

Chapter 2: Natural and Cultural Resources

This chapter provides background information on the natural and human environment for the park units and is included to provide context for planning and managing park use. This information was considered when making the management and facility recommendations in this plan.

Natural Environment

Geology

KBSP and KBSWP lie at the southern end of the Kenai Mountains which form the spine of the Kenai Peninsula. The bedrock of the mountains consists primarily of interbedded shale and graywacke (a marine sandstone), with lesser amounts of radiolarian ribbon chert and pillow basalt along the south coast of Kachemak Bay, of the McHugh Complex. Deep-marine sedimentary rocks on the south side of the Kenai Mountains, near Gore Point and on Nuka Island, consist primarily of interbedded shale and graywacke of the Valdez Group. Ultramafic rocks are found at Red Mountain and Halibut Cove Lagoon; rhyolite dikes intrude the bedrock in many places, most notably at the Kachemak Crack cliff on the south end of Rusty's Lagoon and around Grewingk Lake. Collectively, these rocks compose a large accretionary complex that formed above a long-lived subduction zone along the coast of Southcentral Alaska.

Park units on the north side of Kachemak Bay are situated on Tertiary-age bedrock of mudstone, coal, and sandstone of the Beluga and Sterling Formations, which are mantled with Pleistocene glacial deposits. Fossil stumps (probably *Metasequoia*) and leaves (alder, willow and birch) common in the Tertiary formations have an age of about 10 million years; recently a tapir jawbone was the first mammal fossil find associated with the Beluga Formation. At least twenty Pleistocene fossils, mostly mammoth teeth and steppe buffalo horn core fragments, have been collected on the beaches over the years, apparently washed out of the overlying glacial material.

Both glacial and tectonic forces actively shaped the present features of Kachemak Bay. Remnants of huge Pleistocene glaciers are still present, with 15 glaciers contributing melt waters into the bay. Kachemak Bay itself was formed by a glacier, which left behind a terminal moraine – the Homer Spit. Glacial valleys, outwash plains, and sediment dominate the morphology of the bay, as seen in the shape and bathymetry of Kachemak Bay. Within the last 2.6 million years (the Pleistocene), the Kenai Mountains have been repeatedly glaciated, with the valleys being deepened and the slopes steepened by glacial excavation. The last major glaciation (Wisconsin-age) culminated about 20,000 years ago and completely

filled Kachemak Bay, with the ice extending out of the Bay to meet ice coming from the Alaska Range to seal off Cook Inlet from the Gulf of Alaska. A small recent advance (the Little Ice Age) left moraines in many valleys, such as the prominent 1858 moraine that spans the Grewingk Glacier outwash plain.

There are no significant identified mineral deposits and limited historic mining in the area. Three miles to the west of the parks, chromite was mined at the Queen Chrome/Red Mountain mine in the middle of the 20th century. Gold and silver were mined in the late 19th and early 20th century east of the parks in the hills overlooking Nuka Bay. Analysis of geochemical data from the United States Geologic Survey suggests there is limited potential for mineralization within the parks.

There are five soil types in the parks:

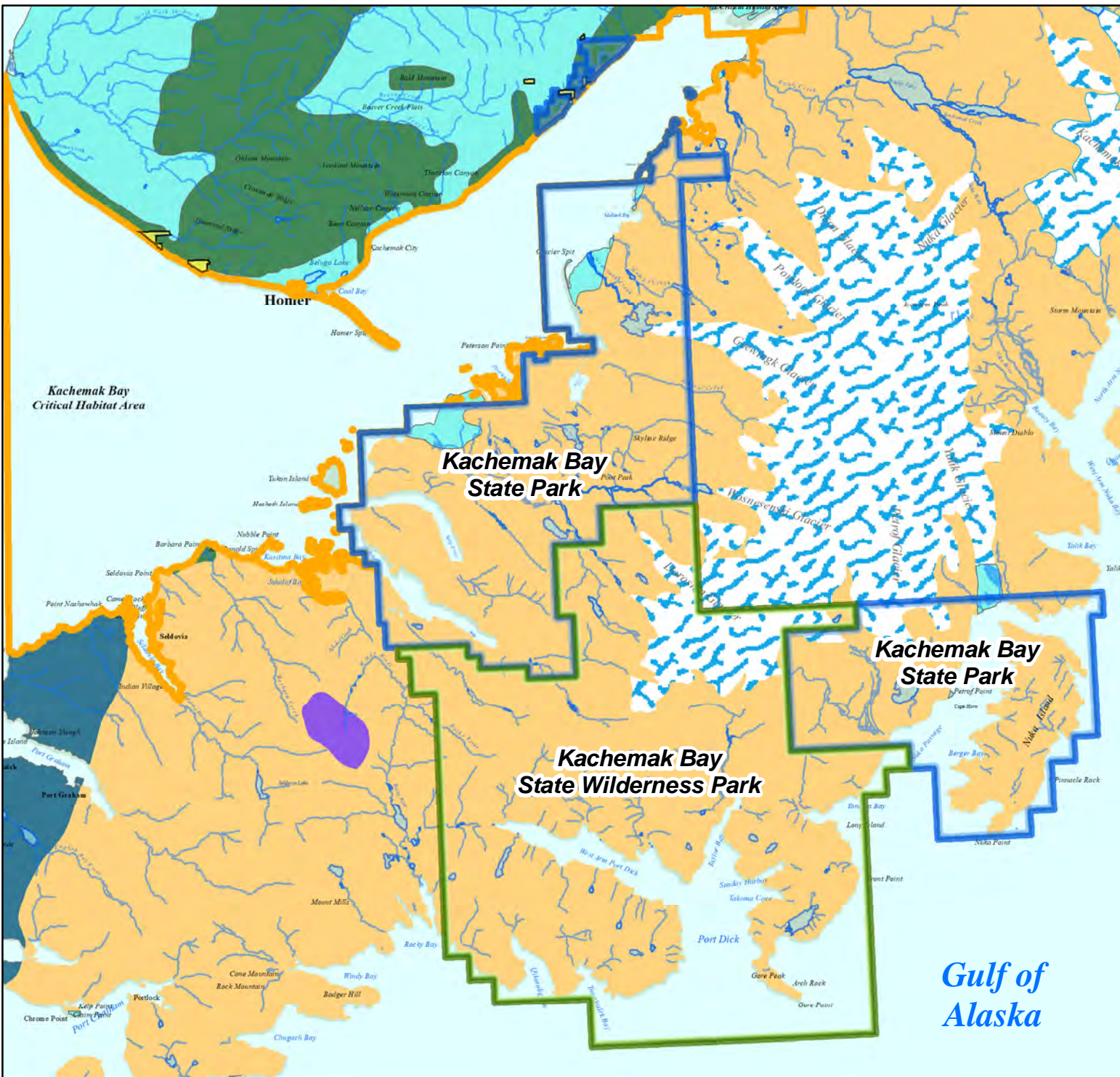
- *Tundra soil* - Developed above 2,500 feet of elevation. This soil is thin, with a poorly developed profile and porous.
- *Forest soil* - Developed under the forest canopy and consequently has a high percentage of organic material. This soil is light, has poor mechanical strength and is easily disturbed by human activity.
- *Marsh soil* - Developed at the confluence of rivers and tidal flats or in bogs. This soil is highly organic, composed of fine particles, and retains moisture.
- *Alluvial soil* - Developed along the course of streams. This soil is granular and well drained but low in organic content.
- *Residual soil* - Poorly developed granular soil, with significant evidence of original parent material remaining. This soil is typically well drained.

Hydrography

The Homer Spit bisects Kachemak Bay into inner (“upper”) and outer (“lower”) bays. The inner bay is dominated by freshwater influence from the incoming fluvial systems, while the outer bay experiences more restricted marine influence from Cook Inlet. Much of the freshwater in the parks is locked in the Grewingk, Portlock, Wosnesenski, Petrof, and Southern Glaciers – all part of the Grewingk-Yalik Glacier Complex. Meltwater from these glaciers mixes with runoff from precipitation to fill the lakes and streams of the parks.

Five glacially-generated geomorphological features found within the parks are:

- Large fjords, such as Sadie Cove;
- “U” shaped glaciated valleys found in various locations throughout the parks;
- Glacial lakes found in cirques;



Kachemak Bay State Park & State Wilderness Park

Map 3: General Geology

- State Park (AS 41.21.131)
- State Wilderness Park (AS 41.21.140)
- State Park Managed Areas
- Valdez accretionary complex
- Glaciers
- Volcanic rocks
- Mafic and ultramafic rocks
- Nearshore and nonmarine sedimentary rocks
- Quartz diorite and granodiorite
- Unconsolidated & poorly consolidated surficial deposits



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0 1.25 2.5 5 7.5 10 Miles

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- Hanging valleys, where a small valley glacier merged with a larger glacier with a deeper base level; and
- Broad plains of glacial outwash – composed of material left behind by retreating glaciers and reworked by their meltwater.

Kachemak Bay averages 46 m (150 ft) in depth, the bottom being relatively flat except for a 100-160 m (330-540 ft) deep trench that runs along the southern edge. The deepest part of the bay is 176 m depression located north of Cohen Island at the entrance to the inner bay, known as the Jakolof Trench. As sediment-laden water from Fox River enters the bay, it is forced north by the inner bay gyres and deposits its sediment between the Fox River Flats and the Homer Spit. Although fed in part by sediment-rich glacial streams, water in the outer bay is generally quite clear with a very low suspended sediment load. In the inner bay, suspended sediment concentrations are normally higher than in the outer bay, particularly in spring and summer. On the southern side of the Kenai Mountains, the Gulf of Alaska is deeply embayed by glacial fjords. Water depths in the fjords reach 250 m (820 ft) in Port Dick, but otherwise generally dip to the south-southwest within the marine boundaries of the parks.

Kachemak Bay and the adjacent Cook Inlet are known for their extreme tidal range. Kachemak Bay has a 4.8 m (15.8 ft) average tidal range due to the complex geomorphology of the adjacent Cook Inlet. Average high tides are about +5.5 m (+18 ft), though high tides can reach +8.5 m (+28 ft). Extreme low tide reaches -1.8 m (-5.9 ft). Homer, Glacier, Aurora, and China Poot Bay Spits all curve inward suggesting flood tide sediment movement dominates over ebb tide erosion. Tide water movement in smaller bays and coves, especially in shallow areas, can be extremely swift. On the Gulf of Alaska side of the parks, at Takoma Cove, Port Dick, the average tidal range is approximately 3 m (10 ft), with tides as high as +4.8 m (+16 ft) and as low as -1 m (-3.5 ft).

Climate

The Kenai Mountains and significant maritime influence control the climate in the area. To the south and east, the Kenai Peninsula is bound by the Gulf of Alaska and on the west side by Cook Inlet. The presence of the relatively warm, southwesterly flowing Alaska Current in the Gulf of Alaska influences the temperatures of the Kenai Peninsula. The Alaska Current originates to the south as the eastwardly flowing North Pacific Current splits when it hits North America, bringing warm Pacific water north along the Alaskan Panhandle and along the southern edge of the Kenai Peninsula. Even though cold weather occasionally moves in from interior Alaska, this warm water moderates the temperature onshore – the Kenai Peninsula is one of the warmer areas in Southcentral Alaska. In the Homer area, the average high temperature in July is 61°F while the average low in January is 19°F. With elevation increase temperature decreases by about three degrees/1,000 feet. Local variations in aspect, exposure, cold air drainage and mountain valley winds create a multitude of microclimates throughout the parks.

Annual precipitation for the Gulf of Alaska side of the parks is high, estimated at more than 70 inches annually. Due to the rain shadow effect of the mountains, the Kachemak Bay area receives significantly less precipitation (around 30 inches/year), while precipitation in the Kenai Mountains is estimated to be more than 130 inches/year. Annual snowfall in Homer and lower elevations along the north side of Kachemak Bay averages 55 inches. Across the bay in Halibut Cove, annual snowfall averages 88 inches. Because of significantly cooler temperatures, higher elevations of inland areas can receive three times or more snow than the lower elevations. Snowfall usually starts in October and continues through April.

In the parks, winds typically range from 10 to 25 knots, with higher winds experienced on mountain ridges and passes, and in open areas such as the mouths of Tutka Bay and Sadie Cove. On Kachemak Bay during the summer months, the wind is typically 15 to 20 knots from the southwest (called the “day breeze”). The day breeze is moderate in the early mornings and late evenings but is stronger at mid-day. With the approach of storms from the Gulf of Alaska, the winds change to southeast. In the fall and winter, winds in the bay are more commonly from the north and northeast. Much higher wind speeds can occur at any time of year (e.g. the “Sadie Eighties”). The Gulf of Alaska is subject to the severe storms of the North Pacific.

The average cloud cover is 72%. All months except December and January have cloud coverage between 70 and 80%. Longer periods of overcast occur in the mountains. Homer experiences heavy fog approximately five days per year. Fog most frequently occurs in low-lying areas of the bay where cold air collects, such as downslope from the Doroshin, Wosnesenski, and Grewingk Glaciers. The sun usually dissipates fog by mid-day.

Habitat

There are six types of habitat present in the parks: Marine; Estuarine and Marine Wetland; Freshwater Wetland; Freshwater Lakes and Streams; Forest; and Alpine (see Map 4: General Habitat).

Marine habitat is defined as that habitat that is dominated by saltwater influence, extending from the tideline to deep water. In the Intertidal Zone the substrate is either ‘hard’ (rocky) or ‘soft’ (muddy) and tends to control the distribution of plant communities and their associated animals. One of the most interesting features of intertidal communities is the horizontal zonation, where the plant and animal communities are divided into distinct horizontal bands of specific species, the location of which is directly controlled by the amount of time it is flooded by the tide. Seaward of the Intertidal Zone, the Subtidal Zone occurs below the low tide line. The Subtidal Zone is the ‘nursery’ of many shellfish and other small invertebrates which comprise the rich underwater ecosystem that feeds the bay. (For a list of terrestrial plants, see Appendix H: Flora Species).



Kachemak Bay State Park & State Wilderness Park

Map 4: General Habitat

- State Park (AS 41.21.131)
- State Wilderness Park (AS 41.21.140)
- State Park Managed Areas
- State Critical Habitat Area
- Alpine
- Estuarine
- Forest
- Freshwater Lakes and Streams
- Freshwater Wetland
- Marine
- Glaciers

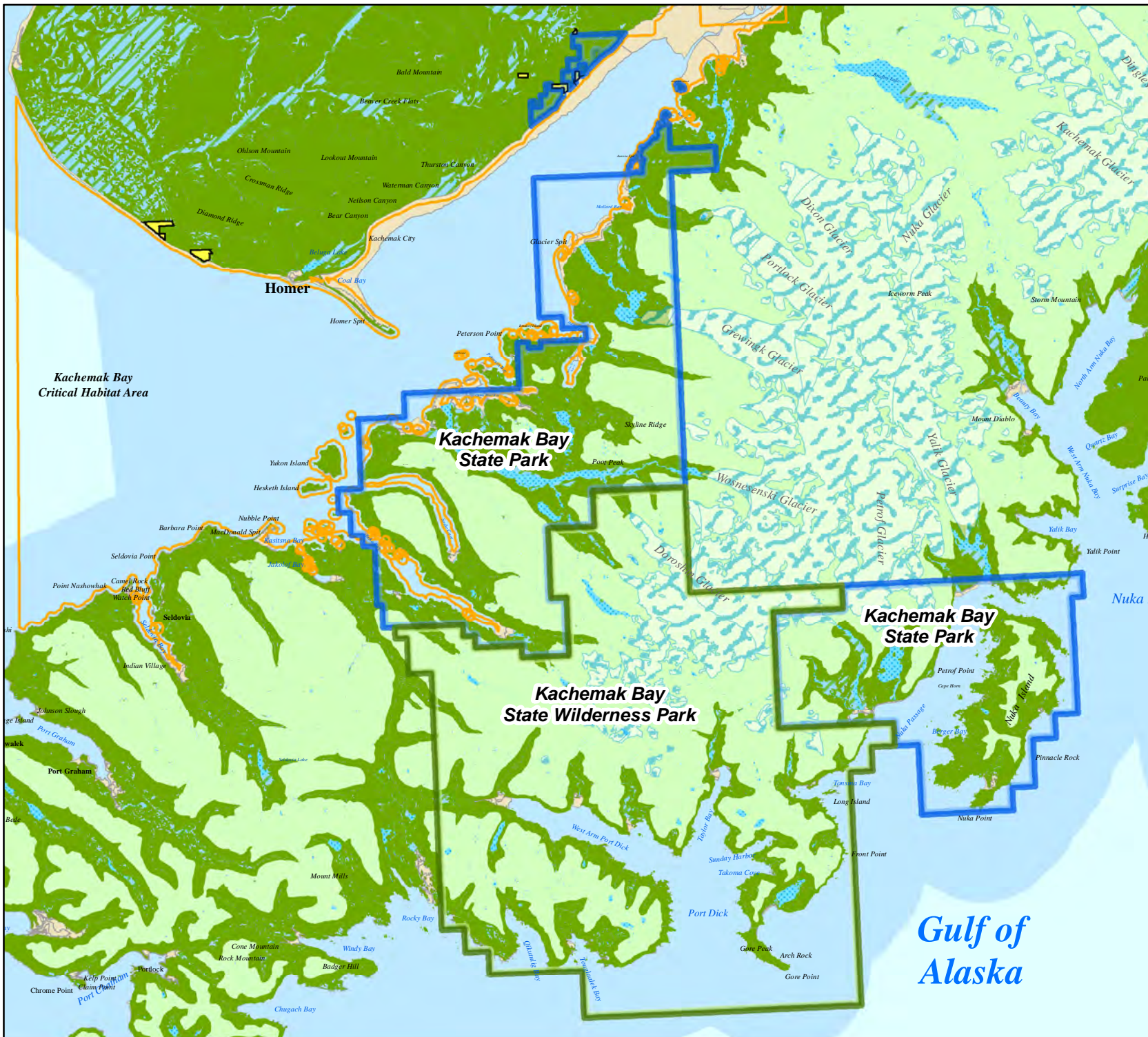


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Estuaries form a transition zone between maritime environments and fluvial environments. They are subject to marine influences, such as tides and waves, and to riverine influences, such as fresh water and sediment. The mixing of both sea water and fresh water provide high levels of nutrients throughout the water column and within the sediment, making estuaries among the most productive natural habitats in the bay.

Freshwater wetlands are “edge” communities that contain poorly drained soils and represent a transitional zone between aquatic and terrestrial habitats. The main types of wetlands found in the parks are bog, grass wetland, and sedge wetland. Wetland habitats can be isolated, ephemeral, or located in riparian areas hydrologically connected to surface waters of rivers, streams, and lakes. Significant wetlands also occur along the coastline and adjacent to river deltas, and within forests throughout the parks.

There are six large lakes (more than 100 acres in size) and many small lakes within the parks. The largest of the glacially formed lakes is Grewingk Lake at the foot of Grewingk Glacier. The headwaters of Tutka, Halibut, Grewingk, Humpy, Portlock, and Petrof Creeks are all sourced from active glaciers. Most of the streams in the parks are young and are just beginning their erosional processes, and many are spawning areas for salmon. The water quality in the parks is excellent. The clear water streams and springs are often used for drinking water, although the potential for giardia contamination exists and appropriate precautions should be taken.

The lower slope vegetation of the Kenai Mountains is dominated by mature stands of Sitka spruce and smaller stands of mixed spruce/deciduous forest. Away from the marine influence, the tree cover changes to black cottonwood. Cottonwood is also common in the river bottoms of the parks. Tall grasses and ferns tend to grow underneath these dense cottonwood stands. Willow is the dominant species in more open areas. At higher elevations and on steeper and wetter slopes below the tree line (500 m), tall shrubs (primarily alder, mixed with salmonberry, elderberry, and devil’s club) are the main vegetation type.

The alpine habitat extends from the upper fringes of the forest habitat to the rocky mountain tops. Alpine tundra occurs above tree line elevations in mountain ranges and exposed ridges. At these higher elevations, the landscape is increasingly broken by rock outcroppings. Plant communities consist of prostrate, mat, and cushion-forming species and shrubby species intermittent in distribution. Barren and lichen-covered rocky areas are dominated by *Dryas* and mountain heather communities. These plants are adapted to the scouring high winds and widely ranging temperatures of high elevation alpine regions. Due to steep slopes and relatively thin soil at the higher elevations, areas of alpine tundra lack trees and may have permafrost. Despite challenging growing conditions, beautiful alpine plants thrive in this zone. Alpine zones are easily disturbed.

Wildlife

A large variety of animals live within the habitats described above. (See Appendix C: Mammal List.) Much more information is available for the northern Kachemak Bay side of the parks than the more remote southern Gulf of Alaska side.

Marine Wildlife

The parks are best known for fauna found in the marine habitat. The northern sea otter and the harbor seal are the two marine mammals most frequently seen in Kachemak Bay. Additional species that occur include harbor porpoise, minke whale, Steller sea lion, and orcas. Occasionally, humpback and finback whales and the endangered Cook Inlet beluga whale (once prevalent) are sighted. Humpback whales and orcas have become more prevalent in Kachemak Bay since about 2010.

In the Gulf of Alaska side of the parks, fin, minke, and humpback whales commonly migrate through. Both resident and transient orcas utilize the Gulf of Alaska side of the parks and limited numbers of sea otters also live along the coastline.

Pacific halibut, walleye pollock, lingcod, Pacific cod, and rockfish are found throughout the salt waters of the parks, both within Kachemak Bay and along the Gulf of Alaska. All five species of Pacific salmon that spawn in Alaska are found in the salt waters of the parks, with all spawning in the freshwater streams on both sides of the Kenai Peninsula.¹ (See Map 5: Anadromous Fish Distribution). A wide variety of other fish species live in the waters of the parks, contributing greatly to its biodiversity and bioproductivity.

Shellfish are common in Kachemak Bay, with crab, shrimp, and clams found throughout the area. Of crab species, Tanner crab are the most common. Dungeness crab are present and are frequently eaten by sea otters; king crab are present but not common. Shrimp are distributed throughout the bay but appear to be concentrated in the waters of the outer bay deeper than 50 feet. Pink and sidestripe shrimp are the most common, with seasonal presence of humpy and spot shrimp. Razor, redneck/surf, soft-shelled, littleneck, butter, and gaper clams; blue mussels; and cockles are found in the intertidal waters.

Terrestrial Wildlife

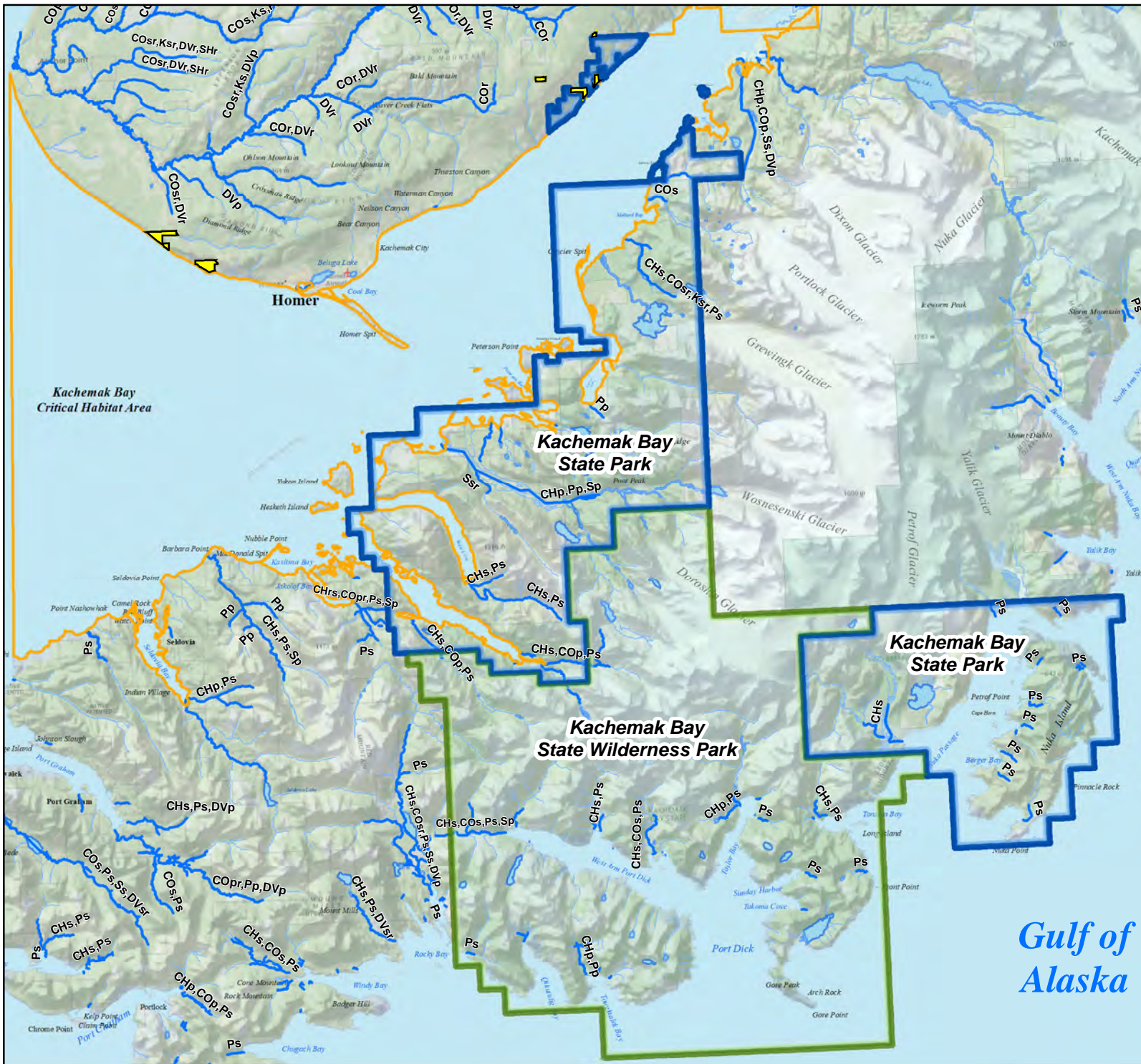
Moose are widespread in low numbers, grazing on timberline plateaus along the larger streams and in recently burned areas throughout the parks. Mountain goats range from alpine to old-growth forest below tree line. Major predators in the area include brown and black bears, lynx, coyote, wolves, wolverine, and ermine. Other common species in the parks include red squirrel, hoary marmot, and snowshoe hare. (See Appendix C: Mammal List.)

¹ More information on salmon systems is available in ADF&G's Cook Inlet Salmon Enhancement Plan.



Kachemak Bay State Park & State Wilderness Park

Map 5: Anadromous Fish Distribution



- State Park (AS 41.21.131)
- State Wilderness Park (AS 41.21.140)
- State Park Managed Areas
- State Critical Habitat Area
- Anadromous Waters

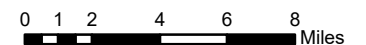
Code	Species
CH	Chum Salmon
CO	Coho Salmon
DV	Dolly Varden
K	Chinook Salmon
P	Pink Salmon
S	Sockeye Salmon
SH	Steelhead Trout

Code	Activity
p	present
r	rearing
s	spawning



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Avian Wildlife

Due to its high bioproductivity and wide range of habitats, KBSP is among the most important marine and terrestrial bird habitats on the Kenai Peninsula and Southcentral Alaska. Ice-free bays and coves form a long shoreline along nutrient rich Kachemak Bay. Old growth temperate rainforest and alpine talus slopes offer multiple niches for avian species. Rich estuarine and intertidal areas attract tens of thousands of shorebirds and other migratory species each spring and fall. The area also offers significant habitat for overwintering waterfowl and seabirds.

More than 215 species of migratory and nonmigratory birds have been identified in and around the parks. More than 140 different species reside in the parks at some time during the year, and more than 110 species breed and raise their young there. More than 60 species migrate through the area. Major categories of birds identified within and around the parks include waterfowl, shorebirds, gulls, seabirds, songbirds, and raptors. (See Appendix D: Bird List.)

Natural Hazards

Earthquakes are common within a 600-mile radius of the parks, with three earthquakes greater than 8.0 magnitude occurring since 1938: M8.6 Shumagin Island 1938; M8.6 Unimak Island 1946; and M9.2 Prince William Sound 1964. This latter event, the Good Friday earthquake, is the second strongest ever recorded in the world. In the Kachemak Bay area the quake's most pronounced effects included land subsidence, landslides, earth fissures, submarine landslides, compaction, and erosion. Due to the geography of Kachemak Bay, tsunami risk is relatively low in the park units bordering the bay; however, on the Gulf of Alaska side of the parks the risk is higher due to the exposed coastline.

Snow avalanche conditions exist whenever unconsolidated snow accumulates to form a slab on a sloped surface that is underlain by a weak snow layer. If there is a sufficiently long and steep slope, a triggering event may cause an avalanche. Most avalanches occur on 34% to 45% slopes. The mountains of the parks reach heights of greater than 5,000 feet, and slopes steeper than 30% are typical in the area. Many areas are subject to avalanches and landslides. Several avalanche scars exist on the peaks forming the south edge of the Wosnesenski River valley. Sadie Cove shows extensive avalanche scarring along most of its length. Small landslides have occurred on the buttresses above Grewingk Glacier Lake. In 1967, a very large landslide triggered a tsunami-like surface wave on the lake – another large event at Grewingk Glacier Lake at any time is a distinct possibility. Receding glaciers throughout coastal Alaska have led to an increasing number of landslides.

In spruce-bark-beetle infested areas, infected trees usually die and can be subject to blowdown events after about 10 years. This results in great difficulty traversing the terrain and maintaining trails and facilities. As vast areas of spruce die, rapid understory growth

results in conversion to devil's club or grass meadows where discerning a trail can be difficult. This can lead to disoriented hikers needing assistance by search and rescue staff.

Human Environment

Regional Setting and Overview

The Kenai Peninsula is a rich and varied region of Southcentral Alaska. Mountains and glaciers (including the 1400+ square mile Harding Icefield and Grewingk-Yalik Glacier Complex) cover much of the peninsula, but there are also extensive lowland forests, meadows, and river systems. The Gulf of Alaska brings saltwater to the shores of the peninsula. The area's abundant fish, wildlife, and breathtaking scenery awe residents and visitors alike.

Combined, the park units encompass more than 371,000 acres of land. Of that, approximately 845 acres are privately owned (201 individual parcels) and another approximately 189 acres are owned by the University of Alaska, Bureau of Indian Affairs, Seldovia Native Association, and BLM.

Most of the Kenai Peninsula's land mass falls within large conservation areas managed by the Federal Government (see Map 2: General Land Ownership). Chugach National Forest, Kenai National Wildlife Refuge, and Kenai Fjords National Park are managed primarily for multiple use, wildlife habitat, and public recreation/resource protection, respectively. The waters and tidelands of Kachemak Bay, a "nursery" for many Alaska marine species, were legislatively designated a State Critical Habitat Area in 1974.

The major communities of the Kenai Peninsula are situated along the peninsula's rivers and coastline. Oil and Gas exploration and production are an economic base for the Kenai Peninsula Borough. Homer, located on Kachemak Bay, is considered the "host" community for KBSP. It has a bustling harbor and deep-water dock. The major economic bases for the Homer area are recreation, tourism, and commercial fishing.

Most of KBSP's 173,435 roadless acres are located on the south side of Kachemak Bay. The park also includes the sand and clay cliffs of the Cottonwood Eastland area (on the bay's north shore), Nuka Island (the largest island on the southern Kenai coast), and islands in the Petrof Glacier area.

The Wilderness Park became Alaska's first, and remains its only, state wilderness park in 1972. It abuts the southern boundary of KBSP in the Kenai mountains and extends south into the waters of the Gulf of Alaska. It contains approximately 198,408 roadless acres, including 115 miles of rugged coastline on the North Pacific plus 15 miles of combined coastline from 80 islands in the park.

The uniqueness of the area is a result of dynamic interactions between geology, biology, and climate. This interplay between the environment and its inhabitants, and between the people, plants and animals themselves, creates a wide diversity of landscape and organisms that offer an abundance of recreational opportunities for residents and visitors.

Cultural History

Pre-Contact

Due to its coastal location, diverse vegetation, relatively benign climate, and abundant marine and terrestrial wildlife, people have been attracted to the Gulf of Alaska and Kachemak Bay areas for millennia. Evidence shows that ancestral Alutiiq lived along the outer Kenai Peninsula coast for at least 7,500 years. Ancestral peoples occupied Kachemak Bay as early as 8,000 years ago. To date, these earliest inhabitants are unidentified culturally; however, archaeologists have identified three cultures called Ocean Bay, Arctic Small Tool tradition, and Kachemak tradition in the area. Sites representing each of these cultures are found on state park land.

Most ancestral peoples probably arrived by kayaks or larger umiaks from the Kodiak archipelago, the Alaska Peninsula, Bristol Bay, and later from Prince William Sound, as evidenced by the types of materials they used and the styles of tools they created.

About 1,000 years ago, Dena'ina Athabascan people migrated into Cook Inlet from the mountains to the west and north of the Kenai Peninsula. In Cook Inlet, communities arose near major salmon streams such as the Kenai and Kasilof rivers and the Beluga River north of Tyonek. Kachemak Bay was the southernmost extension of Dena'ina territory – here people hunted marine mammals such as belugas, whales, and seals; fished; and harvested invertebrates. Dena'ina settled around Seldovia, on a few islands in Eldred Passage, at Bear Cove, at small camps on Chugachik Island, and at Cottonwood Creek, leaving middens (refuse deposits) and other indications of habitation. Aleutika and Tutka are place names that speak to the long Dena'ina presence in the parks.

Although Athabascan is the language of the Dena'ina, four distinct dialect areas exist:

1. Upper Inlet (Turnagain Arm northward to Denali; west to Rainy Pass and Tyonek; and eastward to Chickaloon);
2. Inland (Nondalton, Lime Village, and Lake Clark);
3. Iliamna (Pedro Bay, Newhalen, and westward to Augustine Island in Kamishak Bay); and
4. Outer Inlet (Seldovia north to Point Possession, and, on the west shore, Polly Creek to Kustatan).

Although the Outer Inlet dialect is extinct now, Dena'ina people still reside in Seldovia.

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On the northern shore of Kachemak Bay, the Cottonwood Eastland area holds additional evidence of prehistoric occupation. Known archaeological sites are located near the mouths of both Cottonwood and Eastland Creeks.

In the late 1800s, Chugach Alutiiq people moved from Prince William Sound and from along the outer Kenai Peninsula coast to the tip of the Kenai, where they built the communities of Nanwalek and Port Graham. Descendants still live in those villages and in Seldovia.

Western Contact

Danish Captain Vitus Bering and Russian Captain Alexii Chirikov explored the Alaskan coast on behalf of Russia in 1741. Between 1778 and the late 1790s, British Captains James Cook, George Vancouver, Nathaniel Portlock, and George Dixon explored the waters of Southcentral Alaska, including what Vancouver named Cook Inlet. The Spanish conducted at least five expeditions to Prince William Sound and the Gulf of Alaska between 1774 and 1792.

Permanent western presence in Cook Inlet began in the 1780s. Two rival Russian fur companies established themselves in Cook Inlet from 1784 until 1797. Grigorii Shelikhov's fur hunters were in Kachemak Bay by 1786, primarily hunting land animals or purchasing pelts from the local Dena'ina hunters and trappers. After the flurry of the fur rush, Russian, European, and American scientists focused on mineral exploration. Peter Doroshin, a Russian geologist, explored the Kenai Peninsula in the late 1840s and early 1850s. He recommended that coal seams near Port Graham be mined, which they subsequently were starting in 1855 and continuing into the 1860s.

After Alaska became a United States territory in 1867, American cartographers and scientists traveled north to map the Alaska coastline and to document the natural resources, especially mineral resources such as coal and gold. A flurry of coal mining along the north shore of Kachemak Bay, including at Eastland Creek in the park, and of gold placer mining near Anchor Point occurred in the 1880s and 1890s. Aurora Spit and the land south of Aurora Lagoon were the site of a bogus gold mining venture in the early 1900s. At least one tunnel was dug into bedrock along Portlock Creek to suggest active gold mining in case any curious investors traveled to Alaska.

William H. Dall (cartographer, geologist, and scientist) visited Kachemak Bay in 1880, 1895, and 1899. On each trip, he documented the melting of Grewingk Glacier which he named in honor of a German volcanologist. While mapping the shoreline of Kachemak Bay, Dall named numerous features in the parks such as Halibut and Sadie Coves, Eldred Passage, and Tutka Bay.

Halibut Cove, a small community adjacent to the park, was established around 1911 with the development of a short-lived yet thriving herring fishery. Processing plants, known as salteries, were constructed around Halibut Cove and the nearby lagoon. The herring fishery occurred in late winter and early spring and flourished when the unusually large (12"-14"

long) herring spawned in dense beds of eel grass within the bay, particularly in Halibut Cove and Aurora Lagoon. The fishery crashed in the late 1920s, due to depleted stocks, non-existent conservation practices, and competition with foreign fishing fleets. On certain low tides, boaters can still see remnant pilings from the San Juan Saltery in San Juan Cove, Tutka Bay. The saltery, later converted to a salmon cannery, was dismantled in 1946 or 1947 and the building materials were incorporated into other structures around Kachemak Bay. Saltery pilings near the Saddle Trail trailhead have become a staging area for charter boats to drop off and pick up people hiking nearby park trails.

Concurrent with the development of the herring fishery was fox farming. Wild red foxes, living in the hills north of Homer, were live-trapped, penned, bred, and raised for their luxurious fur. Fox farmers, preferring quiet locations in which to raise their foxes, settled in remote coves along the bay. They also released arctic foxes, imported from northern Alaska, on uninhabited islands to fend for themselves. The availability and abundance of relatively cheap food, such as moose, porcupines, herring, salmon, and fish offal from the processing plants, allowed for the full development of fox farming. Like the herring fishery, the heyday of fox farming occurred between 1910 and 1930.

A few trappers operated in the area from the 1920s through the 1940s. Some of their original trails are now part of the parks' trail system. A few place names in the parks also reference early residents, such as miner Jacob "Rusty" Lien (Rusty's Lagoon) and hunting guide William McKeon (McKeon Flats, McKeon Rock, McKeon Spit). Other names describe land features such as Alpine Ridge and natural resources such as Humpy Creek, Mallard Bay, and Moose Valley. Several park features, such as China Poot Lake and Poot Peak, were named for Henry "China" Poot, a Native man who hunted, fished, and trapped in the region in the early 1900s and probably worked with Chinese railroad workers or fishermen.

"Herring" Pete Sather resided on Nuka Island from the 1920s to the early 1960s and operated a fox farm there. Josephine Tuerck lived on Nuka Island and married Herring Pete in her later years after her first husband passed on. The Nuka area also saw exploration and mining activities during this period, but they ended during World War II. Nuka Island was initially federally owned and was once proposed for inclusion in Kenai Fjords National Park before the state selected the island.

Communities Southwest of Kachemak Bay State Park

There are four communities near KBSP to the southwest: The City of Seldovia, Seldovia Village, Nanwalek, and Port Graham. Although not within the park, many residents of these communities utilize and value park resources. The area is not accessible by road and is served by ferry, water taxi, and aircraft. The Seldovia Village Tribe, the Native Village of Nanwalek, and the Native Village of Port Graham are federally recognized tribes. The local Native Village Corporations are the Seldovia Native Association, Incorporated; Nanwalek's

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English Bay Corporation; and the Port Graham Corporation. The City of Seldovia and Seldovia Village share a K-12 school; Nanwalek and Port Graham have their own K-12 schools.

Seldovia & Seldovia Village

The name Seldovia originates from “Seldevoy,” a Russian word meaning “herring bay.” Russians arrived in the late 1700s, establishing a trading post and a church. After the sale of Alaska to the United States in 1867, European-Americans, particularly Scandinavians, came to Seldovia for the rich fisheries and other natural resources. All these traditions infuse the culture of modern Seldovia.

The City of Seldovia, incorporated in 1945, has a population of 230 – 12% are Alaska Native, including Dena'ina Athabascan, Alutiiq, and Sugpiaq. Between 1869 and 1882, a trading post was located in Seldovia. A post office was established in 1898. The area developed around commercial fishing and fish processing – historic industries include fox farming, berry picking, logging, and mining.

Seldovia Village encompasses a large area adjacent to the City of Seldovia, with Jakolof Bay Road running through the village for approximately ten miles and connecting the two communities.

Tourists, commercial fishermen, businesspeople, and scientific and cultural researchers frequent Seldovia throughout the year. The Seldovia Chamber of Commerce estimates Seldovia receives 6,000 visitors annually.

Seldovia was once home to over 1,100 residents, but due to declining resources, the population diminished. Seldovia Village has a population of 180 and the City of Seldovia maintains a population of 216 (State of Alaska DCCED Certified Population). According to the 2010 US Census, approximately 27% of Seldovia’s population is American Indian or Alaska Native.

Local employment opportunities are scarce, and many jobs are only available during peak tourist and fishing season (May-September).

Nanwalek

This traditional Alutiiq village has a population of 291. Subsistence activities are a large part of the culture. The village was originally the site of a Russian trading post called Aleksandrovsk. In 1991, locals changed the community name of English Bay to Nanwalek, meaning “place by lagoon.” A Russian Orthodox church (originally constructed in 1870 and rebuilt in 1930) is a designated national historic site. Many of the current residents are of mixed Russian and Sugpiaq (Alutiiq) lineage. Villagers speak Sugtestun, a dialect similar to Yup'ik.

Port Graham

Port Graham is a traditional Alutiiq village with a population of 179, 82% of which are Alaska Native. In 1850, the Russian-American Company established a coal mine near Port Graham, but it lasted only a few years. A cannery started in 1911 was sold to the village corporation in 1983 – it continues to be Port Graham’s main economic activity and also employs Nanwalek residents. A pink salmon hatchery began operations in 1991. Cook Inlet Aquaculture Association has operated the hatchery since purchasing it in 2014. In 2015 CIAA completed a \$2.8 million renovation to the hatchery. Port Graham is connected by trail to nearby Nanwalek. The Port Graham airport serves both these communities.

Subsistence

Tribal peoples have for centuries gathered berries, herbs, and medicinal plants; fished the rivers, streams, lakes, and surrounding waters; and hunted this area’s limited game resources such as waterfowl, upland birds, and big game animals. Great distances must sometimes be traveled by foot or by boat to harvest these vital subsistence resources. Duck hunting is now mostly in the Jakolof and Seldovia Bay areas; seal hunting mainly at the head of Tutka Bay, Sadie Cove, Yukon Island, and Jakolof Bay; and moose hunting mainly in other areas of Game Management Unit 15 but a few are still harvested in the Seldovia area. Many areas of Kachemak Bay no longer support significant subsistence use due to diminished game populations and increased settlement.

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