



Terminal Groin at Deal Beach, Deal, New Jersey, U.S.A

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Terminal Groin at Deal Beach, Deal, New Jersey, U.S.A. Deal Beach is located along the New Jersey shore and is a popular bathing and recreation destination for tourists and locals alike. The beach also serves as the first line of defense against coastal storms, as it protects residential homes and a beach club that are situated directly upland. In order to maintain a wide beach for recreation and coastal protection, Deal and the adjacent beach communities are comprised of coastal structures, namely groins. Groins are shore perpendicular hard structures primarily designed to prevent erosion by slowing and/or trapping sediment transported by alongshore currents. In order to mitigate downdrift erosion associated with a single groin, multiple groins are often constructed in synergy to form a groin field and stabilize a larger area. Often, the last groin in the groin field is referred to as the terminal groin, which is the structure shown in the photograph. This terminal groin, which separates Deal Beach from the adjacent community's beach, has a short shore-parallel segment which facilitates an increased accumulation of sediment.

This stretch of New Jersey coastline was one of the first in the United States to be developed due to its highly populated nearby communities and proximity and railroad line to/from New York City. The groins at Deal Beach were constructed in the late 19th century in effort to mitigate erosion, which was quickly identified as a problem as the coastline became more anthropogenically influenced. More recently, Hurricane Sandy devastated the New Jersey coastline and washed away millions of cubic meters of sediment from Sandy Hook to Barnegat Inlet (which encompasses Deal Beach). This prompted the US Army Corps of Engineers to take on their largest ever beach nourishment project; the project covered 34 km of New Jersey coastline and is the largest beachfill project, in terms of volume (6.1 million cubic meters), in the world. (Photograph taken June 2018 by Taylor Zimmerman, Stevens Institute of Technology, Hoboken, New Jersey, U.S.A.)