

2021 Annual Terrapin Survey Report

Terrapin Surveys were conducted in the Maryland Coastal Bays watershed from June 1, 2021 to June 12, 2021. This was the first year the surveys were conducted over an extended period of twelve days, compared to only a period of five days in previous years. Additionally, this year assigned routes were given to surveyors to help standardize the survey. Boat and land-based methods were used to survey for terrapin presence.

Boat-based Surveys

Boat-based surveys consisted of traveling slowly along the shoreline and counting the number of terrapins observed. Motorboats and kayaks were used.

A total of 13 boat-based surveys were conducted from June 1st – June 12th by 22 surveyors.

12 survey teams surveyed 12 locations for a total of 18.39 hours. 251 terrapins were observed over the 18.39-hour period, for an average of 13.65 terrapins/hour (Figures 1,2). This was only an increase of one terrapin from the 2020 survey period despite over an hour increase of hours surveyed on the water. Similarly, the average number of terrapins sighted/hour dropped from 14.37 in 2020 to 13.65 in 2021. A total of 36 surveyor effort hours were expended on the survey. Surveys were conducted in all five of the Maryland Coastal Bays.

Observed water temperatures ranged from 16.7 – 22.2°C.

Land-based Surveys

Land-based survey protocol called for counting the number of terrapins found within three 5-minute time periods at a static location. Not all observers strictly followed protocols.

A total of 14 observers surveyed 18 locations for a total of 6.78 hours. 138 terrapins were observed over the 6.78-hour period, for an average of 20.35 terrapins/hour (Figure 3). This was an increase from 9.77 terrapins/hour in 2020. This difference may be due to a change in protocol that reduced the survey time from three 15-minute intervals to three 5-minute intervals. We did not see any difference in the number of terrapins sighted during the 15-minute versus 45-minute survey period, so this decrease in survey length may have led to the increase in terrapins sighted per hour. Due to differences in yearly survey locations and times, and lack of protocol execution by volunteer observers, land-based surveys should only be used for presence/absence data.

Observed water temperatures ranged from 17.8 – 30.6 °C. Water temperatures were not recorded for 6 surveys.

Volunteer Participation

Volunteer participation was at 32 with 4 Maryland Coastal Bays Staff members also participating, bringing the total surveyor number to 36. 2021 was the third highest year for volunteer participation. Despite the level of volunteer participation, 2021 had the lowest number of total survey hours since 2014 with 25.17 hours spent on surveys. Effort hours for volunteers was 43.89 hours, which was nearly a 4 hour decrease from 2020. This may be due to the change in protocol for the land-based survey. The average number of effort hours per volunteer was 1.37 hours (Figure 4).

Stormy weather during the survey period could be one factor that caused the decrease in total survey time and effort hours for volunteers. Several volunteers commented on the weather inhibiting their ability to survey for a longer period, and some were unable to complete any part of a survey due to the weather. Two land-based surveyors commented that waters were very choppy during their survey period. Typically, terrapins will surface less frequently or stay on land if waters are choppy. Chop can also affect a surveyor's ability to spot a surfacing terrapin in between the waves.

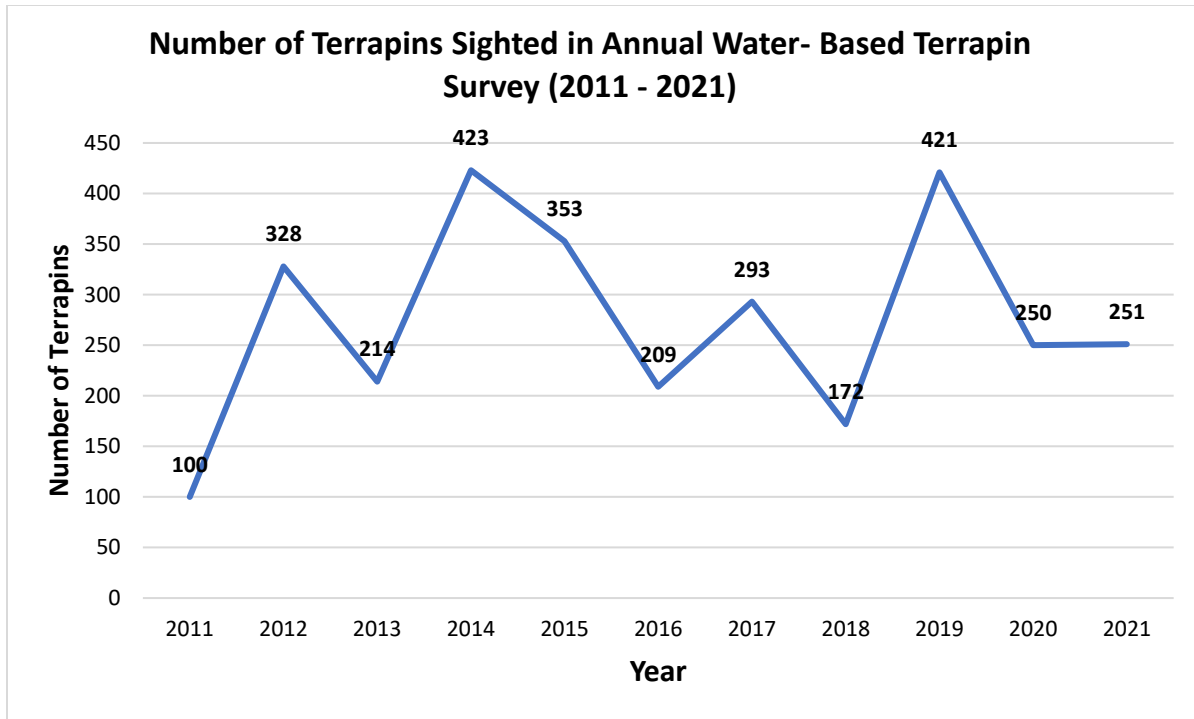


Figure 1. Number of terrapins sighter per year, 2011 – 2021, during boat-based surveys

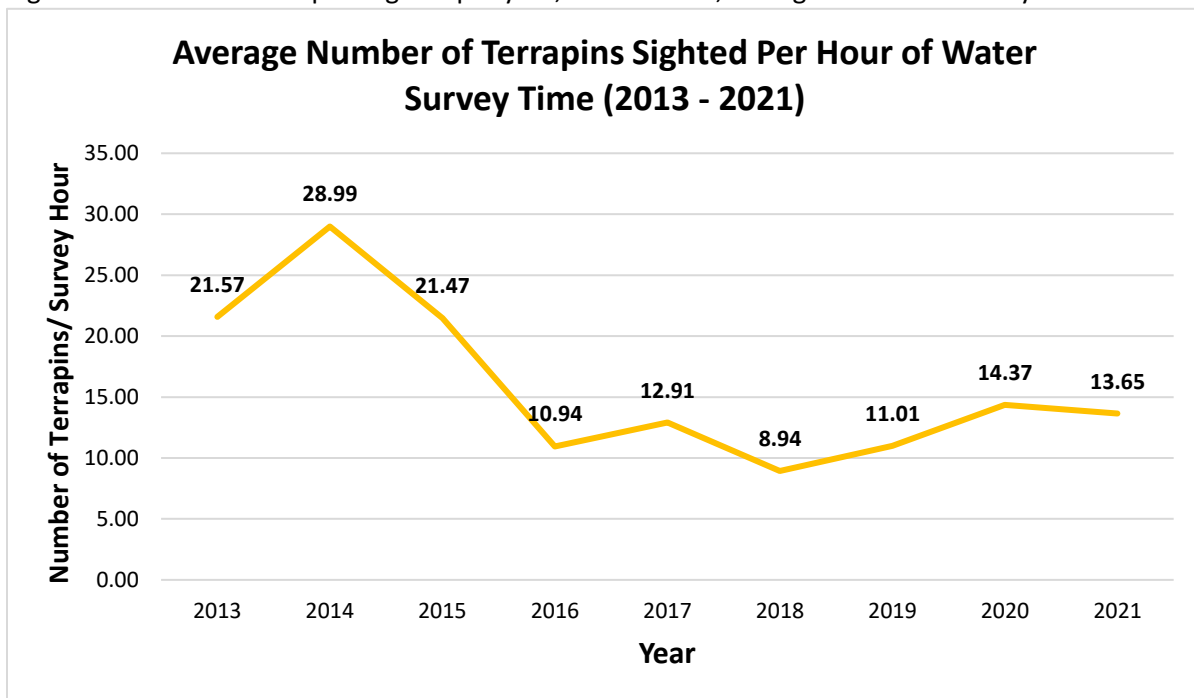


Figure 2. Average number of terrapins sighted per hour of survey time, 2013 – 2021, during boat-based surveys.

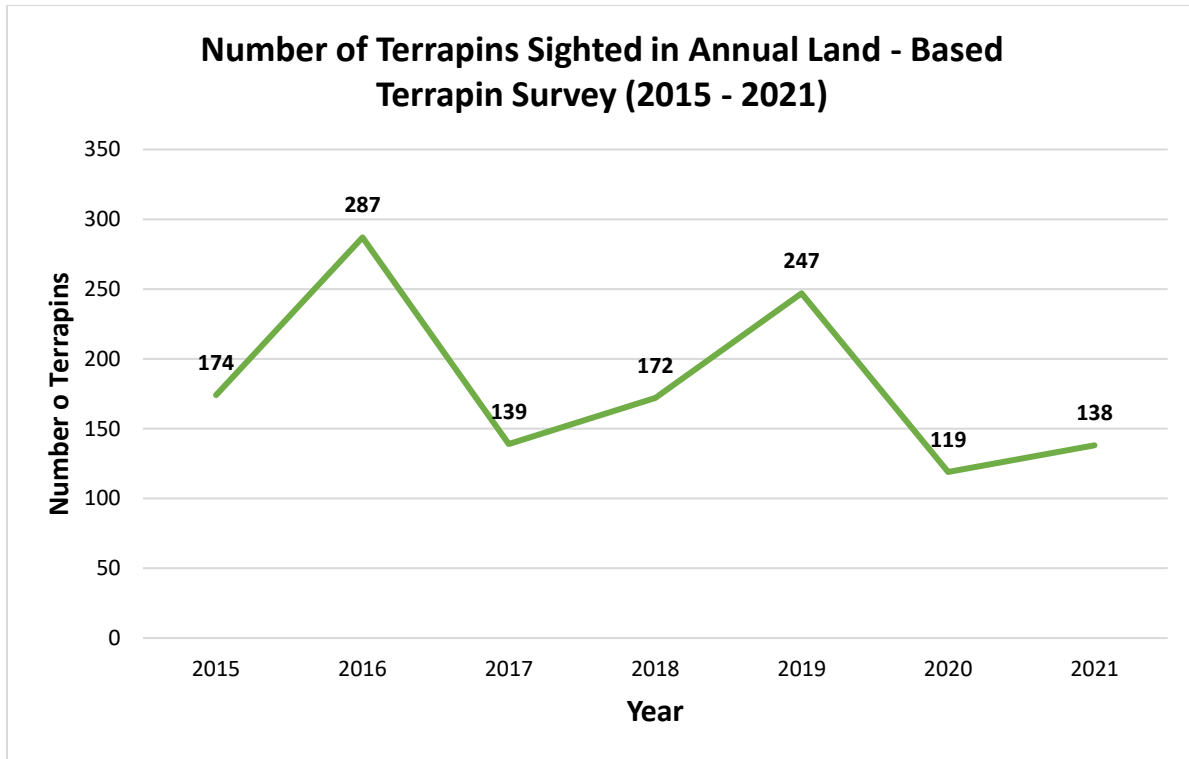


Figure 3. Number of terrapins sighted per year, 2015 – 2021, during land-based surveys.

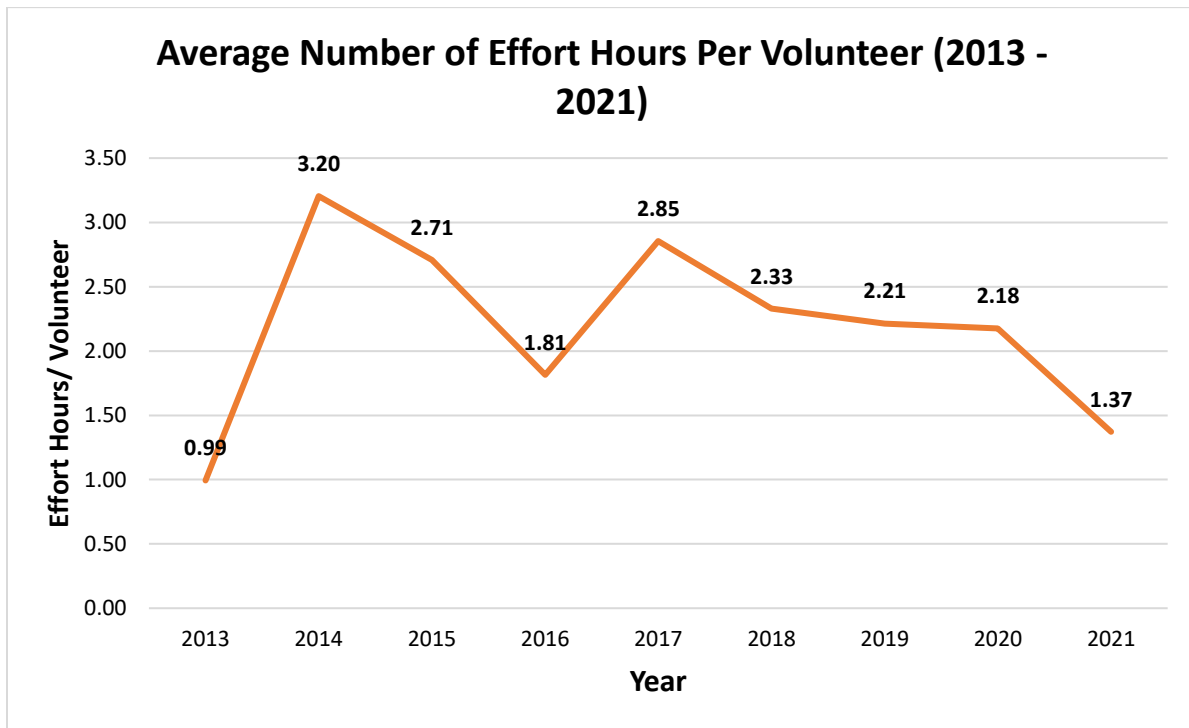


Figure 4. Average number of hours of effort extended per volunteer, 2013 – 2021.