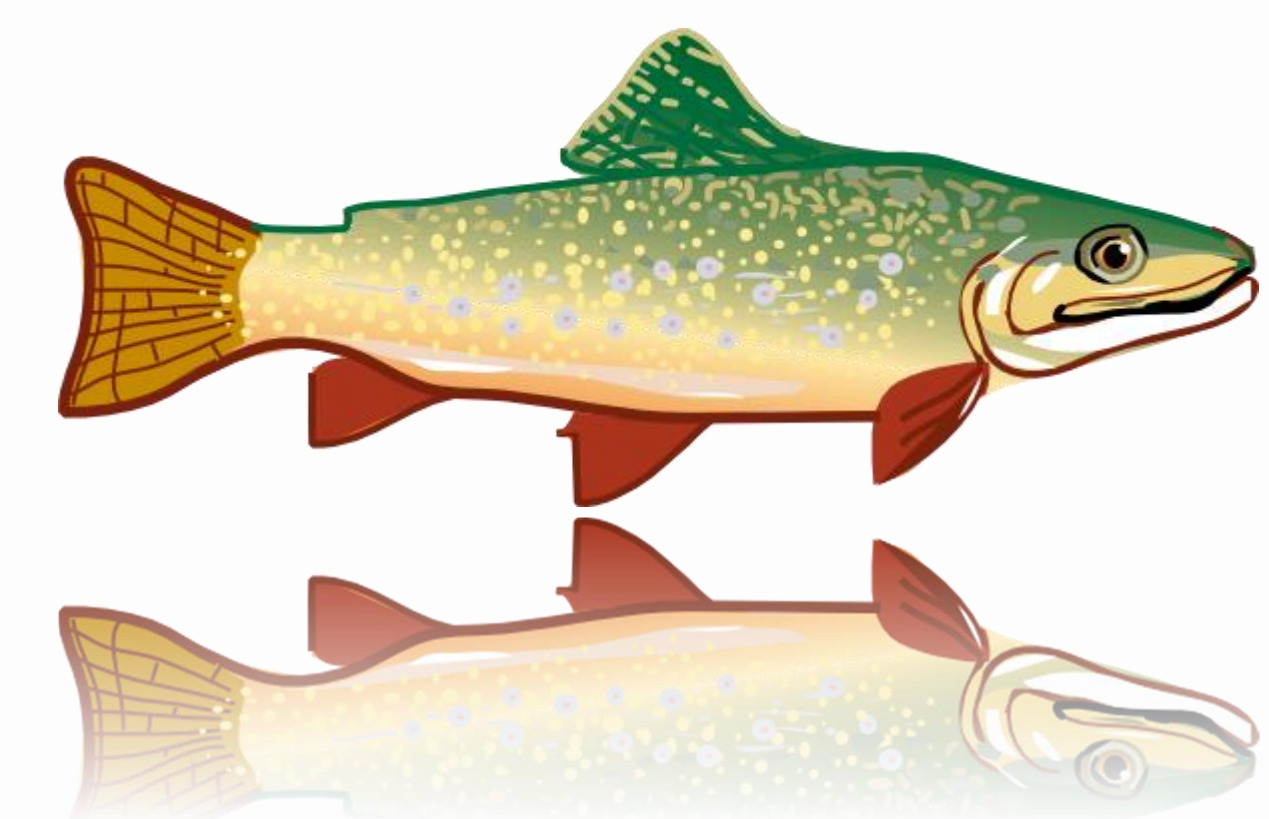


# “IF WATER AIN’T HAPPY, AIN’T NOBODY HAPPY”

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Sustainability Capstone Project 2015



## THE ISSUE

Clean water is important for human consumption, but it is also important for the organisms that live there and the surrounding ecosystems. Aquatic life, particularly fish, are greatly affected by pollutants and changes in the water quality for Beaver Lake near Rogers, AR and the White River near Flippin, AR. **How is the waste from visitors in these areas affecting the aquatic life? How will the pollution of plastic, paper and other trash over time affect these bodies of water?** Water quality parameters, pH, temperature, dissolved oxygen and turbidity, and noticeable pollutants were evaluated to determine the quality of life fish have in these waters. The existing situation is not sustainable because if the pollutants in these water sources continue to rise the northwest Arkansas area will lack both potable water and adequate fish populations.

## SUSTAINABILITY

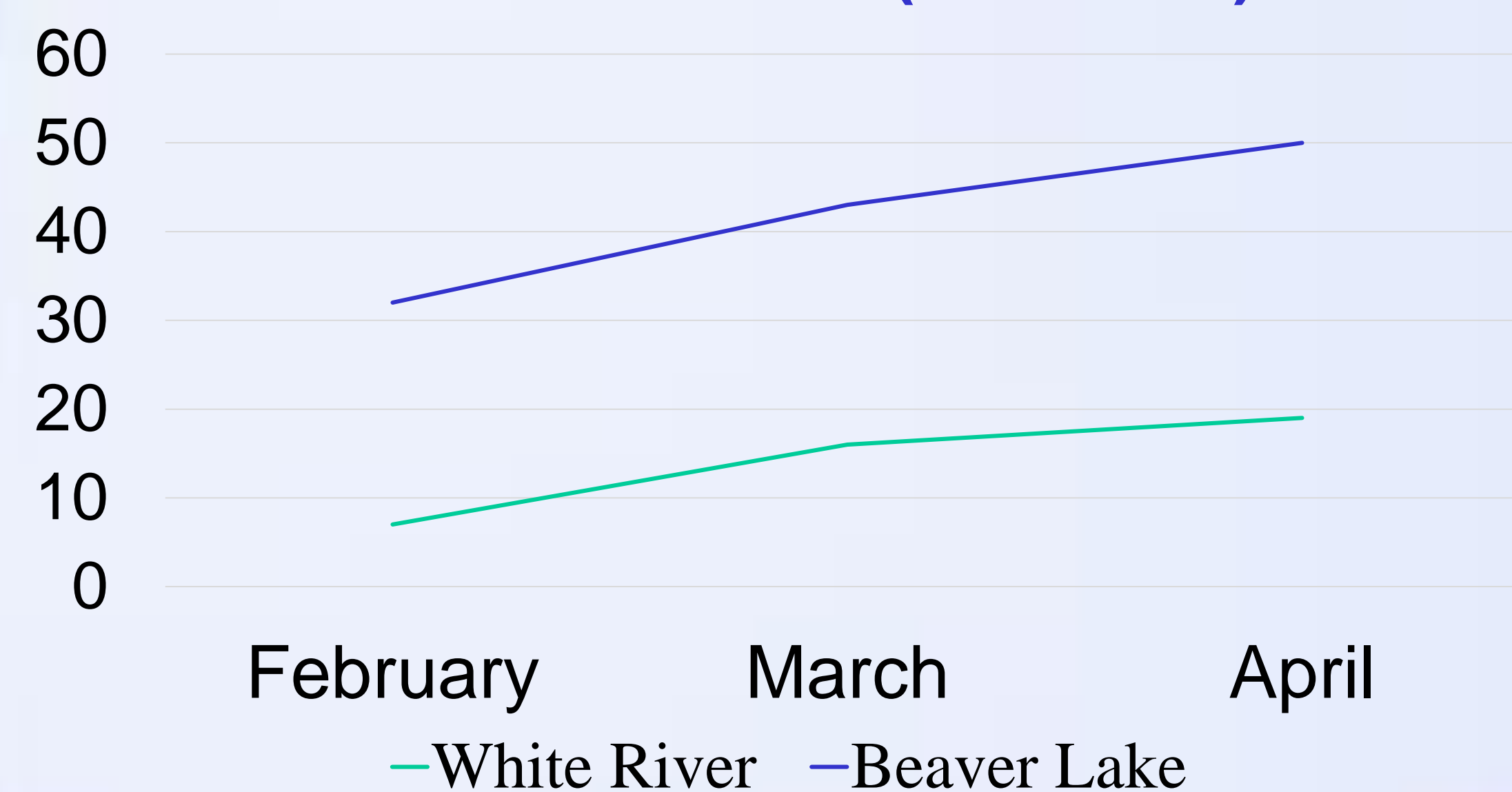
**In order for water reservoirs to maintain their beauty and function effort from the surrounding community is needed. Beaver Lake and the White River are not only water sources for human consumption and activities, but also the home to many organisms in and around the water. This project directly pertains to the Natural Systems area of Sustainability, but also Managed, Social, and Built Systems. The cleanliness of water is crucial in order for humans to sustain life. Fish and other food sources that humans consume must also have clean water. Organisms in the water clean the water. Without mostly pollutant-free water, humans would not be able to survive. This project’s purpose is to raise awareness for how pollution affects more than just scenery around a lake or river. To show students that not disposing of trash properly around bodies of water has short and long term effects for organisms that live there. With the information provided, it is hoped that students will think twice before disposing of trash, sewage, or anything harmful in any of our Arkansas waters.**

## THE PROJECT

Four water quality parameters are measured for this project once a month for February, March, and April: pH, temperature, dissolved oxygen, and turbidity. The presence of trash and other pollutants are observed around each of the areas, Beaver Lake and White River. One mile is walked around each body of water and the number of waste materials visible are recorded. Temperature is recorded using a thermometer, measured in Celsius, immediately after water samples are taken. The water is scanned visually for turbidity: recorded as either “low”, “medium,” or “high.” Dissolved oxygen levels are determined using the Winkler method, and pH is determined by litmus strips.

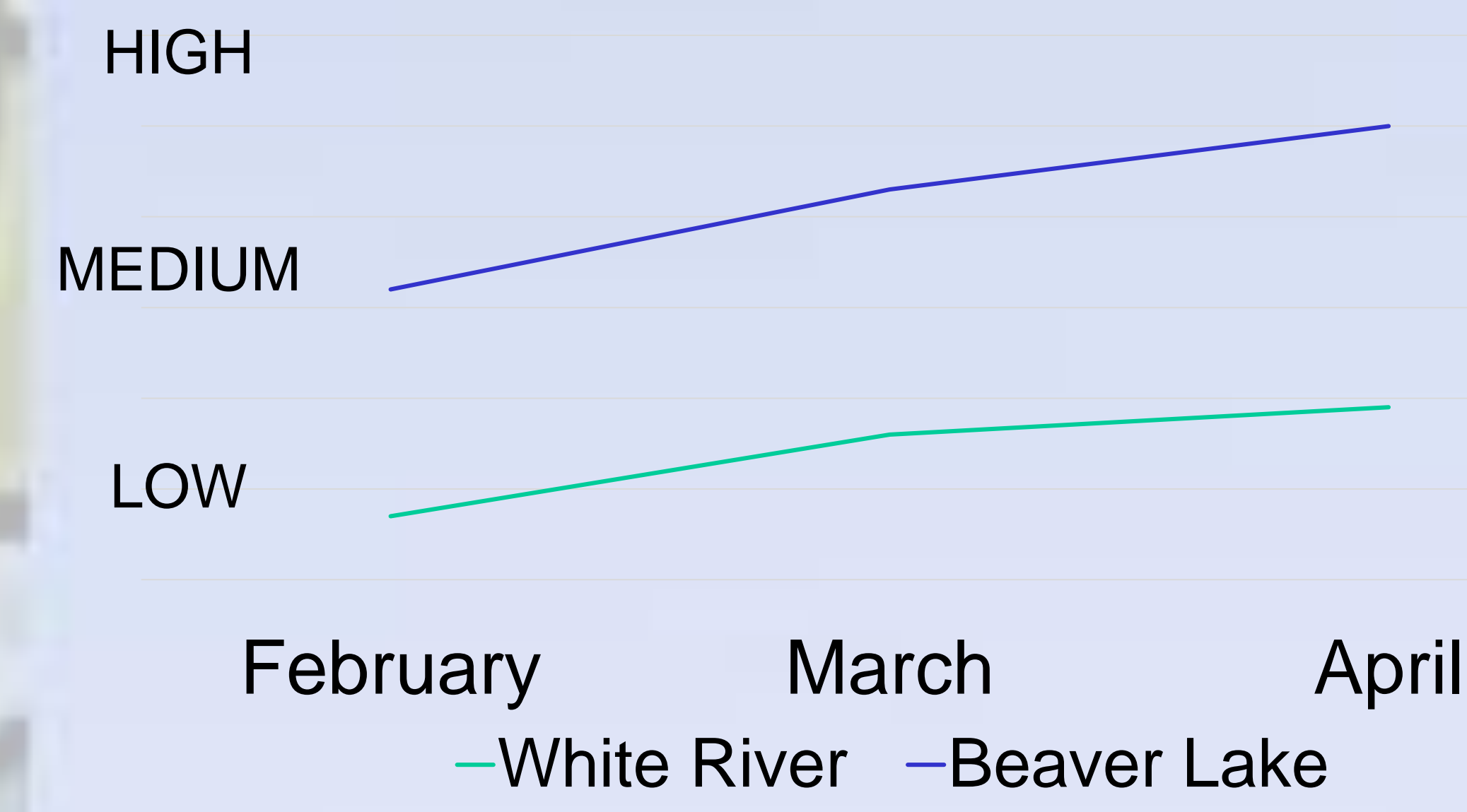
### MANAGED

#### TEMPERATURE (CELSIUS)



### BUILT

#### TURBIDITY



#### DID YOU KNOW?

**Trash, sewage and other waste is not the only type of pollutant that can affect a body of water. Rising temperatures are also considered a pollutant. The constant increase in temperature reduce the amount of dissolved oxygen available for aquatic life such as fish. The reduced levels cause digestive and metabolism rates to slow down and in return causes the mortality rates in some fish to rise. Long term, the reproductive rate of these fish could also slow down. There is a chance the species could adapt over time, however, the likelihood of this happening is not high.**

