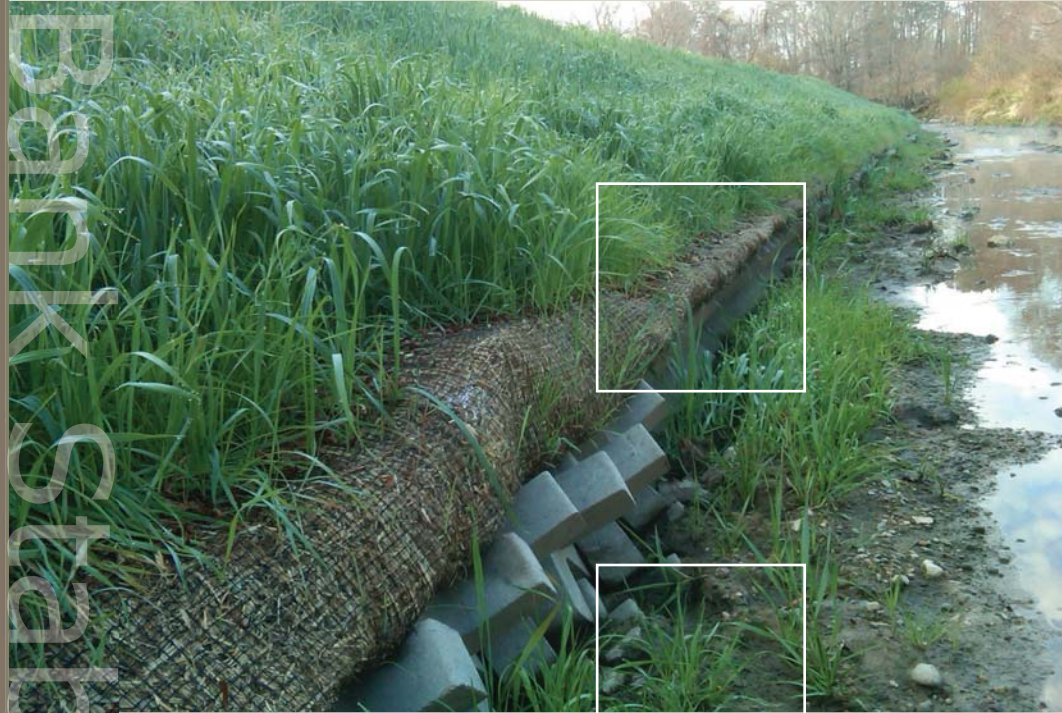




# Bank Stabilization

Batesville, IN

Bank Stabilization



*Synergy With Nature™*

# Bank Stabilization

**Application:** Scourline Protection & Spillway Rehabilitation

**General Contractor:** D2 Land & Water Resource

**Location:** Little Laughery Creek, Batesville, IN

**Size of Structure:** 500 Linear Feet of Creek Bank

In early 2010, D2 Land & Water Resource began working with Submar to design a bank stabilization project along Little Laughery Creek in Batesville, IN. Over time, heavy rains had eroded both the creek bank back toward a wastewater storage area as well as the overflow spillway from a wastewater treatment plant. The project included both areas for repair and stabilization.

The toe of Little Laughery Creek (within the project area) was the most critical zone needing protection. Submar's X-Stream™ concrete armor units were installed to protect the toe and stabilize the bank by dissipating energy during high-flow events. The X-Stream™ units are "jack" shaped, and when stacked in a pyramidal formation, they reduce the energy of the flowing water. The X-Stream™ armor units provide additional bank stabilization through the ample void-space areas. Sedimentation deposits within these void spaces, allowing for the growth of deep-rooting native plant species.

The overflow spillway from the wastewater plant was reinforced by installing Submar's open cell ACB, UltraFlex™. The articulated concrete blocks were shipped to the site palletized and were hand-placed utilizing Submar's Place N' Lace™ installation guidelines.

Once the X-Stream™ concrete armor units and the UltraFlex™ articulated concrete blocks were placed, the remainder of the bank stabilization was completed with the broadcasting of native seeds and the trenching of turf reinforcement mats. Wells Excavating of Batesville, Indiana trenched the turf reinforcement mats against the X-Stream™ units and the articulated blocks to ensure smooth transition points. The installation was completed in September 2010. Within two months, a full vegetative mat covered the embankments.

Wells Excavating installed X-Stream™ units for the first time on this project. Wells began by creating a geotextile lined trench into which a leveling pad of stone was placed to keep the X-Stream™ units on grade along the bank. Due to the efficiency of the interlocking units, Wells was able to place approximately 500' of a 3-stack pyramid formation (1,820 total units) in 3 working days.



X-Stream™ concrete armor units are delivered to the job site palletized and in two pieces that interlock. This interlocking installation process is easily done by hand, which makes the X-Stream™ system a viable option over other traditional types of scourline armoring. This becomes even more important when you are faced with a project that has very limited access to heavy equipment.



805 Dunn Street  
Houma, Louisiana 70360  
985.868.0001  
FAX 985.851.0108  
EMAIL: [submar@submar.com](mailto:submar@submar.com)  
[www.submar.com](http://www.submar.com)