

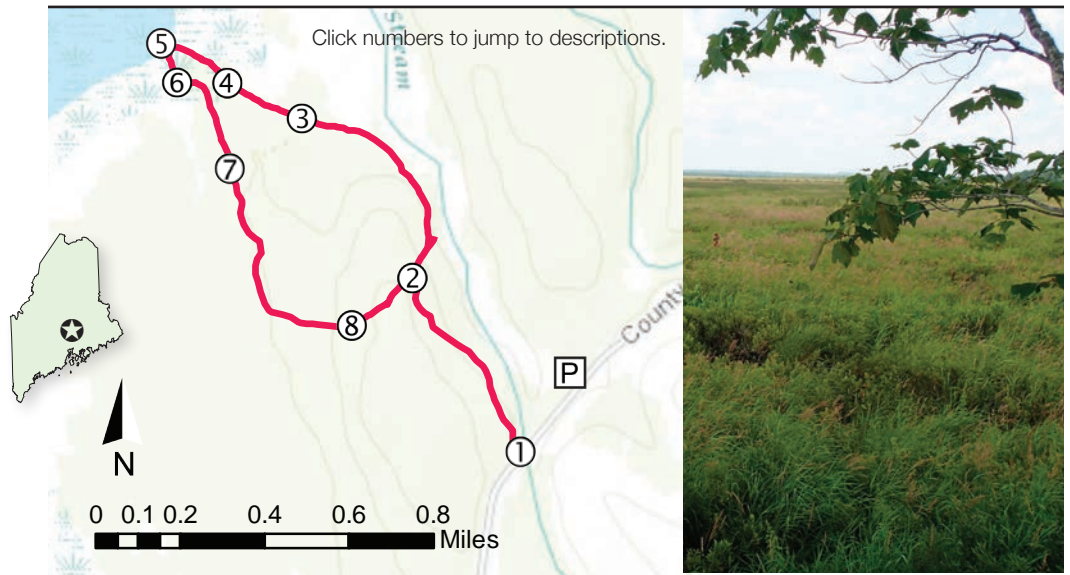
SUNKHAZE MEADOWS NWR

Carter Meadow Road – 2.5-mile loop, easy

Like all of Sunkhaeze Meadows, Carter Meadow Road abounds with wildlife, and well-equipped hikers will appreciate this trail to its fullest. Bring rubber boots to traipse through mud in the footsteps of moose, binoculars to capture the numerous birds that can be found in the forest and fen, and bug spray to keep unwanted “wildlife” at bay.

Getting There

From Route 2 in the center of Milford, turn east onto County Road and drive 6.4 miles to Carter Meadow Road, a signed, gated path on the left. The parking area, which includes an informational kiosk, is a little further up County Road on the left.



① Running on Empty: Deer in the Winter

[to map](#)

The first 0.4-mile stretch of the trail is a wide road through a [Hemlock Forest](#).

Imagine you're a white-tailed deer living here in Maine. Every fall you eat beech-nuts, acorns, and other high-calorie foods to accumulate as much fat beneath your skin and around your organs as you can. In the winter, when easily digestible food is scarce, this fat will supply you with insulation and energy. With enough fat stored, and if the winter isn't too long or too cold, you will have a much better chance of surviving into spring.

Because deer can't add more fat to their reserves during the winter, they must use as little energy as possible to avoid running out. Have you ever walked alone through deep snow without snowshoes? This act of “post holing” can be both frustrating and exhausting for humans, but for a deer, it requires so much energy that it can be deadly. White-tailed deer often overwinter in groups beneath a dense cover of tall evergreen trees, like these [eastern hemlocks](#). Hemlock branches intercept falling snow like a roof, resulting in shallower snow on the ground that is easier to walk through. White-tailed deer also maintain an elaborate trail system in the winter, further reducing the energy required for travel.

Look along the trail for Canada yew, an important winter food source for white-tailed deer. Also called ground-hemlock, Canada yew looks a bit like a stunted balsam fir tree sprawling along the ground.



WHITE-TAILED DEER
2 1/2" to 3"

Image courtesy of the MDIFW



Canada yew



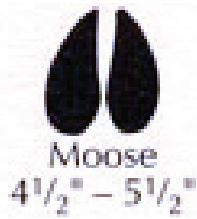


Image courtesy of the MDIFW



Goldthread (left), starflower (right)



Tip-up



Winter wren
Image ©Ron Logan, all rights reserved



Witch hazel in flower

② Maine's Largest Mammal -68.546252, 44.970808

[A to map](#)

Keep right where the trail divides at 0.4 miles.

The trail quickly becomes muddy as it enters a shady spruce – fir forest to the left of an open fen. Patches of green sphagnum moss carpet the wettest places, with goldthread, bunchberry, starflower, and wood ferns scattered throughout.

To save energy that would otherwise be spent “bushwhacking,” wild animals often follow human trails through the woods. If you had antlers that spanned six feet from tip-to-tip, wouldn't you aim for the path of least resistance? In muddy places on this trail, keep an eye out for tracks of Maine's largest mammal, the moose. **Boreal** forests beside wetlands, like this one, are great moose habitat. The forest offers shelter while nearby water is a place to cool off, an escape from biting insects, and a buffet of aquatic plants that sustain this huge animal. A male moose, called a bull, can reach up to 1,800 pounds and 6.5 feet tall at the shoulder.

Because large masses don't lose heat as quickly as smaller ones, large body size is a common adaptation of animals that live in cold climates. The red fox, the snowshoe hare, and the moose are all larger than their more southern relatives the gray fox, the New England cottontail, and the white-tailed deer. Even white-tailed deer that live in warmer climates are smaller, on average, than those that live in Maine.

③ Life and Death in a Boreal Forest -68.550466, 44.975240

[A to map](#)

At 0.8 miles, the trail passes the upturned root system of a fallen tree.

If submerged in water, the roots of many tree species can't absorb nutrients. Like a person tiptoeing through puddles, these trees will go to great lengths to keep their roots at least partially dry. They have adapted to wet sites by growing roots above the surface of the ground water (water table) so that they are only submerged during flooding. But this adaptation comes with a price; trees with shallow roots like this one are more easily knocked over by strong winds.

In the natural world, the death of one organism is always an opportunity for others. Fungi and microorganisms are slowly decomposing this tree and returning it to the soil, where the roots of the surrounding trees can absorb its nutrients. Mosses, herbs, and tree seedlings will take advantage of the small sunny gap left behind by this tree. **Red-breasted nuthatches**, which sing a series of nasal, honking notes, excavate nesting cavities in rotten wood. In its current intact state, the roots of this fallen tree provide an excellent nesting place for **winter wren**, a small brown bird with an erect stubby tail. Listen as you walk for the winter wren's high-pitched song, sung in energetic eight-second bursts.

④ Fast Plants -68.553350, 44.975948

[A to map](#)

Beyond the tip-up at one mile, look for witch hazel and bunchberry.

Identifiable by its oval leaves with rounded, wavy teeth, and its tall multi-stemmed shrub form, branches of witch hazel reach out into the path in patches of sunlight. When most broadleaved plants are getting ready to drop their leaves in fall, witch hazel's flowers are blooming with long, thin, yellow petals that resemble the contents

of a used party popper. As the flowers are slowly opening, seeds burst from last year's seedpods, soaring like tiny bullets as far as 30 feet.



Bunchberry in flower

Witch hazel is quick, but bunchberry holds the title of the world's fastest plant. Low growing bunchberry is easily identified in summer and fall by its clusters of four to six leaves beneath white "flowers" or tight groups of red berries. From a botanist's perspective, the four white "petals" of bunchberry aren't really petals at all. They are actually white bracts, or leaves that grow directly beneath the flower. Look closely to find the true flowers, which are tiny, yellowish or greenish, and clustered above the bracts.



Sedge wren

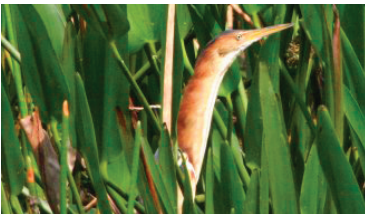
When it's time to reproduce, bunchberry's tiny flowers burst open in just 0.5 milliseconds, catapulting pollen far and wide in hopes of landing on and fertilizing another bunchberry. For comparison, blinking your eye takes 100 to 400 milliseconds; your blink is at least 200 times slower than the bunchberry. As it is being launched, the pollen experiences two- to three-thousand times the force of gravity.

⑤ **Fierce Hunters of the Fen** -68.555512, 44.976900

[▲ to map](#)

Where the trails merge at 1.1 miles, turn right to arrive at the viewing platform.

Leaves of emergent aquatic plants like arrowhead, with its arrow-shaped leaves, and pickerelweed, with spikes of purple flowers, jut out of pools of open water. From the shade of a red maple, observe the sea of grasses and sedges, as well as shrubs like sweetgale and steplebush, that comprise this enormous fen **ecosystem**. Water from the ground and from the surrounding landscape (including Sunhaze Stream and its **tributaries**) saturates this low-lying area, bringing nutrients to the roots of specially adapted wetland plants but keeping the ground too wet to support tree growth. Dead plant matter is slow to decompose when it is waterlogged and so it accumulates here, forming peat, the substrate of fens and other peatlands.



Least bittern

Bottom image ©Ron Logan, all rights reserved

You'll find this fen teeming with wildlife of all kinds. For birdwatchers, the fen is breeding habitat for the rare **sedge wren**, along with **yellow rail**, and the famously inconspicuous **least bittern**. When startled, the least bittern freezes in place with its bill pointing up, resembling the vegetation surrounding it. It even sways when the plants that camouflage it blow in the breeze! Tall white pines to the southwest are prime nesting habitat for **bald eagles**, which are occasionally spotted soaring high over the wet meadows.

At midday when birds are furtive, turn your attention to dragonflies. Large, black and blue mosaic darners zip around with startlingly loud wing beats. Dragonflies capture their prey midflight with their specially modified legs forming a spiny basket-shaped structure beneath the **thorax**. If you're lucky, these dragonflies will feed on the insects that are trying to feed on you!



Mosaic damner

Dragonflies are most commonly seen on the warmer parts of sunny days as their wing muscles need to warm up for flight. Of the world's approximately 5,200 dragonfly species, about 50 migrate south in the fall. Like songbirds, their journey is triggered by cold autumn nights in their northern home. Unlike birds, however, dragonflies make a one-way trip; reproduction takes place in milder climates and the offspring travel north in the spring.

Return to the junction and turn right to continue the Carter Meadow Road loop.



Snowshoe hare in summer (top) and winter (bottom) coloring



Cinnamon fern



Sensitive fern

⑥ **A Color-changing Mammal** -68.554959, 44.976041 [to map](#)

The trail travels through a [white cedar](#) stand before plunging into a dense thicket of young [balsam fir](#) trees at 1.2 miles.

Dense thickets of shrubs or small trees, like this balsam fir thicket, are great hiding places for snowshoe hare. Unlike rabbits, hares are born open-eyed, covered in hair, and ready to fend for themselves above ground. Rabbits are born blind, without hair, and generally helpless in their holes.

The only species of hare in the eastern U.S., the snowshoe hare is named for its large feet, which allow it to travel easily through deep snow. In the fall, the snowshoe hare will shed its brown summer coat and replace it with white camouflage. Sitting still in the snow, the hare is nearly invisible to predators. Hares that turn white too soon, before there is snow on the ground, will sometimes travel to higher elevations to get to snow and safety.

On this section of trail, watch for the snowshoe hare's light brown, pellet-like scat, 1/2" to 3/8" in diameter and rounder than white-tailed deer scat, which tends to be oblong.

⑦ **A Tiny Wetland** -68.553211, 44.973638 [to map](#)

At 1.4 miles, the trail rises onto the first boardwalk to cross a small wetland.

What makes a wetland a wetland? To a scientist, a wetland is an area that is saturated or flooded for at least part of the year, long enough to develop special soils that support wetland plants. Here, the ruts in the road are so deep that they hold water for much of the year, forming a tiny wetland. This is a good place to get a close-up look at wetland plants, including three-way sedge, cinnamon fern, sensitive fern, and bristly dewberry.

Look and listen for green frogs here. Their distinctive "unk, unk, unk" call, reminiscent of a plucked banjo string, can be heard throughout the day. When they aren't calling, an adult green frog, sometimes more brown than green, can be identified by long ridges along its back and dark, tiger-like bands on the back legs. Be careful not to confuse it with a leopard or pickerel frog, which both have a light-colored line paralleling the mouth.

⑧ **An Intentional Forest Fire** -68.548550, 44.969410 [to map](#)

The trail ascends into an old red pine plantation; a clearing is visible to the left at 1.9 miles.

Most of the tallest, oldest trees along this trail have been [white pines](#), with ruttled gray bark and long, soft needles in groups of five. White pines were a popular lumber tree before the onset of white pine blister rust, a fungal epidemic, in the early 1900s. During this time, New Englanders planted [red pine](#), like these, in its place. The red pines in this abandoned plantation are smaller than the nearby white pines, and can



Red pine bark



White pine bark

be identified by their jigsaw puzzle-like bark and needles in bundles of two. Under natural conditions, red pine is far less common than white pine, growing mostly on well drained sites with nutrient poor soils and a history of fire.

The story of this plantation doesn't end there, though. The bases of the trees surrounding the clearing are darkened by tongues of fire. Some forest types, such as red pine, are more prone to fire than others. If fallen trees and limbs are left to accumulate on the ground over many years, a fire started by lightning or accidentally by people could reach the crowns of the trees, destroying the forest and endangering the cabins here at Sunkhaze. In 2005, firefighters intentionally burned this forest before too much woody debris could accumulate on the ground, avoiding this dangerous situation. Several of the red pines here didn't survive the burn, and their skeletons are falling, creating a clearing that is slowly filling with bracken fern, sweetfern, and [paper birch](#).

Listen among the pines for the soft trilling of the [pine warbler](#), a small yellowish bird with an olive back that nests exclusively in pines. Because they reside in the treetops, they are more easily heard than seen.

Turn right at the cabin (mile two) to return to the trailhead. To explore and share more of Maine's extraordinary natural features, be sure to check out the other Natural Heritage Hikes covering dozens of trails from the coast to the western mountains.

Naturalist's Glossary

Boreal: Of cold climates.

Ecosystem: A community of living organisms and their nonliving environment.

Tributary: A smaller stream flowing into a larger stream or river.

Thorax: The middle section of an insect's three-part body, located between the head and the abdomen.

*Natural Heritage Hikes is a project of the [Maine Natural Areas Program](#) in partnership with the [Maine Trail Finder website](#).
For more Natural Heritage Hikes, please visit www.mainetrailfinder.com.*

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Designed and written by Kelly Finan

Map sources: Maine Office of GIS, Esri