

**Great Meadows National Wildlife Refuge**

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**U.S. Fish & Wildlife Service**

# Great Meadows

## *National Wildlife Refuge*

### *Concord Unit Trails*



*printed on recycled paper with vegetable based inks*

## Welcome



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

Great Meadows National Wildlife Refuge is one of 566 refuges in the National Wildlife Refuge System which is administered by the U.S. Fish and Wildlife Service. The National Wildlife Refuge System is a network of lands and waters managed specifically for the protection of wildlife and wildlife habitat and represents the most comprehensive wildlife resource management program in the world. Units of the system stretch across the United States from northern Alaska to the Florida Keys, and include small islands in the Caribbean and South Pacific. The character of the refuges is as diverse as the nation itself.



Welcome to the Great Meadows National Wildlife Refuge – Concord Unit. This is a "Leave No Trace" area. The 2.7 miles of trails within the unit, including the Dike, Timber, Edge, and Black Duck Creek trails go through a variety of habitats that harbor various species including a variety of migratory waterfowl and breeding marsh birds.

Please note: there is an entrance fee for this site. Information and a self-pay station are located at the parking lot.

The Dike Trail is part of the original 250 acres donated by Samuel Hoar in 1928 establishing the Great Meadows National Wildlife Refuge.

A good place to start your walk is from the observation tower beside the parking lot. From here you can best see the full extent of the upper pool to the left and the lower pool to the right, separated by the dike trail down the middle. The upper pool is so named due to its higher elevation and the fact that it is on the upstream side of the lower pool. We commonly refer to these pools as 'impoundments', indicating that these pools are man-made rather than natural ponds.

*Red-winged blackbird*



The dike itself is also man-made. It runs between the upper and lower pools and turns to the east along one side of the lower pool separating the "meadow" from the river. Visitors can get an even closer look on our observation platform located midway on the dike.

## Common Sights and Sounds

While walking along the Dike Trail, you can expect to see or hear several wildlife species, particularly birds.

By far the most common and noisiest residents of this wetland are red-winged blackbirds. These birds are easy to identify by their glossy black plumage and unmistakable vibrant orange and yellow shoulder-patches. Red-winged blackbirds nest early in the spring and summer, but are seen perched at the tops of the maple saplings and button bush along the fringes of the pools throughout the summer.

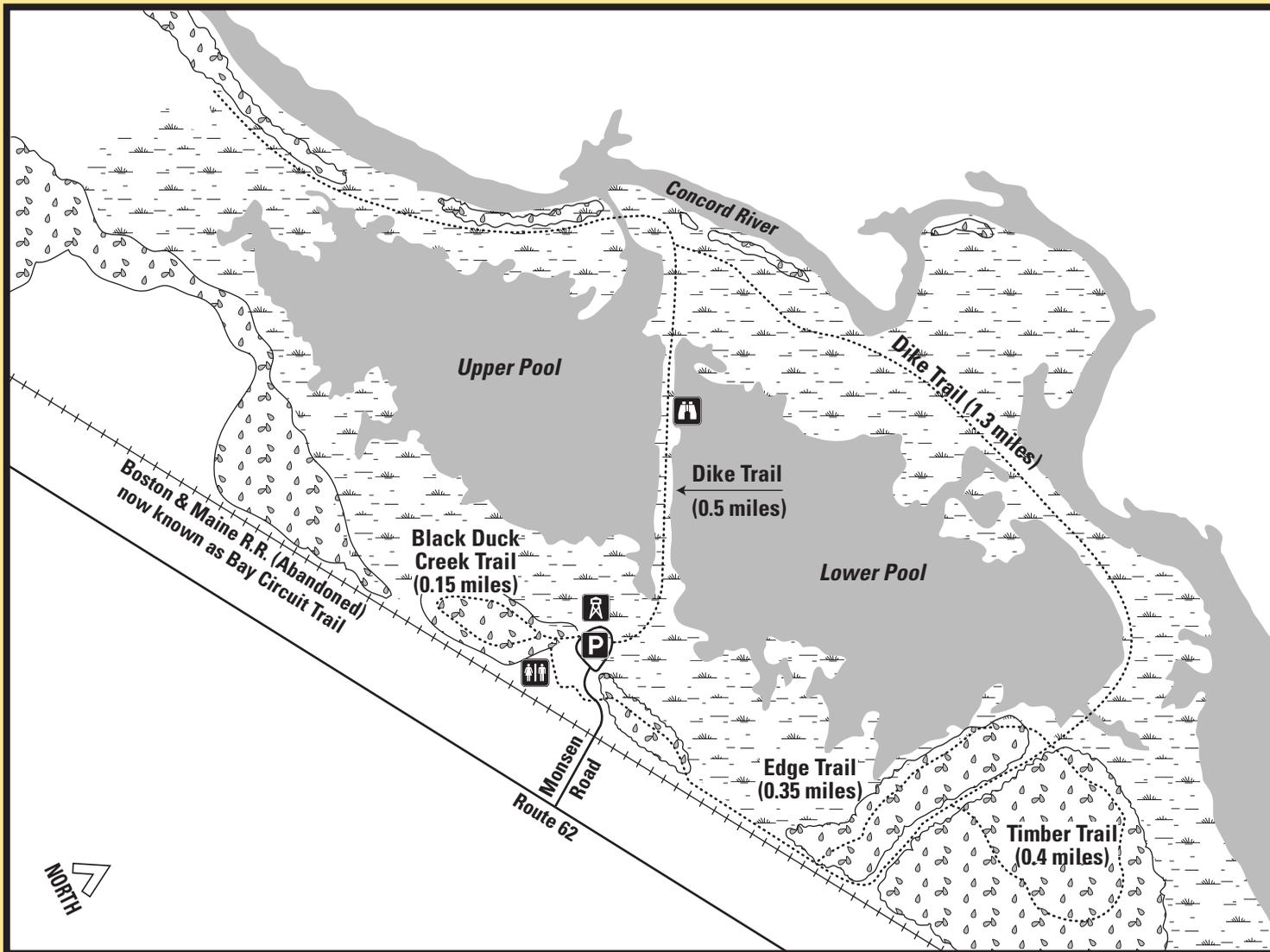
Great blue herons are another frequent summer visitor to the pools. These tall blue-grey birds are often seen standing in the shallows where they hunt fish and frogs, or flying slowly and gracefully over the water.

Northern water snakes, northern leopard and bull frogs, marsh wrens, swallows, swifts, muskrats, and various colorful species of dragonflies are also common sightings along the dike.

## Dike Trail (1.7 miles)



*Great blue heron*  
©Julien Beauregard



# Great Meadows

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### *Concord Unit Trails*



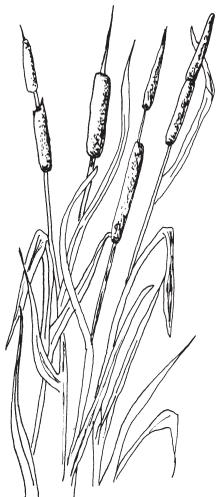
## Blanding's Turtles

The impoundments and surrounding wetlands are home to one of the largest populations of Blanding's turtles in Massachusetts. These long-lived reptiles are listed as "Threatened" in the state of Massachusetts and populations are decreasing across their range in the northern United States and southeastern Canada. Blanding's turtles may be seen basking in open areas on sunny days and can easily be identified by their bright-yellow chin and throat.

U.S. Fish & Wildlife Service biologists and conservation partners have been attempting to increase the Blanding's turtle population at the impoundments since 2008 through a process called "head-starting." By raising Blanding's turtle hatchlings in captivity for the first nine months of their life, biologists hope to give the baby turtles a "head-start" by releasing them at a larger size and decreasing their chances of predation.

Native plant species such as cattail, pickerelweed, wild rice, and arrowhead are all emergent plants. Their stems are ridged so that they can extend beyond the surface of the water.

Spaddeedock and duckweed are two of the many floating plants common in the upper and lower pools. Their leaves rest on the surface of the water to obtain the maximum amount of sunlight. These plants are either connected to the soil by long weak stems or float free on the surface. Many animals such as ducks and muskrats depend on these plants for food, and fish depend on them for shade and cover.



*Cattails*

## Invasive Plants

One of the biggest threats to the delicate ecosystem at Great Meadows is the spread of invasive plants, primarily water-chestnut, American lotus and purple loosestrife. These 'invaders' are very aggressive and out-compete native plants while providing little or no value to wildlife.



*Purple loosestrife*

There are numerous methods used to control or eliminate invasive species, including mechanical and manual harvesting, herbicides, biological controls, and water-level manipulation. For example, biologists at Great Meadows have used the galerucella beetle to control the growth of purple loosestrife. Native to the plant's European habitat, the beetle feeds on the plant's leaves, flowers, and stems. This natural method of controlling purple loosestrife has no known adverse effects on the surrounding environment.

Each of these trails winds through woodland dominated in places by pines and oaks, and in other places by maples. Gray catbirds, eastern wood-pewees, cardinals, phoebes, and flycatchers are some of the various song birds which make these habitats their homes.



*Cardinal*

**Timber Trail (0.4 miles),  
Edge Trail (0.35 miles),  
and Black Duck Creek Trail (0.15 miles)**

We hope you have enjoyed the trails here at Great Meadows. Trails are open sunrise to sunset. Please come again soon!