

Fish Kill

*Paste Externship photo
here*

Nicole Coté

Physical Science, Intro. To Chemistry, and
STEM

2021 extern at Whiterock Conservancy

Part I: Overview of Workplace

Whiterock Conservancy is a 5500 acre non-profit land trust that balances sustainable agriculture, natural resource protection, and public recreation on the landscape. It was founded in 2004 as a non-profit to accept the Garst family donations of a multi-phase gift of nearly 5000 acres. This is one of the largest land gifts in Iowa's history. There is no state or federal support and they rely on tax-deductible donations, agricultural income, and visitors fees. It is named after a white sandstone outcropping at the top of a bluff along the Middle Raccoon River.

Part II: Workplace Focus Whiterock has about 10 fishing ponds on their property. Only one has been redone a few years ago to the point that they have aerators and restocked after shocking. They would like to increase their fishing part of recreation. My task is to collect data on the pH, temperature, nitrates, ammonia and phosphates. This will allow us to see if the living conditions are suited for the fish that are already in the ponds.

Part III: Introduce the Problem

There has been a fish kill along the river and no one knows how the fish died. This is also the source of water for the town. Samples of water have been collected and there are many tests that need to be run so we can pinpoint the reason this has all happened. The outcome is that the problem will have been solved and a plan put in place to prevent further fish kills.

Part IV: Standards, Driving and Essential Questions

What makes water unique? Why do some substances readily dissolve while others do not? How do we describe chemical behavior in aqueous solutions? How is chemistry applied to produce safe drinking water?

NGSS Standards:

HS-PS1-3, HS-PS1-6, and HS-PS3-1

Part V: Extern Host Role

Carissa Shoemaker – Land Manager –
landmanager@whiterockconservancy.org
(712) 790-8221 Ext. 4
Lee Roy Wagner – Land Management, Facility
Maintenance, Rentals and Campgrounds
(712) 790-8221 Ext. 5

Part VI: Student Learning

Students will formulate their own experiments to be able to solve the problems based on prior learning. They will be able to retest but it will be outside of class time.