

Properly DESIGNED & BUILT Shore Structures Protect Ohio's Coast



Groins/Groin Fields are shore-perpendicular structures that are connected to land and extend into the lake. Groins interrupt or slow the movement of sediment along the shore.



Bulkheads are vertical structures built to stop the land from sliding into the lake and to provide deep water access to adjacent shores. Commonly found at marinas or mooring facilities, they may also be found in urban areas and may be the base of a promenade along the lake.



Drainage Systems are a series of pipes and/or gravel-filled trenches that function to remove excess water when they are installed on or within a bluff or bank.



Re-grading/Terracing is moving bluff/bank material so that the slope of the bluff/bank is more stable than the original slope due to the reduction of soil stress on the bluff/bank slope.



Revetments are onshore structures built to protect the toe of a bluff from erosion caused by wave action. Revetments are constructed at a stable slope angle and create a covering of erosion resistant material from the toe of the bluff up to a point where wave action typically does not reach.



Sand Bypassing is the intentional relocation of sand from an updrift area of accretion to areas downdrift. Bypassing is typically performed at navigation channels and harbors where jetties and breakwaters capture a significant amount of sand.

Seawalls are onshore, shore-parallel structures built to reduce wave-induced toe erosion, with a secondary function of limiting flooding of the land behind the structure. Seawalls can have a vertical, stepped or curved face, and typically have a horizontal surface or cap at the top.

Shore Structures can include design elements that enhance habitat in the shore and nearshore areas and promote recreational access.



Beaches are a great erosion control measure in areas where they naturally occur. Beaches also provide recreational opportunities.



Beach Nourishment is the placement of sand within the shore and nearshore zones to increase/buildup beach thickness (height) and width from shore to lake.

Native Vegetation on a newly re-graded bluff will aid in soil retention, remove excess water from within the bluff, and reduce surface water and wind erosion. Vegetation is also a key element in building and retaining a dune along sandy beaches.



Dunes/Dune Construction protects the upland from storms and strong winds. The larger the dune, the greater the protection provided.

Breakwaters are concrete block or rock structures that reduce the energy of approaching waves, creating a calm environment landward of the structure. Breakwaters are often attached to and built at an angle from the shore and may be built in the nearshore.



Detached Breakwaters are shore-parallel structures built in shallow nearshore environments. Located just offshore, these structures reduce erosion and protect beaches by reducing wave energy.



Marinas are facilities with moorings for boats. Marinas typically offer services of docking, loading and servicing of watercraft.

Jetties are shore-connected structures built parallel to the navigation channel and used to stabilize river mouths and shipping channels.

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