LIVING SHORELINE CASE STUDY

ALLIANCE for the Chesapeake Bay

Cape Saint Clarie Community Living Shoreline

Maryland

RESEARCH TO RESILIENCE

By conducting thorough research, the Cape Saint Claire Community was able to connect with experts and design a living shoreline that best fit their community needs.

The Cape Saint Claire community is a long-standing neighborhood in Anne Arundel County, Maryland. The community, which was originally established as a summer retreat, now boasts around 2,300 homes and 8,000 residents. Cape Saint Claire features several marinas and beaches, and the beautiful shorelines remain a focal point for community gatherings. Residents enjoy swimming and fishing at their beaches, just steps away from their homes. However, over the years erosion has significantly reduced beach access. The Cape Saint Claire Improvement Association Beaches & Parks Chair, Beau, who grew up in "The Cape", remembers a time when residents could spread out along their vast beaches. Today certain parts of the beach are inaccessible, especially during high tide. Hurricane Isabel in 2003 further exacerbated issues with erosion. The Maryland Department of Natural Resources (DNR) confirmed the concerns about erosion, projecting up to three-foot annual loss of the beach.

In 2007, the Cape Saint Claire Improvement Association (CSCIA), a board of volunteer residents, spearheaded an initiative to protect their community beaches. After initially exploring living shorelines, the project was put on hold due to the 2008 financial crisis. The community was finally able to pursue a living shoreline project in 2013. The first phase of the project included assessments of several waterfront sites throughout the community conducted by the Maryland Department of Natural Resources (DNR). Next, the CSCIA selected consultants to not only assist with the permitting and designing of their expansive living shoreline, but also, and perhaps most importantly, one who agreed to hold public meetings for the residents. The CSCIA was committed to making sure the large number of residents in Cape Saint Claire were informed about the living shoreline project, which required extensive coordination between the consultant and the CSCIA. Overall, community members were supportive of the living shoreline project to protect their beloved beaches.

The consultant was able utilize previous projections of erosion conducted by DNR, as well as an assessment of community properties to update their restoration priorities. The consultant provided the CSCIA with expectations for installation and potential costs. Eventually, the CSCIA decided to pursue the construction of living shorelines along their main beach and a lake site. The two sites provide more than 1,000 linear feet of waterfront, an ambitious project in both size and scope that would require community fundraising and support from grants.

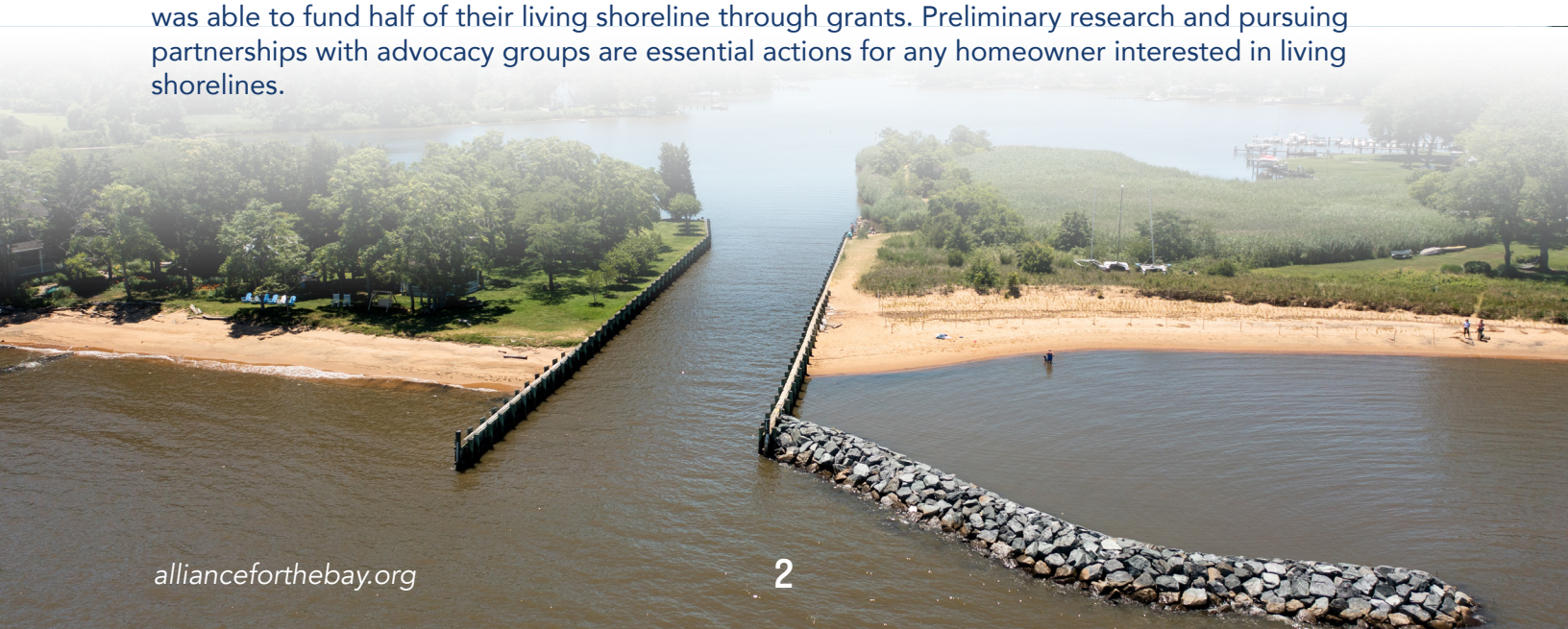
The CSCIA partnered with the Alliance for the Chesapeake Bay (Alliance), a nonprofit organization that brings together communities, companies, and conservationists to improve the lands and waters of the Chesapeake Bay watershed. The Alliance assisted them with grant applications and offered technical advice. Through their partnership, the Cape Saint Claire community was able to obtain several grants from the Chesapeake Bay Trust, Anne Arundel County, the Bureau of Watershed Protection and Restoration, the State of Maryland and the U.S. Fish and Wildlife Service.

"…we struck out. We were 0-6 for bids on grants. It wasn't until we engaged the Alliance in the spring of '18…since then have been able to gain $900,000 dollars in matching funds."

– BEAU, CSCIA BEACHES AND PARKS CHAIR

Considering the size of the living shoreline, the CSCIA knew it would take a minimum of nine months to get permits approved. However, when all was said and done, it took about two years to get all permits approved. Construction of the beach took place in 2021 and construction of the lake site will take place later in the year.

Wave action and hydrology analyses were instrumental for the design of a hybrid living shoreline at the main beach site. The hybrid living shoreline includes both hardened structures and dense planting to achieve stabilization against wave action and erosion. Over 7,000 native plants were installed, along with beach-sand replenishment and a stone jetty. A hardscape was built along a fetch to slow wave action. Areas already protected by the hardscape feature natural materials to absorb further wave action and offer overall protection of the beach. In total, the construction phase took about two weeks to complete.

Beau, CSCIA Beaches & Parks Chair, stated that his community is in the process of measuring the progress of the living shoreline at the main beach. The living shoreline has not reached its final stage yet, but the Cape Saint Claire community feels positive about its progress in protecting against erosion.

Beau has become well-versed in living shorelines after leading the initiative for his community. He recommends that other private communities considering a living shoreline should partner with an advocacy organization to obtain grants and offer advising. Additionally, he recommends that large communities should consider setting aside initial funding to cover the planning and design of a living shoreline. The initial research the Cape Saint Claire community conducted, DNR assessments, and scientific studies of wave action and hydrology were all key steps to successfully installing their large living shoreline projects. By connecting with local experts, the Cape Saint Claire community was able to fund half of their living shoreline through grants. Preliminary research and pursuing partnerships with advocacy groups are essential actions for any homeowner interested in living shorelines.