



## St. Andrew B.E.S.T.

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Mr. Loland Broussard, Civil Engineer  
U.S. Department of Agriculture  
Natural Resources Conservation Service  
646 Cajundome Blvd.  
Lafayette, Louisiana 70506

March 20, 2007

Dear Mr. Broussard:

This is in response to a request by Mr. Scott Bartkowski that I provide some information regarding our observations related to the Wave Attenuation Device (WAD) product. I understand that the CWPPRA program is gathering information to validate that the WAD product qualifies as an effective alternative in abating shoreline/bankline erosion.

Until I retired on January 2, 2005, I was a marine ecologist for the U.S. Fish and Wildlife Service. I spent my entire career at the Panama City Field Office. Originally our work area included the panhandle of Florida, and coastal Alabama and Mississippi. Among the many responsibilities I had over the 30+ year period was sixteen years as a chemical contaminants specialist. Most of my work involved sediment contamination. I was also the Coastal Program coordinator, and as such I was involved with, and helped fund, various restoration projects or pilot projects aimed at leading to full restoration efforts.

I am currently the executive director of BEST. Our organization has completed one pilot project using WADs. I refer you to our website, [www.baybest.org](http://www.baybest.org) and, under the *publications* button, to our BEST report No. 11 entitled *West Bay Seagrass Restoration Pilot Project* and reported on by project officer Neil J. Lamb, PhD.

As Coastal Program coordinator for the Service I provided financial grant assistance to the project and review the proposal and proposed design. Coastal Restoration Inc. provided a generous match in the form of WADs for the project.

Our project was at least 500 feet offshore of the mean high tide line. It was located at this position because the pilot project was to test attempts at seagrass restoration – the average summer depth of water was about three to four feet. Each hollow pyramidal WAD was eight feet at the base, four and a half feet high, and weighed approximately 2,000 pounds. Triangular “windows” allowed water to flow through the WADs.

The question as to whether the WADs effectively and significantly reduce wave energy was, for me, revealed by the rapid accumulation of silts, clays, and particulate organic matter behind the WADs. On page 19 of Dr. Lamb’s report, I quote: “From October 2003 when the WADs were installed until the major storm event of Hurricane Ivan on September 15-16, 2004, a steady accumulation of silt-like mud within the wave protected areas of the WADs and the fencing was very apparent. Walking outside the enclosure was easy on the hard-packed *underwater* (term added for clarity) sand. Within the enclosure, the muck was approaching about half the accumulation as the donor site, *a shoal grass seagrass bed* (added for clarity) off Doyle Point, and making it tedious walking because the feet would sink into the mud.”



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The West Bay area of St. Andrew Bay lost over 1,000 acres of seagrass beds between 1964 and 1980, probably because of various human activities at that site. Once the seagrasses were lost the natural wave energy quickly sorted the sediments, carrying away the lighter silts, clays, and organics. The unvegetated bottom has remained, for over 30 years, fine-grain, firm quartz sand bottom devoid of seagrasses.

The rapid accumulation of silts, clays, and organics behind the WADs could only have occurred because of a significant reduction in wave energy caused by the WADs. This reduction in wave energy allowed these finer materials to settle and remain on the bottom. This situation occurred even though the WADs are hollow with openings that allow water to flow shoreward and sea ward, but at a reduced energy level such that fine sediments accumulate. As Dr. Lamb's report documents, it required hurricane conditions to displace the accumulated sediments. The WADs were not moved at all by the hurricane. This cleansing of the sediments during the hurricane was probably enhanced by the fact that the project had been located at least 500 waterward of the mean high water line.

It is my personal conclusion that, because of the rapid and significant sediment accumulation, the WADs are effective at reducing wave energy. I hope this information is helpful.

Sincerely,

Michael S. Brim, Executive Director  
St. Andrew Bay Environmental Study Team