



Beach Dune Restoration and Education

Beach dunes help protect coastal communities from the forces of nature. Composed of sand and plants, dunes help dissipate wind and wave energy, lessening the impact of storms on the built environment.

Garden researchers have spent years observing plants in these unique, protective ecosystems to understand how they capture and accumulate sand, rebound after storms, and provide wildlife habitat. With further insights from The Water School at Florida Gulf Coast University and support from Rookery Bay National Estuarine Research Reserve, the Garden has developed planting recommendations that local governments are using to restore beaches following storms such as 2022's devastating Hurricane Ian.

The Garden is also working to increase the diversity and supply of coastal plants necessary for restoration. Natural dunes include a tremendous diversity of plants—as many as 80 different species have been recorded in South Florida. Many of these plants, however, are difficult to find in the commercial nursery trade, a barrier in the effort to replicate nature's coastal defenses.

Collecting in the Wild

In 2023, Garden conservationists began visiting area beaches and collecting native beach dune plant seeds and cuttings. With the help of a local grower, we multiplied them for use in dune restoration projects across Southwest Florida. This undertaking ensures our beaches are populated with a diverse mix of plants derived from homegrown genetics perfectly adapted to our region. Those attributes—biodiversity and local genetics—create a resilient shoreline. Our collection includes:

Beach elder (*Iva imbricata*): This shrub is an important dune builder and stabilizer.

Bitter panicgrass (*Panicum amarum*): This bluish-green clumping grass helps stabilize dunes.

Railroad vine (*Ipomoea pes-caprae*): When in flower, this sprawling plant adds pops of color to the beach. It is also a “pioneer species” that recovers quickly after storms and helps beaches rebound.

Enlisting Community Support

Garden educators teach residents and visitors about the critical importance of beach dunes and how they can support their recovery through simple actions like keeping dunes clear of trash and foot traffic. Beaches are the region's No. 1 attraction for Lee and Collier counties' roughly 7 million annual visitors and special places for the 1.2 million people who live here. Our on-site dune education series and social media awareness campaign help beachgoers see plants for what they are—silent sentries protecting the shore.

*The Garden is grateful to the **Collier Community Foundation** for supporting our beach dune endeavors.*