Smithsonian
Marine Station Fort Pierce

Seagrass Monitoring Activity

Background: Florida seagrass habitats are valuable marine resources. Seagrasses grow in thick meadows in the Indian River Lagoon and provide an important nursery habitat for many species, are important for nutrient cycling, sediment stabilization, and for storing carbon.

Learning Objectives: In this activity you will learn how and why scientists monitor seagrass habitats and track percentage cover overtime. You will virtually use a seagrass quadrat to measure percentage cover of seagrass.

Scientists use “quadrats” or square meters, sometimes divided into 10x10 smaller squares, to calculate the percentage cover of an area of seagrass.

Why calculate percent cover? Calculating percentage cover helps scientists and policymakers understand population density and overall health of seagrass meadows. Seagrass densities fluctuate over time because of environmental and human stressors, like boat propeller scarring, algal blooms and others. Mapping and monitoring efforts help local and regional governments manage and protect critical seagrass habitats.

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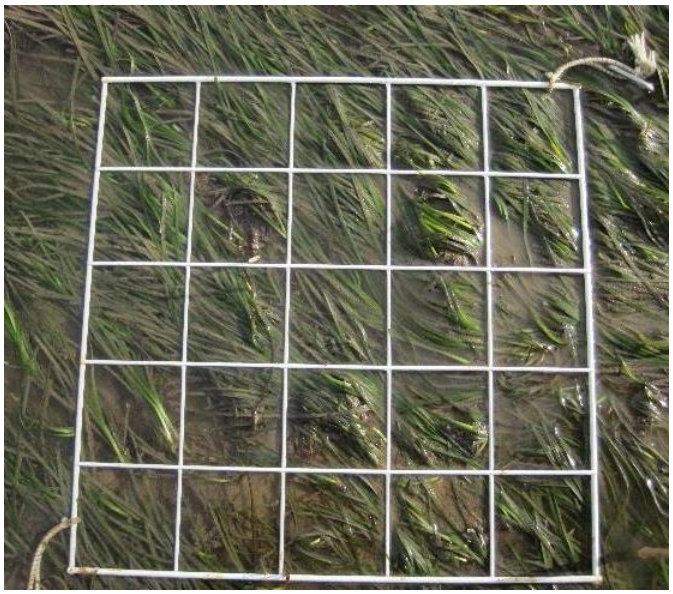
Examples of quadrats placed on abundant (100% cover) seagrass meadows.



Instructions: Using the "quadrats" on the following page you will measure and calculate percentage cover of seagrass species abundance. Each quadrat is made of 10x10 squares, therefore each square equals 1%. You will add up the squares containing seagrass and that will give you percentage cover for each species.

As you learned in the Seagrass Module, there are 7 species of seagrass in the IRL. We will focus on 2 in this activity, *Thalassia testudinum* and *Halodule wrightii*. Measure the percentage of each seagrass species (*Thalassia* and *Halodule*), then add them together to find the total percentage cover.

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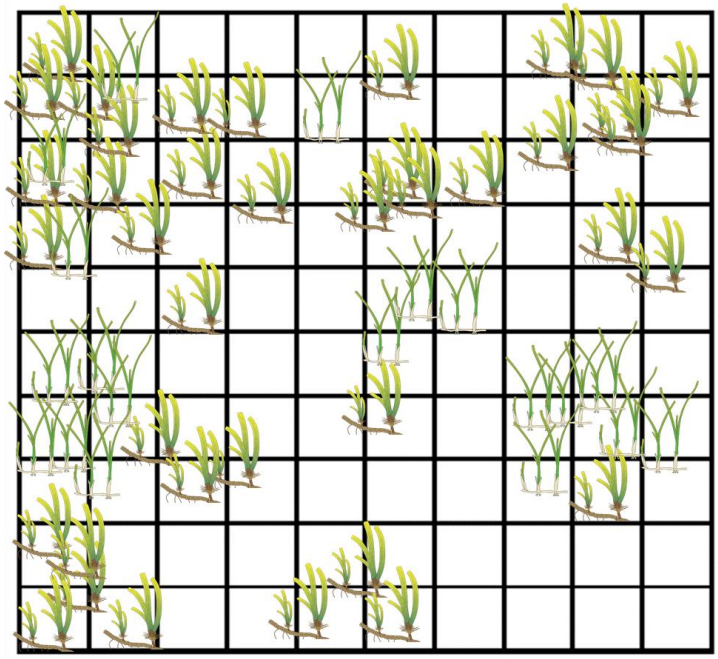
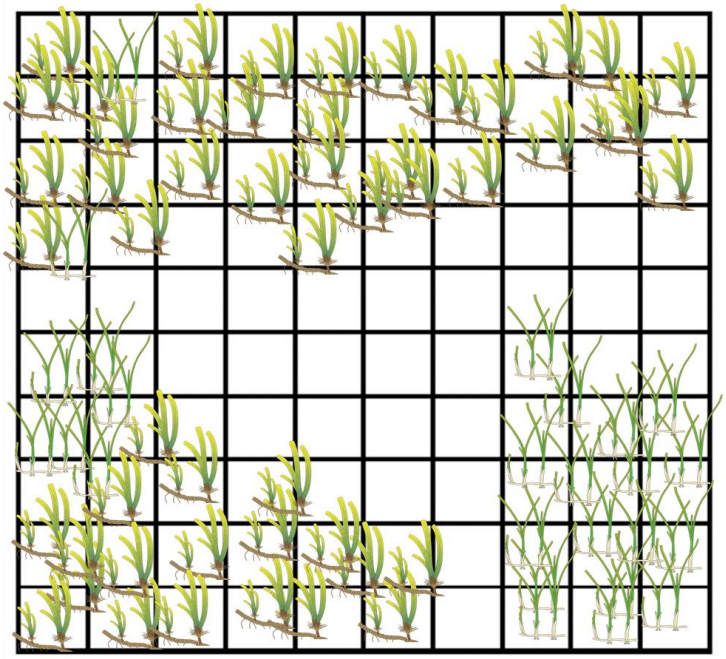
Now it's Your Turn:

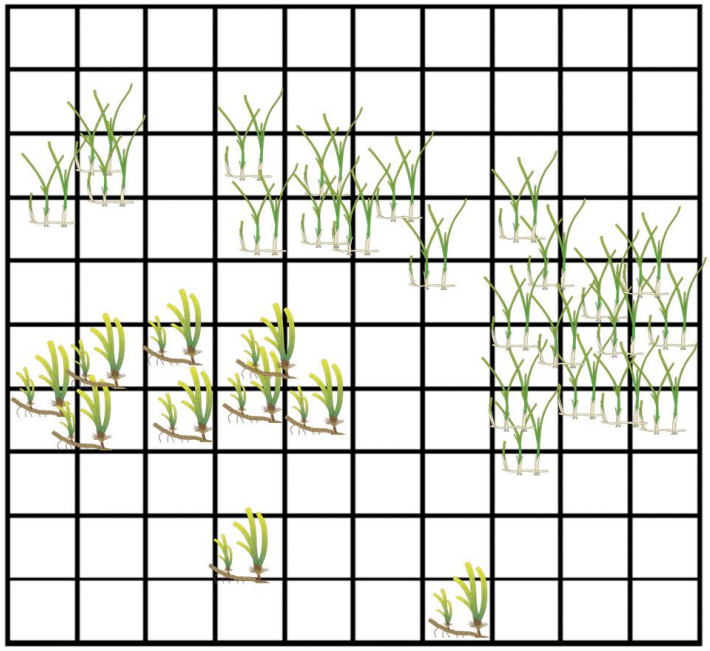
KEY — *Thalassia* — *Halodule*



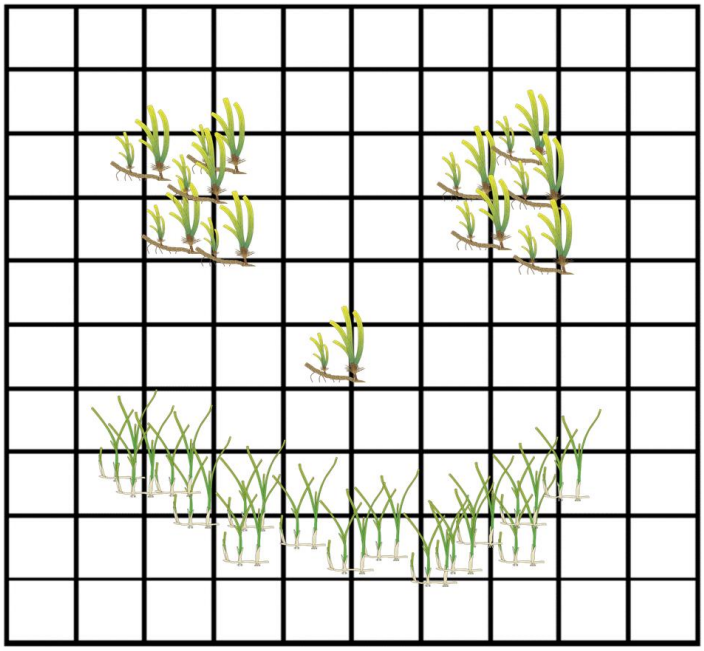
1. % *Thalassia* = _____
   % *Halodule* = _____
   Total = _____



2. % *Thalassia* = _____
   % *Halodule* = _____
   Total = _____



4. % *Thalassia* = _____
   % *Halodule* = _____
   Total = _____



3. % *Thalassia* = _____
   % *Halodule* = _____
   Total = _____

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Thinking Questions & Wrap Up:

- Seagrass grows in meadows of varying coverage in the Indian River Lagoon. Why do you think there might be more *Thalassia* in quadrat 2 than quadrat 3?
- Seagrasses are subject to stressors that reduce their coverage: including algal blooms, poor water quality, boat propeller scarring, and increased herbivory. All these factors can change seagrass abundance over time. Why is it important to manage or protect seagrass meadows?
- If you were to monitor these same quadrats a year from now, how do you think they would look?
- Unfortunately, many studies show a decline in seagrasses globally. Why do you think that is?

If you have any questions or need help with this activity, please contact us at smseducation@si.edu or reach out to us on social media @SmithsonianSMS