

Turtle Conservation Work 2024:

Ward Pound Ridge Reservation

Preliminary Report



Dear Friends of Trailside Nature Museum,

Thank you again for your generous funding of the Turtle Conservation Project at Ward Pound Ridge Reservation. With your support, in 2024 we were able to significantly expand our work on the wood turtle monitoring project, begin monitoring of box turtles, gather new information about the distribution of spotted turtles in the Reservation, and begin a turtle trapping initiative that will allow us to estimate turtle populations sizes, track population trends overtime, and assess which challenges may pose the greatest threats to our native turtle populations in the Reservation.

Specifically, your support allowed us to host the NYNJ Conservation Dog for two full days of surveying, leading to the location of a previously undocumented wood turtle (which is now the youngest individual we have identified) as well as three previously undocumented box turtles that live in high-risk mowing areas. These turtles, particularly the wood turtle, are unlikely to have been located without the assistance of the dog.

We also expanded the wood turtle project by introducing a habitat use analysis component. With the radio telemetry equipment you funded, we were able to locate tagged wood turtles regularly throughout the summer. Each time a turtle was relocated, data was collected on several habitat variables. These data will be used to create a habitat map of wood turtle activity and determine the areas where wood turtles may be at the greatest risk of vehicle collision, mower casualties, or poaching. Additionally, we plan to use the habitat data we have collected to create a linear regression model which will allow us to statistically compare random point habitat data to our specific wood turtle location data. This will help develop a better understanding of how wood turtles make localized habitat selection decisions which will help inform meadow management strategies.

Friends funding was also used to begin an aquatic component of the turtle project. Traps were set in the Michigan Road Wetland, Sand Pit Pond, and Waccabuc River. The goal of trapping was to assess spotted turtle population size in the park and create a baseline dataset of turtle populations. Three spotted turtles were caught at the end of Michigan Road. While we did not trap other locations for spotted turtles this year, we have been made aware of vernal pools that we suspect are used by spotted turtles which we plan to explore next year. It was also discovered that a small population of Musk Turtles is using the Waccabuc River.

Early painted turtle population analysis has revealed that while we have painted turtles in healthy numbers, reproductive success appears lower than in other parks. It is hypothesized that this is due to the high mesocarnivore population in the Reservation.

A full report of our results this season is still forthcoming, however, the rest of this document will describe preliminary results. Many of the turtles discussed in this report are declining state-wide and globally. The efforts we can put towards this project due to your support are an important part of contributing to the long-term success of turtle populations in New York.

Thank you,

Leah Cass

Curator of Natural Resources

Ward Pound Ridge Reservation Box Turtle and Wood Turtle Searches:

Summary of new turtles located this year through conservation dog visits and by chance

This year, new box turtles and wood turtles were added to the monitoring program both by conservation dog surveys and by chance encounters.

The first conservation dog survey at Ward Pound Ridge Reservation took place on May 7th, 2024. The dog surveyed meadows around the red covered bridge but was unsuccessful and then transitioned to surveying the meadow area behind Dan's house. One wood turtle was located in riparian shrubland habitat along the Cross River near the border to DEP property. This wood turtle is a female that is estimated to be 8 years of age, the youngest individual we have documented in the park.

The second conservation dog survey took place on May 24th. This survey focused on the meadow areas surrounding the meadow parking lot. This area was selected due to the need to occasionally mow off-season for events and because 1 tracked wood turtle is known to spend the summer in that area though it has been underexplored for possible use by other wood turtles. Three box turtles were located during this survey. All three were mature adults. Two were male and one was female. All three were notched for reidentification.

Two additional wood turtle were added to the monitoring program this year by chance encounter. The first is a female turtle that was located by Mario as she crossed the road near the dump in the morning. This turtle was later observed laying a nest on the Park Office lawn. The second was a male individual found by chance while performing a telemetry survey for a different turtle. He was located in the stream and was engaged in mating activity with an unknown female turtle. The pair was observed until they dispersed but only the male was able to be captured. He now has a radio transmitter and has been tracked regularly throughout the summer. He is currently the only active male in the monitoring project.

It should also be noted that all three new wood turtles located this year show signs of a reproductively active population which is highly encouraging. However, continued monitoring with a focus on the location of more successful nesting areas remains a top priority.

Several box turtles were located by chance encounter with the majority being found in May and June. All turtles located by chance encounter have been measured, photographed, and notched (Figure 1).

This year, Muscoot Farm and Marshlands Conservancy both also funded conservation dog visits. Box turtles were found at both of those sites as well and provide interesting comparisons to findings at Ward Pound Ridge Reservation. Most notably, younger turtles were found at Muscoot and Marshlands (Figure 1).

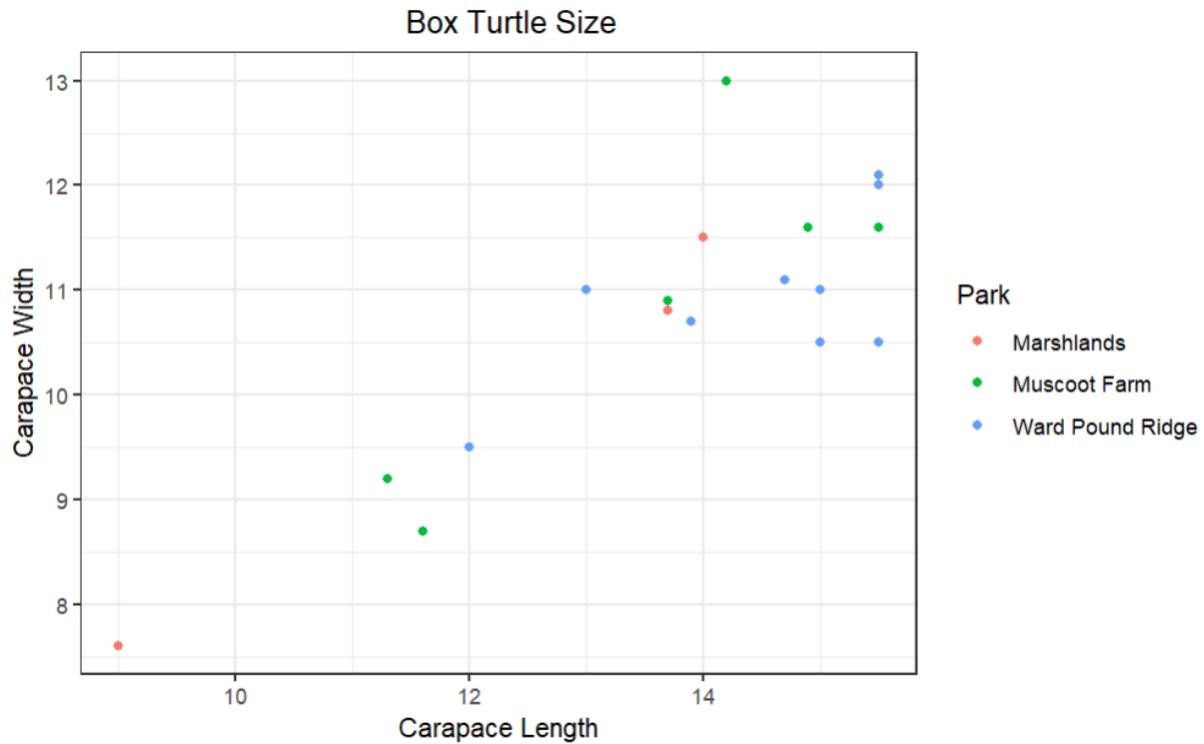


Figure 1. This graph displays the size of box turtles located at each park. The smallest box turtle observed at the Reservation was 12cm in length (nearly full grown). While Marshlands and Muscote Farm had a wider age range of located turtles.



Image 1. Conservation Dog Peat, ready to work!



Image 2. Wood turtle located by Peat.

Assessment of Localized Habitat Selection Decisions by Wood Turtles:

This summer the radio telemetry equipment was put to consistent use for the development of a wood turtle habitat map and model. The goal of the habitat map is simply to create a map that shows points of repeated wood turtle locations. This will help us assess the areas that turtles may be at risk of mowing conflicts or vehicle collisions. It will also potentially point to areas that would benefit from habitat management for promoting wood turtle success.

Additionally, we have collected habitat data at the points where turtles have been relocated and at random points generated within the overall wood turtle habitat patch. Some of the key variables that were included were: distance from road, stream, and trails, habitat type classification, presence of thorny vegetation, percent cover of dominant vegetation, and more. Variables will be compared between the turtle locations and the random points to statistically analyze how turtles make localized decisions about which areas to use within their suitable habitat patch. This information will be particularly important for generating meadow management recommendations that reflect the ways turtles are currently using the landscape.

The cellular tracker funded by the Friends in 2023 has also been instrumental in this research. Though the battery has been more inconsistent than we hoped leading to less frequent data transfers, we have yielded over 100 datapoints from the cellularly tracked turtle which helped improve the sample size for this project.

By regularly tracking the turtles for this goal we have also discovered that it is more common than previously thought for wood turtles to be crossing the park roads.

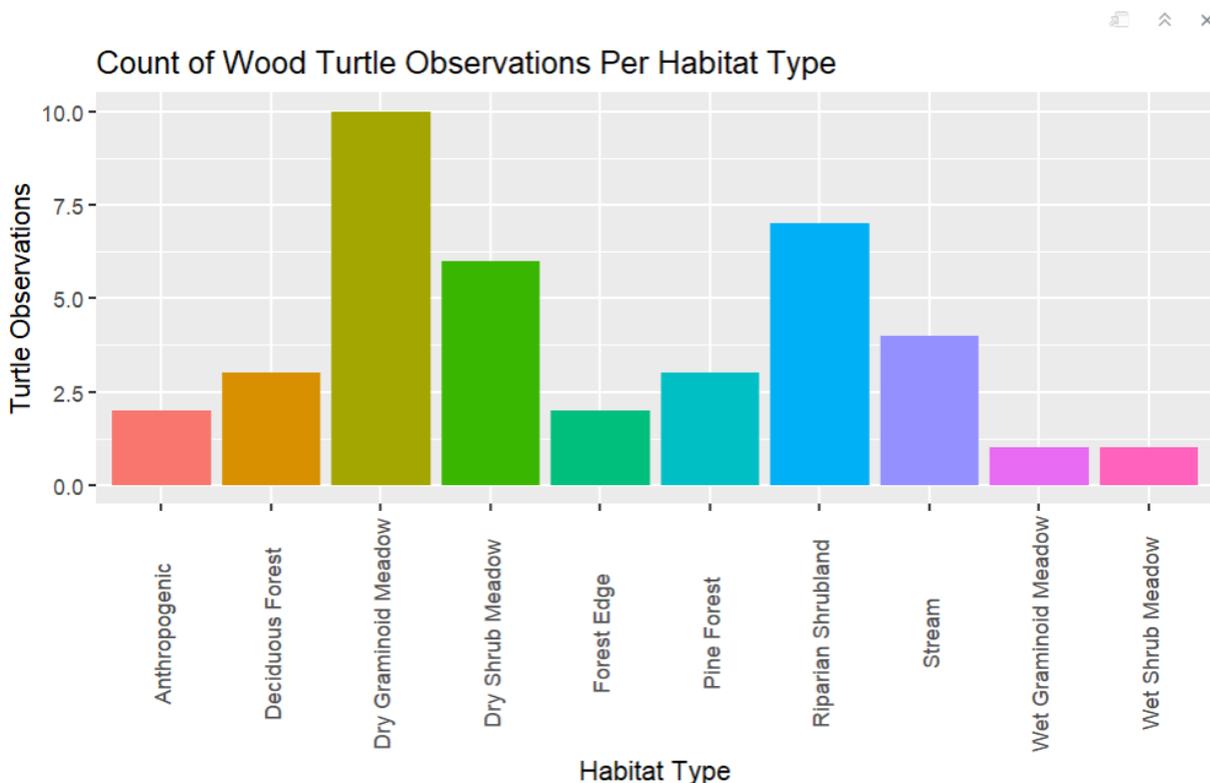


Figure 2. Preliminary Counts Turtles Observed Per Habitat Type

Aquatic Turtle Trapping at Ward Pound Ridge Reservation:

The trapping program at Ward Pound Ridge Reservation this summer focused on the wetland at the end of Michigan Road that is known to be used by spotted turtles and a stretch of the Waccabuc River. The goals of trapping were to assess the size of the spotted turtle population because spotted turtles are a species of special concern in New York and to create a baseline population estimate of common turtles in New York.

The creation of baseline population estimates is important because it gives us the ability to assess threats to the current population and will allow us to make comparisons over time. Painted turtles, the most common turtle species in New York, undergo temperature dependent sex selection which makes them vulnerable to climate change. Additionally, the population analysis revealed that as observed with box turtles, reproductive success appears to be lower at Ward Pound Ridge Reservation than at other sites. The only exception to this was snapping turtles which were found in all life stages throughout the Reservation.

Unexpectedly, we also identified a small population of musk turtles using the Waccabuc River. No invasive red-eared sliders were captured in the Reservation.

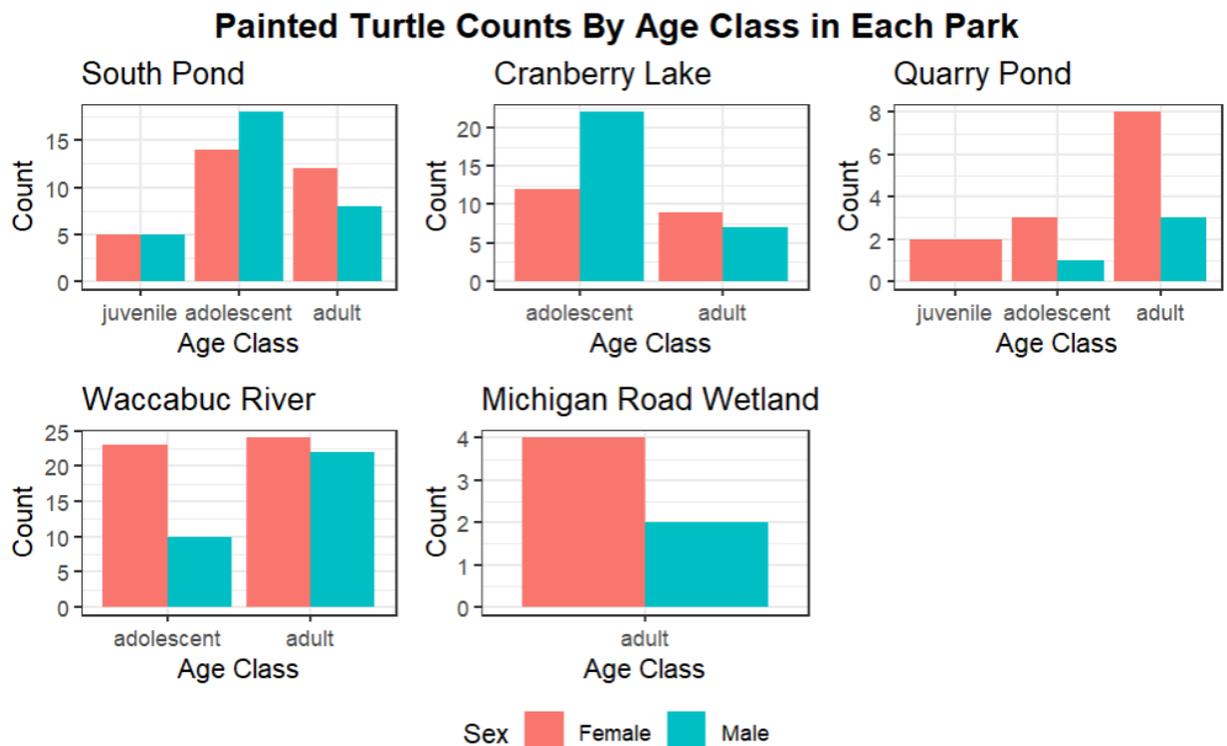


Figure 3. This graph displays the count of male and female painted turtles in each age class caught in each water body sampled. The top row are sites at Cranberry Lake Preserve while the bottom is Ward Pound Ridge Reservation. Juvenile turtles were only caught at Cranberry Lake Preserve, and the Reservation had a higher number of adults than adolescents. This suggests that the Cranberry Lake Preserve painted turtle population is more reproductively successful. There does not appear to be a significant skew in sex ratios at this time.

Next Steps:

Ward Pound Ridge Reservation is home to six species of turtle, four of which are state listed species. Wood turtles, box turtles, and spotted turtles are all considered Species of Special Concern in New York while musk turtles are listed as a High Priority Species of Greatest Conservation Need in New York State (the designation below Special Concern). The active monitoring and conservation of these species within Ward Pound Ridge Reservation must continue to avoid losing these populations especially because reproductive success appears to remain low for all four of these species, including compared to other sites around Westchester County.

Throughout the rest of this year, data will be more formally analyzed. This will include statistical analysis of wood turtle habitat data as well as analysis to estimate total painted turtle population size in Ward Pound Ridge Reservation water bodies. Based on these results, meadow management recommendations will be made.

Next year, the primary goals will include:

- (1) Further exploration of the spotted turtle population including trapping of vernal pools believed to be used by spotted turtles
- (2) Location and protection of wood and box turtle nesting areas
- (3) Implementation of wood turtle habitat management recommendations where possible

Lastly, thank you again to all members of the Friends of Trailside Nature Museum board. Your support is what made this project possible, and I look forward to being able to better support the Reservation's turtle populations in the future based on the findings we have generated thus far.



Image 3. Spotted turtles captured at the end of Michigan Road.



Image 4. Musk turtle captured in the Waccabuc River.