





Great blue heron

Welcome

Welcome to the Montezuma National Wildlife Refuge! Establishment of the Refuge by the U.S. Fish & Wildlife Service (USFWS) in 1938 was the first step of many to restore the area back to its historic expanse of marshes. Once drained as a result of dam and canal construction, area wildlife virtually went the way of the water—gone. But, with the help of the Civilian Conservation Corps, a series of constructed dikes began to hold water and wildlife returned.

All illustrations: Kristina Raab Today, Montezuma NWR continues to work toward restoring the historic Montezuma Marshes and other wildlife habitats. As part of the Montezuma Wetlands Complex—a partnership between the USFWS, the New York State Department of Environmental Conservation, Audubon NY, Ducks Unlimited, the Nature Conservancy, private landowners, and other special interest groups—the Refuge acquires land through deed or easement and restores it to provide critical habitat to migratory birds and other wildlife.

You, too, can benefit from the wonders of Montezuma! The refuge offers a variety of opportunities to our visitors. Whether you take a slow drive down the Wildlife Drive, visit Tschache Pool in search of the bald eagles, or stroll the Esker Brook Trails, you're likely to see wildlife.

The Visitor Center and Nature Store are open spring through fall, 10:00 am to 3:00 pm. We are staffed by volunteers, and so the days we are open may vary. Please check the Refuge website for general open/closed information, and call the Refuge for daily open/closed information.

We hope you find the refuge peaceful and exciting at once. Visit often, for it's a new experience every time!

Water Gives Life

Wetlands are some of the most productive habitats in nature. Waterloving plants thrive here because of the wet, nutrient-rich soils, while many species of birds depend on wetlands for their supply of plants, fish, worms, and shellfish. From April through November, Montezuma's wetlands support tens of thousands of ducks and geese. May through mid-October brings several different kinds of shorebirds. Watch the water's edge to see wading birds hunt for fish along the shores.

Wetlands benefit you too! They act as filters, cleaning the water of



pollutants before it flows into the rivers that will take it to the ocean. Wetlands also act as sponge-like buffers between the land and large bodies of water by absorbing excess water from storms & floods—often protecting our lives & homes.

Water Management Makes Great Habitat

Keeping the refuge a productive place for wildlife is all about the water! All of the refuge pools are shallow. averaging about 1.5 feet deep. The actual depth of the water in any pool at any given season is carefully planned and managed to create the best "mix" of plants and open water. Ideally, this "mix" is 1/3 emergent plants (like cattail), 1/3 submerged aquatics (like bladderwort), and 1/3 open water. Such a mix provides prime habitat for wildlife to rest, feed, nest, and rear young by offering food (plants, insects and crustaceans), shelter, nesting materials, and water.

To keep the ideal mix of plants and water for wildlife, the refuge's pools are drained periodically, exposing the soil to warm sunlight. This allows new plants to grow. To refill the pool, water is either pumped in small volumes from canal to pool or the pool is filled by rain.

Invasive species pose great threats

Threats to the refuge's pools include invasive or non-native species such as the plant, purple loosestrife, and the fish, carp. Both of these species originated overseas and can take over the pools if not kept in check. Purple loosestrife, which can take over and fill in a marsh, is kept under control at Montezuma through a program by a Cornell University scientist, who studied and then released beetles that eat only purple loosestrife. These beetles have kept the plant at bay, allowing the marshes here to flourish.

Carp are attracted to the warm water of the shallow pools. At the Seneca Spillway along the Wildlife Drive,



 $50\ percent\ water$ - $50\ percent\ vegetation$



Drained - full of plants



Open water



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Wood duck pair

Grassland Management Yields Food & Shelter you can get out of your car and often see thousands of carp trying to get into the Main Pool (typically in May). Gates at the outlet keep the carp in the canal, but a few have made it into the Mail Pool during times of flooding. If left unchecked, carp can destroy the water's quality by stirring up the muck on the bottom, thereby choking out the light and oxygen in the water. Thanks to our fish-eating friends like heron, eagles, and osprey, the carp in the Main Pool have not become a big problem.

Grasslands provide critical habitat to migratory birds and other wildlife. Whether providing a place to nest for mallards and bobolink, or feeding grounds for hawks and fox, grasslands are an important part of Montezuma. To prevent the encroachment of woody plants and undesirable species, refuge staff and partners use prescribed burning, periodic mowing, and the planting of desirable grass and wildflower seed mixes.

Shrublands Mean Prime Real Estate for Some Wildlife

Many people don't think much of shrublands. They are hard to see into or walk through, but that is just why some animals like them. Wildlife, like rabbits and American woodcock, can hide and rest here. They can eat well here, too! Shrubs offer berries and fruit eaten by many different birds and mammals. A walk along the South Spring Trail will bring you past a shrubland habitat.

Woodcock chick





Osprey and Great blue heron

Forests Teem with Life Much of the refuge's forests are in areas that flood easily. The damp soils create rich insect and amphibian breeding habitats. These species become prey for birds such as woodcock and barred owl, for mammals such as mink and raccoon, and for reptiles such as smooth green snakes. Forests often act as passageways that allow wildlife to move from one habitat to another. At Montezuma, the nearly threatened cerulean warbler depends on these forests for nesting.

When to Watch

The best time of day to view wildlife is dawn to mid-morning or late-afternoon to dark. The refuge is open from ½ hour before sunrise to ½ hour after sunset.

Spring Migration

Bobolink



Late February – April. Canada and snow geese number in the tens of thousands. Many species of ducks stop on their way to breeding grounds farther north. Look for ringnecks, hooded mergansers, shovelers, mallards, widgeon and canvasbacks. Listen for spring peepers and tree

frogs in the shallow ponds. Shorebirds are common early-May to mid-June. Watch for peregrine falcons and other birds of prey swooping over

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congregations of shorebirds in search of a meal. Warblers peak mid-May. Visit the Esker Brook Trails for your best chance to view these little migrants.

Summer Nesting/Brood-rearing
Bald eagles generally hatch midApril. Young eagles are often spotted
atop muskrat houses on the Main Pool
and Tschache Pool. Osprey hatch by
mid-May and grow quick and strong
for their fall migration—some go as
far as South America.

Canada geese and several duck species nest on the refuge beginning in early-March. Watch for broods in early-May and see them grow throughout the summer. Scan the water at the beginning and end of the Wildlife Drive to see wood duck broods. Piedbilled grebes and American coots also nest and raise young here. Great blue herons nest in the woods adjacent to the Main Pool; although the rookery is not visible from the Wildlife Drive. herons make a good show throughout the summer (also look for green and black-crowned night herons, and America bittern). Cerulean warblers, rare in New York State, often nest in the trees at the head of the Wildlife Drive, along the Seneca Trail, or around May's Point. Black terns also nest on the Refuge; their nesting population is increasing over time thanks to the refuge's ability to manage water levels.

Fall Migration

Mid-August through mid-October offers great opportunities to view shorebirds (peak in September). Killdeer, yellowlegs, and plovers feast on the exposed mudflats. Montezuma boasts several areas managed for shorebirds. Ask at the Visitor Center to see which one's hot!

Mid-September to freeze-up, geese and waterfowl come back through the refuge on their way south to wintering grounds. Mid-November, waterfowl numbers peak to the tens of thousands! Watch too for eagles and other birds of prey as they make their way to open water and/or winter grounds further south.

Winter Wildlife

The Wildlife Drive is closed in winter. You can walk, cross-country ski or snow shoe on the refuge's nature trails, taking advantage of the excellent opportunity to see white-tailed deer, fox, small mammals and resident birds such as woodpeckers, nuthatches, cardinals, and chickadees (Note: Walking trails are closed from November 1 through the end of New York State's white-tailed deer hunting season). Our bald eagles also stay the winter, as long as the canals remain unfrozen.

Bald eagle in flight











Identification Guide

Osprey – fish-eating hawk; call a series of clear whistles

Northern harrier – also called marsh hawk; seen flying low over marshes; note white rump patch

Bald eagle – large, dark with white head and tail; immature eagles mostly brown with some white mottling after 1st year; broad, straight-edged wings kept nearly flat while soaring; call weak, flat, chirping whistles

Coot – duck-sized bird, dark gray with black head, white bill and large, lobed feet

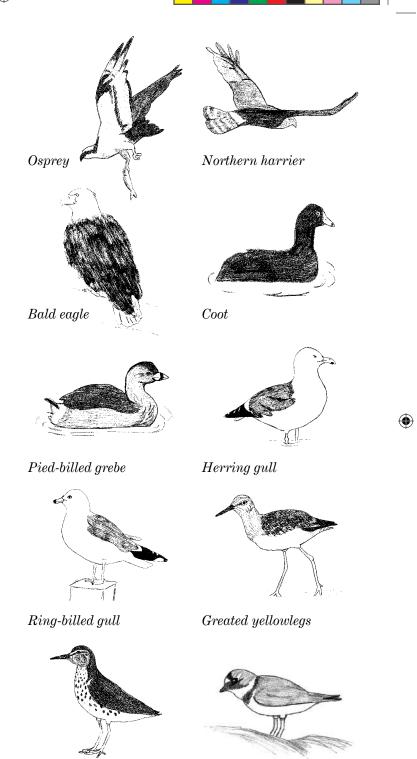
Pied-billed grebe – small, duck-like; tawny brown with thick bill that's whitish with a black band when breeding; called "hell-diver" because it quickly dives under water; eats fish

Herring gull – most widespread large gull; varies in size, shape and plumage; pink legs; relatively slender compared to other large gulls but variations make it confusing to identify

Ring-billed gull – smaller than Herring gull with relatively shorter bill; broad black ring on bill; yellow legs

Greater yellowlegs – common shorebird in spring and fall; taller than other shorebirds here; long yellow legs; flight call a loud deew deew deew

Spotted sandpiper – distinctive shorebird; often found singly at water's edge; short-necked and longtailed; moves with an exaggerated bobbing motion; flight call high, whistled twii twii or descending peet weet weet



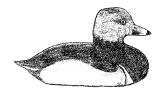
Semipalmated plover

Spotted sandpiper

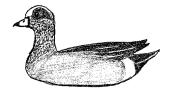




 $Northern\ shoveler$



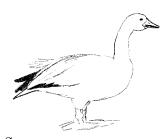
Ring-necked duck



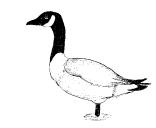
American wigeon



Hooded merganser



 $Snow\ goose$



Canada goose



Wood duck



Blue-winged teal



Tree swallow



Red-winged blackbird

Semipalmated plover – shorebird found mainly on mudflats; relatively long-winged and large-headed; dark brown back and yellow-orange legs distinctive; stubby orange bill; flight call a short husky whitle chuWEE or kweet

Northern shoveler – medium-sized duck with spatula-like bill; feeds by skimming water or filtering mud with bill; resembles mallard due to green head

Ring-necked duck – smallish duck with distinctive peaked head; white ring on bill of male obvious; very common in spring and fall

American wigeon – common duck on Main and Tschache Pools; has somewhat long, pointed tail and rounded head; note dark eye-patch and white on upper wing; adult male sports whitish patch from bill to forehead

Hooded merganser – small diving duck; male has black and white crest on head

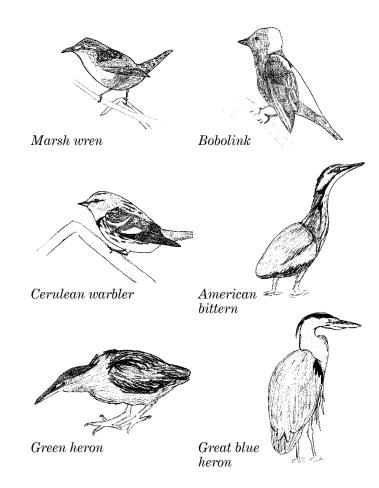
Snow goose – stocky, short-necked goose; typically white with black wingtips; darker color phases may be present

Canada goose – very common; black neck and head, white patch on cheeks

Wood duck – smaller than a mallard; nests in tree cavity or box provided; male ornately colored; female has white eye-patch

Blue-winged teal – small, but longbodied and long-billed; blue wing patch visible in flight; male has white crescent on cheek and white hip-patch





Tree swallow – small, iridescent blue-green with white belly and slightly forked tail; seen swooping over fields and water; will nest in bluebird boxes around Visitor Center

Red-winged blackbird – black bird with red shoulder patches on males; nest in cattails and *Phragmites*

Marsh wren – very small brown bird; nest in grasses and reeds; call a buzzing rattle

Bobolink – found in grasslands or weedy meadows; black bird with

white rump and shoulder patches and straw-colored nape on males; females most resemble sparrows but larger

Cerulean warbler – nests in tall broadleaf trees near water; adult male is striking sky blue above and white below with narrow, dark breastband and dark streaks; female is a unique blue-green above

American bittern – secretive; more easily heard than seen; song a deep, gulping, pounding Bloonk-adonk repeated; large and heavy-bodied with relatively long neck tapering to pointed tail; bold stripes on neck

Green heron – small, stocky heron with greenish back and reddish neck and breast; dark compared to nightherons and bitterns

Great blue heron – large, gray body (shade varies), long legs; white face with black plumes on head; strong, heavy bill

Reference: Sibley, David A. National Audubon Society The Sibley Guide to Birds. Alfred A. Knopf, New York, Chanticleer Press, Inc. 2000.

Where to Watch

Visitor Center Viewing Deck
The Visitor Center's main- and upperlevel decks offer great opportunities
to view a sample cross-section of the
refuge. Refuge staff and volunteers
restored this once old field, plagued
with invasive species, to a healthy
range of habitat. From grassland to
marsh, and the capability to manage
the area to attract shorebirds, this
area showcases the refuge's habitats
and wildlife!

Viewing Towers & Overlooks
As you travel the refuge, take
advantage of the several observation
towers and overlook decks. At
our **Headquarters**, a tower and
wheelchair accessible deck are

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located along the Seneca Trail from the parking area just before the Wildlife Drive. Along the Drive, areas marked with a brown and white binocular sign indicate places to step out of your car for better viewing. Please stay with your car; do not park on the Drive and then walk along it. Walking and bicycling are permitted along the Wildlife Drive from May 25 through August 15; you must park in the Visitor Center parking area, not along the Drive. Near the end of the Drive and next to the bald eagle sculpture, a viewing platform offers great views of our newly restored cattail marsh and Maple Island.

From State Route 89, an observation tower at **Tschache Pool** gives you a bird's eye view of this wetland so popular with waterfowl, bald eagles, osprey, *and* visitors. The observation deck at **May's Point Pool** looks over a classic marsh. North and South Spring Pools have parking areas so you may stop to view the wildlife in the pools.

Seneca Trail

This one-mile loop meanders the perimeter of the refuge's headquarters. Observation areas and restrooms are accessible from the Visitor Center parking area and from the seasonal floating dock located on the canal at the beginning of the Wildlife Drive. The field opposite the viewing tower is a designated Monarch Waystation, providing excellent habitat for monarch butterflies! The trail is open yearround, except during the late archery deer season. Dogs on-leash are permitted on this trail.

Wildlife Drive

This 3-mile, one-way drive traverses the edge of the Refuge's Main Pool, ending at State Route 89. Pull over for viewing any time, but: 1.) from

Photographer



April through May and mid-August through November, please remain in your car until you reach designated viewing areas; 2.) when the trail is open for pedestrians and bicyclists (May 25 – August 15), you may exit your car for better viewing but must stay with your car at all times; 3.) please do not park on the Drive and then take a walk along it. You may enter the Drive for walking and bicycling purposes from May 25 – August 15 from the Visitor Center parking area via the Seneca Trail.

Waterfowl, heron, egrets, eagles, osprey, norther harrier, terns, and shorebirds grace the Main Pool at various times throughout the seasons! The Drive is open from April 1, weather-permitting, through November; from December 1 through March 31, the Drive is closed to driving, cycling, walking, snowshoeing, skiing, etc. Dog walking is not permitted on this trail; your dog may accompany you in your vehicle and must remain in your vehicle.

North Spring Pool
A small parking area will give you access to view this pool. In spring, watch for osprey. During summer, watch the shores and trees for great egret!

South Spring Pool
The small observation platform
brings you close to the water's edge
where you'll see scores of minnows.
Great blue heron, Canada geese, and
other waterfowl can often be seen
here, as well as woodpeckers and
warblers along the trail leading to
the Esker Brook Trails. The trails
are open year-round, except from
November 1 through the New York
State white-tailed deer hunting

season. Dogs are not permitted on this trail.

Esker Brook Trails You can get to the Esker Brook Trails from Route 89 via the South Spring Pool Trail or from Lay Road, right onto East Tyre Road. A series of three 3/4-mile trails, you can walk through woods, along a brook, and around two ponds. You may see or hear songbirds, woodpeckers, great blue heron, ducks, white-tailed deer, or small mammals during your visit. Wildflowers flourish in May. A trail guide is available at the Visitor Center. The trails are open yearround, except from November 1 through the New York State whitetailed deer hunting season. Dogs are not permitted on this trail.

Refuge Etiquette

As you visit, please keep in mind that you are a guest here. The habitats we manage are homes to several species of birds and other wildlife. We provide their houses, food stores, breeding grounds, and rest areas. You can be a welcome guest by following a few simple guidelines and setting an example for those who are not "in the know"!

Please Do:

- Visit from ½ hour before sunrise to ½ hour after sunset.
- Stay on designated refuge trails and at designated refuge viewing areas.
- Stay in your car along the Wildlife Drive until you reach designated viewing areas marked with a brown and white binocular sign. From May 25 – August 15, you may exit your car anywhere along the Drive, but you must stay with your car.
- Walk and bicycle along the Wildlife Drive from May 25 – August 15 only. Park at the Visitor Center Parking lot, not along the Wildlife Drive.

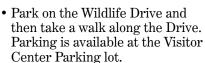












- Bicycle anywhere on the refuge, except on the Wildlife Drive from May 25 August 15.
- Fish or boat in Refuge pools and other waters. You may fish and boat in the canals and rivers around the Refuge from designated fishing and launching areas.
- Feed wildlife.
- Fly drones.
- Walk your dog, except on the Seneca Trail and Refuge entrance road.

Please Do Not:

 Leave designated trails, walk on dikes, enter into water/Refuge pools, enter into closed areas.

 Walk your dog on a leash on the Seneca Trail and Refuge entrance

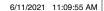
• Fish only in designated areas.

Observe information and

orientation signs.

road only.

- Jog/Run anywhere on the refuge.
- Camp, have fires, or stay overnight on any part of the Refuge.
- Collect any materials (feathers, plants, rocks, animals, etc.) from the Refuge.





Montezuma NWR — Managed for Wildlife & for You!

The Montezuma National Wildlife Refuge is truly a haven for wildlife. Its diverse habitats of wetland, grassland, shrubland and forest give food, shelter, water and space to many of Central New York's wildlife species. Waterfowl and other migratory birds depend on the Refuge as nesting, feeding, breeding and stopover grounds. Some make the Refuge a home year-round.

Wildlife comes first on all National Wildlife Refuges. However, some Refuges can also provide wildlife dependent opportunities to the public—like the nature trails, observation towers and decks, and the Wildlife Drive here at Montezuma. We hope you have enjoyed your visit!



Knox Marsellus Marsh

 $Bald\ eagle\ in\ nest$



