

CHAPTER 4—GLACIER NATIONAL PARK

A Coniferous Mountain Biome



George Bird Grennell, an early western explorer, pushed hard for the setting aside of a large wilderness area in Montana to preserve the pristine environment. In 1910, after ten years of repeated requests by Grennell and others, President Taft signed a bill that formed **Glacier National Park**. The park is located in the northwest corner of Montana in Glacier and Flathead counties. Much of the park's 1.4 million acres was once homeland to the Blackfoot and Kootenai Indian tribes and many sites within the park are still considered sacred by the Indians' ancestors. The parkland is so rugged that it took 11 years to build the "Going to the Sun" road that spans 50 miles of the park and provides visitors with access to the high continental divide, near Logan Pass. The high mountains that bisect the park from north to south capture rainfall from the western slopes. The warm moist Pacific-like environment produces dense forests of larch, spruce, fir, and lodgepole pine. East of the divide where the plains roll up to the mountains pasque flower, lupine Indian paintbrush, gaillardia, asters, and shooting stars paint the prairie.



Moose (*Monstrosus cardestroyerous*) The largest member of the deer family, an adult male moose can easily weigh over 1,500 pounds. Moose are strong swimmers and have been known to cross lakes that are several miles wide. They eat roots, twigs, bark, and water plants like water lilies, horsetails, and pondweed. Moose are extremely protective of their young and, in the wild, have been known to fight off entire packs of wolves. They can run quite fast when necessary and have been clocked reaching 35 miles per hour.



Ptarmigan (*Lagopus leucurus*) Ptarmigan are common to alpine and mountainous regions of the western United States and Canada. These birds have adapted well for survival in the difficult habitat in which they are found. For example, ptarmigan are known to molt, that is, loose feathers, in anticipation of the coming of heavy alpine snow each year. By assuming a white plumage in the winter, they better blend in with the snowy surroundings making it harder for predators to find them. Normally, their sparsely feathered feet grow thick white tufts of feathers in the winter that allow them to "snowshoe" as they move about in search of food.



Indian Paintbrush (*Castilleja linariaefolia*) These flowers grow 6 to 12 inches high and are colored bright orange. Indian paintbrush grows in the dry scrub step plains of the western lowlands to the subalpine portions of nearly every western mountain range. The roots of these flowers burrow into the roots of neighboring plants to get needed nutrients, forming what is called a root parasitic relationship. The Chippewa Indians have been known to treat rheumatism with Indian paintbrush and make the plant into a rinse to impart shine to their hair after bathing.



Limestone (Sedimentary) The shells of animals that once lived accumulate on the bottom of the oceans and seas. Limestone is created after these shell layers are mixed and compressed in a natural process that takes millions of years to complete. Great beds of limestone are easily eroded by slightly acidic rainwater. Such erosion sometimes results in formation of extensive underground cave systems.

Mineral Identification Activity: Contact the geology department of a local university and request a visit by interns in the graduate program. Ask the interns to bring samples representative of the types of rocks and minerals commonly found in the area around your school. Inform students of the important characteristics of minerals that allow identification, including color, hardness, luster, cleavage, and streak. With direction from local geological experts, plan a field trip to a mineral collection site. Have the students take field notes while they are collecting specimens to help them identify the minerals later. Encourage students to add to the classroom mineral collection by bring samples from home for identification. The following Internet sites will be helpful in mineral identification:

<http://www.sdnhm.org/kids/minerals/>

http://www.rockhounds.com/rockshop/mineral_id/

<http://65.167.2.58/~wellerr/MineralIdentification.html>