Maryland Coastal Bays Program
Terrapin Survey Land-Based Protocol

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May 31st to June 11th, 2022

Land-Based Survey Design:

Sites for MCBP's land-based surveys were chosen based on public access points with a clear view of the water and were chosen to cover a variety of habitat types including marshes, sandy shorelines, shorelines along open water, and developed shorelines. Citizen scientists are able to complete a land-based survey at any point during the survey time period.

Survey Timeframe:

The 2022 Terrapin Survey will take place from May 31st – June 11th.

The Terrapin Survey occurs over the 12-day period after Memorial Day. This time period is when terrapins are highly active and are aggregating in clusters after emerging from hibernation.

Weather and Survey Conditions:

Tide: It is recommended to survey within 2 hours of low tide for the best chance of observing terrapins. Record the tidal stage on the datasheet so we know what tide data was collected on. There are several resources for determining tidal stage. Phone apps such as Tides Near Me or websites such as https://www.saltwatertides.com/dynamic.dir/marylandsites.html are good resources.

Weather: The optimal weather conditions will include clear skies and warm water temperatures (70^{o}F +): If you have a thermometer available, record air and water temperatures. Warmer temperatures mean more surface basking behavior. Record all weather observations, including cloud cover, on the datasheet. Significantly more terrapins are observed with water temperatures of >70^{o}F. **Calm days with little wind and low cloud cover (lots of sun) are best for spotting terrapins.**

Water: There should be little wind or chop on the water. Estimate wind speed (mph) and direction on the datasheet. Observing terrapins becomes more difficult in choppier water. **Observing in conditions with wind speeds less than 10 miles per hour are ideal.**

Recording Data:

Upon arriving at the site, take a few minutes to look around. If the site is a public boat launch, park away from the ramp and in designated "cars only" spaces (if indicated). Do not interfere or interrupt use of the boat ramp.

Decide who will be observer and recorder (if more than one person surveying). If the site is a sandy beach area, look about the high-water line (fairly obvious with debris piled high on the shoreline) for possible eggshells from predated nests. Shell material will be white and curled. Sometimes yolk is still visible inside the shell. Also look for terrapin tracks, 2 parallel sets of small claw marks about 8 inches apart, possibly with a "dashed line" between them which is made by the tail. Record on the datasheet any signs of terrapin presence.

To perform the land-based survey, volunteers position themselves along the water's edge in a place with a clear view of water in front of them. To count the terrapins, surveyors perform a left to right sweep of the area, counting all terrapins visible. During the left to right sweep of the water, all terrapins are counted during the sweep, but the observer does not count terrapins if they appear in an area they have already passed during their left to right sweep. The sweep should not take longer than around a minute.

After counting, the observer should wait five minutes and repeat the left to right sweep. This process should be repeated for a total of **three left to right sweeps per site for a total of 15 minutes.** If a land-based survey site shows very high levels of terrapin abundance relative to other land-based survey sites, this may represent a significant population of terrapins in this area.

Remember to count terrapins by category on the datasheet:

- Adult Females (larger and broader heads)
- Adult Males/Juveniles (smaller heads)
- Undetermined (if you're not sure)

Only mark a turtle as male or female if you are certain. It is ok to mark turtles as undetermined!

Keep track of start & end times for each survey. If no terrapins are sighted, enter "0" or "none" in "Count" column. If terrapins are spotted, record the count in the "Count" column. Even if no terrapins are observed, noting the absence of terrapins is just as important as noting their presence and please write legibly on the datasheets. NOTE: The datasheet can include up to four surveys per sheet.

Take the latitude and longitude (**NAD 83m Decimal Degrees; ex. 38.285467, -75.154463**) of each survey location. If you can also photograph them that would be great! Please note any other comments either in the section on "Overall Comments" or in the lower margin of the datasheet.

The use of binoculars or a spotting scope is helpful for a land-based survey as submerged or floating sticks can look like terrapin heads from a distance.

Completed Datasheet Example:

Land-Based Terrapin Headcount Surveys

Survey Point Latitude: 38.285401 Dates: 6/1/2021 Page 1 of 1

Survey Point Longitude: -75.1533919 Location (County & Area): Worcester, MCBP office

Surveyor Names: John Doe Air Temp: 75 (°F or C)

Wind Direction & Speed: 5mph NW % Cloud Cover: 10% Tide: low-incoming Water Temp: 70 (°F or C)

Survey Period	Start Time	End Time	# Females	# Males/Juvs	#Unknown	Total # Terps	Comments
1	4:00	4:05	2	–	1	3	on bank
2	4:05	4:10	–	–	2	2	Swimming
3	4:10	4:15	3	–	3	6	

Survey Equipment Used: ☑ Binoculars ☐ Spotting Scope ☐ Other _____

Submitting Your Data:

Please send your datasheets to sandis@mdcoastalbays.org or mail to Maryland Coastal Bays Program, Attn: Sandi Smith, 8219 Stephen Decatur Highway, Berlin, MD 21811. You may also drop off the datasheets at the office; please be sure to call 410-213-2297 ext. 106 to arrange a time for drop off.

Clear photos or scans of datasheets are perfectly fine to submit via email.

Questions and Concerns:

Please contact Sandi Smith at sandis@mdcoastalbays.org or 410-213-2297 x 106 with any questions. For any questions while surveying on site, please call or text (preferred) her cell phone at 443-783-5293.

If you are unable to print datasheets and protocols, please contact Sandi Smith to receive printed copies.

Thank you for volunteering in this valuable citizen science survey!