

Maintaining Biodiversity and Ecosystem Services





Kelsy Knebel 8th Grade Science at Hoover Middle School, Waterloo Iowa 2019 extern at George Wyth State Park

Part I: Overview of Workplace

George Wyth State Park is located on the Northern edge of Cedar Falls and Waterloo metropolitan area along the Cedar River, just off of Highway 218. The park has been designated as a National Urban Wildlife Sanctuary. Its large expanse of woodland is abundant with many varieties of wildlife, and there are many opportunities for recreational activities year round. At George Wyth, the visitor can truly "get away" from the busy metropolitan area and take advantage of the scenic views and natural beauty the Cedar Valley has to offer.

Part II: Workplace Focus

The life of a DNR in a state park is varied, and the nature of this work requires one to wear many hats. In addition to managing and maintaining the park, which involves managing seasonal and year round employees, mitigating invasive species and protecting native species, park staff also host educational programs, develop and maintain partnerships/collaborations with other parks and stakeholders, and participate in various outreach opportunities.

Part III: The Problem

Invasive species like the Emerald Ash Borer,
Garlic Mustard currently affect the park
ecosystem, and species such as Zebra Mussels
are in surrounding areas and must be
prevented from entering the park. DNR and
park staff must decide how to mitigate these
species so they do not significantly affect the
park ecosystem. Students will research and
evaluate different solutions to one of these
ecosystem issues to determine what actions
park staff should take.

Part IV: Background

- How is **biodiversity** related to the health of an ecosystem?
- How can changes in biodiversity can affect <u>ecosystem services</u> that humans rely on?
- Identify advantages and limitations of using technology to solve a problem
- S<u>ystematically evaluate</u> different solutions to an ecosystem problem
- Effectively collaborate with peers to determine <u>criteria</u>.
- Defend a solution with evidence and reasoning.

Part V: Workplace Solution

- Garlic Mustard: Remove manually with volunteers. Regular trail users also help.
- Emerald Ash Borer: Remove affected (dead) trees and replant different species, like maple, oak, etc.
- Zebra Mussels: Fisheries provide staffing to survey boaters and provide information about this invasive species.

Part VI: Educational Pathways

Most careers within the DNR require a four year degree, typically in some form of science or law enforcement in addition to years of experience. Networking and demonstrating competence in seasonal/intern experiences are also a big help when looking for potential employment opportunities through the DNR.