

Squaw Creek National Wildlife Refuge
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1-800/735 2966 (TTY)
Persons with hearing impairments can
contact Squaw Creek by calling the
Federal Information Relay System at
1 800/877 8339.

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



U.S. Fish & Wildlife Service

Squaw Creek

National Wildlife Refuge



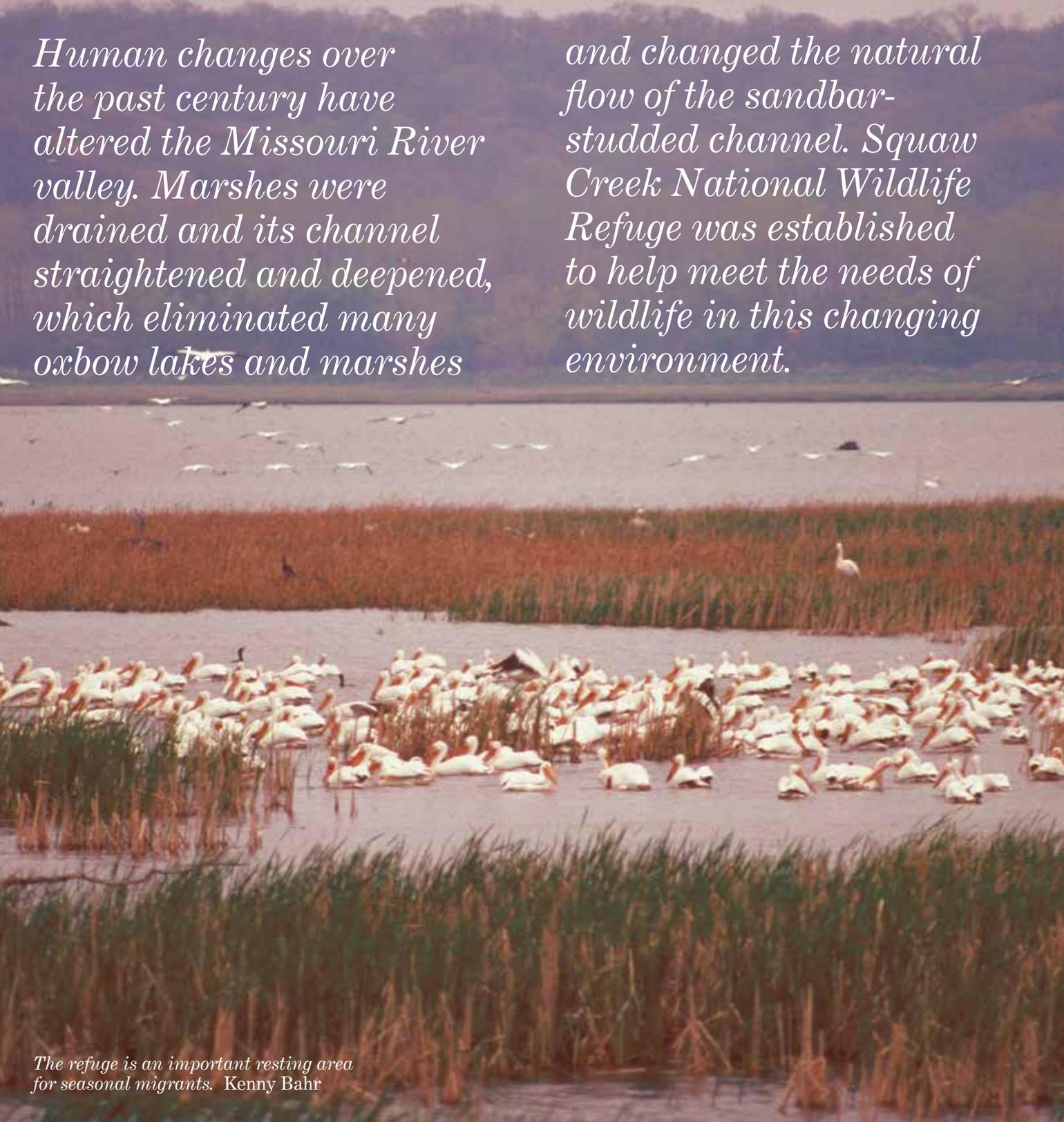
Revised March 2010

Bald Eagle, Ken Bahr

Human changes over the past century have altered the Missouri River valley. Marshes were drained and its channel straightened and deepened, which eliminated many oxbow lakes and marshes

and changed the natural flow of the sandbar-studded channel. Squaw Creek National Wildlife Refuge was established to help meet the needs of wildlife in this changing environment.

The refuge is an important resting area for seasonal migrants. Kenny Bahr





Squaw Creek

Squaw Creek National Wildlife Refuge was established in 1935 by President Franklin D. Roosevelt as a refuge and breeding ground for migratory birds and other wildlife. Many of Squaw Creek's roads, trails, dikes, and buildings were constructed by the Civilian Conservation Corps (CCC) in 1935 and 1936. The CCC camp was located in Mound City.

The refuge comprises 7,415 acres along the eastern edge of the Missouri River floodplain and is located in northwest Missouri, 30 miles northwest of St. Joseph, and 100 miles north of Kansas City, Missouri.



Missouri River Basin

For thousands of years, time in the Missouri River Basin has been measured by the annual migration of waterfowl. Each spring and fall, northwestern Missouri is invaded by a cacophony of ducks and geese stopping to rest and fuel their bodies for the seasonal migration between northern breeding grounds and southern wintering areas.



This blue goose, designed by J.N. "Ding" Darling, has become a symbol of the National Wildlife Refuge System.

Photos: Mallard (above left) and Great Egret (below), Kenny Bahr



Origins of the Refuge System

President Theodore Roosevelt established tiny Pelican Island National Wildlife Refuge, near the east coast of Florida, on March 14, 1903, because he was concerned about plummeting wading bird populations. Hunters had been killing brown pelicans for their feathers, called plumes, for making women's hats. Paul Kroegel, a sometime cook, boat builder and orange grower, was hired to watch over the three-acre, shell-and-mangrove covered island in Florida's Indian River. Today, a century later, the National Wildlife Refuge System has grown to more than 100 million acres and more than 550 refuges.



From top: Pelican Island, President Theodore Roosevelt, and Warden Paul Kroegel. USFWS

Loess Hills



A Unique Habitat

Overlooking the refuge from the east, visitors can see the loess hills, a geologic formation of fine silt deposited during the past glacial period. Loess (pronounced “luss”) soil mounds are the parent material for rich agricultural soils, and are found in major river valleys throughout the world, including Germany (where the word “loess” originated), China, Russia, and along the Missouri, lower Mississippi and Platte rivers.

Here, the hills stretch from about 30 miles south of St. Joseph, Missouri, to extreme northern Iowa. Some of the last parcels of native plants, of a once vast native prairie, can be found here. Native Americans frequented these hills and regarded many of the hilltops as sacred. Today, the breathtaking beauty of the hills remains the same as it was for the early explorers, Lewis and Clark.

The undisturbed portion of the south-facing slopes support remnants of Missouri’s native prairie, including Indian grass, big bluestem, blazing star, and compass plant, as well as yucca, beard-tongue, and skeleton plant.

The north-facing slopes are covered by mature oak-hickory woodlands where the Eastern towhee, American robin, white-breasted nuthatch, black-capped chickadee and several species of woodpeckers, vireos, tanagers can be seen during the summer. A careful observer might even see a wood duck roosting in a tree near its nest. Each of these species has its own habitat requirements.



Photos: *Big bluestem* (top)
Jim Brandenburg

Red-bellied woodpecker (above)
D. Menke, USFWS

Wood duck (right)
B. Angus, USFWS



Woodland Wildlife



The most common trees along the roadsides and ditches of the refuge are Eastern cottonwood, silver maple and willow. These woodlands are good places to see hawks and bald eagles that use the area for resting and feeding. White-tailed deer and turkey are also common in the woodlands, and bobwhite quail and ring-necked pheasants may flush from the grassy edge along the auto tour route.

Grassland

Early settlers discovered more than 15 million acres of native grasses distributed throughout Missouri, but the tallgrass prairies, consisting primarily of big bluestem, little bluestem, Indian grass, and switchgrass, have nearly vanished in the Midwest. Some native prairie has been restored on the loess hills and in the bottomland. Red-tailed hawks and great horned owls hunt for mice and voles in these grasslands.

Photos: *White-tailed deer* (top)
Kenny Bahr

Indian grass (below)
B. Angus, USFWS



Cropland

The refuge’s cropland program is conducted through cooperative farming agreements with local farmers, who plant corn and soybeans. Croplands help wildlife by supplementing natural food sources, creating diverse habitats and providing wildlife observation opportunities. Turkey, mallard, bobwhite quail, red-winged blackbird and deer are seen here.

Wetlands



Squaw Creek's wetlands attract as many as 400,000 snow geese during spring and fall migrations. Wetlands range from open pools and mud flats to flooded woodlands and cattail-filled marshes. Diving ducks, such as the lesser scaup and ruddy duck, prefer deeper open waters where they can dive for food. Others, like the blue-winged teal and mallard, prefer shallow areas where they can dabble in water-filled ditches, flooded woodlands and cattail marshes.



Dome-shaped muskrat houses dot the large wetlands and make handy perches for bald eagles, double-crested cormorants and nesting Canada geese. In the shallow reedy marshes, secretive species like the sora rail and the least bittern are heard but seldom seen. In the evening, the marshes are filled with thousands of roosting red-winged blackbirds and, occasionally, yellow-headed blackbirds. The great blue heron hunts on long legs in the open shallow water, using its sharp beak to spear food.



Moist Soil Units

There are fourteen moist soil marsh units on the refuge. Water levels are drawn down during the spring so sandpipers, plovers, dowitchers, and other shorebirds can probe for invertebrates in sandbars and mudflats.

Bald eagle, USFWS



Smartweed, rice cutgrass and wild millet grow over the summer. When the units are flooded in the fall, hundreds of thousands of waterfowl gather to rest and feed upon these moist soil plants. They are followed by bald eagles who scavenge on the sick, injured or dead birds. Eagle numbers range from 300 to 400 in late November and early December.



Photos opposite page (from top: *Ruddy duck*, G. Smart, USFWS

Dabbling duck, USFWS

Bald eagles, Charlie Pollick

Least bittern, R. Bell, USFWS

Feasting eagle, D. Menke, USFWS

Snow Goose Pool, USFWS

Managing for Wildlife

Squaw Creek's main purpose is to provide habitat for migratory birds and other wildlife. Habitats include:

- n wetlands (3,400 acres),
- n grasslands (2,100 acres),
- n forests (1,560 acres) and
- n croplands (400 acres).

Mowing, prescribed burning and water level manipulation are used to manage these habitats, and cooperative farming and haying are used to supplement them.

The wetlands are subdivided into independently managed marshes and regulated to provide feeding and resting areas for migratory birds. The marsh pools are about three feet deep, replenished by Squaw and Davis Creeks, a well on Mallard Marsh and natural precipitation. These pools also provide summer nesting habitats for a variety of marsh birds and cover for amphibians and reptiles.

Prescribed burning is used to control woody plants, such as the locust tree, and regenerate valued plants, such as skeleton plants and native grasses.

Biological research and surveys are conducted to learn more about federal and state threatened and endangered species. Species of concern which may be observed on the refuge include the bald eagle, peregrine falcon, piping plover and the (state endangered) Eastern massasauga rattlesnake.

Massasauga rattlesnake, M. Blair





Squaw Creek National Wildlife Refuge

- Refuge Boundary
 - Wild Goose Interpretive Auto Tour Loop (10 mi.)
 - Mallard Marsh Auxiliary Loop (2.5 mi.)
 - Eagle Pool Overlook Hiking Trail (1.5 mi.)
 - Boardwalk
 - Interpretive Auto Tour
 - Interpretive Hiking Trail
 - Hiking Trail
 - Observation Tower
 - Parking
 - Refuge Headquarters
 - Restrooms
- Loess Bluff Interpretive Trails (3 mi.)
 - Loess Bluff Trail (1.5 mi.)
 - Munkres Homestead Trail (1.5 mi.)
 - Mike Callow Memorial Trail (.5 mi.)

Restrooms are only available at headquarters and the comfort station at the headquarters parking lot.



Wildlife

Squaw Creek is rich in wildlife diversity. Over 30 species of mammals, almost 40 species of reptiles and amphibians, and over 300 species of birds reside here. During the peak migration over 400,000 snow geese and more than 100,000 other waterfowl create an incredible sight! Early waterfowl migrants include pintail, gadwall, and teal which are soon followed by mallards, snow geese, and Canada geese.

Beaver and muskrat find food and cover in the marsh, coyotes and bobcats hunt the uplands and white-tailed deer seek shelter in willow thickets and groves of cottonwood trees. Great blue herons wade in shallow ponds and sandpipers traverse water's edge, leaving delicate tracks in the mud.

Bald eagles migrate into the refuge in the late fall and early winter. As many as 300 immature and adult bald eagles, and an occasional golden eagle, may be seen here around the first week of December. The first recorded successful bald eagle nest fledged three young eaglets in the summer of 1997.

America's National Symbol



Observation Opportunities

There are excellent opportunities to see wildlife in its natural setting at Squaw Creek. Refuge roads and foot trails provide access to many wildlife observation areas. Viewing towers provide ideal vantage points to observe and photograph wildlife. From a point high on the Loess Bluff Trail, hikers can view the floodplain and much of the refuge. And, on a clear day, you can even see parts of Kansas and Nebraska!



Photos (from top): *Pintail duck*, USFWS

Snow geese, D. Menke, USFWS

Bald eagle, USFWS

Although camping is not permitted on the refuge, camping facilities are available at Big Lake State Park, eight miles west of the refuge. Restroom facilities are available at the comfort station in the refuge headquarters visitor parking lot. The visitor contact



Exploring the refuge, USFWS

station and office hours are Monday-Friday, 7:30 a.m. to 4:00 p.m. On week-ends, (mid-October through early-December and mid-March through early May) the visitor contact station is open from 10:00 a.m. to 4:00 p.m.

Refuge Trails

Loess Bluff Interpretive Trails are a combination of the 1.5 mile Loess Bluff Trail and the 1.5 mile Munkres Homestead Trail. Trails in the hills are on wood chip surfaces. The hike is moderately difficult, due to the ascent of the 200 stone steps, which were hand-laid by the CCC. The forty-five minute trails start at the visitor contact station and meander onto the top of the Loess Hills, with a 200-foot rise in elevation.

Loess Bluff Trails



Munkres Homestead

Mr. Munkres was a maintenance employee for the Squaw Creek refuge for over 27 years. His property is symbolic of early mid-1840 homestead settlements in the country. Both directions of the trail system will return hikers to the main parking lot or the visitor contact station.

Mike Callow Memorial Trail



This out-and-back trail is dedicated to former Squaw Creek Refuge employee James Michael "Mike" Callow, who died in an airplane accident in 1998 while conducting an aerial wildlife study on Oregon's Columbia River. The ¼-mile trail is paved, accessible, relatively flat and an easy walk that parallels Highway 159. It skirts the edge of the loess hill woodlands and extends to the foothills of the loess hill. The trail head starts at the visitor parking lot.

Eagle Overlook Trail



This trail measures three-quarters of a mile and extends between Eagle and Pelican Pools. There is an observation tower which provides good views of both pools. The surface is grassy, fairly level, and easy hiking. Wildlife can be observed along the levee, which places the visitor in the middle of the two large wetlands.

Auto Tour

The auto tour route is open daily during daylight hours. This ten-mile, one-way auto tour loop allows visitors to view wildlife in a natural setting. Visitors have the option of using the Mallard Marsh auxiliary drive, which exits on Highway 118, or returning to the main loop to complete the auto tour route. The auto tour offers good viewing year round, especially in the fall and winter when white-tailed deer, coyotes and other wildlife are active before dusk. Birds of prey, waterfowl and muskrat are often observed in the marshes and pools from the auto tour route. Roads may be closed during flooding, hazardous conditions or special events.

Visitor Use

Refuge visitors participate in wildlife observation, photography, fishing, hiking, bicycling, environmental education, interpretation and mushroom hunting and deer hunting (by permit only) activities. Squaw Creek was officially named one of America's top 500 *Globally Important Bird Areas* by the national nonprofit organization American Bird Conservancy in 2001.



"That's a lot of geese!"
USFWS

Observation & Photography



Enjoy Your Visit!

Most bird watching occurs on refuge trails and along the auto tour route and tour route pull-offs. Photography is permitted from the observation platform, eagle overlook tower, hiking trails and from the auto tour roadside shoulders.

Fishing



Fishing is best from March to December depending on water levels in the creeks and pools. A spring snagging season for rough or non-game fish is available as conditions permit, in accordance with state fishing regulations.

Hiking & Bicycling



All trails and the auto tour are open for hiking, but bicycling is permitted only on the auto tour route. Please observe and obey Closed Area signs in designated areas.

Environmental Education



Teaching school groups, G. Scheil

Environmental education field activities can be conducted on the refuge. Teachers and students are encouraged to participate in learning situations where they are actively involved in problem solving in natural and man-made environments. A primary goal for the environmental education program is to assist educators and students in understanding the role the refuge plays in fish, wildlife, plant, and cultural/historical resource conservation.

Interpretation and Recreation

Programs are scheduled throughout the year and during special events, such as *International Migratory Bird Day* (second Saturday in May), *National Wildlife Refuge Week* (second full week in October) and *Eagle Days* (first full weekend in December).

Mushroom Picking

Morel mushroom hunting is permitted only in the loess hills from mid-April to mid-May.

Deer Hunting



The managed deer hunt is held on the refuge during a weekend in early January. It is by permit only for antlerless deer using black powder weapons.

Calendar of Events

January-February

The most prominent species in winter are pheasants, hawks, coyotes and a large, wintering deer herd. Dress warmly and be prepared to walk as the roads may be closed by snow drifts.

February-April

The northward migration of waterfowl is best observed at this time of year. It's also the best time to see waterfowl in brightly-colored plumage. Some years, in their haste to get to nesting grounds, the birds bypass the refuge and there are no large concentrations of waterfowl.

March-May

Redbud time - a wonderful time for a hike in the loess hills to observe wild flowers, butterflies, and passerine birds.

April-December

The refuge is open to public fishing. A state license, but no special permit, is required. State laws govern methods and limits.

April-May

Peak of warbler and shorebird migration.

June

Deer fawns and pheasant broods may be seen along the auto tour route.

July-August

American lotus is in bloom on refuge impoundments.

August-September

Shorebirds are on mudflats around refuge impoundments. White pelicans and cormorants are found in open pools.

October-November

Fall waterfowl migration is in full swing and concentrations of up to 400,000 snow geese and more than 100,000 ducks are common. Muskrat houses can be seen in pools.

November-January

One of the largest concentrations of bald eagles in the lower 48 states may be seen here. More than 300 birds are possible during the peak migration.

Volunteers



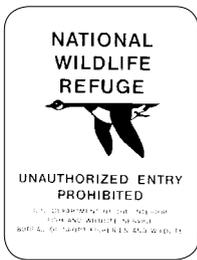
Friends

Refuge Support Groups

The refuge has had an active volunteer program since 1986 and utilizes volunteers in many areas of the refuge management program. Volunteers assist refuge staff with trail maintenance, visitor contact station operation, general maintenance, clerical duties, educational and interpretation programs, photography, and biological projects. Volunteers play a vital role in helping conduct resource management programs on the refuge and in public outreach efforts. If you would like to volunteer, please contact the refuge for further information.

The *Friends of Squaw Creek National Wildlife Refuge*, established in April 2000, is a nonprofit public organization dedicated to conserving the natural and cultural resources of the refuge and its surrounding area. These citizens support the refuge and its resources by generously donating time, materials, expertise and funds. Join Squaw Creek's Friends and be a part of the community partnership. For more information see the Friends website at www.squawcreek.org.





Refuge Rules & Regulations

- Squaw Creek's habitats are delicate ecosystems; public access must be regulated. Help protect our wildlife heritage by observing refuge signs and regulations.

- Although camping is not permitted on the refuge, campsites are available nearby at Big Lake State Park. The Big Lake State Park can be reached by calling 660/442 3770.

- Fireworks, air guns, and all other weapons are prohibited.

- Pets must be kept on a leash.

- Introduction, collection or destruction of plant and animal life is prohibited.

- Disorderly conduct or disturbance of the peace is prohibited. No intoxicated person will enter or remain upon the refuge.

- Snowmobiles, ATVs and other unlicensed vehicles are prohibited on the refuge.

- Please pack out what you pack in! Please leave the area cleaner than you found it. Open fires are prohibited.
- The refuge is a day use area only. Closing hours are posted at entrance and exit points on the refuge. Refuge gates are closed 30 minutes prior to sunset. Roads may be closed during flooding or for hazardous conditions.

