

Dunes Play a Critical Role in Coastal Management

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Coastal dunes play a vital role in the health of the beach and coastal system. Not only do they provide critical habitat to a range of species (many of them endemic to The Bahamas and endangered), but they are also the primary line of defense against coastal waves and storm surge. In reviewing impacts from Dorian on Elbow Cay, it is apparent that areas with a healthy dune fared much better than areas where the dune is compromised. In areas where the dune is low, storm surge overtopped the dune contributing to inland flooding and in areas where there is insufficient setback from the dune structures are now vulnerable. Dorian resulted in a loss (erosion) of the dune face. In some locations this loss was on the order of 10 to twenty feet. However, in general, where present, dunes absorbed the impacts from the waves and surge preventing flooding of the upland properties. Natural recovery of the dune will occur, but this is a long term process that occurs over many years from the trapping of windblown sand by dune vegetation.

Where possible maintaining a healthy dune system provides both environmental and storm protection benefits. Maintaining the dune with native vegetation helps to stabilize and build up the dune by trapping wind blown sand. Replanting of the dune after storms with native vegetation and if need be adding additional sand is an easy and cost effective way to help the system recover. Non-native vegetation (e.g. grass) should be restricted to behind the dune, as dune specific vegetation (e.g. sea oats & railroad vine) is particularly adapted to stabilizing and growing the dune. Dune overwalks should extend over the dune and not cut into the dune as this tends to destabilize the dune. Where possible, seaweed that is deposited on the beach should be left in place as this helps to stabilize the beach, and provides a seed base for natural dune re-vegetation.

In areas where upland structures are vulnerable, additional coastal armoring may be required, though maintaining adequate setbacks for new construction and maintaining a natural dune buffer are the preferred approach to coastal management.

****Any works involving changes to the dune, excavation, or building on/near the dune must be permitted by the government.**



Left: Eroded beach on North End, Elbow Cay after Dorian.

Above: Beaches need seaweed deposits to be healthy.