



## Highland Beach: Beachfront condo is nurturing protective sand dunes

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LEFT: Residents of Penthouse Towers have worked with a consultant this year to improve dune vegetation with native plants. Photo provided RIGHT: A bloom of the endangered burrowing four o'clock came as a surprise as the work progressed. Photos by Tim Stepien/The Coastal Star

By Rich Pollack

Elaine Prentice knew she had to do something.

A condo manager with a green thumb and an eye for natural esthetics, Prentice had seen pictures and heard how Hurricane Nicole battered the beaches near Vero Beach in

November, gobbling the sand under sea walls and causing them to crumble into the ocean.

To ensure that didn't happen to her Penthouse Towers oceanfront building in Highland Beach, Prentice took aim at strengthening all beachfront

property owners' first line of defense against powerful seas that can crumble concrete in minutes — the natural sand dune.

“After seeing the storms, we needed to make sure the dune would work for us,” she said. “We need everything we can get to protect the property.”

With work nearly complete, the dune behind Penthouse Towers has become a model that others along the town's three miles of oceanfront are starting to notice.

And in other coastal municipalities, word is continuing to spread about the benefits of restoring dunes and their natural ability to protect property and stave off beach erosion during storms and other high-water events.

“Mother Nature has the ability to heal herself,” says Lee Gottlieb, the founder of Adopt a Dune and the consultant who worked with Penthouse Towers to design a sustainable dune and find plants that can help build sand as a barrier against storm surge.

With climate change and the inevitability of continued sea level rise, Gottlieb sees a renewed sense of urgency in restoring dunes and is working to create a sustainable dune along the entire coastlines of Broward and Miami-Dade counties.

“We need to adapt to the inevitable,” he said. “How do we live in this environment that's about to come?”

Dune restoration, he says, is a cost-effective and efficient answer.

“The dune system gives you the best and strongest defense against storm surge and hurricanes,” he said.

A strong dune, he pointed out, can protect sea walls, in many cases, by absorbing some of the wave action that comes with storm surge's powerful energy before it hits the reinforced concrete. A revitalized dune also offers natural habitat for birds and other wildlife including sea turtles.

In Highland Beach, concerns about beach erosion and the condition of the dunes behind private homes and condos encouraged town commissioners

in May to authorize a \$30,000 beach feasibility study update of a 2013 review.

As part of the study, the consultant will look at the dunes in front of oceanfront properties and make recommendations on what can be done to strengthen them if necessary.

“It’s critically important for us to look at beach erosion but also at the health of the dune structures, because there is an intrinsic link to the overall health of the beach,” Highland Beach Town Manager Marshall Labadie said.

Commissioners agree dune restoration is critical to ensure beach properties are secure.

“All these properties on the beach will have a problem if the dunes are not maintained,” Commissioner Evalyn David said.

Faced with having only private beaches and few options for any sort of federal- or state-funded renourishment project, commissioners two years ago had enlisted the help of the town’s Natural Resources Preservation Board to begin an education campaign focused on dune restoration.

“It’s our main priority,” says Barbara Nestle, co-chair of the board, which has been promoting dune restoration through material online and held a public forum in March with dune restoration as the topic. “It’s important to educate the public so people understand the impact of a major storm if they don’t restore their dunes.”

During the forum, residents listened to longtime South Florida dune restoration guru Rob Barron of Coastal Management and Consulting, who encouraged installing the right plants, especially sea oats and other native species that form deep root systems and can collect sand and build up dunes.

“You’re better off if you do something than if you do nothing,” Barron said. “If you do nothing the forces of nature will work against you.”

Barron, whose work with Delray Beach resulted in a dune success story, explained that in 1984 the city planted a 10-foot-wide strip of sea oats

which today is about 160 feet wide and has captured about 12 vertical feet of sand.



LEFT: Ted Dinse, maintenance man at Penthouse Towers, plants sea oats on the dune. ABOVE: The project is the brainchild of Elaine Prentice, the condo's property manager.

At Penthouse Towers, board members had taken steps a decade ago to restore the dune but some plants died and others got forced out by exotics — mainly scaevola, a ground cover with shallow roots that grows quickly and crowds out more beneficial native plants.

With the help of its beach raking contractor, Penthouse Towers cleared out much of the exotics earlier in the year and with Gottlieb's guidance enlisted the help of residents to begin planting sea oats.

Last month, Gottlieb brought in a wide variety of native plants to add to the dune, including beach sunflower, beach creeper and sea purslane, as well as two threatened and endangered species — bay cedar and sea lavender.

In all, Barron says about 200 native plants can be used to help restore dunes.

“The dune has to be functional but it also has to be attractive,” Prentice said, adding that residents of the 136-unit building are now taking pride in the dune. “Our owners love looking at the dune and appreciate that it will help protect us from storm surge.”

Prentice points out that her building like others on the beach has to carry extraordinarily high property insurance deductibles. She sees the dune restoration project with a price tag of under \$15,000 as a very cost-effective way to protect the property.

Soon after the exotics were cleared, she and the residents of the building discovered a surprise.

Burrowing four o'clocks, an endangered species also known as beach peanut, appeared from out of nowhere and began spreading quickly throughout the dune. Found only in South Florida, the beach peanut will disappear almost as quickly as it came, leaving behind a seed bank that will explode again with a good rain next spring.

Though its impact on restoring the dune is minimal, the four o'clock return each year is a welcome sign of a dune's return to its natural state.

As word has begun spreading throughout Highland Beach through the efforts of the natural resources board and through town communication efforts, several other buildings, individuals and communities are either restoring their dunes or looking into making the effort.

"We are now seeing activity," says resources board member Nestle, who is coordinating a planned dune restoration project behind her own small condo community.

"Dune restoration is not only good for private property owners but it's also good for the town as a whole because it protects the town from large storm events," Labadie says.