SHORELINE PROTECTION TECHNIQUES

In the movie "My Big Fat Greek Wedding", the father of the bride used Windex to fix any ailment he had from bad breath to achy joints. While this has its comedic value, finding a 'silver bullet' that will cure anything and everything rarely exists in the known world. As a result, there are many approaches to solving a problem; sometimes technology provides a cure, sometimes nature supplies the answer, and sometimes the most innovative idea is the only thing that seems to work. This begins to explain why there are so many different techniques for protecting our state soil from eroding and taking a trip down the Mississippi River to the Gulf of Mexico. Streambanks and shorelines are among the most susceptible soils to erosion due to their proximity to active water and natural forces; i.e. ice pressure/scour. As a riparian community (one that lives on or uses the water) we can protect our land using Shoreline Protection Techniques such as hard armoring, soft armoring, native plantings in an upland buffer or aquatics, etc.

The strategy of hard armor involves an almost militant line of thought; make the shore/bank indestructible. The DNR has found that most sights do not require such techniques, in which corrugated steel and concrete retaining walls have been eliminated as options. However, some sites do qualify as 'high impact' locations where the use of gabions, boulder sea walls, rip rap, and D50-6" rock would be acceptable. The more natural materials allow greater flexibility in construction, meeting a 2:1 slope requirement, provide limited habitat, and egress for amphibious (land/water) species.

The soft armor strategy corresponds with a succession type of thought process; provide the means for a stabilizer such as plants to get started and take over. This technique is a more recent and favored technology that seems to work best in moderate to low energy sites, at the same time being a more environmentally sustainable strategy. Bioblock, Biolog or Bioroll, and Biomat are some of the products included in the soft armor category. These woven coconut fiber, Coir, products act as a medium for plant establishment, a filter for sediment in the water column, and a biodegradable hard armor substitute. The product works best in combination with buffer plantings that will stabilize the bank after the coir has degraded, usually within 7 years.

The native planting strategy mimics Mother Nature at her finest; the lush canopies and dense root systems will provide many levels of protection for shorelines. This technique should be considered for any site, it's a well published phenomenon that a manicured lawn to the water's edge degrades water quality, because such vegetative cover performs like an asphalt driveway. Unlike native plants, turf does not slow stormwater runoff, dissipate raindrop impact, or penetrate the soil subgrade more than a few inches. Native plants also offer many more benefits such as attracting wildlife to the area, deterring Canadian Geese, varying heights/texture/color, and scenic beauty. This technique is most effective when a combination of trees, shrubs, and perennials are used in a 30-foot wide buffer planting, but any width will have its benefits.

There are many things we can learn through the latest technological advances, nature, and creative brainstorming, but keep in mind that the three main strategies of shoreline protection only tip the iceberg of what may be appropriate for various site conditions. The most important thing to take away here, involves the hybridization of techniques. Intermingling strategies often delivers higher levels of success and longer lasting results!

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