LIVING SHORELINE CASE STUDY

ALLIANCE for the Chesapeake Bay

IN PARTNERSHIP WITH THE ELIZABETH RIVER PROJECT

Eastern Branch of the Elizabeth River Living Shoreline

Virginia

NEGLECT TO NOURISHMENT

After installing a living shoreline, Tom's newly-purchased property went from a dumping ground to a beautiful waterfront home.

Tom purchased land on the Eastern Branch of the Elizabeth River knowing that it would be quite an undertaking to construct a home and restore the shoreline. His new home is located near a concrete plant, and over the years this section of the river became a hot spot to dispose of construction debris and trash.

"It was bad. There were refrigerators sitting out there, tires, I mean anything you could throw in the river was out there."

– TOM, HOMEOWNER

Not only were there issues with debris contaminating the water, but routine flooding also caused erosion. One day Tom measured 10 feet of flooding in his yard and instantly knew that something had to be done to protect his property. Having never lived on a shoreline, Tom was unfamiliar with shoreline protection methods. After some research Tom came across the Elizabeth River Project (ERP), who had built living shorelines throughout the region. To begin, the ERP staff showed Tom examples of completed living shoreline projects, including a section of the river that remained natural with native grasses, and he was quickly on board with installing one of his own. The cost of the living shoreline was split between Tom and funding sourced by the ERP from the City of Norfolk and a National Fish and Wildlife Foundation (NFWF) grant focused on restoring the Eastern Branch of the Elizabeth River. Although project costs were not inexpensive, Tom believes he made an investment in his property that will benefit his home for generations to come. He notes that the dedicated staff of the ERP made him feel at ease about the process.

The ERP helped Tom select a contractor who would conduct surveying, acquire materials, and install the living shoreline. The ERP staff also assisted with submitting permits to the U.S. Army Corps of Engineers, Norfolk Wetlands Board and the Virginia Marine Resource Commission. All in all, permitting took around fi ve months to complete. The two-week construction phase began with the installation of an Oyster Castle™ sill on a portion of the property that receives signifi cant wave and wind energy.

Coir logs—a natural fiber product used to protect shorelines from erosion—were placed on the south side of the property that has reduced exposure to waves and less signifi cant erosion. To install the coir logs, upland grading was completed throughout the shoreline area and backfilled with clean sand. Next, sand and marsh plants were added to the shoreline.

After the living shoreline was installed, there was an unforeseen challenge. Tom's home, which was built on an empty lot, began depositing stormwater runoff towards his shoreline. The stormwater runoff eventually created a gully. The contractor was quick to respond by adjusting the placement of the coir logs and sand to combat runoff . One year after the living shoreline was built, the ERP installed upland plants. Additionally, abandoned, repurposed crab traps (dipped in concrete) that once littered the river were used to create a border around the Oyster Castles™ to create an "oyster reef". The installation of the crab traps with the Oyster Castles™ was built to imitate a barrier reef, which off er protection from storms and strong waves. This second project was completed with funding from a NFWF Five Stars Urban Waters grant.

In the two-and-half years since the construction took place, Tom has been extremely impressed with the transformation. He is especially pleased with the wildlife his oyster reef has attracted.

"It's beautiful, we've got otters that will sit there on the oyster castles and eat the oysters The wildlife is incredible. I'm really interested in seeing how the oyster reef will get the smaller fish to come in there…it's really truly gorgeous when you sit back and look at it."

– TOM, HOMEOWNER

Neighbors took an interest in the living shoreline Tom had constructed and just recently completed a one of their own with guidance and funding from the ERP and NFWF. Tom is glad to be a part of a project that restored the natural beauty of land that was once underappreciated. He would advise any waterfront homeowner experiencing erosion to consider a living shoreline. He believes that his living shoreline, and other projects to restore the river, have led to better water quality. And now, every once in a while, Tom gets a glimpse of a dolphin from his pier.

"The primary benefit for me is being able to sit out there and look out at my pier... Being able to sit out here and relax and have a glass of wine and see the egrets, foxes, otters, how all of it meshes together—walk down there and watch the oysters at low tide, spitting the water out knowing that's how they purify the water. The ultimate goal is to get the dolphins back in the river and the dolphins have come back because the quality of the water has improved."

- TOM, HOMEOWNER