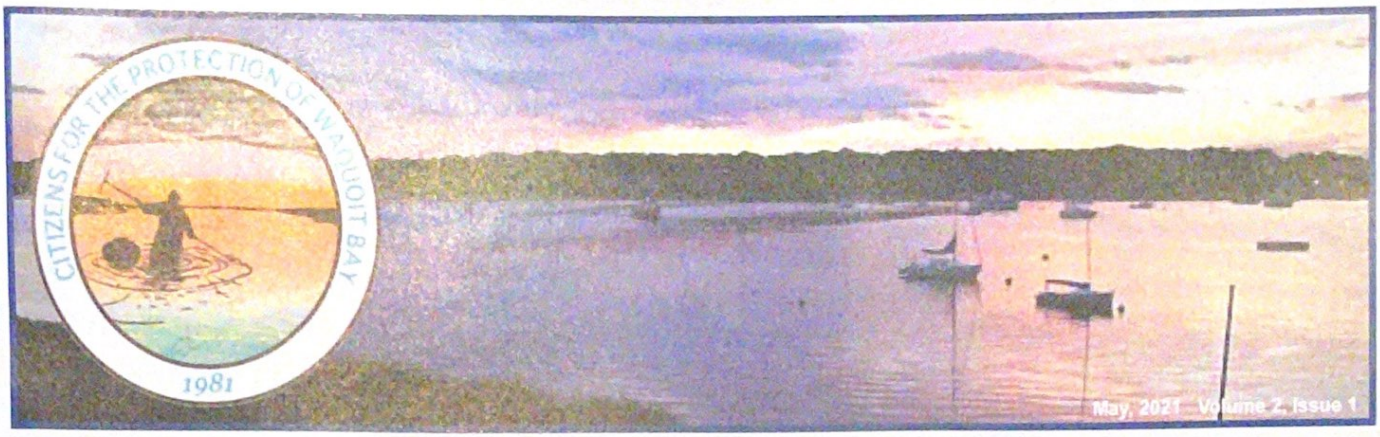


May, 2021 Volume 2, Issue 1

# Spring Greetings!

Your CPWB Board and some of its members have had a very busy winter—working from their home offices (aka dining room tables!) and beyond. This has been a time of collaboration—and as the saying goes: the whole is much more than the sum of its parts. By working with other organizations also striving to save the beautiful waters of Cape Cod, we have much to share with you in this newsletter.

Extensive efforts have been made in raising awareness of the impacts of road runoff and outfalls. Our president, Matt Patrick, was interviewed for a March 5, 2021 article in the Mashpee Enterprise where he points out a couple of examples of poor stormwater control and discusses many of the areas in Falmouth and Mashpee with pollutants spilling into the waterways of Waquoit Bay. Matt has been the spearhead behind the letter that crossed the desks of every Selectman in Mashpee and Select Board member in Falmouth. CPWB was invited to participate in a meeting with Falmouth Water Quality Management Committee, Falmouth Department of Public Works and the Cape Cod Conservation District to discuss pollution from road runoff and possible solutions. We are looking for potential runoff sites on private roads that are not documented or currently being addressed. You'll find more details inside this newsletter.

CPWB has continued its quest to educate homeowners on the potential hazards of improper lawn fertilizer use. We have teamed up with Falmouth Water Stewards to produce a pamphlet and distribute it to some of the suppliers of fertilizer, as well as other key locations and some homeowners' association leaders surrounding Waquoit Bay waters. You'll also find a valuable resource when looking for a lawncare company that cares for our waters as well as your grass.

We want to keep you informed of methods to combat our ongoing battles with invasive species. You will find helpful information about dealing with phragmites and the delicious little demon known as the green crab.

Lastly, we were happy to provide a letter of support and possible volunteer opportunities for a history proposal of Washburn Island's role in World War II called Preserving the Cradle of the Invasion. This intriguing project endeavors to capture and ultimately share the important histories of still-living Veterans--ones who served on Washburn within the Engineering Amphibious Command. Washburn Island is intrinsically linked to the success of US Military forces during WWII. The project is led by the Trustees of The Massachusetts Archaeological Society, Inc., and its partners, the Massachusetts Department of Conservation and Recreation (DCR) and the Waquoit Bay National Estuarine Research and Reserve (WBNERR).

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# Protect Waquoit Waters:

# Stop and Think Before You Use Fertilizer on Your Lawn!

## Why?

**Fertilizer on your lawn ends up running into the waterways and the Bay which:**

- Causes algae blooms from the extra fertilizer nutrients
- Removes oxygen from the water when the algae sink to the bottom and rot
- Kills the plants and animals whose habitat is Waquoit Bay
- Allows less desirable and invasive plants and animals to take their place
- Clogs the waterways and makes boating and swimming difficult

## Remember:

- **If you use a landscaper, insist that they use environmentally safe methods.**(See the article to assist you in selecting an environmentally conscience landscaper.)
- Traditional, natural Cape lawns last for decades with little watering and no fertilizer.
- Environmentally safe sources of nitrogen such as grass clippings and organic slow-release formula work very well.

## What to Do!

**Follow Your Town's Nitrogen Control Bylaws:**

Search online:

**Falmouth** Nitrogen Control Bylaw

**Mashpee** Nitrogen Control Bylaw

- Do not fertilize lawns between mid-October and mid-April.
- Never apply fertilizer on paved surfaces; remove it immediately in the case of an accident.
- Do not fertilize within 100 feet of wetlands.
- For lawns farther away from wetlands, use fertilizers sparingly or use alternatives, including yard waste, compost, or other organic materials.

**Test Your Soil:** Best is 6.5 pH. Lower pH causes nitrogen runoff. Cape Cod Extension Office will test: www.capecodextension.org

**Enrich Your Topsoil:** Grow grass in 6" of topsoil. Add ¼" or ½" of loam with equal amounts of silt, sand and clay. Use compost or grass clippings for nitrogen.

**Use Cape-type Fescue Grasses:** Blends of fescues and perennial ryegrass are drought and shade tolerant and grow well with less nitrogen.

**Mow High and Recycle Grass Clippings:** Cut grass to about 3" to retain moisture and choke out weeds. Leave clippings which will not promote thatch but break down and disappear.

**Water Deeply:** Established lawns need only one inch of water per week. Water in AM.

**Maintenance:** Pull weeds out by hand or spot treat them with an organic spray.

**The Right Fertilizer:** Fertilize in spring and fall with granular or organic, slow-release nitrogen formulas (often labeled WIN -Water Insoluble Nitrogen) 30% or higher. Avoid "weed and feed" formulas. Fertilizing once in the fall is effective. Summer fertilizing encourages weeds and causes runoff.

**Plant Native Shrubs:** Reduce lawn area by planting low maintenance, native shrubs and plants to reduce lawn area.

*YOU* CAN MAKE A DIFFERENCE ...ONE LAWN AT A TIME!

# Questions for Your Landscaper (Correct answers in parentheses)

Original link was included in Association to Protect Cape Cod's (APCC) Weekly Email-April 27, 2021

a. How high do you mow? (3-4")

b. What kind of mower do you use? (Mulching)

c. What do you do with the grass clippings? (Leave in place, except for first mow in spring.)

d. How often do you sharpen your mower blades? (At least once a week)

e. How often do you mow? (Once a week is okay; best practice is to never remove more than 1/3 of the leaf blade.)

f. What do you recommend for irrigation/watering schedule? (Best response: As needed, seldom and deep, 5". Worst response: The irrigation company sets the clock for the season in the spring at 3X or more/week)

g. What is your lawn health care (fertilization and weed control) program? (Best response: Cut low, aerate, compost, and overseed in fall. Worst response: Rake bare patches, seed and fertilize in spring. While many toxin□free providers will add nutrients in the spring to green up a lawn fast, this is more expensive and can cause problems later.)

h. Do you use a subcontractor? (There are specialists who apply compost tea and similar products.)

i. How do you decide the quantity and type of fertilizer needed? (Soil test/organic compost /compost tea)

j. What about thatch? (A properly managed lawn "digests" debris, there is no thatch.)

k. What kind of grass seed do you use? (Regionally specific, disease resistant)

l. What is best for trees and shrubs? (Tough love. Mulch with leaf mold in fall, prune for dead wood or natural shaping. Once established / after 2 years, do not water except in drought conditions. Apply compost or compost tea if soil is deficient. For new plantings, use a mycorrhizal or similar root stimulant.)

m. What is your fall clean up program? (Best response: Mulch mow or mulch vacuum leaves and spread in garden or shrub beds, or put in compost pile. Leave fine bits on lawn. Worst response: Blow everything clean and bare, remove leaves from property.)

Original Link: http://perfectearthproject.org/basics-of-being-prfct/#lb

# Road Runoff, Outfalls and Rain - OH MY!!

What started as determination to get important information about road runoff and outfalls in a letter to every Town leader in Falmouth and Mashpee has escalated to a campaign to educate not only Town leaders but the townspeople, as well. You will find excerpts from the article featured in The Enterprise on March 5, 2021. It was written and photographed by Ryan Spencer.

## The Enterprise Article:

Tires sloshed along Route 28 near the Mashpee/Falmouth town line early this month, March 1, hours after heavy rain had left the roadways glistening with stormwater.

Matthew C. Patrick, the chairman of Citizens for the Protection of Waquoit Bay, motioned in the direction of Route 28, his hand following the slope of Martin Road from its intersection with the highway to where the road overpasses the Quashnet River.

"It's called an outfall," he said, pointing to where the pavement dipped under the wooden railing, directing stormwater runoff from Martin Road into the Quashnet River. Earlier in the day, as rain pelted the roadways in Mashpee and Falmouth, Mr. Patrick in a phone interview expressed concern about the pollutants that wash from roadways into the rivers, as well as the lack of infrastructure in place to address the problem.

"You get the fragments from tires—there's heavy metals in that, toxic metals—and that all collects on the roadways," he said. "Especially the first half-hour of heavy rain is really going to carry away a lot of that stuff." Catch basins, the most conventional method for stormwater control, do little to prevent most pollutants from winding up in the rivers and bays, he said. Some catch basins are equipped with oil skimmers, but nutrients such as nitrogen and phosphorus along with other pollutants are output into the soil, eventually washing into the bays.

Many roadways, like Martin Road, are not even equipped with catch basins. Instead, outfalls direct stormwater—and all the various pollutants swept up in it—straight into the rivers and bays.

On Barrows Road in Falmouth, Mr. Patrick noted two pipes that have been built into either side of the bridge that crosses Childs River to divert stormwater off the road and directly into the river. On Red Brook Road in Mashpee, Mr. Patrick pointed to where stormwater had eroded the side of the road, just feet from where the brook flows toward Waquoit Bay.

Last month Mr. Patrick, who has identified more than a dozen major outfalls and more than 40 potential outfalls contributing to pollution in Waquoit Bay, wrote to express his concern to the Mashpee selectmen and Falmouth select board.

"Road runoff...deposits into our bays toxic pathogens, metals (from tire rubber) and hydrocarbons (exhaust residue, oils, and other automotive fluids) that kill fish, close shellfish beds and swimming beaches," Mr. Patrick wrote. "At a minimum, there should be no road runoff into any estuary's watershed and especially Waquoit Bay, which is recognized as an Area of Critical Environmental Concern and a significant nursery for several important fisheries."

Andrew R. Gottlieb, a Mashpee selectman and the executive director of the Association to Preserve Cape Cod, described stormwater runoff as "a major, poorly regulated source of water contamination both from nutrients and unconventional pollutants. It has deleterious effects that cut across the spectrum."

Moreover, physical contaminants such as erosion, sand and salt add turbidity to the water when they are washed into streams and bays by stormwater, he said. In sufficient amounts, these contaminants can block out sunlight and smother plants, habitat and spawning areas.

Animal waste swept off roadways is also a direct source of bacterial contamination that contributes to the closure of public shellfishing areas, Mr. Gottlieb said.

Additionally, "whether it is leaking oil and gas that leaks from underneath people's cars, brake dust—anything else that falls out on the roadways provides compounds that are toxic to aquatic life," he said.

Stormwater runoff is regulated by the federal government, which issues MS4 permits, Mr. Gottlieb said, describing the regulatory process as "pretty minimal."

"The way most roads are designed and engineered, from a public safety perspective, the objective was to get the water off the road right away," he said.

To receive an MS4 permit, towns are required to do road sweeping and make modest drainage upgrades when upgrading roadways. "Then it is left up to the individual towns how they want to dress up those improvements," Mr. Gottlieb said.

The Town of Mashpee has "made a conscious effort as a town to pull our direct discharges out of the roadways," Mr. Gottlieb said. In some places, as along the edge of Mashpee Neck Road just before the town boat ramp in Popponesset Bay, the town has installed bioretention swales.

Mr. Patrick described bioretention swales, which are essentially ditches filled with native plantings, as the best practice for road runoff control. "Vegetative swales are best management practices; they should be the first thing that [towns] think about," he said. "You want to replicate a wetland."

Instead of being deposited directly into the surface waters, the stormwater runoff filters through the swale's vegetative barrier, where plants take up nutrients and other pollutants before the water reaches rivers or bays.

Eric T. Turkington, chairman of the Falmouth Water Quality Management Committee, noted some of the complications of installing swales—and stormwater infrastructure in general.

"Road runoff has always been on the menu, but it hasn't gone too far for a couple of reasons," he said. "There are a lot of locations where road runoff gets into an estuary. Each one sort of requires its own evaluation and design, if you're going to do something; each one is unique, and each one is expensive."

While some roads are town-owned, others are state-owned or privately owned, he said.

Moreover, it is difficult to assess how much pollution road runoff contributes to surface waters because that can depend on how much it rains and because the multiple kinds of pollution mix into a sort of "stew."

"It's a real hard thing to pin a number onto," Mr. Turkington said. "These elements each have their own ill effects, and that's even harder to measure. There's no numbers out there to even evaluate that realistically."

The fact that pollution from road runoff is so difficult to pin down is exactly the point, Mr. Patrick said.

"It can be easily overlooked; it is being overlooked at this point. I just want to remind people in the towns that this is important," Mr. Patrick said. "Our economy is based on these coastal areas, and they're really going to hell; they're in bad shape."

"[Stormwater runoff] is more pollution than they are giving it credit for," he added. "It's not just nutrient pollution; it's toxic compounds, road compounds, combustion compounds, tires, heavy metals that end up in our water—and it's definitely not good for the ecology."

*The edge of Red Brook Road has been eroded, with some of the debris likely swept by stormwater into Red Brook, which flows into Hamblin Pond in the upper reaches of Waquoit Bay.*


## A Climate Danger Under Our Tires

Falmouth Enterprise 3/12/21

"Our economy is based on these coastal areas, and they're really going to hell; they're in bad shape," Matthew Patrick, chairman of Citizens for the Protection of Waquoit Bay, says in a story this week.

It should be no surprise given the increasing number of ecological crises we're facing on Cape Cod that we cannot immediately zero in on the specific cause of such concern. He might be talking about erosion, about nitrogen pollution from septic systems, about, well, just about anything that affects our coastlines and watersheds.

It turns out he is talking about outfalls that direct polluted stormwater from roadways into rivers and bays at dozens of locations in Mashpee and Falmouth.

"You get the fragments from tires—there's heavy metals in that, toxic metals—and that all collects on the roadways," he said. "Especially the first half-hour of heavy rain is really going to carry away a lot of that stuff."

And there are several other sources of harmful pollutants.

Since the conventional solution of creating catch basins along roadways does little to prevent most pollutants from reaching rivers and bays, Mr. Patrick's group, along with the Association to Preserve Cape Cod, is recommending that Falmouth and Mashpee create bioretention swales, which are essentially ditches filled with native plantings.

"Vegetative swales are best management practices; they should be the first thing that [towns] think about," Mr. Patrick said. "You want to replicate a wetland."

From what we've learned of the science behind how vegetative swales function, we agree that all Cape towns should investigate and strongly consider investing in this approach.

Most of us drive by outfalls each day without thinking what effect the roads we drive on have on our environment whenever it rains. It is time for that to change.

## From the Letter to the Article and Beyond.

The week after the article by Ryan Spencer was published in The Enterprise, an editorial was published which made reference to Mr. Spencer's article and addressed the polluting problems of outfalls. The editorial asks us to consider the impacts that each of us has on our environment when we drive on the roads when it rains and reiterates the points made in the first article about using best management practices (bioretention swales) when opportunities arise to address each of these outfalls.



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In addition, Matt Patrick attended a meeting with Falmouth Water Quality Management Committee, Falmouth Department of Public Works and the Cape Cod Conservation District to discuss pollution from road runoff and possible solutions. This meeting established communication lines and the intent of these organizations to correct the issues.

On the national front, CBS Morning News covered pollution in our waterways on Earth Day. The Environmental Protection Agency (EPA) was quoted as saying, "Polluted Runoff is one of the greatest threats to clean water in the US."

This is not a new threat. "As reported in the National Water Quality Inventory 1996 Report to Congress (US EPA, 1998d), urban runoff was the leading source of pollutants [which include: solids, oxygen-demanding substances, nitrogen and phosphorus, pathogens, petroleum hydrocarbons, metals and synthetic organics] causing water quality impairment related to human activities in ocean shoreline waters and the second leading cause in estuaries across the nation." We need to be diligent and monitor the decisions to use best management practices at every opportunity.

## I Found Phragmites, Now What Do I Do?

If you're concerned about the increasing areas of phragmites taking over the shores of Waquoit Bay as well as it rivers and ponds, you're not alone. The invasive *phragmites australis* or "common reed" is now spreading along the edges of the Moonakis River as well as Hamblin, Jehu, and Sage Lots Ponds. Its 10-15 foot tall plants not only block the view from along the waterfront, it destroys native vegetation, lowers biodiversity levels, and adversely affects wildlife habitat. If you travel along the Connecticut coastline, you can see how it has eliminated virtually all native wetlands from New York to Rhodes Island.

There are two things you can do to help ensure it doesn't take over all our wetlands and waterfront:

1. If you spot it anywhere in the Bay and its tributaries, please take a photo using your cell phone – make sure your phone's location services are turned on so the photo gets tagged with the location. Send the photo to us at CPWB1981@gmail.com. We will add the location to the national tracking website and use the information to help make the case with government officials and others that this is a problem we can't ignore much longer.

2. If you are a waterfront property owner and unfortunately are dealing with phragmites or are interested in working with others to address public property please contact us. We can help you understand the town approval processes in Falmouth and Mashpee and locate a "certified environmental restoration practitioner" who is trained in eliminating it.

For more information about phragmites, see:
https://www.invasivespeciesinfo.gov/aquatic/plants/common-reed

## Green Crabs are an Invasive Species - but they can be Delicious

In our last newsletter, we introduced you to the European green crab, which has been recognized as both a nuisance and a very damaging phenomenon to the shellfish, eel grass and the entire eco-system of Waquoit Bay. There is some good news and some innovative thinking happening that we thought was fascinating.

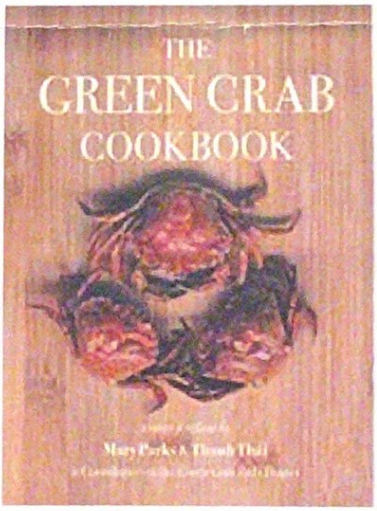
The most common use of these crabs is as bait. In recent years, there has been an increasing interest in developing markets and perhaps a fishery to help control green crab populations and bring their numbers down.

Green crabs are edible and are currently used to make soups and broths as they are smaller than other popular crabs (Dungeness, Rock and Jonah crabs) and there is not much meat yield per crab. To this end, UNH has established the **New Hampshire Green Crab Project.** They have been researching when green crabs molt in order to explore the feasibility of a soft-shell crab market (similar to blue crabs) and subsequently a potential fishery.

Comparable to the annual herring counts that occur on Cape Cod, the NH Green Crab Project is expanding to include a citizen-science component to monitor, track and map the presence of male green crabs in the spring and female green crabs in the late summer to early fall in New Hampshire's estuarine and coastal areas. The goal of the project is to identify a clear window of time when male and female green crabs are molting as part of the exploration of the soft-shell green crab market and fishery in the Granite State.

It seems that our native blue crabs can feast on green crabs and help control the population of the invasive species, too. This means it helps if *we* control the over-fishing of our blue crabs!

We also found a new cookbook for green crabs: THE GREEN CRAB COOKBOOK: *Explore the vast culinary potential of green crabs with diverse recipes and in-depth tutorials will full color photos. Shuck green crab meat like a pro, dazzle with caviar crab cakes or whip up an easy broth for your favorite recipes.*




Buy it on the Green Crab.org website –cheaper than Amazon – and a good cause! https://www.greencrab.org/onlineshop/the-green-crab-cookbook-srkbn

Please let us know if you experiment with any recipes or if you have other information to share with the CPWB community and we'll pass it on to our readers in future editions of this newsletter.

*Continued from Front Page*

The proposal would undertake systematic assessment of World War II Veterans' history on Washburn Island. An ideal location for training, the Army took advantage of Camp Edwards to the north and the sandy beaches of Nantucket and the Vineyard to the south. Though shrouded in secrecy, locals could observe troops, known as "Cape Cod Commandos," practicing tactics for amphibious landings, including conducting a full-scale, mock invasion of Martha's Vineyard—exercises that proved invaluable on the beachheads of Europe, North Africa, and the Pacific. After the war, Washburn was again transformed into a place for healing, as thousands who trained there returned for recreation during the summer of 1945.

Today, many are unaware of the island's critical role in WWII as the birthplace of the Engineering Amphibious Command. To address this, the Project Team will conduct in-depth interviews of four Washburn Island Veterans, recording, transcribing, and analyzing the oral histories of these "Cape Cod Commandoes." Further, the planning grant will support overall project goals to identify important stories and historical themes within the oral and documentary materials, and to better integrate the legacy of WWII Veterans into the interpretive and educational programs available for Washburn Island.

CPWB is excited to partner with the MAS, DCR and WBNERR to help capture and share the stories of those Americans who trained and served on Washburn. Please let us know if you or your family have any stories, historical documents, or artifacts that will help us preserve and share this important story.

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