

# Wild Things Wild Places

## Alaska's Wild Places

- Imagine a land inhabited
- by great herds of caribou
- by muskox and walrus; polar, black, and brown bears
- by Dall sheep, moose, wolves, and wolverines.

Stretch that image to include a host of summering birds and world renowned fisheries resources—and you have Alaska's wildlife heritage.

The landscapes are equally staggering. Amid these vast stretches of towering mountains, rolling tundra, and coastal forests are wild places.

Wild places where combinations of geography, climate, water, and plant communities create habitats supporting Alaska's great fish and wildlife nurseries.

Wild places this nation has dedicated as National Wildlife Refuges.

## Alaska's Wildlife Heritage

National wildlife refuges were first established in Alaska in the early 1900's to protect seabird nesting islands. In the ensuing years additional lands were added to existing refuges and new refuges were created. The expansion of refuge lands culminated with enactment of the Alaska National Interest Lands Conservation Act (ANILCA). This landmark legislation was signed into law on December 2, 1980. It added lands to seven refuges and created nine new refuges in Alaska. The impact of ANILCA on the National Wildlife Refuge System was staggering. It quadrupled the size of the National Wildlife Refuge System to nearly 90 million acres.

## Wilderness and Wild Rivers

Nearly all refuge lands in Alaska can be described as wilderness. More than 18 million acres of land in Alaska's national wildlife refuges have been designated as Wilderness Areas as part of the National Wilderness Preservation System by Congress, thus preserving their natural conditions. Several rivers (or river reaches) on refuges in Alaska have been congressionally designated as Wild Rivers, components of the National Wild and Scenic Rivers System. These rivers include the Ivshak, Sheenjok, and Wind Rivers in the Arctic Refuge, the Nowitna River in the Nowitna Refuge, the Selawik River in the Selawik Refuge, both forks of the Andreafsky River in the Yukon Delta Refuge, and Beaver Creek in the Yukon Flats Refuge.

## Refuges are Wild Places

National wildlife refuges comprise some of the finest natural resources in public ownership. The mission of the National Wildlife Refuge System is to preserve a national network of lands and waters for the conservation and management of fish, wildlife, and plant resources of the United States for the benefit of present and future generations. Alaska's refuges provide many opportunities for recreational use, including nature observation,

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photography, sport hunting and fishing, boating, camping, and hiking. In addition, residents of rural Alaska who depend upon the subsistence use of the resources may hunt, fish, and harvest other resources from refuge lands.

Alaska's wildlife resources are unmatched. The national system of refuges is designed to protect this legacy. The 16 refuges in Alaska include a wide range of habitats with varied terrain—mountains, glaciers, tundra, grasslands, wetlands, lakes, woodlands, and rivers. They comprise nearly 86 percent of all lands in the National Wildlife Refuge System.

## Size

It is difficult to imagine the size of Alaska's refuges. They range in size from the 303,094-acre Izembek Refuge to Arctic Refuge at nearly 19.6 million acres. Izembek Refuge is larger than all but six of the national wildlife refuges in the other 49 states. Arctic Refuge is larger than the states of Rhode Island, Connecticut, Delaware, Hawaii, New Jersey, and Massachusetts combined.

## The National Wildlife Refuge System

The U.S. Fish and Wildlife Service is caretaker of over 500 national wildlife refuges across the country. These refuges provide aquatic, coastal, woodland, desert, and mountain habitat for the nation's wildlife. The agency maintains a balanced wildlife management program for migratory birds, endangered species, and other wildlife of national significance. On March 25, 1996, President Bill Clinton signed Executive Order 12996 which provided the following as a commitment to a strong refuge system:

- \* Reaffirmed a fish and wildlife conservation mission for the Refuge System,
- \* Defined four Guiding Principles for management of refuge lands, of which the conservation of habitat is the most fundamental,

\* Recognized compatible wildlife-dependent recreation as priority uses,

\* Defined the Secretary's stewardship responsibility to ensure the ecological integrity, well-being and future growth of the Refuge System for the benefit of present and future generations, and

\* Called for expanded partnerships, increased public involvement, and expanded opportunities for people to learn about and enjoy the wildlife experience.

## Visitor Information

\* Most land in Alaska does not teem with wildlife in the usual sense. The climate, short growing season, and general ecological conditions are too harsh. The concentrations of fish, birds, and mammals that visitors read about are seasonal phenomena often taking place only during migration, breeding, or spawning.

\* Most refuges in Alaska are difficult to reach. Kenai and Tetlin are the only refuges in Alaska with road access; travel to the interior of even these refuges generally requires a boat or plane.

\* It is expensive to travel to refuges in Alaska because travel usually involves air transport. The cost of goods and services is higher in remote areas. Careful planning, however, can minimize costs.

\* Most refuges encompass significant private and state land and private structures. Remember you are a guest—treat rural residents with courtesy and respect. Many rural residents rely on refuge resources as part of their subsistence lifestyle.

\* Be prepared for inclement weather and cool temperatures in the summer. During the long daylight hours of summer the temperature of interior Alaska is generally warm (50-90°F). In coastal Alaska the temperature is cooler (30-60°F) with occasional readings below freezing.

\* Mosquitos are most abundant after snow and ice ponds melt; they decrease in numbers when mid-summer and fall approach. After mosquitos decline, gnats and no-see-ums (a small biting insect) are common. Be prepared with repellent, headnets, and a screened tent. Medication should be carried by anyone with a tendency to have reactions to bug bites.

\* Take adequate supplies and be prepared for a wilderness experience. It may be necessary to wait out weather when depending on bush planes. Visitors expecting the same accommodations as in the lower 48 are surprised at the lack of lodging and restaurants in rural areas.

\* Activities vary with each refuge and may depend on the season of the year. It is advisable to check with refuge personnel prior to a visit to determine which activities are allowed and what regulations apply.

## Safety

\* Cold water kills! In Alaska, during the summer, a visitor is rarely far from water—often swift, cold water. Wear a personal flotation device and be familiar with your chosen watercraft. Use extreme caution and common sense when operating on Alaska's rivers, lakes, and coastal areas.

\* Be familiar with safety procedures and survival equipment. Know where emergency equipment is located on aircraft.

\* Leave a travel plan with a friend and notify your friend when you return.

\* Boil or filter all water before drinking. Giardiasis, a water-borne disease, is common in Alaska.

\* Maintain a safe distance from bear and moose particularly when they have offspring. Avoid using well-worn bear trails. Talk loudly or use noisemakers when hiking. Do not store food near your sleeping site. Avoid camping near a food source such as a salmon stream or a berry patch.

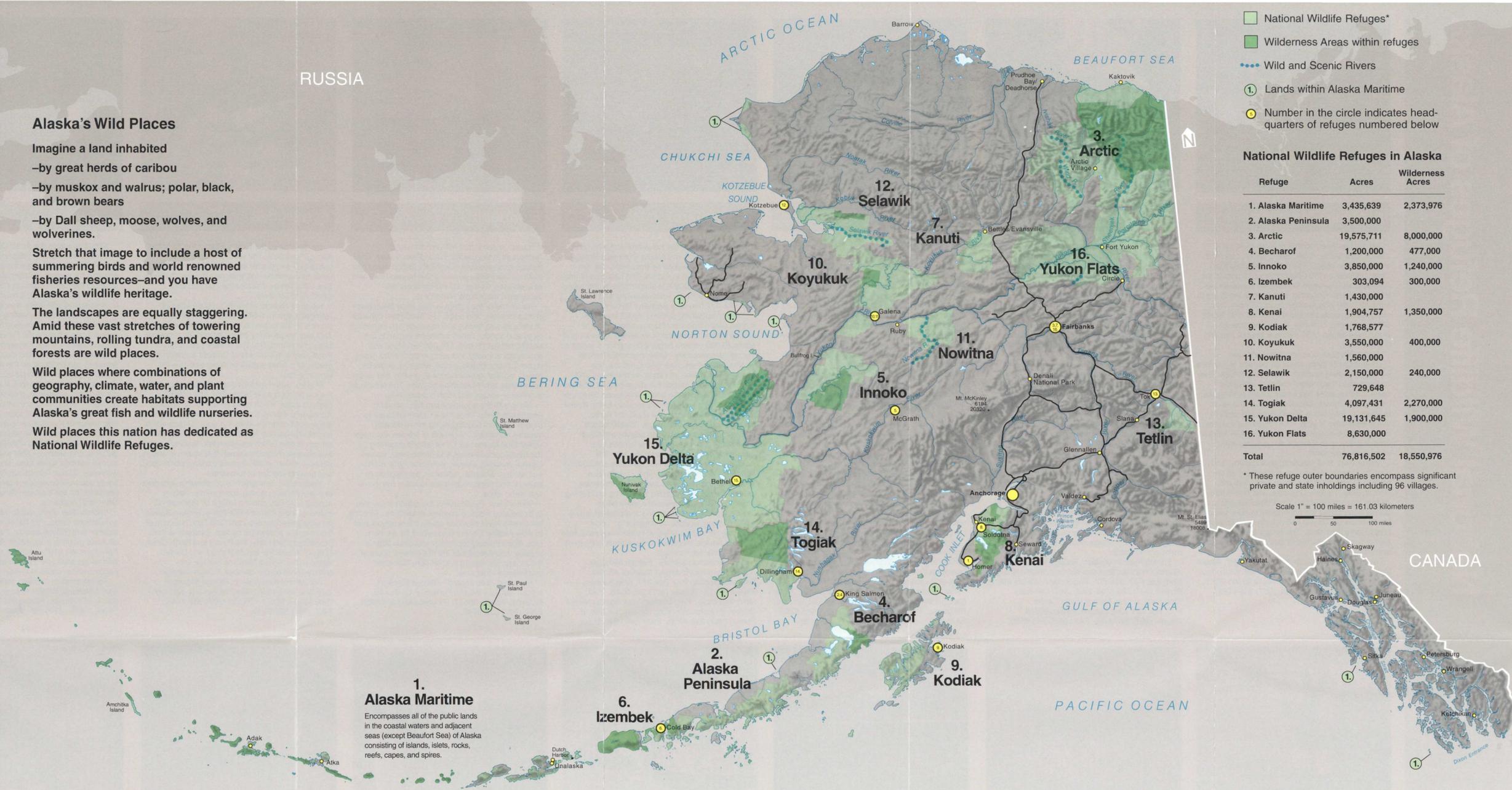
- National Wildlife Refuges\*
- Wilderness Areas within refuges
- Wild and Scenic Rivers
- ① Lands within Alaska Maritime
- ② Number in the circle indicates headquarters of refuges numbered below

## National Wildlife Refuges in Alaska

Refuge	Acres	Wilderness Acres
1. Alaska Maritime	3,435,639	2,373,976
2. Alaska Peninsula	3,500,000	
3. Arctic	19,575,711	8,000,000
4. Becharof	1,200,000	477,000
5. Innoko	3,850,000	1,240,000
6. Izembek	303,094	300,000
7. Kanuti	1,430,000	
8. Kenai	1,904,757	1,350,000
9. Kodiak	1,768,577	
10. Koyukuk	3,550,000	400,000
11. Nowitna	1,560,000	
12. Selawik	2,150,000	240,000
13. Tetlin	729,648	
14. Togiak	4,097,431	2,270,000
15. Yukon Delta	19,131,645	1,900,000
16. Yukon Flats	8,630,000	
<b>Total</b>	<b>76,816,502</b>	<b>18,550,976</b>

\* These refuge outer boundaries encompass significant private and state inholdings including 96 villages.

Scale 1" = 100 miles = 161.03 kilometers



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**1. Alaska Maritime**

Alaska Maritime consists of more than 2,500 islands, headlands, rocks, islets, spires, and reefs of the Alaskan coast. The refuge stretches from Cape Lisburne on the Chukchi Sea to the tip of the Aleutians and eastward to Forrester Island on the border of British Columbia. Most refuge lands are in the 1,100 mile long Aleutian Islands Chain. The refuge is a spectacular blend of tundra, rain forest, cliffs, volcanoes, beaches, lakes, and streams. Most of the refuge (2.37 million acres; 69 percent) is wilderness.

Alaska Maritime is synonymous with sea birds—millions of them. About 80 percent of Alaska's 50 million nesting seabirds nest on the refuge. They congregate in "bird cities," colonies, along the coast. Each species has a specialized nesting site (rock ledge, crevice, boulder rubble, pinnacle, or burrow), an adaptation that allows many birds to use a small area of land. The refuge has the most diverse wildlife species of all the refuges in Alaska including tens of thousands of sea lions, seals, walrus, and sea otters.

Visitor Use: Bird watching, photography, and marine mammal viewing are outstanding on the refuge. Commercial tour boats out of Seward, Homer, Sitka, Kodiak, Unalaska, and Nome take visitors to refuge islands. The Pribilof Islands in the Bering Sea provide the opportunity to view one of North America's largest bird colonies and largest fur seal rookery from land. The refuge visitor center in Homer hosts the Kachemak Bay Shorebird Festival every May.

For information contact: Refuge Manager, Alaska Maritime National Wildlife Refuge, 2355 Kachemak Bay Drive, Suite 101, Homer, Alaska 99603-8021. Phone: (907) 235-6546. FAX: (907) 235-7783.



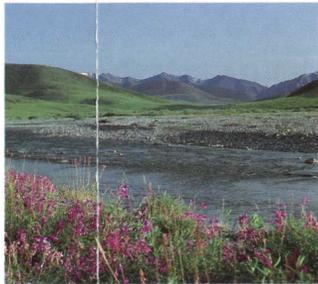
**2. Alaska Peninsula**

Alaska Peninsula Refuge is a land of spectacular beauty with rolling tundra, towering mountains, active volcanoes, and rugged coastlines. Encompassing some 3.5 million acres, the refuge is dominated by the Aleutian Range, part of a chain of volcanoes, the Ring of Fire, that encircles the Pacific Ocean. Designated a National Natural Landmark, 8,400 foot Mt. Veniaminof is a massive volcano with a base almost 30 miles across, larger than any active volcano on record. The summit crater, about 5.2 miles in diameter, contains a 25 square mile cupped ice field—the most extensive crater glacier in North America.

Large mammals found on the refuge include moose, caribou, wolves, brown bear, and wolverines. Productive salmon streams sustain a large population of brown bear. Sea lions, harbor seals, sea otters, and migratory whales inhabit the shores and offshore waters. The entire refuge provides habitat for migratory birds, including ducks, geese, shorebirds, and passerines. Isolated cottonwood forest stands, the western-most in North America, provide nesting and migration habitat for neotropical land birds.

Visitor Use: Alaska Peninsula is renowned for big game hunting, especially for brown bear. Fishing is outstanding for king and silver salmon. Arctic char, lake trout, northern pike, and Arctic grayling. Other public uses include flightseeing, observing and photographing wildlife, hiking, boating, and camping. Local residents harvest many resources from the refuge. Access to refuge lands is by small aircraft; there are no roads.

For information contact: Refuge Manager, Alaska Peninsula/Becharof National Wildlife Refuge Complex, P.O. Box 277, King Salmon, Alaska 99613. Phone: (907) 246-3339. FAX: (907) 246-6696. King Salmon Inter-Agency Visitor Center, P.O. Box 298, King Salmon, Alaska 99613. Phone: (907) 246-4250. FAX: (907) 246-8550.



**3. Arctic**

Arctic is the northernmost of all wildlife refuges. The refuge encompasses one of the most spectacular assemblages of arctic plants, wildlife, and land forms in the world. Designed to embrace the American portion of the range of the great Porcupine caribou herd, Arctic Refuge is home to free-roaming herds of muskox, Dall sheep, packs of wolves, and such solitary species as wolverines and polar, black, and brown bear. Three national Wild Rivers—the Ivishak, Sheenjek, and Wind Rivers arise on and flow through the refuge. The eight million acre McIlvie Beattie Wilderness Area is the largest in the refuge system.

Winter on the refuge is long and severe; summer is brief and intense. Snow can cover the ground nine months of the year and permafrost, (permanently frozen soil) lies within 18 inches of the surface. Arctic adapted plants survive extreme conditions and grow very slowly. Much of the Arctic Refuge is above treeline. At treeline, a 300 year old spruce tree may reach a diameter of just five inches.

Arctic Refuge offers a rich pageant of wildlife including 140 bird species. It protects a large portion of the migration routes of the Porcupine caribou herd (160,000 animals)—one of the two largest herds in Alaska. The caribou migrate from wintering grounds south of the Brooks Range to calving grounds on the northern coastal plain of the refuge and the Yukon Territory. The migration covers more than a thousand miles.

Visitor Use: Arctic's use is increasing. Activities include float trips, hiking, backpacking, hunting, fishing, and wildlife observation. Local residents harvest subsistence resources from the refuge. Access is primarily by small aircraft.

For information contact: Refuge Manager, Arctic National Wildlife Refuge, 101 12th Avenue, Box 20, Fairbanks, Alaska 99701. Phone: (907) 456-0250. FAX: (907) 456-0428. TTD: (907) 456-0420.



**4. Becharof**

Becharof Refuge lies between Katmai National Park and Preserve and Alaska Peninsula Refuge. The refuge is dominated by Becharof Lake, the second largest lake in Alaska. The lake covers one-fourth of the refuge and is surrounded by low rolling hills, tundra wetlands, volcanic peaks and to the east, the 477,000 acre Becharof Wilderness.

Salmon spawning streams attract one of the largest concentrations of brown bear in Alaska. Moose inhabit the refuge in moderate numbers and about 10,000 caribou migrate through and winter on the refuge seasonally. Other mammals include wolves, wolverines, river otters, red fox, and beaver. Sea otters, sea lions, harbor seals, and migratory whales inhabit the shoreline and offshore waters. Becharof Lake and its tributaries contribute over ten million adult salmon annually to the Bristol Bay fishery. Salmon, Arctic char, and Arctic grayling flourish on the refuge. Waterfowl are common in the wetlands and coastal estuaries while nesting eagles, peregrine falcons, and thousands of seabirds inhabit the sea cliffs.

Visitor Use: Becharof Refuge offers outstanding bear hunting and sport fishing for trophy-size Arctic char, grayling, and salmon. Commercial guide services are available for hunting and fishing activities. Other recreational opportunities include flightseeing, observing and photographing wildlife, hiking, boating, and camping. Local residents harvest a variety of subsistence resources from the refuge. Access to refuge lands is by small aircraft; there are no roads.

For information contact: Refuge Manager, Alaska Peninsula/Becharof National Wildlife Refuge Complex, P.O. Box 277, King Salmon, Alaska 99613. Phone: (907) 246-3339. FAX: (907) 246-6696. King Salmon Inter-Agency Visitor Center, P.O. Box 298, King Salmon, AK 99613. Phone: (907) 246-4250. FAX: (907) 246-8550.



**5. Innoko**

Innoko is about 300 miles northwest of Anchorage in the central Yukon River Valley. The Refuge encompasses about 3.85 million acres and includes the middle portion of the Innoko River and its drainages. Of this, 1.2 million acres are designated the Innoko Wilderness.

About half of the refuge is river flood plain, black spruce muskeg, and bogs. The flood plain consists of white spruce forests and marshes with numerous lakes and ponds. These extensive wetlands are nesting habitat for over 100,000 waterfowl and shorebirds annually, including white-fronted geese, lesser Canada geese, pintail, widgeon, shoveler, scaup, mallard, green-wing teal, greater and lesser yellow legs, and Hudsonian godwits. The remainder is primarily spruce and birch covered hills.

Along with the abundant bird life, including neotropical birds, Innoko is an important area for moose. Annual flooding along the rivers and streams enhances the growth of willows—the major winter food for moose. Other wildlife occurring on the refuge include black and brown bear, wolves, beaver, muskrat, weasel, wolverine, lynx, marten, and red fox. Sheefish, whitefish, grayling, chum salmon, and northern pike are found in the rivers and some lakes.

Visitor Use: Public use of the refuge is low due to its isolated location and lack of facilities. Floating the Innoko River provides an excellent opportunity to view wildlife. Fishing is excellent for northern pike. Sport hunting for moose and black bear is popular. Local residents are the primary users of the refuge, harvesting moose, fish, and other subsistence resources.

For information contact: Refuge Manager, Innoko National Wildlife Refuge, P.O. Box 69, McGrath, Alaska 99627. Phone: (907) 524-3251. FAX: (907) 524-3141.



**6. Izembek**

Izembek faces the Bering Sea on the tip of the Alaska Peninsula. The landscape includes volcanoes with glacier caps, valleys, and tundra uplands that slope into lagoons adjoining the Bering Sea. The refuge includes the 300,000 acre Izembek Wilderness.

Izembek Refuge protects the watershed of Izembek Lagoon, a State Game Refuge containing one of the largest eelgrass beds in the world. This estuary provides critical habitat for migratory birds and marine life. The world's population of Pacific brant, thousands of Canada and emperor geese, and other waterfowl congregate on the lagoon in fall.

Migrant waterfowl arrive on the refuge from late August through early November. The colorful Steller's eider, which nests on the Arctic coast of Alaska and Siberia and molts on Izembek Lagoon, is the most common wintering duck. Thousands of shorebirds feed on tidal invertebrates within the refuge. Brown bears are abundant, feeding on the five species of Pacific salmon that spawn in refuge streams. Other wildlife include caribou, ptarmigan, and several species of furbearers.

Visitor Use: Izembek has outstanding waterfowl and brown bear viewing and hunting. Visitors access Cold Bay and the refuge by commercial airline and the Alaska State Ferry System. Roads provide limited access from Cold Bay, but most of the refuge is accessible by foot. Because of their proximity to Cold Bay, the Pavlof and North Creek Units of Alaska Peninsula Refuge and Unimak Island in the Alaska Maritime Refuge are administered by the Izembek Refuge manager.

For information contact: Refuge Manager, Izembek National Wildlife Refuge, Box 127, Cold Bay, Alaska 99571. Phone: (907) 532-2445. FAX: (907) 532-2549.



**7. Kanuti**

Kanuti straddles the Arctic Circle approximately 150 miles northwest of Fairbanks. Kanuti Refuge is typical of the interior Alaska boreal forest, which provides for a great diversity of wildlife. It is composed of the Kanuti Flats, an interior basin drained by the Kanuti and Koyukuk rivers. The forested basin is interspersed with lakes, ponds and marshes.

The refuge provides nesting habitat for several species of waterfowl including Canada geese (primarily from the Pacific Flyway) and white-fronted geese (mainly Central Flyway birds). Several species of ducks (from the major flyways in North America) can be found on the refuge, including scaup, wigeon, northern pintail surf scoter, northern shoveler, green-winged teal, mallard, bufflehead, canvasback, goldeneye, gadwall, oldsquaw, and harlequin. With the loss of wetlands due to drought and man's actions to the south of Alaska, the importance of Kanuti as a nesting area for waterfowl increases. The refuge supports 16 species of fish including whitefish, northern pike, grayling, and salmon. Other wildlife includes moose, caribou, black bear, brown bear, wolf, and wolverine. Kanuti Refuge provides unspoiled and lightly used wildlands and a diversity of natural resources for the Koyukon Athabaskan Indians and other local residents.

Visitor Use: Few people, other than local subsistence users, visit Kanuti due to its remote location and difficult access. Fishing for northern pike and grayling is excellent. River floating on Kanuti's rivers offers a remote adventure. Consult with refuge staff prior to a trip as many of the rivers become un navigable at certain flows.

For information contact: Refuge Manager, Kanuti National Wildlife Refuge, 101 12th Avenue, Box 11, Fairbanks, Alaska 99701. Phone: (907) 456-0329. FAX: (907) 456-0506.



**8. Kenai**

The Kenai Refuge includes both of the western slopes of the Kenai Mountains and forested lowlands bordering Cook Inlet. The lowlands are composed of spruce and birch forests intermingled with hundreds of lakes. The Kenai Mountains, with their glaciers, rise to more than 6,000 feet presenting a barrier on the southeastern boundary of the refuge. The refuge is a miniature Alaska with some of all habitat types of Alaska—tundra, mountains, wetlands, and forests. Much of the refuge—1,350,000 acres—is designated the Kenai Wilderness.

Kenai Refuge was established by President Franklin Roosevelt in 1941 to preserve and maintain the large population of moose on the Kenai Peninsula. Also, the refuge is host to Dall sheep, mountain goat, caribou, coyote, wolf, brown and black bear, lynx, wolverine, beaver, many small mammal and resident and neotropical bird species. Kenai Refuge provides undisturbed spawning for many Cook Inlet salmon.

Visitor Use: The refuge is accessible from the Sterling Highway. Travelers are treated to a panoramic view along the 110-mile drive from Anchorage to the refuge. Fishing is excellent. There are over 200 miles of established trails and routes including the Swanson River and Swan Lakes Canoe Trails which are a part of the National Recreation Trails System. Visitors can fly to remote lakes, take a horse pack trip into roadless areas, or float a whitewater river. Developed facilities are available year-round for day and overnight camping.

For information contact: Refuge Manager, Kenai National Wildlife Refuge, P.O. Box 2139, Soldotna, Alaska 99669. Phone: (907) 262-7021. FAX: (907) 262-3599.

Photo by Daniel Quick - Northlite



**9. Kodiak**

Kodiak Refuge encompasses about two-thirds of Kodiak Island. In addition, the refuge includes a portion of Afognak Island (50,000 acres) to the north of Kodiak Island. Kodiak Island has an irregular coastline of bays, inlets, and rugged mountains covered with alpine vegetation.

Spruce forests dominate the northern part of Kodiak Island and the Afognak Island portion of the refuge. The interior of the refuge is covered with lush, dense vegetation. Southwestern Kodiak is covered with grassy hummocks. No place on the 100-mile long by 40-mile wide Kodiak Island is more than 15 miles from the sea.

Kodiak was established in 1941 to protect the habitat of the brown bear. Besides the brown bear, only five other mammals—red fox, river otter, short-tailed weasel, little brown bat, and tundra vole—are native to the island. Black-tailed deer, beaver, and several other species of mammals have been successfully introduced. Up to two million seabirds inhabit the bays, inlets, and shores.

Visitor Use: Kodiak is known worldwide for brown bear hunting. Fishing is excellent for all five species of Pacific salmon. Wildlife observation, photography, rafting, and camping are popular activities. The island is served by commercial flights and the Alaska State Ferry System. A limited number of public use cabins are available on the refuge.

For information contact: Refuge Manager, Kodiak National Wildlife Refuge, 1390 Buskin River Road, Kodiak, Alaska 99615. Phone: (907) 487-2600. FAX: (907) 487-2144.

Photo above: The late Mollie Beattie, Director of the U.S. Fish and Wildlife Service from 1993-1996, visited Kodiak Refuge.



**10. Koyukuk**

Koyukuk Refuge encompasses the extensive flood plain of the Koyukuk River north of its confluence with the Yukon in west-central Alaska. This area lies within a forested basin surrounded by hills and low rolling mountains. Lowland boreal forests of spruce, birch, and aspen gradually merge with tundra vegetation at elevations of 3,000 feet. Lightning-caused wildland fire is important as a natural component of the interior Alaska boreal forest. Extensive wetlands exist among the myriad of lakes, sloughs, and tributaries of the Koyukuk River that meanders for more than 400 miles through the refuge.

The wetlands are vital to thousands of ducks and geese and hundreds of swans and cranes. Refuge wetlands and river corridors provide excellent moose habitat. Moose populations, exceeding 11,000, form an important element in the subsistence economy of local Athabaskan villages. The refuge includes part of the winter range of the Western Arctic caribou herd. With moose and caribou present, wolves are common. Black bear are abundant in forested areas, and brown bears are found in the open tundra at higher elevations. Chinook and chum salmon are important commercial and subsistence fisheries that migrate up the larger rivers.

The 400,000 acre Koyukuk Wilderness includes the Nogahabara Sand Dunes, one of two active dune fields in Alaska, formed more than 10,000 years ago when winds blew sand left by melting glaciers into large dunes.

Visitor Use: Access is by boat, aircraft, or snowmobile. Recreational opportunities on the refuge include wildlife observation, hunting, fishing, camping, and boating. Local residents use the refuge for a variety of subsistence activities.

For information contact: Refuge Manager, Koyukuk/Nowitna National Wildlife Refuge Complex, P.O. Box 287, Galena, Alaska 99741. Phone: (907) 656-1231. FAX: (907) 656-1708.



**11. Nowitna**

Nowitna Refuge, approximately 200 miles west of Fairbanks, lies within a forested basin encircled by rolling hills capped by alpine tundra. The Nowitna River, a nationally designated Wild River, bisects the refuge and forms a broad meandering flood plain.

Grassy margins of ponds and lakes and many miles of rivers and streams are important breeding habitat for waterfowl including Canada and white-fronted geese, trumpeter and tundra swan, and numerous duck species. Salmon, northern pike, and one of only three resident sheefish populations in Alaska can be found in the Nowitna River. Forested lowlands give rise to mature white spruce habitat that provides valuable cover and den sites for marten, a significant species supporting the trapping economy for local residents. Moose, wolves, lynx, wolverine, and black and brown bear range throughout the refuge.

A series of bluffs along the Yukon River, the refuge's northern boundary, has evidence of Pleistocene animals and plants endemic to the area at that time.

Visitor Use: Access to the refuge is possible by airplane, boat, snowmachine, dog sled, or foot. Wildlife observation, hunting, fishing, camping, and boating opportunities abound on the refuge. The Nowitna River is a Class I river with no white water making it favorable for float trips. Local residents participating in subsistence activities provide most of the public use on the refuge.

For information contact: Refuge Manager, Koyukuk/Nowitna National Wildlife Refuge Complex, P.O. Box 287, Galena, Alaska 99741. Phone: (907)656-1231. FAX: (907) 656-1708.



**12. Selawik**

Selawik straddles the Arctic Circle in northwestern Alaska about 360 miles northwest of Fairbanks. The refuge is composed of estuaries, river deltas, and tundra slopes. The most prominent feature is the extensive system of tundra wetlands that are nestled between the Waring Mountains and the Selawik Hills. The Selawik River is a nationally designated Wild River. The Waring Mountains form the refuge's northern boundary with the Kobuk National Park. In the refuge 240,000 acres are designated the Selawik Wilderness.

Selawik is located where the Bering Land Bridge once existed. Plants, animals, and humans migrated freely across this land mass connecting Asia and North America thousands of years ago.

Selawik is a breeding and resting area for a multitude of migratory water birds returning from North and South America, Asia, Africa, and Australia. Ducks nest in most of the refuge's 24,000 lakes. Thousands of caribou winter on the refuge as they feed on the lichen-covered foothills. Other common mammals include moose, brown bear, and furbearers. Sheefish, whitefish, grayling, and northern pike inhabit lakes, ponds, streams, and rivers. Sheefish weighing 40 to 50 pounds are often caught for float trips. Local residents participating in subsistence activities provide most of the public use on the refuge.

Visitor Use: The Selawik Wild River provides river floating, sport fishing and hunting opportunities. Most local residents, including Inupiat Eskimos and Athabaskan Indians, use the refuge for subsistence activities such as hunting, fishing, and gathering fruits and berries. Selawik is the Inupiat word for "place of sheefish."

For information contact: Refuge Manager, Selawik National Wildlife Refuge, P.O. Box 270, Kotzebue, Alaska 99752. Phone: (907) 442-3799. FAX: (907) 442-3124.



**13. Tetlin**

Tetlin Refuge lies in eastern interior Alaska, bordering Canada's Yukon Territory, Wrangell-St. Elias National Park, and the Alaska Highway. It is one of only two refuges in the state that are road accessible. Major physical features are characterized by broad flat river basins bisected by rolling hills, extensive marsh and lake complexes, and foothill areas of the Nutzotin and Mentasta Mountains. Two large glacial rivers, the Chisana and Nabesna, flow northward through the refuge, joining near the refuge's northwestern boundary to form the Tanana River, one of Alaska's major rivers.

Tetlin lies in a major migration corridor for many birds heading for nesting grounds, with lesser Sandhill cranes being the most impressive in noise and numbers. Trumpeter swans migrate through, and an increasing number nest on the refuge. Refuge wetlands are prime breeding and nesting areas for ducks; up to 65,000 ducklings are produced to flight stage annually. Ospreys, bald eagles and other raptors are seen. Tetlin provides habitat for 114 nesting species and an additional 68 species of migrants. Red fox, snowshoe hare, spruce grouse, wolves, black and brown bear, lynx, moose, Dall sheep, sharp-tailed grouse, ruffed grouse, and Pacific loons occur on the refuge. Caribou are winter residents, often seen along the highway.

Visitor Use: Most use occurs along the Alaska Highway with people observing wildlife, stopping at the refuge's log cabin visitor center, one or more of seven interpretive pullouts, or two lakeshore campgrounds. Duck, caribou, and moose hunting are especially popular.

For information contact: Refuge Manager, Tetlin National Wildlife Refuge, P.O. Box 779, Tok, Alaska 99780. Phone: (907) 883-5312. FAX: (907) 883-5747.



**14. Togiak**

Togiak Refuge encompasses about 4.7 million acres of land between Kuskokwim and Bristol bays in southwestern Alaska. The northern half of the refuge—2,270,000 acres—is the Togiak Wilderness. The refuge contains a variety of landscapes including tundra, lakes, rivers, wetlands, mountains, and rugged seascapes and beaches.

Over 30 species of mammals are present including brown bear, moose, caribou, mink, beaver, otter, and red fox. Sea lions, walrus, and seals inhabit the coastal shoreline. The refuge's coastal lakes and wetlands are heavily used by migrating waterfowl, and the rivers provide more than 1500 miles of riverine habitat necessary for five species of Pacific salmon, rainbow trout, grayling, lake trout, Dolly Varden, and Arctic char. The coastal headlands of Cape Peirce and Cape Newenham are host to millions of seabirds including murrens, herring gulls, cormorants, and kittiwakes.

Visitor Use: Some of the finest remote salmon and trout sport fishing waters in the world—the Kanektok, Goodnews, and Togiak Rivers— are within Togiak Refuge. Coastal areas provide excellent opportunities for photography and wildlife observation. Permitted commercial guides are available for sport fishing and brown bear hunting. Residents, predominantly Yupik Eskimos, of several villages within or adjacent to the refuge, depend on refuge wildlife, fish, and plant resources for subsistence. Summer access is by float and wheel planes and motorboats.

For information contact: Refuge Manager, Togiak National Wildlife Refuge, P.O. Box 270, Dillingham, Alaska 99576. Phone: (907) 842-1063. FAX: (907) 842-5402.



**15. Yukon Delta**

The Yukon and Kuskokwim rivers dominate the landscape of Yukon Delta. The rivers form a treeless wetland noted for wildlife variety and abundance. An intricate maze of lakes, ponds, and meandering streams provides nesting and feeding habitat for over 750,000 swans and geese, two million ducks, and millions of shorebirds. Moose, caribou, brown and black bear, and wolves inhabit the northern hills and eastern mountains. The refuge includes the 1.3 million acre Andreafsky Wilderness and the 600,000 acre Nunivak Island Wilderness.

The 1.1 million acre Nunivak Island portion of the refuge supports introduced herds of muskox and reindeer. Muskox were eliminated by the mid 1800's from Alaska because of over harvesting. The reintroduced muskox on Nunivak Island have been prolific. The herd is used as breeding stock to establish new herds elsewhere in Alaska and Russia. Caribou were eliminated from Nunivak Island but the reindeer herd is a major source of food and income for island residents.

Over the centuries the abundance of wildlife has made the Yukon Delta the heart of the Yup'ik Eskimo culture in Alaska. Forty-two Native villages are located within the refuge boundary. Residents of these villages depend on the fish, wildlife, and other resources of the refuge. Establishing legislation for the Yukon Delta Refuge enables rural residents to continue a subsistence lifestyle, allowing them to live off the land.

Visitor Use: Fishing, hunting, and backcountry recreation are excellent, although access to these opportunities is primarily via aircraft. The Andreafsky River is a nationally designated Wild River. Visitors may view exhibits and obtain complete information at the refuge headquarters visitor center.

For information contact: Refuge Manager, Yukon Delta National Wildlife Refuge, P.O. Box 346, Bethel, Alaska 99559. Phone: (907) 543-3151. FAX: (907) 543-4413.



**16. Yukon Flats**

Yukon Flats is about 100 air miles north of Fairbanks—the most northerly point reached by the Yukon River. Here the river breaks free from canyon walls and spreads unconfined for 200 miles through a vast flood plain.

In the spring, millions of migrating birds converge on the refuge before ice melts on the river. The refuge has one of the highest nesting densities of waterfowl in North America. By August the surfaces of approximately 40,000 lakes ponds ripple with scurrying ducklings and molting adults. Each year, the Yukon Flats contributes over a million ducks and geese to the flyways of North America. Waterfowl banded on the Yukon Flats have been recovered in Belize, Columbia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Panama, Russia, eight Canadian provinces, and 45 of the 50 United States - truly a shared resource.

Birds are not the only migratory wildlife dependent on refuge wetlands. Salmon from the Bering Sea ascend the Yukon River to spawn in the freshwater streams of their birth. Runs of king, coho, and chum salmon pass through and spawn on the refuge each summer. Mammals on the refuge include moose, caribou, Dall sheep, wolves, and black and brown bears.

Visitor Use: Access is by boat or small plane; there are no roads. Most summer use on Yukon Flats is confined to the major waterways. Several rivers may be floated by canoe, kayak, or rafts. Fishing for northern pike can be excellent. Local Athabaskan Indians and other residents take a variety of resources from the refuge. Beaver Creek, a nationally designated Wild River, flows into the refuge from mountains to the south.

For information contact: Refuge Manager, Yukon Flats National Wildlife Refuge, 101 12th Avenue, Room 264, Fairbanks, Alaska 99701. Phone: (907) 456-0440. FAX: (907) 456-0447.