



December, 2020 Volume 1, Issue 3

Our “Grass Roots” Organization

A grass roots organization is defined as one that encourages community members to use collective action at the local level. Citizens for the Protection of Waquoit Bay is a small non-profit that was started in 1981 by Winnifred Woods and Deborah Moore to help protect Washburn Island from development. Like the Bay it supports, CPWB has ebbed and flowed through periods of activity, depending on the severity of ecological needs. We are now using its new members, Board members, and its Action Committees to reactivate prior initiatives and be proactive in new ones.

An on-going issue in our Bay is the excess of nitrogen and phosphorus; it contributes to the algae blooms, decreased oxygen levels, loss of habitat for plants and shellfish, and increases in invasive species. Because suburban-type lawns fed by both individuals and commercial services contribute to this, CPWB felt that a grass roots level action was needed to bring awareness of the issue, educate homeowners on the causes and results, and offer options.

And here's where it got very “grass roots.” Hoping to accomplish this before the fall fertilizing season, some interested members developed a flyer which was then approved by the Board. It started by focusing on the varied summer experiences on the Bay: “Waquoit Bay gave us so much this summer! Did you enjoy swimming, kayaking, fishing, sailing, and shellfishing? Now it's time to help protect this incredible resource! YOU CAN MAKE A DIFFERENCE.... ONE LAWN AT A TIME!” It then included the rationale, the town lawn prohibitions, and a variety of alternatives. The reverse side gave more scientific details of suggestions along with related websites. It was a plea to ask abutting residents to think about their fertilizer use, be better informed of the consequences, and know the lawn-friendly options such as slow-release fertilizers.

That community action view of the initiative affected the decision of how to disseminate the flyer. Rejecting direct mailings and internet options, the members decided to do it on foot – truly a grass roots approach. After mapping the streets and neighborhoods that surround Waquoit Bay in both Mashpee and Falmouth, the members solicited friends, family, neighbors, and spouses to pitch in; phone calls were made and the walking began. It definitely had its ups and downs! People needed to respect the danger of the Covid-19 virus, the privacy of personal property, and the sanctity of the mailboxes.

But as with so many things during this virus era, there were many unexpected joys and benefits. People enjoyed the fall weather and walking in the brisk air. Thinking of creative ways to leave a flyer like anchoring it with a rock. Getting into socially-distanced conversations with neighbors and meeting new ones. Being able to discuss the issues and hearing from many who were already using Waquoit Bay-friendly products and services. And probably most of all, having a sense of accomplishment that even this small house-by-house, person-to-person project might have an effect. Close to 450 flyers were disseminated.

It would be naïve to think that all of them reached their homeowners' hands and had an impact. But as the flyer said, “You can make a difference..... one lawn at a time.” And that's a good start.

Please read about other ‘good starts’ this year in our president's Annual Report. And don't miss all of the newsletter's information regarding various invasive species that threaten the waters we love. With your help, we can make that difference.

- Bobye Anderson,
Secretary



The Annual Report

We are a small group of dedicated volunteers who have come together to revive an old organization with a storied past and now, once again, is an effective advocate for the Waquoit Bay watershed. This year CPWB has a good list of accomplishments worthy of that past history:

Dog Waste Bag Dispenser Stations: We have installed dog waste dispenser bag stations at six locations in the watershed: Martin Road at Quashnet River trail parking lot, the parking lot opposite Hay Road on Red Brook Road, the Seapit Road Town boat landing, the Seconsett Island swim area, the Seacoast Shores swim area and their Association's club house. We have already had to refill 400 bags at the Quashnet station and if you figure a half pound of waste per bag that's 200 pounds of dog waste that we have kept out of our shellfish beds and swim areas.

Fertilizer Education: Several of our board members and volunteers have produced an information sheet informing residents about the proper use of fertilizers according to town bylaws. Almost 450 flyers were distributed door to door to homes bordering all sides of Waquoit Bay. If you must use lawn fertilizer, please use it responsibly.

Road Runoff: We have launched a campaign to address the long-neglected road runoff sites that intersect with the tributaries that flow directly into Waquoit Bay, spreading toxins and disease bearing organisms that close shellfish beds and swim areas. This message will be in the form of a letter to the Towns of Mashpee and Falmouth urging action to comply with Federal and State laws mandating remediation. We have recruited the Falmouth Water Stewards, Falmouth Rod and Gun Club, Cape Cod Chapter of Trout Unlimited, Mashpee Clean Waters, the Seconsett Island Assoc., and the Hamblins Point Homeowners Assoc. to join this campaign.

Blueberry Bushes: With a generous donation from one of our members, we purchased and planted six blueberry bushes along the outlet of Bog Pond which flows into Caleb's Pond. Work had recently been completed by the Division of Fish and Wildlife to clear the stream of debris from an old brick culvert. WBNERR asked if we could plant the bushes on the site to hold the bank together after the work was completed.

New Board Members and Volunteers: We have recruited new board members to the organization with new interests like addressing invasive species. We are also joining WBNERR's group to keep an eye on Red Brook bog to determine how it can be restored to bring back the eels, herring and salter brook trout that once inhabited the brook. Please join with us in welcoming Joan Ryan, legal advisor, Marc Turgeon, database management and longtime summer resident, Rick Otis, to the board. Rick brings a

wealth of knowledge and love for Waquoit Bay with an urgency to stem the tide of invasive species to the board. We also have several very active volunteers that have done great work. Please join us in thanking: Pam Biscoe who has led the charge on installing waste stations and distributing fertilizer flyer information with help from Maggie Megaw and our outstanding Board Secretary, Bobye Anderson. Patty Waltner edited our fantastic newsletters which were beautifully designed by Sara Slaymaker.

We also want to recognize longtime resident, scientist and birder Herb Luther for keeping us updated regarding Red Brook bog and James Rassman, WBNERR's Stewardship Coordinator, who serves as their liaison to CPWB and has taken the time to attend our meetings when he could be home with his family.

The board is rounded out by the ever faithful, longtime resident and volunteer recruiter, Win Munroe. Win is the very heart and soul of the organization and a source of sage advice. Mike Bingham is our treasurer, who keeps our finances in order. However, more importantly, Mike is our ever-present eyes on the bay from the perspective of his kayak, keeping us aware of all current conditions and events on the Bay. This is a fantastic group of activists. We are lucky to have them.

Jayne Abbott and Deborah Moore: Two very important members of CPWB have passed away in the last year. Deb Moore helped start the organization with Winnifred Woods. Together they started and led the organization through the acquisition of both Washburn Island and South Cape Beach. It took a tremendous amount of foresight and work to create CPWB and even more to make it an effective advocacy tool.

Jayne Abbott was a dear friend to all and was always an effective voice for the watershed and community. She led many a clean-up of the Bay and Waquoit neighborhoods. She is sorely missed.

Finances: We have approximately \$14,000 in checking and \$28,000 total net worth.

Please like us on Facebook and visit our website: www.protectwaquoitbay.org



CITIZENS FOR THE PROTECTION OF WAQUOIT BAY



Matt Patrick, President
Boby Anderson, Secretary
Mike Bingham, Treasurer
Winthrop Munro
Rick Otis, Jr.
Joan Ryan
Marc Turgeon

LET'S KEEP IN TOUCH!

Did you receive all three newsletters this year? We know that many of our members receive mail at different locations throughout the year. Please share your mailing preferences so that we can update our database.

Send an email to CPWB1981@gmail.com with the address(es) where you'd like to receive mail and the time of year each address is relevant. We will do our best to keep you informed of the happenings of CPWB.



GET INVOLVED!

Have any of the articles in this or other newsletters piqued your interest? Over the winter and spring months, Action Committees will be forming to continue the work that's been done in 2020. Please review the list below and email us at CPWB1981@gmail.com with the Contact Person listed below in the Subject line. We will follow up with more information on a possible role that will fit your time availability.

Road Run-Off Awareness: Matt Patrick

Invasive Species Management: Rick Otis, Jr.

Fertilizer/Nitrogen Education: Bobye Anderson

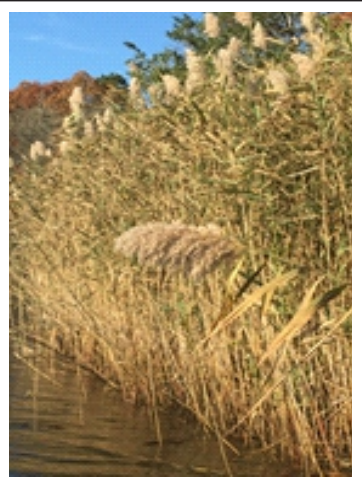
Dog Waste Bag Dispensers: Pam Biscoe



Did You Know?

Phragmites Are an Invasive Species

Take a paddle up the Quashnet River or walk near Sage Lots Pond at the South Cape Beach and you notice stands of tall reeds with plumes waving in the breeze. Pretty, you might think at first glance. Actually, these plants are phragmites – phragmites australis, also known as common reed – a fast-growing, invasive species that destroys native plant life. Gone are the marsh mallows, cattails and other wildflowers. Marsh grasses are choked out. Native wildlife habitat is lost.



Description

There are several species of phragmites, including a native variety. However, the species most common around the bay is the invasive reed that was introduced accidentally in the 1800's from Europe, probably from ship ballast. An aquatic plant preferring alkaline habitats, low salinity and high water levels, it grows in swamps and marshes, along river edges, on the shores of lakes and ponds, and along roads and ditches. Since it tolerates brackish water, it is often found in the upper edges of estuaries. Phragmites can grow up to twenty feet tall with blue-green flat, elongated leaves that are between a half and two inches in width. Purple-brown-silver seed head plumes, six to twenty inches long and eight inches in width, top each plant by late July. Phragmites produce and emit methane (a significant greenhouse gas) and take in carbon dioxide, but the quantities appear to be influenced by the geochemical environment. Some studies indicate that phragmites emit more methane and take up a greater amount of carbon dioxide than native New England salt marsh vegetation. However, other studies show that they emit and take up similar amounts to the native marsh.

How Phragmites Spread

Phragmites reproduce by means of underground and surface runners as well as seed dispersal. Rhizomes, underground stems from the parent plant that spread horizontally and form roots and shoots, grow at a rate 15.7 inches per year. Stolons, stems that extend along the surface and can also form roots and shoots, are capable of growing at a rate of 4.25 inches a day! Phragmites roots can reach a depth of six feet allowing the plant to tolerate drier upland sites as well as water depths of more than two feet. Even fragments of rhizomes or stolons can produce new phragmites plants. Mature phragmites can produce about 2,000 seeds annually, but need less than two inches of water in order to germinate successfully. Phragmites spread most effectively by rhizomes and stolons. Growth often occurs where humans have disturbed an area, leaving open spaces free to be colonized. Wetlands that have been enriched with nutrients (for example by the fertilizer run-off) allow phragmites to grow more densely.

Why Phragmites are a Problem

Phragmites are ecosystem engineers meaning that they can change the form and function of habitats. They create monocultures, effectively destroying the native plant life and negatively affecting wildlife. Since they start growing early in the season, they use up the available resources and ultimately block light necessary for native plant growth. Their leaves have little nutritional value, thus impacting herbivores in the environment. Studies also show a negative impact on larval, juvenile and mature stages of fish. Phragmites grow quickly, but the biomass above the ground decomposes slowly. This means that organic matter accumulates over several growing seasons, increasing the elevation of marshes and affecting drainage. The marsh becomes drier causing a change in the plant population.

There are other negative impacts of phragmites. These include the restriction of shoreline views due to phragmites heights, a reduction of access for swimming, fishing and hunting, a reduction of property values and an increase in the danger of fire due to the dry biomass.

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Phragmites Management

Complete eradication of well-established phragmites stands is very difficult. However, with carefully planned treatments and long-term monitoring, it is possible to reduce infestations to a level at which the natural habitat – plant, fish and wildlife communities- can be restored. Reduction strategies involve several steps including applying herbicides, mechanical treatments (mowing or cutting – careful to avoid stimulating growth), water level management (controlled flooding when feasible), improving tidal connections and prescribed burns. Each site needs evaluation by environmental experts and usually requires permits from local, state and/or federal agencies. Needless to say, phragmites reduction involves an investment of considerable time, resources and money, but the restoration of areas to their native states is a worthy goal.

Local Reduction Projects and Research

In 2013, the Buzzards Bay Coalition led a phragmites reduction project around Salters Pond in Dartmouth, and Flume and Gunning Point Ponds in Falmouth. These sites were chosen because as enclosed systems with no adjoining salt marshes, the chances of phragmites spread from neighboring areas was lowered. It was a three-year process that included herbicides, mowing and then more herbicide application. In 2016, it was reported that the sites were nearly free of phragmites and that native species had returned.

The Waquoit Bay National Estuarine Research Reserve (WBNERR) has also sponsored or participated in research projects involving phragmites. Among these is the 2019 project headed by Meagan Gonneea entitled *Phragmites porewater geochemistry* which looked at the environmental factors that impact methane cycling in phragmite coastal wetlands.

Restoring tidal connections is one of the best ways to reduce the hold that phragmites have in an area. This technique has been used to reduce phragmites stands at South Cape Beach State Park and in the Abigail's Brook area. At South Cape Beach two undersized culverts were removed to improve tidal connection to the marshes behind the Mashpee Beach parking lot. This effort helped restore fish populations and reduce phragmites stands. Abigail's Brook, a small tidal stream that enters the north shore of Jehu Pond, faces numerous environmental problems including phragmites that choke out native cattails, prevent the flow of fresh and brackish water and limit access of fish and crabs. Two culverts were removed at Abigail's Brook in a collaborative effort of the U.S. Fish and Wildlife Service, WBNERR and the Mashpee Department of Public Works. This work is part of on-going efforts to clear the phragmites and improve tidal connection to the estuary.

Sources include: Waquoit Bay Estuarine Research Reserve; Great Lakes Phragmites Collaborative; Michigan State University Extension; Buzzards Bay Coalition; Friends of Mashpee Nature Wildlife Refuge; Texas Wildlife Center



Waquoit Bay is Being Invaded

On a clear summer morning around 1971, a young teenager revved up one of those low slung 9½ hp Johnson outboards on the back of a Collins Brothers' wooden skiff and headed out into the Bay. Some of you remember those summer mornings, those motors, and those legendary skiffs. You may also remember what happened next.

He got about twenty feet before he had to stop, reverse the motor, and clear the prop of eel grass. It was irritating, but something you had to do several times before getting past the eel grass beds into deeper water.



Like most of us, he didn't know that Waquoit Bay had already lost more than half of its eel grass beds. He didn't know that by 1990, almost all of them would be gone. And he didn't know the loss of the eel grass would profoundly endanger this beloved Bay.

If you waded through those eel grass beds, you would have noticed how clear the water was. You would have seen a rainbow of colors as sunlight glinted off the ribbons of grass. You might even have stepped on an ugly, bottom feeding toadfish or dodged a few scallops that zipped by.

On a nearby sand flat, you could have easily dug a bucket of long necks (not the beer kind) in short order. The marsh edges were entirely covered with thousands of mussels and the occasional oyster. An

hour or so spent polling in the shallows would be rewarded with a couple dozen blue crabs. Running parallel to the water line, the beaches had grey and white drifts of dried eel grass that had washed up on the shore – so much that it once was raked up and used for mulch in area farms. And an earlier generation would remember wild rice beds in the lower Moonakis River and catching white perch and pickerel further up in the middle reaches.

By the late 1970's, the drifts of dried eel grass on the beaches were replaced by a 6-inch thick mat of a green algae extending twenty feet out into the water. As the summer progressed, it began to rot, stinking like a sewer. By the close of the last century, it was clear that virtually every measure of water quality was headed in the wrong direction. Acting like an unwanted fertilizer, nitrogen, mostly from septic tanks and cesspools, was increasing. Dissolved oxygen, essential for plant and animal life, was decreasing. Greater turbidity was helping heat the water so much that in the shallows, it actually felt hot.



European Green Crab

Today, wading through the knee deep murky shallows of the lost eel grass beds is like walking through a virtual marine desert. Few of the species found in a thriving ecosystem remain. The bottom is covered with a squishy layer of mud and several types of non-native, invasive

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algae. If you can even see the bottom, you may find the newly arrived, invasive, and predatory European Green Crab that loves to snack on oysters, mussels, and young blue crab. Its preferred food: soft-shelled clams. It thrives in muddy bottoms and has been called one of the 100 "world's worst alien invasive species."

The few remaining natural scallops are gone after the first day of harvest season. The quahog population, like blue crabs and scallops, is arguably also adversely affected by environmental degradation and overfishing. But unlike the others, its population is being sustained by the artificial introduction of seed clams to both maintain commercial harvests and, more recently, an attempt to partially control nitrogen levels.



Red Algae on Popponesset Beach, 11/24/2020

If you canoe along many of the marsh edges, you'll notice the mussels are sparse - the naked edges of peat now being eroded away by waves and birds pecking for a meal. In some places like the middle reaches of the Moonakis River and several of the Bay's ponds, there are stands of a tall, aggressive, and invasive reed called phragmites australis. It has begun to replace the existing, diverse ecosystem of native grasses and wild flowers with a vast monoculture of a plant known, at best, to be less hospitable to native wildlife.

However, all is not entirely lost. Based on requirements in Massachusetts and Federal laws, the towns of Mashpee and Falmouth have been working to address water quality problems in their coastal bays and freshwater ponds. Waquoit Bay and its rivers, ponds, and marshes is the largest coastal system in Falmouth. Its environmental problems are

the most complex and are finally getting the attention already given to other bays within town. Some of the solutions will be difficult and expensive; others can be relatively simple and inexpensive. But it will be decades before we see any real change.

CPWB newsletters are a good source of information both about what you can do to help ensure Mashpee and Falmouth choose the right solutions as well as actions you can take in your own backyard. We ask that you join us so that one day your children or grandchildren will be able to enjoy the beauty and resources that Waquoit Bay could one day again provide.

You can find more about the Bay's water quality by reading these two presentations by the Waquoit Bay National Estuarine Research Reserve.

Analysis of 16 years of Trends

http://www.waquoitbayreserve.org/wp-content/uploads/WhatsUpWithTheWater_tyrrel12018.pdf

After Twenty Years: What Can the Waters in Waquoit Bay Tell Us

<http://waquoitbayreserve.org/after-twenty-years-what-can-the-waters-in-waquoit-bay-tell-us/>



*The Best Way To Stop Invasive Species
Is Before They Become A Problem.*

Here's an invasive and destructive beetle to be on the lookout for – the spotted lanternfly (*Lycorma delicatula*). It attacks a variety of trees, shrubs and vines and could impact a range of agricultural products as well. Examine shipments coming from areas of known infestations: CT, DE, MD, NJ, NY, PA, VA and WV.

For more information and to report a sighting go to: <https://www.mass.gov/news/state-agricultural-officials-urge-residents-to-report-signs-of-invasive-spotted-lanternfly>

