Relatively benign summer-early fall weather in 2004 spared much of the mid-Atlantic and New England coasts from hurricane generated damage. Except for Hurricane Alex, which tracked well offshore to the southeast of New Jersey, storms tended to make landfall far south or along the Gulf Coast and moved inland well west of the coastline. While New Jersey did not experience hurricane related beach erosion, it also did not experience the beach building processes that typically accompany storm generated offshore swells.

Coastal Storm Activity and Beach Response

HURRICANES

The fall-early spring period of 2003-2004 witnessed periodic storm activity that had varying degrees of impact on the New Jersey coast:

- Beginning on October 18th and extending through October 27th strong on-shore winds and waves generated by a high-pressure system to the north in combination with a slow moving coastal low created sustained winds of 10-20 knots and waves of...
The lack of sustained long-period swell conditions in the fall of 2004 reduced the typical width of the State’s beaches prior to the winter storm season. Although none of the 2003-2004 winter storms were characterized by significant storm surge or extreme wave heights, the absence of natural “buffering” processes on many beaches in the fall resulted in local erosion during the prolonged storm event of October 18th-27th. Similarly, the beach transitioned between periods of recovery and erosion until early spring, when 8 of the 12 minor winter storms occurred within 6 weeks. The combination of lack of dry beach width at the end of the fall and the frequency of storm events in April/May resulted in moderately eroded beaches south of Monmouth County. Overall, however, the relatively mild winter storm season of 2003-2004 allowed natural processes to slightly increase beach widths along the New Jersey coast during the following summer.

Because few of the 12 winter storms were of significant duration or strength, much of the sand eroded from the dry beach has been retained in nearshore sandbar repositories. Any sustained periods of gentle wave activity should allow this sand to return to the dry beach profile in early summer 2005. Beach visitors may find less room for their beach chairs in early June but should expect to see a wider beach as the summer progresses. Surfers and fishermen are likely to experience ideal recreational conditions during the early summer as the wide offshore bars will create good surf and deep gullies inshore of the bar.

Summer Outlook

Neutral conditions produced by El Niño/Southern Oscillation are expected to prevail over the tropical Pacific Ocean between June and August. Based on the neutral ENSO condition and continued Atlantic Ocean warming, noted hurricane forecaster Dr. William Gray, head of the Tropical Meteorology Project at Colorado State University, foresees another active Atlantic hurricane season. It is estimated that the 2005 summer storm season will bring with it approximately 7 hurricanes (average is 5.9) and 13 named storms (average is 9.6). Generally, active hurricane seasons are beneficial to the Jersey Shore as tropical storms that pass well east of the New Jersey coast (east of Bermuda) generate large, long-period swells that are extremely efficient in moving sand up onto the beach berm.

Coastal Assessment

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