

Bulking & Tiering Wetland System
Paul Lerin
Bionautics, Inc., 15 Forest Avenue, Staten Island, New York 10301
(bionautics@earthlink.net)

The innovation of constructing multiple bulkheads in a tiered fashion can help recreate the unique ecosystem of a troubled waterway; especially, estuarine tidal banks that have been heavily encroached upon and dredged for commerce. The installation would be surveyed according to the fluctuation of the inter tidal zone which is termed "a green belt in the littoral." Bulking & Tiering Systems provide the ideal grade that is necessary in establishing saltmarsh foundation species. In addition, the aforementioned technology provides a platform for phyto-remediation, which uses nature's aquatic filters for Combine Sewer Overflow abatement.

The method of installing a Bulking & Tiering Wetland System would be constructed of interlocking sheet pilings that are impervious to the harsh marine environment. These sheet pilings are specially formulated of post- industrial recycled vinyl. They are attractive in appearance, durable, and more affordable than conventional retaining walls. Unaffected by sunlight, salt water, or marine borers, this sustainable design material has been specified for its ability to contain toxins.

The System would be particularly appropriate for sediments that are considerably contaminated and which may be a source of contaminants to other water ways in the area. Establishing a bulkhead and capping the existing sediments would specify significant amounts of beneficial uses material to achieve the proper elevation. A layer of sand must be applied to establish a root zone where seeding takes place and any modifications for proper drainage can be adjusted.

Throughout much of our history salt marshes have been little regarded and often destroyed. They have been filled in as dumps and valued only when drained and developed. In the last several decades, we have only begun to understand that wetlands are a fertile and precious nursery. Besides nurturing millions of species -many endangered- wetlands replenish the Earth's water supply, blunt the ravages of nature and provide sanctuary and serenity for humans.