



# Glacier Loadout Package

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*Glacier National Park "Northern Traverse" Expedition Loadout Package*

*By the AcadianX Outdoor Adventure Group*



### *Crown of the Continent*

Glacier National Park is an American national park located in northwestern Montana, on the Canada–United States border, adjacent to the Canadian provinces of Alberta and British Columbia. The park encompasses over 1 million acres and includes parts of two mountain ranges, over 130 named lakes, more than 1,000 different species of plants, and hundreds of species of animals. This vast pristine ecosystem is the centerpiece of what has been referred to as the "Crown of the Continent Ecosystem," a region of protected land encompassing 16,000 square miles.

### *The Northern Traverse*

The six-day, relatively mellow route transects Glacier's ice-carved backcountry on-trail, making it both epic and accessible. En route, pass lakes and creeks and hike over three high passes—with an average daily elevation gain of only 1,000 feet.

### *Wildlife and Geology*

Virtually all the historically known plant and animal species, with the exception of the bison and woodland caribou, are still present, providing biologists with an intact ecosystem for plant and animal research. Two threatened species of mammals, the grizzly bear and the lynx, are found in the park. Glacier National Park is dominated by mountains which were carved into their present shapes by the huge glaciers of the last ice age. These glaciers have largely disappeared over the last 12,000 years. Evidence of widespread glacial action is found throughout the park in the form of U-shaped valleys, cirques, arêtes, and large outflow lakes radiating like fingers from the base of the highest peaks.

### *Fees & Permits*

Fees need to be paid for the park entrance and to secure a backcountry itinerary. Entrance fees are paid on arrival whereas backcountry permits need to be paid and applied for in the month of March.

### *Regulations and Safety Considerations*

With its towering mountains, pristine alpine lakes, abundant wildlife, and over 700 miles of trails, Glacier is a backpacking paradise. With all the beauty that this treasure has to offer there are many considerations you need to be aware of. Refer to the regulations and safety section of this loadout to make yourself fully aware of what to expect and rules you need to follow in order to preserve the beauty of the park.

### *Routes and Topography*

We have packed in to this load a trove of maps and detailed descriptions for you to educate yourself on the layout of the trail. Study and review the details so that you may know your way in case you are separated from your team.

### *Trekking/Camping Essentials and Gear*

A complete list of essential gear and clothing are included in this loadout. To further assist you we have also included a checklist so that you may keep track of your acquired gear.

### *Logistics*

The logistics section provides spaces for you to enter the relevant logistics information when they become available. This information can include flight details, hotel information, and car rental details.

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# About Glacier National Park

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## General Information

Glacier National Park is an American national park located in northwestern Montana, on the Canada–United States border, adjacent to the Canadian provinces of Alberta and British Columbia. The park encompasses over 1 million acres (4,000 km<sup>2</sup>) and includes parts of two mountain ranges (sub-ranges of the Rocky Mountains), over 130 named lakes, more than 1,000 different species of plants, and hundreds of species of animals. This vast pristine ecosystem is the centerpiece of what has been referred to as the "Crown of the Continent Ecosystem," a region of protected land encompassing 16,000 square miles (41,000 km<sup>2</sup>).

The region that became Glacier National Park was first inhabited by Native Americans. Upon the arrival of European explorers, it was dominated by the Blackfeet in the east and the Flathead in the western regions. Under pressure, the Blackfeet ceded the mountainous parts of their treaty lands in 1895 to the federal government; it later became part of the park. Soon after the establishment of the park on May 11, 1910, a number of hotels and chalets were constructed by the Great Northern Railway. These historic hotels and chalets are listed as National Historic Landmarks and a total of 350 locations are on the National Register of Historic Places. By 1932 work was completed on the Going-to-the-Sun Road, later designated a National Historic Civil Engineering Landmark, which provided greater accessibility for automobiles into the heart of the park.

The mountains of Glacier National Park began forming 170 million years ago when ancient rocks were forced eastward up and over much younger rock strata. Known as the Lewis Overthrust, these sedimentary rocks are considered to have some of the finest examples of early life fossils on Earth. The current shapes of the Lewis and Livingston mountain ranges and positioning and size of the lakes show the telltale evidence of massive glacial action, which carved U-shaped valleys and left behind moraines which impounded water, creating lakes. Of the estimated



150 glaciers which existed in the park in the mid-19th century during the late Little Ice Age, only 25 active glaciers remained by 2010. Scientists studying the glaciers in the park have estimated that all the active glaciers may disappear by 2030 if current climate patterns persist.

Glacier National Park has almost all its original native plant and animal species. Large mammals such as grizzly bears, moose, and mountain goats, as well as rare or endangered species like wolverines and Canadian lynxes, inhabit the park. Hundreds of species of birds, more than a dozen fish species, and a few reptile and amphibian species have been documented. The park has numerous ecosystems ranging from prairie to tundra. The easternmost forests of western red cedar and hemlock grow in the southwest portion of the park. Large forest fires are unusual in the park; however, more than 13% of the park burned in 2003.

Glacier National Park borders Waterton Lakes National Park in Canada—the two parks are known as the Waterton-Glacier International Peace Park and were designated as the world's first International Peace Park in 1932. Both parks were designated by the United Nations as Biosphere Reserves in 1976, and in 1995 as World Heritage sites. In April 2017, the joint park received a provisional Gold Tier designation as Waterton-Glacier International Dark Sky Park through the International Dark Sky Association, the first transboundary dark sky park.

## Hiking and Camping

Hiking is popular in the park. Over half of the visitors to the park report taking a hike on the park's nearly 700 miles (1,127 km) of trails.[93] 110 miles (177 km) of the Continental Divide National Scenic Trail spans most of the distance of the park north to south, with a few alternative routes at lower elevations if high altitude passes are closed due to snow. The Pacific Northwest National Scenic Trail crosses the park on 52 miles (84 km) from east to west.

Dogs are not permitted on any trails in the park due to the presence of bears and other large mammals. Dogs are permitted at front country campsites that can be accessed by a vehicle and along paved roads.

Anyone entering the United States over land or waterway from Canada must have a passport with them.

Many day hikes can be taken in the park. Back-country camping is allowed at campsites along the trails. A permit is required and can be obtained from certain visitor centers or arranged for in advance. Much of Glacier's back country is usually inaccessible to hikers until early June due to accumulated snow pack and avalanche risk, and many trails at higher altitudes remain snow packed until July. Campgrounds that allow vehicle access are found throughout the park, most of which are near one of the larger lakes. The campgrounds at St. Mary and at Apgar are open year-round, but conditions are primitive in the off-season, as the restroom facilities are closed and there is no running water. All campgrounds with vehicle access are usually open from mid-June until mid-September. Guide and shuttle services are also available.

The park attracts many climbers though the rock quality is old and loose in the Lewis Overthrust fault structure. The seminal literature on climbing in the park, *A Climber's Guide to Glacier National Park*, was written by J. Gordon Edwards in 1961, with the latest edition published in 1995. The Glacier Mountaineers Society sponsors climbing in the park, issuing awards to those climbers who summit all 10,000 ft (3,000 m) peaks or all five technical peaks.

## History

According to archeological evidence, Native Americans first arrived in the Glacier area some 10,000 years ago. The earliest occupants with lineage to current tribes were the Flathead (Salish) and Kootenai, Shoshone, and Cheyenne. The Blackfeet lived on the eastern slopes of what later became the park, as well as the Great Plains immediately to the east. The park region provided the Blackfeet shelter from the harsh winter winds of the plains, allowing them to supplement their traditional bison hunts with other game meat. Today, the Blackfeet Indian Reservation borders the park in the east, while the Flathead Indian Reservation is located west and south of the park. When the Blackfeet Reservation was first established in 1855 by the Lame Bull Treaty, it included the eastern area of the current park up to the Continental Divide. To the Blackfeet, the mountains of this area, especially Chief Mountain and the region in the southeast at Two Medicine, were considered the "Backbone of the World" and were frequented during vision quests. In 1895 Chief White Calf of the Blackfeet authorized the sale of the mountain area, some 800,000 acres (3,200 km<sup>2</sup>), to the U.S. government for \$1.5 million, with the understanding that they would maintain usage rights to the land for hunting as long as the ceded stripe will be public land of the United States. This established the current boundary between the park and the reservation.

Far away in northwestern Montana, hidden from view by clustering mountain peaks, lies an unmapped corner—the Crown of the Continent. — George Bird Grinnell (1901)



CAMP NEAR LOWER END OF UPPER ST. MARY'S LAKE

While exploring the Marias River in 1806, the Lewis and Clark Expedition came within 50 miles (80 km) of the area that is now the park. A series of explorations after 1850 helped to shape the understanding of the area that later became the park. In 1885 George Bird Grinnell hired noted explorer (and later well regarded author) James Willard Schultz to guide him on a hunting expedition into what would later become the park. After several more trips to the region, Grinnell became so inspired by the scenery that he spent the next two decades working to establish a national park. In 1901 Grinnell wrote a description of the region in which he referred to it as the "Crown of the Continent". His efforts to protect the land make him the premier contributor to this cause. A few years after Grinnell first visited, Henry L. Stimson and two companions, including a Blackfoot, climbed the steep east face of Chief Mountain in 1892.

In 1891 the Great Northern Railway crossed the Continental Divide at Marias Pass 5,213 feet (1,589 m), which is along the southern boundary of the park. In an effort to stimulate use of the railroad, the Great Northern soon advertised the splendors of the region to the public. The company lobbied the United States Congress. In 1897 the park was designated as a forest preserve. Under the forest designation, mining was still allowed but was not commercially successful. Meanwhile, proponents of protecting the region kept up their efforts. In 1910, under the influence of the Boone and Crockett Club, and spearheaded by George Bird Grinnell and Louis W. Hill, president of the railroad, a bill was introduced into the U.S. Congress which designated the region a national park. This bill was signed into law by President William Howard Taft in 1910. In 1910 Grinnell wrote, "This Park, the country owes to the Boone and Crockett Club, whose members discovered the region, suggested it being set aside, caused the bill to be introduced into congress and awakened interest in it all over the country".

From May until August 1910, the forest reserve supervisor, Fremont Nathan Haines, managed the park's resources as the first acting superintendent. In August 1910, William Logan was appointed the park's first superintendent. While the designation of the forest reserve confirmed the traditional usage rights of the

Blackfeet, the enabling legislation of the national park does not mention the guarantees to the Native Americans. It is the position of the United States government that with the special designation as a National Park the mountains ceded their multi-purpose public land status and the former rights ceased to exist as it was confirmed by the Court of Claims in 1935. Some Blackfeet held that their traditional usage rights still exist *de jure*. In the 1890s, armed standoffs were avoided narrowly several times.

The Great Northern Railway, under the supervision of President Louis W. Hill, built a number of hotels and chalets throughout the park in the 1910s to promote tourism. These buildings, constructed and operated by a Great Northern subsidiary called the Glacier Park Company, were modeled on Swiss architecture as part of Hill's plan to portray Glacier as "America's Switzerland". Hill was especially interested in sponsoring artists to come to the park, building tourist lodges that displayed their work. His hotels in the park never made a profit but they attracted thousands of visitors who came via the Great Northern. Vacationers commonly took pack trips on horseback between the lodges or utilized the seasonal stagecoach routes to gain access to the Many Glacier area in the northeast.

The chalets, built between 1910 and 1913, included Belton, St. Mary, Going-to-the-Sun, Many Glacier, Two Medicine, Sperry, Granite Park, Cut Bank, and Gunsight Lake. The railway also built Glacier Park Lodge, adjacent to the park on its east side, and the Many Glacier Hotel on the east shore of Swiftcurrent Lake. Louis Hill personally selected the sites for all of these buildings, choosing each for their dramatic scenic backdrops and views. Another developer, John Lewis, built the Lewis Glacier Hotel on Lake McDonald in 1913–1914. The Great Northern Railway bought the hotel in 1930 and it was later renamed Lake McDonald Lodge. Some of the chalets were in remote backcountry locations accessible only by trail. Today, only Sperry, Granite Park, and Belton Chalets are still in operation, while a building formerly belonging to Two Medicine Chalet is now Two Medicine Store. The surviving chalet and hotel buildings within the park are now designated as National Historic Landmarks. In total,

350 buildings and structures within the park are listed on the National Register of Historic Places, including ranger stations, backcountry patrol cabins, fire lookouts, and concession facilities. In 2017, Sperry Chalet closed early for the season due to the Sprague Fire which subsequently burned the entire interior portions of the structure, leaving only the stone exterior standing. Due to damage, the chalet was closed indefinitely and while the exterior stonework was stabilized in the fall of 2017, the dates for rebuilding and reopening the chalet has yet to be determined.

After the park was well established and visitors began to rely more on automobiles, work was begun on the 53-mile (85 km) long Going-to-the-Sun Road, completed in 1932. Also known simply as the Sun Road, the road bisects the park and is the only route that ventures deep into the park, going over the Continental Divide at Logan Pass, 6,646 feet (2,026 m) at the midway point. The Sun Road is also listed on the National Register of Historic Places and in 1985 was designated a National Historic Civil

Engineering Landmark. Another route, along the southern boundary between the park and National Forests, is US Route 2, which crosses the Continental Divide at Marias Pass and connects the towns of West Glacier and East Glacier.

The Civilian Conservation Corps (CCC), a New Deal relief agency for young men, played a major role between 1933 and 1942 in developing both Glacier National Park and Yellowstone National Park. CCC projects included reforestation, campground development, trail construction, fire hazard reduction, and fire-fighting work. The increase in motor vehicle traffic through the park during the 1930s resulted in the construction of new concession facilities at Swiftcurrent and Rising Sun, both designed for automobile-based tourism. These early auto camps are now also listed on the National Register.

In 2011, Glacier National Park was depicted on the seventh quarter in the America the Beautiful Quarters series

# The Northern Traverse



## Traditional Northern Traverse Route

This route encompasses some of the wildest and most scenic terrain in the park and affords a strenuous challenge to the serious backpacker. The trail begins at Kintla Lake, on the trail to Boulder Pass. The first 12.0 miles are an easy stroll along the shores of Kintla and Upper Kintla Lakes, where views are limited by the density of the forest. Beyond Upper Kintla Lake the trail begins a grueling ascent to Boulder Pass as the views begin to open up, exposing the majestic peaks on all sides. After passing through Boulder Pass, the trail descends around the Hole in the Wall cirque and then drops farther to Brown Pass. A relatively easy descent lands the hiker in the Olson Creek Valley, which the trail follows through the trees to the junction with the Waterton Lake Trail.

From this junction the hiker should follow the trail signs to Goat Haunt Ranger Station, on the south shore of Upper Waterton Lake. From the ranger station the route heads south, following the Waterton Valley beneath the boles of old growth conifers. After topping a brief rise, the route meets a junction with the Stoney Indian Pass Trail, which

it follows eastward again, rising into open meadows and rocky fields. The summit of this pass rewards the hiker with more fantastic vistas of glacier-carved pinnacles before descending past numerous waterfalls into the Mokowanis River Valley. A gentle descent past a chain of lakes takes you to a junction with the Belly River Trail. Just to the north is a seasonally manned ranger station, while the primary route takes you northward, following the meanders of the Belly River through meadows and copses toward the Chief Mountain Customs. The last several miles are a surprisingly steep and strenuous ascent up a hillside to the trail's terminus.

## Modified Northern Travers Route

This modified route is for convenience and diverge at the junction of the Stoney Indian Pass Trail. From the Waterton Lake camping area (Goat Haunt) head south through the Waterton Valley until you reach the Fifty Mountain camping area, about 10.8 miles. Then follow the Swiftcurrent Pass Trail and descend the Continental Divide and follow a string of Lakes that will lead you to the Swiftcurrent Motor Inn.

Virtually all the historically known plant and animal species, with the exception of the bison and woodland caribou, are still present, providing biologists with an intact ecosystem for plant and animal research. Two threatened species of mammals, the grizzly bear and the lynx, are found in the park. Although their numbers remain at historical levels, both are listed as threatened because in nearly every other region of the U.S. outside of Alaska, they are either extremely rare or absent from their historical range. On average, one or two bear attacks on humans occur each year; since the creation of the park in 1910, there have been a total of 10 bear-related deaths. The number of grizzlies and lynx in the park is not known for certain, but park biologists believed as of 2008 that there were just above 300 grizzlies in the park; a study which commenced in 2001 hopes to determine the number of lynx. The exact population figures for grizzlies and the smaller black bear are not known but biologists are using a variety of methods to try to determine an accurate population range. Another study has indicated that the wolverine, another very rare mammal in the lower 48 states, also lives in the park. Other mammals such as the mountain goat (the official park symbol), bighorn sheep, moose, elk, mule deer, skunk, white-tailed deer, bobcat, coyote, and cougar are either plentiful or common. Unlike in Yellowstone National Park, which implemented a wolf reintroduction program in the 1990s, it is believed that wolves recolonized Glacier National Park naturally during the 1980s. Sixty-two species of mammals have been documented including badger, river otter, porcupine, mink, marten, fisher, two species of marmots, six species of bats, and numerous other small mammals.

A total of 260 species of birds have been recorded, with raptors such as the bald eagle, golden eagle, peregrine falcon,



osprey and several species of hawks residing year round. The harlequin duck is a colorful species of waterfowl found in the lakes and waterways. The great blue heron, tundra swan, Canada goose and American wigeon are species of waterfowl more commonly encountered in the park. Great horned owl, Clark's nutcracker, Steller's jay, pileated woodpecker and cedar waxwing reside in the dense forests along the mountainsides, and in the higher altitudes, the ptarmigan, timberline sparrow and rosy finch are the most likely to be seen. The Clark's nutcracker is less plentiful than in past years due to the decline in the number of whitebark pines.

Because of the colder climate, ectothermic reptiles are all but absent, with two species of garter snake and the western painted turtle being the only



three reptile species proven to exist. Similarly, only six species of amphibians are documented, although those species exist in large numbers. After a forest fire in 2001, a few park roads were temporarily closed the following year to allow thousands of western toads to migrate to other areas.

A total of 23 species of fish reside in park waters, and native game fish species found in the lakes and streams include the westslope cutthroat trout, northern pike, mountain whitefish, kokanee salmon and Arctic grayling. Glacier is also home to the threatened bull trout, which is illegal to possess and must be returned to the water if caught inadvertently. Introduction in previous decades of lake trout and other non-native fish species has greatly impacted some native fish populations, especially the bull trout and west slope cutthroat trout.

# Geography and Geology

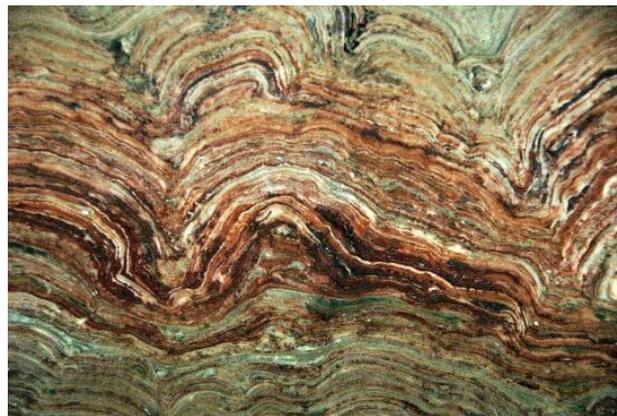
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The park is bordered on the north by Waterton Lakes National Park in Alberta, and the Flathead Provincial Forest and Akamina-Kishinena Provincial Park in British Columbia. To the west, the north fork of the Flathead River forms the western boundary, while its middle fork is part of the southern boundary. The Blackfoot Indian Reservation provides most of the eastern boundary. The Lewis and Clark and the Flathead National Forests form the southern and western boundary. The remote Bob Marshall Wilderness Complex is located in the two forests immediately to the south.

The park contains a dozen large lakes and 700 smaller ones, but only 131 lakes have been named. Lake McDonald on the western side of the park is the longest at 9.4 miles (15.1 km), the largest in area at 6,823 acres (27.61 km<sup>2</sup>), and the deepest at 464 feet (141 m). Numerous smaller lakes, known as tarns, are located in cirques formed by glacial erosion. Some of these lakes, like Avalanche Lake and Cracker Lake, are colored an opaque turquoise by suspended glacial silt, which also causes a number of streams to run milky white. The lakes of Glacier National Park remain cold year round, with temperatures rarely above 50 °F (10 °C) at their surface. Cold water lakes such as these support little plankton growth, ensuring that the lake waters are remarkably clear. The lack of plankton, however, lowers the rate of pollution filtration, so pollutants have a tendency to linger longer. Consequently, the lakes are considered environmental bellwethers as they can be quickly affected by even minor increases in pollutants.

Two hundred waterfalls are scattered throughout the park. However, during drier times of the year, many of these are reduced to a trickle. The largest falls include those in the Two Medicine region, McDonald Falls in the McDonald Valley, and Swiftcurrent Falls in the Many Glacier area, which is easily observable and close to the Many Glacier Hotel. One of the tallest waterfalls is Bird Woman Falls, which drops 492 feet (150 m) from a hanging valley beneath the north slope of Mount Oberlin.

## Geology



The rocks found in the park are primarily sedimentary rocks of the Belt Supergroup. They were deposited in shallow seas over 1.6 billion to 800 million years ago. During the formation of the Rocky Mountains 170 million years ago, one region of rocks now known as the Lewis Overthrust was forced eastward 50 miles (80 km). This overthrust was several miles (kilometers) thick and hundreds of miles (kilometers) long. This resulted in older rocks being displaced over newer ones, so the overlying Proterozoic rocks are between 1.4 and 1.5 billion years older than Cretaceous age rocks they now rest on.

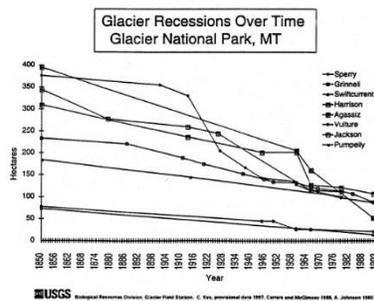
One of the most dramatic evidences of this overthrust is visible in the form of Chief Mountain, an isolated peak on the edge of the eastern boundary of the park rising 2,500 feet (800 m) above the Great Plains. There are six mountains in the park over 10,000 feet (3,000 m) in elevation, with Mount Cleveland at 10,466 feet (3,190 m) being the tallest. Appropriately named Triple Divide Peak sends waters towards the Pacific Ocean, Hudson Bay, and Gulf of Mexico watersheds. This peak can effectively be considered to be the apex of the North American continent, although the mountain is only 8,020 feet (2,444 m) above sea level.

The rocks in Glacier National Park are the best preserved Proterozoic sedimentary rocks in the world, with some of the world's most fruitful sources for records of early life.

Sedimentary rocks of similar age located in other regions have been greatly altered by mountain building and other metamorphic changes; consequently fossils are less common and more difficult to observe. The rocks in the park preserve such features as millimeter-scale lamination, ripple marks, mud cracks, salt-crystal casts, raindrop impressions, oolites, and other sedimentary bedding characteristics. Six fossilized species of stromatolites, early organisms consisting of primarily blue-green algae, have been documented and dated at about 1 billion years. The discovery of the Appekunny Formation, a well preserved rock stratum in the park, pushed back the established date for the origination of animal life a full billion years. This rock formation has bedding structures which are believed to be the remains of the earliest identified metazoan (animal) life on Earth.

## Glaciers

Glacier National Park is dominated by mountains which were carved into their present shapes by the huge glaciers of the last ice age. These glaciers have largely disappeared over the last 12,000 years. Evidence of widespread glacial action is found throughout the park in the form of U-shaped valleys, cirques, arêtes, and large outflow lakes radiating like fingers from the base of the highest peaks.



Since the end of the ice ages, various warming and cooling trends have occurred. The last recent cooling trend was during the Little Ice Age, which took place approximately between 1550 and 1850. During the Little Ice Age, the glaciers in the park expanded and advanced, although to nowhere near as great an extent as they had during the Ice Age.

During the middle of the 20th century, examination of the maps and photographs from the previous century provided clear evidence that the 150 glaciers known to have existed in the park a hundred years earlier had greatly retreated, and in many cases disappeared altogether. Repeat photography of the glaciers, such as the pictures taken of Grinnell Glacier between 1938 and 2009 as shown, help to provide visual confirmation of the extent of glacier retreat.

In the 1980s, the U.S. Geological Survey began a more systematic study of the remaining glaciers, which has continued to the present day. By 2010, 37 glaciers remained, but only 25 of these were considered to be "active glaciers" of at least 25 acres (0.10 km<sup>2</sup>) in area. The National Park Service warns that if the current warming trend continues, the park's remaining glaciers will be gone by 2030. This glacier retreat follows a worldwide pattern that has accelerated even more since 1980. Without a major climatic change in which cooler and moister weather returns and persists, the mass balance, which is the accumulation rate versus the ablation (melting) rate of glaciers, will continue to be negative and the glaciers have been projected to eventually disappear, leaving behind only barren rock.



After the end of the Little Ice Age in 1850, the glaciers in the park retreated moderately until the 1910s. Between 1917 and 1941, the retreat rate accelerated and was as high as 330 feet (100 m) per year for some glaciers. A slight cooling trend from the 1940s until 1979 helped to slow the rate of retreat and, in a few cases, even advanced the glaciers over ten meters. However, during the 1980s, the glaciers in the park began a steady period of loss of glacial ice, which continues as of 2010. In 1850, the glaciers in the region near Blackfoot and Jackson Glaciers covered 5,337 acres (21.6 km<sup>2</sup>), but by 1979, the same region of the park had glacier ice covering only 1,828 acres (7.4 km<sup>2</sup>). Between 1850 and 1979, 73% of the glacial ice had melted

away. At the time the park was created, Jackson Glacier was part of Blackfoot Glacier, but the two have separated into individual glaciers since.

The impact of glacier retreat on the park's ecosystems is not fully known, but plant and animal species that are dependent on cold water could suffer due to a loss of habitat. Reduced seasonal melting of glacial ice may also affect stream flow during the dry summer and fall seasons, reducing water table levels and increasing the risk of forest fires. The loss of glaciers will also reduce the aesthetic visual appeal that glaciers provide to visitors.

## Park Entrance Fees

### Entrance Fee by car - 7 day permit

**\$35.00**

**(Winter Rate - \$25.00, November 1 to April 30)**

This is an entrance fee for all persons traveling in a single, private, non-commercial vehicle (car/truck/van). The permit is non-transferable. Visitors can enter the park at any time, if the entrance station is not staffed, a self-registration area is available for purchasing a 7-day park permit.

### Entrance Fee - single entry

**\$20.00**

**(Winter Rate - \$15.00, November 1 to April 30)**

This is a per person entrance fee for a visitor traveling on foot, bicycle, or for individuals traveling together in a vehicle as a non-commercial, organized group. The permit is non-transferable.

## Backcountry Permits

### Walk-in Permits

Backcountry permits may be available the day before or day of a desired trip start date. Approximately half of all sites in a campground are set aside for walk-in campers. However, that does not mean those sites will be available at all times. Backpackers on longer trips (4 or more nights) may take walk-in sites well in advance. Arrive early the day before your intended trip start date for the best campsite availability. No reservation fees are charged for walk-in permits, only the \$7 / night / person camping fee is charged. **Permits will not be issued after 4:30 pm at any location.**

**NEW! To prevent overnight camping on the Apgar Backcountry Camping Center porch and in the adjacent**

**parking lot, backcountry users may only line up at 4:00 am or later.**

**[What's available tonight?](#)** The dates are listed in green at the top of the chart. The numbers below indicate how many sites are available for a "walk-in" permit. Check the date at the top to make sure the chart is current.

### Permitting Locations:

#### **Apgar Backcountry Permit Center**

Open daily from May 1 to October 31

When the Apgar Backcountry Permit Center has closed for the season, call (406) 888-7800 and schedule an appointment to have a backcountry permit issued.

#### **St. Mary Visitor Center**

Open daily from late-May to late-September

#### **Many Glacier Ranger Station**

Open daily from late-May to late-September

#### **Two Medicine Ranger Station**

Open daily from late-May to late-September

#### **Polebridge Ranger Station**

Open daily from early-June through mid-September

#### **Waterton Lakes National Park Visitor Reception Centre**

The Waterton Visitor Centre will issue backcountry permits for itineraries entering at Goat Haunt and Chief Mountain customs. The temporary visitor centre is located next to the Waterton Post Office in Waterton Townsite.

### Advance Reservations

**Backcountry sites can be reserved in advance starting March 15 for groups of 1-8 campers and March 1 for groups of 9-12 campers.** There is a \$40 application fee (\$10 administrative fee + \$30 fulfilled trip request fee) for EACH application you submit. If backcountry personnel

are unable to award an advance reservation itinerary based upon the parameters you indicate, the \$30 fulfilled trip request fee will be refunded. Applicants should expect a two month period of time between application submittal and notification of permit status. The camping fee of \$7 / night / person is due upon picking up your permit. **Applications can be submitted ONLINE ONLY.**

# Planning, Regulations, and Safety

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## **Trip Planning**

With its towering mountains, pristine alpine lakes, abundant wildlife, and over 700 miles of trails, Glacier is a backpacking paradise. Due to individual differences in fitness, backcountry experience, and personal preference, we don't offer specific trip recommendations.

In the broadest sense, Glacier's backcountry comes in two flavors—east and west roughly split along the Continental Divide. Each trail on a respective side offers a similar "feel." West side trails start at around 3,200 feet in elevation, are more heavily forested, and offer the greatest solitude. East of the divide, trails start at around 5,000 feet and the terrain is more sparsely vegetated, creating more open vistas and attracting more crowds.

## **Map and Campsite List**

Use this [backcountry campground, trailhead, and area information](#) to help plan your trip. [GPS data points](#) are also available.

For specific trail descriptions and other planning tools, visit Glacier's non-profit partner, the [Glacier National Park Conservancy](#).

## **Trail Conditions**

Trail conditions change frequently throughout the year, but the Glacier National Park's [Trail Status Reports page](#) offer some seasonal generalizations as well as specific trail condition updates throughout the summer season, that will help you know what to expect in the backcountry.

## **Trail Closures**

Hazardous or emergency conditions may make it necessary to close a trail segment. These closures may

effect your planned itinerary. Backcountry rangers will make an effort to contact you on the trail to let you know your options and assist with route changes. It may take a while for everyone to be contacted. Do not enter any closed trail, even if it was part of your planned itinerary. See the [current closures and postings list](#).

## **Backcountry Regulations**

### **Campsites**

Backcountry camping is restricted to 65 designated campgrounds with the exception of the Nyack / Coal Creek camping zone where both designated campgrounds and at large camping are available.

### **Permits**

A backcountry use permit is required for all overnight camping, and must be in your possession while in the backcountry. They are valid only for the dates, locations, and party size specified.

### **Trip Itineraries**

Itineraries must be contiguous. You cannot exit one trailhead and drive to another trailhead to access campgrounds on the same trip. Note: Hiking short road sections on foot—Many Glacier and Two Medicine developed areas, Crossing Going to the Sun Road at Jackson Glacier Overlook—to connect longer itineraries is permitted.

### **Group Size**

The maximum party size allowed is 12 persons. Each backcountry campground has 2-7 campsites. Each

campsite is limited to four (4) people and two (2) tents (2-4 person).

## Leave No Trace

Many of Glacier's backcountry camping regulations are based on Leave No Trace (LNT) outdoor ethics. LNT tells us that by concentrating impacts, including eating, sleeping, and human waste disposal, we prevent degradation of a broader area. Concentrating impacts essentially creates small pockets of impact and leaves nearly pristine conditions over larger areas. For more information [visit LNT.org](https://www.lnt.org).

## Backcountry Safety

### Terrain Safety

#### Mountainous Terrain

Many accidents occur when people fall after stepping off trails or roadsides, or by venturing onto very steep slopes. Stay on designated trails and don't go beyond protective fencing or guard rails. Supervise children closely in such areas. At upper elevations, trails should be followed carefully, noting directions given by trail signs and markers.

#### Snow and Ice

Snowfields and glaciers present serious hazards. Snowbridges may conceal deep crevasses on glaciers or large hidden cavities under snowfields, and collapse under the weight of an unsuspecting hiker. Don't slide on snowbanks. People often lose control and slide into rocks or trees. Exercise caution around any snowfield.

#### Along the Roads

There are many great places to pull off to view wildlife and to take pictures. Along the sides of roads, please be careful of moving, alternating traffic. Also be careful of pedestrian crossings and visitors walking along the sides of roads as you drive by.

## Water Safety

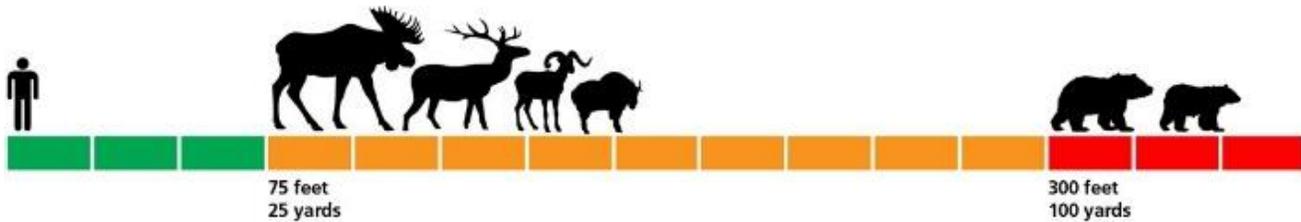
Water is the number one cause of fatalities in Glacier National Park. Please use extreme caution near water. Swift, cold glacial streams and rivers, moss-covered rocks, and slippery logs all present dangers. Children, photographers, boaters, rafters, swimmers, and fishermen have fallen victim to these rapid, frigid streams and deep glacial lakes. Avoid wading in or fording swift streams. Never walk, play, or climb on slippery rocks and logs, especially around waterfalls. When boating, don't stand up or lean over the side, and always wear a lifejacket.

### Hypothermia

Hypothermia, the "progressive physical collapse and reduced mental capacity resulting from the chilling of the inner core of the human body," can occur even at temperatures above freezing. Temperatures can drop rapidly. Exposure to frigid bodies of water and sudden mountain storms can turn a pleasant day into a bitterly cold and life-threatening experience. People in poor physical condition or who are exhausted are particularly at risk.

#### Preventing Hypothermia

- Avoid hypothermia by using water-resistant clothing before you become wet.
- Wear clothing that wicks moisture away.
- Minimize wind exposure and if your clothes become wet, replace them.
- Avoid sweating by dressing in layers, rather than in a single bulky garment.
- Pack a sweater, warm hat, and raingear for any hike.



**The Warning Signs**

- Uncontrolled shivering, slow or slurred speech, memory lapses and incoherence, lack of coordination such as immobile or fumbling hands, stumbling, a lurching gait, drowsiness, and exhaustion.

**Immediate Treatment**

- Seek shelter from weather and get the victim into dry clothes.
- Give warm non-alcoholic drinks.
- Build a fire and keep victim awake.
- Strip victim and yourself, and get into sleeping bag making skin-to-skin contact.
- If victim is semi-conscious or worse, get professional help immediately.

**Drowning**

Sudden immersion in cold water (below 80° F, 27° C) may trigger the "mammalian diving reflex." This reflex restricts blood from outlying areas of the body and routes it to vital organs like the heart, lungs, and brain. The colder the water, the younger the victim, and the quicker the rescue, the better the chance for survival. Some cold-water drowning victims have survived with no brain damage after being submerged for over 30 minutes.

**Giardia**

Giardiasis is caused by a parasite (*Giardia lamblia*) found in lakes and streams. Persistent, severe diarrhea, abdominal cramps, and nausea are symptoms of this disease. If you experience any symptoms, contact a physician. When hiking, carry water from one of the park's treated water systems. If you plan to camp in the backcountry, follow recommendations received with your permit. Bring water to a boil or use an approved filter.

**Wildlife Hazards**

Glacier provides a wonderful opportunity to view animals in their natural setting. Along with this opportunity comes a special obligation for park visitors. With just a little planning and forethought, visitors can help ensure the survival of a threatened or endangered species. Always enjoy wildlife from the safety of your car or from a safe distance. Do not approach wildlife to take photographs. Every year visitors get too close to wildlife in order to get a picture. Sadly, injuries have occurred as a result. Use a telephoto lens instead. This will not only insure your safety, but the safety of the animal. And never approach a bear or get out of your car to get a picture of a bear.

Feeding, harassing, or molesting wildlife is strictly prohibited and subject to fine. Bears, mountain lions, goats, deer, or any other species of wildlife can present a real and painful threat, especially females with young.

For most wildlife, like moose, elk, bighorn sheep mountain goats, deer, and coyotes, visitors are to be at least 75 feet (25 yards/23 meters) away. For wolves, grizzly and black bears, visitors need to be at least 300 feet (100 yards/91.4 meters) away.

**Ticks**

Ticks are most active in spring and early summer. Several serious diseases, like Rocky Mountain Spotted Fever, can be transmitted. Completely remove attached ticks and disinfect the site. If rashes or lesions form around the bite, or if unexplained symptoms occur, consult a physician.

## Rodents and Hantavirus

Deer mice are possible carriers of Hantavirus. The most likely source of infection is from rodent urine and droppings inhaled as aerosols or dust. Initial symptoms are almost identical to the onset of flu. If you have potentially been exposed and exhibit flu-like symptoms, you should seek medical care immediately. Avoid rodent infested areas. Camp away from possible rodent burrows or shelters (garbage dumps and woodpiles), and keep food in rodent-proof containers. To prevent the spread of dust in the air, spray the affected areas with a water and bleach solution (1½ cups bleach to one gallon of water).

## Bear Safety

It is quite reasonable to fear bears, but be aware that many bear stories are greatly exaggerated. Your chances of being injured on the way to the backcountry are actually far greater than being injured by a bear. However, people have been injured and killed by bears in the wild. Your safety is not guaranteed. Read the information below to learn good bear avoidance behavior. Most attacks are caused by surprising a bear, getting between a mother bear and her cubs, or getting too close to a bear with food. The chances of being attacked by a bear can be reduced by avoiding the above situations and taking the following precautions:

- **Be alert.** Watch for tracks, excrement, diggings or other bear sign. Carry binoculars and scan ahead periodically. If you see a bear cub, the mother is close by.
- **Don't hike alone or at night.** Bears travel (often on the trails) and feed mainly at dawn, dusk, and at night. Statistics show that parties of three or more are safer than solo hikers. Groups tend to make more noise and appear more formidable to a bear. Also, if there is an attack, members of the group can assist the injured while others go for help.
- **Make noise.** Talk, sing, clap your hands, shake pebbles in a can, anything to let a bear know you

are present. Don't rely on bells; usually they are too quiet. Shout often, especially when traveling upwind, near streams, or in thick brush.

- **Stay on designated trails.** You increase your risk of surprising a bear when hiking off-trail.
- **Avoid carcasses.** Never camp in a campsite that has a carcass nearby. It is very risky to approach a carcass; a bear may be out of sight guarding its food. Report dead animals near a trail or campsite to the nearest ranger station.
- **Avoid bringing smelly food.** A bear's acute sense of smell can detect odors from great distances. Leave bacon, tuna, ham, scented deodorants and other odorous items behind. Dry foods are lighter to carry and not as aromatic.

### If you encounter a bear:

- Stay calm
- Do not run or make sudden movements
- Back away slowly
- Talk quietly to the bear, do not shout
- Do not drop your pack
- Avoid looking directly at the bear

If you encounter a bear and it does not see you, keep out of sight and detour as far away as possible behind and downwind of the bear. Climbing a tree is popular advice, but not always practical. All black bears, all grizzly cubs, and some adult grizzlies can climb trees if the spacing of the branches is right. Climb a tree only if the bear is far away, the tree is nearby, and one in which you can climb at least 15 feet. Running to a tree may provoke a bear to chase you. You cannot outrun a bear!

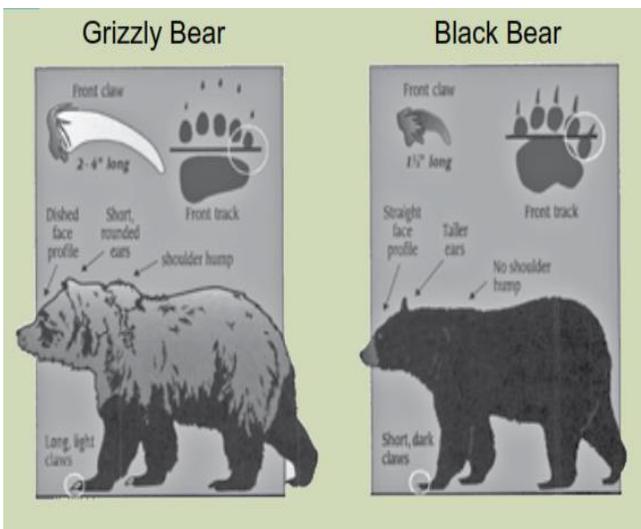
**If the bear charges you,** stand your ground and use bear spray if you have it. Some bears may bluff charge, then veer off or stop abruptly, allowing you to slowly back away. If the bear makes physical contact, drop to the ground, lie face down, and clasp your hands behind your neck; your pack may shield your body. It may take all the courage you have, but lie still and remain silent, resistance will only provoke the bear. Before moving listen and look around carefully to make sure that the bear is no longer nearby.

In exceptionally rare circumstances a bear may come to view humans as prey. This is often a hiker's biggest fear, but this type of encounter is extremely rare. If you feel that a bear has been following you, be firm and aggressive, look big, yell, throw rocks or sticks, and use bear spray.

Night attacks on tents are extremely rare, but if this happens you should defend yourself aggressively. Any bear entering your tent at night doesn't have good intentions; if it attacks fight back with any resource you have available to show that you are not easy prey.

### Do You Know Your Bears?

A line drawn under the big toe across the top of the pad runs through the top half of the little toe on black bear tracks and through or below the bottom half of the little toe on grizzly tracks.



### Food and Bears

Don't let your actions cause a bear or other animal to be destroyed. A bear has an acute sense of smell. If you leave food out and unattended, you are inviting a bear into your camp. Just one incident of a bear obtaining human food may mean a dead bear. Why? A bear conditioned to human food is more likely to be aggressive and, subsequently, to injure or kill people in an attempt to obtain this easy source of food. When such a bear poses a risk of injuring someone, it is often necessary to destroy that bear.

Samples of odorous items which you are required to hang include all food, garbage, empty or full beverage cans, coolers, lip balm, sunscreens and lotions, toothpaste, food panniers, horse feed, some medications, clothes worn while cooking, eating utensils which have not been properly cleaned, and any article that has an odor. Keep all food and odorous items out of sleeping bags, tents, and their stuff sacks.

Before starting a day hike or backcountry trip check at a Visitor Center or Ranger Station for any recent bear sightings or warnings. Look for posted warning signs at the trailhead. Report bear sightings or encounters to the nearest Ranger Station or Visitor Center.

### Bear Pepper Sprays

The best way to avoid being injured by a bear is to take all the necessary precautions. However, if these measures fail and you are charged by a bear, your reactions can, in many cases, defuse the situation. Bear spray is a good last line of defense that has been highly effective in the reported cases where it was used. The use of bear spray is especially appropriate if you are attacked in your tent at night. If you successfully used pepper spray to stop a bear, leave the area immediately. The spray is effective for a short time and is less effective the second time around. Bear Spray is effective only at distances of 10 – 30 feet and is adversely affected by wind, cold temperatures, and age. Carefully read the instructions, know how to use the spray and aware of its limitations. Be sure to check the expiration date. If you decide to carry bear spray the canister must be immediately available, not in your pack.

In choosing a pepper spray please consider the following: Purchase only products clearly labeled "for deterring attacks by bears." Concentration should be between 1 and 2% capsaicin. The minimum net weight should be 225 grams or 7.9 oz. The spray should be delivered in a shotgun-cloud pattern at a minimum range of 25 feet and EPA approved.

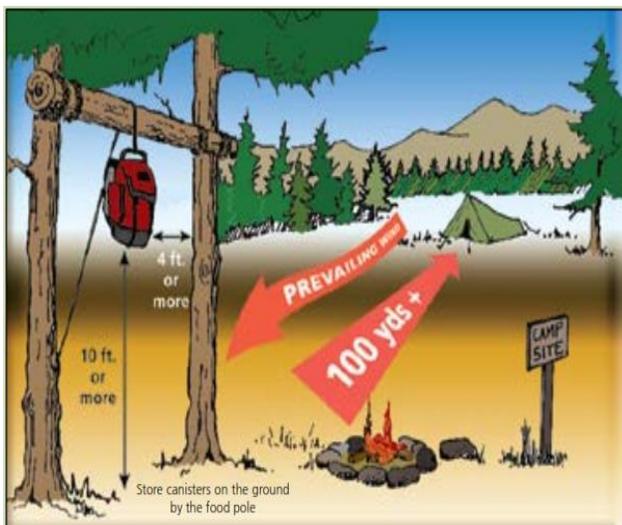
Although bear sprays have been highly effective at stopping charging bears, there are some indications that the residue from some oil-based sprays may possibly act as a bear attractant. Use your spray only as a last ditch

deterrent on the bear. Do not spray around your campsite, tent, camping gear, or in any bear habitat.

### Recommended Camp Set Up in Bear Country

Keep your sleeping area at least 100 yards from the cooking and food-storage area. A food storage pole is provided at most campsites, so that food and other attractants can be suspended. You need to provide your own rope (35 feet recommended).

- Suspend items 10 feet above ground and 4 feet out from tree trunks.
- Certain portable bear resistant food containers (BRFCs) may be used for food storage in lieu of hanging. A list of approved containers is available from park backcountry offices.
- BRFCs must be left on the ground underneath the food pole or in the cooking area.
- Make sure all food and odorous items will fit into a container before starting your trip. Store your food immediately upon entering camp and keep all food and trash secured any time they're not in use.
- Store all odorous items including food, trash, toothpaste, deodorant and lotion.
- Keep a clean camp; remove any food scraps and trash from the fire pit. Pack out all trash.
- Strain food particles from dishwater and pack out with trash. Scatter dishwater at least 100 yards from tent site.



- Never eat or store food in your tent. Sleep in a tent, not under the stars.

### Plan Ahead and Prepare

- Avoid placing your tent near dead standing trees.

### Mountain Lion Safety

A glimpse of one of these magnificent cats would be a vacation highlight, but you need to take precautions to protect you and your children from an accidental encounter.

- Don't hike alone.
- Make noise to avoid surprising a lion and keep children close to you at all times.
- If you do encounter a lion, do not run. Talk calmly, avert your gaze, stand tall, and back away. Unlike with bears, if attack seems imminent, act aggressively. Do not crouch and do not turn away. Lions may be scared away by being struck with rocks or sticks, or by being kicked or hit.

Lions are primarily nocturnal, but they have attacked in broad daylight. They rarely prey on humans, but such behavior occasionally does occur. Children and small adults are particularly vulnerable. Report all mountain lion encounters immediately!

### Leave No Trace



Developed by the National Outdoor Leadership School, the principles of Leave No Trace are an extension of the National Park Service mission to preserve a vast system of resources “unimpaired for the enjoyment of future generations” that challenge individuals to become active stewards in its preservation. The Program builds awareness, appreciation, and respect for the land, and provides a foundation for applying minimum-impact techniques.

- Know the regulations and restrictions for the area you visit.
- Prepare for extreme weather, hazards, and emergencies.
- Select terrain and mileage based on what your group can handle.
- Schedule your trip to avoid times of high use.
- As you look through the campsite list in this planner, please note the party size limit that pertains to each campsite. If your group size exceeds these limits, you will need to camp and cook as smaller groups in separate campsites with separate permits.
- Repackage food to minimize waste.

**Travel and Camp on Durable Surfaces**

- To prevent erosion, avoid shortcuts and switchbacks.
- Walk single file in the middle of the trail, even when wet or muddy.
- Camp in designated campsites.
- Protect riparian areas by camping at least 100 feet from lakes and streams.
- Keep campsites small. Focus activity in areas where vegetation is absent. Avoid leveling the tent site.

**Dispose of Waste Properly**

- Pack it in, pack it out. Inspect your campsite and rest areas for trash or spilled foods. Never bury it or dump it in pit toilets. Pack out all trash, leftover food, and litter.
- To wash yourself or your dishes, carry water 100 feet away from streams or lakes and use small amounts of biodegradable soap. Scatter strained dishwater.
- Deposit solid human waste in catholes dug 6 to 8 inches deep at least 100 feet from water, camp, and trails. Cover and disguise the cathole when finished.
- Pack out toilet paper and hygiene products.

**Respect Wildlife**

- Do not approach wildlife. All wild animals are potentially dangerous. Observe Wildlife from a distance. If your presence causes an animal to move away, you are too close.
- Never feed or harass animals. Feeding wildlife damages their health, alters natural behaviors, and exposes them to predators and other dangers.

- Protect wildlife and your food by storing rations and trash securely.
- Avoid wildlife during sensitive times: mating, nesting, raising young, or winter.

**Minimize Campfire Impacts**

- Campfires can cause lasting impacts to the backcountry. Use a lightweight stove for cooking and enjoy a candle lantern for light.
- Where fires are permitted, use established fire rings, fire pans, or mound fires. Campfires are only permitted in specified campsites in designated fire rings.
- Keep fires small. Burn only small diameter dead and down wood. Do not break, cut or saw branches from any standing tree (dead or alive).
- Burn all wood and coals to ash, put out campfires completely. Fires must be completely extinguished before you leave the site.

**Leave What You Find**

- Avoid introducing or transporting non-native species.
- Do not build structures, furniture, or dig trenches.
- Federal law prohibits: collecting antlers; removing any plant, animal, or mineral substance; and disturbing or removing archeological or historical items. Leave natural objects as you find them.

**Be Considerate of Other Visitors**

- Respect other visitors and protect the quality of their experience.
- Be courteous. Yield to other users on the trail.
- Step to the downhill side of the trail when encountering pack stock.
- Take breaks and camp away from trails and other visitors.
- Let nature’s sounds prevail. Avoid loud voices and noises.

**Altitude Sickness**

Altitude sickness, the mildest form being acute mountain sickness (AMS), is the negative health effect of high altitude, caused by rapid exposure to low amounts of oxygen at high elevation. Symptoms may include

headaches, vomiting, tiredness, trouble sleeping, and dizziness. Acute mountain sickness can progress to high altitude pulmonary edema (HAPE) with associated shortness of breath or high altitude cerebral edema (HACE) with associated confusion. Chronic mountain sickness may occur after long term exposure to high altitude.

Altitude sickness typically occurs only above 2,500 meters (8,000 ft), though some are affected at lower altitudes such as 6,000 feet. Risk factors include a prior episode of altitude sickness, a high degree of activity, and a rapid increase in elevation. Diagnosis is based on symptoms and is supported in those who have more than a minor reduction in activities. It is recommended that at high-altitude any symptoms of headache, nausea, shortness of breath, or vomiting be assumed to be altitude sickness.

if started early in the course of AMS. Acetazolamide can be taken before symptoms appear as a preventive measure at a dose of 125 mg twice daily. Consult with your doctor to explore this option. Being physically fit does not decrease the risk. Treatment is generally by descending to a lower altitude and sufficient fluids. Mild cases may be helped by ibuprofen, acetazolamide, or dexamethasone. Prior to the onset of altitude sickness, ibuprofen is a suggested non-steroidal anti-inflammatory and painkiller that can help alleviate both the headache and nausea associated with AMS. Severe cases may benefit from oxygen therapy and a portable hyperbaric bag may be used if descent is not possible.

AMS occurs in about 20% of people after rapidly going to 2,500 meters (8,000 ft) and 40% of people going to 3,000 meters (10,000 ft). While AMS and HACE occurs equally frequently in males and females, HAPE occurs more often in males.

Reduced oxygen levels at high altitude causes physical distress



Prevention is by gradually increasing elevation by no more than 300 meters (1,000 ft) per day. Pre-medicating with the drug acetazolamide (trade name Diamox) may help some people making a rapid ascent to sleeping altitude above 2,700 meters (9,000 ft), and it may also be effective



# Weather

As the park spans the Continental Divide, and has more than 7,000 feet (2,100 m) in elevation variance, many climates and microclimates are found in the park. As with other alpine systems, average temperature usually drops as elevation increases. The western side of the park, in the Pacific watershed, has a milder and wetter climate, due to its lower elevation. Precipitation is greatest during the winter and spring, averaging 2 to 3 inches (50 to 80 mm) per month. Snowfall can occur at any time of the year, even in the summer, and especially at higher altitudes. The winter can bring prolonged cold waves, especially on the eastern side of the Continental Divide, which has a higher elevation overall. Snowfalls are significant over the course of the winter, with the largest accumulation occurring in the west. During the tourist season, daytime high temperatures average 60 to 70 °F (16 to 21 °C), and nighttime lows usually drop into the 40 °F (4 °C) range. Temperatures in the high country may be much cooler. In the lower western valleys, daytime highs in the summer may reach 90 °F (30 °C).

Climate data for Glacier National Park, elev. 3,154 feet (961 m)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °F (°C)	55 (13)	58 (14)	66 (19)	83 (28)	90 (32)	93 (34)	99 (37)	99 (37)	95 (35)	79 (26)	65 (18)	52 (11)	99 (37)
Average high °F (°C)	30.5 (-0.8)	35.0 (1.7)	43.2 (6.2)	54.0 (12.2)	64.5 (18.1)	71.7 (22.1)	80.0 (26.7)	79.3 (26.3)	67.5 (19.7)	52.3 (11.3)	37.3 (2.9)	28.8 (-1.8)	53.8 (12.1)
Average low °F (°C)	18.3 (-7.6)	18.9 (-7.3)	24.6 (-4.1)	30.6 (-0.8)	38.0 (3.3)	44.3 (6.8)	48.5 (9.2)	47.1 (8.4)	39.3 (4.1)	32.0 (0.0)	25.5 (-3.6)	17.8 (-7.9)	32.1 (0.1)
Record low °F (°C)	-35 (-37)	-32 (-36)	-30 (-34)	3 (-16)	13 (-11)	24 (-4)	31 (-1)	26 (-3)	18 (-8)	-3 (-19)	-29 (-34)	-36 (-38)	-36 (-38)
Average precipitation inches (mm)	3.23 (82)	1.98 (50)	2.08 (53)	1.93 (49)	2.64 (67)	3.47 (88)	1.70 (43)	1.30 (33)	2.05 (52)	2.49 (63)	3.27 (83)	3.01 (76)	29.15 (739)
Average snowfall inches (cm)	29.5 (75)	16.8 (43)	13.6 (35)	2.9 (7.4)	0.3 (0.76)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	1.7 (4.3)	17.9 (45)	34.3 (87)	117 (297.46)
Average precipitation days (≥ 0.01 in)	16.5	12.9	13.5	12.1	14.0	14.7	9.5	7.8	9.4	12.4	16.2	16.5	155.5
Average snowy days (≥ 0.1 in)	12.6	8.3	5.8	1.8	0.3	0.0	0.0	0.0	0.0	0.8	6.9	13.4	49.9

Source #1: NOAA (normals, 1981–2010)

Source #2: Western Regional Climate Center (extremes 1949–present)

Rapid temperature changes have been noted in the region. In Browning, Montana, just east of the park in the Blackfeet Reservation, a world record temperature drop of 100 °F (56 °C) in only 24 hours occurred on the night of January 23–24, 1916, when thermometers plunged from 44 to –56 °F (7 to –49 °C).

Glacier National Park has a highly regarded global climate change research program. Based in West Glacier, with the main headquarters in Bozeman, Montana, the U.S. Geological Survey has performed scientific research on specific climate change studies since 1992. In addition to the study of the retreating glaciers, research performed includes forest modeling studies in which fire ecology and habitat alterations are analyzed. Additionally, changes in alpine vegetation patterns are documented, watershed studies in which stream flow rates and temperatures are recorded frequently at fixed gauging stations, and atmospheric research in which UV-B radiation, ozone and other atmospheric gases are analyzed over time. The research compiled contributes to a broader understanding of climate changes in the park. The data collected, when compared to other facilities scattered around the world, help to correlate these climatic changes on a global scale.

Glacier is considered to have excellent air and water quality. No major areas of dense human population exist anywhere near the region and industrial effects are minimized due to a scarcity of factories and other potential contributors of pollutants. However, the sterile and cold lakes found throughout the park are easily contaminated by airborne pollutants that fall whenever it rains or snows, and some evidence of these pollutants has been found in park waters. Wildfires could also impact the quality of water. However, the pollution level is currently viewed as negligible, and the park lakes and waterways have a water quality rating of A-1, the highest rating given by the state of Montana.

# The Expedition

The six-day, relatively mellow route transects Glacier’s ice-carved backcountry on-trail, making it both epic and accessible. En-route, pass lakes and creeks and hike over three high passes—with an average daily elevation gain of only 1,000 feet.

To begin the trek you start near the Kintla lake Ranger Station and head northeast as you cross through several lush meadows along the Upper and Lower Kintla Lakes. Climb over 6,255-foot Brown Pass and 7,470-foot Boulder Pass to good camping at near the Goat Haunt Ranger Station where a ferry is available for an excursion into Canada. The elevation gain on this route comes in two bursts, as you ascend Brown and Boulder Passes (biggest push: up 3,324 feet) then again as you follow the Northern Highline Trail and pass by the Ipasha Glacier. From the Waterton Lake camping area (Goat Haunt) head south through the Waterton Valley until you reach the Fifty Mountain camping area, about 10.8 miles. Then follow the Swiftcurrent Pass Trail and descend the Continental Divide and follow a string of Lakes that will lead you to the Swiftcurrent Motor Inn. A car shuttle between trailheads is 96 miles (three hours) one-way over ultra-scenic Going-to-the-Sun Road.

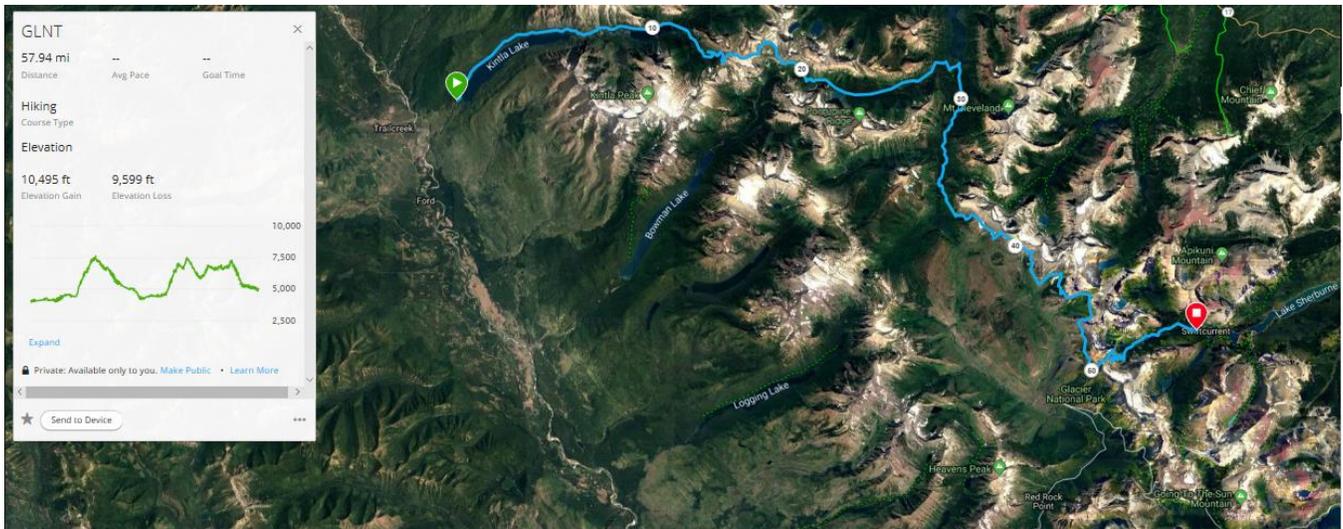
## Itinerary

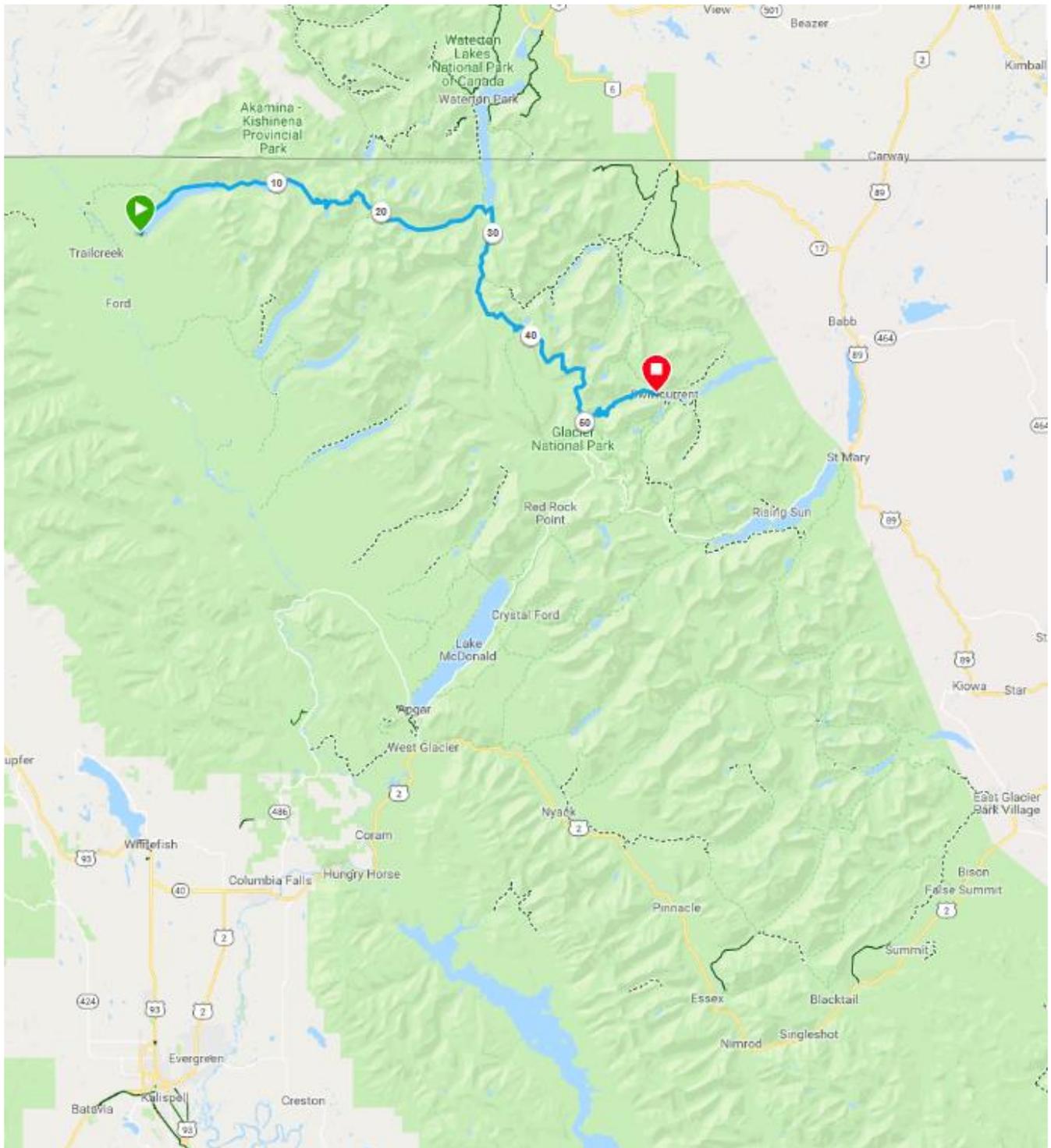
GLACIER ITENERARY FOR 09/2019						
Date	Day/Activity	Night/Camp	Distance	Positive Gain	Negative Gain	Overall Gain
9/11/2019	Fly in to Kalispell, MT.	Hotel near Kalispell, MT				
9/12/2019	Supply Run	Hotel near Kalispell, MT				
9/13/2019	Travel to Kintla Lake Trail Head, Hike to UPK campground	Upper Kintla Lake (UPK)	10.84 mi.	878 ft.	-531 ft.	347 ft.
9/14/2019	Hike to BRO campground	Brown Pass (BRO)	9.85 mi.	3324 ft.	-1587 ft.	1737 ft.
9/15/2019	Hike to WAT campground	Waterton River (WAT)	7.92 mi.	175 ft.	-2067 ft.	-1892 ft.
9/16/2019	Hike to FIF campground	Fifty Mountain (FIF)	10.83 mi.	3038 ft.	-631 ft.	2407 ft.
9/17/2019	Hike to GRN campground	Granite Park (GRN)	11.38 mi.	2443 ft.	-2532 ft.	-89 ft.
9/18/2019	Hike to Swiftcurrent Parking lot in Many Glaciers	Hotel near Kalispell, MT	8.04 mi.	797 ft.	-2447 ft.	-1650 ft.
9/19/2019	Fly out of Kalispell, MT					
<b>Totals</b>			<b>58.86 mi.</b>	<b>10655 ft.</b>	<b>-9795 ft.</b>	<b>860 ft.</b>

### Topographical Map of the Northern Traverse



### Satellite Map of the Northern Traverse





## Trekking Routes

### Day 1

*Hiking from Kintla Lake to the upper Kintla Lake Campground on the Boulder Pass Trail (10.84 miles).*

The Boulder Pass Trail provides access to some of the most rugged and beautiful high-country areas in Glacier Park. High elevations between Boulder and Brown Passes lead to high snow accumulations and late snowmelt, making this trail impassable early in the season. This trail may be entered and exited via three trailheads: Kintla Lake, Goat Haunt Ranger station, and Bowman Lake. Any combination of hiking experiences, from day hikes to extended expeditions, are available to hikers on this trail.

The hike begins at Kintla Lake, which is set in a forested valley between tree-clad hills. As the trail winds around the north lakeshore, watch for signs of the mule deer and mountain lions that inhabit the dense forest. Approximately 3.5 miles from the campground, a primitive connecting trail from Starvation Creek joins the Boulder Pass Trail from the north. The Boulder Pass Trail continues to follow the lakeshore for another 3.0 miles to Kintla Lake (head) Campground, a heavily used area on the lakeshore. Along the way watch for signs of the 2003 Wedge Canyon Fire on the opposite shore.

Shortly after the campground, at the head of the lake, the trail passes the Kintla Lake patrol cabin, where the trail leaves the lakeshore to begin a gentle ascent to Upper Kintla Lake. The trail passes open benches bearing the marks of the 2003 fire; the cascades of Kintla Creek are now visible. Across the valley and high into the basin, you can see the area burned in the 2000 Parke Peak Fire. Occasional avalanche chutes from Long Knife Peak provide vistas of Parke Peak and the Harris Glacier across the valley. The trail reaches the foot of Upper Kintla Lake some 2.5 miles beyond the patrol cabin. Here, you will leave the burned areas. The cockscomb peak at the head of the lake is Gardner Point. The trail follows the north shore of the lake, providing views of Kinnerly Peak across the valley. After 2.5 miles the trail reaches a spur trail to the campground at the head of the lake, which is beautifully situated among stands of fir and spruce.



## Day 2

### *Hiking the Boulder Pass Trail from Upper Kintla Lake to the Brown Pass (BRO) campground (9.85 miles)*

Leaving the lakeshore and the campground behind, the trail crosses Kintla Creek and begins a steep ascent along the west slope of Gardner Point. There are many switch-backs through scattered strands of spruce and open jungles of cow parsnip, a favorite of the small valley. Along this section of the trail are views of Kintla and Kinnerly Peaks to the west and the Agassiz Glacier at their feet. Looking back toward Upper Kintla Lake, Long knife peak can be seen, marking the boundary between Canada and the United States. The trail then reverses its direction, climbing northward to the Boulder Pass campground. Just below the pass the trail proceeds through stands of young alpine larch, an uncommon tree that exists here near the southern extreme of its range.

From the west end of Boulder Pass, the trail winds for several miles through a high, glacier-carved valley, across moraines left by the retreating ice. Pyramid-shaped piles of rock called cairns mark the location of the trail so that it can be found in times of deep snow. At the east end of the pass, the trail branches into two parts. The northerly path, the original trail when the Boulder Glacier stretched across the pass, is now a goat path, which ascends the terminal moraine of Boulder Glacier and winds upward for a mile to a lookout point, high above the Bowman Valley. This lookout affords the most spectacular views of Thunderbird Mountain and many of the high peaks of the Livingston and Lewis Ranges.

The more southerly path descends onto a rocky shelf occupied by several tarns and continues its decent around the curve of the Hole in the Wall, a perfectly formed hanging cirque that sits some 1,800 feet above the floor of the Bowman Valley. There are steep snowdrifts along this upper section, usually until August. When the trail reaches the eastern edge of the Hole in the Wall, a spur trail descends to the floor of the cirque, where a beautiful alpine campground is located among meadows of wildflowers and subalpine firs. This campground is frequented by mountain goats and several pestiferous mule deer, which you should not feed for any reason.

After passing Hole in the Wall, the trail continues its gentle descent to Brown Pass, a low saddle at the base of Thunderbird Mountain. Huckleberries grow in great profusion along this section of trail and provide a free food source for hikers and animals alike when they ripen in early August. At the pass is the junction with the Bowman Lake Trail. A short jaunt of 0.3 mile down this trail brings the hiker to the Brown Pass Campground which completes the second leg of the hike, a pleasant area set among windblown firs. Looking eastward from Brown Pass, The jagged spur ridge shaped like a wolf's lower jaw are Citadel Peaks, and the massive peak behind it is Mount Cleveland, at 10,466 feet, the highest point in the park.



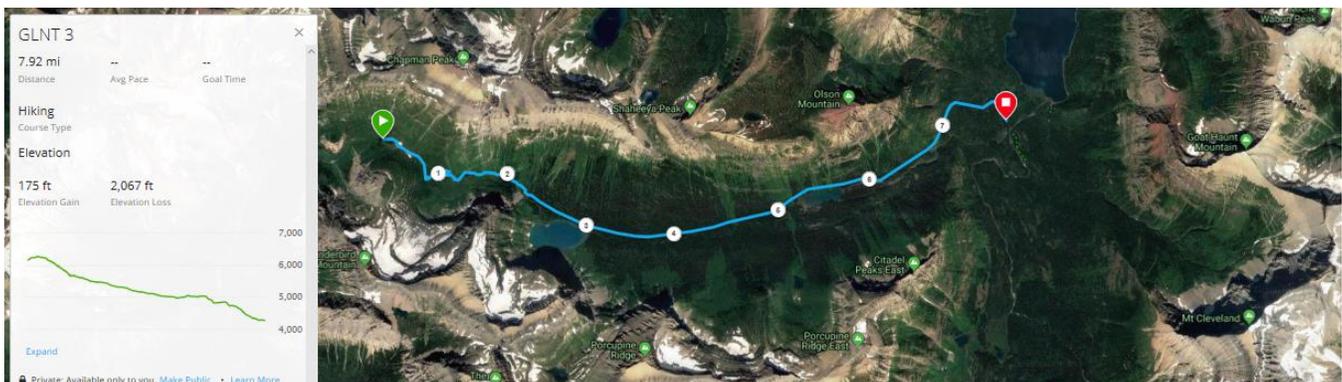


### Day 3

#### *Hiking Boulder Pass Trail from the Brown Pass Campground to the Waterton River (WAT) campground (7.92 miles)*

Beyond Brown Pass, the Boulder Pass Trail descends steeply beneath the Thunderbird Glacier to a tarn at the head of Olson Creek Valley. A steep snowdrift extends down to the edge of the water in spring, and several early-season hikers have slid down the drift to receive an icy and unplanned bath. The pond itself is set among dense willows and may harbor an occasional moose. Once the trail reaches the valley floor, it begins a long, slow descent to the Waterton Valley. The trail passes through a fairly open section to Hawksbill Campground, a small area situated below a cliff-like spur ridge scraped sheer of both sides by glaciers. The trail continues eastward through open forest to the junction with a spur trail to Lake Francis Campground, which lies on the shore of a beautiful lake beneath rocky cliffs. The lake is noted for its mosquitoes and fine fishing for rainbow trout. The trail continues to the Lake Janet Campground, which is located on the bank of Olson Creek, some distance from its namesake lake. Grizzly bears are frequently spotted in the avalanche paths on the ridge above this campground.

The trail continues down Olson Creek Valley, past shallow and sometimes mucky Janet Lake, and into a forest of Douglas firs. An occasional opening in the canopy provides a backward look at glacier-clad Porcupine Ridge, as well as views of Citadel Peaks and Mount Cleveland ahead. Finally, the trail makes a brief descent to the floor of the Waterton Valley and meets the Waterton Lake Trail. To reach Goat Haunt, the trail turns south and east, crossing Waterton River via suspension bridge and then turning north the ranger station complex.





## Day 4

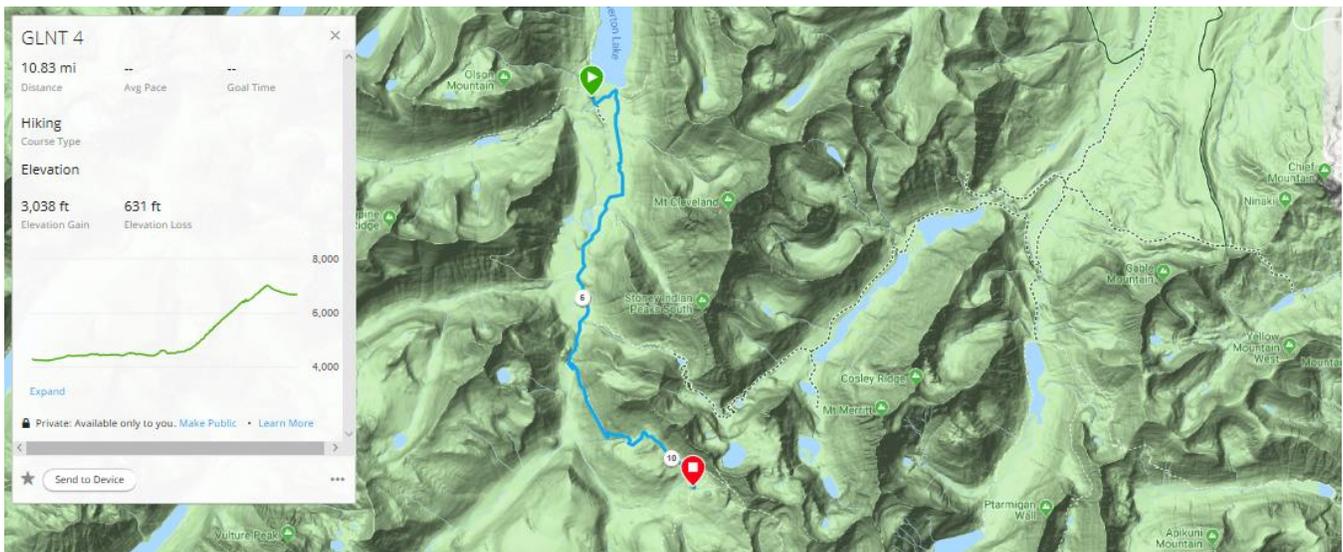
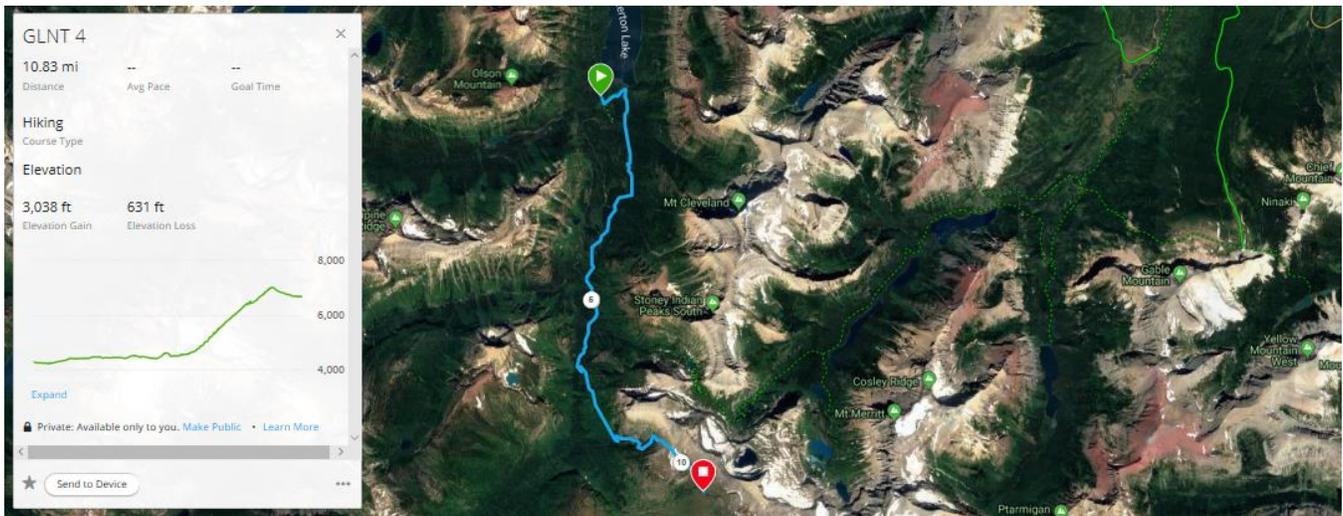
### *Hiking Waterton Valley Trail from the Waterton River Campground to the Fifty Mountain (FIF) campground (10.83 miles)*

The Waterton Valley Trail links Goat Haunt Ranger Station, at the head of Upper Waterton Lake, to the high alpine country of the Highline Trail. It offers an easy stroll through the forest on the valley floor to the Stoney Indian Pass junction, then begins a steep, seemingly endless climb across an open, brushy slope to the Fifty Mountain Campground. Kootenai Lakes provide a popular day hike destination for anglers and wildlife viewers from Goat Haunt. The lakes also offer backcountry campsites for short-range, easy backpack. Increased border security has made backcountry entry into Glacier from Canada more challenging; only US or Canadian citizens are allowed to make the border crossing using this trail.

The trailhead for the Waterton Valley Trail is behind the stable area in the Goat Haunt Ranger Station complex. After leaving the paved walkways and buildings behind, the trail passes beneath a canopy of old-growth conifers interrupted by an occasional wet meadow. At mile 2.5 there is a junction with the Kootenai Lakes Trail, which runs 0.3 mile to a campground at the foot of the lower lake. These shallow lakes provide good fishing for large brook trout, and the willows that crowd the shores provide a favored food source for the moose that are frequently seen here. Forested areas provide prime habitat for black bears. The lakes are overlooked to the west by the Citadel Peaks, the rocky spires at the trail end of Porcupine Ridge.

The main valley trail continues southward, rising imperceptibly at first and then climbing into broken hill sides before reaching the junction with the Stoney Indian Past Trail. Near this junction, grove of old growth spruce grow at the fringes of grassy meadows. About one mile above this junction, the trail begins to climb in earnest, passing high above the rushing torrent of the Waterton River. The trail switchbacks as it climbs out of the forest and onto a hot, west facing slope covered with cow parsnip and brushy vegetation. For 3.0 miles the trail winds upward, testing the endurance of the most seasoned hiker. The trail passes above a lonely stand of conifers and continues climbing into an alpine parkland below Cathedral Peak, where glacier lilies nod their yellow heads just after snowmelt.

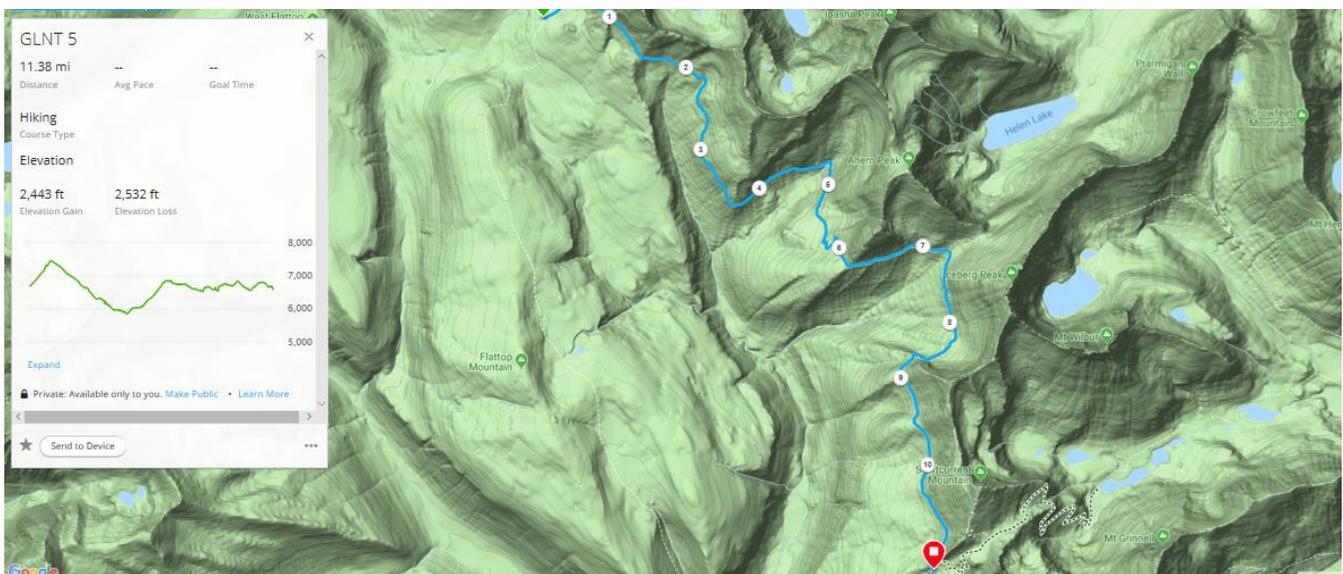
The trail finally reaches its highest point as it passes the ruins of a stone shelter hut, which was never completed, high in an alpine meadow. The view from this point is one of the most spectacular in the park, encompassing the entire Livingston Range and parts of the Lewis Range in the Logan Pass vicinity. From this saddle, it is an easy and short descent into the tree-filled bowl below, where the trail enters the Fifty Mountain Campground. This campground is frequented by almost-tame mule leaving the campground run southwest to Flattop Mountain and southeast along the Highline Trail to Logan Pass.



## Day 5

*Hiking the Northern Highline Trail from the Fifty Mountain Campground to the Granite Park (GRN) campground (11.38 miles)*

The northern section of section of the Highline Trail is accessible only to hikers on extended trips of more than one night. It runs from Granite Park Chalet to Fifty Mountain Campground, connecting the Garden Wall Trail and the Many Glacier Complex with trails out of Goat Haunt and Waterton Lake. The trail stays high in the subalpine country throughout its entire length, and sublime views can be had at any point along the trail. The forests below were burned in the 1988 Kootenai complex of fires and in 2003 during the Trapper Creek Fire, which cleared the conifers to make way for a profusion of wildflowers.



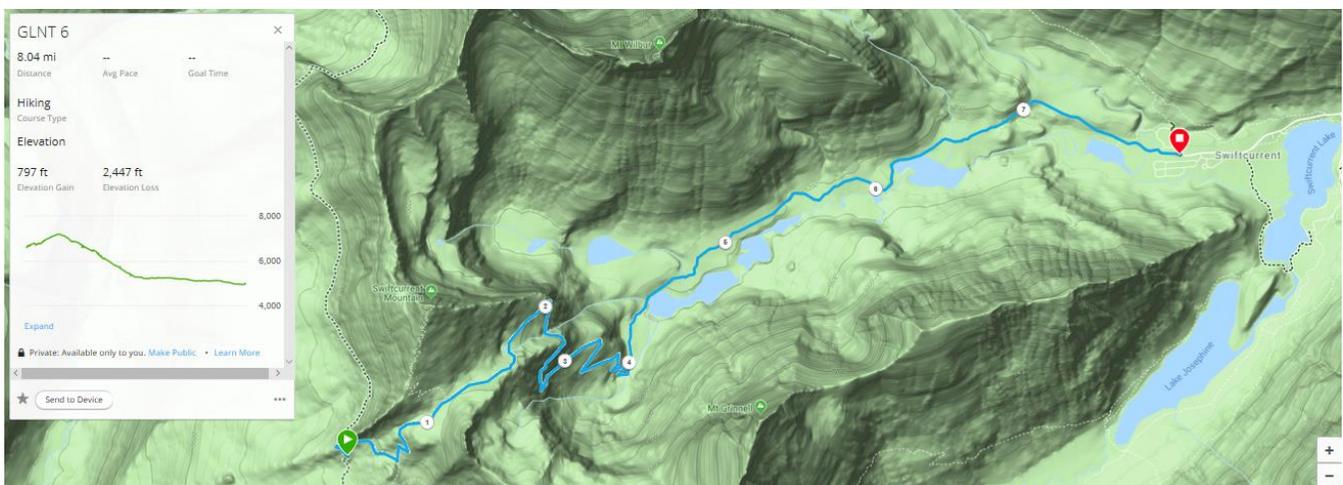
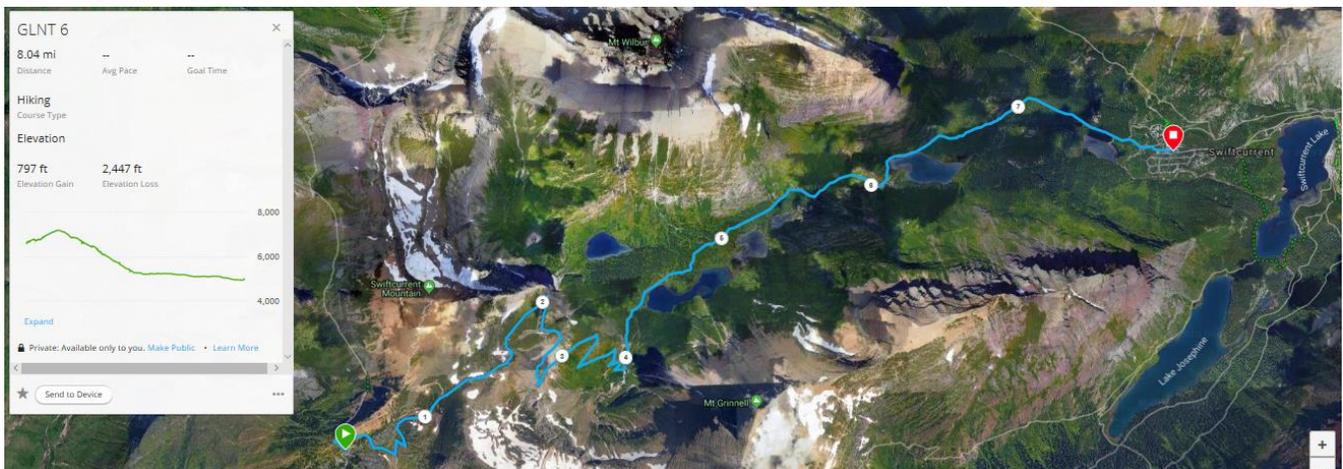
## Day 6

### *Hiking the Swiftcurrent Pass Trail form Granite Park Chalet to the Swiftcurrent Pass Trailhead (8.04 miles)*

The Swiftcurrent Pass Trail begins by heading down a steep decent of the Continental Divide then follows the Swiftcurrent Valley past a chain of lakes to the journeys conclusion. The trail begins by ascending for 0.9 miles and peaks at the low saddle Swiftcurrent Pass. Just before the pass, a side trail takes off to the north to ascend across steep switchbacks some 1.4 miles to Swiftcurrent Lookout. The view from the lookout is outstanding, with a glacier-carved rock-scape sweeping away in all directions.

From Swiftcurrent pass you will descend through miniature meadows on its way to the cliff face that overlooks Swiftcurrent Valley. The trail descends crisscrossing cliff faces on its way to the valley floor, affording spectacular views of the chain of lakes in the valley below. As you descend near the valley floor you are greeted by precipitous waterfalls that issue forth from the Swiftcurrent Glacier high above. From the base of the headwall of the valley the trail heads east passing through grassy fields on its way toward Bullhead Lake.

Once at Bullhead Lake a northward glance reveals Mount Wilbur, Iceberg Peak, and the North Swiftcurrent Glacier on the east face of Swiftcurrent Mountain. Following the trail for another 2.0 miles will bring you to Redrock Lake and continues east passing Redrock Falls above the head of the lake. Notice that harsh growing conditions have stunted the pines and aspens around the lake. From Redrock Lake the trail gently descends while crossing a stream on its way to the north side of Fishercap Lake, which can only be glimpsed briefly through a few gaps in the vegetation. The trail now winds eastward along the valley floor passing through groves of tall aspen interspersed with lodgepole pine before meeting its conclusion at the Swiftcurrent Motor Inn.



# Topography & Maps

## Planning Your Trip

### Backcountry Campground List

Code	Campground	Info	Stock	Special
400A	Adler	4 - 2 - 1075	●	
4012	Algonquin Lake	10 - 2 - 1075	●	
400P	Amos Lake	2 - 1 - 1075	●	
405	Algonquin Camp	4 - 2 - 1075	●	
4010	Bowen (Stornes) Lake	1 - 2 - 1075	●	
4011	Bowen Lake	1 - 2 - 1075	●	
4013	Bowen Lake	1 - 2 - 1075	●	
4014	Bowen Lake	1 - 2 - 1075	●	
4015	Bowen Lake	1 - 2 - 1075	●	
4016	Bowen Lake	1 - 2 - 1075	●	
4017	Bowen Lake	1 - 2 - 1075	●	
4018	Bowen Lake	1 - 2 - 1075	●	
4019	Bowen Lake	1 - 2 - 1075	●	
4020	Bowen Lake	1 - 2 - 1075	●	
4021	Bowen Lake	1 - 2 - 1075	●	
4022	Bowen Lake	1 - 2 - 1075	●	
4023	Bowen Lake	1 - 2 - 1075	●	
4024	Bowen Lake	1 - 2 - 1075	●	
4025	Bowen Lake	1 - 2 - 1075	●	
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4097	Bowen Lake	1 - 2 - 1075	●	
4098	Bowen Lake	1 - 2 - 1075	●	
4099	Bowen Lake	1 - 2 - 1075	●	
4100	Bowen Lake	1 - 2 - 1075	●	

### Special Conditions

- States referenced in the "Special" column, all campgrounds have a three night limit.
- CDT AND CAMPERS**  
Used to reference the locations of each campground on the map to be visited.
- WFO**  
Lands that hold number of sites, the number of sites that may be reserved in advance, and the first date the campground is available for reservation.
- Example: Sperry Campground is 4 - 2 - 1075.** The campground has four sites and two may be reserved in advance for dates August 1 - September 30.
- STOCK**  
The number of livestock permitted overnight.
- VEHICLE**  
● Limited fuel, no wood fire.  
● One night limit, per trip, in July, August, and September.  
● Two night limit, per trip, in July, August, and September.  
● Access by mechanical vehicles prohibited.  
● Good House Shelters are those solid structures near the front deck at the head of Watkinson Lake.  
● Many Glacier and Two Medicine also campgrounds are accessible in December of three or more nights. They are not available on the first night of an itinerary if the trip begins at Many Glacier or Two Medicine. Both campgrounds are one night only per trip.  
● Gravel floors must be part of an extended itinerary of two or more nights in July, August, and September, including Many Glacier or Two Medicine.
- ADDITIONAL SERVICES**  
● Shuttle trips are available through Glacier Guides. For information and reservations visit: [GlacierGuides.com](http://GlacierGuides.com)  
● Mountain Outfitters offers drop-camp service using stock to pack your gear into certain sites. A backcountry permit is required. For information and reservations visit: [MountainOutfitters.com/glacier](http://MountainOutfitters.com/glacier)

### Special Trip Planning Considerations

**ARRIVAL AT GOAT HAUNT**  
Southbound travel from Watkinson (Canada) to the Goat Haunt Ranger Station (USA) requires an official government issued photo identification card for U.S. or Canadian citizens or permanent residents. All others must carry a valid passport. Visitors seeking to travel beyond the Goat Haunt Ranger Station into the United States must present documents that are Western Hemisphere Travel Initiative compliant. For information visit: [dot.gov](http://dot.gov)

**Northbound travel from Goat Haunt Ranger Station (USA) into Watkinson (Canada) mandates contact with the Canadian Chief Mountain Port of Entry upon arrival at Watkinson. Information on contacting the Port of Entry is available at the Watkinson Lakes Visitor Centre or the Watkinson Station of the Royal Canadian Mounted Police.**

**The Goat Haunt Port of Entry will operate from 11 am to 3 pm from June through late October. No entry into the United States past the Goat Haunt Ranger Station will be authorized outside of these hours.**

**WATKINSON CREEK CAMPING ZONE**  
This area offers opportunities for wildlife and higher levels of challenge and risk. In addition to designated areas, unassigned camping is permitted although it still requires a permit. Advance reservations are not allowed for unassigned camping.

**TRANSPORTATION OPTIONS**  
A free park shuttle runs along the Going-to-the-Sun Road from early July to Labor Day.

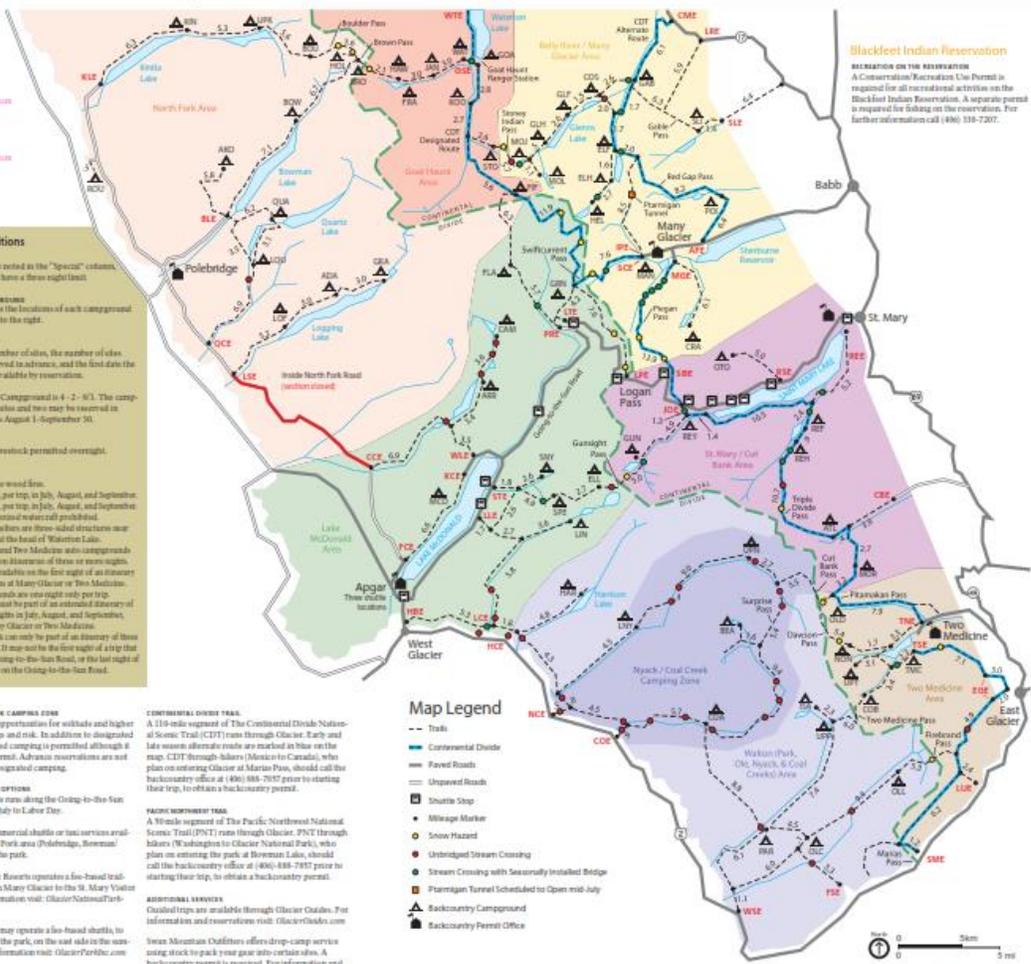
**There are no commercial shuttle or tax services available in the North Park area (Polebridge, Bowmont, Kootenai Lakes) of the park.**

**Next area Parks & Recreation operates a fee-based trail-head shuttle from Many Glacier to the St. Mary Visitor Center. For information visit: [GlacierNationalPark.gov](http://GlacierNationalPark.gov)**

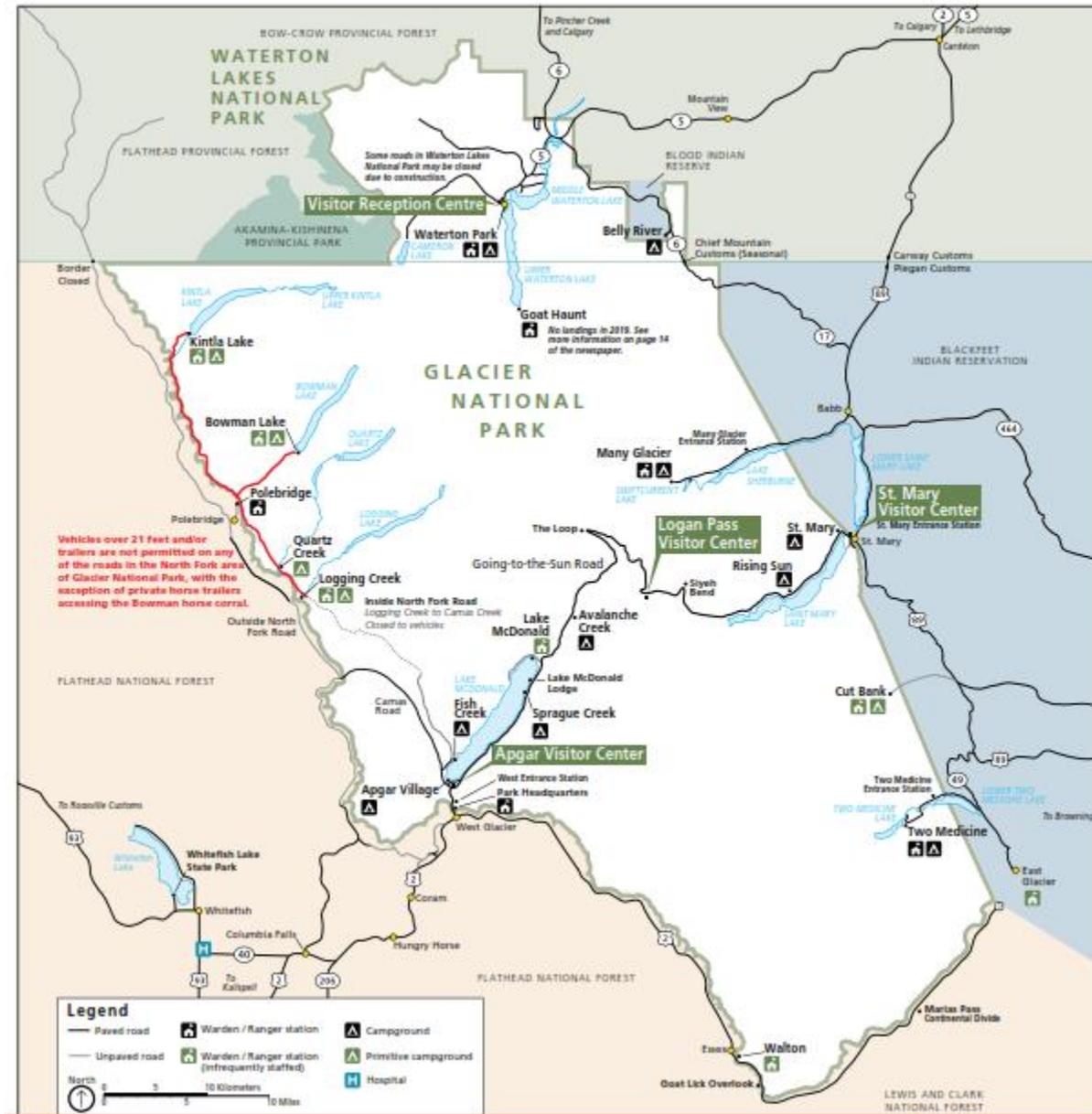
**Glacier Park Inc. may operate a fee-based shuttle, to locations outside the park, on the east side to the summit. For more information visit: [GlacierParkInc.com](http://GlacierParkInc.com)**

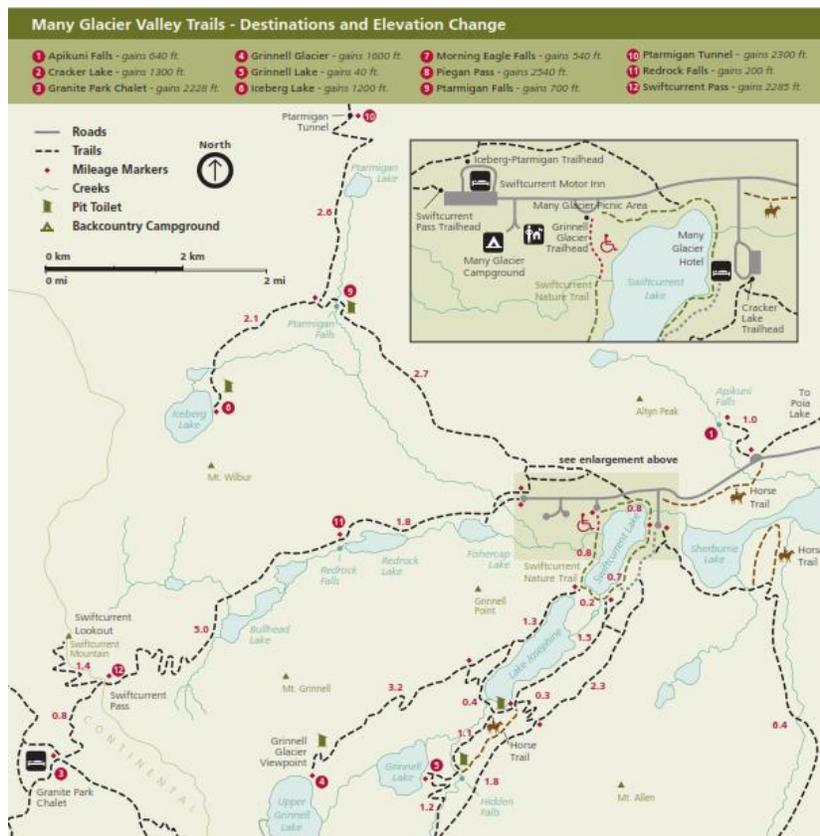
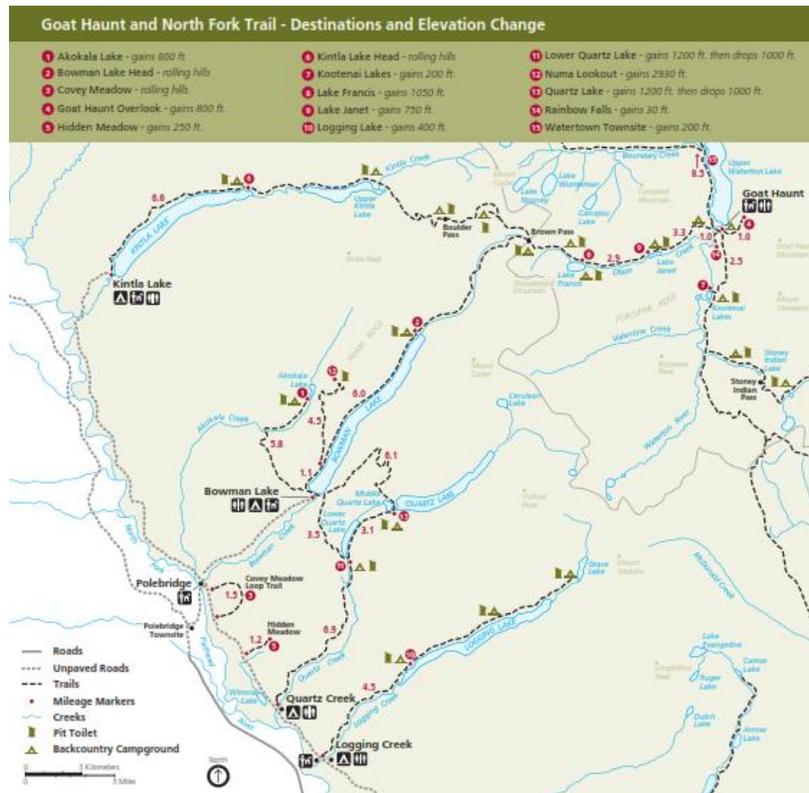
**CONTINENTAL DIVIDE TRAIL**  
A 119 mile segment of The Continental Divide National Scenic Trail (CDT) runs through Glacier. Early and late season alternate routes are marked in blue on the map. CDT through-hikers (Mexico to Canada), who plan on entering Glacier at Martin Pass, should call the backcountry office at (406) 888-7857 prior to starting their trip, to obtain a backcountry permit.

**PACIFIC NORTHWEST TRAIL**  
A 16-mile segment of The Pacific Northwest National Scenic Trail (PNST) runs through Glacier. PNST through-hikers (Washington to Glacier National Park), who plan on entering the park at Bowen Pass, should call the backcountry office at (406) 888-7857 prior to starting their trip, to obtain a backcountry permit.



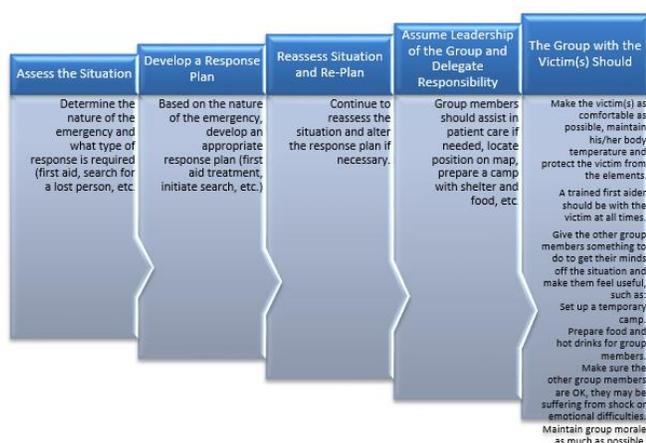
**Blackfoot Indian Reservation**  
Reservations on the reservation. A Conservation/Recreation Use Permit is required for all recreational activities on the Blackfoot Indian Reservation. A separate permit is required for fishing on the reservation. For further information call (406) 338-7207.





# Emergency Action Plan (EAP)

Since each situation is unique, trip leaders must remain flexible in their response. The key to properly responding to an emergency is to remain calm, assess things carefully before acting, and continue to reassess your strategy throughout. There are two basic things to be done, care for the victim and care for the rest of the group. The more severe the situation, the more both populations will need your care and support. A basic approach to handling emergency situations is shown in flowchart form in the figure below.



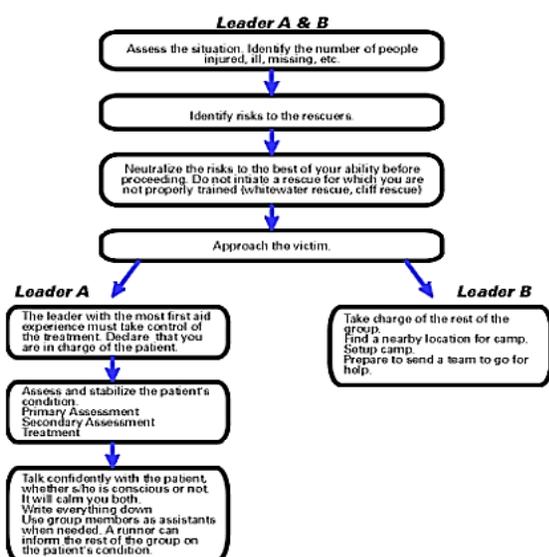
## Evacuation Procedures

### When to Evacuate

Evacuation is used as a general term for transporting someone from a trip. In most cases we think of this as caused by a medical problem. It can also be the result of psychological problems, a family emergency, or the assessment of the trip leaders that the person's behavior poses a threat to themselves or others in the group. Specific evacuation protocols for first aid situations will be determined by the group leaders.

If someone needs to be evacuated due to injury or illness, the primary concern is for the safety and health of the patient. When assessing the need for an evacuation, think both about the patient's condition and how rapidly medical attention is needed. For example, it may take 2 hours for the patient to walk out on their own. Whereas to send two people out for help (2 hours), get a rescue squad to the trailhead (1 hour), hike back in (2 hours - unless driving in is possible), and hike back out (2 hours+) will mean over 7 hours before the patient is evacuated. Their injury may need treatment sooner than that. You also consider your resources, do you have the necessary equipment, manpower, and experience to safely evacuate the person given the current trail and weather conditions. If you do evacuate the person, take the time to plan out the best route keeping in mind patient condition, distance, terrain, etc. Depending on the situation, you might choose the shortest route, the quickest route, or a longer route that poses less threat to the patient's condition. Use the evacuation flow chart to determine how to deal with an evacuation situation.

### Emergency Response Flow Chart



## Possible Evacuation Scenarios

Person Can Walk Out On Own Power	Person Can Walk Out with Assistance	Person Cannot Walk Out
<ul style="list-style-type: none"> <li>The person's medical condition would not be compromised by walking out. This may necessitate taking all the person's equipment. Ex. Stomach ailment, mild allergic reaction, minor laceration.</li> </ul>	<ul style="list-style-type: none"> <li>If the distance is not too great, the person may be able to hike out if carrying no weight and with assistance. This is to be attempted only as long as it does not aggravate the individual's condition. The person must be constantly monitored.</li> </ul>	<ul style="list-style-type: none"> <li>The injury/illness would be aggravated by walking out or movement is contraindicated. Do not attempt a litter evacuation unless you have the necessary equipment, experience, and manpower, otherwise you risk additional injury to your patient as well as placing other members of the group at risk (see Dynamics of Accidents Model page 00). In this case a litter evacuation by skilled rescue personnel (rangers, first aid squad, etc.) is required. Send for help</li> </ul>

## Choosing to Evacuate

If you have determined that it is medically appropriate to evacuate your patient, you need to determine whether or not you have the skills, the time and the manpower to perform the evacuation safely. Ask yourself these questions.

\_\_\_\_\_ How much daylight do you have?

\_\_\_\_\_ What is the weather? Is it changing? For the worse?

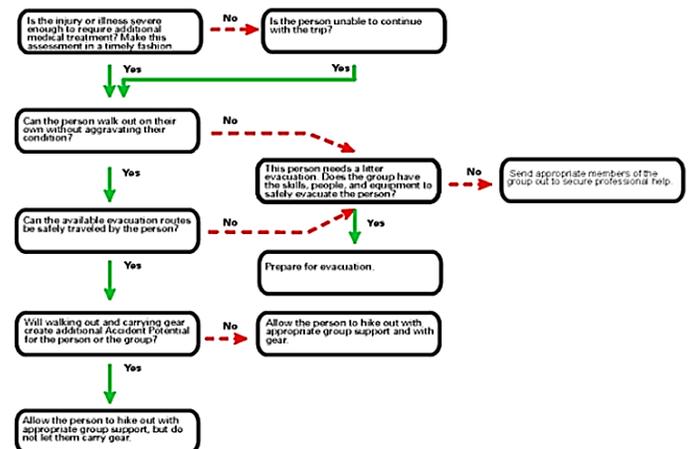
\_\_\_\_\_ Can you continue to provide the necessary first aid treatment and monitoring during the evacuation?

\_\_\_\_\_ What if your patient's condition deteriorates? Would it be more difficult to treat him/her once you start hiking out?

\_\_\_\_\_ How many people do you have to do the evacuation? For a litter evacuation you should plan to have a minimum of 3 teams of 6-8 people rotating through the litter carry.

## Evacuation Flow Chart

Evacuation Plan Flow Chart



### Identify caller

Identify exact location and phone number. Can you call back? If not determine a time or plan for the caller to contact you again.

### Interview caller to determine problem

Leaders may underestimate the nature of the problem so a conservative medical response is the best course of action.

### Triage problem

*Class I* - minor medical problem. Person can remain on the trip.

*Class II* - minor medical problem. Person must be treated or evaluated at medical facility.

Discharge and return to trip likely. Anything above Class II requires a call to McCosh Health Center.

*Class III* - moderate medical problem. Person must be treated or evaluated at medical facility. Discharge and return to trip uncertain.

*Class IV* - serious medical problem. Person must be treated or evaluated at medical facility. Discharge and return to trip unlikely.

#### Determine appropriate evacuation response

*Class I* - hikes out on own power

How long will this take?

What if it takes longer?

What if patient's condition deteriorates?

*Class II* - hikes out with assistance

How long will this take?

What if it takes longer?

What if patient's condition deteriorates?

*Class III* - needs to be picked up by vehicle

How long will this take?

What if it takes longer?

What if patient's condition deteriorates?

*Class IV* - needs litter evacuation

How long will this take?

What if it takes longer?

What if patient's condition deteriorates?

*Class V* - needs helicopter airlift

How long will this take?

What if it takes longer?

What if patient's condition deteriorates?

#### Determine appropriate professional medical response

*Class I* - person seen on return to campus

*Class II* - leaders or support drives person to hospital

*Class III* - EMS meets groups at trailhead

•

*Class IV* - EMS sent in to group

*Class V* - Advanced Rescue Team or helicopter required

**Notifications** (each higher level is cumulative of the levels beneath)

Family members

#### Follow-up

How is the group doing? Do they need to be evacuated for emotional support?

Will the group need follow-up support and/or counseling upon return to campus?

Will the leaders need follow-up support and/or counseling upon return to campus?

## Triage

The purpose of Triage is to determine the nature and extent of injury or illness. In the case of multiple victims, it is used to prioritize treatment. As you take an emergency phone call, you need to gather information to do your own triage of the situation.

1. Get full SOAP Note from Leader
  - History
  - Vitals
  - Problem list
  - Anticipated Problem list
2. Determine exact location of the group.
  - Where was the group when the messengers left?
  - How far are they from the trailhead?
  - What other options are there for reaching the patient? What is the group doing (staying put or hiking out?)
  - How will the time lengths of different evacuation modes affect the medical condition/treatment?
3. Contact outside experts as needed to develop emergency response plan
  - Based on problem as defined in #1 and #2 determine the "need for speed."
  - Implement the appropriate professional medical response as indicated above

## Communications and Navigation

### Recommended Communication Equipment

Handheld Radios	
	<p>Group will be equipped with two way radios for communications and emergency procedures. Range of up to 35 miles (may vary depending on terrain and conditions); compatible with any radio regardless of brand.</p> <p>22 FRS/GMRS channels and 121 privacy codes create 2,662 unique combinations to ensure you always have a clear channel; scan function lets you quickly find a channel.</p> <p>NOAA weather radio keeps you updated with real-time weather and alerts to warn of possible dangers.</p> <p>An emergency alert button transmits an alert siren followed by spoken or incidental sounds to warn others of your peril, and has a built-in LED flashlight for emergencies.</p> <p>Push-To-Talk (PTT) power boost allows you to extend the transmission range by increasing the transmitter power output.</p> <p>Hands-free communication is provided by iVOX/VOX, which acts like a speakerphone to keep your hands free as you hike</p>
<b>Emergency Frequency:</b>	
<b>Ranger Frequency:</b>	

### Recommended Tracking & Emergency Signal Devices

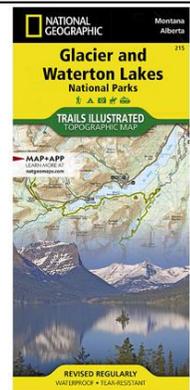
Garmin Rino 755t	
	<p>We will have one Rino device for navigation, gps tracking and emergency communications. High-sensitivity GPS with GLONASS satellite reception tracks satellites in more challenging environments than GPS alone.</p> <p>Powerful, 5 watt FRS/GMRS 2-way radio lets you communicate by voice call or unit-to-unit text messaging.</p> <p>3 in. color touch-screen with dual orientation and sunlight-readable display.</p> <p>Bluetooth® connectivity supports a wireless headset (not included) for improved voice communication.</p> <p>3-axis compass with accelerometer and barometric altimeter sensors.</p> <p>NOAA weather radio, Active Weather forecasts and animated weather tracking help you stay one step ahead of changing conditions.</p> <p>Geocaching Live connects with with Geocaching.com to download the caches you want while you're on the go.</p> <p>Position Reporting shows you the location of other Rino users on the same channel and lets you alert them if you need help.</p>

Garmin inReach Mini	
	<p>inReach Mini is your go-to connection for maintaining off-the-grid contact. It's our palm-sized satellite communicator for adventures where size and weight matter. inReach Mini lets you send and receive text messages, track and share your journey and, if necessary, trigger an SOS alert to contact the GEOS 24/7 emergency response team. With inReach connectivity, your family and friends will know they can stay in touch globally.</p> <ul style="list-style-type: none"> <li>• Small, rugged, lightweight satellite communicator enables two-way text messaging using the 100% global Iridium network (satellite subscription required)</li> <li>• Trigger an interactive SOS to the 24/7 search and rescue monitoring center (satellite subscription required)</li> <li>• Access downloadable maps, U.S. NOAA charts, color aerial imagery and more by using the free Garmin Earthmate app and compatible devices</li> <li>• Optional inReach weather forecast service provides detailed updates directly to your inReach Mini or paired device; basic and premium weather packages available</li> <li>• Send and receive inReach messages through compatible Garmin devices, including connected wearables and handhelds</li> </ul>
<b>Garmin Link for Tracking:</b>	

## Recommended Navigation Tools

### Topographic Trail Map

#### National Geographic Trails Illustrated Topo Map



Learning how to navigate with a paper map is an essential skill. A topographic map is designed to show the physical features and terrain of an area, which is what makes them ideal for backpackers. They're different from other maps because they show the three-dimensional landscape: its contours, elevations, topographic features, bodies of water, and vegetation. Simplified trail maps—like the JPEG images you might find on a national park's website— don't include all the information you need in order to navigate. No elevation data, no magnetic declination, and much fewer symbols. If you get lost, these trail maps won't help you find your way out. A topographic map offers a wealth of orienteering information—not just elevation

and distance, but changes in vegetation and even human-made structures. It's enough to plan an entire trip in advance or to find your way in a pinch.

### Handheld Navigation Device

#### Garmin Rino 755t



Whether you're hunting, hiking, climbing or paddling, the rugged Rino 700 navigator is your go-to for any adventure. Offering an affordable entry point to our navigator/communicator lineup, it retains the core functionality of our more feature-rich Rino 750 and 755t handhelds. And its powerful two-way radio is fully compatible with them as well. So, it's easy to stay in touch with other Rino-carrying members of your group.

- 5 W GMRS two-way radio offers extended range, up to 20 miles; communicate by voice or unit-to-unit text messaging
- High-sensitivity GPS and GLONASS satellite reception; tracks in more challenging environments than GPS alone
- Rechargeable internal lithium-ion battery can provide up to 13 hours of battery life
- Position reporting feature shows locations of other Rino users on the same channel
- Worldwide basemap shows position and supports basic navigation

### Navigation Enabled Watch

#### Garmin Fenix



- Ultimate multisport GPS watch with full-color TOPO U.S. mapping, routable cycling maps and other outdoor navigation features
- Fit for adventure with rugged design that features stainless steel bezel, buttons and rear case: Physical size 5.1 x 5.1 x 1.8 cm; Weight - silicone band: 98 g ; metal band: 196 g
- Built-in navigation sensors include GPS and GLONASS capability to track in more challenging environments than GPS alone as well as 3-axis compass, gyroscope and barometric altimeter
- Preloaded run profiles: running, treadmill running, trail running. Put key stats at your fingertips with the performance widget that shows your training status, training load and more
- Provides built-in mapping and navigation features to help keep you oriented and on course. Full-color TOPO mapping comes preloaded with map data optimized for at-a-glance navigation and location tracking.
- Features multinetwork (GPS, GLONASS and Galileo) satellite reception to track in more challenging environments than GPS alone. In addition to map-based guidance, each watch also provides a set of ABC (altimeter, barometer and compass) sensors for outdoor navigation. The built-in altimeter provides elevation data to accurately monitor ascent and descent for activities such as hiking, while the tilt-compensated three-axis electronic compass keeps your bearing — whether you're moving or not.

## Clothing Essentials

### Layering Basics

When you step outdoors, the ancient art of layering becomes your smart-technology thermostat. This tried-and-true strategy lets you regulate comfort by slipping layers on and off as your activity level or the weather changes.

**How to layer:** To understand layering your clothing for outdoor activities, you need to know the function of each layer:

1. **Base layer** (underwear layer): wicks sweat off your skin
2. **Middle layer** (insulating layer): retains body heat to protect you from the cold
3. **Outer layer** (shell layer): shields you from wind and rain

Even if you don't wear all three layers at the outset, it's a good idea to take all layers on every outing: You can peel off layers if things heat up, but you can't put on layers that you didn't bring along.

#### Cold, Rainy and Hot Layering Examples

We're often asked about how to layer for certain weather. Any suggestions based solely on weather, though, overlook key considerations, like exertion level and personal metabolism. The examples below are for a hypothetical person who doesn't run particularly hot or cold, who is going on an intermediate-level half-day hike:

#### Cold-weather layers:

Midweight polyester long underwear top and bottom; a jacket with synthetic insulation; midweight fleece pants; waterproof/breathable rain jacket and pants.



#### Rainy-weather layers (cool temps):

Lightweight polyester long underwear top and bottom; lightweight fleece jacket; synthetic hiking pants; lightweight waterproof/breathable rain jacket and pants (with plenty of vents).



#### Hot-weather layers:

Polyester briefs and a short-sleeve synthetic Tee; convertible nylon hiking pants; lightweight wind jacket.

You have literally dozens of alternatives and options for each of these layers. The trick is to go with options that make the most sense for where you're headed, what you're doing and what you're able to spend.

It's also key that you take the time to adjust layers as conditions change. If the rain and wind let up, remove your shell. If hiking alone isn't warming you up, add a middle layer. And many people add a middle layer (on top) and/or outer layer at every rest stop, just to avoid getting chilled.



### Base Layer: Moisture Management

As the next-to-skin layer, a base layer's job is moving perspiration away from your skin, aka "wicking." In cool or cold conditions, wicking long-underwear-style base layers are needed to keep your skin dry. That's essential because it helps to keep you from becoming chilled or worse—hypothermic.



**Base layer materials:** You have a wide range of fabric options, including synthetics like polyester and nylon, or natural fibers like merino wool and silk. Though there are subtle differences in wicking and drying for each material, and in odor retention and durability, a lot of people simply go with their personal fabric preference.

**Base layer weights:** Your options are straightforward—lightweight, midweight and heavyweight—though you might also see terms like "ultralightweight" on one end of the spectrum or "expedition weight" at the other. Generally, heavier (thicker) fabrics keep you warmer, though that's not really the primary purpose of a base layer (wicking is).

**Warm-weather base layers:** Long underwear might not be appealing when temperatures soar, but having dry skin generally makes you more comfortable in all conditions. (No one likes having clammy, drippy skin.) Here are some other warm-weather base-layer considerations:

- Any summer shirt is really a base layer, so look for ones that offer wicking.
- Some shirts designed for warm weather spread the moisture out through the fabric, where evaporation helps with cooling. They won't really be marketed as a base layer, but as your next-to-skin layer they can increase your comfort in hot conditions.
- Underwear like briefs, boxers and bras should also wick (the same is true when you wear it under your long underwear in winter).
- UPF-rated base layers give you added sun protection.
- Cotton, considered a no-no in winter because it sponges up water and can chill you, can be okay if you're outside on a super-dry, scorching summer day.

- Emerging fabric technologies, like wool infused with ceramic particles, will offer base layers that literally cool your skin for greater comfort.

### Middle Layer: Insulation

The insulating layer helps you retain the heat that's radiated by your body. The more efficiently this layer traps that heat, the warmer you'll be.



**Middle layer materials:** Just as with base layers, you have a broad range of options, both synthetic and natural. In general, thicker (or puffier) equals warmer, though the efficiency of the insulating material is also important. Below are some common middle layer materials, though other options, like wool and wool-blend tops, are also available.

Here are some of your primary choices for middle layers:

**Polyester fleece:** Available in lightweight, mid-weight and heavyweight fabrics (sometimes marketed as 100, 200 and 300 weight), fleece stays warm even if gets damp, and it dries fast. Fleece also breathes well, so you're less likely to overheat in it.

The flipside of breathability, though, is that wind blows right through, which can steal warmth. That's why you need to have a shell layer with you if you're

going with a fleece middle layer. (Another option is to wear wind fleece, which includes an inner wind-blocking membrane.)

**Down insulated jackets:** Highly compressible for easy packing, down offers more warmth for its weight than any other insulating material. The efficiency of down is measured in fill power—from 450 to 900. Because down is always inside a shell material, down jackets also offer some water and wind resistance. The drawback to down is that it loses insulating efficiency when damp.

**Synthetic insulated jackets:** Synthetic insulations have long tried to mimic down's efficiency, coming closer to that standard every year. And, while synthetics don't compress as well as down, they're a popular option for rainy conditions because they retain insulating ability when they get damp. And, like down, synthetic insulation is always inside a shell material that offers added water- and wind resistance.

### Outer Layer: Rain and Wind Protection (Shell)

The outer layer (or shell layer) protects you from wind, rain and snow. Shells range from pricey mountaineering jackets to simple wind-resistant jackets. Most allow at least some perspiration to escape; virtually all are treated with a durable water repellent (DWR) finish to make water bead up and roll off the fabric.

Your outer shell is an important piece in stormy weather, because if wind and water are allowed to penetrate to inner layers, you can get seriously chilled.



activity levels. More affordable than waterproof/breathable shells, they're typically made of tightly woven nylon or polyester fabrics that block light wind and light rain.

**Soft shells:** These emphasize breathability. Most feature stretch fabric or fabric panels for added comfort during aerobic activities. Many combine light rain and wind protection with light insulation, so they in effect combine two layers into a single jacket.

Shells can be lumped into the following categories:

**Waterproof/breathable shells:** Your most functional (and expensive) choice, this type of shell is your best option for full-on squall conditions. Generally, pricier equals drier, though higher priced shells are often more durable as well.

**Water-resistant/breathable shells:** These are more suited to drizzly, breezy conditions and high

**Waterproof/nonbreathable shells:** These bare-bones shells are okay for rainy days with light to no activity (e.g., fishing, spectating). They are typically made of a coated nylon, which is water- and windproof. If you exert yourself while wearing one, you'll probably end up saturating your underneath layers with perspiration.

## Recommended Clothing Brands and Considerations

Clothing Type	Style	Brands	Notes
Hiking Shoe/Boot		Salomon Merrel Obre	Some people like to wear a pair of light trail running shoes instead of boots. Most prefer boots in order to keep ankle stable. Feet will get wet so Gor-tex lined are recommended.
Base Layers	Torso	Tesla Under Armor	Must wick away moisture.
	Legs	Tesla Under Armor	Must wick away moisture.
Middle Layer	Torso	Mountain Hardware REI	Insulation layer for thermal protection.
	Legs	Under Armor	Insulation layer for thermal protection.
Outer Layer	Torso	Kuhl Outdoor Research Mountain Hardware	Should be durable, moisture resistant, quick drying and light weight.
	Legs	Kuhl Outdoor Research	Should be durable, moisture resistant, quick drying and light weight.
Briefs/Boxers		Exoficcio Saxx	Needs to be synthetic, anti-microbial, breathable, and moisture wicking. At least 3 pairs.
Socks		Smart Wool Darn Tough	Good hiking socks are a must. We recommend either "Darn Tough" or "Smart Wool". You will need at least 3 pairs.
Head Gear	Beanie	Smartwool Outdoor Research	Should be snug on your head and keep you warm.

	<i>Neck Gaiter/ Cravat</i>	<b>Buff</b>	Most versatile piece of clothing you will have. A must on the trail.
<b>Gloves</b>	<i>Hiking</i>		Gloves - a good pair of biking gloves will help prevent blisters when using trekking poles.
	<i>Thermal</i>	<b>Outdoor Research Black Diamond Manzella Sealskinz</b>	Waterproof is preferable. Need to keep you warm even when wet outside.
<b>Rain Shell</b>		<b>REI Co-Op Arc'teryx Outdoor Research</b>	The rain shell needs to breathe properly allowing heat to escape. If not you will become overheated when hiking.

### Recommended Clothing Retailers and Websites

Below is a list of suggested retailers where you can find your gear and websites to help you research and choose your best option:

1.  REI Co-Op <https://www.rei.com/>
2.  Backcountry.com <https://www.backcountry.com/>
3.  Amazon <https://www.amazon.com/>
4.  Outdoor Gearlab <https://www.outdoorgearlab.com/>

## Gear Essentials

### Gear Basics

Camping is like staying in a primitive cabin, minus the cabin itself. So, in addition to your tent, pack as though you're going to stay someplace where there's little or no furniture, no electricity, no stove or refrigerator, and the cupboards are bare. In a developed campground you will have running water and a community bathroom a few hundred yards away. A typical campsite has a table (if not, you'll want to bring one), a place to park a car and a place to pitch a tent.

You can keep your initial investment low if you borrow or rent the priciest items—the tent and your sleeping bags and pads. That's a better strategy than paying bottom dollar for something that might not even last for a single camping trip. That said, if you are ready to invest in your very own camping gear, here are a few tips to help you decide exactly what to buy.

- **The tent:** If your budget can go a little bigger, then go bigger with your tent: A 3-person tent gives a cozy couple a little extra breathing room, and a family of four can more easily achieve harmony in a 6-person tent. You can also check the tent's peak height if you want a tent that you can stand up in (that can make getting dressed and moving around easier to do). Vestibules outside the doors are nice for stowing muddy shoes and having two doors can help you avoid climbing over sleeping tentmates for late-night bathroom breaks.

**Tip:** Practice setting up your tent at home first. And don't forget a properly sized footprint—if you have a ground sheet that's too small, it won't fully protect your tent floor, and if you have one that's too big, it can catch rainwater and pool it underneath your tent.

- **The sleeping bag:** When selecting your bag, temperature rating is a good place to start. If you're planning on only going fair-weather camping, a summer bag is probably all you'll

need, but a 3-season bag will give you more leeway for unpredictable shoulder-season weather. If you're always cold (or always hot), adjust accordingly. And no need to go with a super-snug mummy bag like backpackers use, when a rectangular camping bag will give your body more room to roam.

- **The sleeping pad:** A good sleeping pad is like the mattress on a bed, but it also has high-tech insulation to prevent you from losing body heat on the cold ground. Big air mattresses, like what your guests sleep on at home, might look temptingly plush, but their lack of insulation will likely leave you feeling cold. Take a look at specs when comparing sleeping pads—if one is thicker, longer or wider and has a higher insulation value (known as the R-value) — it will be more comfortable and warmer.

**Tip:** Set your tent, bag and pad up early, so you don't have to do it in the dark.

- **Lighting:** Campsites don't have illumination, so you have to bring your own. A flashlight is OK, but a headlamp frees up your hands for camp tasks. A lantern is nice for ambient light. (You can also build a campfire, but watch for fire restrictions.)
- **Stove:** A classic two-burner propane camp stove should do the trick. You won't spend a fortune and you can cook breakfast and prepare your morning brew at the same time. Bring at least a couple of fuel canisters and a lighter, and fire it up once at home to be sure you know how it works.
- **Pots, plates, cups and sporks:** You gotta bring everything necessary for food prep and consumption. You can raid your home kitchen, just don't bring the fine china. And, unless you plan to take dirty dishes home, you'll need a scrubber, biodegradable soap, a towel and a

small washtub or two (one for dirty, one for clean).

**Tip:** Pack all your kitchen gear in a large clear plastic bin with a lid. It's easy to store away at home and everything will be ready next time you want to camp.

- **Camp Chairs:** These are optional if you can sit at the camp picnic table, but downtime will be a little more enjoyable when you have a comfy place to perch. (And a hammock is even better, especially for afternoon naps.)

**Tip:** Mesh camp chairs let water drain easily and they dry quickly if left out in the rain or morning dew.

## Recommended Gear Brands

Category	Gear	Brands	Notes
Packing	<i>Backpack</i>	Osprey	Pack size is dependent on trip length. For a 3 to 6 day hike a 60 L or larger pack is preferred. Look for good suspension with a breathable back. Should support hydration system.
	<i>Daypack</i>	Osprey	Hydration system is key.
	<i>Compression/Stuff Sacks</i>	Sea to Summit	These will protect your gear within your pack and help to keep it organized. Waterproof.
	<i>Pack Cover</i>	Osprey	Make sure the cover fits completely around your pack when fully loaded.
Shelter	<i>Tent</i>	REI Co-Op Big Agnes Nemo Kelty	1 man tent is recommended but a 2 man is nice if you prefer the extra room. Pay attention to the total weight.
Sleep System	<i>Sleeping Bag</i>	Big Agnes Marmot REI Co-Op Nemo	20 degree rating is preferred. Major differences are between down or synthetic. Each has its benefits.
	<i>Sleeping Pad</i>	Therm-a-Rest Klymit Nemo	Pay attention to thermal rating.
	<i>Camp Pillow</i>	Sea to Summit Klymit	
Kitchen	<i>Stove</i>	Jetboil	
	<i>Utensils</i>		Need to be lightweight with a small footprint.
Health, Hygiene & Safety	<i>First Aid Kit</i>		
	<i>Wipes</i>	Dude Wipes	Must be biodegradable.
	<i>Water Filter</i>	Sawyer Lifestraw Platypus	
Personal Gear	<i>Gaiters</i>	Outdoor Research	
	<i>Trekking Poles</i>	Black Diamond	

	<i>Camp Chair</i>	<b>Helinox REI-Co Op</b>	The lighter the better.
<b>Navigation/Electronics</b>	<i>Radio</i>	<b>Motorola</b>	Used for communicating with other members of your team. Need to be weather proof and at least splash resistant.
	<i>Battery Pack Charger</i>	<b>Anker</b>	
	<i>Solar Power</i>	<b>Goal Zero</b>	
	<i>GPS</i>	<b>Garmin</b>	
	<i>PLB &amp; Satellite Messaging</i>	<b>Garmin</b>	

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2.  Backcountry.com <https://www.backcountry.com/>
3.  Amazon <https://www.amazon.com/>
4.  Outdoor Gearlab <https://www.outdoorgearlab.com/>

## Gear Checklist

\*Optional depending on temperature and weather conditions.

### Packing Gear:

- Backpack \_\_\_\_\_ lbs.
- Daypack \_\_\_\_\_ lbs.
- Compression/Stuff Sack \_\_\_\_\_ lbs.
- Pack/Rain Cover \_\_\_\_\_ lbs.

### Shelter:

- Tent \_\_\_\_\_ lbs.
- Tent Pad \_\_\_\_\_ lbs.

### Sleep System:

- Sleeping Bag \_\_\_\_\_ lbs.
- Sleeping Pad \_\_\_\_\_ lbs.
- Camp Pillow \_\_\_\_\_ lbs.

### Kitchen:

- Stove/Burner \_\_\_\_\_ lbs.
- Fuel \_\_\_\_\_ lbs.
- Pot/Cup \_\_\_\_\_ lbs.
- Utensil \_\_\_\_\_ lbs.

### Personal Gear:

- Trekking Poles \_\_\_\_\_ lbs.
- Gaiters \_\_\_\_\_ lbs.
- Camp Chair \_\_\_\_\_ lbs.
- Flashlight/lamp \_\_\_\_\_ lbs.
- Headlamp \_\_\_\_\_ lbs.
- Knife \_\_\_\_\_ lbs.
- Multi-tool \_\_\_\_\_ lbs.
- Parachute Cord 50 ft. \_\_\_\_\_ lbs.
- Extra Batteries \_\_\_\_\_ lbs.
- Camp Shoes \_\_\_\_\_ lbs.

### Navigation and Electronics

- Map \_\_\_\_\_ lbs.
- Compass \_\_\_\_\_ lbs.
- GPS \_\_\_\_\_ lbs.

- PLB & Sat. Messaging \_\_\_\_\_ lbs.
- Handheld Radio \_\_\_\_\_ lbs.
- Battery Charger \_\_\_\_\_ lbs.
- Phone \_\_\_\_\_ lbs.

### Health, Hygiene, and Safety:

- First Aid Kit \_\_\_\_\_ lbs.
- Water Filter \_\_\_\_\_ lbs.
- Personal Wipes \_\_\_\_\_ lbs.
- Sunscreen \_\_\_\_\_ lbs.
- Lip Balm \_\_\_\_\_ lbs.
- Insect Repellent \_\_\_\_\_ lbs.
- Personal Medication \_\_\_\_\_ lbs.
- Sunglasses \_\_\_\_\_ lbs.
- Camp Towel \_\_\_\_\_ lbs.

### Clothing:

- Base Layer – Torso
- Base Layer – Legs
- Mid Layer – Torso\*
- Mid Layer – Legs\*
- Outer Layer – Torso
- Outer Layer – Legs
- Briefs x 3
- Socks x 3 pair
- Hiking Boots
- Belt
- Hat
- Beanie\*
- Neck Gaiter\*
- Hiking Gloves
- Thermal Gloves\*
- Rain Shell
- Sleep Clothes

# Logistics

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## Travel

You can travel to Glacier by either plane or vehicle. The nearest airport to the park is the Glacier National Park Airport in Kalispell, Mt.

### Departure Flight

Route: New Orleans (MSY) to Kalispell (FCA)  
Date: \_\_\_\_\_  
Depart Time: \_\_\_\_\_  
Arrival Time: \_\_\_\_\_  
Flight Number: \_\_\_\_\_

### Return Flight

Route: Kalispell (FCA) to New Orleans (MSY)  
Date: \_\_\_\_\_  
Depart Time: \_\_\_\_\_  
Arrival Time: \_\_\_\_\_  
Flight Number: \_\_\_\_\_

## Lodging

There is plenty of available lodging in the Glacier National Park area. Lodging information here:

Hotel 1 Name: \_\_\_\_\_ Check-In Date: \_\_\_\_\_  
Hotel 2 Name: \_\_\_\_\_ Check-In Date: \_\_\_\_\_

## Transportation:

Vehicle needs to fit all members of the expedition with enough room to also haul all your gear and supplies.

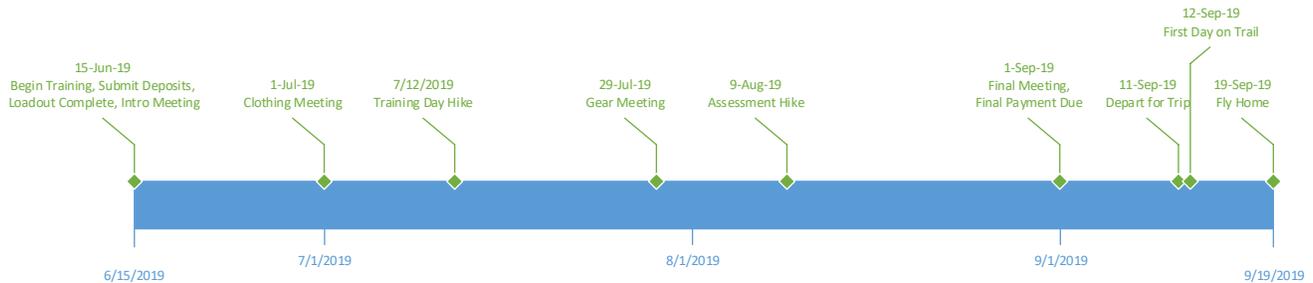
Rental Service: \_\_\_\_\_ Pickup Location: \_\_\_\_\_  
Type of Vehicle: \_\_\_\_\_

## Shuttle Plan:

Shuttle Service: \_\_\_\_\_ Pickup Date/Time: \_\_\_\_\_

# Preparation & Training

## Timeline



## Study the Map

Provided in this loadout are maps of the route which you can use to familiarize with the journey.

## Submit Permit requests

You need to know when permits are being accepted and to be sure to submit them as soon as you can in order to secure the desired camp sites. Refer to the locations website for this information.

## Book Travel and Lodging

### Arrangements

Travel and lodging arrangements should be made 3 months prior to departure.

## Gear Up

Begin purchasing needed gear. Refer to the gear section of this loadout to determine your gear needs. Use the gear checklist to determine the total weight of your gear. For a multi-day trip your gear should be within the 30 to 35 lb. range without food and water. Assume 20 lbs. for water.

## Learn your gear

Know how to setup and use your gear.

## Physical Self-Assessment

Request the AcadianX “MOUNTAINEERING PHYSICAL ASSESSMENT & BACKCOUNTRY READINESS QUESTIONNAIRE” to assess yourself.

## Training

You need to prepare your body for carrying a heavy load for long periods of time. The “3 Way Training” program is a good basic program to help you meet that goal. This consists of training for three days a week doing 3 different exercises for a span of 3 months.

### **Day 1: Leg Training & Trail Run**

Begin with leg training. This can consist of calisthenics, plyometrics, and strength training. Then follow up with a 2 – 3 mile trail run. Work on improving your time.

### **Day 2: Tower Day**

This day consists of using a weighted pack or vest that is equivalent to the amount of weight you will be carrying and to climb a local parking tower. You can alternate between the ramps and the stairs or for more of a challenge you can use the stairs exclusively.

**Day 3: Hiking Day**

On this day grab your weighted vest or pack and head to the trail. Again you should have enough weight to match the weight you will carry on your trip. Refrain from using trekking poles because you don't want to train your body to become dependent on them. Again go for 2 to 3 miles or more at a time and pay attention to pace. Maintaining between a 2 – 3 mile and hour pace is ideal.

For more in-depth advice on training and ways to physically prepare yourself for the mountains follow the link below:

[Physical Training Fundamentals for Mountaineering](#)