

Mass Audubon Wellfleet Bay Wildlife Sanctuary
Sensory Guide to the All-Persons Trail
Cycles and Changes – Fall/Winter

Welcome to Wellfleet Bay's multi-sensory interpretive guide to our All-Persons Trail in fall and winter. Cape Cod is a narrow land buffeted by wind and sea, a land of cycles and changes. Like the rest of the Cape, Wellfleet Bay Wildlife Sanctuary is continually shaped by forces of nature and by human activity. If you were here 150 years ago, you'd be in the middle of asparagus and turnip farms, open fields and salt hay meadows. Dairy cows grazed nearby. Wellfleet Bay was also a fishing port. The pre-settlement forests had been cut down long ago and the open bay was filling in to salt marsh. In 1929 when Dr. Oliver Austin arrived, duck hunters had replaced the fishermen. Dr. Austin and his son banded birds instead of hunting them. The Austin Ornithological Research Station became one of the largest private bird-banding stations in the world.

Mass Audubon bought the 366-acre property in 1958 and created the Wellfleet Bay Wildlife Sanctuary. Today, Wellfleet Bay contains over 1100 acres of protected salt marsh, barrier beach, pitch pine and scrub oak woods, creeks, brackish and freshwater ponds, coastal heathland, and sandplain grassland. Five miles of trails wind through our diverse habitats. We hope our trail guide encourages you to make a sensory exploration of the nature of Wellfleet Bay, learn the unique history of our sanctuary, and understand how people and nature are interconnected. This project is made possible by a grant from the US Institute of Museum and Library Services.

The Trail includes our Robert R. Read All-Person's Pathway and the Sensory Trail which increases accessibility to the sanctuary for all visitors. We give special thanks to the Gertrude A. Pomeroy Charitable Trust

Before you begin, please listen to a brief introduction here at the Nature Center. The wide path of the All-Person's trail is universally accessible with a smooth, packed surface that accommodates wheelchairs, walkers, and baby strollers. Part of the longer Goose Pond trail, it is approximately a quarter mile long, begins at the end of the Butterfly and Hummingbird Flower Garden and ends at Goose Pond with thirteen self-guided stops designated by numbered and Braille markers. Many of the markers are on 3-foot tall wooden posts that are flanked with 5 to 10 foot long wooden guide rails to lead you to the marker. Other markers are affixed to fences and hand rails. After you finish the sensory guide, you may retrace your steps to the Nature Center or you may continue on the Goose Pond

Trail to the Marsh Cabin or down to the beach. The path remains smooth, but is not ADA compliant.

The narration portion of the multi-sensory guide takes about thirty minutes, excluding the walking directions. There is no time limit for walking the trail, but many people take an hour or more to fully enjoy the round trip. A raised trail map and a Braille transcript are available at the front desk. We also have a printed booklet and map. We may be able to provide a trail naturalist to accompany you, particularly if you request one in advance.

Because we are a wildlife sanctuary, all of the plants and animals here are protected. Please do not collect, pick, or eat anything. For your safety as well as for that of the wildlife, remain on the trail to avoid poison ivy, thorny vegetation, and ticks.

Your self-guided, multi-sensory nature walk of Wellfleet Bay is about to begin. Exit the Nature Center. With your back to the door, walk straight across the 20-foot wide stone patio until you reach the edge of the Butterfly and Hummingbird Garden. Using the face of a clock as a guide where 12 o'clock is straight ahead, turn toward 3 o'clock so that the garden edge is on your left. Follow the garden edge as it curves counterclockwise for approximately 65 feet until you find a guide rail and split rail fence on your left. Find marker 1 at the beginning of the fence.

Stop #1: Butterfly and Hummingbird Garden

You are at stop one, the butterfly and hummingbird garden. Our volunteers planted and maintain the flower garden between this path and the nature center with help from our staff. It covers an area of roughly 2500 square feet – a little larger than a tennis court but shaped more like a kidney. Like our buildings, our garden uses resources in a way that is ecologically sustainable. Rainwater from the roof is collected in four tanks that hold up to 1600 gallons of water, a renewable source that is piped into an underground irrigation system to keep the garden green. We also reuse water from our sinks, dishwasher, and drinking fountains – called graywater – to help irrigate the garden.

Flowers attract hummingbirds and butterflies all spring and summer. On a warm October day, clouded sulphurs and cabbage whites may nectar in late-blooming butterfly bushes and purple asters. Plants that butterflies use attract other insects, too, from bees and wasps to beetles and flies. Goldenrods and asters support more than one hundred different kinds of insects and spiders; native

sunflowers and joe-pye weeds more than forty. We don't use herbicides or pesticides, but rely on the garden's natural predators to keep plant-eating pests in check.

To give the insect-based food web a head start for spring, we do not cut back the plants in autumn. Some insects lay eggs on twigs to hatch next spring; others spend the winter as larvae. Many overwinter as adults in leaf litter, hollow stems or under rocks and logs. A balmy day in Indian summer or during January thaw can bring out native bees and flies. Can you hear the subtle droning of insects on a calm, warm day? On cold days, listen to the wind rustling through the ornamental grasses and rattling the flowers' brittle seed heads.

With your back to marker 1, walk toward 10 o'clock and find the low rail fence on your left. Almost immediately, you will feel the cobblestones change to a hard-packed substrate before you get to the fence. Follow the low fence for approximately 28 feet to marker 2 on your left.

Stop #2: Wetland Pool and Pergola

Stop 2 is where the All-Persons Trail officially begins, with a small pool on the left side of the trail and a pergola on the right. Marker 2 faces the pool, a former cellar hole. Imagine the rustic farmhouse that once stood here bustling with the activities of ornithologists or day campers. From 1930 to 1957, it was the residence and bird-banding laboratory of the Austin Ornithological Research Station. Dr. Oliver Austin, a surgeon from New York, his son Oliver, Jr. who was an ornithologist, and a team of other scientists netted and banded thousands of birds. They recorded data on bird species and numbers, migration routes, and population trends. They also quantified the effects of human use and misuse of the land and water.

Mass Audubon, with its focus on birding and conservation, bought the Austin property in 1958. The farmhouse became Wellfleet Bay's first nature center. When the new nature center was built in 1993, the farmhouse was demolished. In the spirit of Dr. Austin's commitment to improving wildlife habitat, we turned the cellar hole into a small wetland pool. All is quiet now, but in summer the pool is hopping with frogs, turtles, insects, birds, and even a muskrat or two.

With your back to marker 2, walk toward one o'clock across the path for approximately 5 feet and you'll be in the open-sided pergola, a great place to listen

to nearby birds. Find a bench and have a seat. Summer migrants have flown south, but red-winged blackbirds, which leave most of Massachusetts, stay on Cape Cod all year. They often congregate under our feeders in winter. Listen for the red-wing's raspy "conk-la-rees." The birdfeeders and shrubs behind the pergola attract many year-round birds. You may hear their wing beats as they fly nearby. Listen for the "purdy-purdy purdy" of bright red Northern Cardinals, the "tweedle-tweedle" of Blue Jays and the call of the Red-bellied Woodpecker. The House Finch's warbling twitter usually ends with a longer slurred note. Goldfinches have a more clipped, buzzy song that includes a higher-pitched "tweee" and flight calls that sound like "p'tata chip, p'tata chip." The common, introduced English Sparrows have a distinctly non-melodic call.

Exit the pergola. With your back to the pergola, walk across the path to return to marker 2. With your back to marker 2, turn toward 9 o'clock and find the low rail fence on your left. Follow the low rail fence for approximately 55 feet until you come to the end. Marker 3 will be on your left.

Stop #3: Whale Bones

Stop 3 is the display of humpback and minke whale skulls and a fin whale jawbone. Take 2 steps to the left to find the whale bone, which is at knee level beyond the low rail fence. Examine the bone. Can you guess the size of this whale? In the North Atlantic, fin, or finback whales grow up to 75 feet long and can weigh from 40 to 80 tons. They are the second largest whales in the sea. They are baleen whales and feed on krill and small fish such as sand lance. Like all baleen whales, female fin whales are larger than the males.

The baleen whales that are commonly found in the waters of Cape Cod and Stellwagen Bank are fin, humpback, and minke whales. Endangered right whales swim very close to the Cape during their annual migration. The toothed whales we see most often are harbor porpoises, common dolphins, Atlantic white-sided dolphins, and pilot whales. Unfortunately, in autumn and winter, sometimes dolphins and pilot whales strand themselves on the beaches of Cape Cod Bay. Scientists are baffled by the behavior, but theorize that the strandings may be due to tides, storms, or the shape of Cape Cod, which may confuse the whales and dolphins. The slope of the beach and the turbidity of the water may disorient them.

With your back to marker 3, walk toward one o'clock across the 6-foot wide path to the grass edge and find the wooden guide-rails that flank Marker 4, which is across the path from Marker 3.

Stop #4: Photovoltaic Array

Here at stop 4, you can touch a photovoltaic – or PV – panel, a smaller version of the ones in our solar-powered PV arrays. Reach over to the left side of the marker and find the PV panel that is about 3 feet off the ground. Feel the smooth glass surface. Don't worry; the panel may feel warm, but it will not be too hot to touch.

Beneath the tempered glass is a layer of silicon that converts sunlight directly into electricity. When sunlight hits the panels, the silicon releases free electrons that bounce at very high speeds, creating an electrical current. Wires conduct the direct current, or DC, into an inverter box that converts it to alternating current, or AC electricity to power lights and computers, run appliances, and heat water and buildings.

One of our ground-mounted arrays is behind the sample panel. It measures 20 feet by 60 feet and comprises 96 PV panels that produce 18 kilowatts of electric power. A larger installation in the field next to our parking lot is 3,240 square feet in size and comprises 200 panels that produce 41 kilowatts. The small array on the roof of the day camp building is rated at 3 kilowatts. Our three arrays produce 62 kilowatts of electric power and meet up to 70% of Wellfleet Bay's needs.

Solar power works even on partly cloudy days, but the stronger the sunlight, the more electricity produced. Sometimes on bright, sunny days, we produce more electricity than we use. Yes, that makes the electric meter run backward. The power that we generate but don't use is sold back to the power grid.

How much electricity do the arrays produce? We started monitoring on December 9, 2010. In the first 16 months, the arrays generated about 60,000 kilowatt hours of clean energy. That's enough to meet the electricity needs of an average American house for five and one-half years.

Our Nature Center is platinum LEED certified and is the greenest public building on Cape Cod. LEED stands for Leadership in Energy and Environmental Design, and platinum is the highest of four ratings that the LEED Commission confers. You can learn more about PV arrays and other aspects of our LEED initiative in the Nature Center through a self-guided tour of our Green Building Trail.

With your back to marker 4, turn toward 3 o'clock and find the grassy edge of the path on your right. Follow the path as it curves to the right and gently slopes

downward approximately 270 feet to marker 5. Keep the grassy edge of the path on your right at all times. It's a fairly long walk to stop 5. Eventually you will enter a woodland and may feel the shade of the trees. At this point, the slope increases slightly. Continue walking downslope with the vegetative edge of the path on your right until you feel the trail edge bear slightly to the right. Stop there and don't follow the curve. Instead, turn to 10 o'clock and walk across the 6-foot wide path to the split rail fence at the Marsh Overlook where you will find Marker 5.

Stop #5: Salt Marsh Overlook

This is stop 5, the marsh overlook, designated by a split-rail fence. Take a deep breath for a sensory impression of the salt marsh and pine/oak forest edge. How does the air smell: Pine-y? Fragrant? Salty? Organic like sulphur? How does it feel: Moist? Dry? Breezy? Calm?

You are facing west toward an extensive salt marsh, beyond which a flat barrier beach meets Cape Cod Bay. The lush greens and blues of the marsh in summer have faded to light browns and golds. The bay waters are gunmetal gray on overcast days or deep sapphire on sunny ones. Close to the marsh edge, dead cattails stand tall. Beyond them, salt marsh grasses have died back, exposing the tidal creeks that lace the marsh. Two wooded upland islands rise from the flat expanse. "Pie Island" is smaller and wedge-shaped. The larger Try Island housed a "try works" in the 18th and 19th centuries where people rendered whale blubber into oil. A salt works operated on the hill behind you.

If you stood here two or three hundred years ago, you'd be next to an open bay instead of a marsh. Even now, at high tides after a storm or near a winter full moon, the water will flood the entire marsh and will lap at the upland edge. Do you hear wind or water today?

Birds feed and shelter in the salt marsh and bay in winter, particularly brant and Canada geese, buffleheads, red-breasted mergansers, and black ducks. Listen for black ducks and Canada Geese. Great blue herons are the only heron or egret that winter on the Cape. You might hear this guttural cry if one flies over the marsh. Crows and red-tailed hawks are year-round birds. The red-tail's "keer-keer" is distinctive. You'll recognize the crow's call. If you hear many crows cawing together loudly, they may be mobbing a red-tailed hawk, which will most likely ignore them.

With the fence in front of you, turn toward 3 o'clock and, keeping the fence on your left, take 3 or 4 steps forward. The fence ends and you will be facing a large pitch pine. Reach out in front of you and touch the tree. Examine the bark. This pitch pine, with its rough and deeply furrowed bark, is one of the larger and older pines on the sanctuary, more than a hundred years old.

Return to Marker 5. With your back to marker 5, turn toward 3 o'clock and follow the fence to the end. Turn toward 9 o'clock and find the vegetative edge of the path on your right. Walk back up the incline, keeping the grassy edge of the path on your right. At approximately 30 feet, you will feel a directional sign with two posts. At the sign, bear to the right, keeping the shrubby edge of the path on your right. Follow the trail for about 120 feet, at which point it bears to the right. Follow the curve for just 2-3 feet, then stop. Turn toward 10 o'clock and walk across the 6-foot wide path to a split rail fence. Follow the fence until you find Marker 6 on the fence.

Stop #6: Dock at Silver Spring

The split rail fence here at stop 6 leads to the dock at Silver Spring. The long and narrow 8-acre freshwater pond winds through the woods. Oak, red maple, and sassafras dominate the northern side of the pond. A high ridge of oak and pitch pine rises above the southern edge. The Austins created the Silver Spring pond in the 1930s to increase habitat diversity.

The dam and pond area offer glimpses of the geology of the sanctuary. Twenty-five thousand years ago, New England was covered by mile-high ice of the Pleistocene glaciation. The Laurentide ice sheet deposited tons of sand and gravel to form the Outer Cape by the time it receded about ten thousand years ago. As the ice retreated, meltwater streams created channels such as the Silver Spring area. The current water source is runoff from the Eastham/Wellfleet highlands. The dock is a favorite place for frog and turtle watching from early spring until late October. In winter these ectothermic, or cold-blooded, animals burrow under the mud. Bullfrog tadpoles, which take a couple of years to metamorphose, remain active under water. In winter, Silver Spring attracts mallards and hooded mergansers.

The Silver Spring area is a good place for muskrats and river otters, both of which are active all year. Muskrats are rodents that eat cattails and aquatic plants, but will occasionally eat mussels, small fish and frogs. They are much smaller than otters. River otters are members of the weasel family. They eat fish, frogs, snakes,

turtles, and even small mammals. Otters like to hunt at the mouths of rivers and streams where there's a plentiful food supply, and we find their trails here. Their scat, filled with fish scales, is evidence that the otters cross the spillway often. Muskrats and otters den in and along the banks of Silver Spring.

You now have a choice of taking a short side path out onto the dock or continuing directly to marker 7 on the main trail. The dock juts out over the shallow water; it is sturdy and grounded, not floating. Be aware that the dock has no hand railing, just a toe rail around it.

If you'd like to walk onto the dock, keep the fence on your left, and follow it to the end. The boardwalk to the dock begins at the end of the fence. You'll notice the difference in substrate between the hard-packed sand and the boards.

Remember, the boardwalk and dock have no hand railings. Proceed with caution and feel for the toe rails along the edge. The 17-foot long boardwalk leads to the dock, which is 5 1/2 feet by 7 1/2 feet.

When you are finished with your observations on the dock and are ready to return to the trail, turn around and retrace your steps to the split rail fence that is now on your right. Follow the fence to Marker 6.

Here are the directions to get to Marker 7. With your back to Marker 6, recross the 6-foot wide path to the vegetative edge. Turn so the vegetation is on your right and follow the main trail approximately 60 feet to marker 7, keeping the vegetative edge of the path on your right. When you feel the wooden edge of the spillway, the wooden guide rails that flank marker 7 will come up on your right.

Stop #7: Silver Spring Spillway

Stop here at marker 7 and take another sensory impression. How does the air smell: salty? Fragrant? Pungent? What do you hear? You are standing on the dike directly over the dam and spillway. When you face marker 7, freshwater Silver Spring is behind you and the brackish salt marsh is in front of you. Dr. Austin constructed the dam to maintain Silver Spring as a permanent freshwater pond and to keep tidal saltwater out. Listen to the water flowing down into the marsh. Sometimes it trickles quietly, other times, it's a steady flow.

Enough fresh water flows from Silver Spring into the salt marsh to dilute the salinity here, allowing a fringe of cattails to grow along the upland edge of the salt

marsh. Cattails are plants of freshwater wetlands and do not tolerate typical salt marsh conditions.

In winter, this portion of the trail is exposed to the prevailing northwest wind that whips across the bay and the open marsh. How many wind sounds can you hear? The wind hisses through the cattails, rattles the bare branches of nearby scrub oak, and howls around our heads. Sometimes, even the crows and gulls have trouble flying in a blustery wind.

With your back to marker 7, turn toward 3 o'clock and follow the path to Marker 8 for approximately 150 feet, keeping the vegetative edge on your right. The wooden guide rails that flank Marker 8 will be on your right.

Stop #8: Woodland in Transition

The habitat that you enter at stop 8 is a woodland in transition. Dr. Austin planted thousands of trees in the 1930s to transform the barren, sandy ground into habitat that would attract more birds. He planted many non-native species, including European red pine, Scotch pine and Norway spruce, according to the conventional wisdom of that time. Many of the trees in this European red pine plantation are dead or dying now, due to both old age and infestations of native insects. The woodland is changing to one of native pitch pine, white pine, and oak.

We don't remove dead trees unless, of course, they are a safety hazard, because dead trees play an important role in the ecology of the forest. They provide food and shelter to a wide variety of organisms from fungi and insects to birds and mammals. In turn, fungi, bacteria, insects, and rain all work to decompose the wood.

Colonized by bark beetles, carpenter ants and termites, upright snags are a major food source for flickers, red-bellied, downy, and hairy woodpeckers. Other than their larger size, hairys look like downys. Here's the call of the downy woodpecker and now a hairy. Listen for woodpeckers drumming on a tree trunk. With their sharp, chisel-like beaks, woodpeckers can excavate nest holes in the hard wood of healthy trees as well as in dead or diseased trees. Other cavity-nesting birds use discarded woodpecker holes, but they can make nest holes in soft, decayed wood. Squirrels and raccoons take shelter in larger cavities.

Eventually, a dead tree becomes so riddled with rot that it falls to the ground where it continues to decay. Rotting logs on the forest floor and the soil beneath them are teeming with a decomposer-based food web. Isopods, millipedes, and

earthworms are some of the scavengers. Their predators include centipedes, daddy-long-legs, and salamanders. It takes about twenty years for a dead tree to disintegrate into soil from which new plants will grow. Nature is the original recycler.

With your back to marker 8, turn toward 3 o'clock and continue walking through the woodland, following the vegetative edge on your right for approximately 170 feet. The wooden guide rails that flank Marker 9 will be on your right.

Stop #9: Pine and Oak Woodland

You've been walking through a pine and oak woodland. Now take a sensory impression of the woods at stop 9. Do you feel exposed or protected? How does the wind sound? Wind blows constantly at Wellfleet Bay in winter. The trees act as a windbreak, so it may feel warmer and calmer here. But the treetops sway in the gusty wind. Listen for the creaking of tall pines and the thunk of branches, chunks of bark, and pinecones hitting the ground.

Do you hear birds? In late fall and winter, black-capped chickadees, tufted titmice, and nuthatches often travel in small, mixed flocks. These resident songbirds are not defending territories or looking for mates, so they are less vocal than in spring and summer.

One of the easiest songs to recognize is the "chickadeedeede" of the black-capped chickadee, our state bird. The titmouse has a "cheeva cheeva cheeva" song. Both nuthatches give nasal "yank-yank" calls.

In pre-colonial times, Cape Cod was covered with hardwood forests and lofty white pines. European settlers chopped down the original forests for homesteading, agriculture, and fuel. Deforestation led to erosion of the topsoil by wind and rain, exposing the nutrient-depleted sand beneath. By 1800, the forests were long gone; what remained were hard scrabble farms and barren ground. The bare, sandy landscape hadn't changed much when Dr. Austin arrived in Wellfleet in 1930. He planted trees to augment reforestation, but even without him, pioneer species such as eastern red cedar and pitch pine would have initiated field-to-forest succession. An early and vigorous colonizer of dry, open ground, pitch pine is the dominant tree on the Cape today. As pitch pines and cedars grow, they create a cooler and shadier habitat, so oaks can move in. Eventually, the oaks will grow tall enough to form a forest canopy that shades out the pioneer species. We are also seeing the return of eastern white pine, which was one of dominant native

trees on Cape Cod in pre-settlement forests. Succession appears to be heading toward an oak and white pine forest in the future.

With your back to marker 9, turn toward 3 o'clock and follow the vegetative edge on the right for approximately 205 feet. The wooden guide rails that flank Marker 10 will be on your right.

Stop #10: Edge of the Marsh

Stop 10 is where the trail transitions from the woodland to a different habitat. Take a deep breath for a sensory check here. Does the air feel moist? Dry? Windy? Does it smell different from the woods? Where do you think you are heading? You are at the edge of the salt marsh again. On warm autumn days and during January thaw, you may smell the organic sulphur-like odor of active decomposition in the marsh. For most of the winter, the dominant smell is the crisp, cold air of Cape Cod Bay.

What type of plant do you think is rustling in the wind? The wind is blowing through a stand of very robust grass called phragmites. With its distinctive feathery plumes, phragmites, or giant reed, is the largest member of the grass family in New England, growing up to 12 feet high. Both native and non-native species of phragmites occur in New England. The phragmites at Wellfleet Bay is the introduced species, which rapidly colonizes disturbed sites. Although it provides protective cover to some animals of the marsh, it tends to be invasive. When you turn the corner and walk along the path on the right, you'll pass a stand of phragmites. Reach over the right side of the trail about shoulder level and touch the hollow stems and plummy seed heads of these tall grasses. Are they taller than you?

With your back to marker 10, turn toward 3 o'clock and follow the vegetative edge on the right. In about 45 feet, you will feel the transition from packed trail to boardwalk. The 5-foot wide boardwalk has a toe rail on both sides. Find the toe rail on the right side of the boardwalk and follow it for another 48 feet. Where the path angles to the right, the toe rail ends and is replaced with a 4-foot tall fence with a wide hand railing. Follow the railing to Marker 11, which is affixed to the railing at the corner.

Stop #11: The Salt Marsh

At stop 11, you're facing the salt marsh and Goose Pond is behind you. Is the wind blowing in your face or at your back? You are on the deck directly over the dam that maintains Goose Pond's water level. At low tide you can hear water dripping out of the dam from Goose Pond into the creek.

Wellfleet Bay's expansive marsh is the only unditched salt marsh on outer Cape Cod. The Austins did not participate in the federal government's mosquito control campaign that ditched more than 90% of the salt marshes along the East Coast. Their farsightedness created a valuable ecological legacy. Our salt marsh is an important place for conservation research because it is one of the few naturally functioning tidal marsh ecosystems left in the region.

Salt marshes are coastal grasslands that are cyclically flooded by ocean tides. They are among the most important and productive ecosystems in the world because they function as nurseries for the young of a wide variety of marsh and marine species of fish, shellfish and crustaceans. The salt marsh is so productive because the mixing of fresh and salt water creates a nutrient-rich environment. The tidal fluctuations of the creeks facilitate nutrient exchange. Twice daily, the tide inundates the marsh with minerals and oxygen that help salt marsh plants grow. Bacteria and fungi decompose dead salt marsh plants and tidal wrack into tiny particles of organic matter called detritus. The microbe-laden detritus is the basis of the salt marsh's tremendous food web. Salt marshes are always changing, never static.

The northern harrier, formerly called marsh hawk, glides low over the marsh looking for mice, voles, and other small mammals and birds. Harriers hunt by sound as well as sight. The stiff feathers around their face form an owl-like facial disk that helps concentrate sound toward their ears. Unlike most raptors, the sexes have different plumage. The larger females are brown above and buff below, with dark underwings. Males are gray above and pale below with black wingtips. Juveniles are brown above and rusty orange below. All harriers show a white rump patch in flight that is unmistakable.

With your back to marker 11, stand at the corner so the railing is on your right. Follow it for about 10 feet to the next corner. Instead of turning the corner, walk straight across the boardwalk for about 8 feet until you reach another 4-foot tall fence. Find Marker 12, which is affixed to the hand railing.

Stop #12: The Goose Pond

At stop 12, you are facing Goose Pond. A hundred years ago, a barrage of gun shots would have greeted you here. Goose Pond and the salt marsh behind you were prime territory for hunting deer, waterfowl, and shorebirds. Hunting has been prohibited at Wellfleet Bay since 1930 when Dr. Austin established the banding station.

The Austins reinforced the dam at Goose Pond to create diverse habitat. Today, we use the dam to actively manage water levels at Goose Pond. From July through September we draw down water levels, exposing mudflats in order to maximize feeding and resting habitat for fall migrating shorebirds and wading birds. When the birds have gone, we restore pond-like conditions.

Goose Pond is brackish, a salt and fresh water mix that fluctuates on a yearly salinity cycle. The water is saltiest in late summer when water levels are lowest and dry periods create a “sea” of mud. Most years, winter snowmelt and annual rains fill Goose Pond to its highest and freshest in early spring. Occasional astronomic high tides bring salt water into the pond.

Goose Pond is gradually filling in due to tidal deposits and accumulation of decomposing seaweeds and vegetation. You may find geese here occasionally during the winter, but they prefer the marsh and creeks. Mallard ducks still frequent Goose Pond. Listen for their familiar quacking. Mallards are herbivores. They eat plants, not fish. If they swim near enough, you may hear the click-clack of their beaks as they dabble for vegetation. Mallards belong to the group dabbling ducks, which feed by tipping their bodies to reach vegetation in shallow waters. The eider and scoter that winter down at the bay are diving ducks. They eat shellfish, particularly blue mussels.

With your back toward Marker 12, walk toward 10 o’clock and recross the boardwalk to the fence. Keeping the fence and hand railing on your right, walk along the boardwalk for approximately 25 feet until the fence ends and a toe rail begins. Continue to follow the toe rail on the right. The boardwalk ends and the path becomes sandy again. At the end of the toe rail, find the wooden guide rail that leads to Marker 13.

Stop #13: Eastern Red Cedar

Marker 13 is on the right side of the path. With your back to the marker, find the bench immediately to your right. Follow the bench to the end. Just beyond the bench, there is a large, evergreen cedar tree on the right. Reach up and touch it. The eastern red cedar here at stop 13 is one of the largest on the Goose Pond Trail, about 20 feet wide and 30 feet tall. Instead of smooth, thin, pine-like needles, this conifer has branched sprays of tiny, flat scales that feel a bit prickly. Eastern red cedars belong to the juniper family. In the fall, they bear blue, waxy berries that smell like gin when crushed. Feel around for a small hard berry to crush. If you can’t find a berry, gently rub some of the needles between your thumb and fingers, which may release a faint gin-like aroma. Cedar berries are one of the favorite

foods of cedar waxwings and are an especially important winter food source for a variety of birds. This tree is also a favorite perch of red-tailed hawks. From the top branches, they scan the marsh for prey.

Eastern red cedars grow in upland habitats of dry fields and open woods. Like pitch pine, they are one of the first colonizers of old fields in the process of field to forest succession. Cedars are sun-loving trees. They die out when the woodland they helped to create becomes too shady for them. They are replaced by oak and white pine. This tree grew so large because of its sunny, open location.

Summary

You have now reached the end of the sensory trail. You are welcome to spend some time on the bench here at stop 13 before you return to the Nature Center. You have the option of continuing along the Goose Pond Trail for at least a quarter of a mile to the boardwalk and Cape Cod Bay – if the trail is dry, which depends on the tide. The rest of the Goose Pond Trail is sandy and smooth, but not as hard-packed as the all-person's trail, and it is not ADA compliant.

We hope that you have enjoyed your exploration of this portion of the Goose Pond Trail, and that this guide enabled you to make some new connections to the history of Wellfleet Bay and to the nature of our sanctuary in spring and summer. We also have a fall and winter version of the sensory trail guide. We invite you to return and explore our sanctuary on other days and in other seasons. There is always something new to experience.

You can return to the Nature Center by retracing your steps. Please return any maps and any equipment to the Nature Center before you leave. Thank you for coming.

Thank You

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Perkins School for the Blind

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