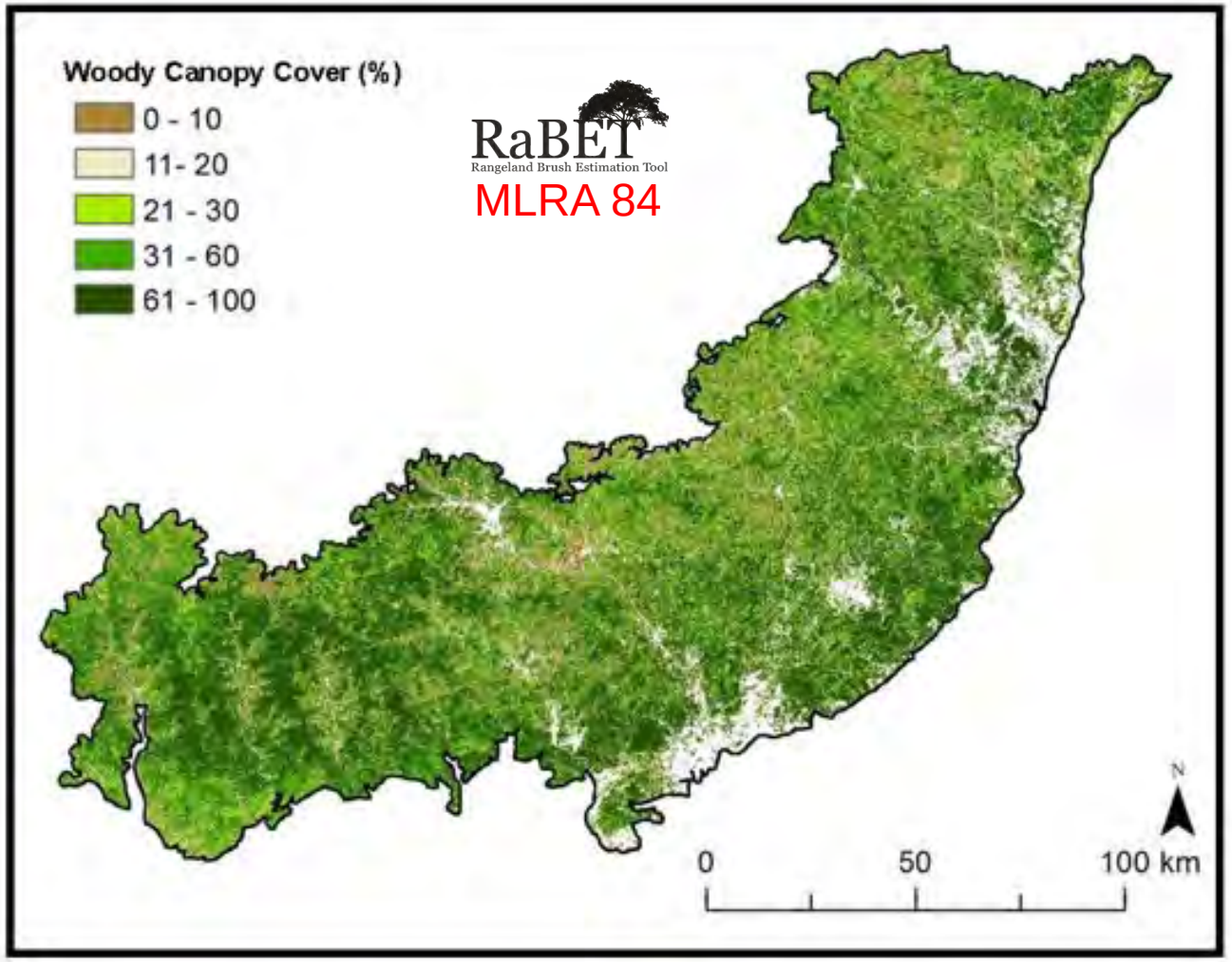
SSURGO-QueryTool

Choose MLRA, then go through the 14 filter categories on the left to find soils with those properties.



Rangeland Brush Estimation Tool

RaBET
Rangeland Brush Estimation Tool



Amazing Partnerships across the Nation!

- **Producers, Organizations**
  - Ranchers, Society for Range Management, National Cattlemen's Beef Association

- **Federal & University Partners**
  - ARS, NRCS, ERS, FSA, NASS, USFS, USFWS, BLM, Universities

- Across all **NRCS Deputy Areas**

Stay Tuned. There's So Much More to Come!...

MODELING RESOURCE CHANGE & RISK

BRINGING ECOSYSTEM SERVICES INTO PLANNING

USING NEW TECHNOLOGIES

Natural Resources Conservation Service

nrcs.usda.gov/