

Effects of Inlets

Morton, R.A. (1976) "Nearshore Changes at Jettied Inlets, Texas Coast", ASCE Specialty Conference on Coastal Sediments '77, pp. 267-286.

A review is provided of the seven jettied inlets along the Texas coast. The geomorphic features and the erosional and accretional effects are presented. The inlets reviewed are: Sabine Pass, Galveston, Freeport, Matagorda, Aransas Pass, Mansfield, and Grazos-Santiago. The updrift accretion and downdrift erosion volumes ranged up to 21.5 million cubic meters and 36.6 cubic meters, respectively. Although it was found that accretional and erosional values were qualitatively in agreement with expectations, it was not generally possible to develop a sediment budget for each inlet. It was concluded that some of the more significant effects on coastal processes due to dredging and jetty construction are: (1) changes in refraction patterns, (2) deflection of longshore currents and tidal currents, (3) development of large-scale gyres or counter currents, (4) increased cross-sectional areas of channels, (5) altered shoreface slope, and (6) disruption of bar bypassing.

Olsen, E.J. (1977) "A Study of the Effects of Inlet Stabilization at St. Marys Entrance, Florida", Proceedings, ASCE Specialty Conference on Coastal Sediments '77, pp. 311-329.

Jetties were constructed on St. Marys River during the period 1881-1903. These jetties are quite low and permeable and allow a substantial amount of the flood flow to enter the channel over and through the jetties. However, during ebb flows when the tides are low, the seaward directed currents are confined primarily between the jetties. This has resulted in a strong seaward bias of the tidal currents. Additional effects of the jetty construction include wave sheltering, primarily of a portion of the downdrift shoreline (Amelia Island). A comparison of surveys conducted in 1870 and 1970, indicate major changes in the nearshore and offshore morphology have occurred. The greatest effect is the shifting of approximately 90 million cubic meters from the nearshore areas to seaward of the jetties.