

ARE INVASIVE IGUANAS DETRIMENTAL TO COASTAL DUNES?

Florida-specific evidence summary

CONCLUSION

Yes. Invasive iguanas can be detrimental to coastal dunes, particularly where populations are concentrated or dunes are newly restored, narrow, fragmented, or recovering from storms. The strongest documented concerns are excavation of sandy soils through burrowing and damage to vegetation that traps and stabilizes dune sand. However, Florida research has not yet quantified how much dune-volume loss is attributable to iguanas at a typical site, so impacts should be described as a credible and site-dependent risk rather than the sole cause of dune erosion.

Why the Risk Matters

Florida's beach-and-dune system is the first line of defense against storm waves and coastal flooding. Dune plants build and stabilize dunes by trapping windblown sand and anchoring it with their root systems. Disturbance that creates holes, removes roots, or damages vegetation can lower the protective value of the dune system.

How Iguanas Can Affect Dunes

- **Burrowing and nesting excavation.** Green iguanas nest on beaches and other sandy areas. FWC reports that female nesting systems may include nearly 80 feet of interconnected tunnels and multiple entrances. FWC also identifies iguana burrows as a cause of erosion and collapse in berms, canal banks, seawalls, sidewalks, and foundations. In a dune, similar excavation can create voids, loosen sand, and contribute to localized slumping or blowouts.
- **Damage to stabilizing vegetation.** Green iguanas consume shoots, leaves, blossoms, and fruits from many plants. Direct Florida measurements of their feeding on specific dune plantings are limited, but repeated browsing or trampling of young or recovering dune vegetation can reduce plant cover and root development. Because dune plants stabilize sand and reduce erosion losses, vegetation damage is a meaningful concern.
- **Pressure on dune habitat and native wildlife.** Florida DEP identifies black spiny-tailed iguanas as a problematic invasive species throughout the beach-dune community at Gasparilla Island State Park. The park conducts targeted iguana management to protect native species and notes that the iguanas frequently use abandoned gopher tortoise burrows.
- **Cumulative damage in vulnerable areas.** Iguana impacts are most concerning when combined with storm erosion, foot traffic, sparse vegetation, restored sand, or other disturbances. A single burrow may be localized, but numerous burrows and repeated plant damage can interfere with dune recovery and increase maintenance needs.

Evidence at a Glance

Evidence strength	Finding	Relevance to dunes
Strong	FWC documents long nesting tunnels in sandy areas and erosion/collapse associated with iguana burrows in berms and banks.	Directly supports a risk of localized dune weakening.
Strong	FDEP states native dune plants trap sand, anchor it with roots, and reduce erosion losses.	Shows why plant and root damage can reduce dune stability.
Moderate	FDEP identifies invasive iguanas as problematic within a nearby Gulf Coast beach-dune community and uses targeted control.	Confirms that iguanas occupy and require management in dune habitat.
Limited	Published research has not established a standard amount of sand loss or storm vulnerability caused solely by iguanas.	Site inspections and monitoring remain important before estimating damages.

Practical Implications for Dune Management

- Iguana control can reasonably be treated as a dune-protection and habitat-management activity where burrows or vegetation damage are documented within the dune system.
- Priority areas include newly nourished or planted dunes, narrow dune ridges, storm-damaged areas, and locations with repeated burrowing.
- Field documentation should distinguish active burrows, collapsed tunnels, damaged plants, exposed roots, and other erosion causes such as waves, drainage, pedestrian access, or vehicles.
- Burrow repair or filling should be coordinated with appropriate wildlife and coastal-permitting requirements so protected species, active nests, dune topography, and vegetation are not harmed.

Bottom line: Iguanas should not be described as the primary driver of regional beach erosion, which is dominated by storms, waves, currents, and sediment supply. They can, however, create meaningful localized damage and impede the establishment or recovery of protective dune vegetation.

Sources

1. Florida Fish and Wildlife Conservation Commission. "Green Iguana." <https://myfwc.com/wildlifehabitats/profiles/reptiles/lizards/green-iguana/> Documents nesting tunnels, sandy nesting areas, plant consumption, and erosion/collapse associated with burrows.
2. Florida Department of Environmental Protection. "CCCL Dune Planting Recommendations." August 2022. https://floridadep.gov/sites/default/files/CCCL_DunePlanting_Recommendations_2022_508_0_0.pdf Explains that native dune plants anchor sand with roots that resist erosion.
3. Florida Department of Environmental Protection. "CCCL Dune Plant Maintenance Guidelines." March 2022. https://floridadep.gov/sites/default/files/DuneVegetationMaintenanceGuidelines_2022_0.pdf Describes how dune vegetation traps and stabilizes sand, reduces erosion, and buffers storm impacts.
4. Florida Department of Environmental Protection, Division of Recreation and Parks. "Gasparilla Island State Park Park Chapter," draft management plan, 2026. https://floridadep.gov/sites/default/files/Gasparilla%20Island%20State%20Park%20-%20draft%20management%20plan_0.pdf Identifies black spiny-tailed iguanas as problematic in the beach-dune community and describes targeted control.
5. Claunch, N. M., et al. "State of knowledge for invasive green iguanas in Florida reveals negative impacts and pervasive research needs." *Frontiers in Amphibian and Reptile Science*, 2025. <https://www.frontiersin.org/journals/amphibian-and-reptile-science/articles/10.3389/famrs.2025.1529065/full> Reviews documented impacts and notes continuing research gaps.

Note: This briefing is intended for general policy and management discussion. Site-specific conclusions should be supported by field observations and, when needed, coastal engineering or biological review.