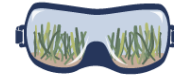




SAFETY

Safety is ALWAYS first. Here are some safety issues to consider while conducting these surveys.

- **Swimming** – You should be able to swim the length of your transect and back. If you are not a strong swimmer, consider teaming up with someone who is.
- **Buddy system** - With water related activities, it is always best to use the buddy system. We recommend a team of at least three for this activity, two to complete the survey in-water survey and one to remain on the boat. Please do not attempt this by yourself.
- **Dive Flag** – Snorkelers and divers are required to display a dive flag in Florida waters. One was provided in your sampling kit. Unfortunately, there may still be boaters who don't see or disregard the flag. Be aware of nearby boating activities.
- **Stingrays** – Stingrays tend to hang around seagrass beds in search of prey. Many times, they are buried in the sand near grass beds. Shuffle your feet as you walk to your quadrats to avoid stepping on them. If stung – warm (not hot) water will ease the pain. If the barb is lodged seek professional medical attention. They are more afraid of you than you are of them!
- **Jellyfish** – Survey the water before entering. You should be able to observe the presence of jellyfish and decide whether you should enter the water or not.
- **Blue crabs** – Blue crabs are very common in the grasses. Often, they will swim away, but if you surprise them, they may reach with their claws and take a snip. We recommend using gloves while working in the grasses and wearing water shoes.
- **Glass, metal, other debris** – The bay and harbor bottoms contain many forms of marine debris that can injure you, particularly following Hurricane Ian. You should wear water shoes when walking in the water for this project.
- **Weather** – We do not recommend you do this during rain events because of the poor visibility and the possible risk of bacteria during summer months. If there is lightning in the area leave the water immediately.
- **Sun protection** – The sun can burn you even when you are snorkeling or swimming. We recommend plenty of sunscreen (or some form of sun protection) on your back and neck and the top of your head.
- **Water** - Being in salt water and breathing through a snorkel will dehydrate you. Bring lots of water, or another source of hydration each time you survey.
- **Bug Spray** – Low energy estuaries like Charlotte Harbor and Lemon Bay are famous for biting bugs. You may find you will need bug spray.



Seagrass Monitoring Field Procedures *Spring 2024*

NAVIGATING TO YOUR SITE

Like distance, GPS Coordinates come in different units. It is important to make sure you are using the correct unit to reach your desired location. We have provided GPS coordinates in Degrees Minutes Seconds and Decimal Degrees. The examples in the table below reflect the same geographic location even though they look very different. When in doubt, make sure the quotation marks, degrees symbols and/or decimal points line up between your site and the device you are using to get there!

<p>Degrees Minutes Seconds (DMS)</p> <p><i>Example</i> 26°54'10" N, 82°5'52" W</p>	<p>-Default on most boat/handheld GPS -Specify hemispheres with letters indicating North, South, East and West</p>
<p>Decimal Degrees (DD)</p> <p><i>Example</i> 29.90287°, -82.0978°</p>	<p>-Default for Google Maps -Specify hemispheres with negative and positive values (Southern and Western hemispheres are negative)</p>

Seagrass habitat in this region exists anywhere from 2-5 feet of water. Although we have tried to account for depth in our site selection, we cannot account for tidal influence. Try to get as close to your site as possible while remaining in a depth of 2-5 feet. Move directly towards or away from shore if necessary. This will ensure you are sampling at a scientifically accurate and safe location without posing a risk of propeller scars!

COLLECTING YOUR SECCHI READING

Even though the space to record your secchi reading is on the back of your datasheet, take the measurement before completing your survey. During your survey, you will likely stir up sediment that could affect your secchi reading.

- 1) On the shady side of the boat and with your sunglasses removed, slowly lower the Secchi disk into the water until it is no longer visible. **Record** the depth of the disk by reading the length on the marked line at the waterline.
 - This can be best achieved by pinching the line at the water line and bringing it to your eyeline.
 - Black marks occur every 10cm and red marks occur every 1m.
 - If you can see the disk on the bottom, record the depth as “greater than bottom” and indicate depth of water.
 - i. Those of you that have boats are welcome to try to take a secchi reading in deeper water on the way to or from your site to try to get the most accurate reading.
- 2) With your sunglasses *back* on, estimate the percent cloud cover.

SETTING & DEPLOYING YOUR TRANSECT LINE

Transects should be deployed perpendicular to shore.

- 1) Once a suitable survey site has been found, attach the two-weight bundle to the first loop (roughly 2 meters down the line from the first buoy) using the fastened carabiner. Lower the buoy and weights into the water and drive towards or away from shore, paying out the transect line slowly while you drive.
 - This process may be easier on foot. If the water is too shallow to operate the boat without damaging seagrass, please deploy the transect line on foot!

- Do not traverse into deep water or navigational channels. If you encounter one of these areas before you are done paying out your transect, wind the reel back up and shift your site so that you can deploy the entire 50m transect safely.
- 2) Take note that the transect is not attached to the reel provided. You will need to attach the single weight bundle to the final loop (again, roughly two meters away from the final buoy) before throwing the end of the transect into the water. Store the empty reel in a secure location for later use.
 - 3) Make sure to anchor your boat once your transect is deployed and avoid placing your anchor in seagrass where possible.
 - Some prefer to anchor at one end of the transect and others prefer to anchor in the middle so they can shout data points to a team member recording on the boat. Whatever you decide, ensure that the anchor line and transect do not cross or pose a danger. Anchoring down current of your transect will help visibility.
 - 4) Have two team members safely enter the water with a mask and snorkel (and fins if preferred) and have each navigate to opposite ends of the transect. Each person should lift the weight on the end of the bottom line and carefully pull away from each other to eliminate any slack before returning it to the bottom.
 - If you deployed your transect on foot, have each person move their end of the transect 3 meters (10 ft) up current before pulling the line taught and putting it down again up to assure clear conditions.
 - It is best practice for at least one person to always remain in the boat.

SEAGRASS SURVEY PROCEDURES

It doesn't matter if you begin recording data at the end of your transect closest to shore, or furthest from shore. However, the order matters on the datasheet. Data collected at the end closest to shore should be recorded on the first line of your datasheet at Transect Position '0 m'. If you start at the end furthest from shore, fill the datasheet in from the bottom up.

- 1) Take your mask, snorkel, fins (if preferred), quadrat, depth pole, ruler and mesh bag to the beginning of the transect line (or next point along transect if on repeating step). Using the depth pole, measure and **record** the water depth in meters.
- 2) Dive down with the quadrat and find the weight marking the end of the transect. Carefully lay the quadrat next to the line, lining up the edge of the quadrat with the transect. Take care to ensure the seagrass blades extend through the quadrat and are not bent over underneath the PVC edges.
 - A weight belt may assist with reaching the bottom easily.
- 3) Reach down to feel the sediment. Dig your fingers into the top ½ inch and feel the texture. Ensure you do not have gloves on for this step! Describe the sediment as Sand/Shell, Sand, Fine sand, Fine sand/Mud or Mud/Muck on the data sheet.
- 4) Looking down on the quadrat from above, estimate the percentage that is covered by macroalgae – use the percent cover standards field sheet as a guide. **Record.**
 - A good rule of thumb: with a quadrat this size, the palm of your hand should cover about 5%!
- 5) Remove unattached macroalgae from the quadrat (if there is any) and place it to the side so that you can see the seagrass below. Looking down on the quadrat from above, estimate the percentage that is covered by seagrass – use the percent cover standards field sheet as a guide. **Record.**
 - Again, take care to ensure the seagrass blades are not bent over underneath the quadrat.
- 6) Identify the species of seagrass within quadrat and determine the percent contribution of each species to the cover. Use the field guide *Seagrasses of Southwest Florida*. **Record.**
 - Total composition must equal 100%
 - Ex. A quadrat might be 30% Turtle Grass and 70% Shoal grass
- 7) Use the back of the field guide *Common Seaweeds of Southwest Florida* to measure EPIBIOTA. Select None, Low, Mod (short for moderate) or High to describe the density. Decide whether the epibiotes are mostly Fleshy or mostly Encrusting.
 - You may need to look at seagrass next to your quadrat as epibiota are often removed during the macroalgae removal process.
 - Please make sure you circle two options in each cell of the *Epibiota* column, one above the squiggly line and one below.

- 8) Using your ruler, measure the height of three seagrass blades from each species present in your quadrat. If your seagrass blades are longer than 1 foot (roughly 30 cm), use the markings at the bottom of your depth pole to estimate length to the nearest 5cm. **Record.**
 - Ex. If there are two species of grass present in a quadrat you should measure 6 blades of grass total.
 - Place the “0” end in the ruler at the base of the blade, close to the sediment. Pull the seagrass up GENTLY to straighten the blade next to the ruler/depth pole to record the height.
 - Be sure you are measuring full blades (not broken ones). For Turtle Grass, blades should have a rounded tip. If a lot of blades are broken, note that in comments.
- 9) Swim or walk along the transect line until you see the next 10-meter mark on the transect line and repeat steps 2-8.
 - Only at the 20-meter mark, carefully collect macroalgae within the quadrat (even if attached) rather than setting it to the side. Transport back to the boat in the mesh bag.
- 10) Continue survey until one of the following conditions occurs:
 - a. The entire 50 meter transect is surveyed.
 - b. The transect becomes too deep to safely swim along the bottom.
 - c. Any other condition that may arise, ranging from poor visibility, poor weather, physically tired diver, etc.
- 11) Once your survey is finished wind up your transect by completing Steps 2 and 1 from the previous section (“Setting & Deploying Your Transect Line”) in reverse.

SPINNING AND PROCESSING YOUR MACROALGAE SAMPLE

- 1) Place your macroalgae sample into the mesh bag if it’s not already in there. If a lot of macroalgae was collected, you may need to divide the sample and process in chunks. You may also have very little or none!
- 2) Close bag securely and swing spin in circle for 30 seconds or until the sample is 95% dry.
 - Water is heavy and can affect a weight measurement.
- 3) Remove the macroalgae from the mesh bag and spread it onto your boat deck. Pick through the sample, putting anything that is not macroalgae (clumps of sand, snails, small crabs, shells) back in the water.
 - On top of saving any critters, this also ensures an accurate measurement.
- 4) Weigh the macroalgae by putting it into a bag and hanging it on the hook at the bottom of the spring scale. **Record** the weight of your sample in grams.
 - If you had to process your sample in chunks, ensure that you record the weight of the total sample on the datasheet.
 - PAST PARTICIPANTS: Please note that we will not be collecting samples for further processing this year!

BEFORE LEAVING THE SITE MAKE SURE YOUR DATA SHEET IS COMPLETE

If surveying another site...

- 1) Navigate to the next assigned station (GPS) location.
- 2) Repeat steps above until all survey locations are complete, you run out of time, or any other conditions arise ranging from poor weather, physically tired diver, etc.
 - Not all your sites have to be completed in one day, but you should not divide one site over multiple days.

WHEN YOU ARE FINISHED FOR THE DAY

- 1) Thoroughly rinse equipment (you should unspool your transect line) and set it out to dry.
- 2) Return your clean, dry, and reassembled survey kit to the UF/IFAS Charlotte County Extension Office.
 - If you are planning to participate in the Summer 2024 Surveys, you may hold onto your equipment. We recommend still caring for it as though you will be returning to it to avoid mold or and ensure its longevity. Someone will be at the Extension Office during business hours, but if you need to connect outside of business hours, let someone on the Sea Grant Team know.
 - Regardless of what you do with your equipment, please submit your datasheet either in person or virtually as soon as you can.

THANK YOU!!