GLACIER BAY NATIONAL MONUMENT

The park is located in southern Alaska. A spectrum of habitats is found, including temperate rain forest, tundra, alpine tundra, wetlands, and tall spruce-hemlock forest.

The environment is supported by a combination of hydrologic and biological processes. The tides of the bay provide the necessary water for plant growth, while the forests provide sufficient energy to sustain the plant life. The balance between these two systems ensures the maintenance of the park's ecological integrity.

THE GLACIERS REDECE

When Capt. James Cook sailed through the ice-choked waters of Icy Strait in 1741, Glacier Bay was little more than a cove in the shoreline. Across the head of this apparently minor inlet stood a towering wall of ice—a wall that marked the seaward outlet of an immense glacier that completely filled the bay. Deep basins of water that are now called Glacier Bay. To the north, the ice extended more than 160 kilometers (100 miles) to the St. Elias Range, covering the basin to a width of 30 kilometers (20 miles) and more. In many places the mantle of ice was more than 1,200 meters (4,000 feet) deep.

By 1879 the ice front had retreated 77 kilometers (48 miles) and 73 kilometers (45 miles) from the present edge of the outlet. Tidal Varied the basin and filled the deep, narrow fiords.

The glaciers kept moving. By 1916, Tarr Inlet was free of ice, and the terminus of Grand Pacific Glacier stood 106 kilometers (66 miles) from the mouth of Glacier Bay. Nowhere else have glaciers receded at such a rapid pace. The speed of retreat at Glacier Bay's sheet of ice appears to have been a rapid process, but the full explanation for this bewildering diversity of glacial activity has yet to be found.

Forests, glaciers, and wildlife combine with lush forests and abundant wildlife to create a unique wilderness.

Several tidewater glaciers offer a spectacular show of geologic forces in action. As water underlies the ice front, it melts the ice at speeds of up to 60 kilometers (35 miles) per year, thereby creating huge waves and filling the narrow valleys with massive icebergs. Muir and Johns Hopkins glaciers are examples of this dynamic process.}

THE GLACIERS TODAY

The glaciers in the park today are remnants of a gentile ice advance which began about 14,000 years ago. This period, sometimes called the "little ice age," in no way approached in extent the continental glaciation of earlier Pleistocene time. Ice fronts reached their maximum limits about 1750, after which the slow warming climate brought about general melting.

For about 40 years, the ice of the many cirque glaciers that once supplied the huge sheets of ice that once covered the land receded. By 1929, most of these glaciers had disappeared. In contrast, the glacier on the bay's west side was stabilized by 1929. Most have slowly fluctuated ever since, but several, including the mouth of Grand Pacific and Johns Hopkins, have moved gradually forward. Glaciers outside the Glacier Bay drainage show other patterns of activity. Some may be as far forward as in any previous time. Local climate and topography are presumably involved, but the full explanation for this bewildering diversity of glacial activity has yet to be found.
FLORA IN TRANSITION

Before the last glacial advance, much of the land in the upper bay was covered by forests of spruce and hemlock (left). With the forward movement of the glaciers came great quantities of meltwater and debris. The shifting streams flooded and then buried the trees under many meters of sand and gravel. Glaciers then advanced over the sediments and for perhaps 3,000 years the forests lay buried. As glaciers melted, their outwash streams cut through the deep deposits and exposed the ancient stumps, still in upright position. Well-preserved specimens may be observed in the areas of Morse and Forest Creeks and along the shore just north of Fingers Bay.

Life quickly reinvades land recently covered with ice. The glacial barriers are dotted with scattered dwarf fireweed, nesatina, rosinow, and other plants that steadfastly prosper in the poor soil. A pioneer plant, Dryas, forms dense mats on the sands and gravels, building soil for the willow and alder thickets that soon follow. Much later, much more, the stream carves out the thick brush. Hemlock slowly replaces the spruce, and much of the undergrowth gives way to a deep carpet of moss. The last stage of succession occurs as moat locations become open muskegs.

PIONEERING MAMMALS

The recent recession of glaciers that once covered Glacier Bay and nearby islands has opened a new landscape for pioneering animals as well as plants. Many mammals have shown special means to speed their colonization. Black-and-brown bears, river otters, and mink are able to swim around ice barriers that prevent access by other land animals. Mountain goats and hoary marmots live in alpine meadows, where moun­

tain clearings and a few meadows remain. Two-thousand-meter-high ridges were the last to be cleared by the retreating glaciers, giving way to a deep carpet of moss. The last stage of succession occurs as moat locations become open muskegs.
GETTING TO GLACIER BAY

Glacier Bay is situated at the northwest end of the Alexander Archipelago in southeastern Alaska. There are no roads to the park, and access is by various types of commercial transport, including regularly scheduled and charter air services, cruise ships and charter boats, private boats, and tours via kayak.

By boat, the distance from Juneau is about 180 kilometers (110 miles). Flying times from Juneau is about 30 minutes. An airfield is at Gustavus, just outside the park. Otherwise, landing is restricted to saltwater. Adams Inlet is closed to aircraft landing.

TO GLACIER BAY

By boat, the distance from the closest city offering commercial transportation is about 90 kilometers (60 miles). Flying time from the nearest scheduled and charter air service is about 10 minutes. Flying time from the nearest airfield is about 15 minutes. An airfield is at Gustavus, just outside the park.

CONCESSIONARY OPERATED

Glacier Bay Lodge at Bartlett Cove is operated from about mid-May to mid-September. Boating and fishing parks are available. For reservations, write to Glacier Bay Lodge, Glacier Bay National Monument, Gustavus, AK 98860.

VISITOR ACTIVITIES

SEEING THE GLACIERS

Tourists and park rangers are stationed at Bartlett Cove to help you. Field ranger crews are also based at Goose Cove in Muir Inlet and at Dundas Cove to help you. Field ranger crews are also based at Goose Cove in Muir Inlet and at Dundas Cove. Boating and fishing parks are available. For reservations, write to Glacier Bay Lodge, Glacier Bay National Monument, Gustavus, AK 98860.

CAMPING AND HIKING

Although only one campground, at Bartlett Cove, is maintained, the park's several hundred kilometers of shoreline, numerous islands, and alpine meadows offer nearly unlimited camping and hiking opportunities. Lightly vegetated regions of the upper bay are especially attractive to hikers.

Access to more isolated areas is usually by the daily tour boat from Bartlett Cove, which will drop campers at selected points en route, or via charter services. Reservations may be required, and it is advisable to obtain local information prior to a camping trip. Inquire about thesupervision. In addition, a hiker's guide with many suggestions for back-country users and topographical maps covering the park can be obtained at Bartlett Cove.

FISHING

Fishing is permitted under regulations established by the Alaska Department of Fish and Game, and fishing licenses are required. Boats for charter may be obtained at Bartlett Cove.

VISITOR SERVICES

NATIONAL PARK SERVICE CONDUCTED


WE'RE JOINING THE METRIC WORLD

The National Park Service is introducing metric measurements and metric publications to help Americans become acquainted with the metric system and to make interpretation more meaningful for park visitors from other nations.