2022 Annual Terrapin Survey Report

Terrapin Surveys were conducted in the Maryland Coastal Bays watershed from May 31, 2022 to June 11, 2022. 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 11 boat-based surveys were conducted from May 31st – June 11th by 12 surveyors.

11 teams surveyed 8 locations for a total of 12.32 hours. 195 terrapins were observed over the 12.32-hour period, for an average of 15.83 terrapins/hour (Figures 1,2). This was a decrease of 56 individuals from the 251 terrapins sighted in the 2021 survey period despite an increase of 2.18 terrapins/hour in 2022. The average number of terrapins sighted/hour increased from 13.65 in 2021 to 15.83 in 2022. There was a decrease of total surveyor hours expended from 47.2 hours in 2021 to 32.2 hours in 2022. This explains the decrease in total number of terrapins sighted despite an increase of terrapins/hour. Surveys were conducted in all five of the Maryland Coastal Bays.

Observed water temperatures ranged from 64 – 88^{o}F.

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 8 observers surveyed 17 locations for a total of 8 hours. 153 terrapins were observed over the 8-hour period, for an average of 19.13 terrapins/hour (Figure 3,4). This was a slight decrease from 20.35 terrapins/hour in 2021. There was an increase in time spent on land surveys, with 6.78 hours in 2021 and 8 hours in 2022. There was also an increase in sightings when volunteers surveyed for over 5 minutes, causing the total number to increase by 56 individuals. Without including surveys of over 5 minutes, total terrapin sightings were 97. 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 59.9 – 84.2 ^{o}F. Water temperatures were not recorded for 6 surveys.

Volunteer Participation

Volunteer participation was at 9 total with 3 Maryland Coastal Bays Staff members also participating, bringing the total surveyor number to 12. This was a 66% decrease from the 36 participants in 2021. Despite the level of volunteer participation, total survey hours only decreased by 4.85 hours with 20.23 hours in 2022 compared to 25.17 hours in 2021. Effort hours for volunteers was 28.17 hours, which was also a significant difference from 43.89 hours in 2021. This is likely due to the lower level of participation from volunteers. The average number of effort hours per volunteer was 3.13 hours, becoming the highest since 2014 (Figure 5).

Stormy weather during the survey period could cause a decrease in total survey time, effort hours for volunteers, and sightings of terrapins. 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. Fortunately, our surveyors were blessed with good weather this year, compared to the stormy weather during surveys in 2021. Only one surveyor in 2022 commented that waters were rough and choppy, though they were still able to observe a few individuals.

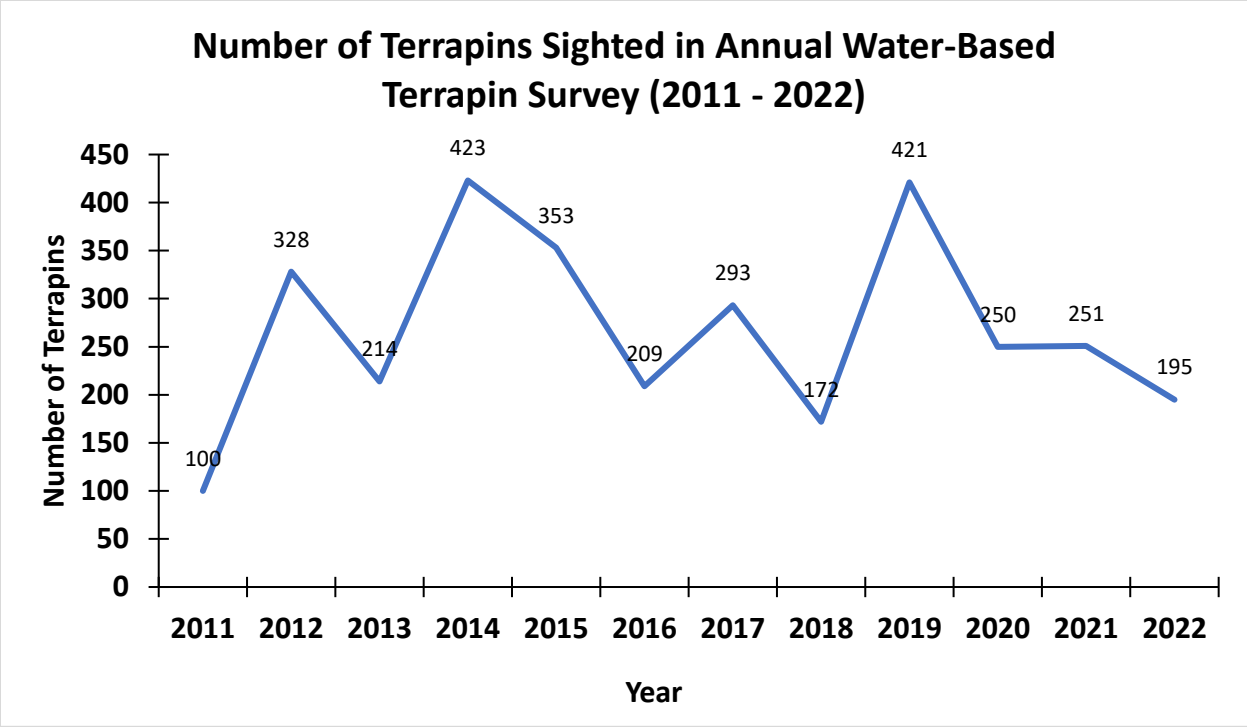

Figure 1. Number of terrapins sighter per year, 2011 – 2022, during boat-based surveys.

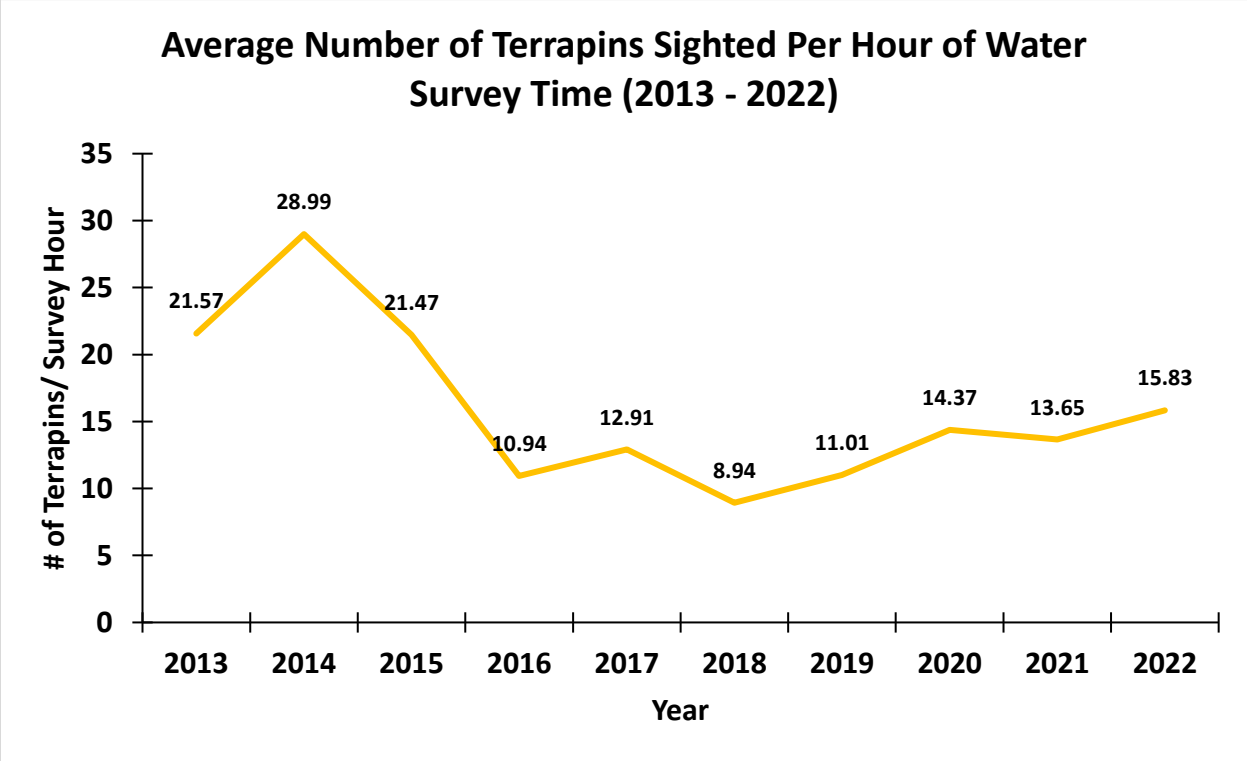

Figure 2. Average number of terrapins sighted per hour of survey time, 2013 – 2022, during boat-based surveys.

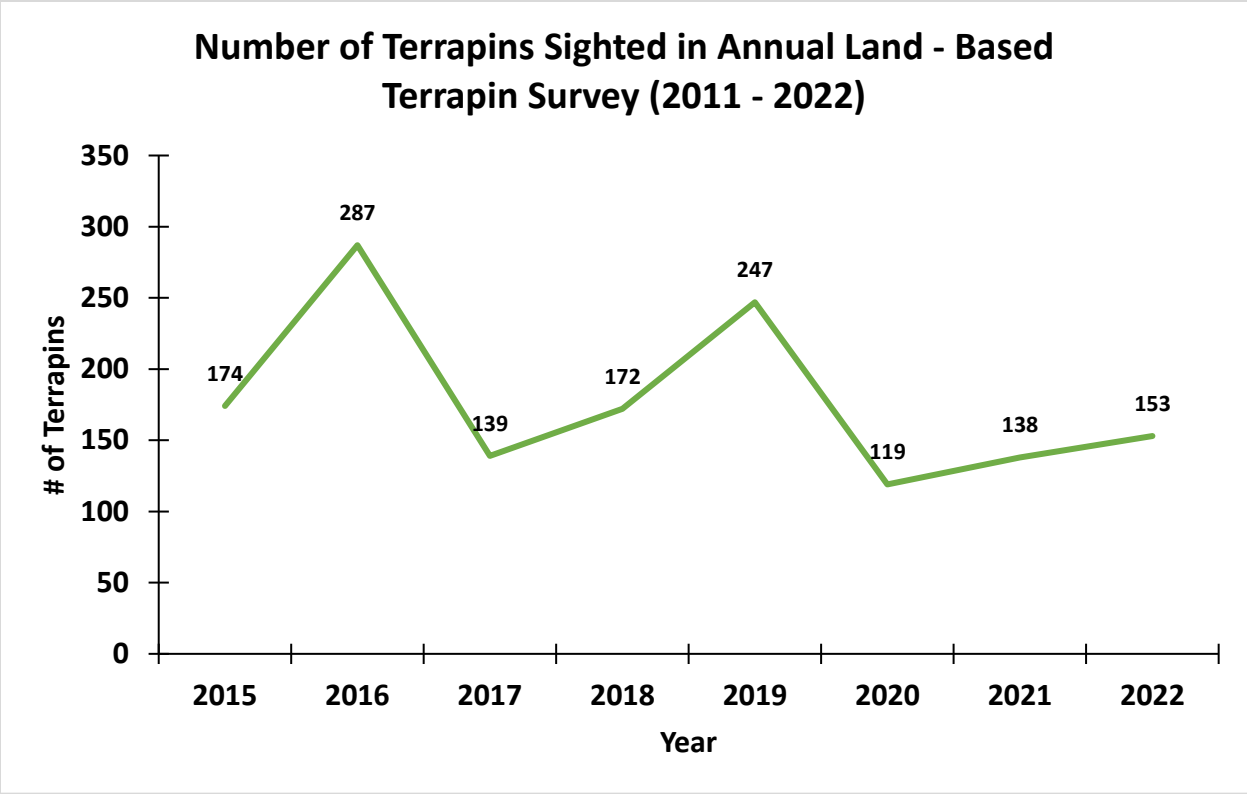

Figure 3. Number of terrapins sighted per year, 2015 – 2022, during land-based surveys.

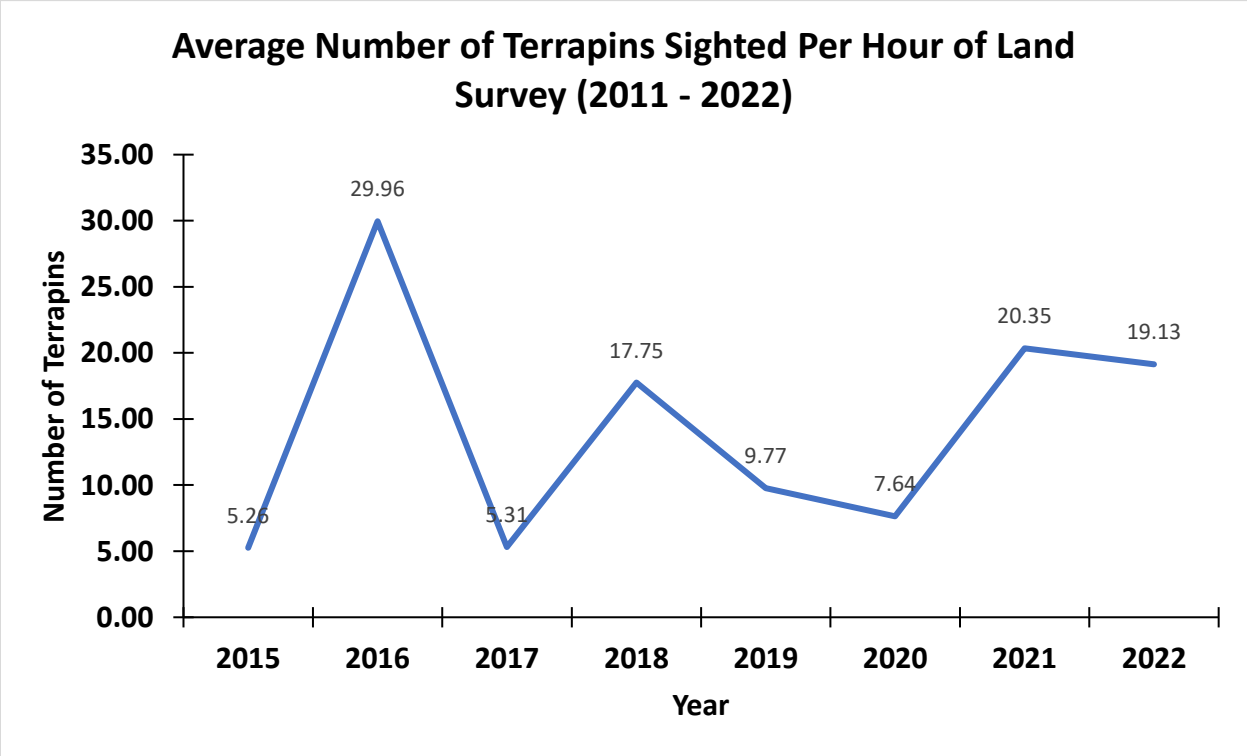

Figure 4. Average number of terrapins sighted, 2015 – 2022, during land-based surveys.

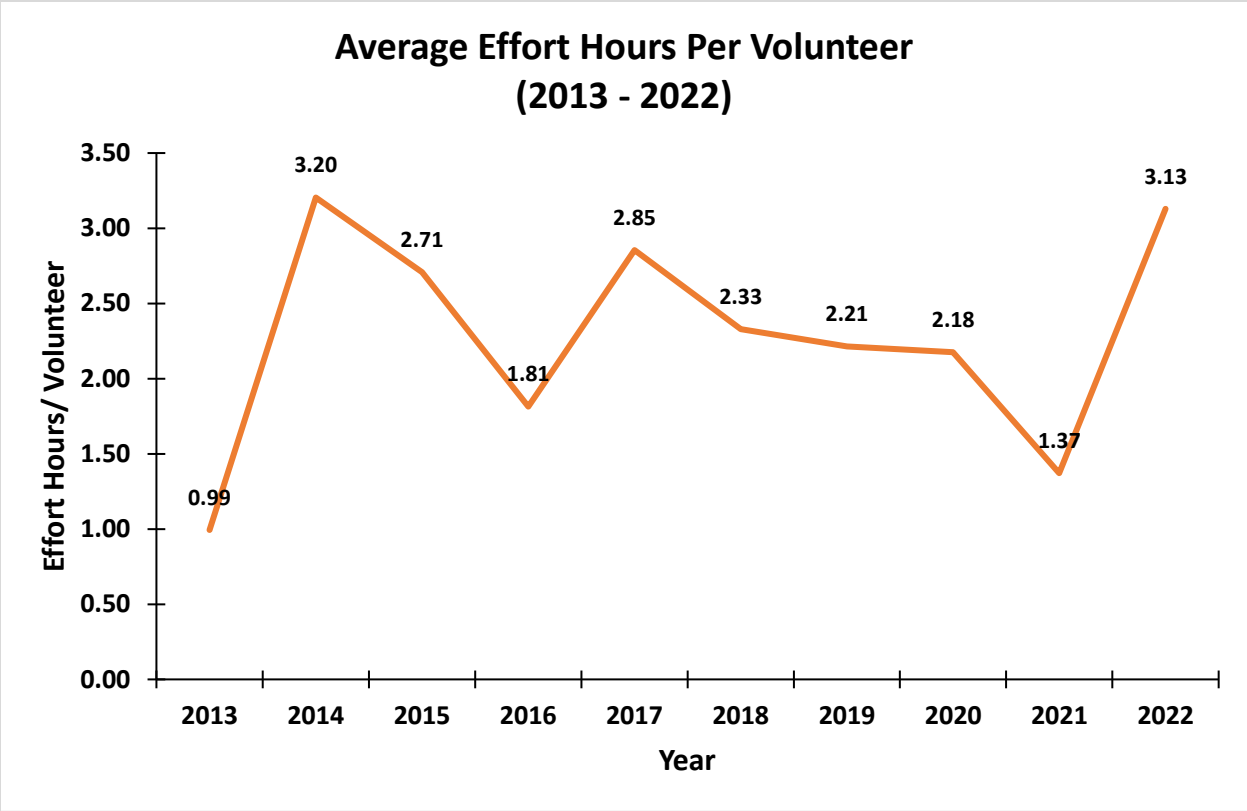

Figure 5. Average number of hours of effort extended per volunteer, 2013 – 2022.