

Sullivan's Island Tree Canopy Mapping

Executive Summary

The Town of Sullivan's Island is a coastal barrier island community nestled between the Atlantic Ocean and important coastal marshes of the Intercoastal Waterway. The island sits on one side of the harbor which leads to the bustling Charleston port. Sullivan's Island is a small community but deals with many of the same challenges that other coastal cities in South Carolina endure such as tropical storms and sea level rise. The island's beloved beaches are a major draw for tourism, which the island depends on, but which also increases the pressure of new urban development.

Sullivan's Island's tree canopy goal is to increase coverage by 1% over the next 15 years.

An increase in tree canopy from 31% to 32% will require the town to plant 42 trees per year on publicly maintained property for a total of 623 trees. The town plans to achieve this by replanting trees using tree mitigation funds on lots that have been illegally cleared, conducting a codes audit to examine how trees can be better protected through land development regulations. Sullivan's Island also has data on their drainage basins and a plan to plant trees within each one to get individual basins up to 30% tree canopy. The town plans to use software to track tree plantings and monitor progress on their goal. From the perspective of private property owners, 166 trees per year will need to be planted for a total of 2,494 trees during the goal period. The town plans to use a "shade your right-of-way" campaign to get trees planted in front yards and continue to host tree giveaways in partnership with Dominion Energy. The giveaways and the promotional tree campaign will be a part of the town's annual Arbor Day celebrations to get residents involved in caring for the island's urban forest.



Among their many benefits, trees also provide year-round beauty as this Holly demonstrates with bright red berries in the fall and winter.

Key Strategies

- Continue to celebrate Arbor Day annually and explore hosting more tree events throughout the year.
- Use software to better track tree maintenance and new plantings and assess the town's progress.
- Prioritize low-lying areas most vulnerable to sea level rise with salt-tolerant species.
- Increase tree canopy in drainage basins up to the townwide average of 31%.
- Prioritize property owners for tree giveaways and tree related education whose properties have less than 10% tree canopy.
- Create a "shade your right-of-way" front yard tree planting campaign.

Key Stats



Current Tree Canopy is 31%



Potential Planting Area is 62 acres



7,009 more small trees (20 ft diameter crowns) can be planted



3,398 more large trees (40 ft diameter crowns) can be planted



Potential Tree Canopy could be 43%



The town's goal is to increase tree canopy by 1% over the next 15 years.

Strategies for the Urban Canopy

Maintain existing urban forest programs and identify efficiencies.

Strategy 1: Partner with Dominion Energy for tree giveaways.

Strategy 2: Continue to host Arbor Day tree giveaways and add a second city tree giveaway in December to celebrate South Carolina's Arbor Day.

Strategy 3: Use funds from the town's tree mitigation bank for maintenance of public trees and to plant more trees on town properties.

Strategy 4: Use a tracking software such as PlanIT GEO or similar to monitor goal progress.

Strategy 5: Apply for assistance from the South Carolina Forest Commission to audit the town's tree codes.

Increase tree plantings on public property.

Strategy 1: Prioritize planting low-lying areas vulnerable to sea level rise with salt tolerant species.

Strategy 2: Replant lots which have been illegally cleared of trees.

Increase tree canopy on private property

Strategy 1: Create a "Shade your Right-of-Way" program to encourage tree plantings in front yards, which will cool the town.



Even in areas of the town which have tree canopy currently, the next generation of trees is also crucial to consider when planning tree plantings.

Strategy 2: Focus plantings within the town-designated drainage basins in order to get them above the 30% tree canopy threshold.

Strategy 3: Target tree-giveaways to parcel owners whose property is at less than 10% tree canopy.

Build capacity for urban forest management through new partnerships.

Strategy 1: Partner with Trees SC on tree planting and maintenance workshops for the public.

Strategy 2: Partner with "Sullivan's Island For All" once they have regrouped. This group has a wide reach and can be a powerful force of tree advocacy in the area.

Strategy 3: Partner with "The Island Club" to advocate for tree planting, protection and care on the island.



Sullivan's Island plans to use its basin data to guide tree planting efforts.



While the Sabal Palm is the state tree, overplanting of a single genus can lead to an unhealthy urban forest.

Sullivan's Island, SC Land Cover

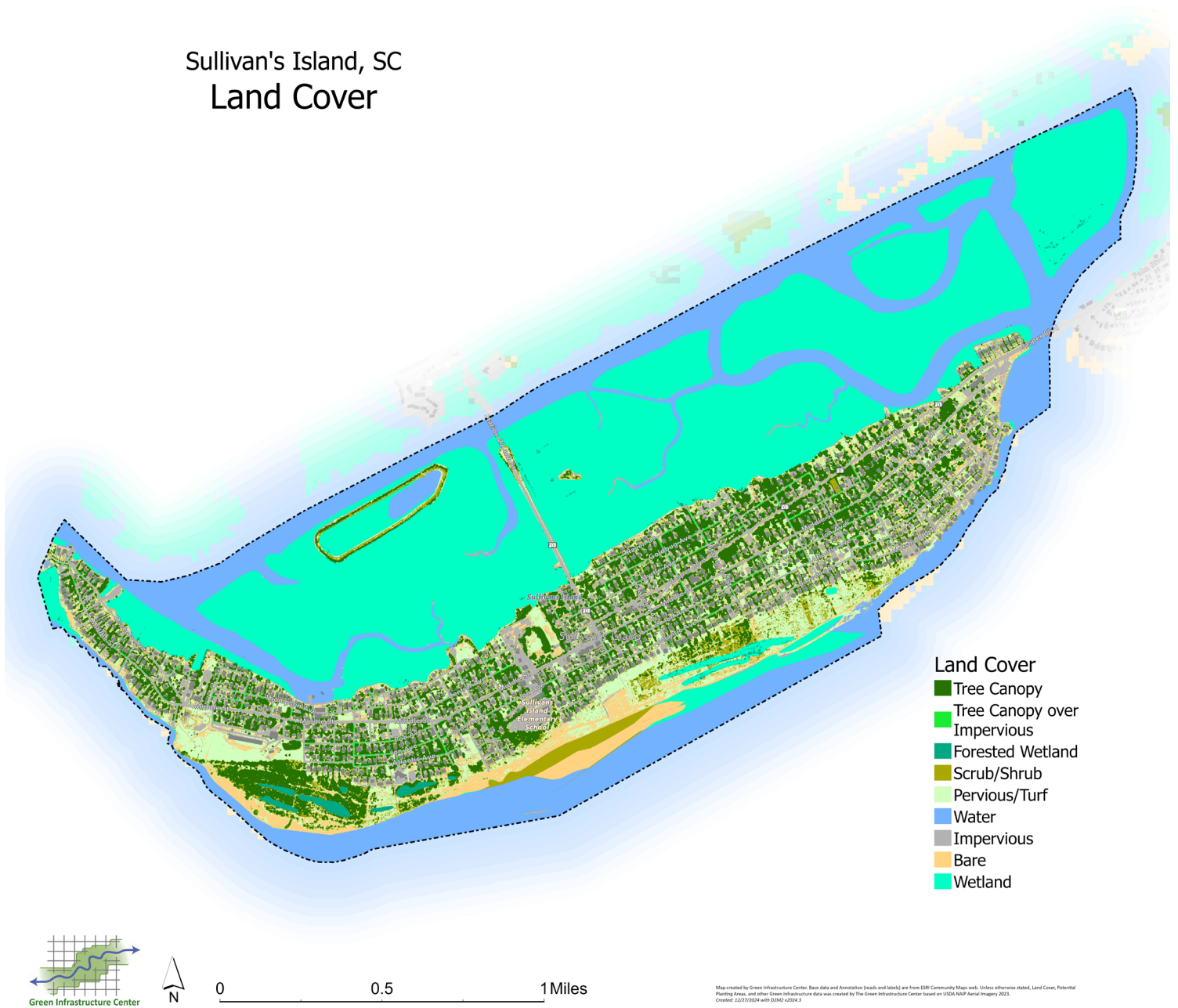


Figure-1: A map of land cover based on USDA National Agricultural Imagery Program (NAIP) 2023 in Sullivan's Island.



Sullivan's Island, SC Potential Planting Area



Figure-2: A map of Potential Planting Areas (PPA) in Sullivan's island.

Sullivan's Island, SC Existing Tree Canopy Coverage Along Streets

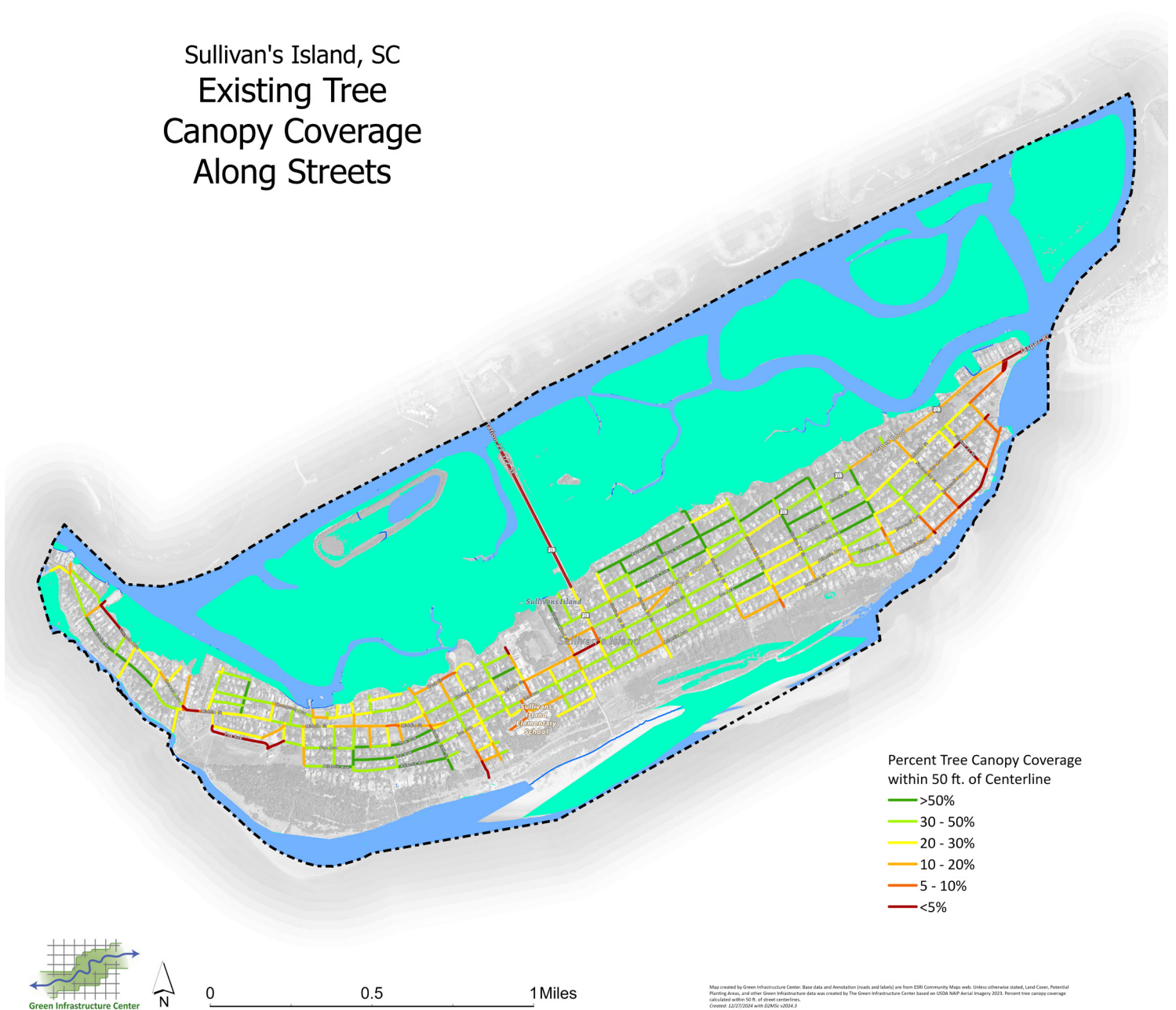


Figure-3: A map of percent tree canopy within 50 feet of street centerlines in Sullivan's Island.



Sullivan's Island, SC Tree Canopy Coverage by Elevation

Percent Tree Canopy Coverage

>90%	40 - 50%
80 - 90%	30 - 40%
70 - 80%	20 - 30%
60 - 70%	10 - 20%
50 - 60%	<10%

Elevation

31%	15-45 ft.
38%	12-15 ft.
32%	9-12 ft.
30%	6-9 ft.
31%	3-6 ft.
14%	0-3 ft.
0%	Below sea level

Elevation Legend

15-45 ft.
12-15 ft.
9-12 ft.
6-9 ft.
3-6 ft.
0-3 ft.
Below sea level

Map Created by the Green Infrastructure Center. Base data and Annotation (roads and labels) are from Esri Community Maps with. Parcel boundaries are from the locality. Created: 12/22/2024 with QGIS 3.28.2

Sullivan's Island, SC Tree Canopy and Potential Planting Area within Sea Level Rise

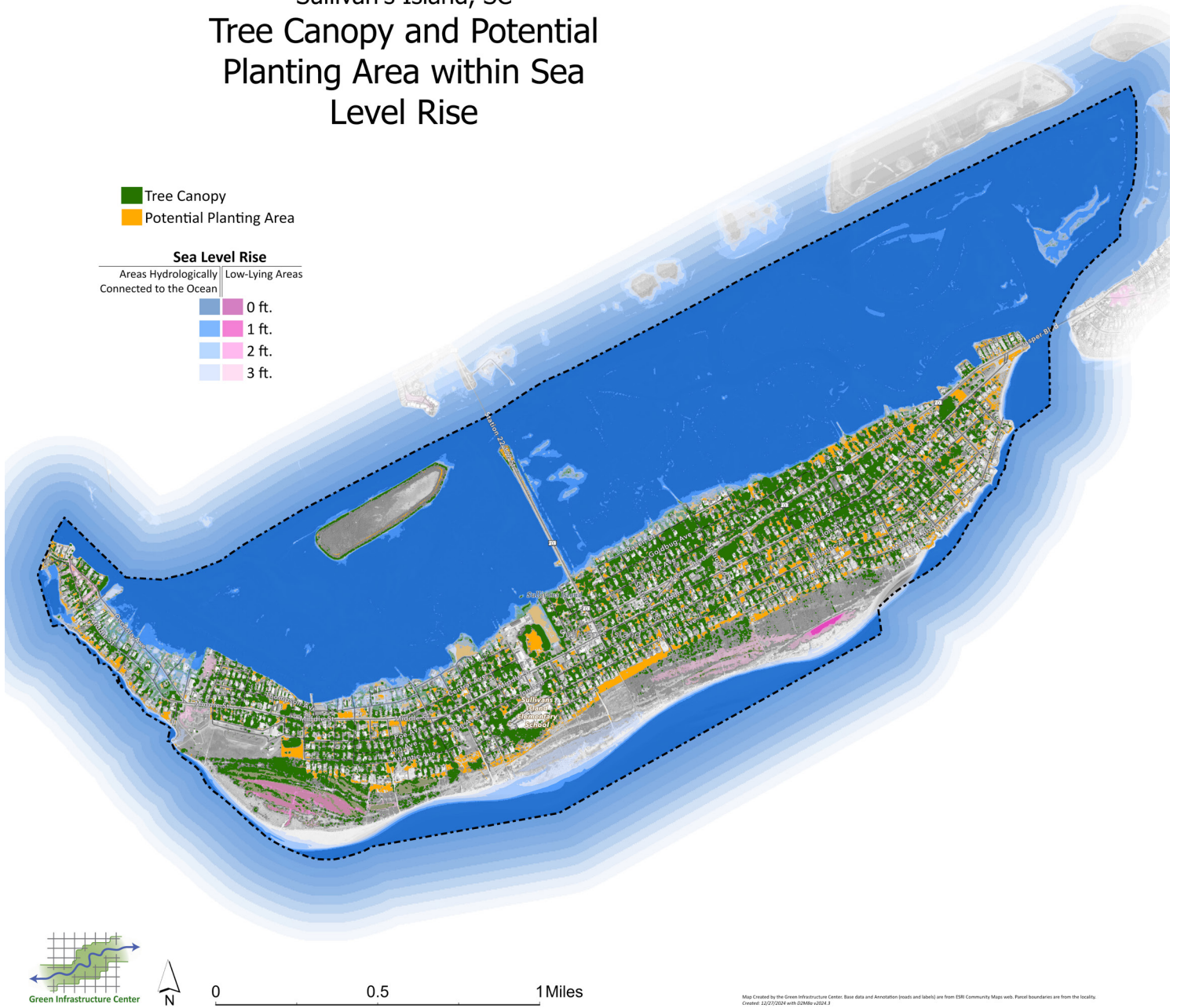


Figure-5: A map of tree canopy and potential planting area with projected Sea Level inundation in Sullivan's Island.



Sullivan's Island, SC Tree Canopy Coverage by Parcels

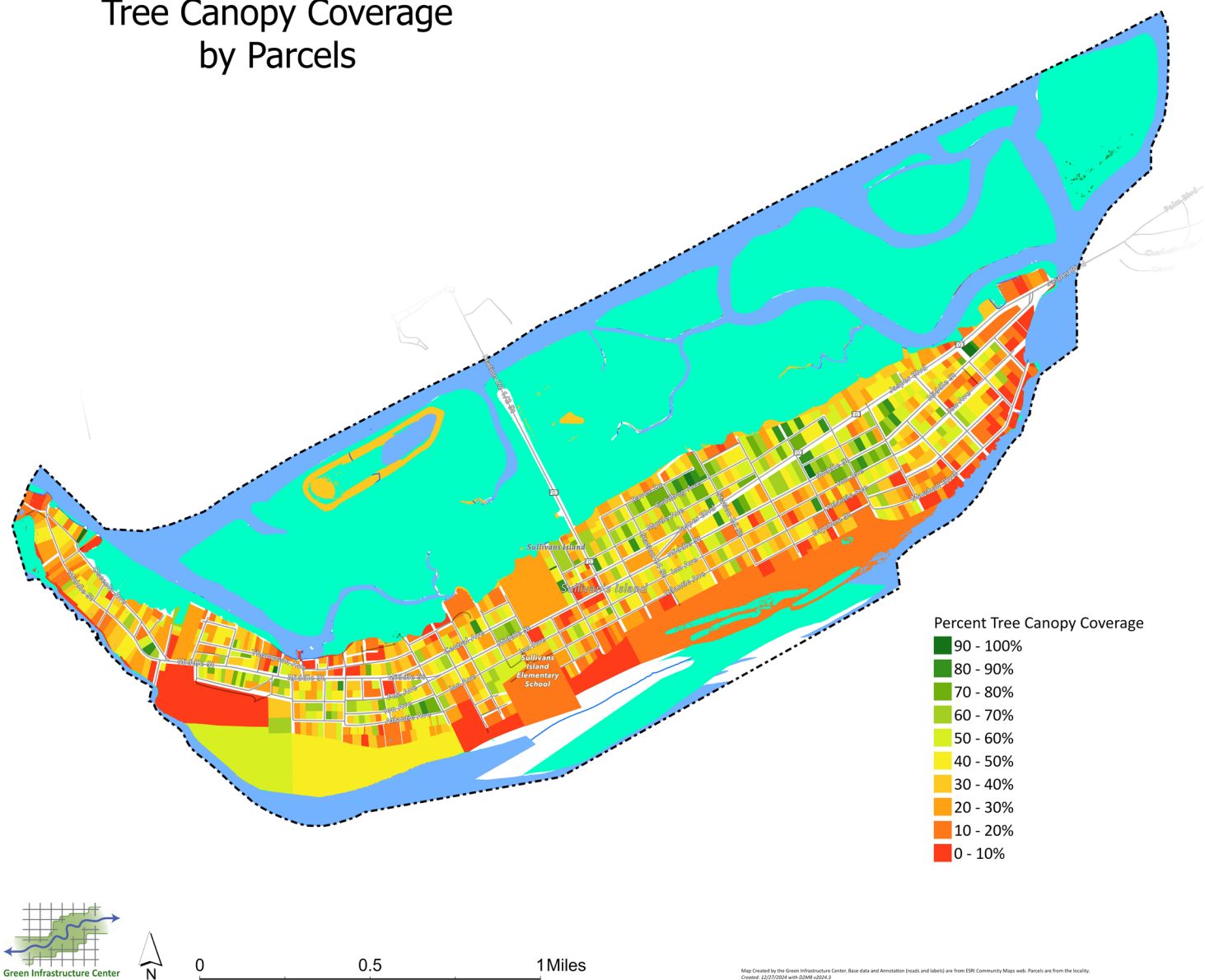


Figure-6: A map of percent tree canopy by parcels in Sullivan's Island.