

# Fire Effects - 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 ecology at Apgar. Then travel to Fish Creek Picnic Area for a 2-mile long (round-trip) hike with a ranger. There will be stops at various points along the trail to do activities related to fire and to discuss what's happened in the forest since the Robert Fire of 2003.

**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 a research project.
- Identify **coniferous** trees with a **dichotomous** key.
- Accurately collect and record data for inventory and monitoring (tree species and size).
- Analyze their data and decide if it supports their expected observations.
- 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.
- Explain why it's important for people to understand fire effects.

### Next Generation Science Standards:

MS-LS2-2 Construct and explanation that predicts patterns among organisms across multiple ecosystems.

### 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 Effects 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 Effects Typical Field Trip Schedule*



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*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. Each student should also know what their expertise within their group will be for the day – tree ID expert, data recorder, data recorder expert, plot locator, etc...

**9:30 a.m. – 10:00 a.m.** Meet at the Apgar Visitor 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. Classes will be split into groups.

**10:00 a.m. – 10:30 a.m.** Bus(es) travel to trailheads for hiking to data collection sites.

**10:30 a.m. – 12:00 p.m.** Data Collection.

Hike Trail (Rocky Point or Lower McDonald Creek) with rangers. Students will collect fire effects data at two locations along the trail.

**12:00 p.m. – 12:30 p.m.** Lunch.

Depending on the data location sites, students will eat lunch on the trail or at a picnic area.

**12:30 p.m. – 1:15 p.m.** Complete data collection. Each class will discuss their findings from the morning with the ranger. Students will have time to run calculations and answer questions and come up with their own questions about forest succession.

**1:15 - 1:30 p.m.** Wrap-up and bathroom break.

Ranger(s) review the educational objectives for the day and engage all of the students in a fun activity to assess their learning. Optional: groups who went to different locations compare data.

**1:30 - 1:45 p.m.** – Bus(es) leave the park