

Rapid Assessment Protocol for Surveying Spawning Horseshoe Crabs

This protocol is used to rapidly assess the spawning densities of horseshoe crabs in place of the standard quadrat method. The purpose of the rapid assessment is to estimate spawning densities quickly during spawning season or to determine if the beach should be surveyed in the future. Data can be collected on any Cape beach, at high tide (day or night) anytime from late April – early July.

*We have a special preference for surveying new RA sites on the same days as our state quadrat surveys. For 2019, the special preference dates are: June 1, 3, 5, 15, 17 and 19.

Please read through these protocols fully before planning a Rapid-Assessment Survey.

Supplies

- 5 meter length of rope (to measure if a HSC if seen)
 - Pencil
 - Clipboard
 - Thermometer
 - Rapid Assessment Data Sheet (with Resight data sheet on other side)
 - Waders or hip boots
 - Clock (phone, watch, etc.)
 - Flashlight or headlamp (if conducting a night survey)
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- If thunderstorms are in the area do not go on the beach.
 - Do not go barefoot, Shoes are required. Waders or hip boots are recommended.
 - For night surveys bring a headlamp or flashlight.

Protocols

1. Arrive at the site at least 30 minutes before the predicted high tide.
 - We suggest NOAA tide predictions, but they are often not site specific. The FishWeather app can also have adjusted tide projections.
2. As you walk to the starting location, find a stick that you can use to determine high tide. When you get to the starting location, push the stick into the sand at the tide line. The tide line is the highest point on the beach that the water reaches. Move the stick up the beach as the water reaches higher on the beach. Begin the survey when the tide begins to recede and the water no longer reaches the stick. Record that time as your starting time.
3. While waiting for tide, fill out data sheet and the site info, starting coordinates, and environmental conditions as completely as possible. After using a thermometer for the water temperature, rinse it with fresh water if there is any available.

- Note: we suggest the weather app FishWeather and the GPS app MotionX GPS (which allows you to “track” your walk on the beach for distance.
 - You can also use GoogleEarth for GPS.
 - While a thermometer is desired, you may also perform a rapid-assessment without a thermometer. Simply make a note on the sheet and do not record water temperature.
4. Once you begin surveying, “track” with the GPS as you walk, so that you can record the accurate length of beach along the tide line.
 5. Record any horseshoe crabs within 5 meters of the high tide line. Use a 5 meter measurement (rope) to determine if they are inside or outside the 5 meter range, and record accordingly (if HSC is outside, record in comments). It is important to identify the sex of the crabs observed so that spawning indices (number of spawning females) and spawning sex ratios can be calculated.
 - Tally males and females on the appropriate lines as you go. When done, add tally marks and circle total number for each line.
 6. If you want to make notes about crab behavior, clusters, etc., you can do that in the notes portion as well. Also note if you see any SINGLE females (without a male attached), as these are rare!
 7. If you encounter a button-tagged crab, record the tag number on flip-side of the data sheet (Horseshoe Crab Resight Data Sheet). Do not remove the tag.
 8. Once you are done surveying, record the end time. Also, end the GPS “track” and record the length of beach, and then record the end coordinates.
 9. Even if the weather prevents you from doing the survey, please fill out the survey sheet with all possible information and explain why the survey could not be completed in the comments.
 10. Return all data sheets to the Horseshoe Crab Field Coordinator at WBWS (note: if you are farther away, you can scan the forms and send them in an email, and then snail mail the original forms).

Notes:

- Feel free to take photos while surveying and email them to the Horseshoe Crab Field Coordinator – it helps us get a better idea of the site as well!
- If there is a specific beach close to you that you are interested in surveying, remember: the more data the better! Though our highest priority survey days are the ones listed, the more days you can survey, the better! If you want to survey a beach every day for a month, every weekend in May and June, or every night for a week, all of that data is welcome!
- It is also helpful to get rapid-assessments on the beaches we currently *do* survey, on “off” days. We currently have state quadrat survey beaches in Wellfleet, Orleans, and Chatham. Contact the Horseshoe Crab Field Coordinator if you are interested in surveying on off-days.
- Always bring a copy of these protocols with you when you survey, and feel free to keep extra data sheets in your car, ect. in case you feel like doing an impromptu rapid-assessment!

Please return data sheets to WBWS – Dana Grieco – Mailbox at the back of the staff offices