EDDY SISTERS TRAIL

An Interpretive Nature Trail Guide and History of the Lower Road Neighborhood in Brewster, Massachusetts

***Brewster Impressionism**: Goldenrod and joe-pye-weed brighten the wild meadow at the Eddy Sisters Trail, September 2011*

EXPANDED

VERSION of TRAIL GUIDE

www.brewsterconservationtrust.org

Prepared by the Brewster Conservation Trust for the Trail Dedication July 12, 2012

EDDY SISTERS TRAIL GUIDE, 2012

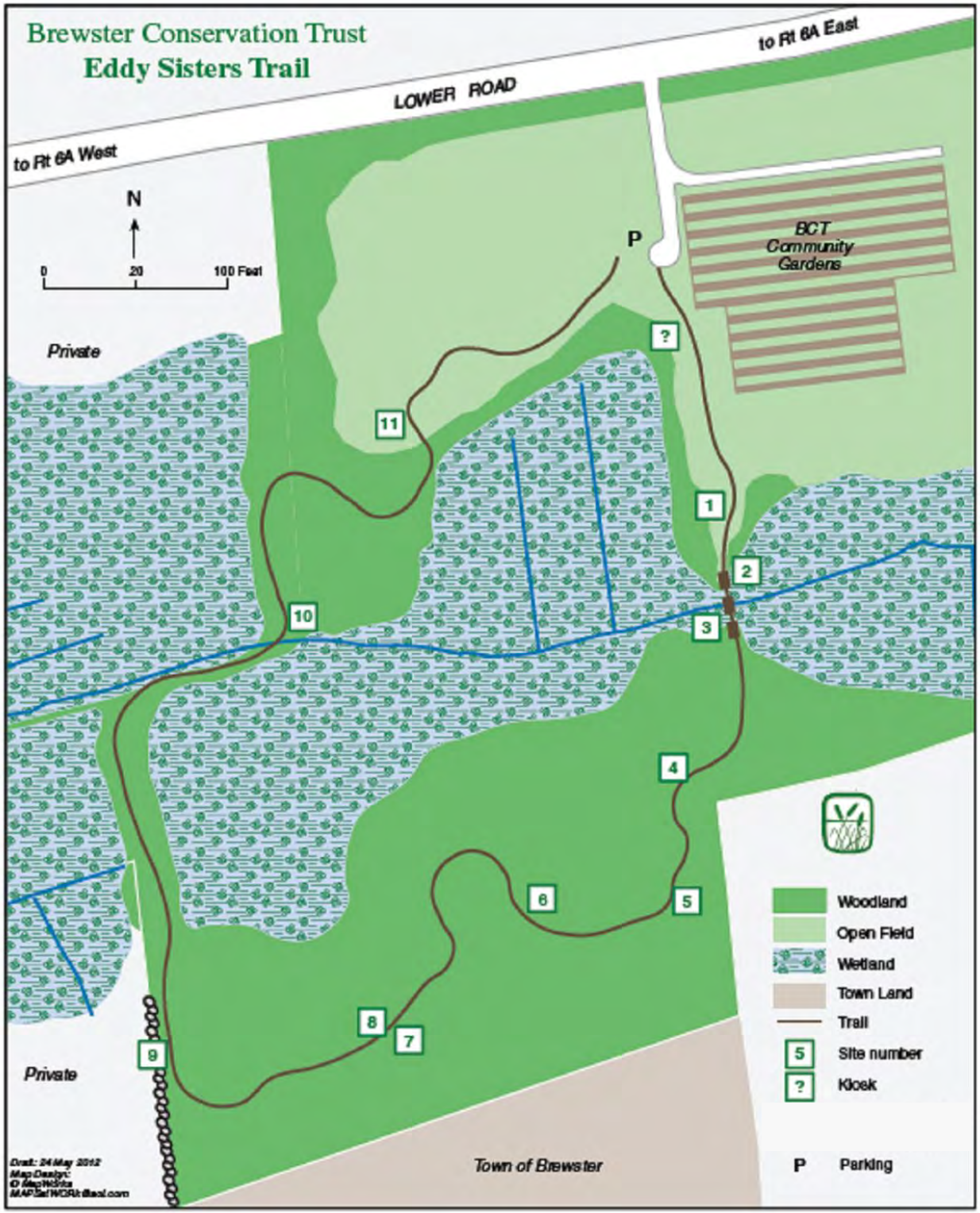
1. WELCOME TO THE EDDY SISTERS TRAIL

The Brewster Conservation Trust Board voted in 2011 to create the first official nature trail on its 350 acres of property throughout the town. The logical property to choose was the large parcel on Lower Road, already BCT's most actively-used property, owing to presence of the Brewster Community Garden. This property, which includes land donated by both the Eddy Sisters and Lenore Dedon, also has a wealth of natural resources and cultural history to interpret for the visitors. The evolution of the wetland from wooded swamp to cranberry bog and back now to maple swamp is one interesting feature. The variety offered by the forest and open meadow aspects adds to the richness of habitats and views—quiet intimate woods for contemplation and wide open fields for spirit-soaring.

BCT retained a team of experts, including Mario DiGregorio, Mark Robinson, Herb Heidt and Eliza McClennen to research the history, identify sites of interest and make the trail map shown here.

A condensed version of the interpretive trail guide is available at the trailhead kiosk.

The trail is about one-third of a mile long and takes about 20-30 minutes to walk, which includes a little time to study the guide. Learn…and enjoy!



2. *Wild swamp to cultivation and back again: the rise and fall of cranberrying*

Our ferns and maples by the Trail

Wetlands comprise between 25-35 percent of the total land area of Cape Cod. The dominant tree in Cape swamps is red maple (*Acer rubrum*), a fast growing but relatively short-lived hardwood renown for its crimson buds in April and glorious scarlet foliage in September. During the growing season, a lush carpet of cinnamon fern (*Osmunda cinnamomea*) and royal fern (*O. regalis*) rise to almost three feet in height, shading the moist woodland floor. In the early years of the 19th Century, swampland was considered worthless, costing a dollar an acre. Once folks saw the potential in cranberry conversion, however, bog acreage jumped to $50-$100 an acre by the mid-1800's. In the 1850-60s, "Cranberry Fever" struck the Cape and most bogs were developed in that time period, in response to demand. Most marginal bogs were abandoned 100 years later, when labor costs grew and the 1959 "cranberry scare" (over pesticide use) temporarily curtailed demand.

Cranberry Time on Lower Road, 1887

"Opposite the Thorndike farm were vast bogs. Author Joseph Lincoln recalled that in his boyhood, before 1900, picking cranberries yielded 1 1/2 cents per quart. The opening of school was delayed a month until early October so that whole families could pick. They would crawl through the vines for eight hours a day on their knees. The younger boys thought of it as a lark, but to the adults in must have been hard work. The Massachusetts Wampanoag Indians knew about the value of eating wild berries mixed with other food staples, but colonists add the tart berries to desserts and sauces, breads, and stews. Also, mariners carried them aboard their sailing vessels in barrels. Like lemons and limes, cranberries were known to ward off deadly scurvy."

Photos and caption source: Brewster: A Cape Cod Town Remembered, *1976, Brewster Historical Society (3rd ed., 1995).*

In 1855 there were but 21 acres of cranberries grown in Brewster. Within 10 years, it was 136 acres. As late as 1926 there were 447 acres of cranberries growing commercially in Brewster. By 2012, there were only about 85 acres of working bogs in Brewster, according to The Compact of Cape Cod Conservation Trusts, Inc.

Separating cranberries in Brewster, 1893

3. *Cranberry Cultivation Hydraulics*

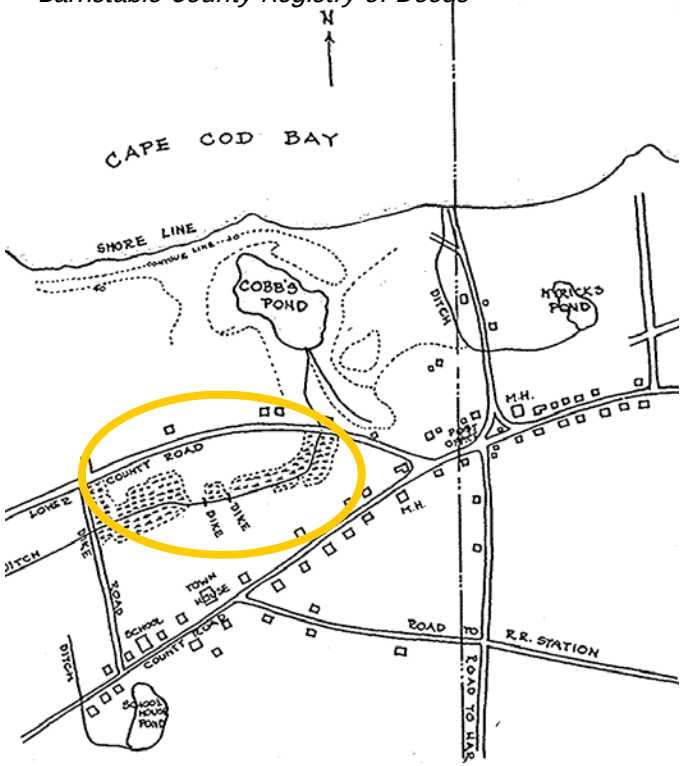
The lifeblood of cranberry bogs is running water. By 1913, Thorndike and Young had built a wooden aqueduct carrying water from Cobb's Pond to the north beneath Lower Road and into an existing stream whose banks were cut vertically and straightened into the ditch you see now. Bogs were flooded after harvest to protect the vines from winter-kill. Water elevation was controlled by a series of flumes or sluiceways (see Stop #10). The plank bridge was re-constructed by volunteers of the Brewster Conservation Trust in 2011. The Cape Cod Mosquito Control Project, founded 1930, keeps the ditching clear.

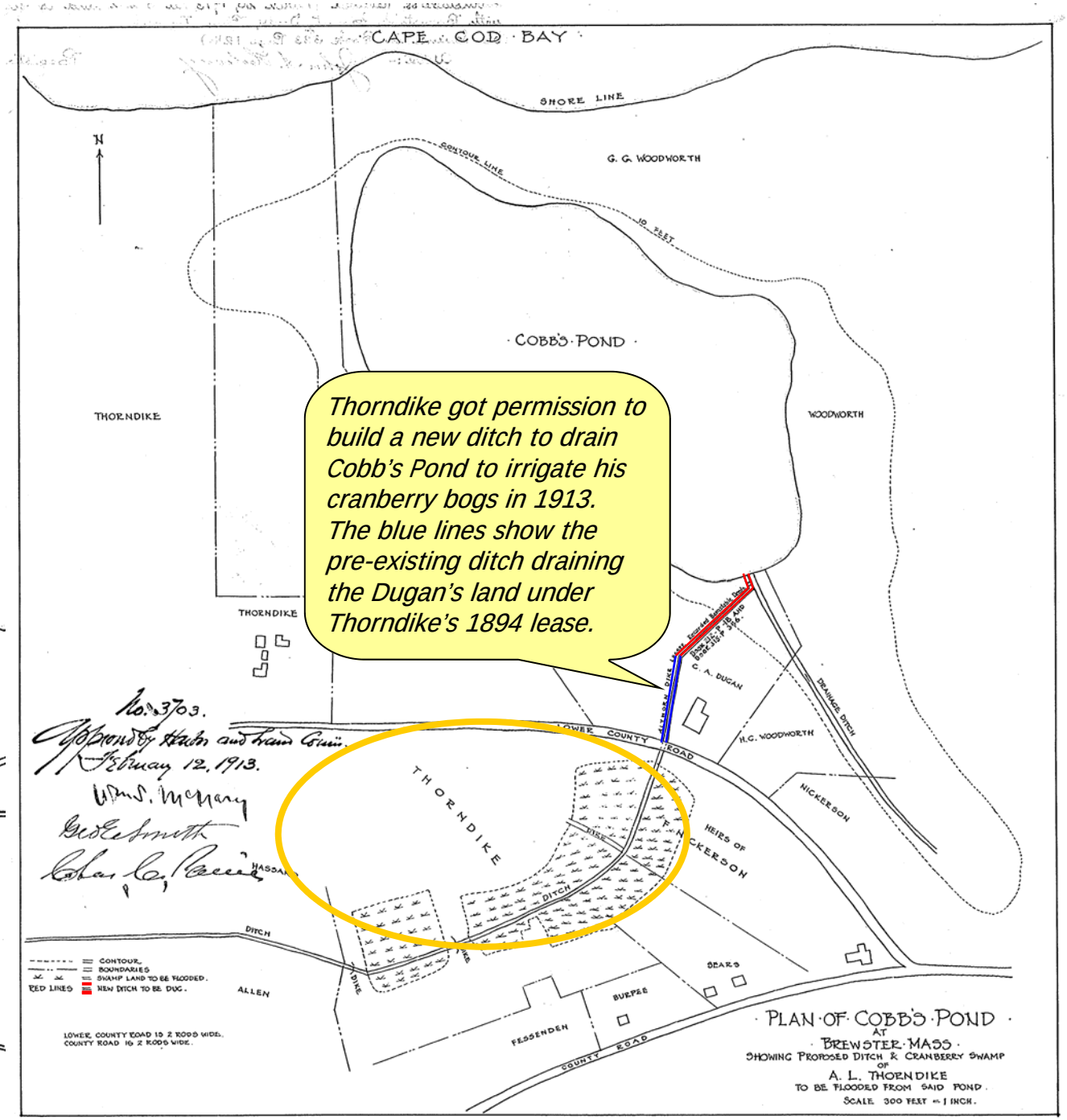
Cobbs Pond, c. 1900, was called Wauquanesit, meaning "flows to the sea." It is a kettle pond that receives surface flow from the famous Considine Ditch that drains lowlands along Brewster's Main Street from as far east as Underpass Road. After Thorndike connected Cobbs Pond to his bogs on Lower Road in 1913, water flow continued on to Freemans Pond and out to the Bay. Note the cleared land all around the pond and landscape.

3. Cranberry Cultivation Hydraulics (continued)

This 1913 survey plan enabled Thorndike to secure State permission to drain Cobbs Pond, a Great Pond of the Commonwealth. The Plan note says the head of the outlet ditch at the Pond is to be 6 feet wide and run 30 feet to a rotary pump that will lift the water 5 feet to run 450 feet through a wooden or tiled flume (red) to reach the pre-existing ditch (blue) through Dugan land.

Source: Plan Book 32 Page 77 in Barnstable County Registry of Deeds





Thorndike got permission to build a new ditch to drain Cobb's Pond to irrigate his cranberry bogs in 1913. The blue lines show the pre-existing ditch draining the Dugan's land under Thorndike's 1894 lease.

4. 'Nature's Perfume'

In the sultry summer dusk, the walker may suddenly be delighted by the fragrances of swamp azalea (*Rhododendron viscosum*) in June-July and summer-sweet (*Clethra alnifolia*) in August. The flaring azaleas sport pink to pure white tubular flowers favored by sphinx moths and hummingbirds. In spring a fungal gall is formed on the upper branches which are juicy and refreshing to chew. Tasting somewhat like watermelon and apple combined, they were gathered and pickled in colonial times.

Clethra alnifolia
or
summer-sweet or
sweet pepperbush

Rhododendron viscosum
or swamp azalea
or clammy azalea

Along the Eddy Sisters Trail in the spring, the shrubs leaf out sooner than most of the trees.

(Latin names are used for plants because of the inconsistency of common names from place to place.)

5. Changing of the Guard

Look around you here. What you see is a woods in transition, with large pitch pines (*Pinus rigida*), some 50-60 years old, looking rather haggard and bedraggled, some actually dead or dying. Notice the younger more vigorous growth of hardwoods such as choke cherry (*Prunus virginiana*), tupelo (*Nyssa sylvatica*; see Stop #8), white oak (*Quercus alba*), scarlet oak (*Q. coccinea*) and a scattering of red maple. When Pinecroft Farm ceased operation, and its open fields and meadows were abandoned in the mid-1900s, sun-loving pioneers such as pitch pine became established. Forest succession then ensued, favoring hardwoods which shaded out the softwood pines. With more time, the cherries will succumb to more oaks and other shade-tolerant species, perhaps American beech (*Fagus grandifolia*).

Pitch pine cones open in the fall to let the seeds fall out and germinate in the following spring.

White oak tree along the Eddy Sisters Trail (above left) looks smooth and white compared to the dark rough pitch pine bark (at right). Oaks and pines are the most common trees of the upland forest on Cape Cod. The pitch pine might be the Cape's signature tree. Where would we be without it?

Illustration for BCT by D. Dana Gaines, Outermost Graphics, Edgartown MA

6. Undulating topography or Something Else?

Looking to the northwest, a series of scalloped ridges will come to view. These semi-concavities are at variance with the natural topographical slope , indicating their origins as human constructed. Sand borrow pits were an integral part of cranberry production. After laboriously clearing the swampland of pines and scrub oaks then leveling the newly shorn bog surface, a layer of fine sand was applied about six inches deep. This provided the porous substrate and drainage necessary for propagation of the vines. This layer of sand needed to be reapplied annually not only for growing purposes, but to keep down injurious insects and fungal blights. A ready supply of sand was available along the upland ridge surrounding the bogs, but it was laborious labor in the 1800's to 'borrow' the sand via shovel and wheelbarrow. Wherever you see these mysterious 'key-holes' in the Cape woods, you can be sure that a century or so ago there was a cranberry bog nearby.

The Eddy Sisters Trail winds right along the top edge of an old borrow pit (photo at right). Don't fall in!

The reason for the narrow entrance to the pit was that it only had to be wide enough for a man and his wheelbarrow (shown above).

Some people call them barrow pits or burrow pits, but borrow pits seems to have emerged as the correct term. They all work!

There are great examples of very deep, overgrown borrow pits scattered through the Punkhorn Parklands in SW Brewster.

7. Cradle and Pillow

The toppled red maple before you is known as a blow-down. Many tree blow-downs occur in wetlands where the lack of oxygen in the water-soaked soils creates anaerobic conditions, leading to shallow root systems susceptible to high winds. Over time, if many blow-downs occur, the topography becomes pock-marked with an irregular pit and mound pattern. The old root ball decomposes into a mound (sometimes known as a 'pillow') and the pit of the hole (known as the 'cradle') where the roots once were give the surface an undulating pattern. Note the new maple "trees" growing up out of the pillow. The life force is a very strong one.

For more information about cradles, pillows and other interesting landscape features of the forest, try Tom Wessels' book, *Reading the Forested Landscape*, (Woodstock VT, The Countryman Press, 1997).

8. The '*Beetlebung'* Tree

The tupelo (*Nyssa sylvatica*), sometimes known as black gum, is a denizen of wetlands and their edges. Mainly coastal in distribution, the tupelo is a straight-boled tree rendering a very hard, white wood once used in industrial rollers and white piano keys. These tupelos to the east are relatively middle-aged; they can attain great size and live for two centuries or more. In the nineteenth century, tupelo was used in whale oil casks, with the dense wood rendering the beetle (the mallet) and the bung (the stopper in the cask hole). To this day it is known as the '*beetlebung'* tree on Martha's Vineyard.

Beetlebung Corner at Chilmark Center on Martha's Vineyard.

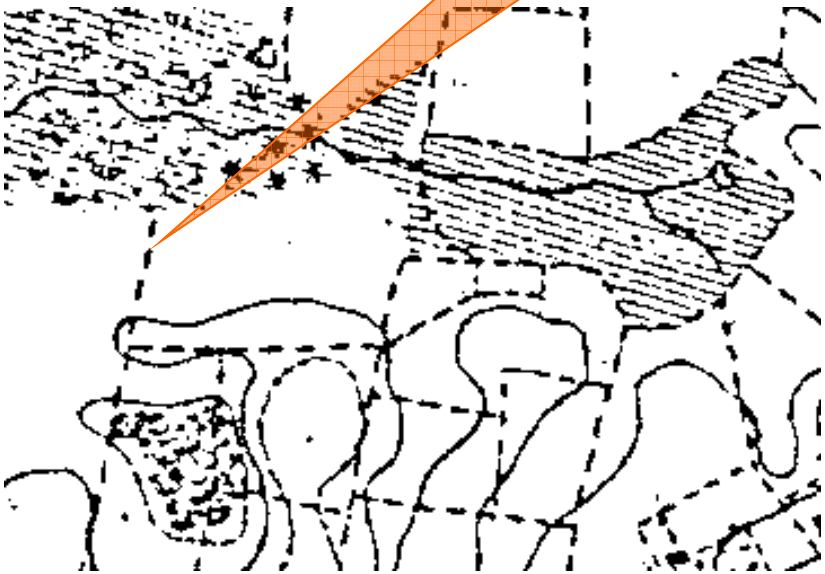
Our tupelo grove along the Eddy Sisters Trail in the winter and spring.

9. Fences of Stone

There are reputed to be nearly 100,000 miles of stone walls in New England. Before the advent of hydraulic machinery, these structures represent an enormous amount of arduous, physical labor. Most were built between 1820-1860 and many are still extant today. Most people believe they were built by farmers to delineate property bounds, but why go through the trouble of hand-placing two hundred pound boulders on top of another when simple postings or tree blazings would do nicely? These walls were, for the most part, fences to keep livestock, particularly sheep, within bounds. The lack of small stones in this wall would indicate that it was built not for agricultural reasons, but to keep livestock from wandering off property and into other people's pastures. Free-range livestock were a common complaint in mid-19th century New England.

The Eddy Sisters Trail skirts the side of the old stone wall, a long-time property boundary. Most of the rocks are granite plowed up for the farm.

The stone wall along our trail has marked the boundary as shown here since probably colonial times, and is clearly shown here in the 1868 federal survey map as a boundary.



10. Damming for Cranberries

Augustus Thorndike needed a ready supply of water to irrigate and flood his bogs. In 1913 he received permission from the town to direct water from Freeman's Pond into a series of ditches and headwalls such as this one to control water levels and flooding within the bogs. Look closely inside the headwall wings and the mechanics of the flume or sluiceway becomes evident. Boards (called flash boards) were placed into the tongue-and-groove notches; these boards could be added or removed depending on the desired elevation of the water. All or most were removed to completely drain the bogs for harvest time. Note the wetter conditions on the upstream side, where sedge, ferns and false nettle (*Boehmeria cylindrica*) are found where the water was impounded. Downstream, where water flowed directly into the ditches, red maple, a less wet species, dominates.

Red maples arch over the stream along the Eddy Sisters Trail

Flashboards are used to control water levels for non-cranberrying use too.

Poured concrete flume at the downstream end of the Thorndike Bogs, used to control water levels in the bog.

Flashboard notch in riser

Headwall wing

Flashboard notch in riser, looking upstream

11. Indian Planting Fields and Joe-pye-weed

As the walker emerges from the woods, a wide open wet meadow extending to Lower Road comes into view. These fields never succeeded to woodland or bog probably due to Native American agricultural practices dating to before white colonization. Just west of here along the east bank of Stony Brook Valley was an Indian village known as the "*Saquatucket Sachemship*". The broad low fields, including the ones here, were planted to maize (corn), beans and squash supporting the population of this Wampanoag clan. Wild cranberry, which grew commonly in area wetlands, was dried and mixed with venison, then made into cakes known as pemmican.

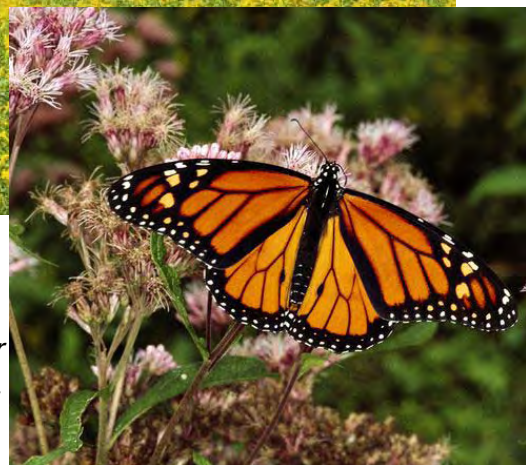
In late summer, a purple haze of Joe-pye-weed (*Eupatorium purpureum*) rises over this low field. It was named after a Native American known as Joe Pye, who used various plants including the one named after him to combat typhus fever throughout New England. Goldenrod (*Solidago spp.*) is the other dominant flowering plant, at its peak about Labor Day. Goldenrod and the field's milkweed are favored nectar sources for beetles, bees and butterflies, including the famed Monarch. In fact, Monarch butterfly relies exclusively on the milkweed to lay its eggs and its caterpillars have adapted to ingest the toxic milky latex of the plant. Birds of the meadow include hawks, bobwhite quail, bluebirds, swallows, woodcocks and sparrows.

You're out of the woods,
You're out of the dark,
You're out of the night,
Step into the sun,
Step into the light.

Keep straight ahead for the most glorious place
On the face of the earth or the sky.

- - *"Optimistic Voices" from the soundtrack to The Wizard of Oz, 1939.*

Goldenrod and Joe-pye-weed cover the meadow along the Eddy Sisters Trail.



Monarch feeding on nectar of Joe-pye-weed.

ACKNOWLEDGEMENTS

We hope you have enjoyed learning more about the natural and cultural history hidden along the Eddy Sisters Trail. Please watch our newsletters and website for invitations to join us on guided walks along the trail sponsored by the Brewster Conservation Trust. They are always free!

Our thanks to Mario DiGregorio and Mark Robinson for the text of this Trail Guide. Mario served as Brewster's first Town Conservation Administrator in the 1980s and has written the premier guide to rare plants on Cape Cod, Vanishing Heritage. *He lives in Falmouth and is a self-employed environmental consultant.*

Mark Robinson has published no books, but, like Shakespeare, finds "tongues in trees and sermons in stones." He has served as the conservation advisor to the Brewster Conservation Trust since 1986 as the Executive Director of The Compact of Cape Cod Conservation Trusts, Inc, a regional service center for land trusts. Most of the protected land in Brewster since 1990 has had Mark's fingerprints on it, both for the BCT and the Town.

SELECTED READING LIST

If you would like to delve farther and deeper in this beautiful and complex web of nature and history represented in the Lower Road neighborhood of Brewster, Mark and Mario suggest the following materials:

William Cronon, Changes in the Land: Indians, Colonists and the Ecology of New England, Hill & Wang, NY, 1983.
Beth Schwarzman, The Nature of Cape Cod, University Press of New England, NH, 2002.
Tom Wessels, Reading the Forested Landscape; The Countryman Press, VT, 1997.
Mrs. William Starr Dana; How to Know the Wild Flowers; Scribners, NY, 1895.
Harriet L. Keeler; Our Northern Shrubs; 1910.
Mario DiGregorio and Jeff Wallner, A Vanishing Heritage: Wildflowers of Cape Cod, Mountain Press MT, 1989.
Joseph Thomas, Cranberry Harvest, Spinner, MA, 1990.
Josiah Paine, A History of Harwich, Sullwold, 1937.
Brewster Historical Society, Brewster-A Cape Cod Town Remembered, Brewster MA, 1976.
Henry C. Kittredge, Shipmasters of Cape Cod, Houghton Mifflin, MA, 1935.

If you are a dues-paying member of the Brewster Conservation Trust, thank you!
If you are not, please consider joining us to preserve the best green of Brewster.

More information on how to become a member of the Trust is available on our website: *www.brewsterconservationtrust.org.*
or email us at *bct@brewsterconservationtrust.org*

We thank the many families of Brewster who donated land to the Trust in the Lower Road neighborhood between 1984 and 2012.

Without their generosity of land and spirit, we could not have assembled this wonderful retreat from the busy affairs of the world:

Mary-Louise and Ruth N. Eddy

Lenore Dedon
(in memory of Charlie Dedon)

William and Agnes Dowling

Brewster Park Club

Arthur F. & Geraldine P. Dugan

Roy W. Robinson, Jr.

Margaret Gibbs Trust

Hope T. Davis