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# Distribution, Density, and Habitat Association of the Dwarf Seahorse (*Hippocampus zosterae*) in Texas

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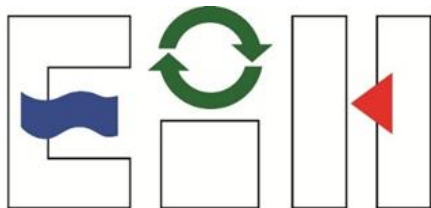
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<sup>3</sup>U.S. Fish and Wildlife Service, Texas Fish and Wildlife Conservation Office, Houston, TX

Texas Bays and Estuaries Meeting  
Port Aransas, TX  
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University  
of Houston  
Clear Lake



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# Dwarf Seahorse (*Hippocampus zosterae*)

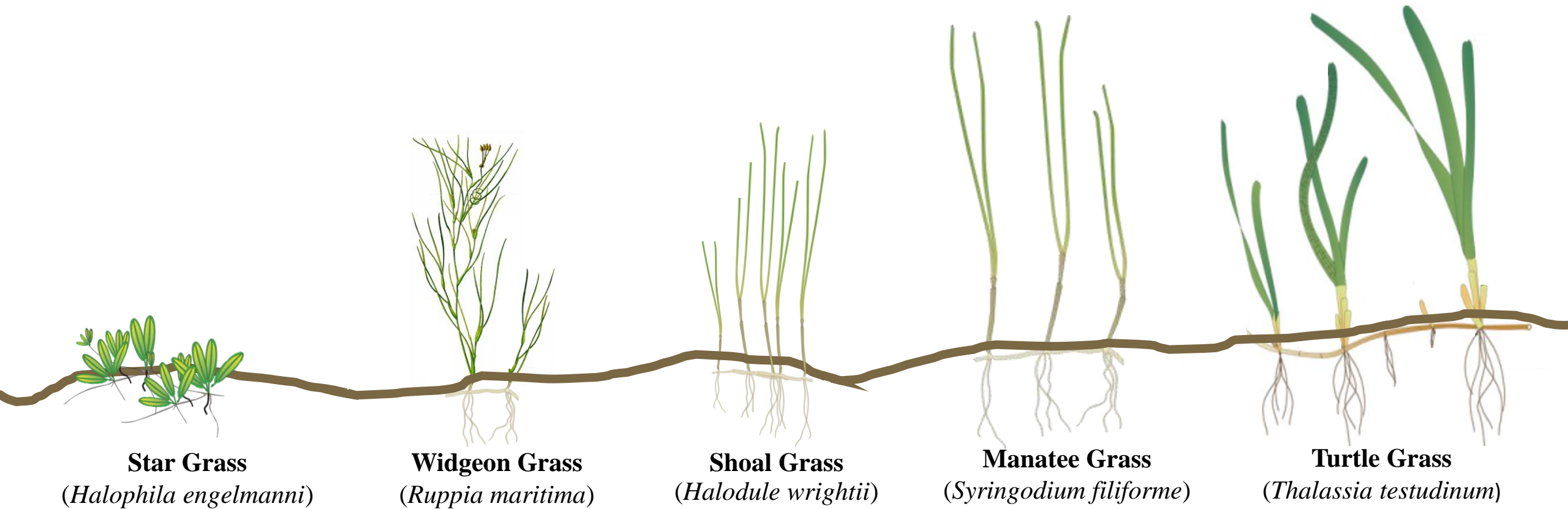
- Range:
  - Gulf of Mexico
  - Atlantic Coast of Florida
  - Caribbean
- Smallest species in U.S. waters
  - Averaging 2 cm in height
- Habitats of choice:
  - Seagrass
  - Macroalgae
  - Coral reef
- Status Review (2020) finding:  
“listing not warranted”
  - Identified insufficient data in Texas



# 5 Seagrass Species in Texas

Small-bodied  
Short-lived  
Fast turnover

Large-bodied  
Long-lived  
Slow turnover



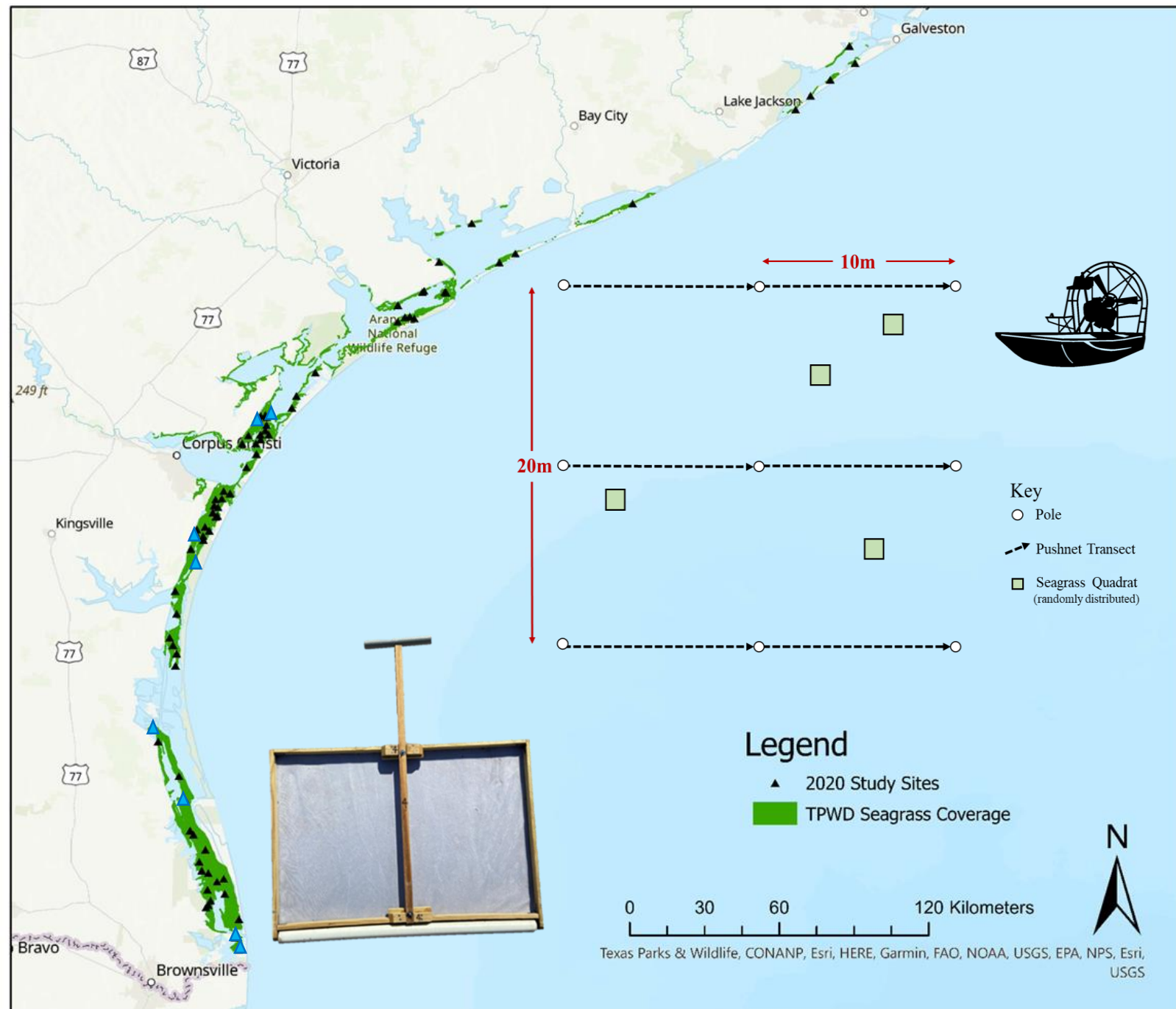
# Objectives

1. Distribution and Abundance
2. Habitat Associations
3. Demographics and Morphometrics
4. Gear Comparison



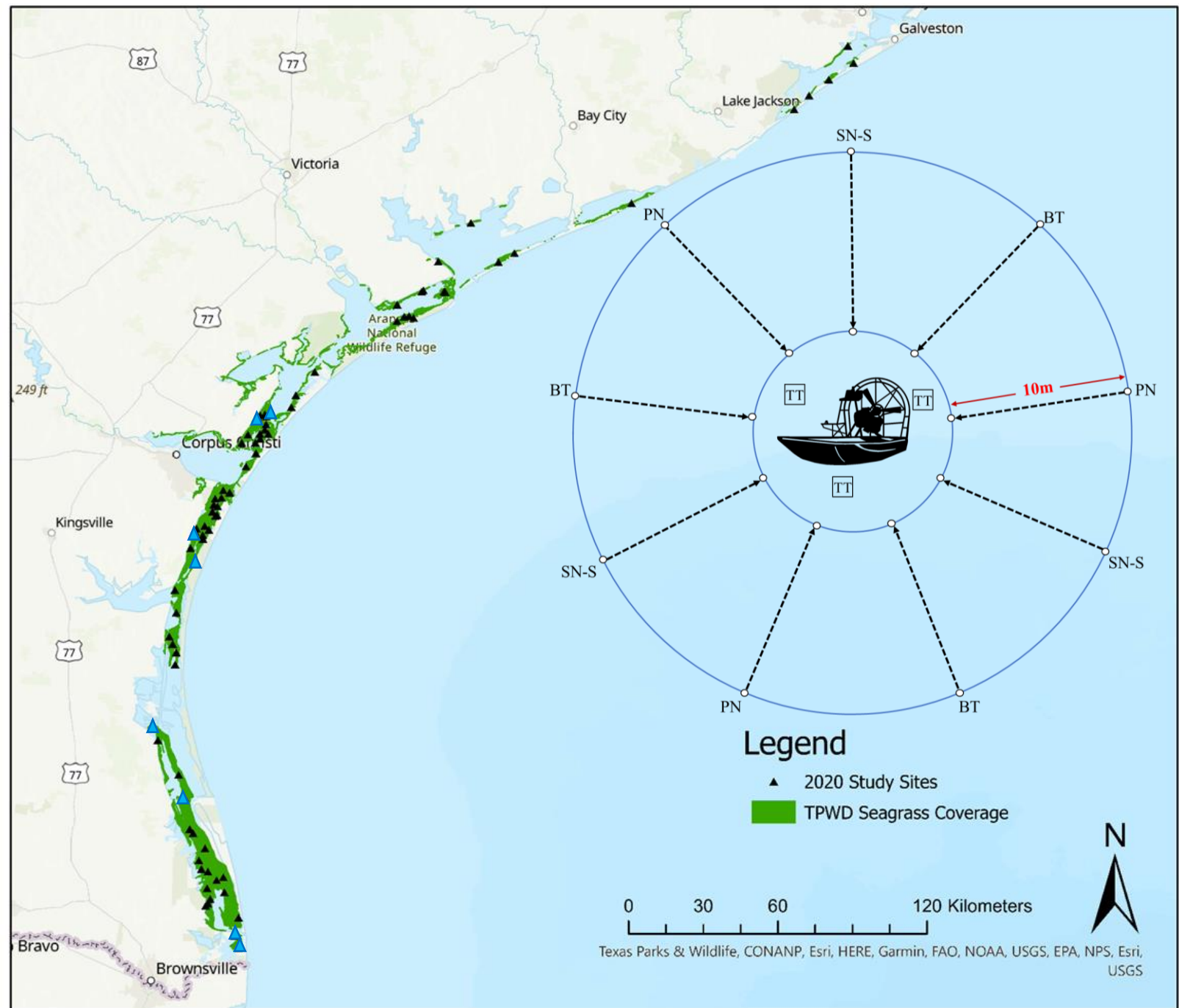
# Site Selection

- Texas Seagrass Project (Dunton, 2022)
  - $\leq 1.22\text{m}$  depth
- Historic occurrences of Dwarf Seahorses
- Summer 2020
  - 80 sites
  - 7 bay systems
- Summer 2021
  - 8 sites



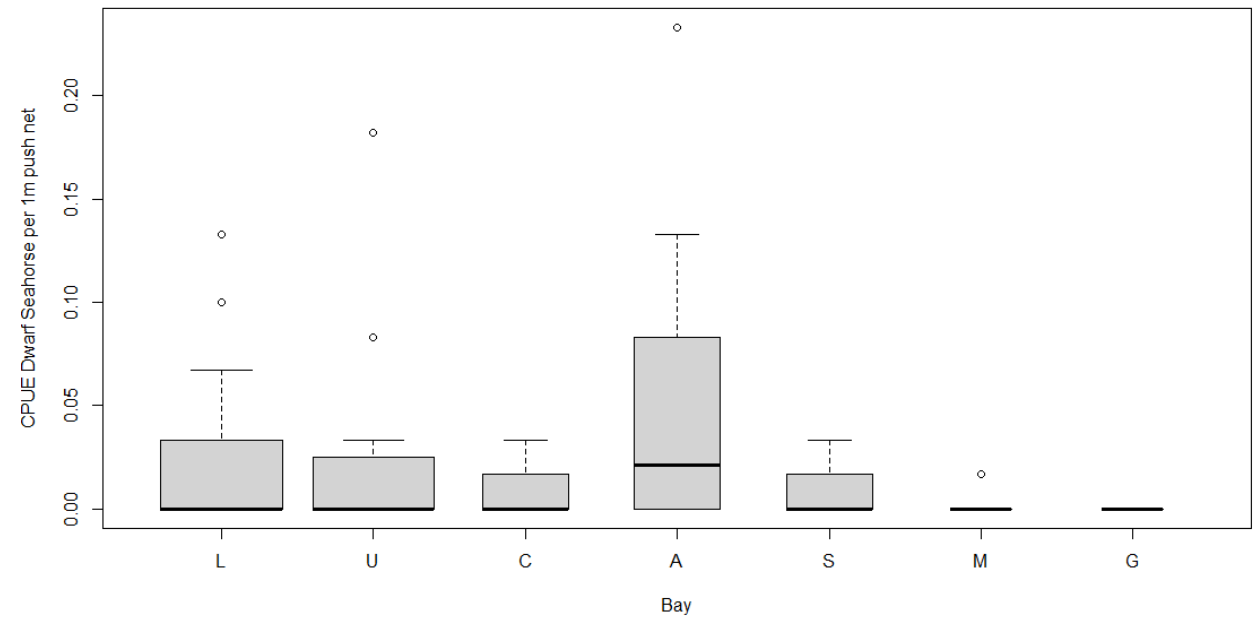
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# Results

- 79 Dwarf Seahorse captured at 30 sites



Major Bay System	Number of sites	Number of Dwarf Seahorse Captured	Percent of Sites with Dwarf Seahorse Detection	CPUE of Dwarf Seahorse
Galveston	5	0	0	0.000
Matagorda	5	1	20	0.003
San Antonio	10	5	30	0.008
Aransas	10	20	60	0.038
Corpus Christi	10	6	40	0.011
Upper Laguna	20	19	35	0.017
Lower Laguna	20	28	45	0.023
<b>Grand Total</b>	<b>80</b>	<b>79</b>	<b>37.5</b>	<b>0.017</b>

Upper  
↓  
Lower

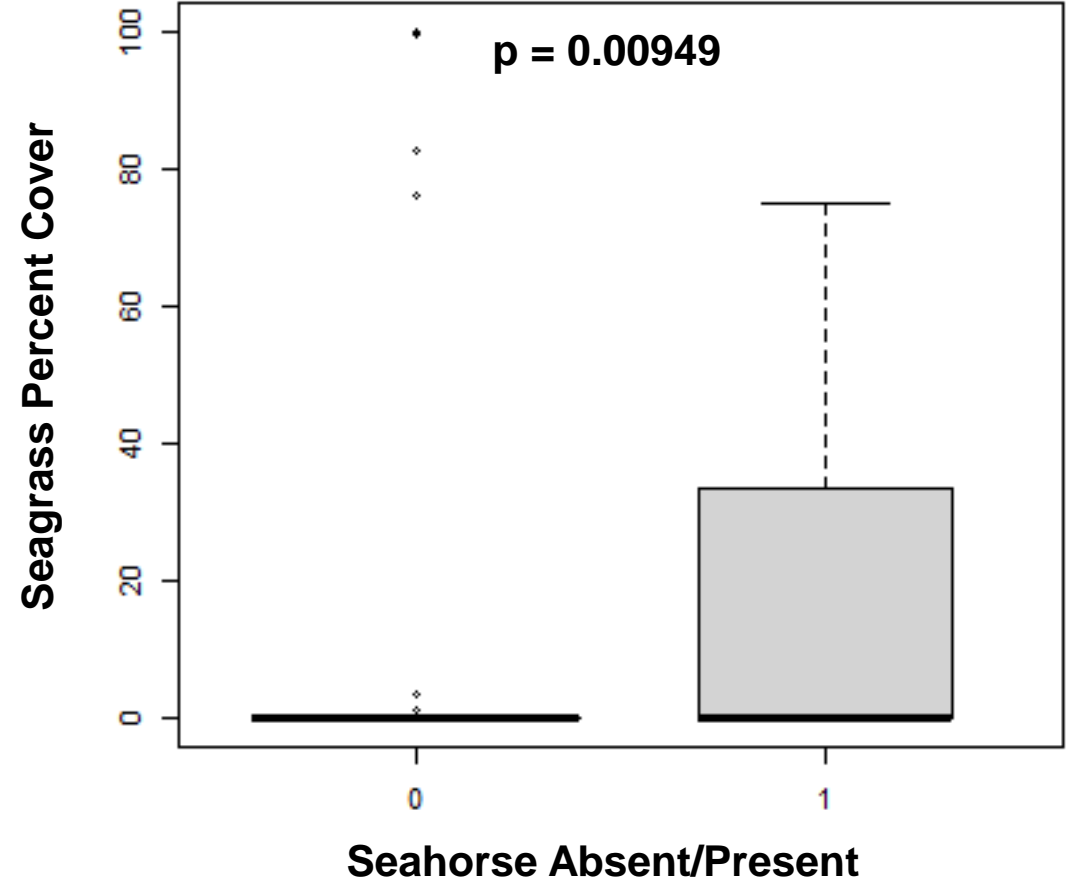
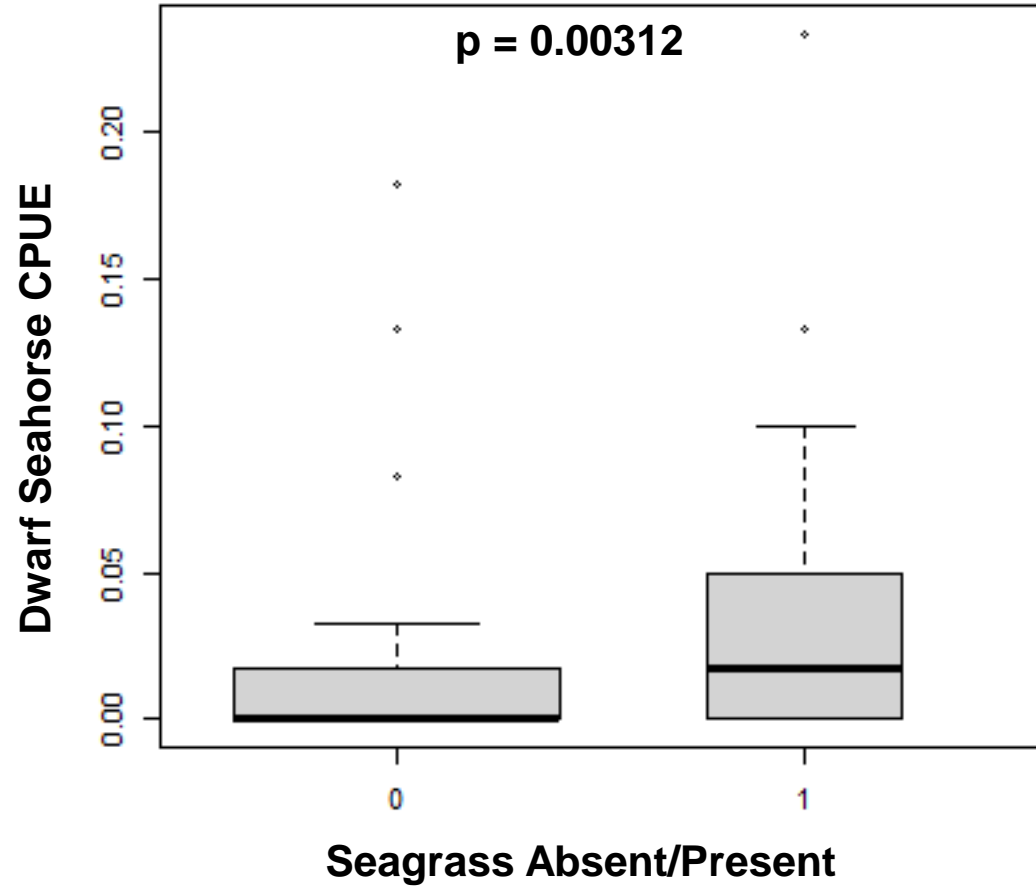


# Seagrass

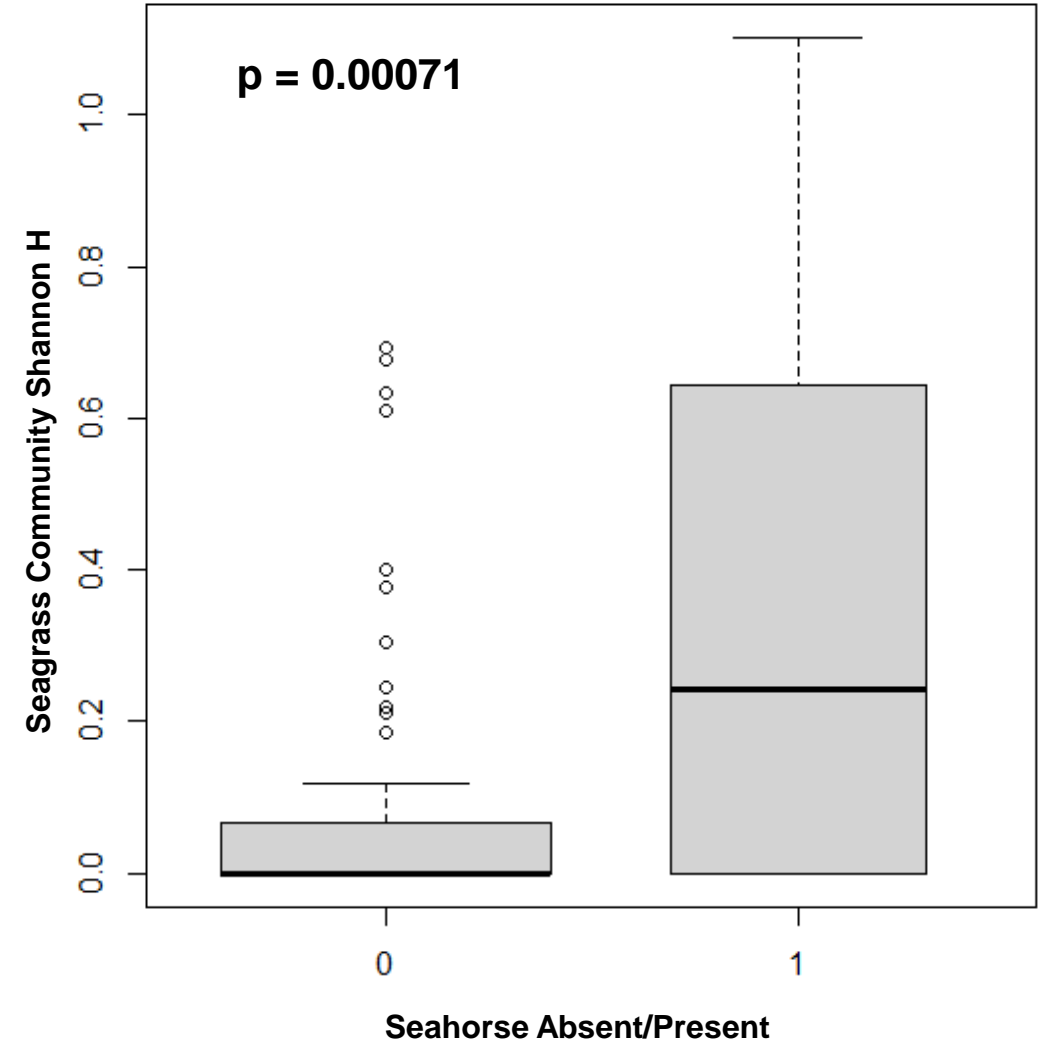
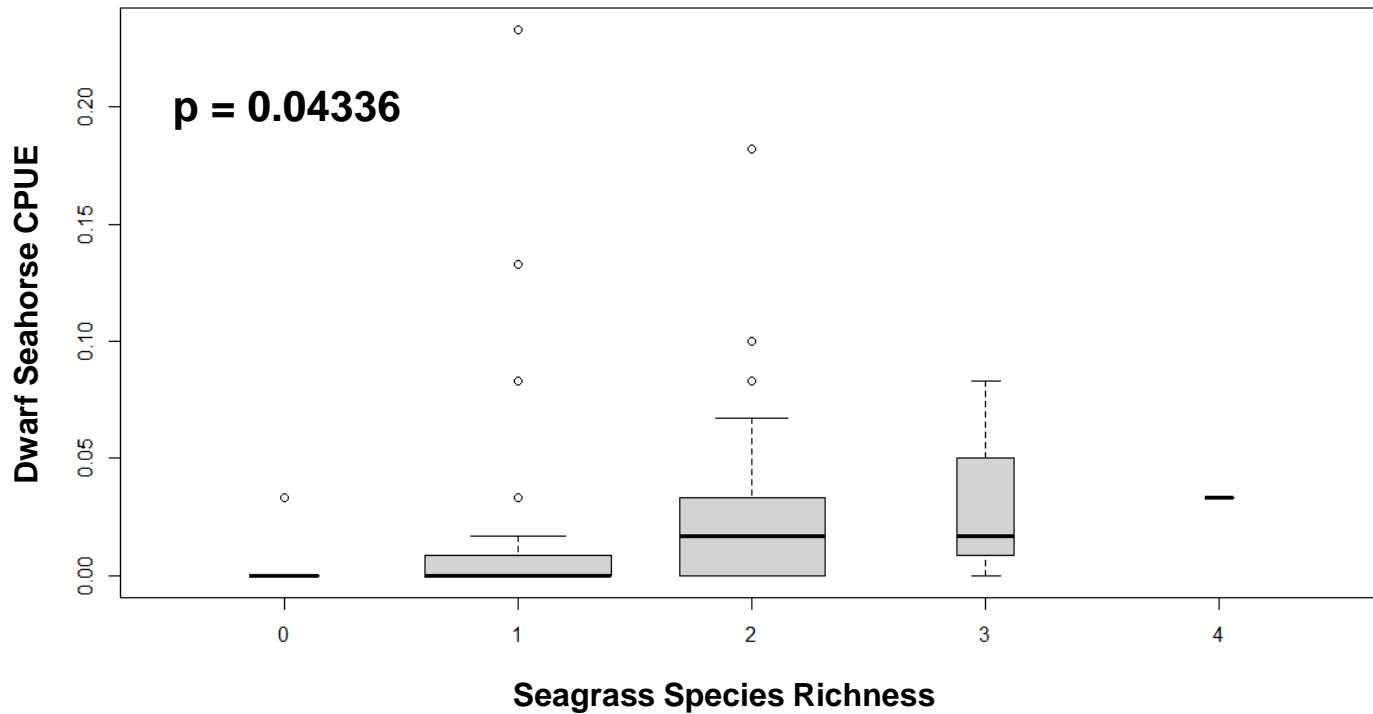
	<b>Major Bay System</b>	<b>Number of Sites</b>	<b>Biomass (g)</b>	<b>Canopy Height (cm)</b>	<b>% Cover Seagrass</b>	<b>% Cover MACRO</b>
Upper ↓ Lower	<b>Galveston</b>	5	N/A	3.0	18.7	0.0
	<b>Matagorda</b>	5	0.3	4.6	21.0	0.1
	<b>San Antonio</b>	10	0.9	10.3	45.4	8.0
	<b>Aransas</b>	10	1.5	18.6	50.8	5.1
	<b>Corpus Christi</b>	10	2.1	20.1	49.1	27.5
	<b>Upper Laguna</b>	20	1.2	20.9	57.5	11.2
	<b>Lower Laguna</b>	20	3.2	18.2	63.4	6.4

- Upper: shoal, star, and widgeon grass
- Lower: shoal, manatee, and turtle grass

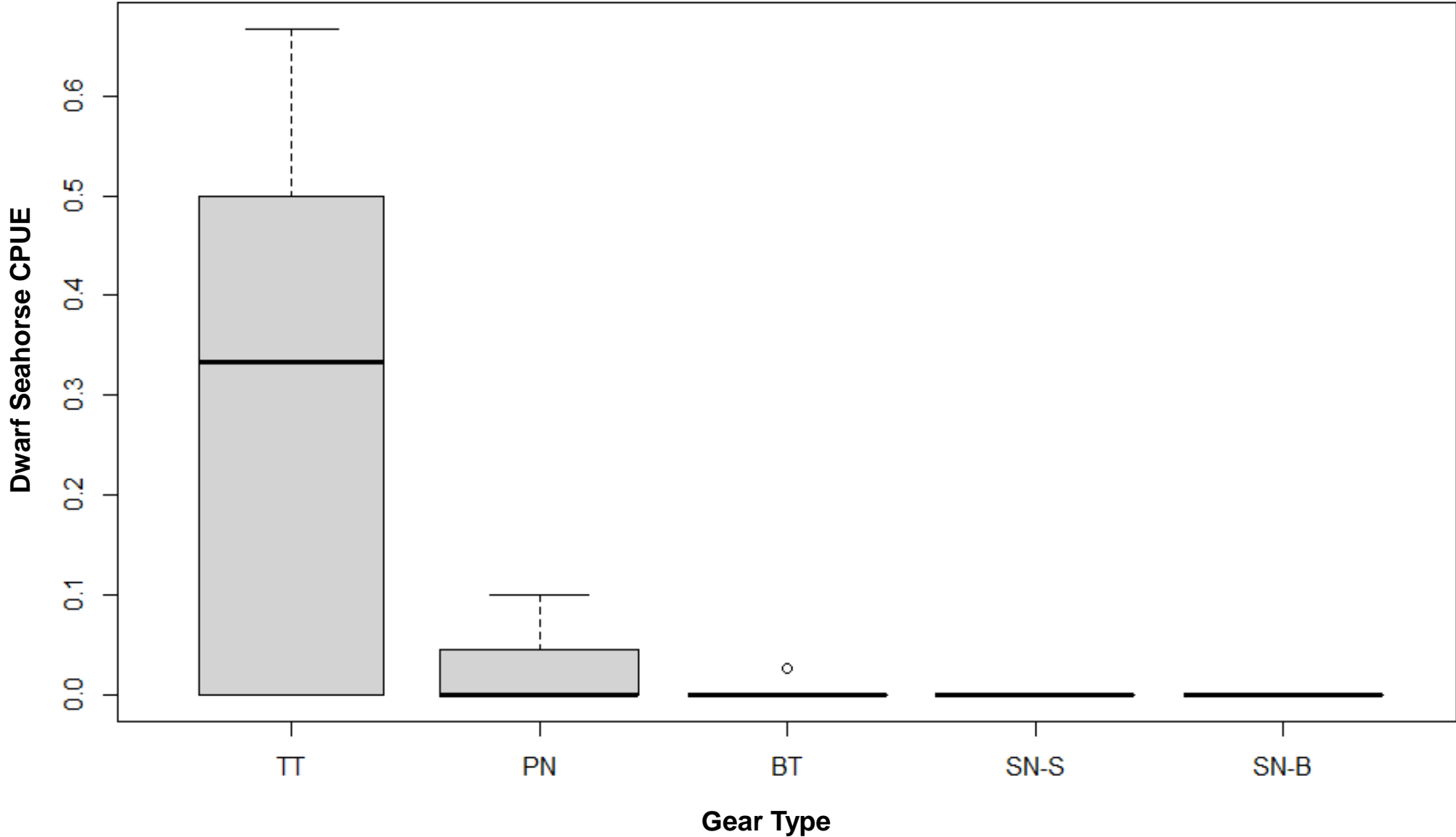
# Turtle Grass: *Thalassia testudinum*



# Seagrass Community Structure

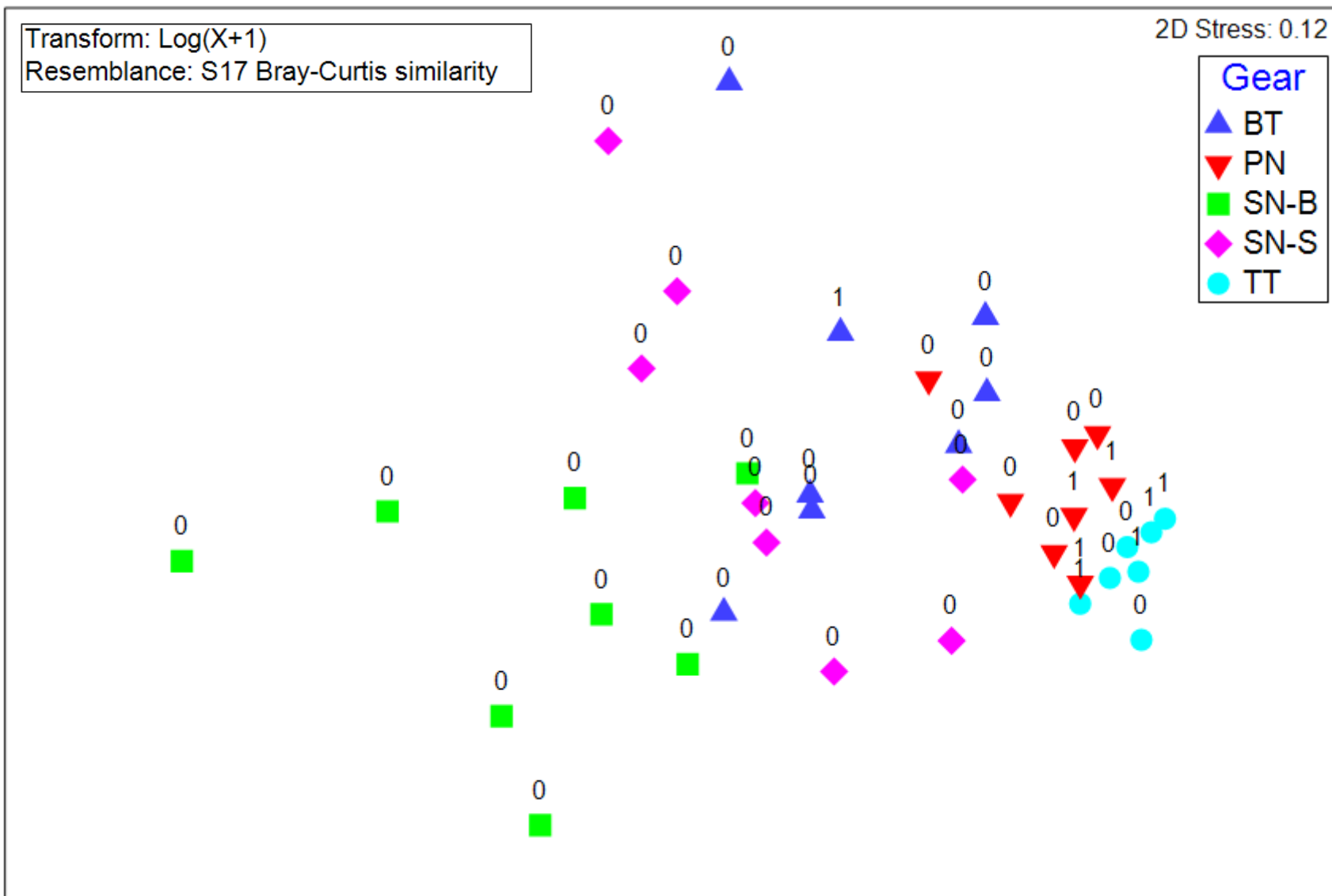


# Gear Comparison



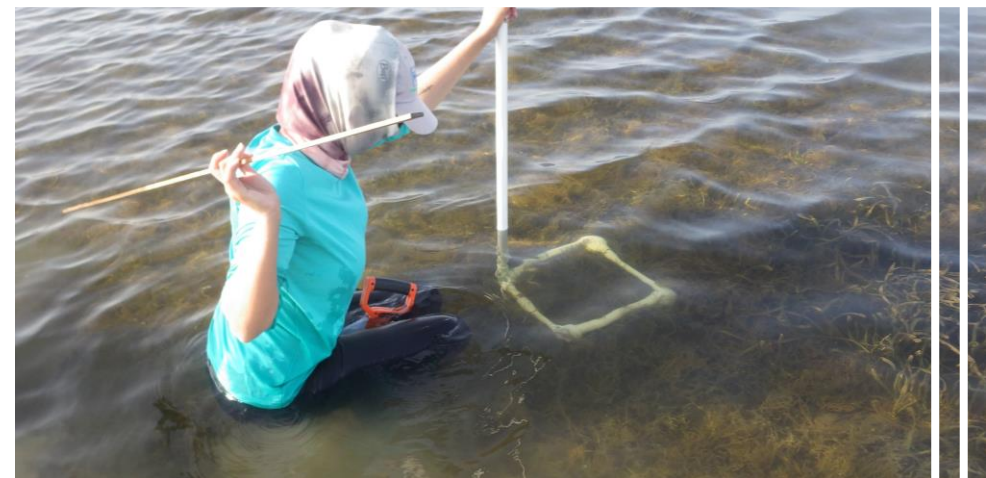
# Gear Comparison

*Non-metric MDS*



# Discussion

- Water conditions relatively consistent
- Aransas Bay highest CPUE of Dwarf Seahorse
- Dwarf Seahorse association with Turtle Grass
  - Large biomass – slow water velocity
  - Climax species - indicates established bed
  - Nekton community exists with minimal disturbance
- Most effective gear type: throw trap & push net
- Consider: effort and study objectives when choosing a gear type
- Using traditional sampling gears (seines and otter trawls) vast underestimates of Dwarf Seahorse density





## Future Work

- Continued intensive/equal sampling across bay systems.
- Year-round sampling
- Use of other gear types – throw trap for more accurate CPUE
- Sampling in areas with depths greater than 1.22m



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Scan for final report:



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