



Belle Isle News

Upcoming Events

Nature Walks with Sean Riley

1st and 3rd Saturdays of the month,
7:30am Meet at the Bennington
Street main parking lot.

Belle Isle Marsh Climate Change Project Meeting

June 14, 6 - 7 pm. See page 8

Tidepool explorations

Dates in June, July, and August.
See page 5 for details

Kayaking Expedition

See page 8 for details

Paint Night

See page 8 for details

Contents Page

Conal Foley	1
Saltmarshes	2, 3
Our New President	4
Children's Corner	5
Clean-Up Photos	6
Climate Resiliency: Belle Isle	7
Upcoming Event Details	5, 8

The Stewardship of Conal Foley

by Gail Miller

Conal Foley, past president and longtime member of the Friends, passed away in August of 2022. Conal was a person who all admired and befriended easily within our Belle Isle Marsh network. He served in several other capacities with the Friends, but most might remember his presence for a number of years leading guided walks at Belle Isle Marsh Reservation. Conal, being a former Boston Public School teacher, had a natural ability to engage his students. I am told by a colleague of his that students thoroughly enjoyed his biology classes because he brought such hands-on approaches to learning. He hatched chickens in his classroom! When was the last time you heard of such a thing?



On the walks along the path at Belle Isle, Conal exhibited his passion and love for this jewel in the city and that is what engaged newcomers to enjoy and respect it also. Folks visiting Belle Isle would certainly learn many of the birds, plants, and other features that Conal identified, and many were amazed that the various species of birds even resided at Belle Isle. Bringing nature that close to mostly city-dwellers was a gift he so willingly shared. I would venture to say that many, if not all, were happy to be in the presence of someone so upbeat, who also possessed a mischievous chuckle making anyone's day a delight to be out "in the wild". Suffice it to say, Conal could point out the best of nature and share it every minute possible.

To know Conal was to know an individual with great integrity, who had an undying appreciation of our natural environment and a keen interest in how our government either helped it or harmed it. On a local level, Conal ran for state representative in the 1970s, hoping to make change and a difference. Having lost those races, many among us knew that we missed a chance to see the integrity in government that we longed for.

With Conal's passing, he left with us a legacy of stewardship for our environment and an everyday example of what it means to care for it. He was tireless in that endeavor and we will miss him, his friendship, and his commitment to our natural environment.

The Past, Present, and Future of Saltmarshes

Second
in a
series

by **Soheil Zendeh**

The Past, Present and Future of Saltmarshes

Ice! For over 10,000 centuries, sheets of ice one to two miles thick advanced and retreated over the northern parts of Northern Hemisphere continents. In our region, these glaciers brought multiple loads of boulders, rocks and rubble, scraped from the mountains of northern New England, down to and past the Boston region until the ice finally stopped advancing and began to melt back for good, perhaps only 100 centuries ago; then it deposited its load of mountain debris into *terminal moraines* which became Long Island, Block Island, the Elizabeth Islands, Martha’s Vineyard, Nantucket and Cape Cod.

While the ice was here, its weight depressed the surface of the earth underneath; our land is still rebounding from that. The massive ice sheets, stretching from the arctic regions down to our latitudes, also tied up much water from the oceans. The ocean shore was dozens or hundreds of miles out from where it is now.

As the ice melted away, sea levels rose and reflooded the previously drained seafloor. Debris dumped by the glaciers was surrounded by shallow seas and became islands and peninsulas. Plants adapted to salt water began to grow and spread throughout the intertidal region, creating saltmarshes which persist to this day.

The tidal cycle covers and uncovers the shallows surrounding the land twice a day, bringing in nutrients which nourish the plant community adapted to salt water. In a previous article, we described most of the plants which are the foundations of the saltmarsh. [For descriptions of saltmarsh plants, see “Unsung Heroes: Saltmarsh Plants” in the previous issue of Belle Isle News, no. 111, January 2023.]



The saltmarsh grows upon itself. As the plants from one year wilt and die, they fall on top of old dead plants and, slowly, over the years, the surface of the saltmarsh rises.

Utilizing the Saltmarsh

Native people of New England appreciated the bounty of sea and saltmarshes. Seasonally, native camps were set up close to shore and fish and shellfish were harvested; saltmarsh plants were used for roofing thatch and as mulch in crop plots.

The Europeans who arrived on the New England shore brought grazing animals and found that saltmarsh hay (the *Spartinas*, *Distichlis*) was extremely nutritious for their cattle.

New research has shown that from the late 17th century on into the 18th century, European farmers devised intensive farming techniques which altered saltmarshes radically. In order to use a part of the saltmarsh to grow crops which were not salt-tolerant, farmers constructed complex terraced barriers to tidal action in the marsh. Using berms and wooden structures, farmers isolated

higher parts of the saltmarsh, gradually making it into an upland meadow where crops such as corn or squash could be grown.

After three centuries of tidal and weather action, the berms are now down to barely 6 inches or less above the surface of the remainder of the saltmarsh, but they can still be discerned as long corridors through the marsh. But walking through a marsh,

it is possible to see these mildly elevated and also discover the wooden structures that once were an integral part of the scheme which those farmers used to isolate fresh water areas from tidal salt water.

(continued on page 3)

Saltmarshes

(continued from page 2)

And Now the Ditches

Long after the berms were built and then abandoned, by 18th century farmers, residents near saltmarshes altered the marsh system in various ways, particularly through ditching.

Mosquitos lay eggs in salt pans. Several species of fish swim up the salt marsh creeks and lay eggs in the upper reaches of the marsh; once the eggs hatch, the fry swim back down the estuaries and into the ocean. The fish in the marsh, whether adults or fry, are a natural predator on mosquito larvae.

Over several centuries, there have been a number of schemes to “improve” the marsh by getting rid of mosquito breeding ponds and pans. One of the most wide-spread of these schemes was executed during the 1930s, when Great Depression-era Civilian Conservation Corps (CCC) personnel were given the task of digging parallel ditches in saltmarshes in order to drain them quickly during an outgoing tide. An additional “benefit” of ditching was supposed to be that, during flood tides, mosquito-larva-eating fish could swim quickly to all parts of the saltmarsh.

The mosquito-control ditches can still be seen very clearly in all the marshes around New England, including at Belle Isle Marsh.

In the 1980s and later, an additional tweak to this system was instituted by the county-wide, taxpayer-funded mosquito control bureaucracy: in a system called Open-Marsh Management, additional ditches were dug and circular pools created to be hyper-attractive for mosquito-eating fish. This program, along with innumerable other mosquito-control strategies (most of which involve spraying known toxins all over the environment) turned out to have no demonstrable effect on mosquito populations and was destructive of saltmarshes as well, as

described below; it was scrapped by order of the United States Fish and Wildlife Service.

As we noted near the beginning of this article, the massive continental glaciers of 10,000 years ago depressed the surface of the land; the land is still rebounding. However, higher upper latitude temperatures is melting ice at both north and south poles

and causing ocean levels to rise.

The rebound of the land, as well as the natural rise in the height of the saltmarsh surface due to plants dying each year and falling down to raise the marsh surface, used to be sufficient to keep the saltmarsh elevation fairly constant, but it no longer is keeping up with the rate of sea level rise. Mosquito-control ditches, dug in the marsh for centuries, are degrading the marsh surface level.

When marsh plants die and fall on top of old stems and roots,

soon they are buried in several years’ worth of growth. After a certain amount of time, the depth of the dead plant material is such that little or no oxygen can reach it, slowing down its decomposition. This used to be enough to build up marsh surface elevation. This natural process is also how saltmarshes sequester carbon. During photosynthesis, saltmarsh plants absorb carbon dioxide from the air and water and use the carbon to support their growth. When the plants die or shed old leaves or roots, the carbon in that decaying organic matter becomes locked in the soils.

Ditches, however, allow oxygen to seep into the decomposing material from the ditch-sides during low tides, allowing aerobic bacteria to work on the roots and causing the saltmarsh surface elevation to stagnate or fall. This factor, along with sea level rise, is the cause of much concern, both for the fate of the saltmarshes themselves as well as the survival of the Saltmarsh Sparrow.

In a future article, we will describe plans afoot to reverse the fate of both saltmarshes and of the Saltmarsh Sparrow.



Saltmarsh Sparrow photo by Sean Riley

Meet Our New President

Kannan Thiruvengadam grew up in a farming family in southern India where life was inextricably linked with land and agricultural adages were part of everyday parlance. After an early career in technology, Kannan responded to his calling and returned to his agrarian roots. He now leads Eastie Farm, an urban farm in East Boston that fosters food security, regenerative land use, and environmental stewardship. In response to the COVID crisis, as Eastie Farm’s Executive Director, he co-created Mutual Aid Eastie, and served over 5000 meals every week during the height of the crisis to food-insecure families in an initiative that also supported restaurant shutdown due to the pandemic. Under his leadership, Eastie Farm built the first geothermally-powered zero-emissions greenhouse in the region, a space for all-year growing, gathering, and education. Eastie Farm’s CSA (Community Supported Agriculture) supports small farmers in the region and serves hundreds of families in East Boston all across the economic spectrum in a manner that de-stigmatizes food insecurity and strengthens local economy. Eastie Farm connects people with nature and with each other, which Kannan hopes is the antidote to apathy.



photo by Rudi Seitz

Kannan believes solutions to local and current issues are the strongest building blocks of solutions to global and long-term issues. Small projects that serve people here and now motivate them to engage more readily in addressing larger, future challenges. At various scales and from various angles, Kannan approaches the crisis of our times, climate change, by centering equity. As President of Friends of Belle Isle Marsh, he advocates for wildlife that depends on the largest salt marsh in Boston; as an at-large member of Boston’s Community Preservation Committee he helps channel 25 to 30 million dollars per year towards affordable housing, historic preservation, and open spaces; as a Boston Conservation Commissioner, he helps ensure conservation of the city’s natural assets; and as the Vice Chair of the Executive

Committee of Sierra Club (Mass), he advocates for environmental justice policy. By participating in ward and state political committees, he strives to increase civic engagement and electoral participation so we the people can keep the power. He helps young leaders focus on the harder challenge of transformative change, instead of status-quo-friendly band-aids. His theory of change is built on his belief that only nature-based solutions and empowerment of those made vulnerable by long-standing injustices can help us escape vicious cycles and enter virtuous ones.

Meet our new contractor:

Julie Conroy, AICP, WEDG

Julie Conroy is an independent contractor leading her own practice focused on climate change mitigation and adaptation, and the Operations Manager for the Friends of Belle Isle Marsh. She is a certified planner and coastal ecologist with over twenty (20) years of diverse experience in environmental science and planning. She began her career working as an environmental analyst and grant administrator for the Massachusetts Office of Coastal Zone Management where she participated as a field scientist for the Coastal Wetlands Monitoring and Assessment program and managed the coastal nonpoint source pollution grants. Julie has worn several hats since then within both the public and private sectors, constantly seeking to solve challenging environmental issues of the day. She has provided critical climate change related services for the



City of Boston, states of New York and New Jersey, Washington DC, and numerous Commonwealth of Massachusetts municipalities as a Municipal Vulnerability Preparedness Service Provider. Her exemplary roles include serving as project manager of several Resilient New Jersey initiatives, an author of the New Jersey Offshore Wind Strategy, Program Coordinator for the National Adaptation Forum, lead author of the Metro-Boston Regional Climate Change Adaptation Strategy, developer of the Stormwater Financing/Utility Starter Kit, adjunct professor at Boston University, and a founding member of both the state’s Low Impact Development Working Group, and Environmental Justice Working Group. Julie is also a trained facilitator, skilled in the translation of scientific and technical findings to diverse audiences, as well as the preparation and delivery of legislative testimony and regulations relative to environmental protection and climate change.

Children's Corner

As many readers know, my grandfather owned a six acre "gentleman's farm." A retired schoolteacher, Bumpa had always wanted a farm, to till the soil and grow crops. The grandchildren played heavily into this plan. The crops grew throughout the seasons, starting with spring asparagus and rhubarb, followed by my favorite, strawberries. Early fall brought a variety of squash and pumpkins. We all worked to raise and sell the crops at the farm stand or to a local market. When my own family settled in Winthrop, I wanted my children to have this same experience. It's amazing what you can grow along the side of the house and driveway if you put your mind to it.

Today, urban gardening, led by folks like those at Eastie Farm, flourish. Locals can come together, garden and provide fresh food for themselves and neighbors. It's not uncommon today to see secret back-, and sometimes front-yard gardens, if you peek around corners. Empty, abandoned lots can flourish with care.

by Mary Mitchell

productive garden. They are followed through the seasons, planting, weeding, and watering their garden, inviting friends along the way. This book not only tells the story of this brother-sister team, but is full of charts, notes, etc. to improve the reader's understanding of gardening. This is a great book to introduce the idea that a garden can grow anywhere, with attention and perseverance.

At This Very Moment by Jim Arnosky, Dutton Children's Books, 375 Hudson Street, New York, N.Y. 10014, 2011.

"Each and every moment of each and every day, amazing things are happening..." And the story

begins as the narrator takes a child through a typical preschooler's day and tells them the stories of what wild animals all around the world might be doing at that moment. "Take a sip of water from the fountain in your school, and somewhere in the forest a deer drinks from a pool."

We see bears, owls, butterflies, and more depicted in bright, realistic images which delight the reader as they turn the pages and read along.


The book ends as predicted at the child's bedtime. "Think of all the animals getting sleepy too, who at this very moment will fall asleep with you." A great book to introduce your little one to the world of animals all around, near and far away.

Upcoming Events

These events are co-sponsored by the Better Beaches Program of Save the Harbor, Save the Bay and the DCR.

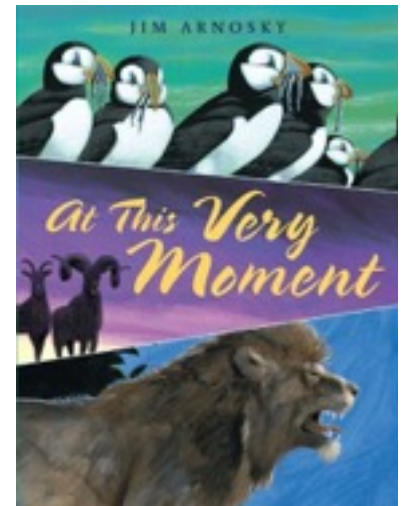
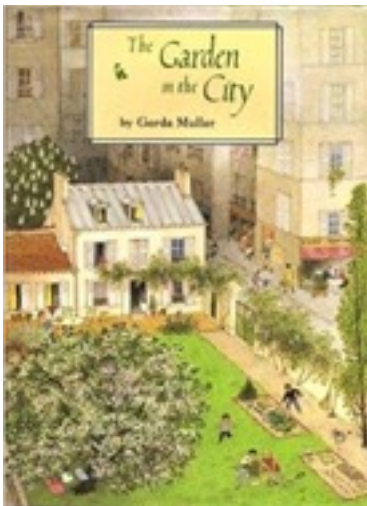
Tidepool explorations:
Meet at Short Beach, on the beach side of the sidewalk on the border between Revere and Winthrop. Be prepared for slippery rocks and getting your feet wet! Each exploration will run for about an hour. Our expert: DCR supervisor Matthew Nash.

Dates: June 10,	10:30 am
June 24,	10 am
July 8,	9:30 am
July 22,	8:30 am
August 8,	11 am
August 22,	9:30 am



The Garden in the City by Gerda Muller, Dutton Children's Books, 375 Hudson Street, New York, N.Y. 10014, 1988.

This book is older but one I used to read to my own children years ago now. It follows two young, newly transported city dwellers, as they go about reclaiming an overgrown yard to create a



Earth Day Clean-Up

April 22, 2023

Our members and newcomers met at the CVS site on Saratoga Street in East Boston on Earth Day this year to help clear the Belle Isle path and edges of trash and debris. Some items removed were bicycles, tires, lots of plastic sheeting, building materials, and more. Many small pieces of trash blow from the neighborhood in high winds, but the larger pieces appear to have been dumped deliberately by persons unaware of the delicacy of the marsh habitat. Join us to help protect this valuable, precious place!

photos by Mary Mitchell and Karyl Stoia



A Climate Resilient Boston Needs Belle Isle Marsh

by Ana Tavares Leary

Nestled between the cities of Boston, Revere, and Winthrop lies a natural barrier to climate change, the 359-acre Belle Isle Marsh. A saltmarsh is a low-lying, coastal area that mostly comprises grasses that are frequently flooded by ocean tides.

This wetland protects coastal areas from flooding, destructive winds, higher tides, and increasingly intense storms. Plants in saltmarshes help buffer the coast and reduce the impacts of storm surges, such as those generated during hurricanes. The Marsh delivers essential ecosystem services, which are important to help reduce climate change impacts caused by rising sea levels and severe weather events. Belle Isle Marsh provides critical habitats for wildlife—including the 271 species of birds which have been documented there—and recreation areas for local communities.

In 1988, the Commonwealth of Massachusetts recognized the Rumney Marshes Area of Critical Environmental Concern (ACEC) to include Belle Isle Marsh in East Boston, Revere, and Winthrop and Rumney Marsh in Revere and Saugus. This area once contaminated by industry is now one of the most biologically significant habitats in Boston, according to the U.S. Fish and Wildlife Service. Thousands of birds migrate to this area, and many endangered and threatened species can be found in the reservation year round.

The largest remaining saltmarsh in Boston Harbor, Belle Isle Marsh plays an important role in the prevention of flooding by delivering flood storage capacity. This capacity is lost when marshlands are filled or degraded via poor water quality from stormwater, which can also negatively impact public health, wellbeing, and safety of surrounding communities. Marshland filling accelerated in Boston during the expansion of Logan Airport in the 1960s.

Investing in a wetland is investing in public health. Saltmarshes contribute to positive physical and mental wellbeing; they clean polluted air and purify water. Also, they provide accessible green spaces for recreation, physical activity, and connection to nature, all of which are crucial for improved mental health.

Coastal ecosystems (mangroves, saltmarshes, seagrass meadows) are also known as blue carbon systems. Saltmarshes and seagrass beds can sequester carbon (like forests do) during plant photosynthesis, creating a carbon “sink” (capture). If destroyed, these habitats would emit a large amount of carbon into the atmosphere. Preserving these vital coastal systems is essential to reducing the effects of climate change and protecting vulnerable communities.

Given the enormous benefits of the Marsh to its neighboring cities, what is being done to conserve it?

FBIM’s mandate is to protect Belle Isle Marsh and its surroundings, to educate the public about the importance of saltmarshes and barrier beaches, and to offer educational programming in all areas of the reservation.

Recently, the organization has partnered with the Mystic River Watershed Association, the Nature Conservancy, and the DCR to conduct an environmental inventory of Belle Isle Marsh, with technical assistance from the Woods Hole Group, to better understand the health of the marsh ecosystem and to measure how it has changed over time. This inventory helps inform how the Marsh will adapt over the next 50 years to climate change, sea level rise, and increasing storms.

What can you do to get involved to help protect Belle Isle Marsh? First, come visit Belle Isle to go bird watching, enjoy a leisurely walk, watch the sunset, or climb the observation tower. Then, read more about the organization on our website (<https://friendsofbelleislemarsh.com>) and join in on upcoming events, including monthly birdwatching walks, summer kayaking expedition, art painting night, and tide pool explorations for children. Finally, become a member to advocate for local conservation efforts, and take greater action in your community.

Conclusion: Understanding the critical importance of protecting our natural habitats is a first step to preserving and cherishing them. Wetlands provide myriad ecosystem services that benefit surrounding communities and help cities fight climate change. Preserving Belle Isle Marsh—an essential coastal resource—contributes to a more climate resilient Boston, Winthrop, and Revere.

Meet our new contractor:

Ana Tavares Leary, Conservation Program Manager

Ana is a multidisciplinary consultant and climate advocate with a Master’s in Environmental Studies (MES). For over 12 years, she has made an impact managing 60+ international projects for family-owned enterprises, research institutes, and community-based organizations.



Friends of Belle Isle Marsh (FBIM) Annual Membership dues:

Family.....	\$15
Individual.....	\$10
Seniors and Youth (under 16)...	\$5

FBIM is a registered nonprofit corporation. Contributions are tax-deductible. Thank you for your continued support.

FBIM is a volunteer organization dedicated to the preservation of this marsh. We believe that protection ultimately depends on public awareness of the value and beauty of this natural resource.

For more information or to add your name to our email list, visit us here:

Website:
www.friendsofbelleislemarsh.com

Facebook:
Friends of Belle Isle Marsh

*Friends of Belle Isle Marsh
P.O. Box 575
East Boston, MA 02128
Address services requested*

Non-profit Org.
U.S. Postage
PAID
Boston, MA
Permit no. 3225



Upcoming Events

Belle Isle Marsh Climate Change Project: Evaluating Nature Based Solutions

June 14, 6 - 7pm Zoom Meeting (*see website for link*)

The events below are co-sponsored by the Better Beaches Program of Save the Harbor, Save the Bay and the DCR.

Tidepool explorations in June, July, and August (*see page 5 for details*)

Kayaking Expedition

- ◆ Saturday, August 26, 9 - 11 am
- ◆ Meet at Belle Isle Marsh Reservation with Piers Park Sailing. All equipment (including life vests) will be provided at no cost to participants. Join the fun exploring the Marsh by kayak!

Paint Night

- ◆ Saturday, June 24, 6:30 - 8:30 pm
- ◆ Meet at Short Beach in Winthrop

Become a Member!

As a “Friend,” or steward, of Belle Isle Marsh, your membership supports FBIM’s mission to protect, preserve and restore the Marsh. FBIM’s work focuses on conservation, climate resilience, and non-intrusive recreation. With your help, FBIM can fund much needed scientific monitoring and marsh health assessments to determine priority restoration projects, education programming, and recreational events to connect citizens with the outdoors. Any involvement and contribution you make greatly helps our cause, thank you! Please become a member at:

www.friendsofbelleislemarsh.com/membership