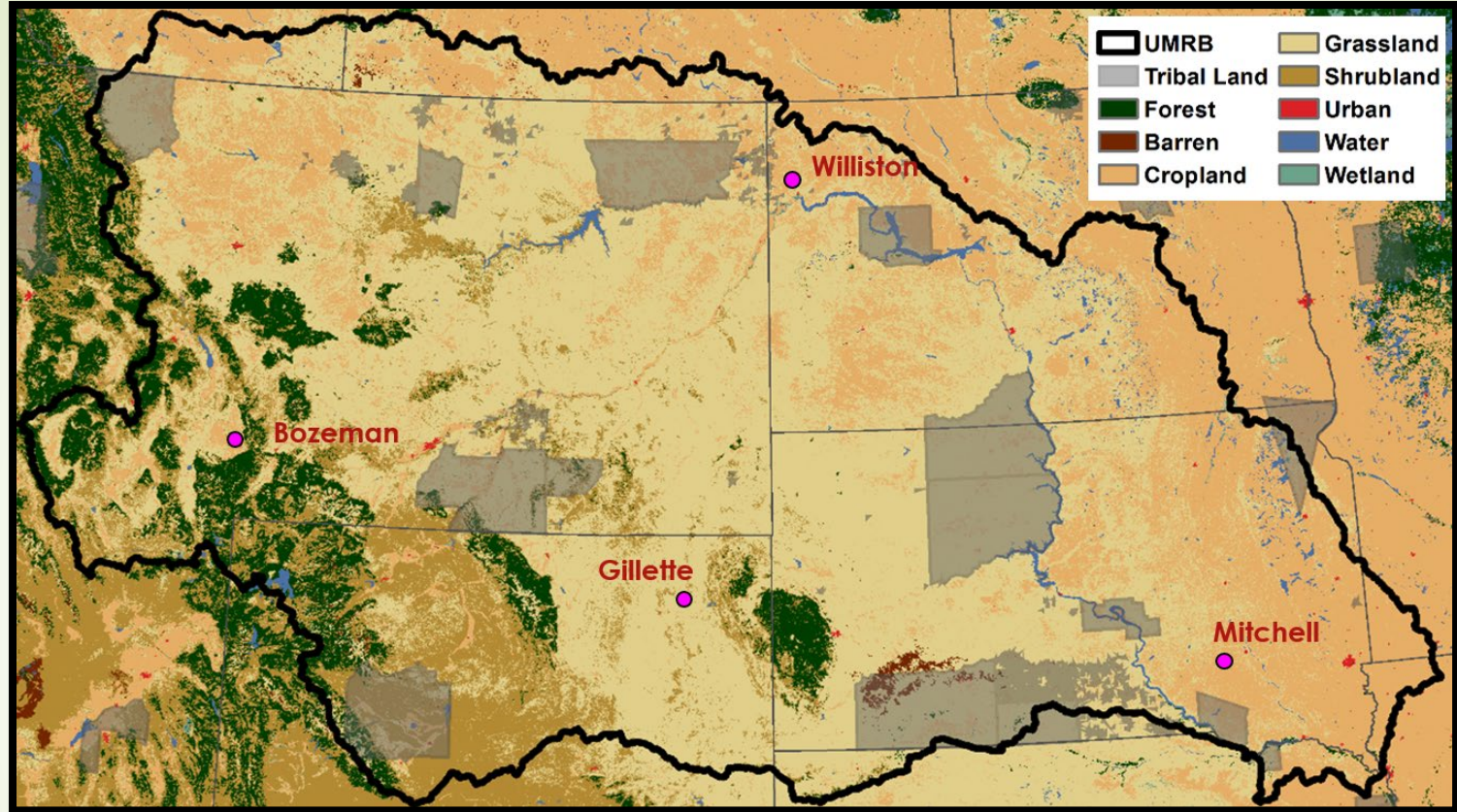


# DEVELOPING SOCIAL VALUES TYPOLOGY FOR LAND USE CHANGE AND ECOSYSTEM SERVICES THE UPPER MISSOURI RIVER BASIN

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# Upper Missouri River Basin





# Interviews and Coding



# Interview Background

## Locations:

- ❖ Bozeman, MT
- ❖ Gillette, WY
- ❖ Mitchell, SD
- ❖ Williston, ND

## Interviewees:

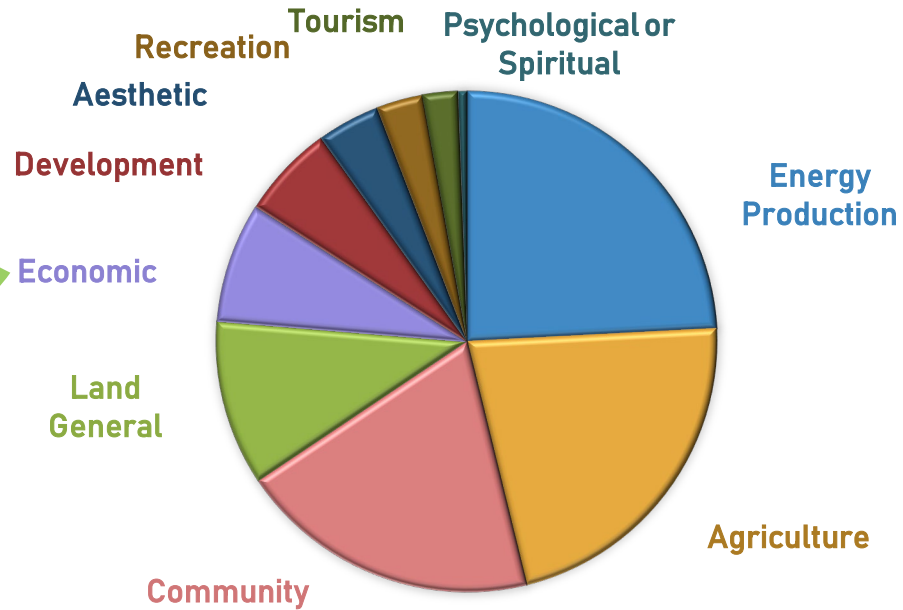
- ❖ Farmers and ranchers
- ❖ City and county planners
- ❖ Extraction workers
- ❖ Business owners
- ❖ Government officials
- ❖ Tourism employees

# Qualitative Coding

- ❖ Used Nvivo coding software
- ❖ 360 total codes identified
- ❖ Used predominant themes for typology creation

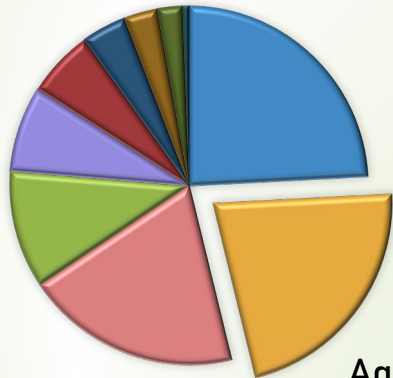


# Top Interview Themes



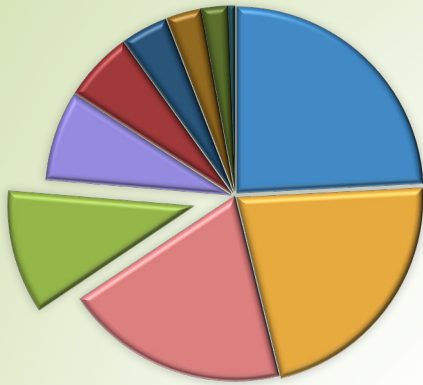
“(The land) is great for agriculture and, regardless of what anybody will tell you, if agriculture isn’t successful, nothing else moves in our county. Farmers don’t come to town and buy pick ups, the car salesman doesn’t go out and eat, so everything in our area revolves around agriculture.”

Interviewee - Mitchell, SD



Agriculture





Conservation

“Growing up, my Dad always had to work all the ground. And then you’d see a big windstorm come up and all this dust blows. Well what’s that blowing away? That’s your land.”

Interviewee - Mitchell, SD

“You can see the real life effect of what the reclamation process has done as far as... bringing the vegetation back and providing habitat areas for the wildlife on the land”

Interviewee - Gillette, WY







Community

**“It was the way life’s supposed to be, and that’s not an opinion, that’s a fact. Free kids involved, parents enjoying their lives, and a thousand people that had a community. My Grandfather was the night watchman, my grandmother ran the café, my parents ran a store.”**

**Interviewee, Mitchell, SD**

**“It’s hard for me because I’m a little town boy and I like the sense of community that a population this size brings, you know, there’s a sense of safety and community here. It’s a great place to raise a family, there’s not a lot that happens from a crime standpoint.”**

**Interviewee, Gillette, WY**





Energy

“Energy’s using the land. That’s the whole reason Gillette’s here. The whole reason people live in this area is the land.”

Interviewee - Gillette, WY

“Some people come drive down the road and as all they see is oil wells and not the land behind it. I can look through the oil wells and see that land behind it and not even know the oil wells are there.”

Interviewee - Williston, ND





# Typologies

# Typology Comparison

## Forest Typology (Brown & Reed, 2000)

- ❖ Aesthetic
- ❖ Economic
- ❖ Recreation
- ❖ Life sustaining
- ❖ Learning
- ❖ Biological diversity
- ❖ Spiritual
- ❖ Intrinsic
- ❖ Historic
- ❖ Future
- ❖ Subsistence
- ❖ Therapeutic
- ❖ Cultural

## UMRB Values Typology

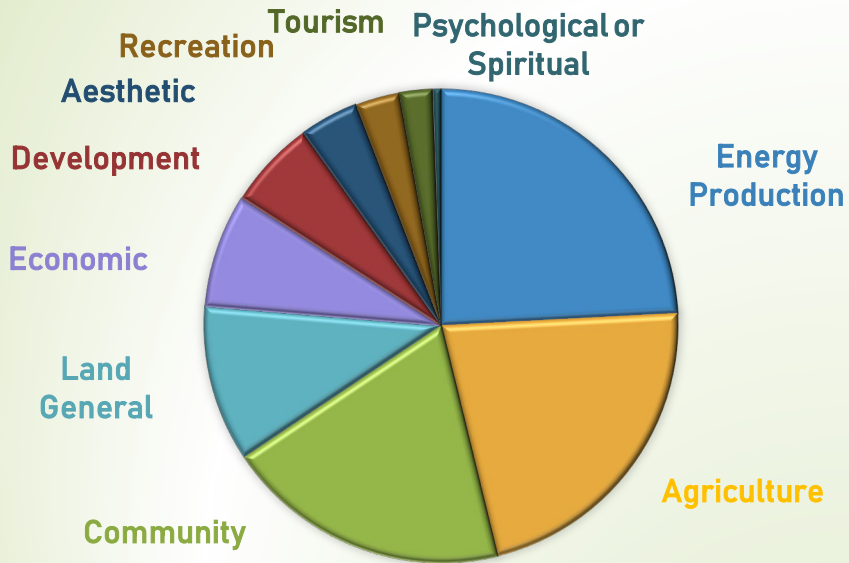
- ❖ Aesthetic
- ❖ Agriculture
- ❖ Community Building
- ❖ Conservation/Stewardship
- ❖ Cultural
- ❖ Development
- ❖ Economic
- ❖ Energy
- ❖ Recreation
- ❖ Spiritual
- ❖ Tourism



# Map Background

- ❖ Used typology to map social values in 12 locations
- ❖ Collected 760 surveys and over 3,900 mapped points

# Interview Themes vs. Mapped Values





# References

Brown, G., & Reed, P. (2000). Validation of a forest values typology for use in national forest planning. *Forest science*, 46(2), 240-247.

Stoy PC, Ahmed S, Jarchow M, Rashford B, Swanson D, Albeke S, et al. (2018) Opportunities and trade-offs among BECCS and the food, water, energy, biodiversity, and social systems nexus at regional scales. *BioScience* 68(2): 100-111.

# Acknowledgements

Thank you to Dyanis Popova, David Swanson, and Darius Semmens, Tanner Hall, Robert Welch, and Dylan Lewis for advising and data collection assistance. This research is supported by NSF OIA-1632810 and NSF DBI-1560048.

