

# Shorelines: 2016 Winter Newsletter

[apcc.org/newsletters/2016-winter.html](http://apcc.org/newsletters/2016-winter.html)



APCC's Restoration Coordination Center (RCC) began work this fall on its first major project—a multi-year \$613,000 stormwater project in the Three Bays watershed in Barnstable.

The RCC was awarded a \$472,574 grant from the Environmental Protection Agency Southern New England Program to support this project. APCC and our partners, the town of Barnstable Department of Public Works, Three Bays Preservation, Inc., Cape Cod Commission and a stormwater engineering firm, will provide an additional \$140,752 in matching funds.

The Three Bays watershed is severely impaired by nutrients and bacteria, resulting in poor water quality, degraded habitat and closures of beaches and shellfish areas. The project will address high-priority stormwater outfalls that flow directly into the Three Bays embayment where it can achieve the greatest impact.

APCC will manage the project as part of the RCC, which was established to assist towns and communities on the Cape with prioritization, planning, implementation and management of restoration projects. Based on a watershed assessment and initial design options, priority retrofit sites will be chosen for design, permitting and construction.

Two or more stormwater Best Management Practices (BMP) will be installed at selected sites to treat and remove pollutants from stormwater runoff before entering the bays. These BMPs will emphasize use of low impact design and green infrastructure, applying innovative techniques to remove nitrogen and other pollutants.

The project team will provide outreach to the surrounding community. APCC, with Three Bays Preservation, will host a rain garden workshop and install a demonstration rain garden. The team will reach out to the community in the coming months for volunteers to assist with the rain garden installation and monitoring of the new treatment systems.



**Improving existing stormwater infrastructure at Cordwood Landing in Cotuit is one potential project for improving water quality in the Three Bays watershed under the EPA's SNEP grant program.**

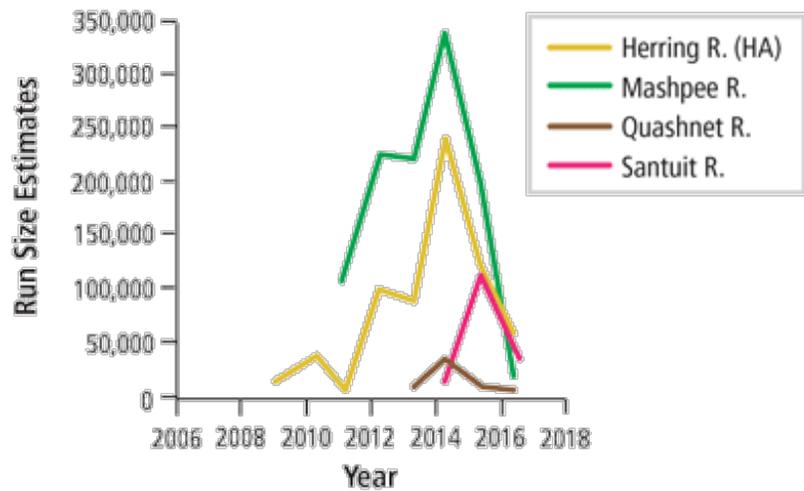
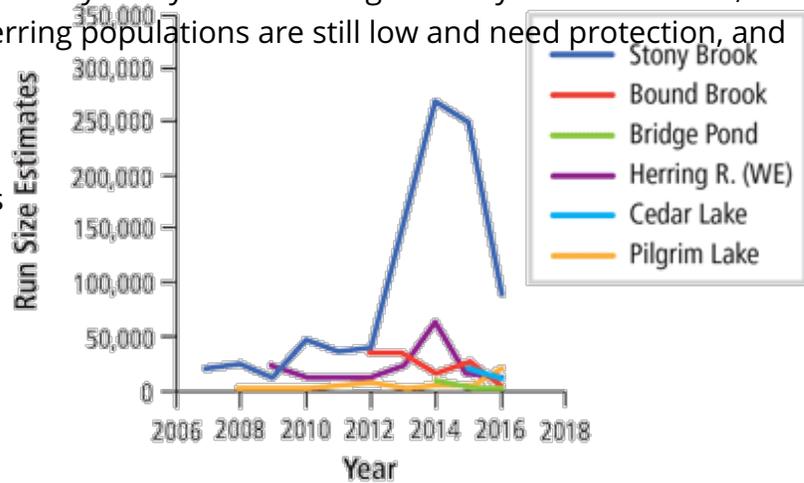


In 2007, three herring runs on Cape Cod were monitored for herring counts. Since then, APCC's Herring Monitoring Program has trained many volunteer groups to count river herring using a state-approved protocol. This has greatly improved the Cape's ability to estimate river herring populations, enabling better management and protection of these Species of Special Concern. This past spring, over 250 volunteers counted herring along 18 runs.

How did the runs do this year? Compared to 2015, most run sizes were down with the exception of the Pilgrim Lake run, which had the highest run size yet for that location at 19,648 fish. In contrast to last year, no runs exceeded 100,000 fish.

It's difficult at this point to determine why many runs were significantly smaller in 2016, but the results do indicate that river herring populations are still low and need protection, and that their habitat needs to be restored.

For a summary of herring run sizes on Cape Cod, please visit our website at [www.apcc.org/herring](http://www.apcc.org/herring) and select "Herring Run Summary 2017-2016." For more information, contact Dr. Jo Ann Muramoto at [jmuramoto@apcc.org](mailto:jmuramoto@apcc.org) or 508-619-3185.



## 2016 Herring Run Size Results

Stony Brook, Brewster	88,703 herring	(down from 2015)	R
Herring River, Harwich	63,349	(down from 2015)	R
Santuit River, Mashpee	41,256	(down from 2015)	R
Mashpee River, Mashpee	26,196	(down from 2015)	R
Pilgrim Lake, Orleans	19,648	(up from 2015)	R, N
Cedar Lake, Falmouth	12,953	(down from 2015)	R
Herring Rive, Wellfleet	12,874	(down from 2015)	N
Stillwater Pond, Chatham	11,969	(first year)	

Quashnet River, Mashpee	11,875	(down from 2015)	N
Long Pond, Yarmouth	9,270	(first year)	N
Lovers Lake, Chatham	7,310	(first year)	
Bridge Pond, Eastham	1,932	(down from 2015)	R
Bound Brook, Dennis	1,453	(down from 2015)	
Herring Pond, Eastham	378	(first year)	
Scargo Lake, Dennis	Counts were too low to calculate run size		N



APCC's Restoration Coordination Center (RCC) is working with the town of Yarmouth and the Massachusetts Division of Ecological Restoration in reviewing design plans and permit applications for a restoration project on Parkers River. This project will restore tidal flow to 153 acres of estuary, salt pond and salt marsh.

The project site is located in Yarmouth where Route 28 crosses Parkers River. The existing 18-foot bridge will be replaced with a 30-foot span to allow optimal tidal exchange. This will improve the health of the upstream salt marsh, allow for better nutrient flushing to improve Long Pond and Seine Pond water quality, enhance shellfish resources, improve access to migratory fish spawning and nursery habitat, enhance habitat for wetland birds and improve access and safety for recreational uses. The restoration will also enhance coastal zone resiliency by providing better buffering of storm surge, allowing floodwaters to retreat more quickly. Construction for this multi-million-dollar project is anticipated to begin in 2017.

APCC provided pre-restoration monitoring of the marsh in 2010 and 2011 and set up a herring run monitoring program this past spring to compare pre- and post-restoration herring run size. APCC will continue to provide technical support and training for the herring run monitoring and will begin additional monitoring of the salt marsh next summer.



## APCC's education center: the next phase for our new home

Now that the move to APCC's permanent headquarters has taken place and the living landscape laboratory plan is under way, the major focus for our new home in 2017 will be securing the funds to convert the property's historic barn into an education center. The structure will be modernized and made self-sustainable with renewable energy technologies, and will be an ideal location for workshops and meetings. Once completed, it will greatly enhance APCC's environmental outreach efforts. To find out how to be a part of the creation of APCC's education center, call Ed DeWitt at 508-619-3185 or [edwitt@apcc.org](mailto:edwitt@apcc.org).



## APCC's living landscape laboratory blossoms

It has been exciting working on the grounds of APCC's new home over these past months! Thanks to a true APCC friend, Theresa Sprague of BlueFlax Design, we have a concept plan for our living landscape laboratory. Theresa and her staff worked with us to develop a plan for our goal to showcase native plants, best ecological landscape practices and stormwater management designs.

The first project was installation of handicapped parking and path using a type of porous pavement made out of recycled tires, which allows rainwater to be infiltrated slowly into the root zone. The area disturbed by the construction of the handicapped access was revegetated with a native seed mix and plugs of flowering perennials, creating a meadow that was abuzz with native bees.

We installed rain barrels to capture rain water from three downspouts, which was used to water our first plantings. A variety of natives were planted in the deep shade of a historic catalpa tree. Once established, we expect to have something flowering from early spring to late fall.

A rain garden was installed with the financial support of the Friendship Fund and the aid of volunteers.

Next, we'll reduce lawn area by converting most of it into forest edge, meadow and a native shade garden. Other projects include installing a composting system, a stormwater demonstration display and raised vegetable beds. To participate in these projects, watch for

opportunities for volunteer days and workshops in early spring 2017. For more about the landscaping projects, including a video of the creation of the rain garden, visit [www.apcc.org](http://www.apcc.org). Also, stop by and see the results first-hand.



Under the Clean Water Act, National Estuary Programs must periodically document environmental trends and conditions in their estuaries. The Massachusetts Bays National Estuary Program (MassBays) encompasses Cape Cod Bay (APCC hosts the MassBays regional coordinator for Cape Cod) and Massachusetts Bay, approximately 1,100 miles of coastline. To help document water quality, habitat and species status in this area, MassBays has turned to citizen monitoring by community-based environmental organizations. The goal is to bring volunteer-collected data to bear on coastal policy and management decisions.

This fall, MassBays convened a summit for citizen monitoring coordinators and agencies to share resources and form a network of coastal monitoring programs. The MassBays regional coordinator for Cape Cod, APCC's Dr. Jo Ann Muramoto, took part. The resulting Citizen Monitoring Network will facilitate information exchange, data management and analysis, communication of results, connect scientists with organizations to help define monitoring goals, and provide training. For more information or to join the network, contact Dr. Jo Ann Muramoto at 508-619-3185 or visit the MassBays website.



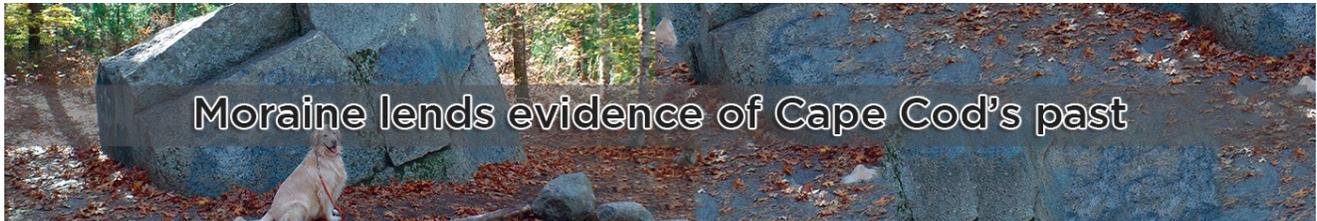
Congratulations to four members of APCC's board of directors who were elected as officers of the organization this autumn: Margo Fenn as president, Charles Sumner as vice president and Elizabeth Jenkins as clerk. Robert Summersgill was re-elected treasurer. Margo steps into the leadership role following the retirement of Robert Cunningham. The position of vice president was most recently held jointly by Margo and Eliza McClennen. Elizabeth Nill, who also retired from the board, served as clerk.

At the annual meeting in August, APCC members elected DeeDee Holt and Pat Hughes to the board of directors.

DeeDee Holt retired to Chatham in 2004. She has served for seven years on the Chatham

Conservation Commission, the last four as chair, and is currently a member of the Chatham Planning Board. She is president of Friends of Trees, serves on the board of Friends of Chatham Waterways and was treasurer of Wild Care for six years.

Pat Hughes is director of the marine policy program at the Center for Coastal Studies in Provincetown. She previously worked for the Cape Cod Commission and the Massachusetts Coastal Zone Management Program. Pat served on the Massachusetts Coastal Erosion Commission in 2015 and recently completed two terms as a Brewster selectman. She served on the APCC board from 1982 to 1984.



About twenty thousand years ago, the vast Laurentide ice sheet inched its way south to cover much of Canada and New England, scraping up the bedrock and sediment that eventually formed Cape Cod. The ice bulldozed massive amounts of rock in its forward motion, and when the leading edge of the ice retreated, it left behind great heaps of debris.

These ice-formed deposits—or glacial moraines—are Cape Cod's rocky double spine, with one moraine extending from Sandwich east-west, forming the bumpy backbone of the mid Cape. The other moraine, a stretch of undulating, boulder-infused ridges and ravines, runs from Bourne down through Woods Hole.

The Bourne to Woods Hole ridge, or Buzzards Bay moraine, is characterized by steep, irregular-shaped hills that are some of the highest on Cape Cod. Interspersed among the hills are kettle holes—pockmarks in the topography created by great chunks of ice left behind by the retreating glacier. Littered along the length of the moraine is the greatest concentration of large boulders on the Cape, many matching and even exceeding the girth of automobiles.

Thanks to far-sighted efforts, large parcels along the moraine in Falmouth have been pieced together and permanently preserved as open space. A system of interconnecting trails welcomes visitors who wish to travel the moraine, much of which is heavily forested and serves as a valuable wildlife corridor. Winter is the perfect time of year to experience its quiet solitude and gain a better view of the uniquely rugged terrain left behind by the ice sheet. There, one can contemplate how Cape Cod was created by the powerful yet slow-motioned hand of nature and geology, a forced march of ice, rock and sand at a pace measured in micro-inches and thousands of years.