

Volume 3 - Winter 2023



Celebrating Over 50 Years of Service  
To Our Members and Community

## BBLA Newsletter



The purpose of the **BBLA Newsletter** is to provide members with in-depth coverage of current issues/topics related to Bethany Beach and the surrounding areas.

BBLA publications are also available on the [BBLA website](#)

**IMPORTANT REMINDER:** BBLA membership renewals are underway. Be sure to **RENEW** today to continue your membership if you haven't already done so. Click [HERE](#)

Membership survey data has indicated strong interest in issues discussed in this environmental-based **BBLA Newsletter**. All Bethany Beach property owners are affected by realities such as sea level rise, nuisance flooding, and storm/hurricane damage, which is why BBLA needs member support to work on advocacy efforts aimed at protecting property investments in the wonderful BB community.

## Articles

This issue is dedicated to environmental topics:

- (1) Addressing Water Issues Related to the Back Bay
- (2) What Happens in BB When Storms Hit?
- (3) BBLA Works with Other Local/State Organizations Concerned with the Environment
- (4) Town Progress in Engineering Studies of Tidal Flooding Solution
- (5) *Ghost Forests: What are They and Why are They Becoming More Prevalent?*



### **Addressing Water Issues Related to the Back Bay**

In response to member input, BBLA has been working hard for several years on "being part of the solution" regarding local and regional water issues. For instance, BBLA Board Members:

- meet regularly with the Mayor and Town Manager
- cover all Town Council meetings
- serve on Town Committees such as the Stormwater & Flooding Committee
- meet with state and federal officials and attend and testify at hearings, as appropriate
- reviewing federal legislation such as the [Water Resources Development Act of 2022](#) for local impact

### **Town Progress in Engineering Studies of Tidal Flooding Solution**

For well over two decades, successive Town Councils and the Town Manager have pursued the goal of preventing or lessening tidal flooding due to the Loop Canal. A number of studies were conducted over this period of time by the U.S. Army Corps of Engineers (USACE), as well as engineering firms assisting the Town. Each study built on the conclusions of the previous ones. In recent years, advances in technology and methodology have enabled engineers to more accurately measure the effects and efficacy of proposed solutions.

The initial concept suggested in the late 1990's and studied since 2004, called for the installation of an inflatable bladder dam on the Loop Canal at the junction with the Assawoman Canal. It could be inflated in such tidal events and prevent or lessen flooding in Town. The concept was, and sometimes is still referred to as the "bladder dam" project. However, in each subsequent engineering study, the latest by McCormick Taylor, the project evolved and now envisions construction of two flood control measures: a mechanically activated steel (or steel-covered) dam at the junction of the Loop and Assawoman Canals; and a tidal flap gate at the culvert under the upper bike path at the north end of the Prickly Pear trail within the Fresh Pond Canal area of the Delaware Seashore Park. The Fresh Pond Canal runs under Fred Hudson Road and empties into the Salt Pond and ultimately into the Loop Canal.

During 2021 and 2022 BBLA requested through letters and meetings that DE collaborate with the U.S. Army Corps of Engineers (USACE), as the non-federal partner on a Back Bay Study to identify and evaluate solutions to the nuisance or sunny day flooding which has plagued DE beach communities for many years. BBLA welcomed the long-awaited [announcement from the USACE Philadelphia District](#) that an agreement was signed on 11/29/2022 with DE's Department of Natural Resources and Environmental Control (DNREC). The cost-sharing agreement formally kicked off the Delaware Inland Bays and Delaware Bay Coast Coastal Storm Risk Management Study.

USACE is in process with looking for innovative solutions to the water issues, using a systems approach and applying a full range of programs and authorities available.

As a membership organization, the BBLA Board will remain engaged stakeholders – monitoring the study progress and continuing to advocate for solutions to the specific challenges manifested in Bethany Beach and the surrounding areas.

## **What Happens in BB When Storms Hit?**

Between October 2-7, 2022, BB experienced the effects of Hurricane Ian with a Nor'easter-like storm. Rain, high wind velocities, and serious storm surge (back bay flooding) from the Bethany Beach Loop Canal pounded BB for the 6 days. Floodwaters and rain quickly

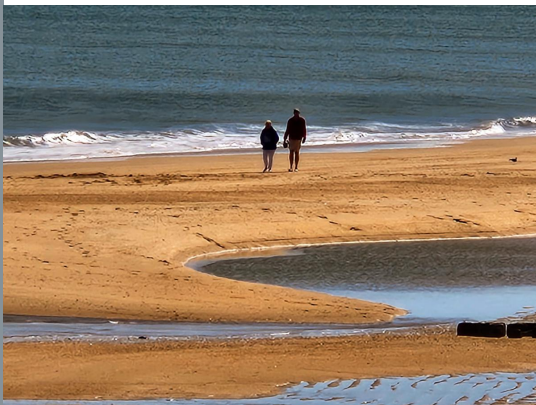
could be activated in anticipation of either rain-related or sunny day tidal events to prevent flooding in the areas north of Route 26 as well as North Pennsylvania Avenue and adjacent streets. Such flooding events generally occur during nor'easters when strong winds (20 mph and over) from the northeast are sustained over several high tides. These winds push water from the ocean into the Indian River Bay and prevent it from receding during low tide. The water is eventually forced into the Salt Pond and Loop Canal where it has nowhere to go except onto the streets and property in Bethany Beach. Sometimes referred to as "nuisance flooding" it is a serious problem for the Town, property owners, and businesses. The Town estimates that it occurs, on average, about 30 days each year.

A hydraulic study by the McCormick Taylor engineering firm completed in 2022 established that a three-foot high retractable steel dam on the Loop Canal at the Assawoman Canal, together with a tidal flap gate in the Fresh Pond canal area would eliminate most tidal flooding in Town, except for major storms like Hurricane Sandy. And the structures would do so without causing any flooding on properties along the Assawoman Canal or the Fresh Pond area.

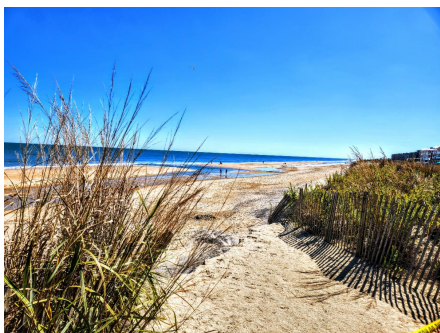
To put this in perspective, if a three-foot mechanically activated dam and flap gate had been in place during the May and October 2022 storms, there would have been no flooding in Bethany Beach. For example, during the October storm, the tide rose to 2.3 feet in the Loop Canal. That tidal surge would not have overtopped the three-foot dam barrier. Even if water overtops the dam, it would more gradually flow into the Loop Canal. In addition, during rain events, if the dam is activated when the Canal is low, stormwater would more easily drain into the Canal from surrounding streets. [Click [here](#) to see the areas of Town that flood depending on the level of water in the Loop Canal



filled up streets like Wiegand Lane and began to creep up onto lawns, in some cases, right up and into house foundations. IAN and the resulting floodwaters apparently affected the groundwater table to the point where water percolated upward. With water depths of 4-6" in crawlspaces, utilities were at risk in addition to the mold and noxious odors caused by moisture. Water on some streets was knee-high which made it unsafe to drive cars and trapped property owners in their homes for several days. In fact, water remained pooled in the street in some places until October 17. Click [here](#) for more photos and [here](#) for member stories. Use this [link](#) whenever you want to check Town weather conditions/tides.



**October 2022 Nor' Easter:** almost six days of continual northeast winds and storm related high tides the front caused these conditions at the oceanfront



Due to the Nor' Easter, ocean continued to break on or close to

without such barriers - scroll down to the map and click on the various number of feet.] Moreover, the Town Manager has reported that in the 48 instances the Town has experienced tidal flooding since 2017, the proposed dam and tidal flood gate would have prevented flooding in all but one case.

In March 2022, based on this positive development, the Town Council approved a proposal from McCormick Taylor to develop a "30% preliminary design" plan for the project, the first phase of a typical 30%-60%-90% process for such a construction project. The plan will include survey and geotechnical information; basic details of the dam apparatus and foundation; and support infrastructure for the dam pump and power supply. The plan will also include details of the tidal gate at the Fresh Pond site north of the Salt Pond. The approved [McCormick Taylor proposal](#) is posted on the Town website under "Briefing Book Materials" – March 14, 2022.

The McCormick Taylor 30% preliminary design plan is expected to be completed early in 2023. The plan notes, among other provisions, that upon completion and Town review, the firm will also meet with USACE and DNREC for review and coordination purposes. The BBLA Board will continue to monitor progress and keep our members informed as new information becomes available. We understand that there will be an opportunity for public review and comment on the design plan at a Council meeting and/or workshop.

The Board appreciates and supports the Town's ongoing efforts to bring this priority project to completion. We understand that it is going to take more time and effort and BBLA will assist in those efforts in any way we can.

the dune with no substantial buildup of sand to make crossover reconstruction possible



As of this printing, only **boardwalk** access via a crossover at Garfield Parkway

## **BBLA Works with Other Local/State Organizations Concerned with the Environment**

### **Center for Inland**

**Bays:** preserves, protects and restores Delaware's Inland Bays and their watershed through education, outreach, science and research, restoration, and public policy -  
- **Vision Statement:** A healthy and resilient watershed, where diverse wildlife and habitats thrive, and all who live, work and visit contribute to its betterment

**SARG - Sussex Alliance for Responsible Growth:** non-partisan Alliance to inform, educate and engage the citizens of Sussex County as to the critical importance of the development, adoption and implementation of a Comprehensive Plan that fosters smart Growth, ensures a balance between a sustainable quality of life and economic



## **Ghost Forests: What Are They and Why Are They Becoming More Prevalent?**

**Written by:** Chip Smith, BBLA Board Member and Environmentalist

Take a drive up and down the Delmarva Eastern Shore and the interior parts of Sussex and Kent Counties, DE, Accomack County, VA, and Worcester County, Maryland. Most would enjoy the great natural beauty throughout the region, precious oceanfront and interior habitats, rivers and streams, wetlands and lakes/ponds, and of course, stands of forest.

During my frequent travels, I have noticed there are areas where formerly healthy stands of trees seem to have been decimated. Trunks are shedding their bark, branches are devoid of leaves, and even the understory vegetation seems frail or non-existent.

Recently, I read an article "*Knowing the Shore*" in the November-December 2022 issue of the *Smithsonian Magazine* (pp. 88-101) about unique research being conducted to better understand climate change so that we can adapt and find ways to preserve and protect habitats at the border between land and sea. In low lying coastal areas such as Bethany Beach and neighboring communities, sea level rise saturates soils. Storm surges are more frequently pushing saltwater further inland. Salty surface water and groundwater forces trees to pull harder to bring water up into trunks, branches, and leaves. Air

development and encourages Responsible and transparent governance

### Nature Conservancy in

**Delaware:** works with government agencies, private corporations, conservation organizations and our members to conserve the lands and water on which all life depends

### Friends of the Nanticoke

**River:** a citizen's non-profit dedicated to protecting the unique natural, cultural, and recreational resources of the Nanticoke River watershed from its source in Delaware to the Chesapeake Bay

### Delaware Nature Society:

connects people with the natural world to improve the environment through education, conservation, and advocacy, envisioning a healthy and sustainable environment for all - state affiliate for the National Wildlife Federation providing community tools to take action and promote the health of the environment through land preservation, wildlife protection, and watershed stewardship

### Save Our Lakes

**Alliance:** founded in 2004, SOLA3 is the only non-profit, all-volunteer organization dedicated to protecting, preserving, and maintaining three freshwater lakes - Silver Lake, Lake Comegys, and Gerar Lake, all located in the Rehoboth Beach, DE, area - These lakes suffer from extreme pollution, resulting in inconsistent water levels, rampant algae growth, massive fish kills, turbidity of the water and mud

bubbles are sometimes created that further diminish or eliminate a tree's ability to ingest the water it needs to survive. Trees die when there is no water and no photosynthesis.

An interesting fact about wetlands is that in the natural state wetlands are able to self-engineer by trapping sediments which elevates ground levels, enabling more plants and their roots to take hold and survive. Wetlands capture CO2 and other pollutants, a function critical for overall ecosystem health. However, the increases in flooding and standing water observed over the past 30 some years have been working contrary to the ability of wetlands to self-engineer, stabilize, expand, and survive. Wetland and edge plants drown and cannot photosynthesize. The same thing happens with trees. Also, as temperatures rise there is a significant increase in the growth of microbes, bacteria, protozoa, archaea, fungi, and microscopic worms in the soils to the point where these lifeforms begin to break down the soil (a good thing usually) faster than wetlands can self-engineer. Holes are created in the soil, structure breaks down, and marshes drown. In addition, CO2 and methane gasses are released which exacerbate climate change and warming trends. Trees are likewise affected by the breakdown of soil structure and content.

The Smithsonian article also pointed out that "*once the temperature gets above 86 degrees Fahrenheit, crop production begins to drop precipitously.*" High temperatures, and longer periods of high temperatures, can similarly affect trees. For example, the Blackwater National Wildlife Refuge in Maryland now contains what are referred to as "*ghost forests*" - stands of barren, lifeless, grayish trunks and branches. In general, there are many factors that, over time and to varying degrees, can adversely affect trees ([see chart and more photos](#)).

Climate-induced and human-induced factors interact in complex ways to cause climate change and the resulting



flats created from an abundance of silt deposits

### **Delaware Audubon**

**Society:** statewide chapter of the National Audubon Society dedicated to developing a better appreciation of our natural environment and working for species and habitat conservation - advocates for environmental issues; and sponsors public programs and school education with a focus on protection of the Delaware Bay and the Coastal Zone

### **Delaware Sierra**

**Club:** explores, enjoys, and protects the planet - Delaware Chapter has blazed trails to protect the environment and to provide opportunities to enjoy and explore the State's natural beauty - as a volunteer-run grassroots organization, works to protect our air and water quality and supporting state legislation and policies to reduce the negative impacts from climate change on those precious resources now and in the future



factors listed in the chart. Unfortunately, these unintended consequences adversely affect trees. When trees, shrubs, wetlands, and grasses die off coastal communities lose the ability to absorb storm energy, trap pollutants, and protect water quality.

Ghost forests and individual dead trees are harbingers of bad things to come if halting and attempting to reverse the trend toward habitat loss does not become a priority. Examination of causes for loss of trees, such as over-development, installation of impervious surfaces, increased polluted runoff, loss of vegetated buffers and loss of TREES should be addressed at local and state levels, as well as individual advocacy. Putting strong buffer ordinances in place and working on reforestation are positive ways for restoring natural habitats for the ever-important forest trees. The benefits to Delmarva would be immeasurable.

According to NBC news report **“Ghost Forests Creep Up U.S. East Coast”** states: “New Jersey’s Atlantic white cedar forests are turning from green to a pale white, a sign of creeping sea levels and more frequent superstorms.....Along much of the Eastern Seaboard, the once-healthy coastal woodlands are dwindling rapidly — to the extent that if the rate of decline continues, these forested wetlands will reach the “point of no return within the century,” according to University of Virginia and Duke University researchers focused on studying the ecosystems. Ghost forests are already a problem all along the East Coast and in states along the Gulf Coast, such as Louisiana, Mississippi and Alabama. Coastal woodlands like these are critical ecosystems in the United States, as they filter pollutants, act as natural barriers and store carbon in the ground. But their positioning on the coast puts them at the vanguard of rising sea levels brought on by the warming atmosphere, therefore worsening some of the effects of climate change.”



*Fun on the "Ice" in BB - Appropriate for our Winter Issue*

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