

3 MINUTE READ

Fowl River Private Living Shorelines



from **Engineering With Nature: An Atlas, Volume 1.**

by **US Army Engineer Research and Development Center**



Theodore, Alabama, United States

The Fowl River Private Living Shorelines demonstration projects consist of two living shorelines constructed by The Nature Conservancy (TNC) for private landowners whose property is adjacent to Fowl River. The shorelines for both properties were hardened by failing bulkheads and were experiencing erosion caused from boat wakes during the busy summer recreation season. The 2014 Fowl River Private Living Shoreline 1 project was the first to use the innovative method of retrofitting an existing bulkhead with gabion baskets planted with native marsh species. The construction of tiered gabion baskets stabilized approximately 50 feet of shoreline by mimicking the natural slope found on the river banks; this method restored near-shore habitat that had been lost when the bulkhead was built. The Fowl River Private Living Shoreline 2 project was constructed in 2017 and utilized the same innovative concept of stabilizing an existing bulkhead using tiered gabion baskets; this time, they were also filled with dredged sediment, then planted with the native marsh grass. In addition, 40 feet of natural shoreline and an existing marsh island were protected by two gabion-basket breakwaters. This project incorporated beneficial use of

dredged sediment removed from a nearby canal to provide sediment for the living shoreline and marsh restoration; the project protected 200 feet of shoreline and enhanced 720 square feet of marsh.

Article cover: Completed bulkhead retrofit with marsh grasses. (Photo by Jacob Blandford, The Nature Conservancy)

Producing Efficiencies

These projects used an innovative hybrid living shoreline design that provides a green, or environmentally friendly, alternative solution to shoreline stabilization for private property owners with existing grey infrastructure such as bulkheads. The design beneficially used locally dredged sediment in gabion baskets to reduce the height of boat wakes, thereby stabilizing the shoreline and providing a suitable habitat for native marsh species to grow. Bulkheads are commonly found along shorelines in the United States and this is an approach that could be suitable for nationwide implementation.

Using Natural Processes

The natural slope that is mimicked with the tiered design reduces wave energies more efficiently than traditional vertical bulkheads. Native grasses stabilize the beneficially used dredged sediment and create habitat that is lost when a bulkhead is constructed. In addition, native grasses filter water and remove excess nutrient runoff.





Completed bulkhead retrofit with marsh grasses.
(Photo by Jacob Blandford, The Nature Conservancy)

Broadening Benefits

The design of these living shorelines leaves the failing bulkhead in place and stabilizes the structure, saving the landowner the cost of removal. Beneficial use of dredged sediment was also a cost-saving measure. While the cost of this method is still slightly above the cost of a bulkhead, it is expected that costs could decrease if this method becomes a more popular solution. This green alternative provides additional environmental benefits compared to traditional grey infrastructure by creating a riparian zone with marsh habitat.



Construction of the first private living shoreline.
(Photo by Mary Kate Brown, The Nature Conservancy)

Promoting Collaboration

These projects are demonstration sites executed by The Nature Conservancy. The private landowners have been very willing to allow site visits by prospective landowners considering this approach who are interested in viewing implemented examples.



Planting the first private living shoreline.
(Photo by Carlton Ward Jr., The Nature Conservancy)



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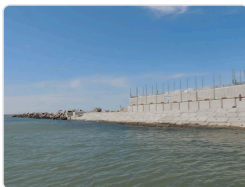
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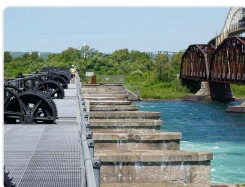
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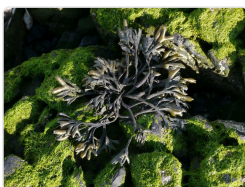
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