

U.S. Fish & Wildlife Service

Cabeza Prieta

*National Wildlife
Refuge*



The 860,010-acre Cabeza Prieta National Wildlife Refuge is one of more than 500 refuges throughout the United States managed by the Fish and Wildlife Service. The National Wildlife Refuge System is the only national system of lands dedicated to conserving our wildlife heritage for people today and for generations yet to come.

**Welcome:
Sonoran Desert
Wilderness**

Boundless desert surrounds you in Cabeza Prieta, the third largest national wildlife refuge in the lower 48 states. Here, seven rugged mountain ranges cast shadows over barren valleys once swept by lava. Saguaros loom in stark profile above the baked earth. A 56-mile, shared border with Sonora, Mexico, might well be the loneliest international boundary on the continent.

Imagine the state of Rhode Island without any people and only one wagon track of a road. Cabeza Prieta NWR is that big, that wild and also incredibly hostile to those who need lots of water to live. Yet, within a landscape at once magnificent and harsh, life does persist, even thrives.

**Scorching Heat
and Life-giving
Rain**

Temperatures may top 100 degrees F for 90 to 100 straight days from June to October. Summer thundershowers and winter soaking rains average about 3 inches on the western part of the refuge and up to 9 inches on the east side, 60 miles away. The winter and summer pattern of rainfall in the Sonoran desert stimulates the growth of more plant species than in most deserts. You'll find creosote and bursage flats, mesquite, palo verde, ironwood, and an abundance of cacti, including ocotillo, cholla, and saguaro on the bajadas (southwest colloquialism for sand, silt, and gravel deposited by running water on the slopes of mountain ranges).

*Pronghorn at
Cabeza Prieta.
Painting by
Paul Boseman*





Saguaro. Photo by Stephan Dobert

Endangered Sonoran pronghorn and lesser long-nosed bats call this parched land home, as do desert bighorns, lizards, rattlesnakes, and desert tortoises. Elf owls peer from holes carved in saguaros by Gila woodpeckers. Every plant and animal has adapted to life we would find uninhabitable. Far from a barren desert, Cabeza Prieta NWR harbors as many as 391 plant species and more than 300 kinds of wildlife.

Cabeza Prieta Name

Cabeza Prieta, Spanish for “dark head,” refers to a lava-topped, granite peak in a remote mountain range in the western corner of the refuge.

A Fragile Wilderness

Over 90 percent of the refuge was designated as wilderness by the 1990 Arizona Wilderness Act. To help maintain the wilderness character of Cabeza Prieta NWR, no vehicle traffic is allowed except on designated public use roads (see map). Vehicles may be parked up to 50 feet from the center of the roads *in areas previously used by*

other vehicles. All other off-road travel is prohibited. Visitors should practice a “leave no trace” ethic, keeping in mind that the desert ecosystem is fragile, and tracks made by vehicles or people can remain for hundreds of years.

Wildlife: Lessons in Desert Life Skills

Sonoran wildlife possess a “chest of tools” to beat the desert’s heat and hang in there for months without rain. Burrowing, nocturnal living, and astonishing water conservation techniques are just a few of the ways animals adapt to life here. The only water sources around are natural rock basins, called *tinajas*, that catch rainwater, a few artificial water storage areas, flowing washes after rains, and one intermittent seep.

Burrow Comfort

Desert tortoises, inhabiting the entire refuge, become dormant in burrows during the hottest and coldest times of the year. In fact, almost three-quarters of all desert animals are burrowers. Temperatures fluctuate only two degrees F just 18 inches below the surface. Kangaroo rats, pocket mice, ground squirrels, snakes, and badgers all find underground shelters.

Night Life

The sun sets. The desert cools and a host of animals stir. Ringtail cats prowl. Coyote, kit fox, and gray fox all hunt for pocket mice and kangaroo

Desert Pocket Mouse. Photo by Tricia L. Cutler



rats. Eleven species of bats navigate starry skies far from city lights. The endangered lesser long-nosed bat feasts on saguaro flower nectar in spring and its fruit in summer, first pollinating then spreading the cactus seeds.

Outfitted for Heat

Light-colored fur helps mammals like mountain lions reflect, not 'soak' in the heat. The scales of lizards help them deflect heat too. Perhaps most incredible are the built-in water saving abilities of many desert animals. Collared peccaries, also known as javelina, can decrease water evaporation from their body by 68 percent. Some of Cabeza Prieta NWR's bighorn sheep may go for weeks or months without visiting one of the refuge's water developments. The sheep draw some moisture from food and rainwater pooled in rocks and can lose up to 30 percent of their body weight. When water is plentiful, the bighorns quickly recover from dehydration.

Desert Bighorn. Photos by Steve Van Riper



Lizard. Photo by Bob Buecher

Reptile Hot Spot

Cold-blooded reptiles like hot, dry climates. Lizards and snakes dash and slither throughout the refuge. Side-blotched lizards turn up just about everywhere. Basin whiptails brave the heat of the day in search of termites and other insects. Desert horned lizards hunt for ants in valleys and washes. Like something out of a science fiction movie, these lizards will defend themselves by squirting blood from their eye sockets.

At least 24 species of snakes live here, including six kinds of rattlesnakes. Three of those rattlesnake species are common. The sidewinder, recognized at once by its sideways locomotion and "horns" above its eyes, ranks as a common species. The western diamondback rattlesnake, largest of the bunch, lives primarily in the lower hills. The Mojave rattlesnake possesses highly toxic venom and rarely rattles, even when disturbed.

Snakes would rather leave you alone, if you leave them alone. They play an important role as predators in the desert community. Before heading out, pick up information on snake bite prevention from the refuge office.



Vermilion Flycatcher. Photo by John and Karen Hollingsworth

Birds Passing Through

Birds have the distinct advantage of being able to fly to find desert water. You'll find the best birdwatching from February to May and August to November during migration. Look for warblers, swallows, flycatchers, and phoebes along vegetation-lined washes. Red-tailed hawks soar year-round. Coveys of Gambel's quail make the refuge their permanent home as well. Near Ajo, you'll find good birdwatching habitats within easy walking distance from your vehicle on Charlie Bell Road near Little Tule Well and Daniel's Arroyo and near the established campgrounds at Papago Well and Tule Well.

Lending a Hand for Wildlife

Refuge staff haul water to artificial catchments and guzzlers throughout Cabeza Prieta NWR to give desert bighorns and other wildlife a little bit more water than what nature provides.

The refuge also takes the lead role in Sonoran pronghorn recovery. This endangered species with international significance ranges across the Sonoran desert in small, scattered bands.

Wildlife Watching Tips

Dawn and dusk are the best times to see wildlife.

In warmer seasons, little is moving on hot summer afternoons or on windy days.

Observe from the sidelines. Leave "abandoned" young animals alone. A parent is probably close by waiting for you to leave. Don't offer snacks; your lunch could disrupt wild digestive systems.

Cars make good observation blinds. Drive slowly, stopping to scan places wildlife might hide. Use binoculars or a long lens for a closer look.

Try sitting quietly in one good location. Let wildlife get used to your presence. Many animals that have hidden will reappear once they think you are gone. Walk quietly in desert washes, being aware of sounds and smells. Often you will hear more than you will see.

Teach children quiet observation. Other wildlife watchers will appreciate your consideration.

Look for animal signs. Tracks, scat, feathers, and nests tell interesting stories.



History

Striking it Rich?

The prehistoric Indians who survived here as hunters and gatherers knew how to reap the riches of the desert. They collected cactus fruit, desert annuals, and mesquite beans and hunted bighorn sheep and small game.

Those who came later had a different vision of desert riches. In 1540, Melchoir Diaz made a name for himself as the first European to travel through the area, 90 years before the Mayflower landed at Plymouth Rock. A member of Coronado's expedition, Diaz was searching for the lost city of Cibola, a legendary city of gold.

El Camino del Diablo, or "the Devil's Highway," crosses the refuge. Jesuit Padre Eusebio Francisco Kino pioneered the trail, which stretched from Mexico to California, from 1699-1701. It earned its name from travelers who died in route to the California gold fields.

In the twentieth century, numerous prospectors combed the mountains in search of precious metals. The discovery of rich copper deposits led to the opening of the Ajo mines in 1916.

Hawk on Saguaro. Photo by Scott Clemans



Things to Do at the Refuge

A visitor center and short interpretive trail near the refuge office offers a first introduction to the ecology of the Sonoran desert. For the well prepared, the refuge offers plentiful hiking, photography, wildlife observation, and primitive camping. Please do not linger near water holes. Wildlife depend on them for survival.

Pick up a Permit First

Before entering the refuge, you must obtain a valid Refuge Entry Permit and sign a Military Hold Harmless Agreement. Free permits are available from the refuge office or they can be sent through the mail.

Most of the refuge falls within the air space of the Barry M. Goldwater Air Force Range. Numerous low-flying aircraft cross the refuge on their way to air-to-air bombing and gunnery ranges located to the north. Some military training exercises over the refuge may require limitations on travel and even short periods of closure of the refuge to the public. Military schedules are known in advance, so refuge staff can help with your schedule.

Special Events

The Cabeza Prieta Natural History Association features bi-weekly presentations from November to March on the natural history of the refuge. The evening talks are free. Check with the refuge staff for dates and specific topics. Other special events and tours are scheduled throughout the year.



Butterfly on Refuge Wildflowers.
USFWS Photo

Meeting Your Needs

For Your Safety

The military has used this area as a gunnery and bombing range since World War II. Many types of ordnance remain on the refuge, some buried and some on the surface. You may encounter unexploded ordnance. If you do, please:

- Do not touch it.
- Note its location.
- Report it to refuge staff.

Plan Ahead for a Desert Trip

There are no facilities for gasoline, sanitation, or potable water on Cabeza Prieta NWR. Plan on bringing two gallons of water per day, per person. Wear a broad-brimmed hat, long sleeves, and pants for sun protection. Be prepared to carry out all trash and debris, including toilet paper and other non-biodegradable waste. Bring your own charcoal for fires and plan to use a firepan to protect the fragile soil.

You'll Need 4-wheel Drive

If you desire to travel on the refuge, 4-wheel drive vehicles are required on all routes except Charlie Bell Road where 2-wheel drive high-clearance vehicles may be driven. Vehicles are restricted to public use roads and can be parked up to 50 feet of the center line of the roads in areas previously used by other vehicles. All vehicles and operators must be licensed for highway driving. Make sure you carry two spare tires and other spare mechanical parts in case of a breakdown.

Camping



You may select your own campsite. Papago Well, Tule Well, and Christmas Pass camping areas have some facilities and are recommended for larger groups. State laws prohibit camping within 1/4 mile of water holes. Your presence at water holes prevents wildlife from quenching their thirst.

Hunting



Cabeza Prieta NWR's limited, desert bighorn sheep hunt offers a high quality hunting experience in a desert wilderness setting. Long hikes are necessary just to arrive at the base of many of the mountain ranges. Hunters must carry in their own food and water. Please contact the refuge for more specific information about the bighorn sheep hunt.

Help Protect the Refuge



To protect the fragile desert ecosystem, we do not allow any of the following activities:

Dumping of litter, sewage, or liquid waste on the refuge.

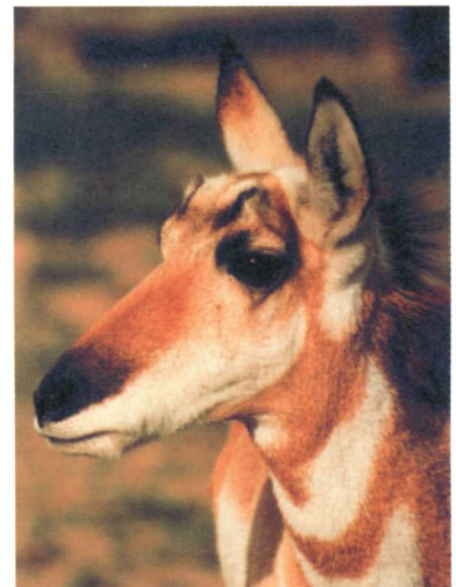
Firearms, except as authorized in writing by the refuge manager.

Prospecting, removal, or disturbance of sand, rock, gravel, or minerals.

Rock hounding.

Excavating or removing objects of antiquity, cultural artifacts, or paleontological artifacts.

Trapping.



Pronghorn.
USFWS photo

Collecting, possessing, molesting, disturbing, injuring, destroying, removal, or transportation of any plant, or animal, or part of the natural flora and fauna on the refuge is prohibited. (Exceptions to the above are legally taken game).

Fires



To protect scarce desert wood, only charcoal campfires are permitted.

Pets



Pets must be leashed and under control at all times.

Volunteer Opportunities

Interested in volunteering for Cabeza Prieta NWR? Volunteers are needed from October to May. The refuge has a bunkhouse with room for five and a trailer or motor home site. Reservations and a minimum of 32 hours per week is required for housing. Work in the field usually requires a 4-wheel drive vehicle. Please contact the refuge for more information.

Cabeza Prieta NWR Facts

Where is it?

Cabeza Prieta NWR refuge office/visitor center is in Ajo, in southwestern Arizona. From Phoenix, take I-10 west to exit 112, follow Highway 85 south to Gila Bend, continue south on 85 approximately 40 miles to Ajo. From Tucson, take Highway 86 (Ajo Way) west across the Tohono O'odham reservation to Why, follow Highway 85 north to Ajo. From Yuma, take I-8 east to Gila Bend, follow Highway 85 south approximately 40 miles to Ajo. The refuge office is on the west side of the highway at the north end of town.

When was it established?

1939.

How big is it?

860,010 acres.

Why is it here?

For the conservation and development of natural wildlife resources.

Cabeza Prieta

National Wildlife Refuge



U.S. Fish & Wildlife Service

Canaan Valley
National Wildlife Refuge
HC 70, Box 200
Davis, WV 26260
(304) 866-3858
E-mail: fw5rw_cvnwr@fws.gov

Canaan Valley

National Wildlife Refuge

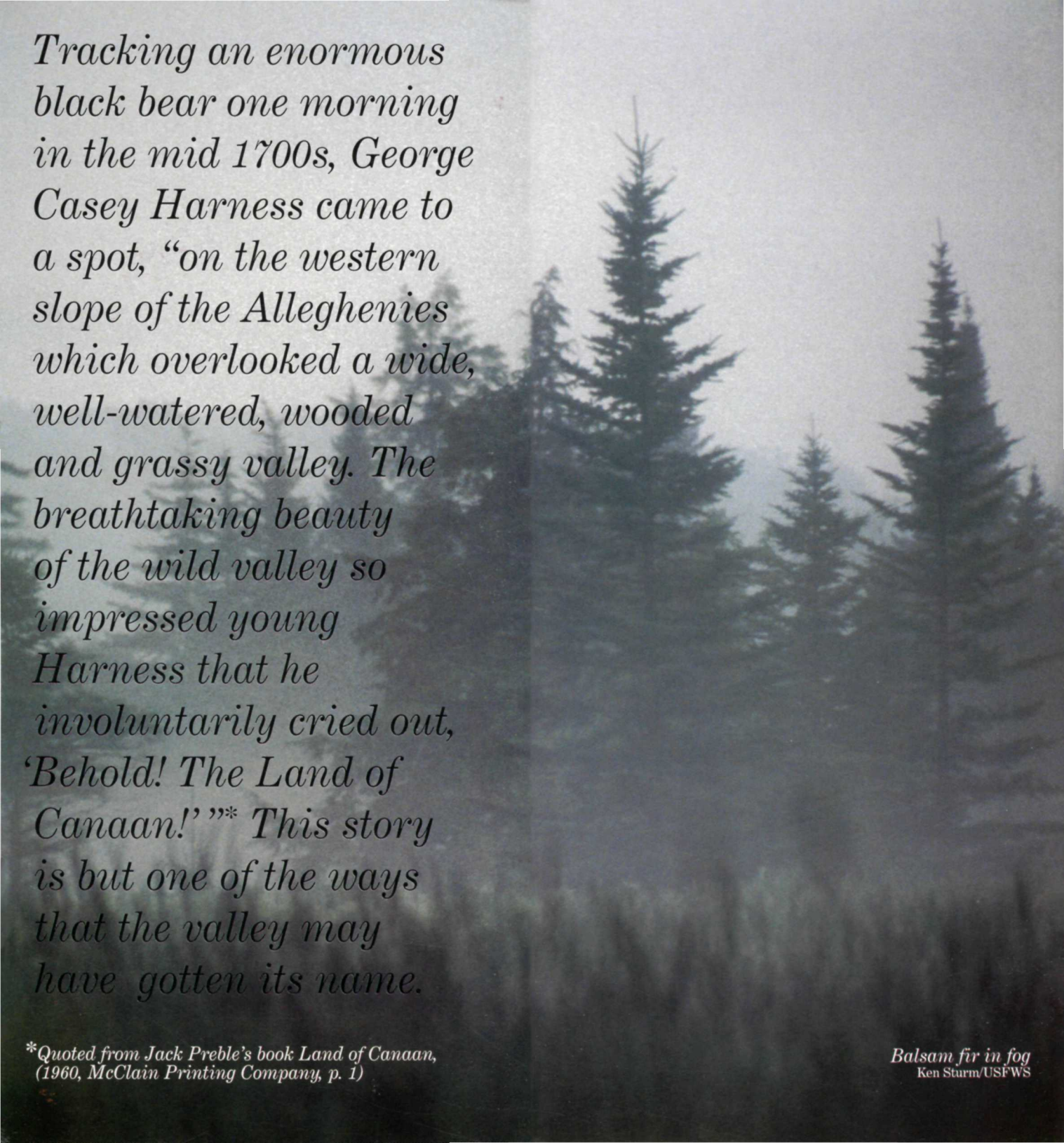
Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339

U.S. Fish & Wildlife Service
1 800/344 WILD
<http://www.fws.gov>

September 2002



Common yellowthroat
Ken Sturm/USFWS



Tracking an enormous black bear one morning in the mid 1700s, George Casey Harness came to a spot, “on the western slope of the Alleghenies which overlooked a wide, well-watered, wooded and grassy valley. The breathtaking beauty of the wild valley so impressed young Harness that he involuntarily cried out, ‘Behold! The Land of Canaan!’ ” This story is but one of the ways that the valley may have gotten its name.*

**Quoted from Jack Preble’s book *Land of Canaan*, (1960, McClain Printing Company, p. 1)*

Conserving the Nature of the Mountains

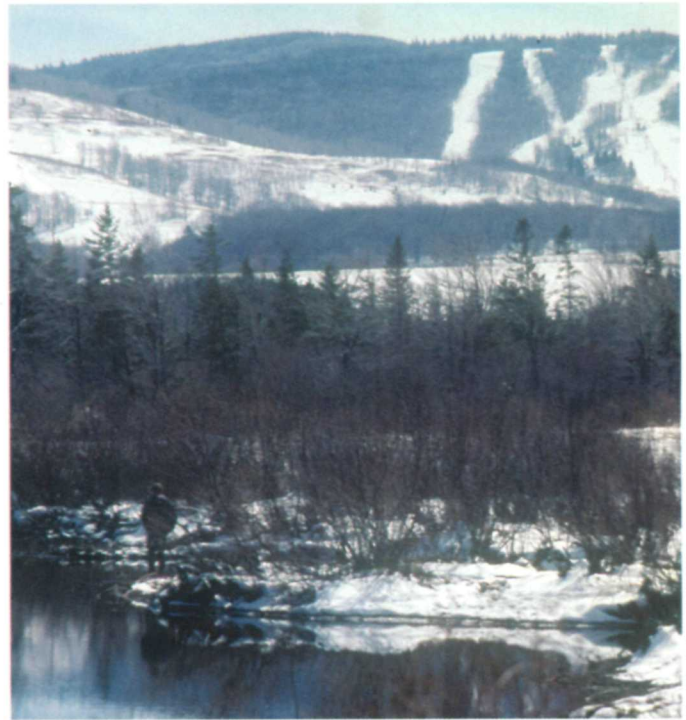
Welcome to Canaan Valley National Wildlife Refuge, the nation's 500th! The refuge works to preserve the unique wetlands and uplands of this high elevation, moist valley. You may enjoy the refuge by participating in wildlife-dependent recreation, including wildlife observation and photography, hunting, fishing, environmental education and interpretive programs.

The combination of wet soils, forests, shrub lands and open ground throughout the valley provides a diversity of wildlife habitat. In these habitats, animals, such as deer, raccoon, geese and squirrel are easy to see. Others, such as mink, bobcat and barred owls stay hidden most of the time. Beavers use trees to build dams, altering water levels to suit their needs. Woodcock treat us to their breeding display in spring. Elusive turkey and ruffed grouse provide a challenge for hunters. Along with native brook trout, you will also find other species of trout and bass in the river.



Beaver dam

On August 11, 1994, with the purchase of 86 acres, the refuge was established. It grew slowly at first. Then, with the purchase of about 12,000 acres in 2002, the refuge grew to 15,245 acres in size. There are 25,459 acres within the refuge acquisition boundary.



South Canaan Valley in the snow

History

During the last ice age 10,000-18,000 years ago, as the glaciers moved southward, northern species of plants and animals did also. The glaciers did not reach this area, and the northern plants and animals found refuge here. After the ice age, as the climate warmed, many northern plants and animals found new places to live high in the mountains where they could survive far south of what is now their normal range. Canaan Valley, the largest, high-elevation valley east of the Mississippi, is just such a place.

*Hermit thrush
nest on Cabin
Mt. XC ski trail*



Ken Sturm, USFWS

When early European explorers came to the area, game, fish and edible plants were plentiful in Canaan (pronounced Kah-nane') Valley. "Carpeted with delicious grasses and canopied with massive trees, cold streams teeming with speckled trout and enough wild game in the form of panthers, bears, elk, deer, otter and raccoon to last a man a lifetime



Valley view

of sport and subsistence, it was truly a paradise for man or beast.”* But the explorers also had a difficult time cutting their way through the dense tangled thickets of spruce and rhododendron, “where one could be hopelessly lost within shouting distance of his own camp.”†

*(Preble, 1960, p. 1-2.)

†(Preble, 1960, p. 2)

Dragonfly



In the late 1800s and early 1900s, while railroads delivered products to market, the area’s timber industry boomed. Forests of spruce, birch, cherry, beech and other trees were harvested, leaving branches and tree tops (slash) on the ground.

Without the shade, the soils, rich with decaying plants and slash began to dry. Fires began, ignited by lightning, people or sparks from trains. In some uplands, even the decaying plants burned, leaving inorganic soils exposed to the forces of erosion.

The logging and fires opened up what had been an impenetrable web. With the soils burned away, forests were slow to regenerate. The drier open areas grew into grasslands. Farming and grazing grew in importance. Today, the rugged and beautiful valley holds various wetlands, forests and grasslands.

Wetlands

There are relatively few places in West Virginia where ducks call, herons fly, and shorebirds probe the earth for food. Canaan Valley is such a place. Mallards, black ducks and wood ducks nest in the marshes. Solitary sandpipers and spotted sandpipers are found wherever a small pocket of wetland exists.



Sundew

Timid herons and snipe squawk in alarm and fly when encountered. Frogs and salamanders mate in the vernal pools. These are among the many animals you may find in Canaan Valley’s wetlands.

A patchwork of 23 wetland types, including bogs, shrub swamps and wet meadows, carpet the valley floor. At about 9,500 acres, this is the largest wetland complex in the state of West Virginia, and is a regionally significant wetland complex within the southern Appalachians. Currently, 5,370 acres of these wetlands are part of the refuge.

The ecological functions of wetlands provide valuable services to people. Wetlands absorb water and slow it down during heavy storms, reducing downstream flooding. This water retention helped reduce flooding just downstream of Canaan Valley’s wetlands in Davis in 1985. During times of drought, wetlands slowly release water. Along rivers, they buffer the shoreline, reducing the erosive effects of the water. They filter sediment, trash and pollutants. Without wetlands, we would need more water treatment plants, flood control projects, bank stabilization projects, and relief from natural disasters - all expensive propositions.

Aerial wetland





White-tail deer

Forests

Forests of beech, cherry, birch and maple cover the slopes of the mountains and add color to the fall. Scattered stands of spruce, balsam fir and hemlock remind us of the boreal forest that once dominated the valley. Squirrels, ruffed grouse, turkey and bear make their homes in these woodlands. Hermit thrush, ovenbirds and woodland warblers also find their place here. The world's largest diversity of salamanders find their niches in these and other southern Appalachian woodlands.

Canaan Valley's forests harbor threatened and endangered species. The endangered West Virginia northern flying squirrel and the threatened Cheat Mountain salamander are both found on the mountains, in areas with spruce forest cover.



West Virginia flying squirrel

Cheat Mountain salamander



Grasslands

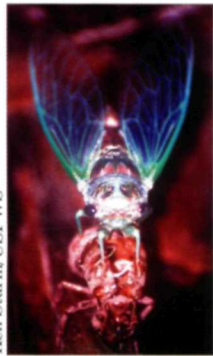
Grasslands are important for the wildlife that they hold, particularly grassland birds. Savannah, field and grasshopper sparrows, bobolink and meadowlark are a few of the species using the refuge's grassland management areas. Grassland habitat is in decline nationwide, and in the east, along their migratory path. This has led to a decline in grassland bird populations. The U.S. Fish and Wildlife Service is obligated by the Migratory Bird Treaty Act to conserve these birds. Thus, at this refuge, and throughout the northeastern United States, the Service studies how to offer these birds high quality habitat.

Grasslands are also important during the winter months. They provide hunting areas for rough-legged hawks and migrating northern harriers. The short vegetation allows raptors access to the small mammals who also call grasslands their home.

Field at morning light



A Refuge for People Too!



Ken Sturm/USFWS

Cicada emerging

We encourage wildlife-dependent forms of recreation. The refuge is open for nature observation, photography, hunting, fishing, environmental education and interpretive programs.

Parking and trail maps are available at all trail heads. You may use the trails for wildlife observation and photography. Please stay on the trails to minimize the disturbance to wildlife and plants.

The refuge has library resources for educators about wildlife and nature. Field study equipment is also available for educators. Educators may be classroom teachers or youth group (scout, etc.) leaders.

With the help of The Friends of the 500th, the refuge offers a regular schedule of programs and tours. Schedules are available at the visitor's center. Requests for special programs will be honored when possible, dependent on staff/volunteer availability.

The Friends of the 500th is a non-profit citizen's group that strengthens the refuge's educational and biological programs. The Friends invite visitors to join in supporting the important work of the refuge.

Winter tour



Jim Hudgins/USFWS



Want to Volunteer?

Volunteer opportunities are growing. Qualified volunteers are needed to lead refuge programs, assist with maintenance projects, staff the visitor center, help with special work days or with special events. There are also a limited number of opportunities for qualified volunteers to help with biological work.

Your Cooperation is Appreciated ...

Hours

The refuge is open from one hour before sunrise to one hour after sunset.

Permitted:

- Walking, cross-country skiing, and snowshoeing are allowed on designated routes. Please stay on these routes to minimize disturbance to wildlife.
- Horseback riding and bicycling to access wildlife-dependent recreation is allowed only on designated routes.
- Hunting is permitted in accordance with state and refuge regulations. Obtain a refuge hunt brochure for details. A refuge permit is required.
- Firearms are permitted only during refuge hunting seasons and must be unloaded and cased while in a vehicle.
- Dogs must be on a leash, attended and are restricted to designated routes except when used for hunting during refuge hunting seasons that allow the use of dogs.
- Fishing is subject to state regulations. Walking access is available from designated routes and parking areas.
- Please help keep the refuge clean. Littering is prohibited. Please take your trash with you.



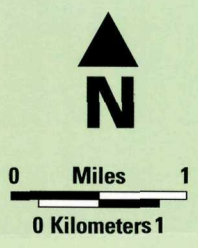
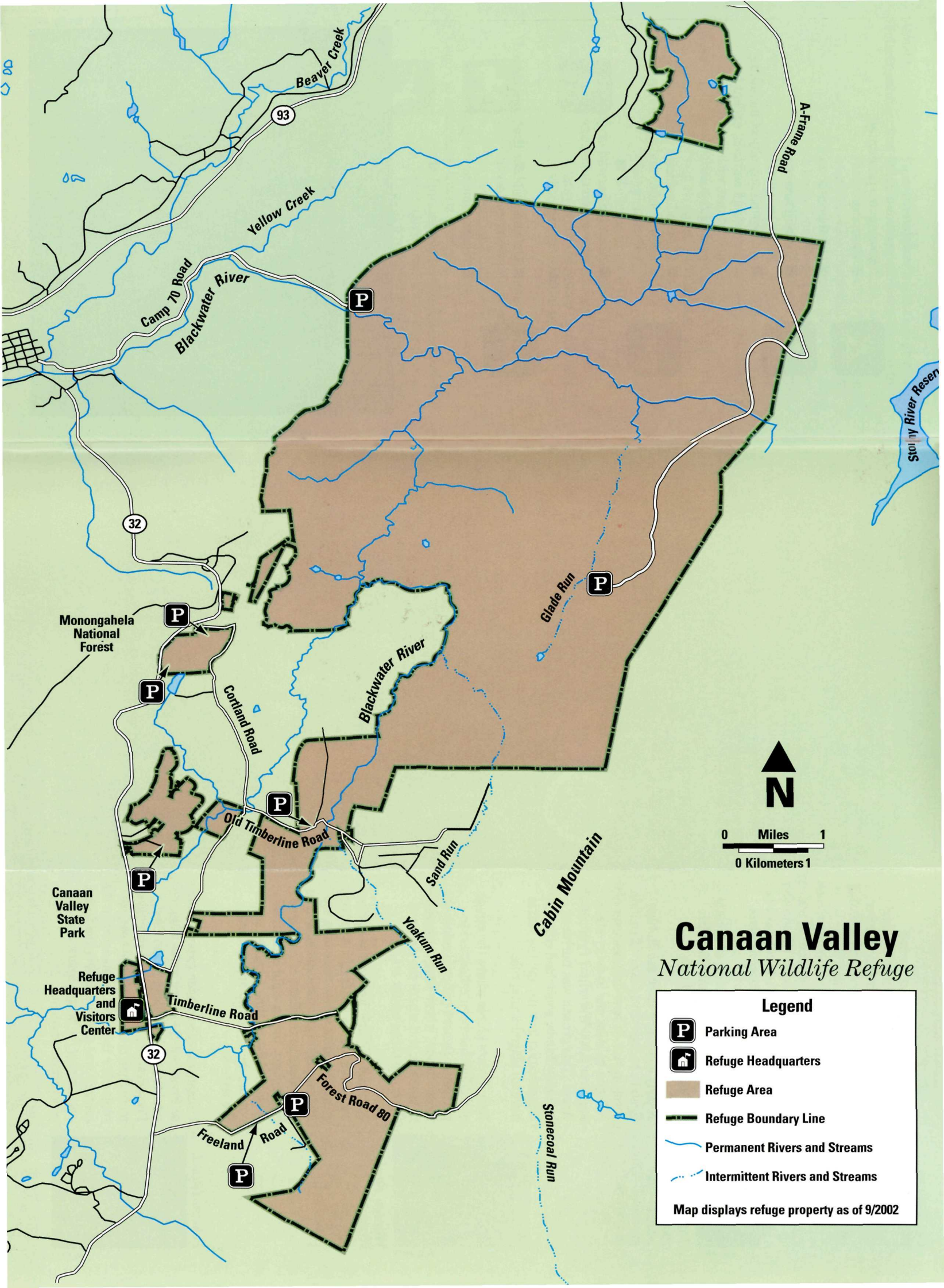
Prohibited:

To protect wildlife and visitors, the following are prohibited:

- Camping
- Open fires
- Cutting firewood
- Removing any object including plants and animals, except in accordance with hunting and fishing regulations.
- Off-road vehicles including snowmobiles and all terrain vehicles
- Abandoning wild or domestic animals on the refuge
- Jogging
- Driving on other than designated routes of travel
- No permanent structures such as tree stands, stairways or rope swings.

Tour on Freeland tract





Canaan Valley

National Wildlife Refuge

Legend

- Parking Area
- Refuge Headquarters
- Refuge Area
- Refuge Boundary Line
- Permanent Rivers and Streams
- Intermittent Rivers and Streams

Map displays refuge property as of 9/2002

Our National Wildlife Refuges



USFWS

"The past gives roots to our vision—our promises—for the future."



USFWS

Warden Paul Kroegel

Pelican Island



USFWS

In 1903, President Theodore Roosevelt ordered that a small shell-and-mangrove covered island in Florida's Indian River be forever protected as a "preserve and breeding grounds for native birds." Paul Kroegel, a sometime boat builder, cook and orange grower, was hired to watch over this 3-acre sanctuary. His mission was clear: *protect the island's pelicans from poachers and plume hunters.*

With this simple promise of wildlife protection, the **National Wildlife Refuge System** was born.

Nearly a century later, the Refuge System has grown to over 82 million acres in size. It now includes over 500 refuges, at least one in every state, and over 3,000 Waterfowl Production Areas. This growth was nurtured by many hands; concerned citizens, conservation groups, and the states have all played a vital role.

Refuges are places where the music of wildlife has been rehearsed to perfection, where nature's colors are most vibrant, where time is measured in seasons, and where the dance of the crane takes center stage.

National Wildlife Refuges are gifts to ourselves and to generations unborn ... simple gifts whose treasures are unwrapped every time someone lifts binoculars to the flash of feathered color, every time a child overturns a rock, and every time a hunter sets out the decoys or an angler casts the waters.

Canaan Valley's mission today is much as President Roosevelt's was when he established the Pelican Island Bird Preservation. While the job now takes more than one man and one boat, we remember the promise made when the century was new—*preserve wildlife and habitat for people today, and for generations to come.*

Cabeza Prieta National Wildlife Refuge
1611 North Second Avenue
Ajo, Arizona 85321
520/387-6483/5226
520/387-5359 Fax
<http://southwest.fws.gov>

U.S. Fish & Wildlife Service
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Cabeza Prieta

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Cover: Cabeza Prieta
Peak. USFWS photo