
Naples
Botanical
Garden™
where plants • and people • thrive together™

Miles of Southwest Florida's renourished beaches will need replanting.

Naples Botanical Garden has the science and experience to help make them stronger.

NBG knows the mix of plants that will:

- Stabilize dunes and trap additional sand to build dunes naturally
- Enhance the ecosystem
- Make a dune more storm-resilient
- Protect public investment in beach renourishment

A healthy **biodiverse** dune will help prevent the loss of sand from beach renourishment project investments.

January 2021: City of Naples and Naples Botanical Garden removed invasive plants from a demonstration area and planted a specific mix of beach dune plants.

September 2022: Hurricane Ian destroyed beaches, but the demonstration area held fast and its plants are recovering quickly.




October 19, 2022 beach conditions



Within weeks, Naples Botanical Garden plants were recovering.



February 2023: The same plant has naturally recovered, captured sand, and built an 18-inch dune.

Iva imbricata

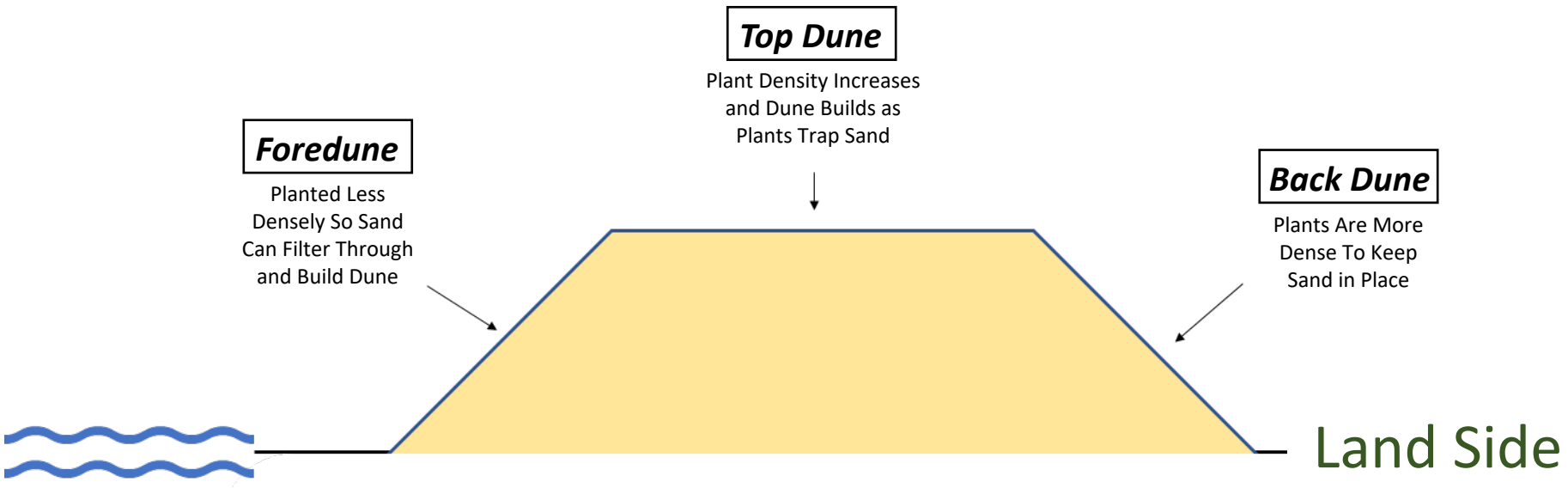


WARNING

Invasive plants are beginning to sprout. Without proper planting, these will take over.

Momordica charantia

Planting a Beach Dune for Resiliency and Biodiversity



Example: 2,500 FT^2 dune (25’ wide, 100’ long)

	Foredune	Top Dune	Back Dune
Area	800 FT^2	800 FT^2	900 FT^2
Spacing	36”	24”	12”
Total Plants	103	231	924

Planting a Beach Dune for Resiliency and Biodiversity

Plant Species by Zone		
Foredune	**Top Dune**	**Back Dune**
Panicum amarum	Canavalia rosea	Cakile lanceolata
Uniola paniculata	Croton punctatus	Coccoloba uvifera
	Ipomoea pes-caprae	Croton punctatus
	Ipomoea imperati	Ernodea littoralis
	Iva imbricata	Ipomoea pes-caprae
	Panicum amarum	Ipomoea imperati
	Paspalum vaginatum	Panicum amarum
	Physalis angustifolia	Paspalum vaginatum
	Scaevola plumeri	Physalis angustifolia
	Sesuvium portulucastrum	Sesuvium portulacastrum
	Spartina patens	Sophora tomentosa var. truncata
	Sporobolus virginicus	Spartina patens
	Uniola paniculata	Sporobolus virginicus
		Suriana maritima
		Thrinax radiata

Planting a Beach Dune for Resiliency and Biodiversity

FORDUNE 36" staggered spacing	**TOP DUNE** 24" staggered spacing	**BACK DUNE** 12" staggered spacing
80% Uniola paniculata 20% Panicum amarum	60% Uniola paniculata 15% Panicum amarum 25% mix from a minimum of 5 other species each compromising no more than 5% of total Top Dune each	75% mix of Panicum amarum, Paspalum vaginatum, Sesuvium portulucastrum, Spartina patens, or Sporobolus virginicus from a minumum of 3 species each compromising no more than 50% of total Back Dune each 25% mix from a minimum of 3 other species each compromising no more than 15% of total Back Dune each Coccoloba uvifera or Thrinax radiata added sporadically on back of planting where tree required

NBG is partnering with peers, industry and government to ensure rebuilding efforts include landscape resiliency:

- Conserve and purify water
- Use less fertilizer
- Minimize erosion
- Withstand winds
- Resist disease
- Provide wildlife habitat
- Manage stormwater
- Tolerate rising temperatures

Next in R&D

- Trees best adapted to our warming climate and wet/dry seasons
- Stormwater swale plantings that clean the water and don’t need mowing
- Littoral plants for lake & pond banks that clean the water and provide homes for wildlife