



IRENE UPDATE #5 (8/30/11)

As mentioned in the [previous update](#), Hurricane *Irene* crossed Cape Lookout early Saturday morning (8/27/11) resulting in the erosion of the incipient dune field along Bogue Banks. The incipient dune field is generally a result of various sand fencing and dune planting activities that have been coordinated through the local municipalities, home owner groups, and individuals; and importantly has acted as a line of defense to the large foredune that fronts most of Bogue Banks and often exceeds an elevation of 20 feet. The geographic extent of incipient dune erosion and was very “zonal” across Bogue Banks and Figure 1 loosely depicts the different areas of severity along the island. Please keep in mind this is a very subjective exercise, but provides a sense (order of magnitude) of the erosion.

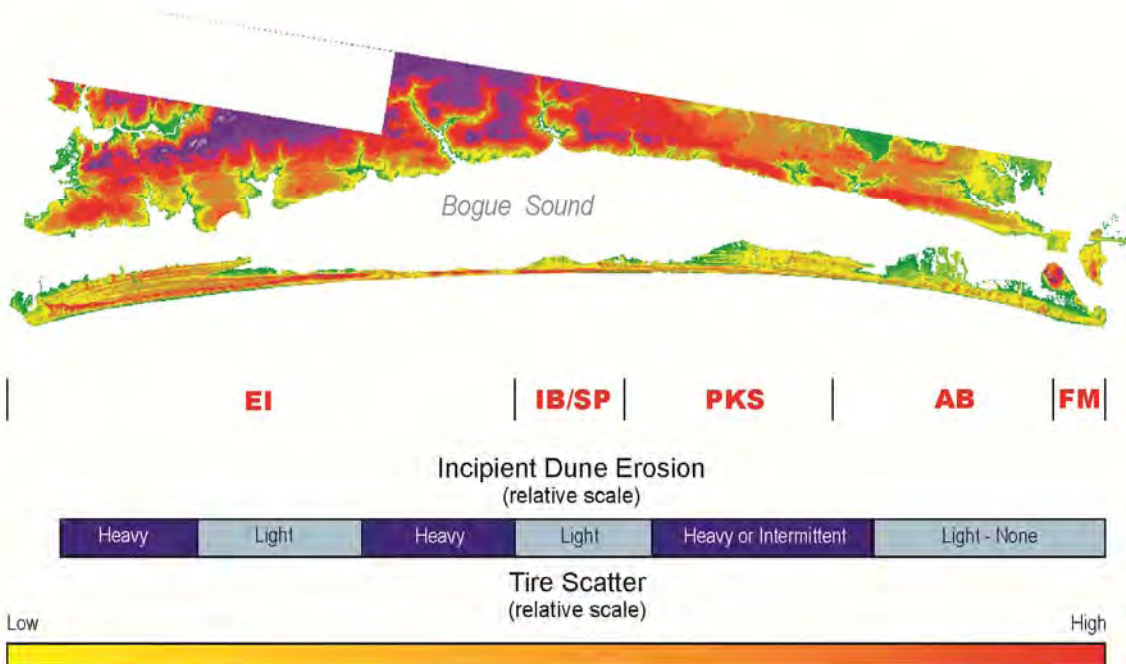


Fig. 1 – Map depicting the relative scale of incipient dune damage and tire scatter along Bogue Banks. EI – Emerald Isle, IB/SP – Indian Beach/Salter Path, PKS – Pine Knoll Shores, AB – Atlantic Beach, and FM – Fort Macon.

A new comparative photo gallery is available via [this link](#) and includes some of the worse examples of incipient dune erosion by placing the “before” and after” *Irene* photos side by side. Figure 2 and 3 (next page) are examples from the photo gallery – again worse case.



Fig. 2 – Before (8/26/11) and after (8/28/11) incipient dune impacts of *Irene* at Ocean Oaks, Emerald Isle.



Fig. 3 – Before (8/25/11) and after (8/27/11) incipient dune impacts of *Irene* at the Clamdigger, Pine Knoll Shores.

Waves and Tides – Significant wave heights exceeded 25 feet at buoy [41036](#) located 40 miles due south of Beaufort Inlet (Fig. 4) and water levels were 3 feet higher than “normal” at [Beaufort Inlet](#) tide gauge.

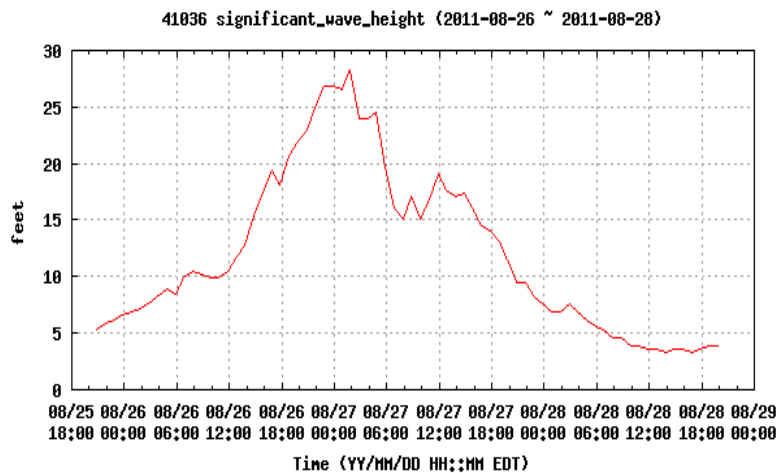


Fig. 4 - Significant wave heights from August 26th through the 28th recorded by ocean buoy 41036, located roughly 40 miles due south of Beaufort Inlet.

Tire Scatter – As depicted on Figure 1, tires and to a much, much lesser extent concrete pipes from offshore artificial reefs were brought to the beach compliments of *Irene*. The tire scatter was “heavy” in Atlantic Beach (Fig. 5), but quickly subsided to “light” in Pine Knoll Shores, “very light” in Indian Beach, to “almost nonexistent” in Emerald Isle. The N.C. Division of Marine Fisheries begun collecting the debris from the beach yesterday – [press release](#).



Fig. 4 – Tire scatter along Atlantic Beach.

Shackleford Banks and Core Banks – Although outside our purview, the [aerial photographs](#) obtained yesterday do allow us to make some casual observations concerning the Cape Lookout Seashore ([official NPS release](#)). Moving north to south; (a) South Core Banks – there was a high degree of overwash along this region with what appears to be heavy damage sustained by some of the cabins, RVs, and other structures. No new inlets formed. (b) Cape Lookout – the lighthouse is still standing and damages to the ancillary structures in this area appeared to minor and wind related. (c) Shackleford Banks – no overwash occurred that crossed the entire island. There is a narrow spit located along the eastern edge of this island (almost due north of the Lookout spit) that would be prone to this.

Surveying – *Geodynamics* has mobilized and begun the beach component (topography) of the post-*Irene* survey mentioned in previous updates, and will continue with the underwater (bathymetry) portion of the survey as the weather predicates. These two elements of the survey will be merged to gain an understanding of how much sand moved up and down the beach profile.

Archives – An *Irene* website complete with links to all the updates and photo galleries is now available at <http://www.protectthebeach.com/temp/irene.html>.