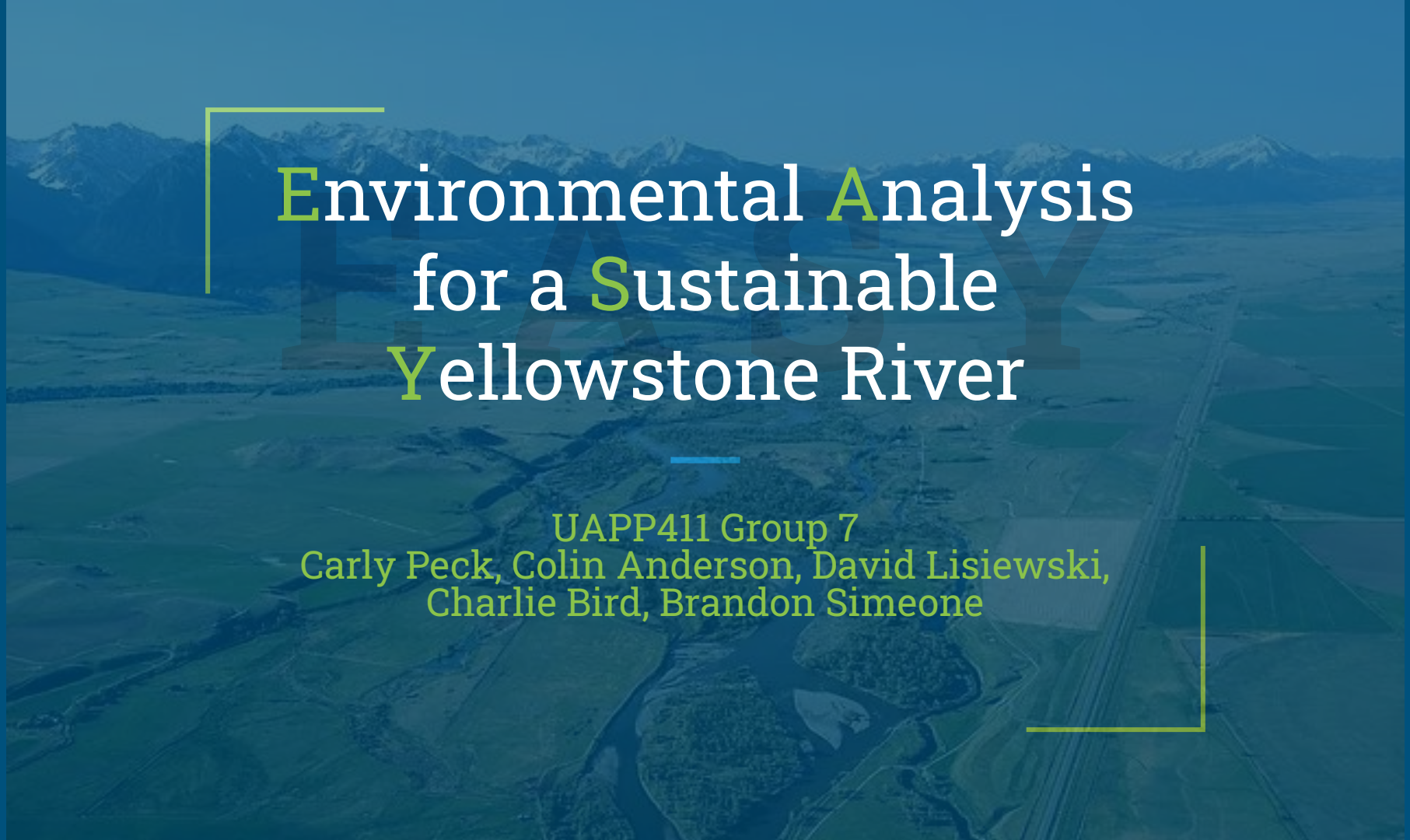

Environmental Analysis for a Sustainable Yellowstone River

UAPP411 Group 7
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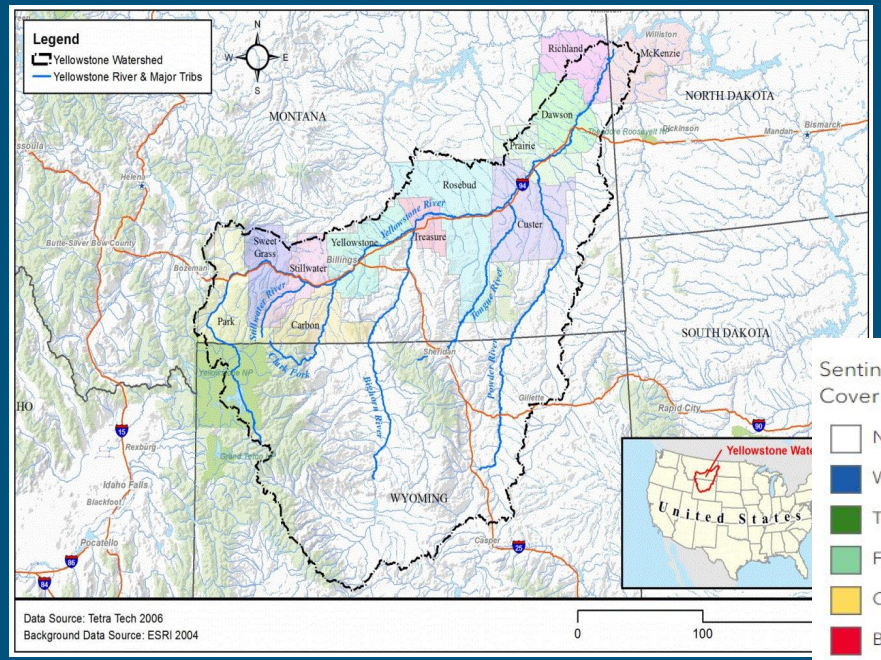
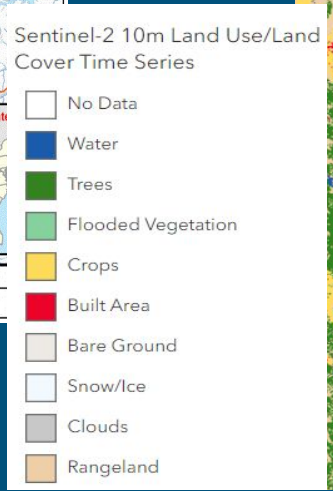
Charlie Bird, Brandon Simeone

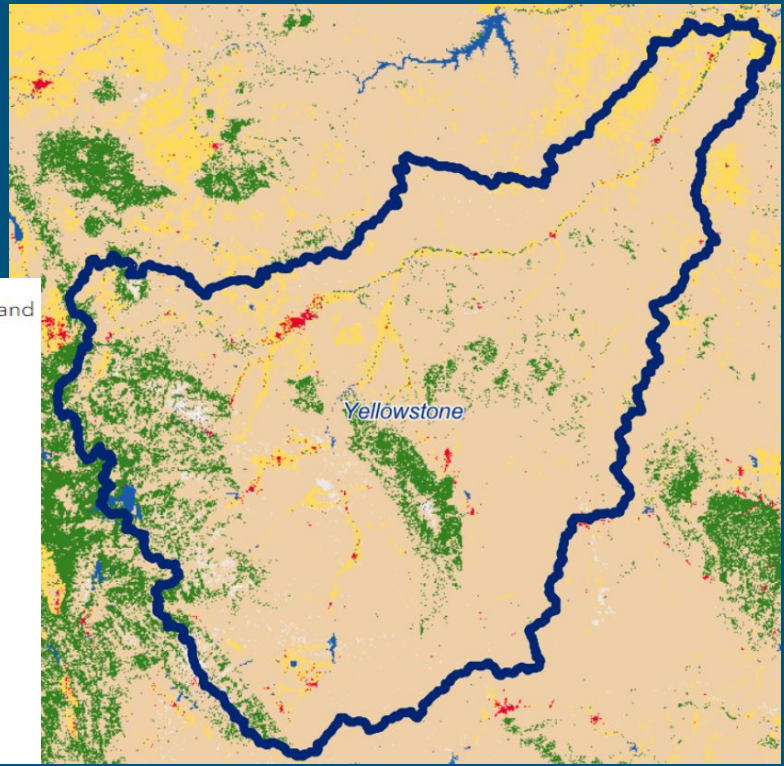
Outline

- Mission Statement
- Background and History
- Policies and Mandates
- Problem & Goal 1
- Problem & Goal 2
- Problem & Goal 3
- Recommendations
- Conclusion

Maps


Legend
Yellowstone Watershed
Yellowstone River & Major Tribs
N
W
E
S
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
WYOMING
Richland
McKenzie
Williston
Dawson
Prairie
Rosebud
Custer
Treasure
Yellowstone
Sweet Grass
Stillwater
Billings
Park
Carbon
Sheridan
Gillette
Rapid City
Bismarck
Mandan
Dickinson
Helena
Bozeman
Butte-Silver Bow County
Rexburg
Idaho Falls
Blackfoot
Pocatello
Casper
Yellowstone River
Stillwater River
Clarks Fork
Bighorn River
Powder River
Tongue River
United States
Data Source: Tetra Tech 2006
Background Data Source: ESRI 2004
0
100


Sentinel-2 10m Land Use/Land Cover Time Series
No Data
Water
Trees
Flooded Vegetation
Crops
Built Area
Bare Ground
Snow/Ice
Clouds
Rangeland


Yellowstone

Mission Statement

"EASY is dedicated to preserving suitable water quality standards for surrounding ecosystems in the Yellowstone River Basin across Montana, Wyoming, and North Dakota through 2035"

Background and History

Background

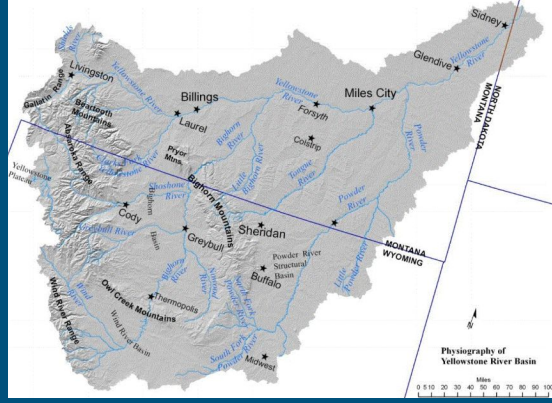
- The basin is named after the Yellowstone River, which is the longest undammed river in the contiguous US
- Home to a variety of plant and animal species including grizzly bears, wolves, bison, and cutthroat trout
- On average, 3.77 million people visit the park each year, the basin is a scenic view and recreational opportunity for millions of people

History

- Native American tribes, including the Crow, Blackfeet, and Shoshone have called the basin home for thousands of years
- European explorers first entered the basin in the early 1800s
- In 1872, the Yellowstone National Park was established, making it the first national park in the world

Policies and Mandates

- Wild and Scenic Rivers Act
  - 1976: Yellowstone River designated as a “Wild and Scenic River”
  - Protects the river’s quality and use
- Montana Department of Environmental Quality
  - Protects water quality
  - Limits pollution via discharge permitting
- Montana Fish, Wildlife, and Parks Department
  - Monitors health of river wildlife
  - Manages river recreational and commercial activities



Problem 1: Flooding

- June 2022: Major storm and floods
- Destruction of natural systems
  - Erosion, behavior of waterways,
- Damage to infrastructure
  - Drinking water, roads, buildings
- Safety concerns

Goal 1: Utilize data and modeling to predict, understand, and mitigate flood risks

Problem 2: Trace Elements and Contaminants

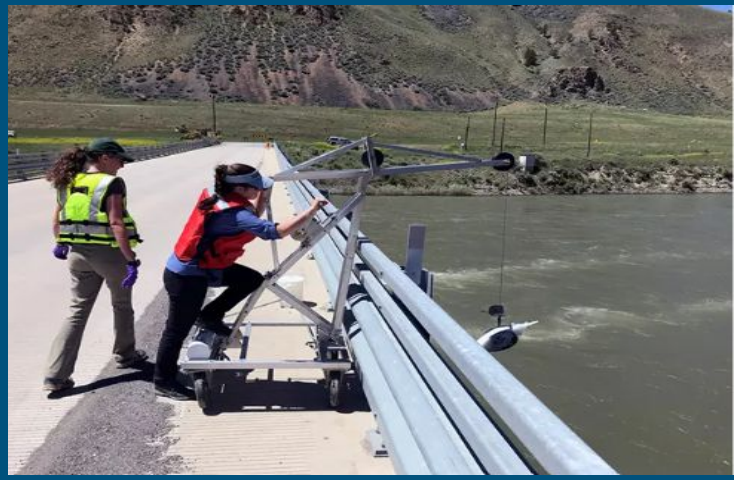
- Trace elements can be leached from organic rich sedimentary rocks located near sources of high temperature water
- Contamination is higher during fall and winter season due to inability to dilute the streams with the combination of melted snow
- Both wildlife and humans rely heavily on the Yellowstone River as a main source of freshwater

Goal 2: Reduce the amount of trace elements from human activity during months of high concentration

Problem 3: Water Resource Development

- Low streamflow Causes
  - Improper development practices
  - High water usage
- Potential effects of low stream flow
  - Habitat loss
  - Water shortages

Goal 3: Preserve existing river habitats that have sustained damage, this can be done through careful management of land development



Recommendations

- Legislators consult with scientists/experts
  - Change policy for greater protection
- Funding toward Yellowstone River Basin protection
  - Grants the means to enact real change
- Spread awareness of EASY
  - Spreads awareness of the problems
  - Encourage feedback from residents and stakeholders

Conclusions

- Historically and culturally valuable area
- Protected by policy, but problems persist
  - Flooding
  - Contamination
  - Water Resource Development
- EASY plan:
  - Data collection and modeling
  - Contamination monitoring
  - Pollution education
  - Land development monitoring
- EASY goal: A safer, healthier, well-understood, and protected Yellowstone through 2035