



## **Ireland's only two barrier islands: human and natural genesis.**

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Barrier islands are common phenomena on trailing edge coasts with coastal plains, and also on the fringes of major deltas. They are rare on bedrock coasts as a result of limited accommodation space, and only two barrier islands exist in all of Ireland. These two islands conform to the widely accepted definition of barrier islands but have some unusual characteristics as a result of their location in high waver-energy settings, bedrock-fringed embayments and finite sediment volume. In contrast to most barrier islands, their historical evolution is therefore characterised by cross-shore rather than longshore movement. The two islands have contrasting origins. Bartra Island on the west coast originated from glaciogenic sand transported landward during the Holocene rise in sea level and accumulated against a pre-existing glacial moraine over which it is now draped. Historically it has prograded, most likely as a result of progressive sedimentation in the backbarrier and consequent reduction in tidal prism. North Bull Island in Dublin Bay, has an entirely human genesis, having been formed by construction of a jetty that created a focal point for accumulation, and progressive estuary reclamation that reduced the tidal prism and enabled excess sand to be transported landward from the former ebb-delta of the Liffey estuary. The island has shown significant rates of seaward progradation since its formation in the mid 19th century and now comprises a series of prograded beachridges.