



Gulf Islands National Seashore, Mississippi and Florida

Project Descriptions

The Gulf Coast Network (GULN) conducts long-term monitoring on six vital signs at Gulf Islands National Seashore.

Water quality is measured with continuous autonomous sampling at two sites in the Florida District. There is also one autonomous sonde in the Mississippi District at East Ship Island, operated by United States Geologic Survey (USGS). Autonomous measures are collected every 15 minutes and include water temperature, specific conductance, pH, dissolved oxygen and turbidity. Grab samples are taken monthly and analyzed for nutrients and chlorophyll, consistent with those used by the Gulf of Mexico Alliance, a state-led network.

Seagrass communities are monitored at 106 permanent stations spanning eight regions of shallow aquatic habitat in the park. At each station, four 0.5 x 0.5 m quadrats are visually assessed for percent cover and canopy height of all seagrass species present. Data are also recorded on environmental variables such as light availability, salinity, turbidity and depth. Fieldwork is completed through a cooperative agreement.

Coastal geomorphology is monitored in late spring in four areas: Horn and Petit Bois Islands in Mississippi, and Perdido Key and Fort Pickens in Florida. Ground-based GPS surveys are used to measure shoreline position. Topography transects are used to measure the elevation of beaches and dunes.

Amphibians are monitored at Naval Live Oaks using coverboards and PVC pipes as passive, artificial cover objects. Plywood coverboards are arranged in clusters of four along transects near two different waterbodies. PVC pipes are hung in pairs from nearby trees. During sampling events every other month, the team records the amphibian species present in pipes or under boards and counts individuals. They also record temperature in each cover object and environmental conditions for the site.

Breeding landbirds are sampled from fixed point locations using an established point-count method, which documents every individual seen or heard during a ten minute period. All monitoring points are sampled twice per year, during the summer breeding season. Bird survey points are often co-located with vegetation monitoring plots to improve data interpretation.

Terrestrial vegetation is sampled within fixed 20 meter x 20 meter plots to determine the composition and condition over time of vascular plant communities. All plant species are identified, and in nested subplots, the relative frequency and percent coverage of each species are recorded. Data are also collected on tree growth, recruitment and mortality.

GULN Vital Sign	Number of Sampling Points	Sampling Frequency	Monitoring Start Year
Water Quality	1 MS, 2 FL	15 Minutes, Monthly Grab	2011
Seagrass	46 MS, 60 FL	Every 3 Years	2011
Coastal Geomorphology	33 transects, ~100 km shoreline	Every Other Year	2018
Amphibians	124 pipes, 64 boards	Every Other Month	2011
Breeding Landbirds	8 MS, 13 FL	Annually	2010
Terrestrial Vegetation	18 MS, 15 FL	Every 4 Years	2024

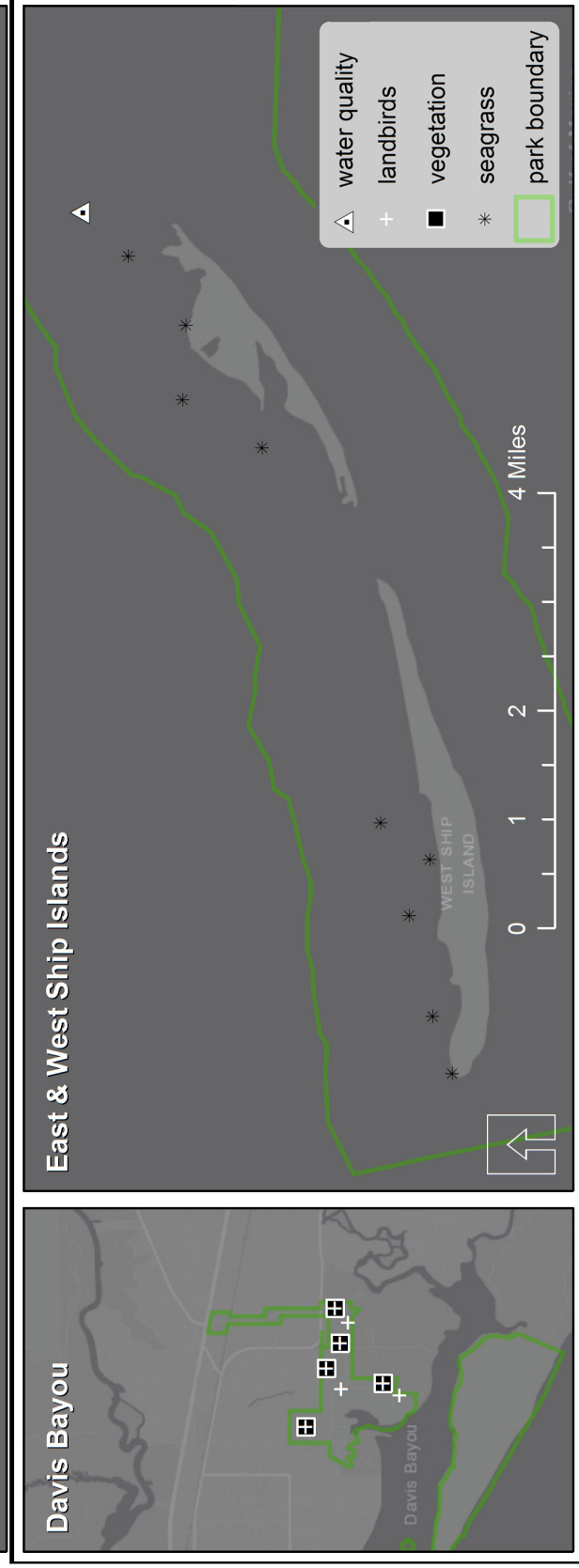


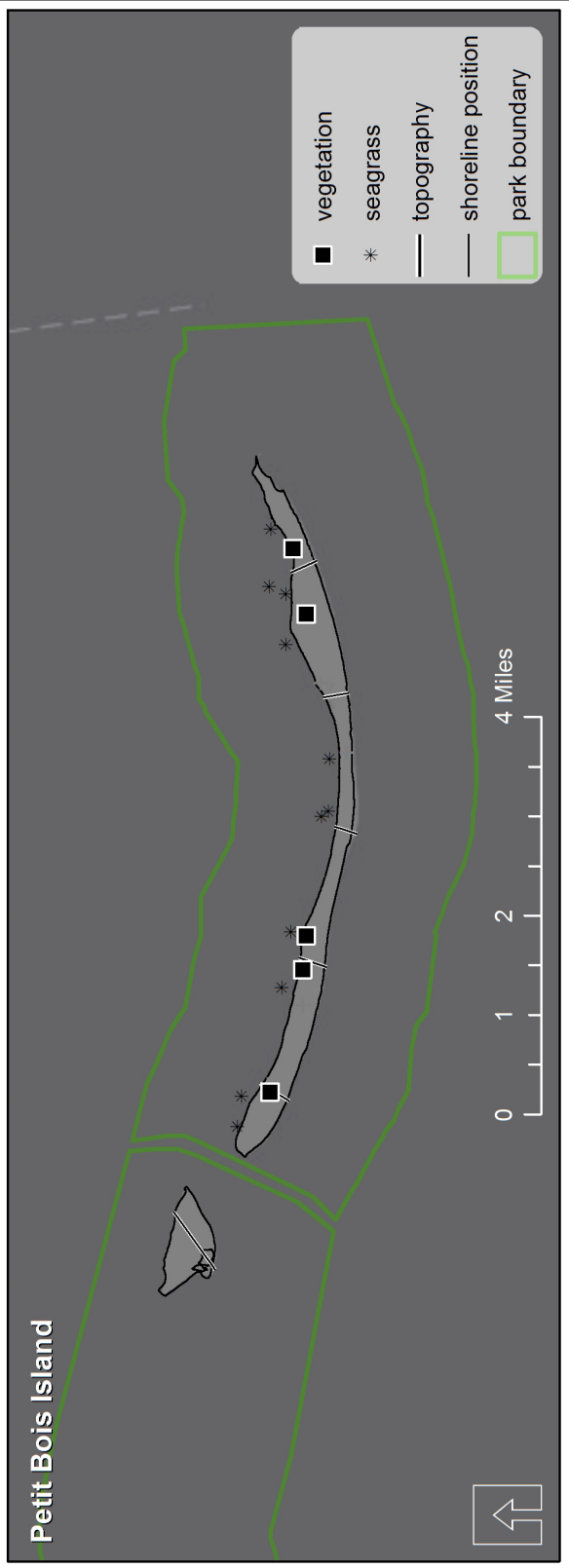
The Gulf Coast Network monitors vital signs on barrier islands like Horn Island (above), as well as on mainland units.

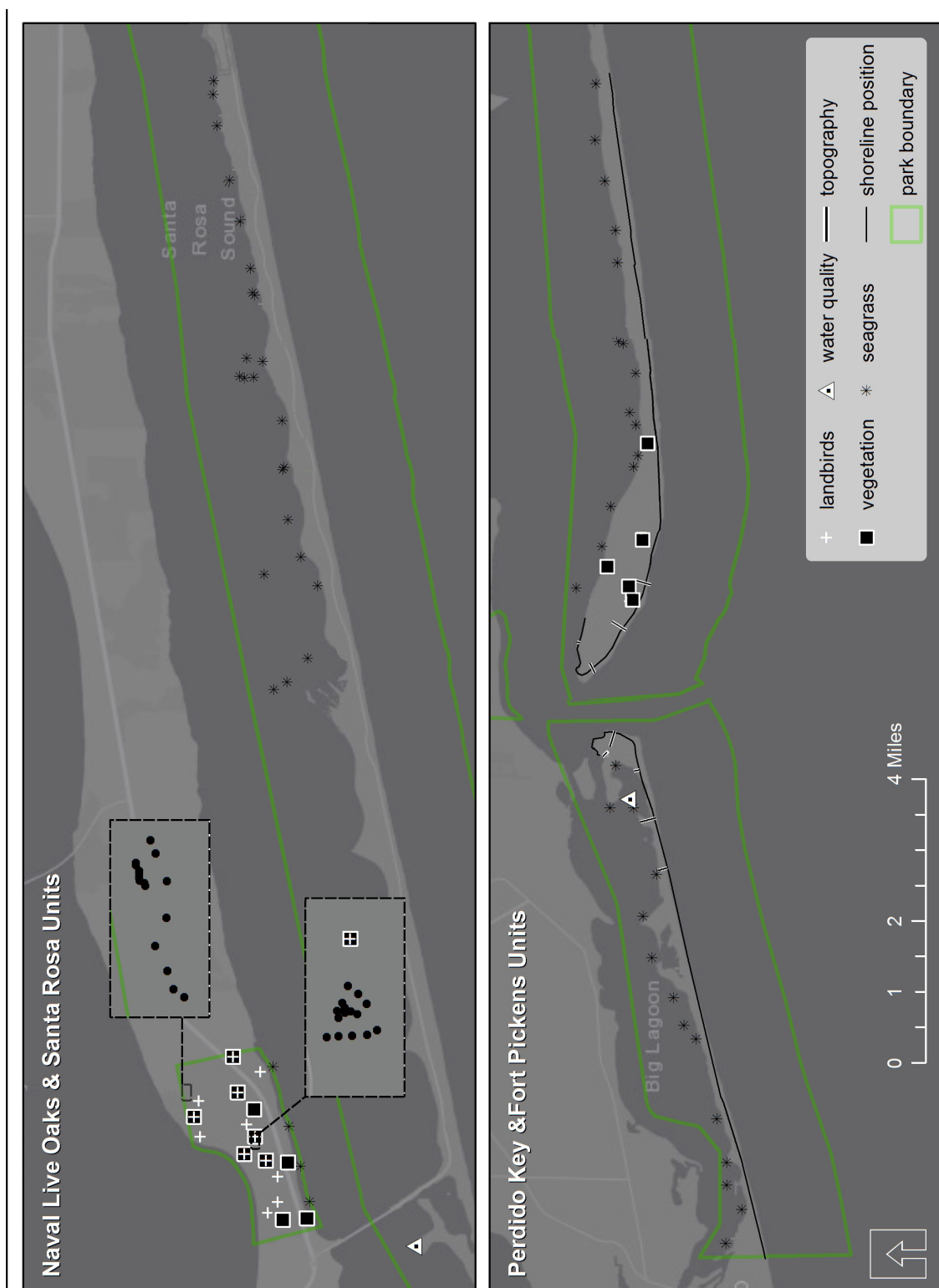
Gulf Coast Network

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Inventory and Monitoring Division
National Park Service
U.S. Department of the Interior







For more information, visit <https://www.nps.gov/im/guln/index.htm>