

# Shore protection manual.

**U.S. Army Coastal Engineering Research Center - This Program for courses of Coastal Engineering**



Description: -

- Grandjouan, Claireve.  
Shore protection. Shore protection manual.

- AD/A-001 340 Shore protection manual.

Notes: Bibliography: p. 4-155-4-180.

This edition was published in 1973



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## Types of Coastal Protection Structures and their Details

The subtle changes in the beach which occur during normal conditions are nearly imperceptible to the untrained observer, but the beach defense mechanisms become obvious when storms attack. WAVE AND WATER LEVEL PREDICTIONS I— Introduction, page 3-1; II— Characteristics of Ocean Waves, page 3-1; III— Wave Field, page 3-19; IV— Estimation of Surface Winds for Wave Prediction, page 3-27; V— Simplified Methods for Estimating Wave Conditions, page 3-39; VI— Wave Forecasting for Shallow Water, page 3-55; VII— Hurricane Waves, page 3-77; VIII— Water Level Fluctuations, page 3-88; Literature Cited, page 3-130; Bibliography, page 3-140 CHAPTER 4.

## Shore protection manual (1984 edition)

Thus, high storm waves will generally move more material per unit time than that moved by low waves. A significant amount of this wave energy is finally dissipated in the nearshore region and on the beaches. Waves provide an important energy source for forming beaches; sorting bottom sediments on the shoreface; transporting bottom materials onshore, off-shore, and alongshore; and for causing many of the forces to which coastal structures are subjected. This bare eventually grows large enough to break the incoming waves farther offshore, forcing the waves to spend their energy in the surf zone.

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This is particularly true in the Great Lakes and in bays and estuaries where waves are fetch-limited and do not develop into long swell waves. Alternate erosion and accretion may be seasonal on some beaches; the winter storm waves erode the beach, and the summer swell waves rebuild it. This can be mitigated by sand-bypassing systems. Beach-grass seeds are not generally available from commercial sources, and must be wild harvested during the fall for spring seeding.

## Shore Protection

The range of tides varies tremendously with geographic location. Protective beach, Rockaway Beach, New York. Even more dramatic is the difference between mean tidal ranges at Anchorage 7.

## **Details**

For some situations, waves are better described by these higher order theories, which are usually referred to as finite-amplitude theories. The physical system within this region is composed primarily of the motion of the sea, which supplies energy to the system, and the shore, which absorbs this energy.

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Prediction methods generally have been based on simple waves where elementary mathematical functions can be used to describe wave motion. The clumps should be separated into transplants having the desired number of culm stems.

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