

Fire Ecology—Inventory and Monitoring

Glacier National Park



Grade: 7-12

Subject: Science

Skills: Observe, communicate, identify, model

Duration: 4.5 hours

Group Size: 45-60 total, 2 groups of 20 -30 students.

Setting: First 2 miles of lower elevation trails in the park.

Vocabulary: Succession, inventory, monitoring

Summary: Students participate in an introduction to Glacier National Park and fire affects monitoring. Groups hypothesize how forests change after fire, collect and record data on tree species and size, then analyze their data and decide if it supports their hypothesis.

Objectives: (These are examples of some of the objectives that can be achieved on a fire walk. Many others are possible depending on the teacher's focus and the ranger.)

Students will be able to:

- ❖ Tell what **national parks** protect and one reason Glacier National Park was established.
- ❖ Give two reasons why a scientist might want to use a national park for their a research project.
- ❖ Explain why it's important for people to understand fire affects.
- ❖ Write a hypothesis of how a forest will change after fire.
- ❖ Collect and record data to support their hypothesis (tree species and size).
- ❖ Identify **coniferous** trees with a **dichotomous** key.
- ❖ Analyze their data and decide if it supports their hypothesis.
- ❖ Give an example of an effect the forest fire has had on plants and on wildlife.
- ❖ Tell how a fire might increase plant reproduction and/or describe **succession** after a fire.
- ❖ Give examples of **adaptations** that plants and animals have to survive fires.
- ❖ Discuss 2 **organisms** who not only can survive fire, but who actually thrive after a fire.

Montana Content and Performance Standards:

MT.SCI.K-12.1 Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations.

MT.SCI.K-12.2 Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.

MT.SCI.K-12.3 Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.

Making Connections to Glacier National Park:

One of the reasons Glacier National Park was established was to preserve biodiversity & natural processes. Fire is a natural disturbance that plays an important role in natural communities.

Field Trip Logistics:

Teachers wishing to have their students participate in the fire data collection field trip should plan to arrive in the park by 9:30 – 10 a.m. and stay until 1:30 – 2 p.m. Everyone must be prepared to be outside all day and ready to hike 2 miles on fairly level terrain.

Glacier National Park

Fire Ecology Inventory and Monitoring Typical Field Trip Schedule



P A R K S • A S • C L A S S R O O M S

Flexibility for weather conditions, bus problems, etc...is essential to having an enjoyable visit to the park. No two school programs are exactly alike, but the following schedule represents a typical trip.

8:30 a.m. – 9:30 a.m. Travel to the park

Teachers can be making sure students all have nametags and know their group assignments. Students can watch for areas of forest along the way that have had recent fires..

8:30 a.m. – 9:30 a.m. Travel to the Park

Simple assignments can be completed by seatmates or individuals during this time. Point out sights along the way that relate to the park story, recent fires and native plant communities. You may also want to review vocabulary words or ecological concepts.

9:30 a.m. – 10:30 a.m. Meet at the Apgar Visitor Center (previously the Transit Center)

Rangers will meet the bus and talk with teachers and chaperones about the schedule for the day. There will be an introduction to the national park service and to Glacier National Park. Students will have time for a bathroom break.

10:30 a.m. – 10:45 a.m. Rangers break students into smaller groups. Ranger-led groups may travel to Huckleberry Nature Trail – or – hike to the West Shore trailhead for their data collection site.

10:45 a.m. – 12:15 p.m. Classes will hike with a ranger to their data collection sites.

The sites will include a recently burned forest and an older forest so students can compare/contrast. Typically, sites are along the Rocky Point Trail and the Huckleberry Nature Trail. Other possible sites are on the West Shore of Lower McDonald Creek.

12:15 p.m. – 12:45 p.m. Lunch, bathrooms, and clean-up.

Students will eat lunch at either the Fish Creek Picnic Area or eat on trail for lunch.

12:45 p.m. – 1:15 p.m. Each class will discuss their findings from the morning with the ranger.

Students will have time to run calculations and answer questions to decide if their data supports their hypothesis. .

1:15 - 1:30 p.m. Wrap-up

Ranger(s) review the educational objectives for the day and engage the students in a fun activitie to assess their learning.

1:30 - 1:45 p.m. – Buses leave the park