

Chronology of glacial retreat

On this historical series, today's trails are included as an overlay for orienting purposes (on early scenes, of course, they were not yet present). Terminus positions are also shown on each image. At the peak of the Little Ice Age in the mid 1700s, Mendenhall Glacier covered all but the lower right corner of this scene.

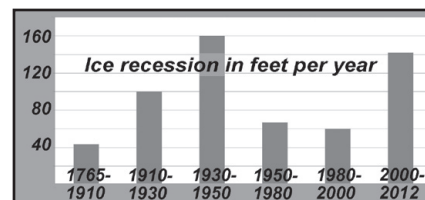
1910 This 50-ft contour USGS masterpiece was completed decades before the first aerial photography. Mendenhall Lake didn't exist. Nugget and Steep Creeks flowed down the east flank of the glacier, mixing with melt water, then swung west across the valley behind recessional moraines. Asterisk shows site of future visitor center.

1948 Visitor Center site was uncovered in 1941. Outwash channels on 1910 map were excavated for gravel, creating Dredge and Crystal lakes. From 1910 to 1930, recession averaged 100 ft/yr, but soared to 160 ft/yr (chart on right) from calving in deep water. Steep Creek still ran through 1930s outwash channel (map, flipside).

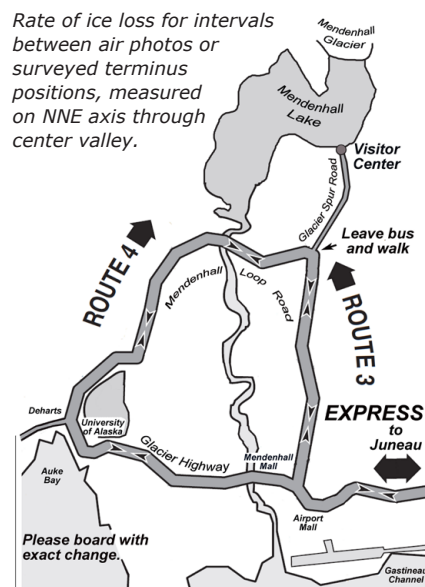
1962 Visitor Center completed. Mendenhall Valley still thinly populated. The Mendenhall Glacier Recreation Area was established in 1947, and its first management plan prepared in 1960; making MGRA the Valley's forever-wild back yard. Steep Creek mined through pitted outwash (ponds in ice-melt depressions) directly north to lake.

1979 While construction boomed in the lower valley, succession healed raw landforms in the MGRA. Compare, for example, with "pitted outwash" on the 1962 aerial. Retreat rate slowed as the glacier settled into a narrower portion of the lake, exposing schist bedrock on the north shore where gulls began to nest.

2005 Rate of retreat has increased again (chart on right), exposing torrential falls where Nugget Creek meets Mendenhall Lake. Vegetation is still sparse near the falls. Be aware, however, that successional status varies not only with surface age, but with landform type and sediment size. Drainage is excessive in abandoned outwash channels, moderate on glacial till, and impeded on lake-bed fines.



Rate of ice loss for intervals between air photos or surveyed terminus positions, measured on NNE axis through center valley.



Access to the glacier

A common question from independent travelers in downtown Juneau is "how do I get to Mendenhall Glacier?" Taxis and a private bus offer interpreted rides. Here's another option for the self-guided visitor who enjoys walking:

Juneau City buses (\$2, exact change) depart Downtown Transit Center at foot of Main Street every 30 minutes (00:05 and 00:35). Take Bus 3 or 4 and ask the driver to drop you at Glacier Spur Road, **stop 1** on airphoto overleaf. The trip will take 45 to 55 minutes. From there, walk 1.5 miles (2.5 km) on a paved, level, bike-and-pedestrian path to the Forest Service Visitor Center. Buses have racks for 2 bikes, carried without charge.

As you approach the retreating glacier, trees get younger, glacial landforms more prominent, and scenery more spectacular. At the Visitor Center are a wide variety of hiking paths. A 3/4-mile trail follows the lake shore to Nugget Falls, only half a mile from the calving glacier terminus. (*Access to the ice itself is a difficult, off-trail bushwalk, west of the lake, beyond the scope of this guide.*)

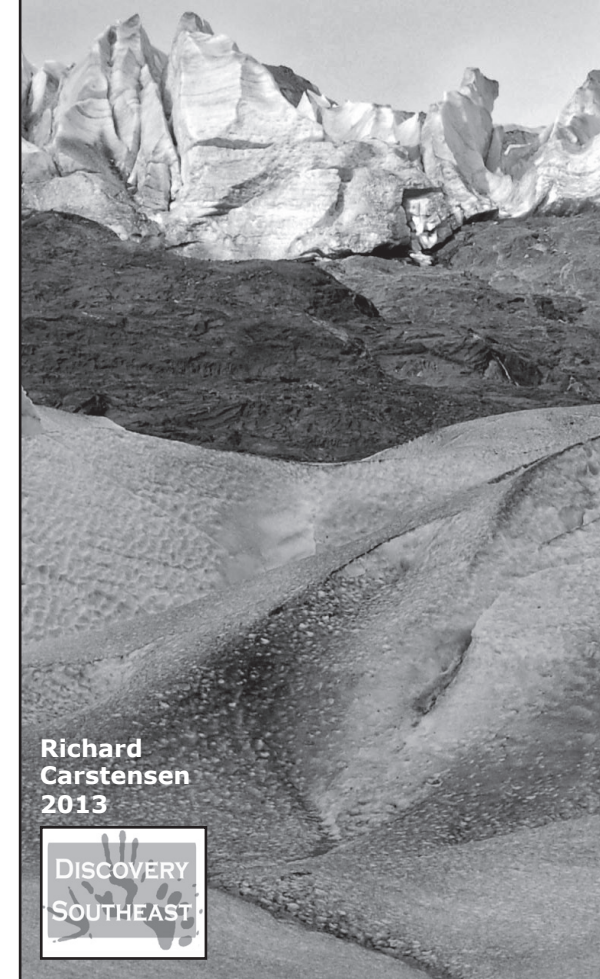
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Mendenhall Glacier by bus & boot leather

Exploring a deglaciated
landscape on foot from
Juneau's bus system

A Discovery Guide for
the independent traveler



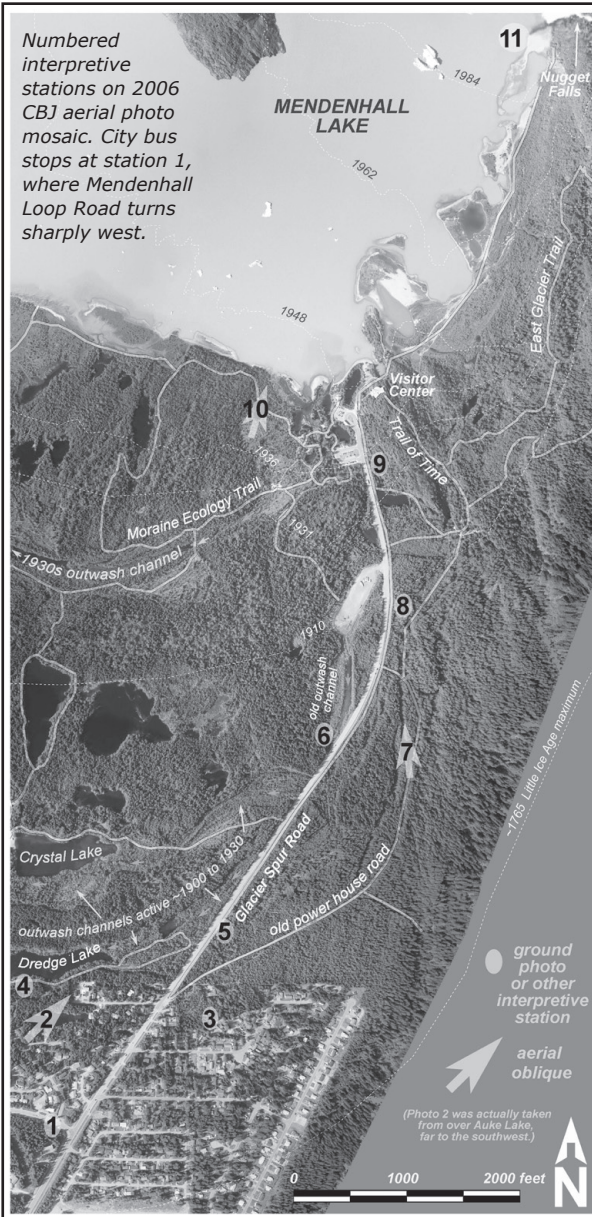
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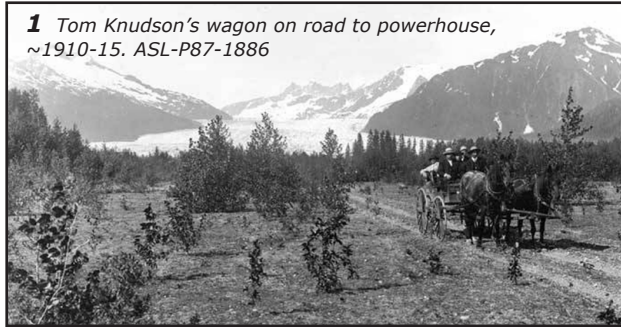
Numbered stations

Numbered interpretive stations correspond to historical photos, or descriptions of contemporary vegetation and glacial landforms.

1 Glacier Spur bus stop, wagon road Mendenhall Glacier uncovered this site in approximately 1800 AD. A century later, Tom Knudson built a wagon road inland from his ranch on the tide flats to service the power house (photos 7&8).

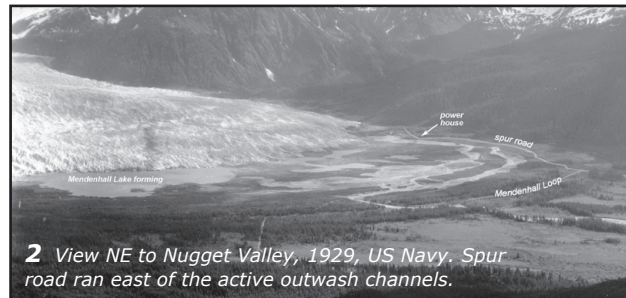


1 Tom Knudson's wagon on road to powerhouse, ~1910-15. ASL-P87-1886



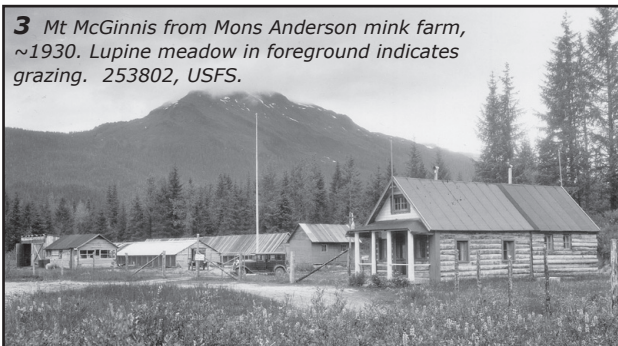
He followed sparsely vegetated gravelly outwash channels that required no tree-clearing. The glacier in the background was only 0.8 miles away (today it's 2.5 miles) and the lake did not exist.

2 1929 Navy oblique By 1929, the lake was forming on the left of this photo, but vigorous outwash still flowed through curving channels between *recessional moraines* (station 5). Knudson's road swung east of these channels until they dried out; today's Glacier Spur Road runs right through them. Compare routes on adjacent map. You could make a round-trip of this outing by following the old power house road on your return.

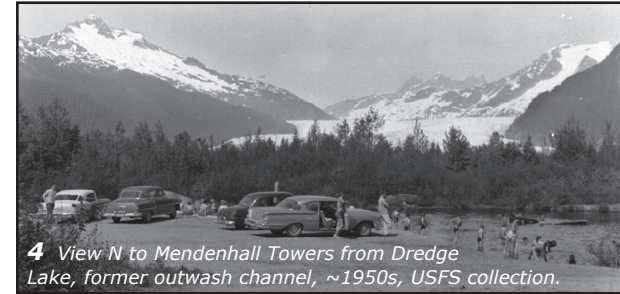


2 View NE to Nugget Valley, 1929, US Navy. Spur road ran east of the active outwash channels.

3 Mink farm While homesteads on the tide flats were mostly dairies and gardens catering to the mines, other parcels far up the creeks were better suited to fur production. Thousands of pink and chum salmon once ran to the heads of Duck and Jordan creeks. Fur farmers pitch-forked these fish to captive mink and foxes, and paid valley teenagers to gather more.



3 Mt McGinnis from Mons Anderson mink farm, ~1930. Lupine meadow in foreground indicates grazing. 253802, USFS.

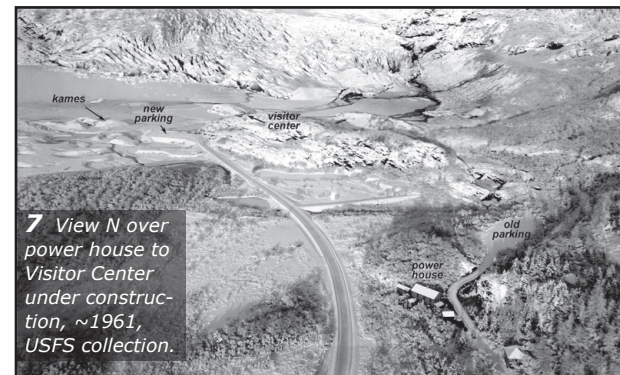


4 View N to Mendenhall Towers from Dredge Lake, former outwash channel, ~1950s, USFS collection.

4 Dredge Lake A 300-yard foot trail turns west from Glacier Spur Road to Dredge Lake. Since Dredge and Crystal were excavated in the 1940s for road gravel, this shallow lake has been a favorite swimming hole and tadpole-catching place. The toad population collapsed in the 1990s; larvae are now rare.

5 Recessional moraines When a glacier pauses in its retreat, additional rubble (till) is deposited, leaving a *recessional moraine*. Watch for these well-drained, spruce-covered ridges, aligned NE-SW diagonally across the Spur Road.

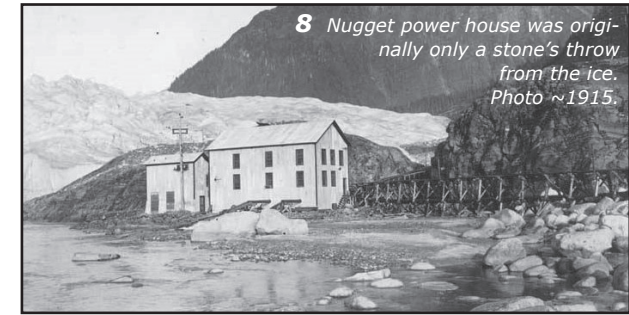
6 Roadside beaver swamp West of the road is a low swale rimmed by dead trees—our best remaining view of outwash channels that drained the glacier until the 1930s. Road construction (1960s) obstructed southward drainage, then beaver dams drowned marginal spruces. Beaver management (a philosopher's gordian-knot) pits coho vs sockeye; production vs protection; hiker-access & photogenics (crimson fish!) vs wildlife habitat.



7 View N over power house to Visitor Center under construction, ~1961, USFS collection.

7 1961 oblique Glacier Spur Road led to new parking lot. Visitor Center roof peeked over *roche moutonnée* (bedrock rounded by glacier). On left were *kame mounds*, still cored by ice. Trestle road led past power house to old parking lot, since forested.

8 Nugget power house This plant at the foot of Mendenhall Glacier generated 2,300 KW at peak flow on Nugget Creek. By 1914, a 6,900-foot pipeline ran from a dam above Nugget Falls to the power house. Transmission lines delivered its power to Treadwell and Alaska-Juneau mines. Trail of Time from this turnout is an alternate route to the Visitor Center.



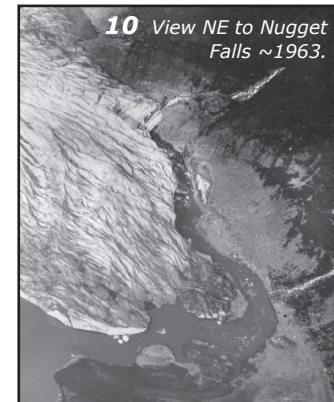
8 Nugget power house was originally only a stone's throw from the ice. Photo ~1915.

9 Steep Creek This sockeye stream takes its name from cascades down Thunder Mountain, framing the east side of Mendenhall Valley. Since the 1960s (air photo series, flip side), Steep Creek has flowed north into the lake. Spawning sockeye and coho salmon—plus supervision by Forest Service interpreters—make this the likeliest place in Juneau to see black bears. (*But no guarantees!*) Ask about loop-trails near the Visitor Center, or continue your “deglaciation pilgrimage,” hiking the lake shore north to Nugget Falls.

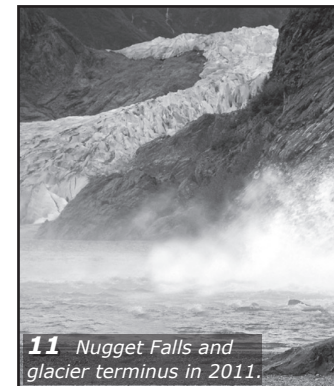
10 Nugget Falls oblique, 1963 Until the 1970s, Nugget Creek flowed under Mendenhall Glacier. Some claimed cohos spawned under the ice, at the base of the falls. As glaciers recede, they down-waste; note raw valley walls, recently exposed.

11 Nugget Falls today On the walk to Nugget Falls you'll leave the forest behind. Only shrubs and herbs have colonized these young surfaces. Most have highly mobile seeds: with wings (Sitka alder, Sitka spruce) or plumes (willow, cottonwood, dwarf fireweed) that carry them for miles on the breeze.

Returning down-valley, watch for patterns in post-glacial succession. On surfaces of increasing age it's easy to notice the *first* time a species appears (simpler than to *remember*—traveling toward the ice—the *last* time you saw it). Glacial grandeur increases to the north; habitat maturity flourishes southward.



10 View NE to Nugget Falls ~1963.



11 Nugget Falls and glacier terminus in 2011.