

# Shore Lines

Newsletter of the Association to Preserve Cape Cod

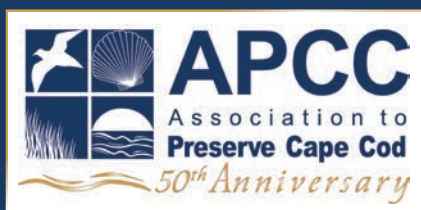
Spring 2018



## *The New Normal*



This winter's string of super-sized coastal storms caused wide-spread power outages, destruction of property, record-breaking coastal flooding and severe beach erosion. They also generated a lot of talk about climate change and whether this is the "new normal" for Cape Cod, heightening the resolve of political leaders and policy makers to be better prepared for future catastrophic weather.



Even before the events of this winter, APCC has been engaged in multiple adaptation and resiliency initiatives, which will help Massachusetts and our communities plan for climate change and also protect and restore Cape Cod's natural systems to lessen climate change impacts. Read more beginning on page 2.

*Photo: Sea Grant Woods Hole and Cape Cod Cooperative Extension*





(Left) Bridge St. in Dennis was cut off by flooding from the March 2 nor'easter. (Right) Bridge St. after the storm.

## The New Normal

Although climate change cannot be pinned down to one weather event—or even a few—long-term patterns in weather are certainly a good indication of climatic shifts. A report published in the March online science journal *Nature Communications* by researchers from MIT, Rutgers University and NASA found that conditions produced by a rapidly warming Arctic may be causing a shift towards severe winter weather patterns in the Northeast.

The severe weather experienced this winter certainly fits into what climate scientists have predicted for years now, and is consistent with what this region of the country is expected to confront with increasing frequency. But scientists tell us to also expect rising sea levels, hotter summers, increased periods of drought and a greater frequency and intensity of tropical storms. Consider this winter as a wake-up call—it is now time to get serious about planning for and adapting to climate change.

APCC has been working on several fronts recently to address climate change adaptation and resiliency.

### Climate adaptation and resiliency policy

Storm flooding in Rock Harbor, Orleans.



For the past several years, APCC has been an active member of a coalition supporting passage of the Climate Adaptation Management Plan legislation, or CAMP, which would require the state to develop a comprehensive, statewide plan to respond to climate change. It would also fund a voluntary “buy-back” program to enable the state to purchase coastal properties frequently damaged by storms as part of a managed retreat strategy. The legislation passed unanimously in the state Senate six times, but has fallen short in the House of Representatives. As of this writing and due to the recent storms’ impacts, House members are increasing their calls for action on CAMP. APCC is working with members of the Cape legislative delegation on this effort.

And, in the wake of the recent damaging storms, Gov. Charlie Baker released a \$1.4 billion environmental bond bill that includes \$300 million for climate change preparedness. The funds would help build adaptation and resilience. APCC is working with coalition partners on amendments to the governor’s bill to include provisions from CAMP that will strengthen climate planning and preparedness.



The two photos at right show the before and after effects of storm-related coastal erosion at Harborview Beach in Dennis.

## Coastal resilience planning for Cape Cod

APCC is working with the Cape Cod Commission and Waquoit Bay National Estuarine Research Reserve on a three-year project to develop a regional decision support tool for coastal resilience planning. This tool will help towns understand their options and make informed decisions about managing their coastline to increase resilience to the impacts of climate change.

APCC has supported development of a database of strategies for the program, including policy, structural and non-structural alternatives to address the impacts of storm surge, erosion and sea level rise. Over the past few months these materials have been reviewed through a series of stakeholder meetings across the Cape. Check out the existing set of resources at [www.capecodcommission.org/resiliency](http://www.capecodcommission.org/resiliency).

## Restoring ecosystems to increase resilience

One strategy to reduce flooding from sea level rise and storm surge is restoration of salt marshes.

In one example, APCC is currently wrapping up our pre-restoration monitoring report for the Parkers River tidal restoration project in Yarmouth. This project will reduce the risk of flooding to upstream homes and businesses by replacing an undersized bridge that is creating a bottleneck in the system. Under normal conditions, the restriction creates a two-hour delay in retreat of tides. But with the March 2 nor'easter, it took days for the water to recede.

The completed project will improve tidal function in the marsh and ease the backup of tidal waters. The project will also provide positive benefits to the salt marsh, herring run, shellfish beds, water quality and recreation.

## Municipal Vulnerability Preparedness program training

APCC recently participated in a forum in Falmouth to advance planning for climate change preparedness at the local level. The forum is part of the state's Massachusetts Municipal Vulnerability Preparedness (MVP) program to help communities plan for climate change resilience and hazard mitigation. The objectives were to identify and prioritize actions to reduce risk and improve the resilience of the infrastructural, societal and environmental components of the community.

At the forum, APCC's director of science programs, Dr. Jo Ann Muramoto, gave an overview of APCC's work on coastal resilience and climate preparedness. These include our USGS sea level rise-aquifer study, salt marsh migration report, participation in the Cape Cod Climate Change Collaborative and our restoration work.

The MVP program provides support for municipalities to begin planning for resiliency. The program helps communities to define extreme weather and natural and climate-related hazards, identify existing and future vulnerabilities and strengths, develop and prioritize actions for the community, and identify opportunities to reduce risk and build resilience. Communities that complete the program become certified as MVP communities and are eligible for grant funding and other opportunities.

Falmouth and Sandwich are the only two Cape Cod towns to receive MVP funding. For more information about the MVP program, visit [www.mass.gov/municipal-vulnerability-preparedness-program](http://www.mass.gov/municipal-vulnerability-preparedness-program).

*APCC restoration ecologist, Bryan Horsley, and special projects intern, Carl DePuy, conduct pre-restoration monitoring at Parkers River in Yarmouth in preparation for the Rte. 28 bridge replacement to increase tidal flow to the salt marsh system. The bridge can be seen in the background.*



*The  
New  
Normal*



*High tide during the March 2 nor'easter flooded Crosby Lane and Crosby Landing Beach parking lot in Brewster.*







## Landscaping practices can help mitigate climate change, too

Our landscape designs and how we choose to care for our properties can reduce carbon emissions and help the Cape be more resilient in weathering storm events, drought and erosion. In addition to workshops, talks, eco-tours and videos, APCC continues to develop its Living Landscape Laboratory on the grounds of the office in Dennis. Here, we implement eco-friendly land care practices that reduce energy input, minimize our carbon footprint and improve the health of our property. Watch for notices of workshops, programs and eco-tours in the coming months.

Here are **10** things property owners can do to mitigate and adapt to climate change impacts.

- 1 Plant trees for energy conservation, carbon sequestration, air quality, habitat and property value.
- 2 Conserve water and use rain barrels to harvest raindrops to water the garden.
- 3 Use permeable materials instead of asphalt to allow rain to recharge the aquifer.
- 4 Kick the wood mulch habit and plant more native plants. Plant roots are more effective in holding soils against erosion and plants take in carbon dioxide.
- 5 Incorporate a variety of drought tolerant native species. This will help reduce watering needs.
- 6 Install a rain garden to capture water from a downspout. Rain gardens are functional and attractive.
- 7 Minimize heat-storing stonework and reduce energy usage by shading AC units with plantings.
- 8 Leave the leaves and lose the leaf blower. Gas-powered yard equipment emits lots of greenhouse gases, not to mention they are noisy and stir up pollutants into the air.
- 9 Reduce lawn area and go chemical-free. For the remaining lawn, buy a push mower—it's great exercise!
- 10 Plant with diversity for pollinators, design interest and resiliency. Convert the landscape design to one with the environment in mind and preserve wild areas.



## *Trust fund will provide revenue for water quality projects*

**The Cape Cod and Islands Water Protection Fund will create a dedicated funding source to assist with the implementation of wastewater management projects to improve water quality in Cape Cod embayments and estuaries**

There's very good news for Cape Cod's water. The state legislature recently approved legislation that will provide much-needed assistance to Cape Cod towns in their efforts to improve water quality. The legislation included language to create the Cape Cod and Islands Water Protection Fund, which was added as an amendment to the short-term rental tax bill passed by both the House and Senate.

APCC has been a leading proponent of the trust fund and worked closely with the Cape Cod legislative delegation and other community leaders, including the Cape Cod Chamber of Commerce and the Center for Coastal Studies, in drafting the language for the legislation and in advocating for its adoption.

The fund will benefit from revenue generated by a 2.75 percent fee added to the tax on short-term rentals occurring on Cape Cod. The fund will provide financial assistance to towns to implement wastewater management projects to restore the health of the Cape's bays and estuaries. Cleanup costs for the Cape region are estimated to be around \$4 billion. All Cape Cod towns will be able to utilize the fund, and towns in Dukes and Nantucket Counties have the ability to opt into the funding program in the future.

As of this writing, the House and Senate versions of the bill are headed to conference committee, and once approved, will go to Governor Charlie Baker for his signature.

APCC is greatly appreciative of the support and commitment of the entire Cape Cod legislative delegation in bringing the trust fund to this successful outcome.



## APCC speaks out against Eversource VMP

In March, APCC expressed opposition to Eversource's proposed 2018 – 2022 Vegetation Management Plan for Cape Cod due to the utility's continued use of herbicides on its rights-of-way. APCC spoke at a public hearing held by the Massachusetts Department of Agricultural Resources (MDAR), which regulates the use of herbicides by utilities, and submitted written comments detailing our concerns.

APCC pointed to the Cape's sandy soils, which enable contaminants to leach into groundwater. The Cape's groundwater is hydrologically connected to the region's freshwater ponds, streams, wetlands, and ultimately, to the Cape's bays and coastal waters. It is also the source of the region's private and public drinking water supplies.

The VMP states that herbicides will be applied to control vegetation in most areas along the Eversource ROW, including within 10 feet of a surface water body or other wetland, within 50 feet of a private drinking water well and within 100 feet of a public well. Many of the herbicides approved by MDAR for use by Eversource have been linked to some human health risk and/or potential environmental impacts.

APCC also has concerns about the "inert ingredients" in the herbicides that are not listed on the label and that are largely untested for toxicity.

According to state records, Eversource has in the past applied over 2,000 gallons annually to its 150 miles of ROW on the Cape, or a total of approximately 10,000 gallons over the course of a typical five-year Vegetation Management Plan.

It is APCC's position that continued use of these herbicides as part of Eversource's VMP has the potential to adversely affect the Cape's environment and pose human health risks. This potential risk is enough to warrant discontinuation of the application above the Cape's aquifer and in sensitive habitat areas.

APCC calls on MDAR and Eversource to be more responsive to the concerns of Cape Cod citizens and to work with community leaders to seek out viable low-impact options for vegetation management, such as hand removal of vegetation. Read APCC's letter to MDAR at [www.APCC.org/positionstatements](http://www.APCC.org/positionstatements).

## Offshore drilling plan poses a threat to Cape Cod

APCC strongly opposes the federal government's proposed plan to open areas of the outer continental shelf in the Atlantic Ocean to oil and gas exploration. An accidental oil spill affecting Cape Cod coastal waters would be devastating to the region's environment and economy.

Last summer, APCC submitted written comments to the Bureau of Ocean Energy Management expressing grave concern over a proposal to develop a plan that would lift the existing moratorium on offshore drilling in the Atlantic. When the drilling plan was officially released this January, APCC once again responded by condemning the proposal. APCC submitted comments on the plan and in March attended a Bureau of Ocean Energy Management listening session in Boston. APCC also wrote to Gov. Charlie Baker, urging him to take a stronger stand against offshore drilling.



The nearshore area surrounding Cape Cod supports highly sensitive coastal ecosystems, while the ocean waters beyond the Cape's coastal region are of critical environmental significance, providing a diversity of marine habitats that are important to the state's economy. The impacts of a spill on these resource areas would be catastrophic, making drilling an unacceptable gamble for our region.

APCC is fully committed to fight any efforts by the Trump administration to move forward with the drilling plan. Read our comments at [www.APCC.org/positionstatements](http://www.APCC.org/positionstatements).

## We couldn't have said it better ourselves . . .

**A February 15<sup>th</sup> *Cape Cod Times* op-ed by six prominent leaders from the business, nonprofit and government spheres began this way:**

The Association to Preserve Cape Cod turns 50 this year. While some Cape Codders may be unaware of its efforts, everyone who lives, visits or works here has benefited from APCC—our regional advocate for the Cape's environment and quality of life. APCC has helped restore natural resources in every town, procured better environmental policy at the county, state and federal levels, and brought in millions of dollars to improve, protect and preserve the Cape. It's hard to imagine what our beloved Cape Cod would be like today without APCC. After 50 years, it's time to show our appreciation.

**In the truest sense, this op-ed is a testament to APCC's members—like you—whose support throughout the past five decades allowed us to provide to Cape Cod our advocacy, service and stewardship.**

**Please use the attached envelope to send in your donation today, or go to [www.APCC.org](http://www.APCC.org) to make a secure online donation.**  
**Thank you!**

We are very grateful to the op-ed authors: Richard Delaney, president/CEO of the Center for Coastal Studies; Paul Niedzwiecki, former executive director of the Cape Cod Commission; Wendy Northcross, CEO of the Cape Cod Chamber of Commerce; Mark Robinson, executive director of the Compact of Cape Cod Conservation Trusts; Dan Wolf, founder/CEO of Cape Air and former state senator for the Cape & Islands District; and Virginia Valiela, former Falmouth Board of Selectmen for 26 years.



## APCC plans to expand cyanobacteria monitoring program in 2018

After an eventful 2017 monitoring season, in which we collected valuable data about cyanobacteria and observed and reported toxic blooms in two Brewster ponds, APCC plans to expand monitoring efforts in 2018.

Cyanobacteria, or blue-green algae, are microscopic organisms that can form toxic blooms in ponds and coastal waters. Exposure through skin contact, ingestion or inhalation can result in various illnesses or even death in humans, domestic animals and wildlife.

Working with researchers at the University of New Hampshire and volunteers from the Brewster Ponds Coalition, APCC will assist with further development of a new monitoring program. Results from the first monitoring season support the hypothesis that cyanobacterial pigments can be used to estimate cyanobacterial toxin concentrations. The monitoring found that tracking pigments associated with cyanobacteria throughout the season can help forecast formation of harmful blooms.

This year, the team will use relationships identified in last year's data to test accuracy in estimating cyanotoxin concentrations in pond water. Microscopes will be used to document and track changes in cyanobacteria throughout the season, as this is important in understanding its behavior, toxicity and bloom formation. To facilitate this research, APCC will invest in new equipment and establish a seasonal workspace and laboratory.

APCC has also received inquiries from citizen groups in Chatham and Falmouth who would like to initiate their own cyanobacteria monitoring programs. APCC will conduct training events to educate interested citizens. For more information contact Bryan Horsley, APCC restoration technician, at [bhorsley@apcc.org](mailto:bhorsley@apcc.org).



*Top: The toxic cyanobacteria bloom last year in Brewster's Upper Mill Pond, confirmed by APCC's monitoring.*

*Bottom: Microscope slide of two genera of cyanobacteria collected during sampling.*

## Survey of tide gates aids coastal managers

A newly released report provides an inventory of tide gates in coastal communities on Cape Cod Bay, Massachusetts Bay and Ipswich Bay. The inventory, funded by a NOAA grant and prepared by MassBays and Massachusetts Coastal Zone Management, describes locations and conditions of tide gates in the MassBays area, with the goal being to help coastal managers to better manage tide gates and to aid in decision-making about their use.

APCC staff, including Dr. Jo Ann Muramoto and April Wobst, assisted with field work to characterize tide gates. Later this year, Jo Ann will meet with towns to discuss their tide gates and obtain more information about them.

Although they control the flow of incoming seawater into embayments, coastal ponds and inlets, tide gates can also damage salt marshes and impact water quality by restricting seawater flow. They can also impede the outgoing flow of floodwaters back to the sea, causing floodwaters to remain in place longer.

Tide gate management decisions may include weighing the pros and cons of leaving a tide gate in place versus removing it, modifying a tide gate to alleviate impacts, or applying adaptive management over time to address changing conditions and sea level rise.

The report and the web-based tool, TIDEGateway, which will enable users to obtain information on tide gate locations, condition and documentation, will be available soon at [www.mass.gov/service-details/tidegateway](http://www.mass.gov/service-details/tidegateway). For more information, contact Dr. Jo Ann Muramoto at [jmuramoto@apcc.org](mailto:jmuramoto@apcc.org).



*Jo Ann Muramoto, APCC director of science programs/MassBays Program regional coordinator (right), and David Roman, P.E., from Geosyntec Consultants, inspect a tide gate at Dock Creek in Sandwich as part of the tide gate inventory study for the MassBays Program and Massachusetts Coastal Zone Management.*

*There's more to learn at APCC's website!*

*Check it out at [www.APCC.org](http://www.APCC.org)*





Woohoo!

It's APCC's **50<sup>th</sup>** Anniversary!

## Don't miss these **50<sup>th</sup>** Anniversary Events

### **March 15 – June 3** Preserving the Very Nature of Cape Cod

A special exhibit at the Cape Cod Museum of Art of original works by local artists, dedicated to APCC's 50th anniversary and celebrating Cape Cod's fragile environment.

### **May 20th, 1 p.m.** Cape Cod's Changing Nature

Peter Alden, noted bird expert and author, explores changes in the bird and mammal life of Cape Cod landscapes over time. Cape Cod Museum of Natural History, Brewster

### **June 5 & 22** Barnstable Harbor Tours with APCC

Join APCC for a tour of Barnstable Harbor with Captain Joe of Barnstable Harbor Ecotours aboard the Horseshoe Crab, a spacious and comfortable 25-passenger pontoon boat.

Tuesday, June 5th Departure is 3 p.m., return by 5 p.m.

Friday, June 22nd Departure is 10 a.m., return by 12 noon

### **June 15, 7 p.m.** Becoming Cape Cod: Creating a Seaside Resort

Author and planner, James O'Connell, Ph.D., traces the development of Cape Cod's tourist-based economy and its impacts, good and bad, on the Cape today. Brewster Ladies Library, Brewster

### **July 19, 7 p.m.** An Evening with Robert Finch

Renowned Cape Cod author Robert Finch offers selected readings from his works. \$10 admission at the door. 1717 Meeting House, West Barnstable

### **July 26, 6:30 p.m.** Plastics: A Toxic Love Story

Author and journalist Susan Freinkel examines the pervasive role of plastics in our lives, from her book, *Plastics: A Toxic Love Story*. Eastham Public Library

### **October 5 – 29** Thoreau, The Maine Woods to Cape Cod: A Journey in Photographs by Scot Miller

A month-long exhibit by celebrated nature photographer, Scot Miller, of his work commemorating the travels and writings of Henry David Thoreau. Cultural Center of Cape Cod, S. Yarmouth

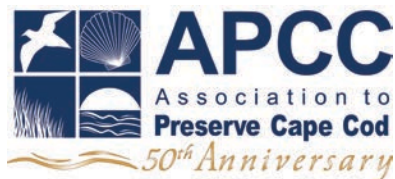
### **October 11, 7 p.m.** Walden Warming: Change Comes to Thoreau's Woods

Boston University biologist and author, Dr. Richard Primack, discusses his groundbreaking climate change research using Thoreau's field notes on the timing of plant leafing and blooming. Cultural Center of Cape Cod, S. Yarmouth

**Also, save the date for APCC's Annual Meeting on September 17.**

**Special guest: Steve Curwood, host of NPR's *Living on Earth***

**Go to [APCC.org/events](http://APCC.org/events) for event details, registration information and additional event announcements.**



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### Association to Preserve Cape Cod

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The Association to Preserve Cape Cod is a 501(c)(3) non-profit organization founded in 1968 to foster policies and programs that promote the preservation of natural resources on Cape Cod.

Support comes from over 3,000 members, and from gifts and grants from individuals, foundations and businesses.

### APCC Staff

Andrew Gottlieb, *Executive Director*

Don Keeran, *Assistant Director*

Jo Ann Muramoto, Ph.D., *Director of Science Programs /  
Mass Bays Program Regional Coordinator*

Kristin Andres, *Director of Education & Outreach*

April Wobst, *Restoration Ecologist*

Bryan Horsley, *Restoration Technician*

Patrick Frye, *Membership Field Coordinator*

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## Leave a Lasting Legacy

### Living Legacy

APCC has benefited greatly over the years from bequests from our members. Making a bequest is as easy as adding the following language to your will: "I bequeath to the Association to Preserve Cape Cod, Inc. (APCC), a charitable corporation established by law in the Commonwealth of Massachusetts, the sum of \_\_\_\_ dollars (or percentage of estate)." You can direct how you want your legacy gift to be used by choosing "the general purposes of APCC at the direction of its Board of Directors," or if you'd prefer to have your legacy live on in an endowment, you can direct it "to be added to APCC's permanent endowment."

### Securities for Security

Even with the change in the tax code, giving appreciated securities may be a financially prudent way to be charitable, as you can avoid paying tax on capital gains. It's also easy!

For more information, please contact APCC's executive director, Andrew Gottlieb, at 508-619-3185 or agottlieb@apcc.org.

Please note: This information should not be considered as legal, tax or financial advice. Consult your professional advisor for further information and guidance.

