

Biodiversity on Ninepipe Reservoir

by Peggy Mattson

Grade level 6

Time required

Ten classes of varying lengths

Materials/Technology

Computer access
Spreadsheet software
Pond, weed, bird, tree, and flower field guides
Binoculars
Waders
Pond nets
Flat shallow pans
Magnifying lenses
Spotting scope (optional)
Wild about Wildlife! activity guide
“Biodiversity Rules” video
Background information on the Ninepipe brothers
Tribal wildlife biologist
Federal wildlife biologist
Bird watching expert
“Pheasants Forever” representative
Fieldtrip transportation

Summary

In this unit, students will investigate the biodiversity of the Ninepipe National Wildlife Refuge and how it is managed to benefit wildlife and agricultural interests in a cohesive and collaborative manner. Students will also learn about the importance of natural resources to the native people of the Flathead Reservation, and about the local issues concerning natural resources. Activities include guest speakers, videos, discussions, fieldwork, data collection and analysis, and participation in a local environmental action project.

Objectives

The student will:

- 1) Students will learn about the namesake of Ninepipe Reservoir.
- 2) become aware of biodiversity, especially at Ninepipe National Wildlife Refuge.
- 3) realize how biodiversity affects their own lives through the examination of local issues such as logging, irrigation, and the expansion of Highway 93.
- 4) learn about management practices on the refuge.
- 5) gain insight as to the local tribal perspective about Natural Resources, and how the tribes manage their own lands.
- 6) collect data on the biological diversity at the refuge, analyze and map their findings, and make inferences about the health of the refuge.
- 7) use field guides to identify and categorize local flora and fauna.
- 8) gain experience using a computer spreadsheet.
- 9) learn about a career as a wildlife biologist.
- 10) participate in an environmental action project.

Montana Science standards addressed

- 1) Students design, conduct, evaluate and communicate scientific investigations.
- 2) Students demonstrate knowledge of characteristics, structures, and functions of living things, the process and diversity of life, and how living organism interact with each their environment.

Montana Math standards addressed

- 1) Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology.
- 2) Students demonstrate understanding of and an ability to use numbers and operations.
- 3) Students demonstrate understanding of and an ability to use data analysis, probability, and statistics.

Assessment

Evaluation throughout this unit will be made on a daily basis using teacher observation, completed assignments, field trip behavior, proper use of identification guides, and use of equipment in the field.

Background Information

Editorial Note Courtesy of Julie Cajune

The Namesake of Ninepipe Reservoir

People often talk of places and towns in Montana without thinking of how that area got its name. Many places on the reservation had Salish place names long before the reservation was created in 1855 and subsequent development brought new and foreign names to the area.

Ninepipe Reservoir was given the name of a prominent Salish family. The Ninepipe brothers, Louis, Andrew and Adolph (Happy), were quite well known for their knowledge of traditional music and their skill and talent in performing them. Louis Ninepipe in particular was noted for playing “love” songs, and many of the Ninepipe brothers’ songs were recorded in the early 1900’s. These recordings were originally on wax cylinders, but are now available on cassettes and perhaps today on CD’s.

Andrew Ninepipe was also known as a healer, and Adolph was well known for his skill in making drums and flutes. Louis Ninepipe however, was the best known of the brothers. He was born along the Bitterroot River. Louis was a small child when, Charlo and the remaining band of Salish were forcibly removed from the Bitterroot by military escort. Louis and his family were part of the last people to leave their beloved homeland in the Bitterroot Valley.

Louis was generous with his knowledge of the old ways and music that some of which is no longer used today. As he grew older, he was saddened by the changes in lifestyles and by the loss of traditional knowledge among the younger generation. During the 1950’s and 60’s, Louis watched the passing away of his brothers and their wives and his own wife and stepfather who had been one of the historians of the Tribe.

Probably one of the best known stories of Louie’s life, is that as an elderly man, he began to receive letters from a young woman in England. She had heard him singing on one of the recordings. Letters were written back and forth, and finally the young woman come from England and Louie picked her up at the bus stop in Missoula. They went to the Justice of the Peace and were married, and the young woman, Vivien, stayed with him until he died in 1974.

Procedure

Day 1 – Introduction to biodiversity

- 1) Have students locate the reservoir on a reservation map. Teacher asks students if they know where the name of the reservoir came from, and then share background information on the Ninepipe brothers.
- 2) Show students half of the “Biodiversity Rules” video which comes with the *Wild about Wildlife!* activity guide.
- 3) Have students brainstorm about what biodiversity means and what they know about the diversity of life.
- 4) Have students compose two questions to ask the wildlife biologists about biodiversity.

Day 2 – Tribal wildlife biologist

- 1) Invite a tribal wildlife biologist to talk to the students about the importance of wetlands, how the tribe manages wetlands and local environmental issues.
- 2) Have students ask the biologist their prepared questions, and record the answers given.

Day 3 – Data organization

- 1) Discuss and demonstrate how to collect and organize data, including making data sheets, and bar and pie graphs.
- 2) Have students go to the computer lab to learn how to use spreadsheets.

Day 4 – Preserving and restoring biodiversity

- 1) Show students the second half of the video.
- 2) Ask students to use information from the Day 2 talk by the Tribal Wildlife Biologist to write about local actions that have been taken to preserve wildlife habitat. Refer also to the Grizzly Bear Corridor to assist student responses if necessary.
- 3) Have students name ways that biodiversity benefits people.

Day 5 – Federal wildlife biologist

- 1) Invite a federal wildlife biologist from the National Bison Range to speak to the class about the importance of wetlands and how the federal government manages wetlands.
- 2) Have students ask this biologist the same questions asked of the tribal biologist so they can compare the two viewpoints on caring for biodiversity.
- 3) Have students write up comparison tables for the answers received from the two biologists, focussing on similarities and differences.

Day 6 – Long Journey Home/Pheasants Forever representative

- 1) Use the lesson called “Long Journey Home” from the *Wild about Wildlife!* guide. Key topics covered include:
 - Hazards facing migratory birds
 - Human benefits of healthy migratory bird ecosystems
 - Positive actions to restore migratory bird populations and habitat

- 2) Invite a speaker from the organization “Pheasants Forever”, such as Cort Potter, to discuss the local pheasant population and efforts to purchase and restore pheasant habitat that are occurring in the Mission Valley.

Day 7 - Ninepipe fieldtrip

- 1) Take students to Ninepipe Reservoir to collect species data. If possible, have a spotting scope set up and ask a local birder to come along to help students identify birds.
- 2) Have pairs of students record types of plants, insects, birds, fish and wildlife observed. Have them use field guides to identify their findings. Have them record their findings in a data table.
- 3) Have students draw the riparian area, especially the flora they see along the water’s edge.
- 4) Have students look for and record evidence of wildlife, such as tracks, partially eaten leaves, burrows, etc.
- 5) Have students use binoculars to view the heron rookery on the southern shore.
- 6) Have students use waders to collect a variety of mud and insects samples from the water.

Day 8 – Data analysis

- 1) Have students enter their collected data into computer spreadsheets and make graphs showing their findings.
- 2) Have students analyze their data as to the health of the wetlands. They should look for evidence of biodiversity and the availability of adequate habitat for the species they observed.
- 3) Ask one group to prepare a spreadsheet and graph with the results of the whole class.

Day 9 – Presentation and discussion of results/Planning project

- 1) Have students present and discuss their data and graphs, and use them to defend their decision about the health of the Ninepipe wetlands.
- 2) Conduct a discussion about the collaboration of the federal government and the tribes in protecting and restoring the biodiversity on the reservation. Have students discuss partnerships in which they can work with another agency to protect an ecosystem within walking distance of the school.

Day 10 - Choosing and implementing a project

- 1) Take students on a walking fieldtrip to view possible collaborative project sites near the school (e.g., Pollywog Park or Spring Creek in Ronan.)
- 2) Ask students to submit project proposals, vote on them as a class, and present their proposal to the principal.
- 3) After completing the project, have students write and submit an article about their findings and project to the local newspaper.

Further information

For further information about this unit of activities, contact Peggy Mattson via electronic mail at rmspmatt@ronan.net.

References

United States Fish and Wildlife Service. 19. Wild about wildlife! Activity guide and Biodiversity Rules [video].

