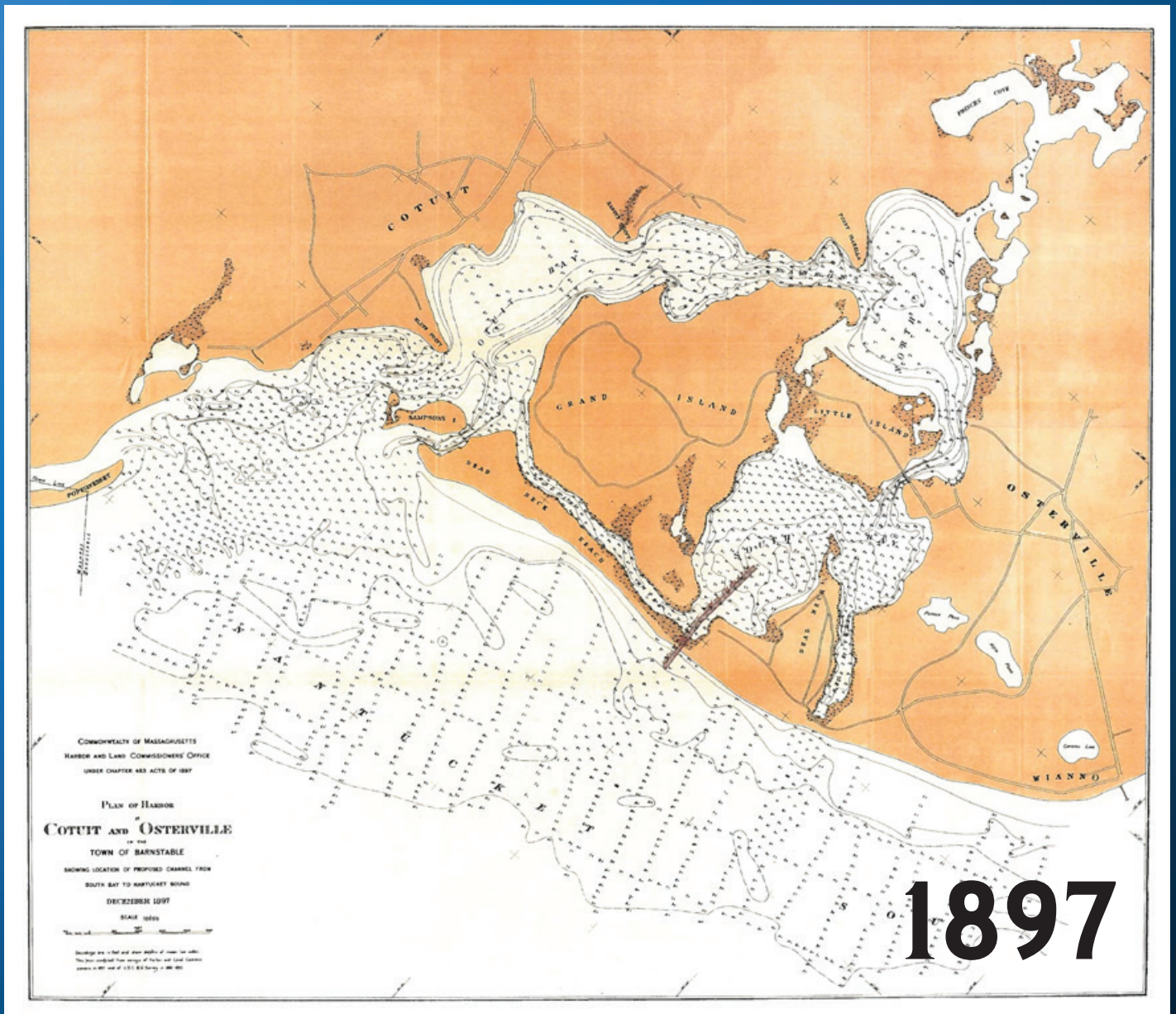




COALITION Quarterly

Barrier Islands: Sentinels of Change



A Note from The Helm

Over twenty years ago, Three Bays Preservation was founded with a mission to protect our bays with a primary focus to preserve the barrier island known as Dead Neck Sampson's Island (DNSI). Four years ago, we changed our name to Barnstable Clean Water Coalition (BCWC), as we recognized that everything we loved about Cape Cod would be at risk if our waters continued to deteriorate.

Without clean water, our whole world is in trouble. Harmful algae choke our estuaries and worsening conditions further threaten aquatic organisms and impact human health. Over 70 percent of our ponds are in decline and our aquifer, that supplies all drinking water on Cape Cod, is at risk.

Yet, even as we look forward to new solutions, it is important to look back. This newsletter highlights the history of DNSI. I often run into people who say "don't change anything" when, in fact, everything is already changed! Historically, Dead Neck was a long spit of land that stretched to the west from Wianno, just like Long Beach does today in Centerville. Sampson's laid to the west as a separate island. Around 1900, the villagers of Osterville decided they needed a better harbor entrance, so they dredged and fortified a new channel which is now the Wianno Cut.

At the time, this was not without controversy (Cotuit residents opposed the effort), nor without consequence. Since the littoral current flows from east to west, the new cut interrupted the natural flow of water and movement of sand resulting in the truncated Dead Neck merging with Sampson's Island to form DNSI.

Like the constantly maintained Cape Cod Canal, the changes from a century ago require regular maintenance to allow recreational and commercial vessels to enjoy safe passage. In fact, this is the case all over the Cape with the constantly shifting sands.

We have changed our environment by adding wastewater to our groundwater. Climate change is warming our planet. Warming air and water are increasing algal growth. With your support, we completed the most recent of perhaps a dozen dredging projects over the last 100 years. In the process, we have improved water flow, navigation, and island habitat. These efforts buy us time and mitigate some of our trespasses.



Looking back, you will see that this area has played many roles in our history. Oyster Harbors is so named because of the once-abundant shellfish beds, which are still evident in the "middens" found there. Some of these discarded piles of shells from our Native American forefathers stood over two stories high.

The salt marshes around Sampson's once provided food for cattle. Cotuit Harbor became an important transit point to and from Nantucket due to the easy navigation afforded by our regular southwest winds.

Later, this area became an important summer destination for wealthy people from New York, Pittsburgh, and Boston to enjoy our warm weather and waters. Only then did our coastline start to change with increased development along the water's edge.

Our shorelines are constantly changing, and sea level rise will likely result in Sampson's and Dead Neck becoming separate islands again. Rather than hugging the coastline, our homes will need to retreat inland. Warming waters will result in different aquatic species moving in and taking hold.

Please enjoy this opportunity to step back in time and consider the future we want for ourselves and our families. This summer, try to visit Menemsha on Martha's Vineyard or the outer Cape in Orleans and Chatham to see their eel grass beds and pristine waters. We can have that again around DNSI, but we all must work together!

That's a Wrap!

On Dead Neck Sampson's Island (DNSI), years of erosion and longshore drift have resulted in sand from the eastern end (Dead Neck) moving and depositing at the western tip (Sampson's) of the island.

The recent three-year maintenance dredging project on DNSI that began in November 2018 wrapped up early in November 2020. Upon completion, over 133,000 cubic yards of dredge material had been removed from the western tip of DNSI. The material was placed at locations throughout the island for beach nourishment and enhanced nesting habitat for coastal waterbirds.

This partnership between BCWC, Mass Audubon, and the town of Barnstable should result in increased nesting on DNSI by protected shorebird species.



Moving dredged material to the dewatering basin.



Dredge removes material from western tip.



Building up habitat on the eastern end.



Panoramic view of the dredge in action on the western tip.

The Herring Are Coming and We Are Ready (COVID-Style)!

Triggered by warming waters, the annual migration of river herring from Nantucket Sound, along Dead Neck Sampson's Island, through the Three Bays estuary, and up the Marstons Mills River is a sure sign spring has arrived on Cape Cod.

BCWC will once again oversee the herring counts along the Marstons Mills River at the Mill Pond and Middle Pond fish ladders with the help of our amazing team of volunteers and the Barnstable Department of Natural Resources.

We have revised the 2021 monitoring protocols to address the safety issues related to COVID. All you will need this year to count herring on their spawning run upriver is yourself, a mask, access to a computer and a positive attitude.

If you want to join this exciting citizen science program collecting data from April 1st thru June 1st for State fisheries scientists, please email info@bcleanwater.org or call 508.420.0780 for more information.

Did You Know?

There are two species of river herring, alewives and bluebacks, and more than 40 herring runs on Cape Cod where you can view the springtime ritual of herring swimming upriver to their spawning grounds. Read more about river herring under the What We Do – Monitor section of our website.



Thank you for your support in 2020!

Considering all the hardships and obstacles that so many of us faced in 2020, BCWC is so grateful for being able to keep up our work cleaning and protecting local waters. With your help, we were able to continue testing ways to mitigate nutrient pollution through nature-based bioreactors in Marstons Mills cranberry bogs and working on the installation of Innovative/Alternative septic systems in the Shubael Pond area of Barnstable. Since you couldn't be there in person, BCWC has built a video library to share our groundbreaking work to restore our waters.

Check out these informative short videos on our website at BCleanWater.org.

We all have a part to play in solving the Cape's water crisis. Stay tuned and join us in this fight for a clean water future.

Working together we can save our local waters!



SANDS *of* TIME

The phrase “sands of time” is from a poem by Henry Wadsworth Longfellow. It describes the mark that great people leave on history. Time is like ever-shifting sand, it is never at a standstill. Yet in those mires of sand, some people leave their mark and are remembered for their actions and achievement.

Over the past 300 years, Dead Neck Island and Sampson’s Island have been owned by the Wampanoag tribe and well-known locals and families including the Crockers (ancestors of our own Zenas Crocker VII), Sampsons, Lovells, Bearses and Nickersons — familiar names in many Cape Cod towns. At the turn of the 20th century, and with the shifting of currents and aftereffects of storms, the islands joined together to form one simply known as Dead Neck Sampson’s Island. Today, this 110-acre barrier island is co-owned and co-managed by Barnstable Clean Water Coalition and the Massachusetts Audubon Society, creating a private wildlife sanctuary for protected piping plovers and least terns.

As you read through the timeline, you will note how important the islands were for commerce including salt marsh hay farming, salt production

and boat building. Maritime travel was significant both for economic and recreational purposes. While the controversial Osterville/Wianno “Cut” provided easier access to Nantucket Sound from Osterville and improvements for the east end of the island, it changed the physical dynamics on the islands immensely and resulted in multiple dredge projects over the more than 120 years since the cut was made.

We would like to thank the following people and organizations for their extensive research and assistance in pulling together this timeline. Their knowledge, groundwork and photos proved invaluable to the success of this project.

David Churbuck - Cotuit resident and editor/writer churbuck.com

Jim Gould - Cotuit resident and winner of the Barnstable Historical Commission’s 2020 Preservation Service Award

Cindy Nickerson - Historical Society of Santuit & Cotuit

E.M. Crosby Boatworks
Osterville Historical Museum

TIMELINE

1700-1900

1706-1737

In 1706, John Crocker, Jr. and his family are given land, including an island, by the "Proprietors" of the Massachusetts Bay Colony. The island is to be called Sampson's Island in 1800.



In 1710, the Wampanoag tribe sued James Lovell, one of the founders of Osterville, for possession of Oyster Island (now Grand Island) and Dead Neck Beach. Though they won the case, the tribe was forced to sell Oyster Island and Dead Neck to Lovell in 1737 to pay their legal fees.

Why is it called Dead Neck? "Dead" because most likely nothing of any value could be grown on it. "Neck" is an old English term for an appendage of land jutting out from the mainland.

Salt marsh hay is a very valuable commodity and was harvested on the islands to feed cattle. In 1839, it is recorded that two tons of salt hay is harvested per year on Sampson's.



Earliest known map of Sampson's
Circa 1775 by Bassett



1790 - DesBarres

During much of the 1800s, Cotuit had a lively maritime economy. Its harbor was too shallow for whaling ships, but it was fine for skiffs, coastal trading schooners, and the packet boats carrying food, wood and mail to Nantucket.

Lacking direct access to the Sound, Osterville wasn't as much of a seafaring village. To reach open water, Osterville seamen had to sail up through North Bay and down through the Narrows and Cotuit Bay — an added distance of up to 4.5 miles — or navigate the narrow Seapuit River.

1804

Josiah Sampson inherits Sampson's Island (along with most of Cotuit) from his mother Desiree Crocker Sampson, great-granddaughter of John Crocker, Jr.



1837-1847

Daniel Childs, a salt maker, buys 15 acres of Sampson's from Ezra Crocker for \$35 and more acres from Josiah Sampson, Jr. for \$70.

In 1847, Childs sells Sampson's to Daniel Nickerson for \$100.

Even at the turn of the century, some locals still called the island "Daniels' Island".

1866

Cotuit Postmaster Charles Bearse was a land speculator, who was involved with many back and forth land transactions related to Dead Neck.

Lucinda Lovell sells Dead Neck to Charles Bearse, Alexander Childs and Andrew Lovell for \$80.



TIMELINE

1874

Bearse and others sell Dead Neck to William Childs. Childs sells back to Andrew Lovell and Charles Bearse.



Spars and rigging for new ships were stored on Sampson's before being transported out to the ships' hulls in "Deep Hole", a very deep area on the southside of Dead Neck.

1885-1890

In 1885, Abigail Nickerson (Daniel's widow) sells Sampson's to Thomas and Abbie Childs for \$275. Five years later, the Childs sell the island to Charlotte Davidson, a Cotuit summer resident, for \$500.



1899

Dead Neck was a peninsula or "neck" of land that ran all the way from Dowse's Beach to the end of Dead Neck. It is not until the Osterville/Wianno "Cut" is completed that it becomes an island.



In 1899, work begins to make the Osterville/Wianno "Cut" from West Bay through the eastern end of Dead Neck to Nantucket Sound.

1900

The Corp of Engineers find only three feet of water in the historical channel between Dead Neck and Sampson's that joins the two islands together. With the merging, it leaves a shallow pond, that Oyster Harbor residents call "Pirates Cove" and Cotuit sailors call "Cupid's Cove".



1902

The town of Barnstable is given \$5,000 to dredge a three-foot channel out from deeper water in Nantucket Sound in through West Bay up into the boatyards.

Located in the West Bay area, Crosby boatbuilders have built, restored and maintained wooden boats for eight generations.



1906

Horace Sears, a Boston textile manufacturer, bought Sampson's from the Davidson family.

1910-1954

The State dredged a ten-foot channel through Cotuit Bay at a cost of \$27,000. Similar dredges happen in 1917, 1928, 1949 and 1954.



TIMELINE

1923

Harry L. Bailey, Sear's secretary, inherits Sampson's upon Sear's death.



1953

Bailey, persuaded by Cotuit bird watcher Alva Morrison, donates Sampson's to the Massachusetts Audubon Society. (MA Audubon)



1986

Paul and Rachel Mellon buy Dead Neck from Oyster Harbors Inc.



1997

Three Bays Preservation, Inc. is formed to address the troubling problems of pollution in the Three Bays estuary as well as the erosion of the barrier beaches of Dead Neck Sampson's Island.



1998-2009

From 1998 through 2009, Three Bays Preservation, the Town of Barnstable and Barnstable County work together on dredging projects to re-nourish the shoreline of Dead Neck by moving sand from Sampson's, West Bay and Seapuit River. Approximately 300,000 cubic yards of dredge materials are spread on Dead Neck to build the island up and to create critical nesting habitat for protected shorebirds.



2004

Five years after her husband's death, Rachel Mellon donates Dead Neck to Three Bays Preservation.

MA Audubon and Three Bays Preservation join to co-manage the two islands as a private wildlife sanctuary.



2011-2014

Due to the constant movement of sand along the southside of the island to the western end resulting in the narrowing of the Cotuit Cut, Three Bays Preservation, MA Audubon and the Town of Barnstable develop a three-phase maintenance dredging project that begins in 2018.

2017

Three Bays Preservation changes its name to Barnstable Clean Water Coalition with a new mission of restoring and preserving clean water throughout Barnstable.



2018-2020

Three phase dredging project starts in late 2018 and is completed in November 2020.



AmeriCorps Spotlight

BCWC's new AmeriCorps Service member Colleen Lucey hails from Derry, New Hampshire. After studying psychology and minoring in environmental studies at Stonehill College in eastern Massachusetts, Colleen decided to join AmeriCorps. "I knew that I wanted to do something that included field work, and AmeriCorps made sense."

Colleen's work with BCWC focuses on water sampling. Her days include going out with Field Operations Manager Meg Materne along the Marstons Mills River to test for nitrogen, temperature, velocity, and specific conductance. "I never knew that it could be such a problem for septic systems to leak, and the negative impact they could have on the environment," Colleen shared. "There have definitely been a few close calls [walking along the river] because of how slippery the rocks are," Colleen told us, laughing. She went on to talk about how she was excited to learn about bioreactors that BCWC put in a cranberry bog and how those help to reduce nitrogen flow.

While she is here, Colleen is excited to be able to travel to new places on the Cape and explore new spots. When asked about her future, Colleen confirmed that she wants to pursue working in the environmental field. "I've always been interested in humans' connection to their environment. I'm definitely more centered around environmental work in the future." We are excited to have Colleen on our team this year!



Farewell

Holbrook Davis 1921-2021

As we bid farewell to one of our iconic supporters, it is worth reflecting on how much the world has changed in his lifetime. In 1921, the world population was 1.5 billion, today it is over 7 billion. Mr. Davis supported our work to mitigate the impact of increasing human density on Cape Cod. He tirelessly supported our efforts to work for clean water, not just financially, but with regular calls and letters. Godspeed, Holbrook, and thank you.

Dead Neck Sampson's Island Revisited By Local Author



We are excited to share the news that starting this spring, we will be working with local author and ecologist Gil Newton on an in-depth book about Dead Neck Sampson's Island (DNSI)! This book will include a natural history survey of DNSI, identifying all the plants and animals found on the island, as well as other key aspects of this barrier island's ecology and landscape.

Gil will be conducting a survey of the island this spring that will take a few months, in order to capture the full picture of what plants and animals are present on the island through the seasons, like migratory birds. "We'll also talk about the protected bird species that use the island," Gil remarked in a call about the book.

Along with sections on the plants and animals present on DNSI, there will be an environmental impact section. This chapter will look at what affects invasive species, climate change, poor water quality, and more have done to this man made island. This section will go on to discuss what potential problems DNSI will face in the future as a result of the above factors.

We asked Gil a few questions to get a sneak peek of this book for you:

What are you most excited about regarding DNSI research? "I'm most excited about finding out if there have been any changes over the years since I've been there, and I'm always excited about sharing that information with others who care deeply about this area. I'm excited to find out what is living there, and it may be a large assemblage of plants and animals. That to me is a really interesting proposition."

Have you spent time out there before? "I've explored the area on my own more than a few times. As a young person, being able to explore these local areas was one of my inspirations to go into the marine sciences in the first place. Exploring these unique local places is a part of my heritage. We've seen a lot of physical, geological changes in the area since I was a kid, and it's been a while since my last visit, so I'm interested to see what those changes are."



Coyote: Coyotes are one of the few mammals found on DNSI.



Asian Shore Crab: First identified in the U.S. in 1988, this invasive crab is found under large rocks at the low tide line.



Least Tern: The nesting colonies of this State species of special concern can number in the tens of thousands.



Do you have anything else you'd like to add? "I really enjoy writing. I've written seven books already, so this is another opportunity for me to write and share this knowledge with others."

Do you have some interesting historical or environmental facts from the area you would like to share with Gil? You can email him at gdnewton@comcast.net



A native Cape Codder, Gil Newton has been teaching environmental and marine science at Sandwich High School and Cape Cod Community College for many years. His classes include coastal ecology, botany, coastal zone management, and environmental technology. In 2013, he became the first Director of the Sandwich STEM Academy. One of the founding members of Barnstable Land Trust, Gil is past president of the

*Association to Preserve Cape Cod. He completed his graduate work in biology at Florida State University and is the author of seven books, including the recent *Mysteries of Seaweed*.*



Heterosiphonia japonica: This north Pacific invasive red algae has spread rapidly along the Cape's shorelines in recent years.



Codium fragile ssp.: Codium, also known as Deadman's Fingers or Green Fleece, is an invasive macroalgae from Japan that thrives in nutrient-rich waters.



Piping Plover: Listed as threatened at the Federal and State levels, this small shorebird migrates between DNSI and the Bahamas.



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Mission Statement

Barnstable Clean Water Coalition works to restore and preserve clean water in Barnstable. BCWC utilizes science as its foundation to educate, monitor, mitigate and advocate for clean water.

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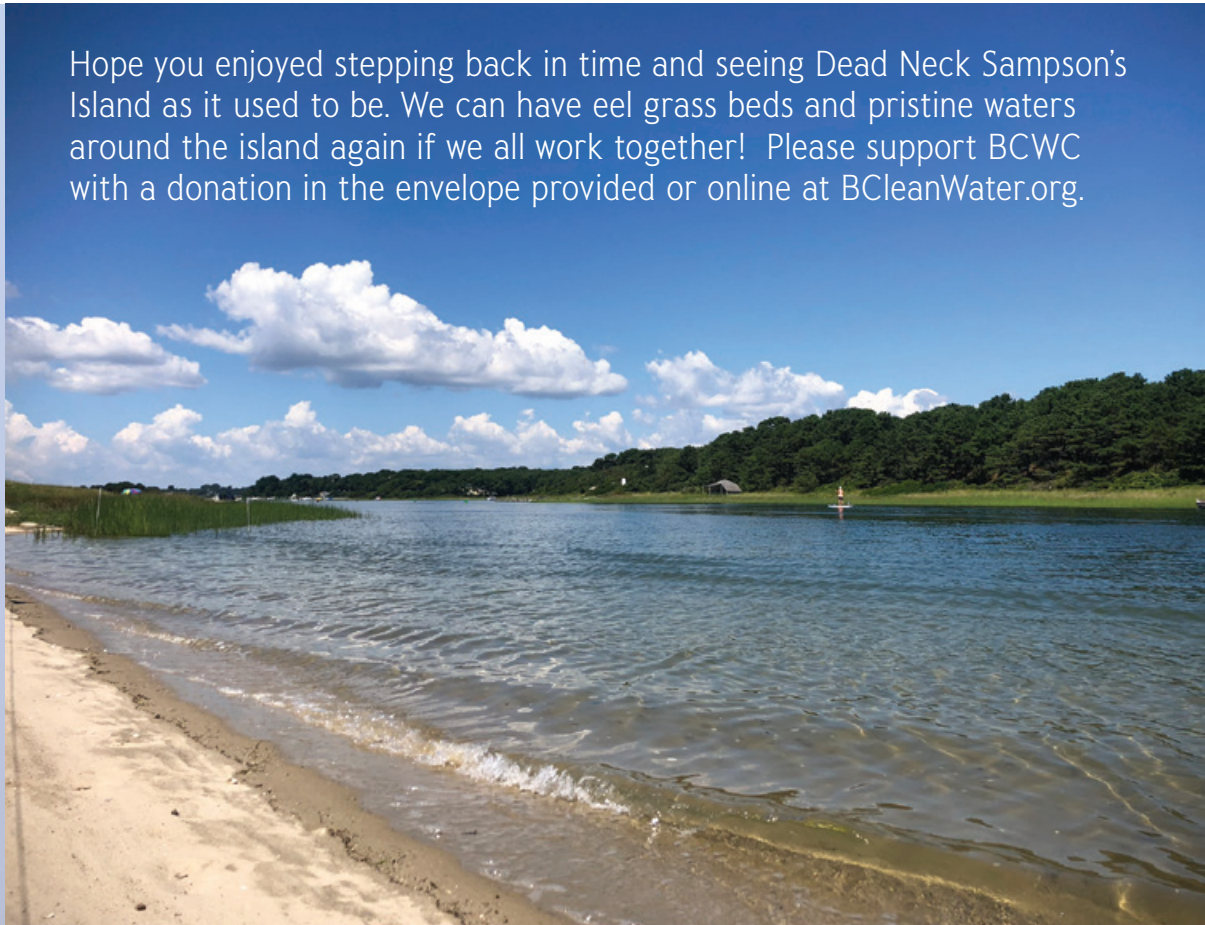
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Photo Credits: BCWC Staff, Heather Fone, Donna Bragg.

Hope you enjoyed stepping back in time and seeing Dead Neck Sampson's Island as it used to be. We can have eel grass beds and pristine waters around the island again if we all work together! Please support BCWC with a donation in the envelope provided or online at BCleanWater.org.



Help BCWC continue its work for clean water by donating today.



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