

NATURE

The DUNES*at Schooner Bay Village*

by TANYA N. FERGUSON

As a Botanist and Environmental Consultant, I have travelled the islands of The Bahamas extensively and have seen my fair share of the beauty and wonderful majesty of these islands. As I stood on the ridge overlooking Guinea Schooner Bay Beach and cast my eyes upon over two miles of intact, invasive-free dune I was speechless.

The dunes at Schooner Bay Village are a noteworthy example of sustainable development in practice. Sustainable development aims to meet the needs of humans in a manner that preserves resources for future development. In this case however, efforts to preserve the dunes have far exceeded this definition as it not only avoids destructive activities but has resulted in an improvement of the system.

Sand dunes are hills of sand formed by wind. Sand particles are blown by the wind and accumulate in areas where there is existing

vegetation. The vegetation in these areas is salt tolerant, low lying plants adapted to withstand high speed winds. They are able to grow up through the sand which allows for further build up. Their extensive root systems make it easy for plants to replenish if sections are damaged. Typical native dune species in The Bahamas include: Sea Oats (*Uniola paniculata*), Railroad Vine (*Ipomoea pes-caprae*), Bay Marigold (*Borrchia arborescens*), Bay Lavender (*Mallontonia gnaphalodes*), Bay Cedar (*Suriana maritima*), Sea Rocket (*Cakile lanceolata*) and Black InkBerry (*Scaevola plumieri*).

The presence of dunes indicates a balanced Beach ecosystem. Dunes function in creating a barrier between the sea and the land behind them. This barrier is nature's first line of defense during storms as they slow the force of winds and waves on the land and prevent salt water inundation. As a result more complex and

diverse vegetation communities are able to develop. They also protect against erosion. The roots of the vegetation stabilize the loose sand grains and the accumulated sands act as sand banks, replenishing beaches at times of erosion.

In 2008, when construction began at Schooner Bay Village, the dunes were typical of many beaches in The Bahamas. Invasive species such as White Inkberry (*Scaevola taccada*) and Australian Pine (*Casuarina equisetifolia*) were common species in the dune zone. Restoration of the dune began in 2009 and involved removal of invasive species. Invasive removal involved mechanical and manual techniques. For the most part invasive species were removed by hand, but in one instance due to the amount of present and lack of native species and sand accumulation, the area was completely bulldozed. Due to the aggressive nature of invasive species, removal

efforts continue as a part of the maintenance program.

The restoration process continued with planting of appropriate native species. Over twenty thousand (20,000) Sea Oats were planted during the three (3) years initiative. Free of invasive species, other naturally occurring species emerged on their own.

Restoration of these dunes ensures the protection of these beaches for human recreation and enjoyment for years to come. More importantly, they help to preserve habitat vital for the survival of sea turtles. Four (4) turtle species - Loggerhead (*Caretta caretta*), Hawksbill (*Eretmochelys imbricata*), Green (*Chelonia mydas*) and Leatherback (*Dermochelys coriacea*) - have been observed utilizing the Guinea Schooner Bay Beach. The Loggerhead and Green are threatened species and the Hawksbill and Leatherback are endangered.



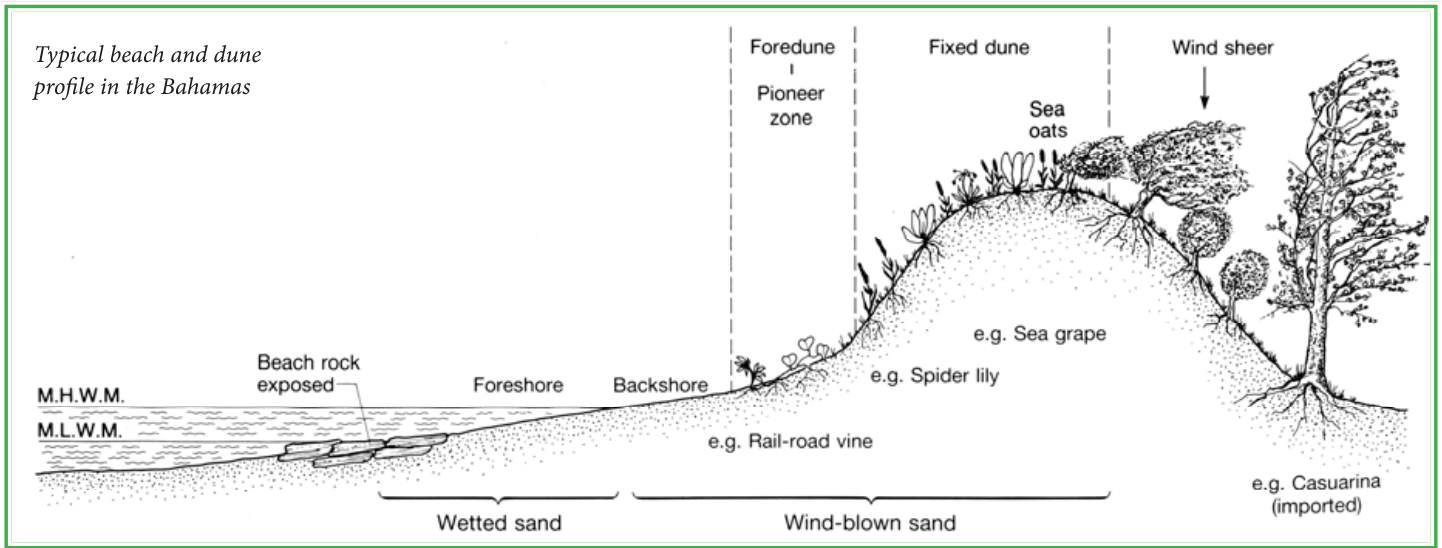
Guinea Schooner Bay Beach ridge – aerial view



Guinea Schooner Bay Beach ridge – top view



Guinea Schooner Bay Beach – coastline view



The continued use of the beach by turtles, in addition to the intact dune system and aesthetically appropriate beach cabana structure at Guinea Schooner Bay Beach, represents a classical example of the co-existence of development and the environment. That both the man-made cabana and the natural dune system survived the brunt of Hurricane Irene intact is a testament to the idea that *if we build it properly, it will stand.*

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Coastline view of the dune at Guinea Schooner Bay Beach with native dune species represented.



Guinea Schooner Bay Beach – coastal view



Guinea Schooner Bay Beach – harbour view



Patch of invasive *Scaevola taccada* surrounded by native dune species.