

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

743

Mendenhall Glacier

Carver of a Landscape

aGB585
.A4M46



United States
Department of
Agriculture

PREPARED BY
Forest
Service

Alaska Region
Leaflet
R10-RG-26

Mendenhall Glacier

Tongass National Forest

Welcome to the Mendenhall Glacier Visitor Center. Fed from an icefield high above Juneau, Mendenhall Glacier is a dynamic flowing force, grinding and scouring everything in its path as it carves its way down to the sea.

Mendenhall Glacier is one of many “rivers of ice” in southeast Alaska formed during the Little Ice Age which began about 3,000 years ago. The unique climate and geography of this region allowed glaciers to survive long after they began receding from other places in North America. The Mendenhall Glacier continues to provide us with new insights into past, present, and future climatic conditions.

Before 1750, the Mendenhall Glacier was advancing; its face was 2.5 miles down valley from its present position. Since then, due to slightly warmer temperatures, the glacier began receding. Land buried under ice for centuries is being exposed. Simple forms of life quickly take hold and begin a steady progression from pioneering plants and animals to a complex climax forest.

Today, the Mendenhall Glacier offers visitors an opportunity to explore one of North America’s most scenic and accessible glaciers. We invite you to come and enjoy this rich and fascinating landscape.



The Mendenhall Glacier Visitor Center, built in 1962, is dedicated to furthering the knowledge and enjoyment of glacial phenomena. It is the first visitor center built by the U.S.D.A. Forest Service in the United States.

Visitor Center Facilities

- **Staffed Information Desk**—Brochures and maps available.
- **Alaska Natural History Association Sales Outlet**—Books, pamphlets, visual aids, and maps available for purchase.
- **Theater**—Feature films and slide programs about Mendenhall Glacier and local flora and fauna.
- **Relief Map**—Topographic model of a portion of the Juneau Icefield.
- **Displays**—Glacial dynamics, plants and animals of a changing landscape, aerial photographs, and others.
- **Restrooms and Drinking Fountain**

Points of Interest

- **Photo Point**—A short walk from the visitor center, this scenic point offers spectacular views and excellent opportunities for pictures.
- **Glacial Features**—See evidence of the glacier's presence in the Mendenhall Valley from the visitor center or while hiking nearby trails.
- **Steep Creek**—Visit a roadside exhibit that explains the life cycle of salmon; in season, view sockeye salmon and coho salmon swimming upstream to spawn.
- **Mendenhall Lake and River**—Stroll the shore of a lake and river fed by glacial meltwater and see icebergs close up.
- **New Growth Forest**—Step back in geologic time and observe plant succession in action. A slow transformation takes place from bare soil at the glacier's edge to the beginnings of a spruce-hemlock forest.
- **Wildlife**—Watch for black bears, mountain goats, eagles, porcupines, salmon, and a variety of birds, including waterfowl.



Trails

Trails throughout the Mendenhall Glacier Recreation Area access points of interest. Ask the staff for directions.

- **Photo Point Trail**—0.3 mile (handicapped access)
- **Interpretive Trail**—0.5 mile (self-guided)
- **East Glacier Loop Trail**—3.5 mile loop
- **Nuggett Creek Trail**—1.5 mile
- **Moraine Ecology Trail**—1.5 mile loop
- **West Glacier Trail**—3.5 miles (trailhead near campground)

A Word on Safety

For your personal safety, please do not approach the face or sides of the glacier. These areas are very unstable and unpredictable. Large pieces of ice may break off (calve) at any time with little or no warning. Unless properly equipped and knowledgeable of local conditions, we urge you to stay on established trails.

The Juneau Icefield

Glaciers flow from icefields high in the Coast Mountains where heavy snowfall accumulates year after year. The Juneau Icefield encompasses about 1,500 square miles of ice and is the beginning of many glaciers including Mendenhall, Lemon Creek, Herbert, Eagle, and Taku Glaciers. Annual snowfall on the icefield often exceeds 100 feet and the cold temperatures at higher elevations keep the snow from melting.

As snow accumulates and is buried, it is gradually transformed into glacial ice. This ice has little or no trapped air and spaces between ice crystals are reduced. Under tremendous pressure, it has the ability to flow, becoming a glacier.



The Glacier in Action

The Mendenhall Glacier flows for 12 miles down the Mendenhall Valley to its terminus near the visitor center. The ice flows forward at an average rate of 2 feet per day, but at the very same time, it wastes away at a slightly faster rate. Wastage occurs through melting or by large pieces of ice breaking off the face of the glacier. This latter process is known as “calving” and produces the icebergs floating in Mendenhall Lake.

When the rate of melting exceeds the rate of flow, a glacier recedes. The Mendenhall Glacier has been receding since the late 1700’s and currently retreats at a rate of 25–30 feet per year.

When the rate of flow exceeds the rate of melting, a glacier advances. For the Mendenhall Glacier to begin advancing again, either more snow needs to accumulate in the icefield, or melting at the face of the glacier needs to decrease. A minor change in climate can bring about either change.

A glacier works like a giant conveyor belt. As it moves down valley, it grinds and scrapes the underlying surface. Rocks and other debris are plucked from the walls and floors of the valley and transported to the glacier's terminus. As the ice melts, it deposits its load of rock and debris into landforms called moraines.

Evidence of the Mendenhall Glacier's grinding action can be found in the grooved, polished rock surrounding the visitor center. A fine glacial sediment, known as "flour," washes into Mendenhall Lake, giving it a cloudy appearance.

Blue Ice

One of the most striking features of a glacier is its blue color. Like all minerals, glacial ice has a crystalline structure which absorbs or reflects light. When you look at glacial ice you are looking into and through thousands of crystals. As light strikes the ice surface all colors of the spectrum are absorbed except blue, which is reflected back.

Forest Succession—A Dynamic Process

As the Mendenhall Glacier slowly recedes up the valley, land buried for thousands of years is uncovered. Bare and barren, this land soon supports a rich growth of vegetation and wildlife.

Plant succession begins when lichens and mosses grow on rock and soil. Soon, other pioneering plants such as lupine, fireweed, willow, and alder become established. These plants add organic matter and nitrogen and prepare the soil for other species such as Sitka spruce, and western hemlock.

With each advance and retreat of the glacier, the process begins again.



Mendenhall Glacier—A Home for Wildlife

A newly created forest provides a variety of habitat for birds, fish, and mammals. As the forest matures, the diversity in vegetation provides for more diversity in wildlife.

At Steep Creek, near the visitor center, sockeye (red) and coho (silver) salmon return from the open ocean to spawn. They can be observed from late summer to early fall.

The spawning salmon provide a ready source of food for black bears and eagles which are frequently seen in the area. Small mammals such as fox, coyote, porcupine, squirrel, and snowshoe hare inhabit the valley floor. The alpine environment of the surrounding peaks is home to several small herds of mountain goat. They are often spotted scaling the sheer cliffs of Mt. Bullard.

Loons, gulls, and arctic terns nest along the lake shore. A variety of waterfowl use the lake as a stopover on their spring and fall migrations.

The Juneau Icefield

Glaciers flow from icefields high in the Coast Mountains where heavy snowfall accumulates year after year. The Juneau Icefield encompasses about 1,500 square miles of ice and is the beginning of many glaciers including Mendenhall, Lemon Creek, Herbert, Eagle, and Taku Glaciers. Annual snowfall on the icefield often exceeds 100 feet and the cold temperatures at higher elevations keep the snow from melting.

As snow accumulates and is buried, it is gradually transformed into glacial ice. This ice has little or no trapped air and spaces between ice crystals are reduced. Under tremendous pressure, it has the ability to flow, becoming a glacier.



The Glacier in Action

The Mendenhall Glacier flows for 12 miles down the Mendenhall Valley to its terminus near the visitor center. The ice flows forward at an average rate of 2 feet per day, but at the very same time, it wastes away at a slightly faster rate. Wastage occurs through melting or by large pieces of ice breaking off the face of the glacier. This latter process is known as "calving" and produces the icebergs floating in Mendenhall Lake.

When the rate of melting exceeds the rate of flow, a glacier recedes. The Mendenhall Glacier has been receding since the late 1700's and currently retreats at a rate of 25-30 feet per year.

When the rate of flow exceeds the rate of melting, a glacier advances. For the Mendenhall Glacier to begin advancing again, either more snow needs to accumulate in the icefield, or melting at the face of the glacier needs to decrease. A minor change in climate can bring about either change.

A glacier works like a giant conveyor belt. As it moves down valley, it grinds and scrapes the underlying surface. Rocks and other debris are plucked from the walls and floors of the valley and transported to the glacier's terminus. As the ice melts, it deposits its load of rock and debris into landforms called moraines.

Evidence of the Mendenhall Glacier's grinding action can be found in the grooved, polished rock surrounding the visitor center. A fine glacial sediment, known as "flour," washes into Mendenhall Lake, giving it a cloudy appearance.

Blue Ice

One of the most striking features of a glacier is its blue color. Like all minerals, glacial ice has a crystalline structure which absorbs or reflects light. When you look at glacial ice you are looking into and through thousands of crystals. As light strikes the ice surface all colors of the spectrum are absorbed except blue, which is reflected back.

Forest Succession—A Dynamic Process

As the Mendenhall Glacier slowly recedes up the valley, land buried for thousands of years is uncovered. Bare and barren, this land soon supports a rich growth of vegetation and wildlife.

Plant succession begins when lichens and mosses grow on rock and soil. Soon, other pioneering plants such as lupine, fireweed, willow, and alder become established. These plants add organic matter and nitrogen and prepare the soil for other species such as Sitka spruce, and western hemlock.

With each advance and retreat of the glacier, the process begins again.



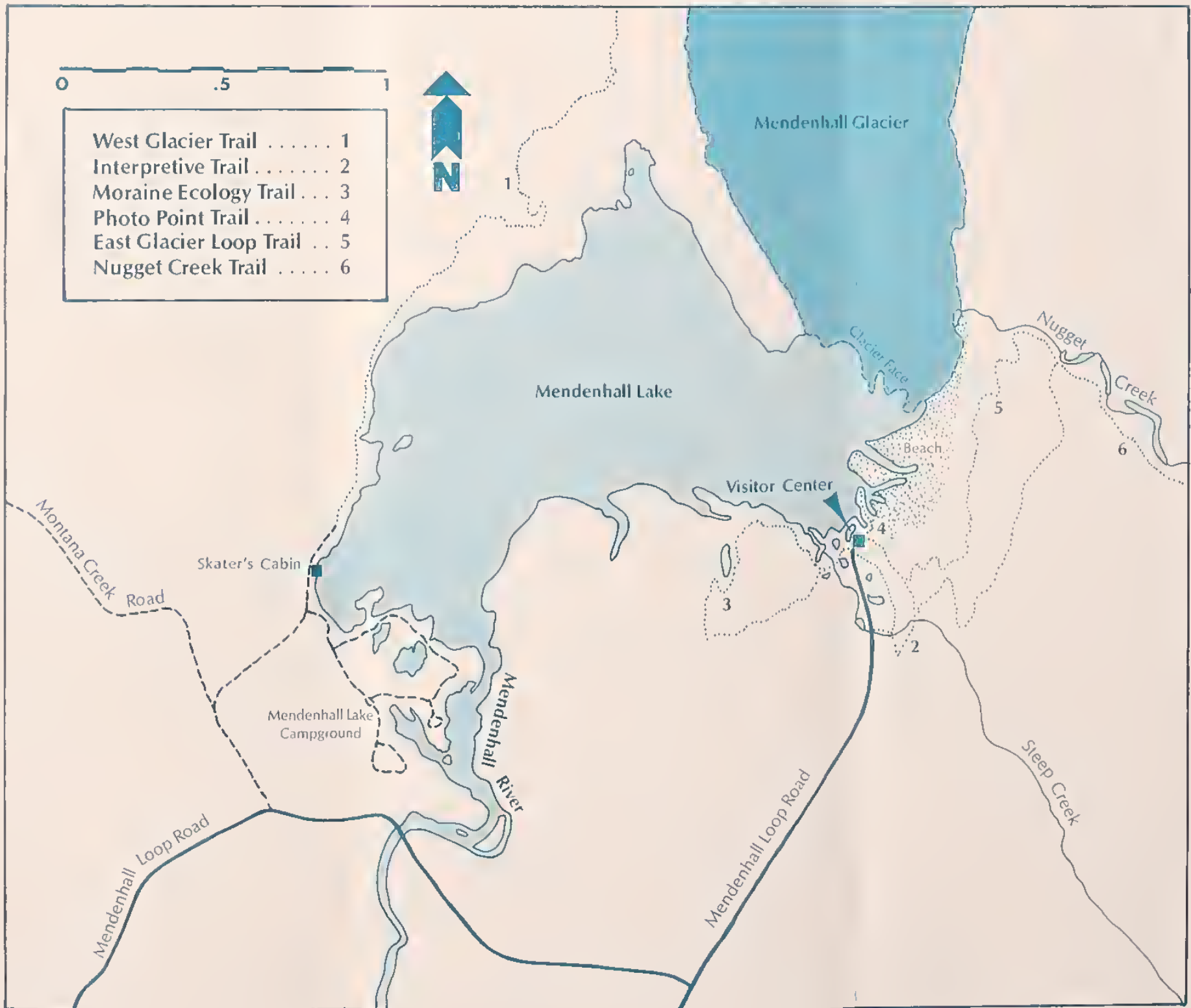
Mendenhall Glacier—A Home for Wildlife

A newly created forest provides a variety of habitat for birds, fish, and mammals. As the forest matures, the diversity in vegetation provides for more diversity in wildlife.

At Steep Creek, near the visitor center, sockeye (red) and coho (silver) salmon return from the open ocean to spawn. They can be observed from late summer to early fall.

The spawning salmon provide a ready source of food for black bears and eagles which are frequently seen in the area. Small mammals such as fox, coyote, porcupine, squirrel, and snowshoe hare inhabit the valley floor. The alpine environment of the surrounding peaks is home to several small herds of mountain goat. They are often spotted scaling the sheer cliffs of Mt. Bullard.

Loons, gulls, and arctic terns nest along the lake shore. A variety of waterfowl use the lake as a stopover on their spring and fall migrations.



The Mendenhall Glacier Recreation Area is set aside to provide Juneau residents and visitors with a variety of year-round recreational opportunities.

Mendenhall Lake Campground

Mendenhall Lake Campground is open from mid-May through September each year. The campground has 60 units including 10 units that accommodate trailers up to 22 feet in length. There are 7 walk-in units for backpackers. Camping fees are \$5.00 per day with a 14-day limit.

Skater's Cabin

Located on the shore of Mendenhall Lake next to the campground, Skater's Cabin is a day-use picnic area with good views of Mendenhall Glacier. Facilities include picnic tables, grills, pit toilets, and water from the nearby campground.



Outfitter/Guides

Several commercial operators provide guided tours of the Mendenhall Glacier Recreation Area. Opportunities offered include bus tours to the visitor center, river rafting trips on the Mendenhall River, and sightseeing flights over the glacier and icefield. A current list of approved outfitter/guides is available on request.



1022306993

The Glacier's Vital Statistics

- Length—12 miles from the Juneau Icefield to Mendenhall Lake.
- Width at the face—1.5 miles from side to side.
- Average height of the glacier face above lake level—100 feet.
- Distance from the visitor center to the glacier face—0.5 mile.
- Average rate of forward flow—2 feet per day.
- Average rate of recession—25 to 30 feet annually.
- Age of ice at the glacier face—no more than 150 years old.
- Depth of Mendenhall Lake—200 feet deep at some points.
- Elevation of Mendenhall Lake—about 50 feet above mean sea level.

All in a Name

Noted naturalist John Muir, on a visit to southeast Alaska in 1879, first named the glacier "Auk" after a local Tlingit Indian village. Muir considered the glacier to be "one of the most beautiful of all the coastal glaciers." In 1892 the glacier's name was changed to honor Thomas C. Mendenhall, Superintendent of the U.S. Coast and Geodetic Survey. Under his administration, the international boundary between Canada and Alaska was surveyed.

For further information, please contact:

U.S.D.A. Forest Service
Juneau Ranger District
8465 Old Dairy Road
Juneau, Alaska 99801
Phone: (907) 789-3111

A bibliography of selected readings is available on request.

