

2019 EASTERN BOX TURTLE POPULATION MONITORING GUIDELINES

(June 03, 2019)

SURVEY INSTRUCTIONS

Year 1 – Protocol Evaluation Guidelines

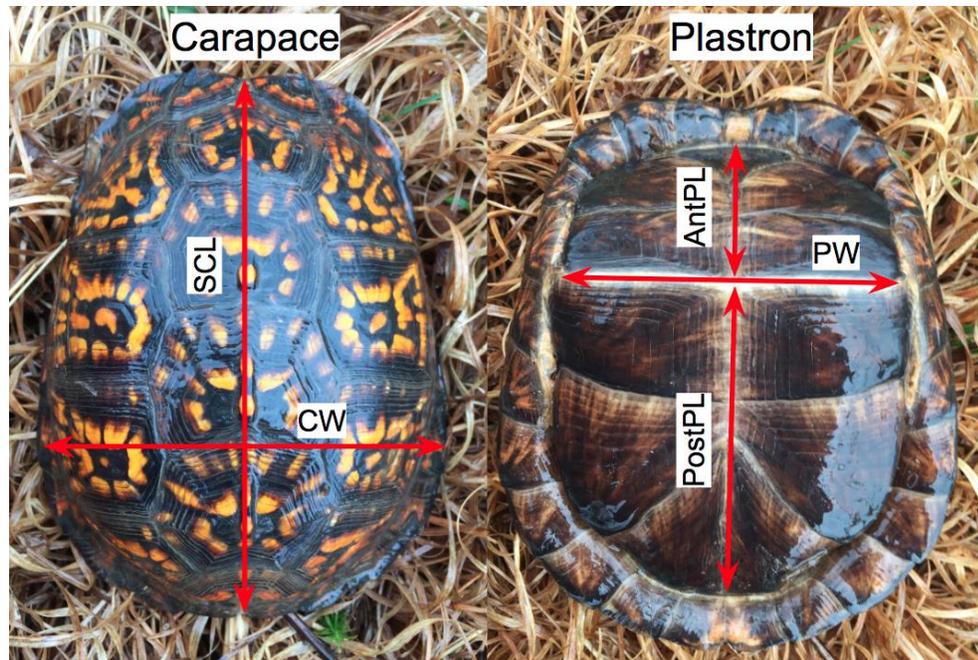
- We recommend that everyone test all three options at 2 or more sites in 2019. At a minimum, evaluate the feature-based survey and one of the plot-based survey options at one or two sites.
 - For example, on a given day you could try the feature option at site 1 and plot option at site 2. Then on another day, you could try the plot option at site 1 and feature option at site 2.
 - It would be helpful if you test the protocols on survey locations of varying size.
- As time allows we recommend testing these methods at more sites opposed to performing multiple surveys of the same type (feature or plot) at the same site.
- For plot surveys, please limit the number of surveyors to 2 per plot during each visit. If 2 surveyors are used the survey time should be adjusted accordingly (would be 7.5 minutes of search time/plot).

Box Turtle Visual Rapid Assessment

- Fill out the *Box Turtle Visual Rapid Assessment* field form.
 - Fill out the first section of feature surveys, except the total search time, time not searching and total TECA found. Those fields will be filled out at the end of the survey.
 - Fill out the second section for plot surveys, except the Time not searching and total TECA found. Those fields will be filled out at the end of the survey.
- Optional - If you find it helpful, each time you stop the survey for any reason (e.g. process turtles, answer a phone call), record the stop time on the *Site Visit Log*, and then record the time when you resume the survey. Keep track of total time spent looking for turtles on this form (see example below).
- Cover the entire survey site as evenly as possible, but giving more time to thickly vegetated areas and less time to open areas where visibility is good. Your total survey time should equal approximately 0.75 person hrs/ha. For larger survey areas (> 2 ha) it helps to divide the feature into sections and time your survey of each section. For example, if you have a square 4 ha feature you can divide it into quadrates and time your survey of each quadrate making sure you finish each within 45 minutes (assuming one surveyor).
- At the end of the survey, record the end time on the *Site Visit Log* and complete the *Box Turtle Visual Rapid Assessment* form.

Turtle Processing

- Complete a *Box Turtle Individual Form* for each turtle found (including recaptures).
- Record the following information
 - *site name*
 - *site code (optional)*
 - *Survey type* (options are feature or plot). For plot surveys please note which of the four plots you are surveying by checking the appropriate box.
 - *visit* - note whether this is your first, second, or third visit. An additional option is available if you visit the site more than 3 times.
 - *observer(s)* that found the turtle (full name)
 - *date* of the survey (mm/dd/yyyy)
 - *time* the turtle was found
 - *turtle ID#* (coordinate with you state lead for a notch code system)
 - *sex* (male, female, unknown)
 - *age* (A=adult, J=juvenile)
 - *waypoint ID* (where appropriate)
 - *unmarked, marked 1st capture, within yr recap* – unmarked is for turtles that have not been marked to date. Marked 1st capture is for turtles that were marked in previous years but where this is the first time they were captured during the field season. Within yr recap is for any turtles that were captured previously during the same field season.
 - *coordinates* of the location where the turtle was found. Please use decimal degrees for the lat long (dd.dddd)
 - *SCLmin (mm)* – straight line carapace length measure down the middle of the carapace. See the diagram below.
 - *CW (mm)* – measure of the widest point of the carapace
 - *AntSPL (mm)* – measure down the middle of the anterior portion of the plastron
 - *PostSPL (mm)* – measure down the middle of the posterior portion of the plastron
 - *SPLmin (optional)* - if the turtle hinge is completely open and you are able to get a straight line measure of the full plastron length you may use this field opposed to the AntSPL and PostSPL.
 - *PW (mm)* – measure the width at the humeral-pectoral seam
 - *SH (mm)* – measure the maximum height of the carapace (typically at the hinge)



- *mass (g)*
- *photo file names* (optional) if it helps you organize your photos at the end of the field season. Always take a full frame photo of the carapace and plastron for each capture.
- *PIT number* (optional) if you PIT tag the turtle
- *wear class* of the right pectoral scute
- *visible annuli* - the number of annuli that are visible
- *gravid or not gravid* for females that you are able to palpate
- *general health* of the turtle including any signs of sickness (lethargy, nasal discharge, swollen eyes, etc.)
- *injuries* observed including missing limbs or toes, eye wounds, or stub tails.
- *Scute morphology* - note if the turtle has a normal number of marginal, vertebral and costal scutes. If not normal please note what irregularity is present.
- use the shell sketch to note the notches and any injuries
- *comments* to provide any additional information that may be important
- Check with your state lead to determine how to handle notching of turtles with an irregular number of marginal scutes (e.g. 11 or 13) on one or both sides of the carapace. Researchers use several ways to count marginal scutes including from the anterior to the posterior, head to the bridge and tail to the bridge, and posterior to anterior.

