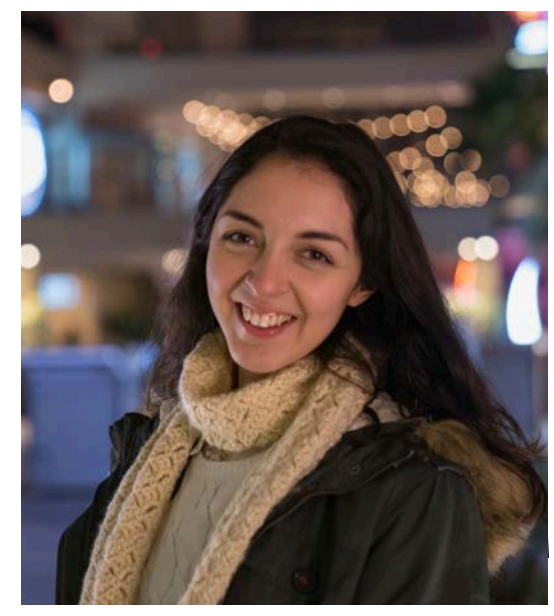


Differences In Goliath Grouper Habitat Use Between Day and Night Within a Refuge Habitat



Lizbeth Gonzalez

20liz00@csu.fullerton.edu

CSU Fullerton

Mentors: Dr. W. Ryan James & Jonathan Rodemann

BACKGROUND: REFUGE HABITATS

Bacteria & Mangrove Tree Detritus

- Feeds many younglings

Structure: Tangled Roots

- Protection from predation

- Cooler waters

- Higher oxygen content

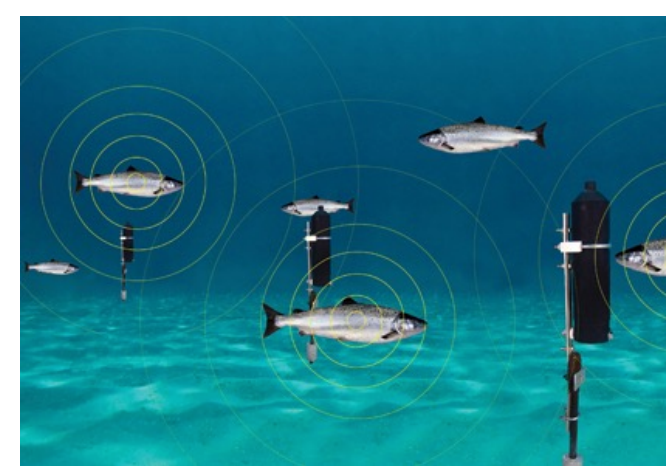
Rich Biodiversity

- More than 3,000 fish species (IUCN, 2021)



METHODS

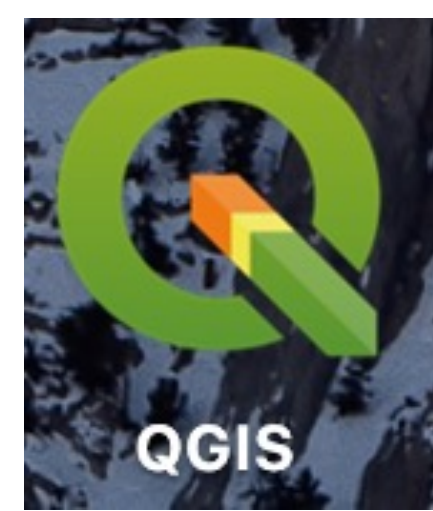
1. Use acoustic telemetry to track fish movement and triangulate exact GPS positions using YAPS (Yet another Position Solver)



2. Take submerged aquatic vegetation surveys and delineate the seascape using QGIS



3. Overlay SAV survey and acoustic data with a delineated map



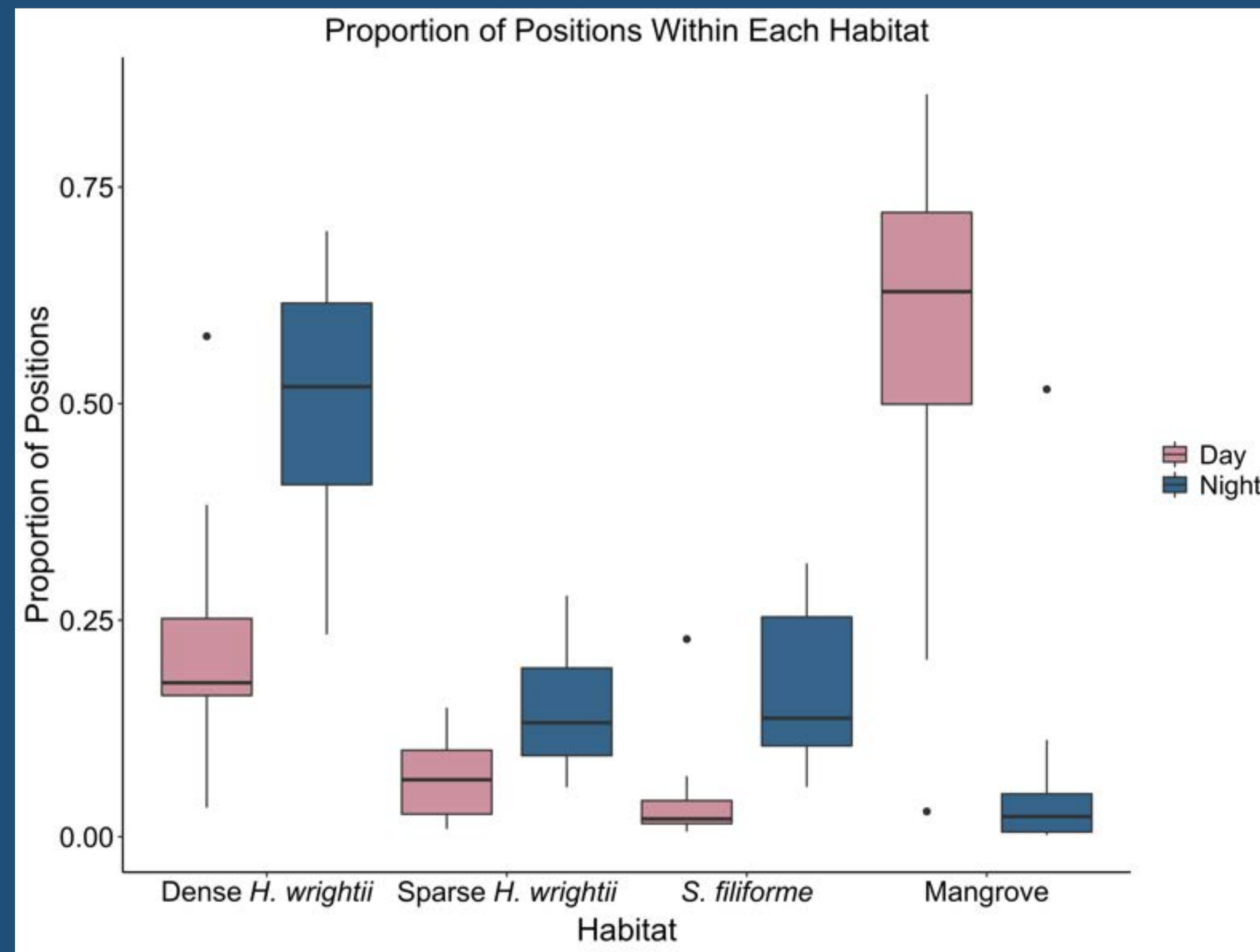
RESULTS

Habitat	Time of Day	Mean ± SD
Sparse <i>Halodule wrightii</i>	Day	0.07 ± 0.05
	Night	0.15 ± 0.07
Dense <i>Halodule wrightii</i>	Day	0.21 ± 0.12
	Night	0.51 ± 0.14
<i>Syringodium filiforme</i>	Day	0.04 ± 0.05
	Night	0.18 ± 0.09
Mangroves	Day	0.57 ± 0.21
	Night	0.06 ± 0.13

Table 1. Lists the mean and standard deviation of the proportion of positions detected within each habitat during the day and night.



Goliath Grouper uses mangrove habitat during the day and seagrass at night.

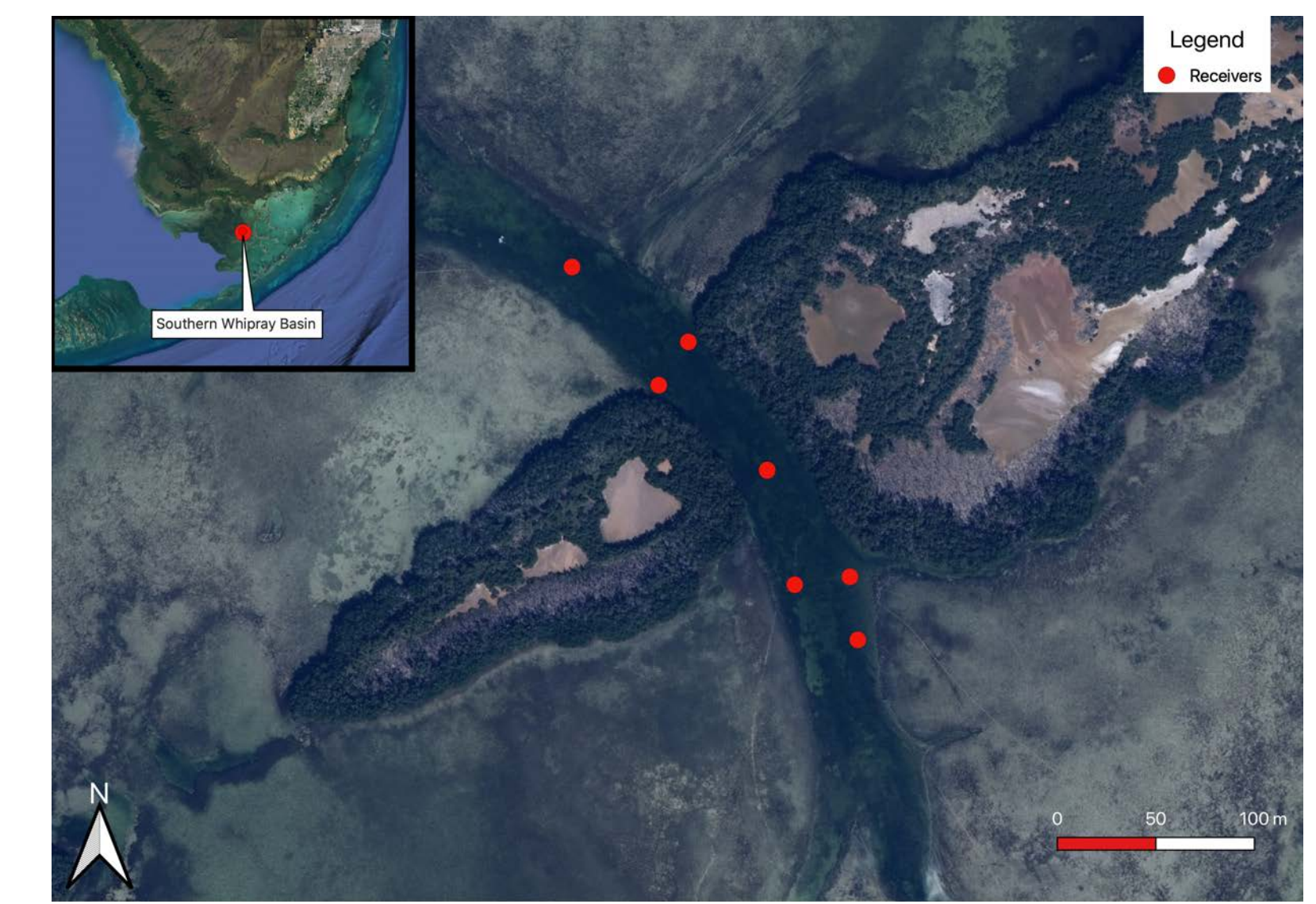


The proportion of positions detected within each type of habitat during the day and night.

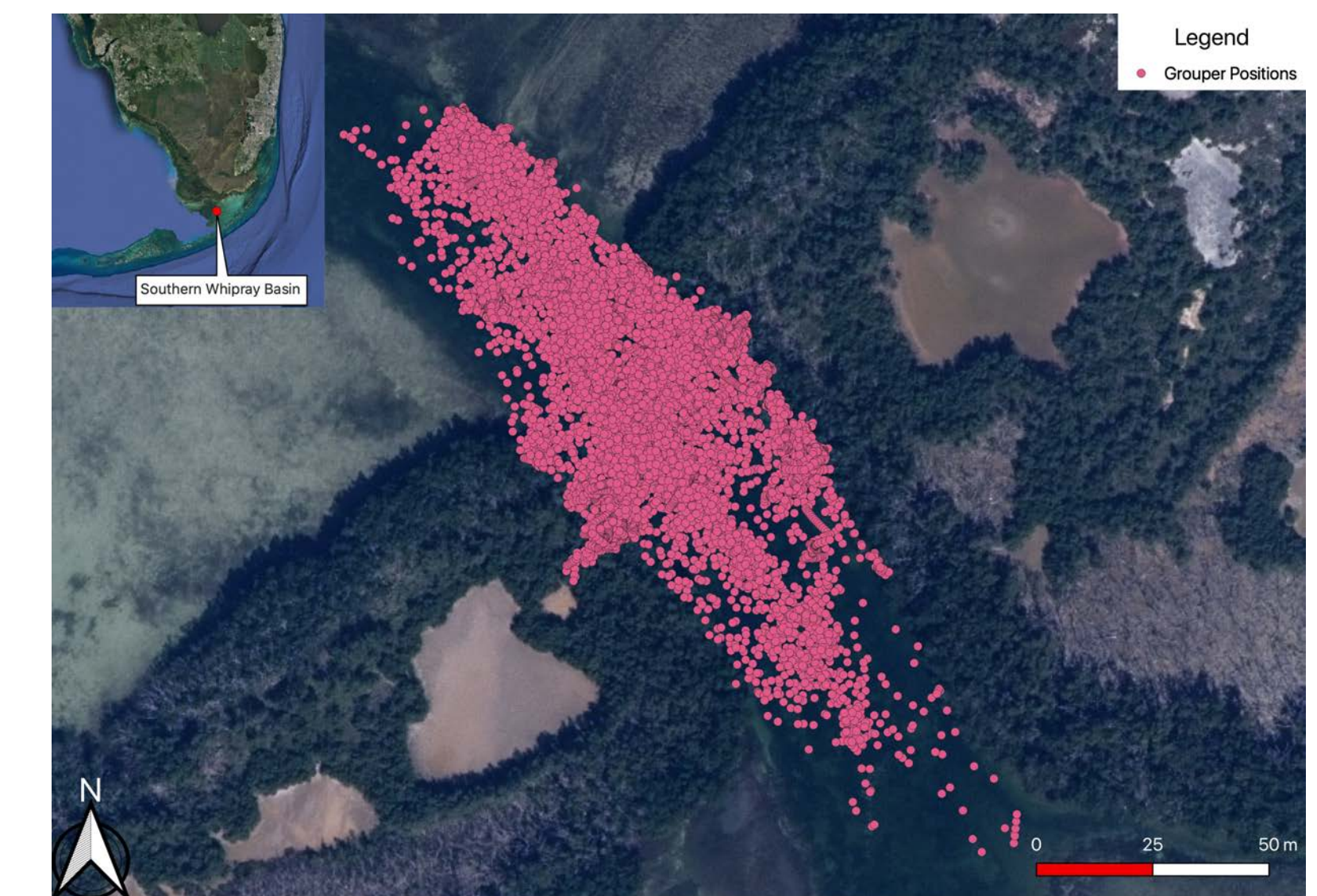


Take a picture to learn more.

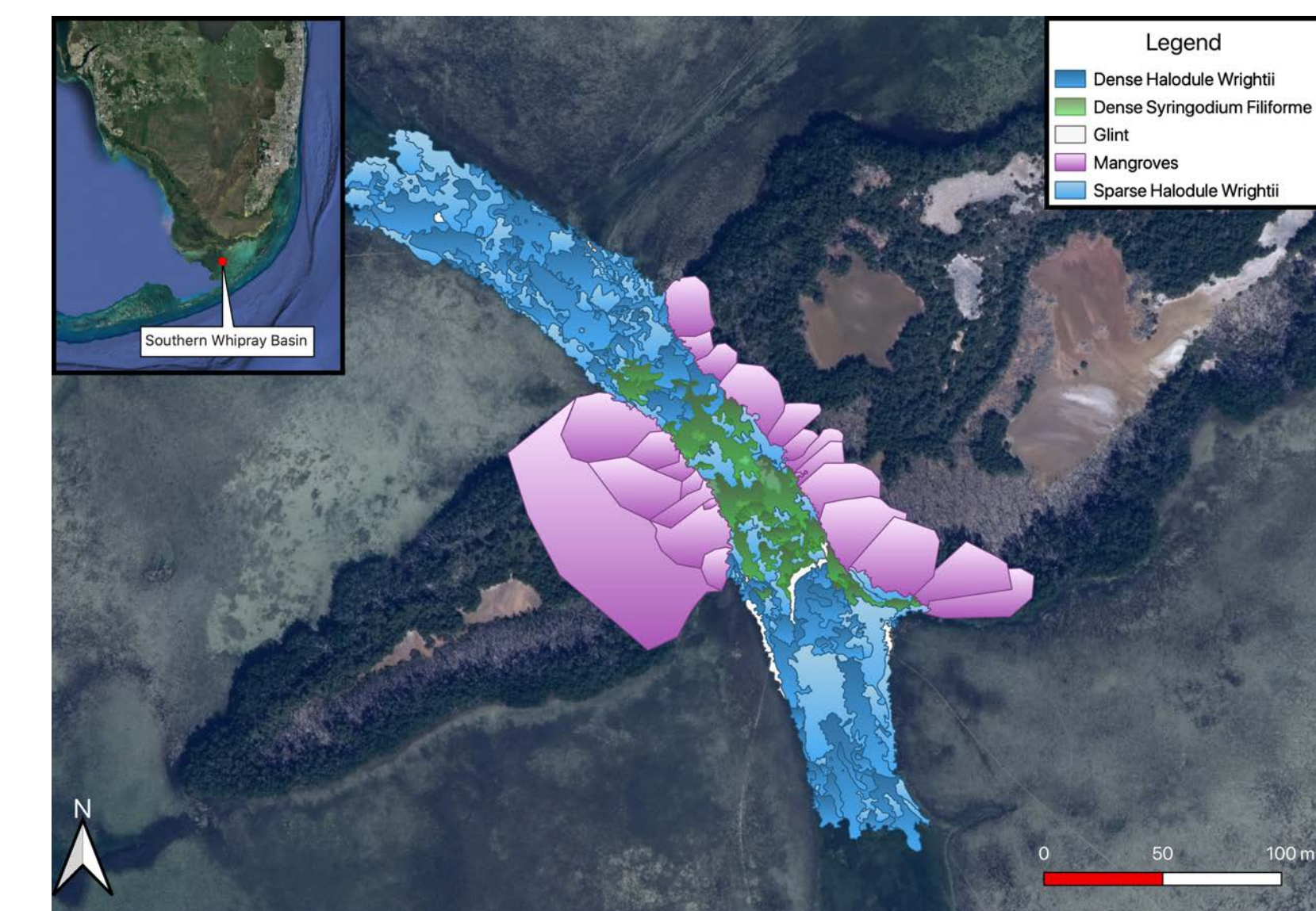
FIU Coastal Ecosystems REU Site



A map illustrating the placement of 7 receivers in southern Whipray Basin.



21,915 Grouper positions detected in southern Whipray Basin over a 2-week period.



Aerial imagery of southern Whipray Basin classified by habitat.

Co-authors/collaborators:

Jonathan Rodemann, Dr. W. Ryan James, Dr. Rolando Santos, Dr. Jennifer Rehage

<http://environment.fiu.edu>



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