

Shorelines: Summer 2015 Newsletter

apcc.org/newsletters/2015-summer.html



APCC interns help preserve, protect and restore Cape's coastal resources

Each summer, APCC invites undergraduate and graduate students as well as local teachers to participate in our internship programs. These individuals utilize their education and talents to work on projects that make a real difference in efforts to protect Cape Cod's environment. In return, APCC's interns gain invaluable hands-on experience that will assist them in their environmental careers.

By design, APCC's three 2015 interns are working on different aspects of the same goal: preserving, protecting and restoring the Cape's coastal environment in the face of environmental change. The multidisciplinary and collaborative approaches used by the interns incorporate GIS maps, analyzing sea level rise scenarios, shoreline change and restoration planning to advance APCC's efforts to facilitate Cape Cod coastal resource restoration.

This year, APCC's internships are funded by the Cape Cod Foundation, the Horizon Foundation, the Mary-Louise Eddy and Ruth N. Eddy Foundation, and, as always, through dedicated endowment programs made possible by the generous support of our members in honor of Herb Whitlock and Maggie Geist. Find out more at www.apcc.org/internprogram.



Lauren Tierney is this year's Maggie Geist intern. She began the summer assisting APCC with a town of Brewster project, "Building Coastal Resilience in Brewster," by monitoring habitat at eight town landings using the natural communities approach developed by the Massachusetts Natural Heritage and Endangered Species Program. GPS coordinates taken during field surveys were used to develop GIS maps showing natural community locations. Her work then turned to expand the mapping for APCC's critical habitats atlas by identifying important natural communities through a combination of areal interpretation and ground-truthing to create GIS maps of Brewster's coastline. She is also looking at areas of erosion and shoreline change to determine the resiliency of different natural communities.

Lauren is a rising senior at Trinity College in Hartford, Connecticut, working towards a Bachelor of Science in environmental science and an interdisciplinary minor in data modeling and analysis. Lauren is a member of the track and field team and Outdoors Club, a leader for Trinity's pre-orientation wilderness trip on the Appalachian Trail, a geology lab teacher's assistant and a mentor for first year students. This year will be Lauren's third year researching the effects of clear-cutting in the White Mountain National Forest on soil nutrients essential for forest regrowth. Last fall Lauren spent her semester studying ecology and restoration management in New Zealand. Lauren hopes to utilize the skills she learned from APCC, Trinity and New Zealand to help address some of the complex environmental problems facing Cape Cod and our planet.

Trish Vosburg, APCC's 2015 biology intern, is working on developing and updating a Cape-wide list of priority restoration projects that address fish passage and salt marsh restoration as well as stormwater mitigation. These projects aim to benefit the Cape's natural resources, particularly herring runs and shellfish beds. She is also gathering related data on Total Maximum Daily Loads (TMDLs) for the associated water bodies, as well as information on sea level rise and coastal resiliency. Trish will then help develop a system to prioritize these restoration projects for funding. She is also working on organizing and analyzing the herring count data submitted by volunteers.

Trish is a 2015 graduate of the University of Massachusetts Amherst, having earned a Bachelor of Science in natural resources conservation with a concentration in wildlife ecology. She also completed a minor in biology and a certificate in coastal and marine science. In the summer of 2014, she worked for the National Oceanic and Atmospheric Administration as a marine biology intern in Pascagoula, Mississippi. During that time, Trish spent three weeks on one of their research vessels in the Gulf of Mexico, and also completed a research project on the activity comparisons of loggerhead and Kemp's Ridley sea turtles in turtle excluder devices. She hopes to attend graduate school in marine biology or biological oceanography next year. Trish looks forward to developing her skills as a scientist throughout the summer while exploring the natural environment of Cape Cod.



Carl DePuy is returning for his sixth summer as our coastal ecology educator. Carl is spending most of his time helping APCC establish the Cape Cod Restoration Coordination Center. He is focused on identifying which salt marshes have the greatest potential for being able to migrate as sea levels rise.

He is working closely with intern Trish Vosburg in cataloguing information about salt marshes that have nearby open space, human-created barriers, invasive species or that support shellfish beds and fish runs. Carl is also using various sea level rise computer models and conducting site visits to determine which salt marshes are the best candidates for restoration. He is currently writing a report that will be used by towns, land trusts and state agencies to identify salt marshes that need to be restored and that will also be resilient to sea level rise. In addition, Carl recently led a group of 7th graders in a session on salt marshes, showing them how to seine for nekton and identify fish at Quivett Creek salt marsh.

Carl graduated from Huxley College of Environmental Studies, completing his undergraduate research on the remote sensing of coral reef bleaching in the Bahamas. Afterwards, he helped start the Nevada Conservation Corps where he worked with at-risk youth, college students and senior corps members in resource management projects. He graduated from Green Mountain College w



A bill that would require Massachusetts to develop a comprehensive preparedness plan to meet the various challenges from climate change has advanced in the state legislature.

Senate Bill 1979, An Act Providing for the Establishment of a Comprehensive Adaptation Management Plan in Response to Climate Change and known by the acronym CAMP, cleared the Senate in a unanimous vote in July and as of this writing is under consideration by the House of Representatives.

The bill would require a vulnerability assessment of the state's natural resources and built environment. The adaptation plan that emerges from that assessment would be crafted to ensure that the state's infrastructure, transportation networks, energy supply, coastal protection, weather warning systems and emergency management are prepared to meet present and future climate change impacts.

APCC submitted written testimony to the Joint Committee on Environment, Natural Resources and Agriculture in May, voicing strong support for CAMP. The legislation has direct relevance for future planning efforts on Cape Cod, which must contend with rising sea

levels, coastal erosion and property damage from severe storms. APCC will continue to push for the bill's adoption into law. To read APCC's testimony, visit www.apcc.org position statements.



Climate change is predicted to increase the frequency and intensity of coastal storms that cause flooding, property damage and beach erosion.
Photo credits: NOAA (left), Arthur Handrahan (right)



APCC testifies for Public Lands Preservation Act

In written testimony submitted this June to the state legislature's Joint Committee on Environment, Natural Resources and Agriculture, APCC called for passage of the Public Lands Preservation Act and urged the committee to act swiftly in moving the bill forward.

The Public Lands Preservation Act, filed as Senate Bill 402/House Bill 623, establishes a process that would help prevent the incremental loss of land set aside for natural resource protection purposes.

Lands acquired for open space, parks or other natural resource purposes are protected as a public right under Article 97 of the Massachusetts Constitution. Changing the use of Article 97 lands to something other than their intended purpose requires a two-thirds vote of the state legislature. Although the two-thirds vote requirement was designed as a check in the process, such votes have become routine. The result has been a steady chipping away of these public lands.

If adopted into law, the PLPA would require a municipality or state agency proposing to dispose of Article 97 land provide replacement land of comparable natural resource value, acreage and location.

The bill also requires the state's secretary of Energy and Environmental Affairs to assess the need for the change of use, feasible alternatives to changing the use, and the suitability of the replacement land. The secretary would make a recommendation to the legislature based on the assessment.

In our testimony, APCC pointed to the challenge of keeping land conservation efforts apace with development during the building booms of recent decades. With only about 13 percent of the Cape remaining undeveloped and unprotected, there is likely in the future to be increased pressure on currently protected land from competing land uses. The PLPA would help make sure the Cape's land protection achievements do not lose ground.

The legislative committee had not taken action on the bill when Shore Lines went to press. Read APCC's letter at www.apcc.org/positionstatements.



A>PCC is part of a state coalition of environmental, business, labor, public health, human services and consumer protection organizations established in reaction to Governor Charlie Baker's Executive Order 562, which requires an unprecedented review of all state regulations. The coalition recently sent letters to Gov. Baker, Attorney General Martha Healy and the Office of Administration and Finance—which is charged with implementing EO 562—outlining concerns about adverse consequences from the executive order.

EO 562 sets a March 2016 deadline, when every state regulation will automatically “sunset” unless it is recertified. In order for a state regulation to remain in effect, EO 562 requires that it must demonstrate that it “...does not exceed federal requirements.” Regulations must also not “...adversely affect Massachusetts citizens and customers of the Commonwealth, or the competitive environment in Massachusetts.”

Such broadly worded requirements could lead to the unraveling of Massachusetts' most important and successful environmental protection regulations. For example, the state's wetland protection regulations are more effective at protecting wetland habitats than federal standards. The Regional Greenhouse Gas Initiative, adopted by Massachusetts and other northeastern states, exceeds U.S. EPA clean power requirements. Regulations written for the Massachusetts Endangered Species Act protect many at-risk species in this state that are not afforded protections on the federal level. Naturally, rare species protections can place limitations on where and how certain development occurs, arguably affecting the state's “citizens and customers.”

In the letter to Gov. Baker, the coalition called for a fully transparent—and fair—review of state regulations that provides multiple opportunities for public input. The coalition also urged Attorney General Healy to carefully monitor implementation of EO 562 and to act “on behalf of the protection of our most vulnerable citizens, our civil rights, our public health and our consumer and environmental protection regulations which make the Commonwealth a special place.”



APCC's annual meeting hosts special exhibit



APCC's August 19 annual meeting was a particularly special event. Held at the Cultural Center of Cape Cod, the meeting corresponded with “Washashore,” a photo exhibition hosted by APCC. The exhibit was a two-week long showing of beach litter artistically presented by Peter Gwillim Kreitler and photographed by John Reiff Williams. Proceeds from the show were donated to APCC.

At the annual meeting, Senator Daniel Wolf was presented with the Paul Tsongas Environmental Excellence Award, Cape Cod herring count volunteers received the Volunteer of the Year Award, and Mark Robinson, executive director of the Compact of Cape Cod Conservation Trusts, was added to the APCC Honor Roll.

Maureen O'Shea of West Barnstable and Charles Sumner of Brewster were elected to the APCC Board of Directors. Elliott Carr, Elizabeth Jenkins, Eliza McClennen and Donald Palladino were each reelected to serve another term on the board.

APCC wishes to extend special thanks to Peter Kreitler and John Williams for their generosity in making the “Washashore” exhibit possible.

MASSACHUSETTS BAYS PROGRAM

APCC again wins MassBays Program grant to host Cape Cod region

In July, APCC once again was awarded an annual grant to serve as the regional host for the Cape Cod region of the Massachusetts Bays National Estuary Program.

The MassBays Program is dedicated to protecting, restoring and enhancing the estuarine ecosystems of Massachusetts and Cape Cod Bays (www.mass.gov/eea/agencies/mass-bays-program/). In the years since 2006 when APCC was first named MassBays Program regional coordinator, accomplishments have included assisting towns and organizations to obtain over \$3.5 million in grants for coastal restoration projects, winning designation of the Cape Cod Bay No Discharge Area, providing the Cape's first stormwater utility outreach workshops and facilitating coordination of coastal stakeholders.

APCC's senior scientist, Dr. Jo Ann Muramoto, will continue to be the regional coordinator.

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One of the most instantly recognizable of Cape Cod's native turtles, the eastern box turtle (*Terrapene carolina carolina*), is also a fitting symbol for why it is important to preserve and protect the Cape's open spaces and habitats.

The box turtle is a land turtle, although its habitat is varied. It can be found in woods, fields with brushy vegetation, in or near wetland areas such as bogs and marsh edges, in close proximity to pond shores and in other upland areas. Some of the greatest concentrations of box turtles in Massachusetts are found on Cape Cod.

Generally speaking, an individual turtle tends not to wander too far within its home range. Studies conducted in Massachusetts have documented turtles occupying between six to 20 acres on average, although a maximum home range of greater than 150 acres has been documented. However, to support a breeding population, the species requires larger, contiguous habitat areas where males and females can find each other.

Unfortunately, box turtle populations are on the decline in Massachusetts due in large part to fragmentation and loss of essential habitat. This population decline has led the state to designate the eastern box turtle as a Species of Special Concern.

When forced to live in reduced and compromised habitat, box turtles are exposed to other, often lethal, threats, one of the most common being automobiles. Being slow reproducers, even a small loss of adult box turtles from road fatalities or other means can significantly impact local populations.

Too often, the need to protect undisturbed habitat suitable for box turtles to survive and reproduce brings conservation efforts into conflict with development. But by being vigilant in protecting habitat areas and preserving wildlife corridors that connect breeding populations, we can do much to help ensure that eastern box turtles, and the wild areas they inhabit, remain a vital part of our peninsula.