

BREAKWATERS AND SHORELINE STABILIZATION STRUCTURES

Bulkheads and other shoreline stabilization structures are used to protect adjacent shorelines from wave and current action and to enhance water access. These projects may adversely impact wetlands through direct filling, isolation, and increase of wave scour. Adverse impacts may be reduced by applying the following criteria:

- a. Vegetation plantings, sloping (3:1) riprap or gabions are generally considered to be environmentally compatible as shoreline stabilization methods over vertical seawalls since they provide shoreline protection and also provide good quality fish and wildlife habitat. Riprap material should be clean and free of toxic substances.
- b. In areas where marsh exists along the shoreline, vertical structures are not recommended.
- c. Where vertical structures are proposed, they should be aligned at or landward of the mean high tide line and above wetland vegetation. Vertical structures should be constructed so that reflective wave energy does not scour or otherwise adversely affect shorebird foraging areas, adjacent fishery habitat or adjacent shorelines.
- d. Submerged riprap material should be placed at the toe of bulkheads to protect the integrity of the bulkhead, reduce reflective wave energy and provide hard substrate for aquatic organisms.
- e. Breakwaters should have openings that allow for fish ingress and egress and water circulation.
- f. Breakwaters constructed of riprap material with a minimum 3:1 slope are preferred in most cases in lieu of vertical wall structures.

NOTE: Bulkheads and other forms of bank stabilization that: 1) do not exceed 500 feet in length; 2) do not exceed one cubic yard of fill per running foot; and 3) are not proposed for placement in a special aquatic site, including wetlands, may qualify for Nationwide Permit 13. Contact the Galveston District for additional information.

Breakwaters are prohibited in the Gulf of Mexico pursuant to Section 15.6(c), Title 31, Texas Administrative Code.

Bulkheads proposed on Lake Conroe that do not exceed 200 feet in length may qualify for General Permit 17667(02). Construction of artificial wave barriers to protect transplanted smooth cordgrass may qualify under General Permit 19088. Construction of spur jetties for bank stabilization may qualify for General Permit 17446. Contact the Galveston District Corps of Engineers.