

WELCOME TO LONG POND, WELLFLEET, MASSACHUSETTS (By Steve Broker)

INTRODUCTION

Long Pond is a glacially formed **kettle pond** that originated following the retreat of the **Laurentide Ice Sheet** beginning some 14,000 years ago (Late Pleistocene age). Three major lobes of this continental ice sheet formed Cape Cod, the largest glacially produced peninsula in the world. Worldwide warming followed. The ice blocks that broke off the retreating glacier subsequently were covered by glacial outwash. They remained as ice for 2,000 to 3,000 years before melting into their “kettles.” Bottom core studies at Wellfleet’s nearby Duck Pond indicate a minimum age for that pond of 12,000 years.

The two main sections of Long Pond connect at a narrows that is visible from the Town Landing. This side of the pond has a maximum depth of 60 feet at the center when the water level is at its maximum. The other side, generally more shallow throughout, reaches a maximum depth of 50 feet. The connecting narrows consists of two small kettles. As with all kettle ponds, Long Pond intersects the **water table**, slowly circulating and filtering its waters with surrounding **groundwater**. A study of Massachusetts’ freshwater lakes and ponds conducted decades ago determined that Long Pond then had nearly the cleanest water in the state.

The sandy bottom in the main swimming area of Long Pond results from extensive erosion of sand from the Town Landing shoreline, an artificial “beach” created by human traffic and trucked-in sand. Heavy use of the pond in recent years has led to increased erosion. The natural aging process of the pond thus is speeded up greatly. Presently, there is a five-foot underwater wall of sand slowly migrating out into Long Pond. This wall of choking sand can be viewed underwater and also in aerial views of the pond. The naturally silty bottom of the pond lies beyond this sand. In deepest water, a scuba diver can stick an arm all the way into the silt floor without touching anything “solid.” Aquatic grasses grow in Long Pond between depths of 15 feet and 30 feet. They are excluded from deeper waters by diminished penetrating sunlight. The center of the pond has a non-vegetated, monotonous bottom.

Long Pond is one of a dozen and a half kettle ponds that formed in the Wellfleet outwash plain. The others include Gull Pond and its neighbors Higgins, Williams, and Herring Ponds, Great Pond and four small ponds at its “corners”

(Turtle, Northeast, Southeast, and Southwest or Grass Ponds), Dyer Pond, Duck Pond, Kinnacum and Spectacle Ponds, two unnamed ponds associated with Spectacle, Doane Bog Pond, Perch Pond, and Squires Pond. Other Wellfleet freshwater wetlands include **vernal pools**, **red maple swamps** (one is located between Long Pond and Dyer Pond), the **Atlantic White Cedar Swamp** at Marconi Site (some trees here are more than 300 years old), and a **sphagnum bog** found along Fresh Brook in South Wellfleet. Southernmost Truro also has an ecologically significant **quaking bog**.

Cape Cod has more than 800 kettle ponds, and thus they are not uncommon here. However, the shores of these ponds, called **coastal plain pond shores**, constitute a **globally rare habitat**. The *Cape Cod Critical Habitats Atlas* (Association for the Preservation of Cape Cod, 1990) recognizes the significance of kettle ponds as “**critical habitat for many state-listed rare plant and wildlife communities.**” In spite of the fact that Long Pond has a heavily used town landing, it has as diverse a biota of plants and animals and as well developed a pond shore habitat as any kettle pond on the Cape.

THE PLANT AND ANIMAL LIFE OF LONG POND

On-going studies by Cape Cod National Seashore biologists and a half-century of intensive field work by two Long Pond Road residents have produced a wealth of information about the plants and animals of Long Pond and adjacent lowlands and uplands. The plant communities found here include the following: submergent aquatic plants; floating and emergent aquatic plants; the pond shore community; a higher zone of mostly woody plants on the pond banks; swamps adjacent to the pond; the surrounding pine-oak forest. Each plant community supports its own characteristic plant species. An impressive diversity of invertebrate and vertebrate animals shares each of these communities. Insects are the most easily seen **invertebrates**. Several dozen species of damselflies and dragonflies dart through the air above the pond shore. Among them are Civil Bluet, Violet Dancer, and various spreadwings (damselflies) and Damson Skimmer, Ruby Meadow Beauty, Red Saddlebags, and Common Green Darner (dragonflies). Many moths, butterflies, and beetles and numerous other aquatic and flying insects live at Long Pond.

Among the **vertebrates**, the most commonly seen fishes are yellow perch, pumpkinseed, and grass pickerel. Bullfrogs, Green Frogs, and Pickerel Frogs are found easily at the pond edge. **Please observe the National Seashore signs, and do not try to capture them.** Bullfrog tadpoles are found in shallow water feeding on pine pollen (late June-early July) and on other plant matter later.

Bullfrog tadpoles also are found at the bottom of the pond in deepest waters. A population of the endangered Eastern Spadefoot (*Scaphiopus holbrookii*) breeds in a nearby vernal pool. The turtles of Long Pond include Common Snapping-Turtle, Painted Turtle, and Eastern Box Turtle. Box Turtles are mostly terrestrial, but they sometimes bury themselves in sand at the pond shore. Snakes living in the area include Northern Black Racer, Eastern Garter Snake, and Eastern Hognose Snake. Long Pond also enjoys a remarkable diversity of birds and a number of mammals in the surrounding woodlands and fields.

THE COASTAL POND SHORE PLANT COMMUNITY

The *Cape Cod Critical Habitats Atlas* (1990. Association for the Preservation of Cape Cod) states of the coastal pond shore plant community, **“the critical habitat area extends from the highest water line to the lowest water line.”** Coastal pond shore plants typically reach their maximum growth in August when the pond level has dropped due to summer evaporation. Then, a sandy shoreline is exposed around the circumference of the pond. **You should not enter pond shore areas where these low-growing plants are found.** Bathers (young and old) can trample and destroy pond shore plants through careless inattention. The most significant of Long Pond’s pond shore communities are located along the far half of Long Pond, but important remnant patches of plant growth border the Town Landing shore. **Please watch where you step!**

The carnivorous sundews are among the most remarkable of pond shore plants. All three eastern United States species (Genus *Drosera*) are found at Long Pond: Round-leaved Sundew, Spatulate-leaved Sundew, and Thread-leaved Sundew. They all grow from basal rosettes. The first two lie close to the ground. Leaf size is no bigger than your “pinky” fingernail. The thread-leaved species grows to a maximum of 8-10 inches, and it can form dense carpets. All three species produce tiny, delicate, pink flowers. The sticky droplets on sundew leaf margins capture unsuspecting insects, including minute beetles and flies and small damselflies. The prey species struggle to get free, but they eventually exhaust themselves. Digestive enzymes released by the sundew then break down soft body parts, and the hard insect exoskeletons eventually fall off the plants. Carnivory is an evolutionary adaptation enabling these plants to live in very acidic, low-nutrient soils. The insects consumed provide a source of nitrogen, essential for the plant’s manufacture of protein.

Shallow water floating and emergent plants include Common Arrowhead, Common Pipewort, Pickerelweed, Military Rush, Yellow Pond-Lily, Fragrant Water-Lily, Floating Hearts, Purple Bladderwort, and Water Lobelia. **Pond shore plants** growing in the exposed sandy shoreline include sedges,

Yellow-eyed Grass, Yellow Water-Buttercup, the sundews, Cross-leaved Milkwort, Canada St. John's-wort, Virginia Meadow-Beauty, Large Cranberry, and Rose Coreopsis. Several **woody shrubs and herbaceous plants** grow just above the high water mark. Most significant of these are Swamp Loosestrife (Water Willow), Sweet Pepperbush, Leatherleaf, Highbush-Blueberry, American Cranberry, Swamp-Milkweed, Buttonbush, Thoroughwort, and Slender-leaved Goldenrod. Several small, wet (hydric soil) areas around the edges of Long Pond support Red Maple (*Acer rubrum*) or Red Maple-Black Gum (*Nyssa sylvatica*) **swamps**.

The **wooded uplands** that surround Long Pond comprise a **pine-oak forest**. Representative tree species are Pitch Pine (*Pinus rigida*) and three oak species: Black Oak (*Quercus velutina*), White Oak (*Q. alba*), and Scrub Oak (*Q. ilicifolia*). Additional tree species indicating human settlements include American Basswood (*Tilia americana*) and Black Walnut (*Juglans cinerea*). The widespread presence of Black Locust (*Robinia pseudoacacia*), a tree species of more southern distribution introduced into the northeastern United States through human activity, marks the presence or former presence of farmland, home lots, and vacant fields. Black Locust spreads extensively by underground root suckers. There is nothing fun about the experience of stepping on locust thorns with bare feet.

The forest community of Cape Cod that existed before European settlement included American Holly (*Ilex opaca*), Coastal Basswood (*Tilia neglecta*), American Beech (*Fagus grandifolia*), Black Birch (*Betula lenta*), Yellow Birch (*B. alleghaniensis*), Post Oak (*Quercus stellata*), and several species of Hickory (*Carya spp.*). These **critical woodland communities** now are exceedingly rare on Cape Cod, as most of these tree species were cut down long ago for fuel wood and for building purposes. Two remnant stands of such trees are found along the Herring River near Herring Pond in north Wellfleet and on Try Island in South Wellfleet (Wellfleet Bay Wildlife Sanctuary).

THE BIRDS OF LONG POND AND VICINITY

A 2001 study of woodland bird species by the Cape Cod National Seashore included a monitoring site within 250 yards of Long Pond town landing. The following information, however, is based on field observations of two Long Pond Road residents who are active field biologists and who have developed annual records of Long Pond birds since the early 1950s. In addition, a five-year Massachusetts Breeding Bird Atlas 2 project was held from 2007 to 2011. The author's extensive Atlas field work and the last 14 years of on-going studies in

Wellfleet's Atlas Block 05 have resulted in a more complete understanding of the breeding birds of Long Pond. The list below includes 110 species of birds that are found at Long Pond and the surrounding lowlands, open areas, and wooded uplands. At least 65 of these species are confirmed or probable breeding birds. The other species include spring migrants, summer non-breeders, early fall migrants, and wintering birds. The migrant birds feed and rest here before moving further north to their breeding grounds. The non-breeders are seen feeding or flying to other Outer Cape roost sites. You can best enjoy the birds of Long Pond by paying attention to the different habitats found here, and to the sights and sounds that surround you. Following is a list of birds that can be located with time and patience. Some species occur in two or more habitats.

Long Pond waters and airspace. Double-crested Cormorant, Great Blue Heron, Green Heron, Turkey Vulture, Canada Goose, American Black Duck, Mallard, Osprey, Bald Eagle, Red-tailed Hawk, Laughing, Ring-billed, American Herring, and Black-backed Gulls, Chimney Swift, and swallows. American Black Ducks occasionally are seen swimming with their young. Osprey hover over Long Pond, plunge in, and carry captured fish to a nearby nest site. Cooper's Hawk and Red-tailed Hawk nest in surrounding woodlands. Green Heron can be seen over the pond's far shore in early morning or evening. Bald Eagle sightings are rare but regular. Turkey Vulture occurs commonly over the pond and surrounding forests. Tree Swallows and Barn Swallows feed on mosquitoes (in the air) and water striders (on the pond surface) in early evening. On December 6, 2020, I observed a storm-driven Dovekie swimming in Long Pond, then lifting off and flying in the direction of the Outer Beach and the ocean.

Coastal plain pond shore community. Spotted Sandpiper, Belted Kingfisher, Eastern Kingbird, Red-winged Blackbird, Common Grackle. Spotted Sandpipers feed along pond shores and fly low over the pond surface with characteristic wing beats and glides. Kingfishers perch in shoreline trees, then chatter in flight as they relocate. Eastern Kingbirds build nests in pitch pine trees overhanging the pond. They lay their eggs in July.

Town Landing grassy areas and groves of trees. Mourning Dove, Red-bellied Woodpecker, Downy Woodpecker, Hairy Woodpecker, Northern Flicker, Eastern Wood-Pewee, Great Crested Flycatcher, Blue Jay, American Crow, Black-capped Chickadee, Tufted Titmouse, White-breasted Nuthatch, American Robin, Gray Catbird, Cedar Waxwing, Black-and-white Warbler, Chipping Sparrow, Northern Cardinal, Brown-headed Cowbird, Baltimore Oriole, House Finch, American Goldfinch, House Sparrow. While sunning at the Town Landing, you easily can identify a dozen bird species right around you.

Lowlands and thickets. Carolina Wren, House Wren, Brown Thrasher, Yellow Warbler, Common Yellowthroat, Eastern Towhee. These birds are more secretive, but they can be heard calling from shrub thickets surrounding the Town Landing. Common Yellowthroats (call = wichee-wichee-wichee) give a frequent chip call (a strong, dry “chedp”) as they collect insect larvae such as caterpillars to feed their young nestlings.

Surrounding Woodlands. Cooper’s Hawk, Wild Turkey (greatly increasing), Northern Bobwhite (greatly declined), American Woodcock, Ruby-throated Hummingbird, woodpeckers, Red-eyed Vireo, Brown Creeper, Hermit Thrush, Wood Thrush, Pine Warbler, American Redstart, Ovenbird, Purple Finch. As noted above, Osprey has nested on a tower (visible from the middle of Long Pond) on the Old King’s Highway. Cooper’s Hawk has increased significantly on the Cape in recent years. These woodland hawks offer fleeting glimpses in rapid flight. American Woodcock has a lekking ground for displaying and courtship at twilight in a nearby wet meadow. Hummingbirds come to feeders set up by Long Pond residents. Brown Creeper builds nests behind loose bark or house shutters. Pine Warbler and Ovenbird are two common nesting wood warblers. The nocturnal raptors include Eastern Screech-Owl and Great Horned Owl (both regularly heard calling), and Northern Saw-whet Owl (less frequent).

LONG POND’s FLOATING, EMERGENT, AND POND SHORE PLANTS

Common Arrowhead	<i>Sagittaria latifolia</i>	(Water-Plantain Family)
Sedge	<i>Carex</i> species	(Sedge Family)
Yellow-eyed Grass	<i>Xyris smalliana</i>	(Yellow-eyed Grass Family)
Common Pipewort	<i>Eriocaulon aquaticum</i>	(Pipewort Family)
Pickerelweed	<i>Pontederia cordata</i>	(Pickerelweed Family)
Military Rush	<i>Juncus militaris</i>	(Rush Family)
Yellow Pond-Lily	<i>Nuphar lutea</i>	(Water-lily Family)
Fragrant Water-Lily	<i>Nymphaea odorata</i>	(Water-lily Family)

Yellow Water-Buttercup	<i>Ranunculus flabellaris</i>	(Crowfoot Family)
Spatulate-leaved Sundew	<i>Drosera intermedia</i>	(Sundew Family)
Round-leaved Sundew	<i>Drosera rotundifolia</i>	(Sundew Family)
Thread-leaved Sundew	<i>Drosera filiformis</i>	(Sundew Family)
Cross-leaved Milkwort	<i>Polygala cruciata</i>	(Milkwort Family)
Canada St. John's-wort	<i>Hypericum canadense</i>	(St. John's-wort Family)
Swamp Loosestrife	<i>Decodon verticillatus</i>	(Loosestrife Family)
Virginia Meadow-Beauty	<i>Rhexia virginica</i>	(Melastoma Family)
Sweet Pepperbush	<i>Clethra alnifolia</i>	(White Alder Family)
Leatherleaf	<i>Chamaedaphne calyculata</i>	(Heath Family)
Highbush-Blueberry	<i>Vaccinium corymbosum</i>	(Heath Family)
Large Cranberry	<i>Vaccinium macrocarpon</i>	(Heath Family)
Floating Hearts	<i>Nymphoides cordata</i>	(Gentian Family)
Swamp-Milkweed	<i>Asclepias incarnata</i>	(Milkweed Family)
Purple Bladderwort	<i>Utricularia purpurea</i>	(Bladderwort Family)
Buttonbush	<i>Cephalanthus occidentalis</i>	(Madder Family)
Water Lobelia	<i>Lobelia drotmanna</i>	(Bluebell Family)
Thoroughwort, Boneset	<i>Eupatorium perfoliatum</i>	(Composite Family)
Slender-leaved Goldenrod	<i>Solidago tenuifolia</i>	(Composite Family)
Rose Coreopsis	<i>Coreopsis rosea</i>	(Composite Family)

(Produced in 2010 and updated in 2025)