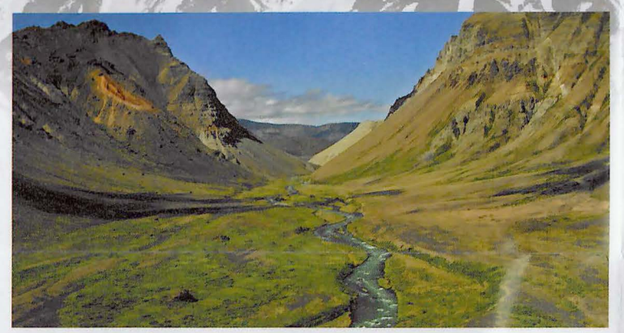
Aniakchak

Aniakchak National Monument
Aniakchak National Preserve
Alaska

National Park Service
U.S. Department of the Interior

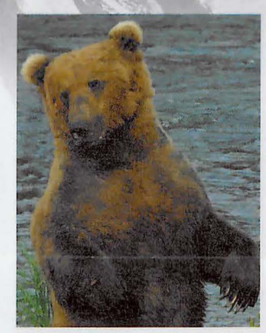
A Volcanic Wilderness

Midway down the wild, remote, and mostly roadless Alaska Peninsula lies one of the nation's most fascinating recent volcanic features. Aniakchak is a large caldera formed by the collapse of a 7,000-foot volcanic mountain. Set inland in a place of frequent clouds and fierce storms, Aniakchak was unknown to all but area Natives until the 1920s, when geographers remotely plotting mountains along the caldera rim noticed that they formed a circle. In 1922, a geology field party gazed into the caldera itself and brought back news of its immense size. Maps and diagrams help tell the volcanic story on the other side of this brochure.

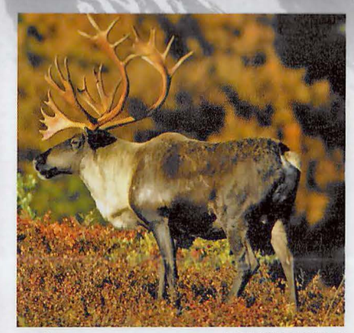


Aniakchak River below The Gates, outside the caldera
NPS / ROY WOOD

This narrow stretch of the Alaska Peninsula boasts a rich human story, but its spacious promise of solitude also suggests: "Here is the world as it was." Volcanoes, earthquakes, and tsunamis have interrupted the human story, even burying it under volcanic ash. Yet the land abides as a wild place where humans can sense not just independence but interdependence—kinship, even—with the whole of the natural world. Here are brown/grizzly bears, moose, and caribou; sea lions, seals, and other marine mammals; and geese, swans, and other waterfowl. Life has persisted here in the face of world-class catastrophic change.



Brown bear
NPS / MELINDA SCHMITT



Caribou
© DON GETTY / ALASKA STOCK

Cover: *Aniakchak Caldera, with Surprise Lake and The Gates, upper left*
© ROY WOOD

Catastrophic Change and Slow Regrowth

Father Bernard Hubbard peers into the caldera on his 1930 expedition.

Father Hubbard also traveled to Aniakchak crater in 1931 after the eruption that year.
BOTH PHOTOS: SANTA CLARA UNIVERSITY

Aniakchak's most recent volcanic activity, in 1931, cast thousands of tons of ash in the caldera up to 40 miles away over small villages. (The blast was a mere blip on the radar compared to the caldera-creating blast 3,700 years ago.) Fortunately, the caldera was documented in 1930 and again just after the blast by the geologist and Jesuit priest Father Bernard Hubbard *(above)*. His photos and descriptions help us judge how long plants will take to recover in the devastated caldera.

Plants now grow in sheltered spots and near Surprise Lake and its outlet *(big map on back)*. Brown bears and caribou are back. The sockeye salmon run up the Aniakchak River into Surprise Lake in the caldera to spawn, as they have for perhaps 2,000 years, since the caldera wall was breached and gave them entry.

West of the caldera, Bristol Bay's coastal plain is habitat for waterfowl and migratory birds. To the east, rugged bays and inlets of the Pacific coast and offshore islands are habitat for sea mammals and seabirds.

Congress created the national monument and the national preserve in the 1980 Alaska National Interest Lands Conservation Act, one of the most far-reaching conservation laws of the 1900s.

Recognizing its outstanding wildlife and recreation values, Congress also designated the Aniakchak as a wild river under the National Wild and Scenic Rivers System Act.

Wild celery
MICHELE MORSETH / NPS

Highbush cranberries
© ALASKA STOCK

Sea otter
© RON WOLF, CALPHOTOS

WAYS OF LIFE BUILT ON THE BOUNTY OF NATURE

Left to right: An Alutiiq traditional bentwood hunting visor, ivory figurine, arrowhead, and adze.

Alaska's Russian period endures in influences of the Russian Orthodox Church in most Native Alaskan communities. A bilingual Bible has the Alutiiq language on the left page with facing Russian translation (above).
VISOR: ALUTIIQ MUSEUM; FIGURINE, ARROWHEAD, AND ADZE: BRIAN HOFFMAN OF HAMLINE UNIVERSITY; BIBLE: ALUTIIQ MUSEUM

A woman and child in ground-squirrel parkas stand in front of a barabara, a traditional underground house.
UNIVERSITY OF WASHINGTON LIBRARY

People used the coastal and inland areas before and after the eruption 3,700 years ago, but they did not re-inhabit the devastated land for nearly 1,500 years. Historically this volcanic wasteland has formed the boundary between Aleut (Unangan) speakers in the southwest and Alutiiq (Sugpiaq) speakers in the northeast. The narrow peninsula, 30 miles across here, gives ready access to distinct environments: the Bering Sea and ice-free Pacific coast. Trade and warfare regularly brought Native groups in contact with each other.

Russian Gregory Shelikhov subdued Koniag people's resistance in 1783 and founded the first permanent non-Native settlement on Kodiak Island. His fur trade empire then dominated economic and social life on the Alaska Peninsula. Russians conscripted Alutiiq people to hunt or trap puffins, sea otters, seals, and foxes for the Russian American Company.

In the 1890s the Alaska Commercial Company built a trading post on Sutwik Island that became a commerical center that bought caribou, otter, fox, wolverine and mink pelts from Native hunters. As salmon numbers waned in the U.S. Pacific Northwest, the Columbia River Packers Association built a cabin at Aniakchak Bay in 1924 for its workers tending the commercial fish traps in the bay. The cabin, now restored, is in the Aniakchak Bay Historic District, listed on the National Register of Historic Places. Salmon are still a crucial food source for Native people, as they have been since time immemorial.

Subsistence Lifestyle Certain subsistence activities are allowed in these parklands for those who qualify. Subsistence fishing, hunting, and trapping are regulated for maintaining natural, healthy populations of the wild animals.

If you come across subsistence-use camps or equipment, do not disturb them.

Drying salmon
© WAYDE CARROLL / ACCENTALASKA.COM

Alutiiq family on a trip to Kanatak, in a three-seat kayak or baidarka, ca. 1930
JOHN URBAN COLLECTION, ANCHORAGE MUSEUM, B64.1.354

Safety May Mean Life or Death Here
You and your gear must be tested and experienced before you travel here. There are no roads, no trails, no facilities. Brown bears, caribou, and moose can injure, maim, or kill you. Weather can delay drop-off and pick-up times for days—you must pack extra food.

Some people fly into Surprise Lake to float the Aniakchak River to its mouth. Others hike in with pack rafts to float out. By Alaska standards this is good, open country for backpacking, despite no trails. But it is not for inexperienced backcountry travelers or paddlers. You must be prepared and practice proper food storage as required by law in bear country. See the park newspaper and website for important details.

More information
Aniakchak National Monument
Aniakchak National Preserve
P.O. Box 7, King Salmon, AK 99613
www.nps.gov/ania or 907-246-3305

These parklands are two of over 390 parks in the National Park System. Learn more about national parks and National Park Service programs in America's communities at www.nps.gov.

Running Aniakchak River rapids
NPS

Aniakchak's Volcanic Past

A Huge, Climate-changing Eruption

Dwarfing every subsequent volcanic eruption, a 7,000-foot-high mountain erupted and collapsed here 3,700 years ago, leaving a 2,000-foot-deep, bowl-like caldera 6.5 miles across *(large map)*. Hot ash flows then overran the narrow Alaska Peninsula to both the Pacific Ocean and, mainly, the Bering Sea. The flows overran 780-foot mountain passes and slammed Bristol Bay so hard their impact caused a massive tsunami.

The blast created an ecological "dead zone" that separated cultural and linguistic developments of the northern peninsula from those of the south, amplifying the differences between them. Sprawling plains of tephra—ash, pebbles, and boulders—visible from space, extend 20 miles around the caldera, with little or no vegetation. Airborne sulfur dioxide from the eruption would block sunlight for such large areas that the global climate would have cooled but to what extent is not known.

Pacific Ring of Fire Aniakchak lies on the Pacific Ring of Fire, the Pacific Ocean's active volcanic rim where Earth's crustal plates interact *(globe above)*. Often explosive, these volcanoes can produce huge volumes of ash. Aniakchak is cousin to America's Katmai *(inset map, right)*, Redoubt, and Mount Saint Helens and Japan's Fuji and Indonesia's Krakatoa—but the Aniakchak eruption was far, far more powerful than any of those.

Compare Aniakchak's ash flows (yellow area) to those of Katmai's Novarupta, 1912, up the peninsula. Volcanic eruptions as big as Aniakchak's cause global temperatures to cool down.

A Catastrophic Flood

Former 7,000-foot-high Aniakchak peak (above) collapsed from its eruption, forming a caldera or bowl (big map). The caldera eventually filled with water (above middle) like today's Crater Lake in Oregon.

Later the caldera wall was breached. This left behind today's much smaller Surprise Lake (above right) and The Gates.

Water eventually filled most of Aniakchak caldera *(middle, above)*, but when the caldera wall was breached 2,000 years ago, the lake drained so suddenly that it caused catastrophic flooding.

The outrushing waters' great force carved The Gates in the caldera wall, and it rafted house-sized boulders downstream. Chunks as big as semi-trailers came to rest as much as seven miles down the newly created river, the Aniakchak.

Salmon Flooding left a much smaller Surprise Lake inside the caldera, and the floodpath—now the Aniakchak River valley—opened the lake to ocean-run sockeye salmon and Dolly Varden, who colonized the caldera.

The salmon all live on one side of Surprise Lake because water from the caldera floor contains various metals toxic to animals. The salmon are living where cleaner water from the caldera wall drains into the lake.

Vent Mountain's 1931 eruption inside the caldera no doubt wiped out life in Surprise Lake, but sea-run salmon—who live for two to three years in the ocean—were able to return from the ocean, spawn, and produce offspring.

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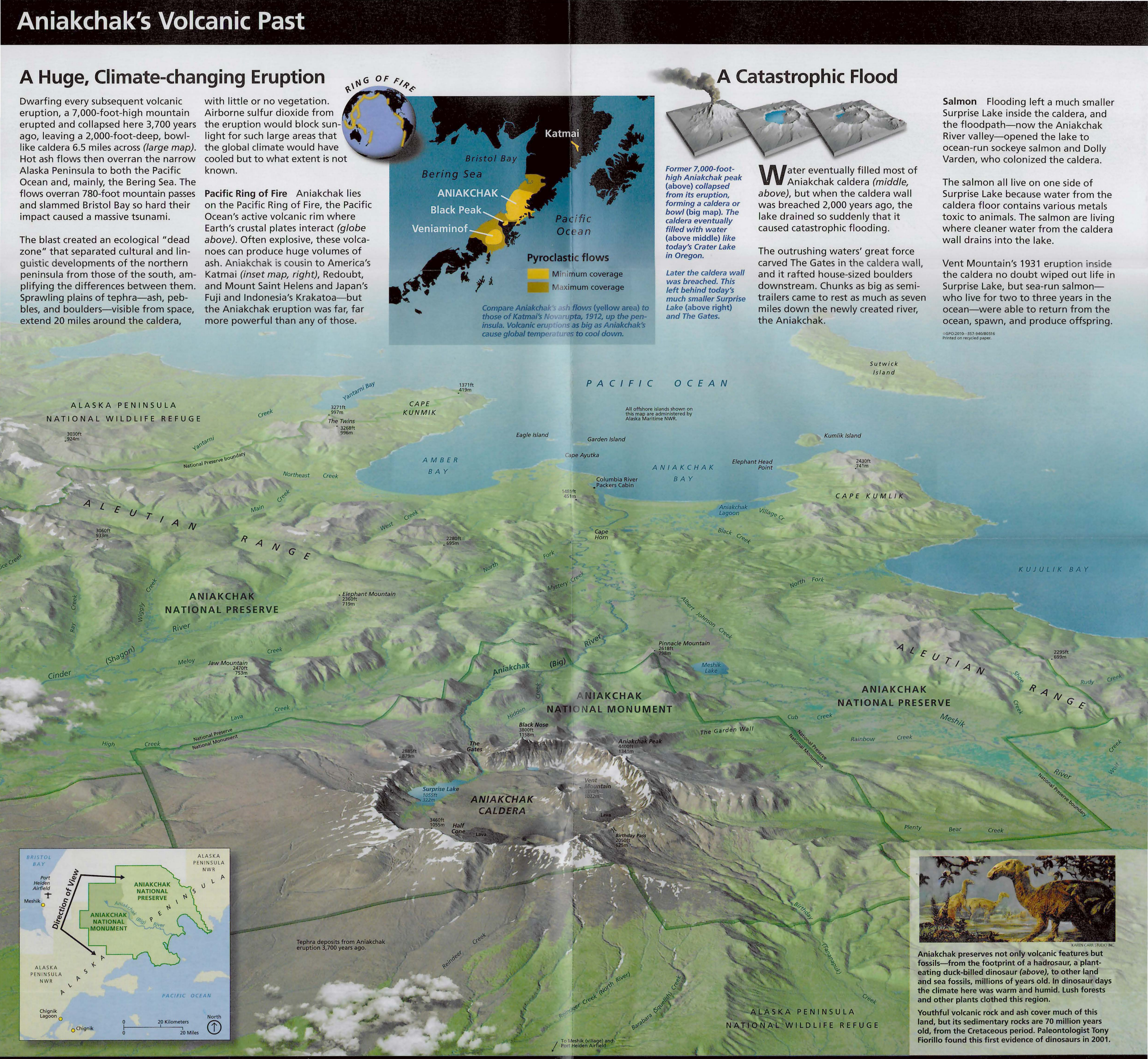

KAREN CARR STUDIO INC.

Aniakchak preserves not only volcanic features but fossils—from the footprint of a hadrosaur, a plant-eating duck-billed dinosaur *(above)*, to other land and sea fossils, millions of years old. In dinosaur days the climate here was warm and humid. Lush forests and other plants clothed this region.

Youthful volcanic rock and ash cover much of this land, but its sedimentary rocks are 70 million years old, from the Cretaceous period. Paleontologist Tony Fiorillo found this first evidence of dinosaurs in 2001.