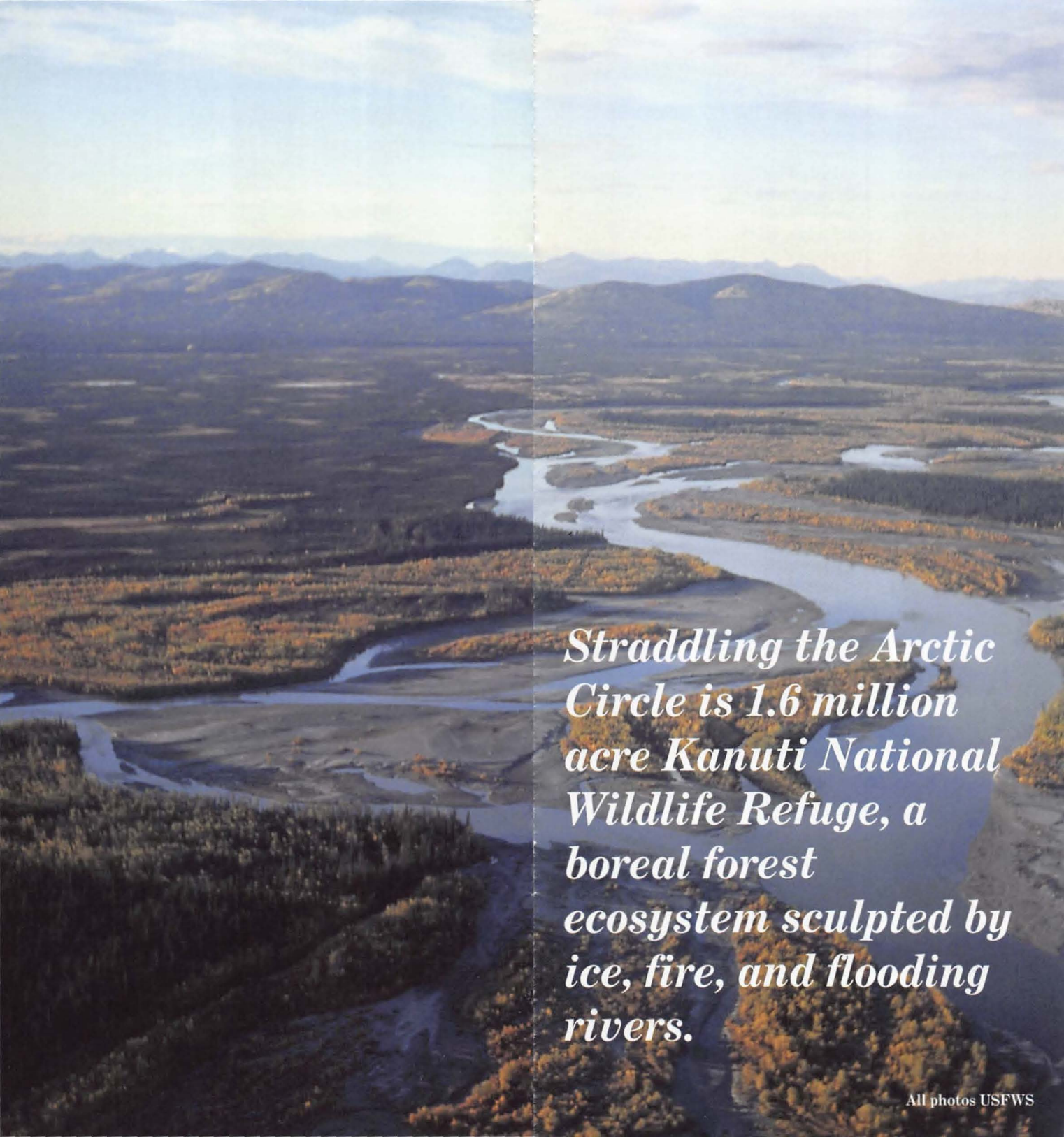


U.S. Fish & Wildlife Service

Kanuti

*National Wildlife
Refuge*



An aerial photograph of a vast, flat landscape with a winding river. The river flows from the upper right towards the lower left, creating several meanders. The surrounding land is covered in dense forest, with some areas showing autumnal colors of yellow and orange. In the far distance, a range of mountains is visible under a pale, overcast sky. The overall scene depicts a remote, natural environment.

*Straddling the Arctic
Circle is 1.6 million
acre Kanuti National
Wildlife Refuge, a
boreal forest
ecosystem sculpted by
ice, fire, and flooding
rivers.*



This flying "Blue Goose" (a stylized Canada goose) was designed by renowned cartoonist and conservationist J.N. "Ding" Darling in 1935. It has become the symbol of the National Wildlife Refuge System.

A Snapshot of Kanuti

Kanuti National Wildlife Refuge is a land that remains wild and undeveloped. The 1.6 million acre refuge is a prime example of Alaska's boreal ecosystem which is an area dominated by black and white spruce with some white birch and poplars. Interspersed in this area are various sized lakes, wetlands and open areas. The refuge has a diversity of wildlife, fish and plants that interact in much the same way as they evolved thousands of years ago. The refuge provides undisturbed lands for breeding birds, including loons, geese and many long distance migrants, and provides space and isolation for moose, wolves and bears. Seasonally flooded streams and rivers are home to salmon, arctic grayling and whitefish. Kanuti Refuge is tucked into a basin formed by glaciation and the Kanuti and Koyukuk rivers. Placid streams, winding rivers, numerous lakes, wetlands, muskegs and boreal forests characterize the landscape.

The Athabascan Indian name for the Kanuti River is Kk'oonootne. The exact translation has been lost, but it likely means either "well traveled river by both man and animal" or "fish roe river." Local residents refer to the Kanuti River as "Old Man."

Kanuti Refuge was set aside primarily for its rich and diverse waterfowl habitats.

Establishment

Kanuti Refuge was established by the Alaska National Interest Lands Conservation Act in 1980. The refuge was created to conserve fish and wildlife populations and habitats in their natural diversity. Additionally, the refuge fulfills wildlife treaty obligations, provides for subsistence use by local residents and ensures water quality.





*In the spring, ice
on the rivers
breakup, creating
giant sheets of
moving ice.*

A Land of Extremes

Climate at Kanuti is defined by dramatic seasonal extremes of temperature and light. In June and July, temperatures can exceed 90 degrees F. This warmth, coupled with 24 hours of daylight, stimulates growth and activity. During the long winter, temperatures can drop to minus 70 degrees F and the prolonged darkness keeps a tight grip on activities. Snow typically arrives around the first week of October and stays until the end of April, although it can snow any time of the year. Rivers and lakes generally freeze by the middle of October and are not ice-free until mid-May.

Resident plants and animals display a wide array of adaptations which allow them to survive in spite of the wide environmental extremes experienced in this boreal region.

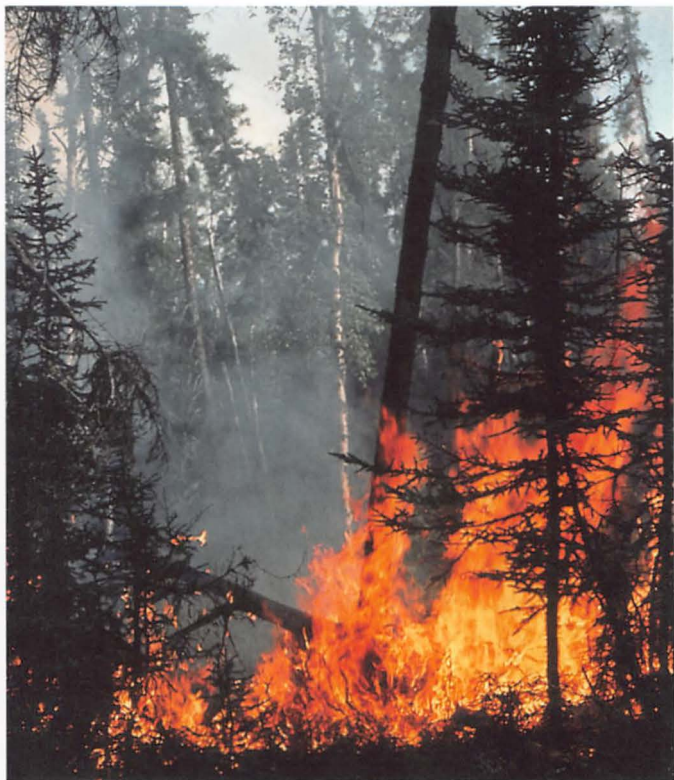
*Average snow
depth by early
March is 31
inches.*



Dynamic Ecosystem

The ecosystem in this refuge is characterized by fire, ice and flooding. Fire and floods continually change the landscape, creating a mosaic of diverse habitats for a variety of specialized plants and animals. Since 1990, almost one-half of the refuge has burned by lightning caused fires. Seasonal flooding of streams and rivers pumps water and vital nutrients into adjacent wetlands. Habitat patterns are also dictated by the presence of permafrost, or permanently frozen ground, that underlies much of the refuge. The presence of permafrost, from a few inches to several feet below the ground's surface, influences water drainage and determines where certain plant species can and cannot grow.

Lightning caused fires are a major force in shaping Kanuti Refuge's habitats.



Home to Many People

Koyukon Athabascan Indians and Kobuk Inupiaq Eskimos have used the area that is now the Kanuti Refuge for thousands of years. The village of Alatna is located on the Koyukuk River just west of the refuge and is home to Kobuk Eskimos. Athabascan Indians live across the river in the village of Allakaket. In the 1890's gold miners pulsed through the region in pursuit of riches. Most did not stay long, but those who did trapped for fur and developed commerce in nearby communities. During World War II, the community of Bettles, just north of the refuge, was developed as an alternate landing site for military planes. Bettles continues to be an important refueling stop for planes traveling throughout the state. Evansville, an Athabascan Indian village, was established adjacent to Bettles in the early 1970's.

Elders pass on traditional knowledge.



Generations of Traditional Use

Subsistence hunting, fishing, berry picking and trapping continue to be an important part of the lives of rural residents living near the refuge. These have occurred for generations in concert with the change of seasons. Spring is a time to hunt waterfowl and muskrats, while fish are caught in summer. Hunters harvest moose in the fall. Winter is the time for ice fishing, trapping and caribou hunting. Trapping continues to be an important source of income. Furs are used to make traditional crafts and clothing.

Subsistence is still a way of life for those who choose to live near the refuge.





Thousands of birds fill the sky over Kanuti Refuge each spring.

A Refuge Important to the World

A rich diversity of species inhabit the refuge. Each spring, migratory birds arrive to breed on the refuge, many from as far away as the Amazon basin. Bands from marked waterfowl have been recovered in 45 of the 50 states, eight Canadian provinces, and 11 foreign countries. Three species of salmon migrate more than a thousand miles each year up the Yukon and Koyukuk rivers to spawn in the meandering streams of the refuge.

Feathers

The refuge provides breeding areas free from forest degradation and human disturbance for more than 130 species of birds. As snow and ice give way in April, bird songs fill the air. In early April, sandhill cranes, greater white-fronted geese, Canada geese, northern pintails, Lapland longspurs, raptors and a variety of gulls are the first to arrive.



Shorebirds stop over on the refuge and wait for spring to arrive farther north.

By early June, blackpoll warblers, northern waterthrushes and many species of sparrows and swallows are common along waterways. Species like ruby-crowned kinglets and varied thrushes can be heard in forests.

During summer months, the Kanuti River Canyon is an important area for raptors, including great horned owls, northern goshawks, merlins, peregrine falcons, Harlan's red-tailed hawks and northern harriers. Other raptors found on the refuge include golden and bald eagles, great gray owls, boreal owls and northern hawk owls.



The Great Horned Owl is one of a handful of bird species that live year-round on the refuge.

Wetlands in the Koyukuk and Kanuti river basins are important breeding areas for white-fronted geese, Canada geese, wigeon, scaup, swans and loons.

The contrast between the sounds of spring and winter on the refuge is extreme. As snow falls, quiet avian hunters can be seen by those patient enough to watch. Silently, great horned and great gray owls drop from forest stands to hunt willow ptarmigan, snowshoe hare and voles. Redpolls and white-winged crossbills splash winter scenes with red. Gray jays and ravens call raucously while woodpeckers drum and chickadees sound their names from forests silenced by ice and snow.

Fur

Signs of wolf activity can be found throughout the refuge.

A variety of mammals, large and small, live year-round on the refuge.

In summer, moose can be seen in lakes feeding on aquatic plants or along rivers feeding on willows. Female moose are secretive at this time to protect their young. In winter,



moose move to areas where they have access to willows, their primary winter food source. Moose and their tracks can often be seen near rivers, particularly on



Aquatic plants provide moose with important nutrients that are not available in winter willow browse.

snow-covered gravel and sand bars, where willows are plentiful. In years with deep snow, moose stay in well-trampled areas near food sources.

Grizzly and Black bears are common throughout the refuge. They are often seen as they search for food or sun themselves on hillsides. Bears eat a varied diet of meat, plants and berries all summer to fatten up in preparation for a long winter sleep.

Caribou from the Western Arctic Herd occasionally move onto the refuge from the north in winter, while the Ray Mountain Herd sometimes wanders onto the southern portion of the refuge.



During the spring, bears feed extensively on grasses and horsetails.

Voles, lemmings and mice are often overlooked, but they are a vital link in the food chain of this ecosystem. Beaver work all summer to maintain their lodges and dams. In the fall, large caches of willow and poplar branches are stored underwater near the lodges to serve as food during the upcoming winter.

Snowshoe hares change color with the seasons; making it harder for predators to find them.



A visitor to Kanuti may be fortunate enough to witness a lynx pursuing a snowshoe hare through the willows, or a red fox darting across a meadow chasing a vole. Tracks in the snow reveal an abundance of life in a seemingly quiet landscape.

Fins

King, chum and silver salmon return to refuge waters annually to spawn. Clearwater-loving arctic grayling are often seen as they rise to the water's surface to capture insects. Sheefish, whitefish, burbot and northern pike thrive in the river and lake systems within the refuge.

After spawning, dead salmon provide nutrients to Kanuti Refuge's aquatic systems.





*In spring,
purple wild
onion and iris
color river
banks.*

Leaves

Plant life on Kanuti is typical of the boreal forest. Black spruce grows in poorly-drained and nutrient-poor soils often underlain by permafrost. White spruce occurs in well-drained river corridors and uplands. White birch, poplar and various tall shrubs also occur on these sites and are some of the first to grow back in recently burned areas. A diverse array of shrubs, herbs, grasses, sedges, mosses and lichens occupy the forest's understory.

Conserving the Resources

The refuge is managed to maintain its natural condition, a diversity of wildlife and habitats, and other special values. Management efforts focus primarily on surveys, research studies, monitoring, and education. Part of the management challenge is to better understand the pieces and processes that comprise this natural ecosystem.

Studies have investigated the survival and movement of white-fronted geese breeding on refuge lands. Other surveys record annual waterfowl use, moose density and population trends. A 10-year radio telemetry study collected data on wolves. Breeding bird surveys document landbird use of the refuge; raptors and owls are surveyed in both summer and winter.

*Yellow-cheeked
voles establish
colonies in
recently burned
areas.*

The importance of wetlands is studied through a variety of projects focusing on the relationship between water chemistry, aquatic insects, waterfowl, beaver activity, and plants.

Due to the large role wildland fire plays in the ecosystem, the refuge has several ongoing projects related to fire. These studies primarily monitor forest and small mammal population changes following fire.



A Land of Solitude

Visiting Kanuti can be described as the ultimate wilderness experience where it is possible to find complete isolation. Kanuti Refuge wilderness is ensured by the absence of roads within an area slightly larger than the state of Delaware. Visitors to Kanuti Refuge must be prepared to visit on nature's terms, relying on their own skills to navigate the refuge.

Opportunities include camping, fishing, hunting, river floating, wildlife viewing and photography. Be aware that there are some restrictions on the refuge, so it is always important to contact refuge staff prior to your trip.

Grizzly bears are silent and secretive, especially when females are caring for cubs.



Be Prepared

Visitors should be prepared for rapidly changing weather conditions and clouds of mosquitoes. Therefore, warm clothing, rain gear, extra food and mosquito repellent should be carried on all trips. Bears are frequently encountered within the refuge and precautions should be taken to prevent bear incidents. Due to the remote nature, visitors should be prepared to administer first aid in case of injury.

Visit With Respect

If you visit Kanuti Refuge, please keep in mind that about 18 percent of the refuge is privately owned. Much of the private property is along river corridors. This land is generally not posted, so it is a good idea to obtain land ownership maps from the refuge office prior to your trip. Also note that it is illegal to disturb any archaeological site.

Please be sensitive to the customs of local people who use the refuge for subsistence purposes. Hunting restrictions exist on a large portion of the refuge; contact the refuge office or consult hunting regulations before planning a hunting trip.

Access



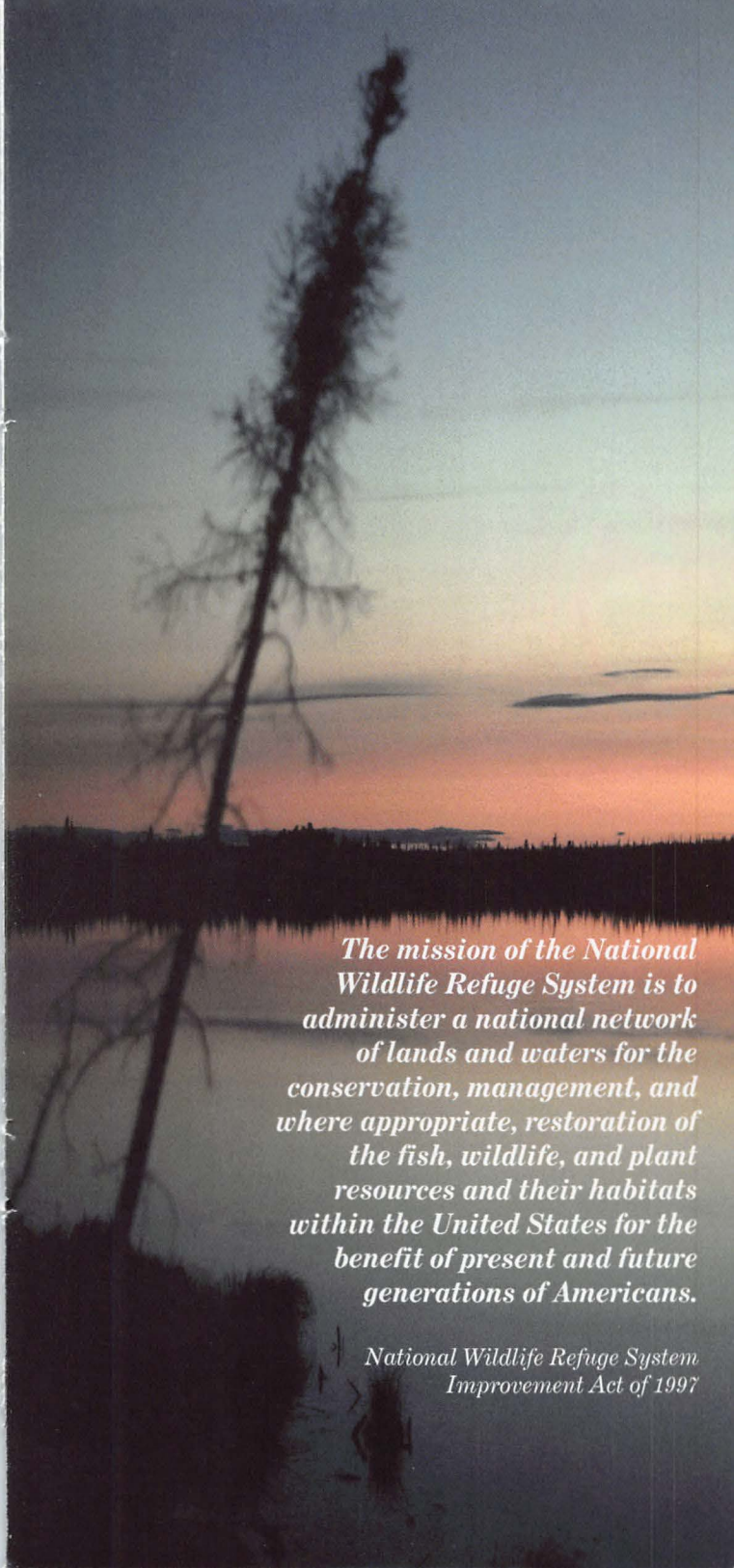
Rivers are the highways of the Kanuti Refuge.

Most visitors to the refuge come through the community of Bettles. From Bettles, air charters are available for drop-offs at lakes, rivers and gravel bars. Visitors can then access the remaining parts of the refuge on foot or by boat. Keep in mind, however, that this is a very wet area with no foot trails and is not ideal for hiking.

In winter, the refuge can be reached from the Dalton Highway using non-motorized transportation such as skis or dog teams. In winter, snow mobile access is authorized for traditional activities; contact the refuge office for more information.

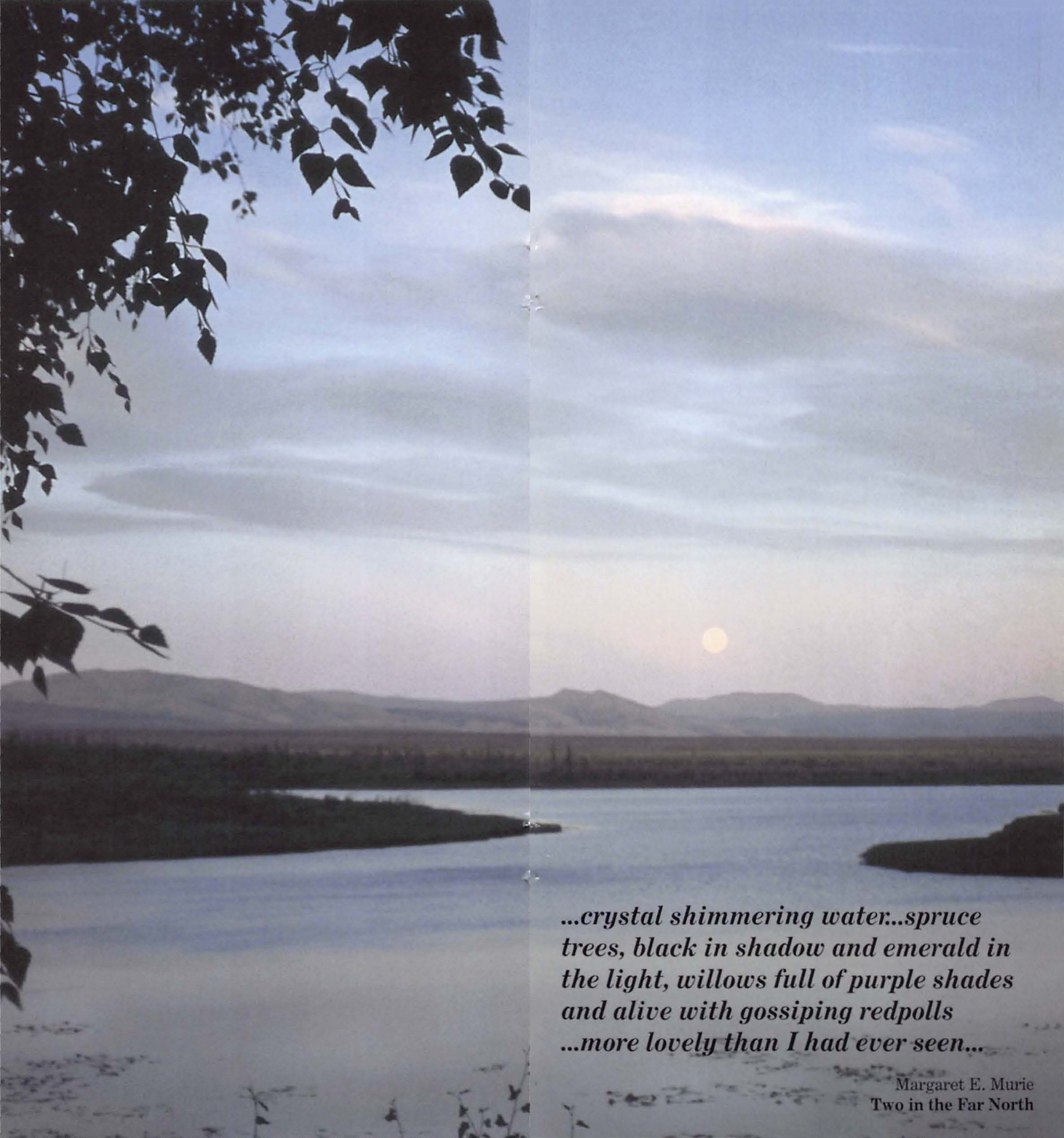
Touch Kanuti Lightly

Visitors to Kanuti Refuge are asked to touch the land lightly and to make as little impact as possible. Make sure to pack out all garbage and leave campsites clean. Leave the refuge as it was when you arrived. Do your part to preserve the wilderness so that future visitors may experience all that Kanuti has to offer.



*The mission of the National
Wildlife Refuge System is to
administer a national network
of lands and waters for the
conservation, management, and
where appropriate, restoration of
the fish, wildlife, and plant
resources and their habitats
within the United States for the
benefit of present and future
generations of Americans.*

*National Wildlife Refuge System
Improvement Act of 1997*



*...crystal shimmering water...spruce
trees, black in shadow and emerald in
the light, willows full of purple shades
and alive with gossiping redpolls
...more lovely than I had ever seen...*

Margaret E. Murie
Two in the Far North

Kanuti

National Wildlife Refuge

Refuge Boundary

Village

Dalton Highway

Bettles Winter Road

Alatna

Allakaket

Evansville

Bettles

(winter trail only)

South Fork Koyukuk

River

Koyukuk

Dalton Highway

Fairbanks 190 miles
(By road)

Todatonten Lake

Kanuti River

Sithylemenkat
Lake



Kanuti NWR

Fairbanks

Anchorage

Alaska



0

Miles

25

0

Kilometers

25

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Greater White-Fronted Goose