

7.2.2 Eastern Box Turtle and Common Snapping Turtle BMPs

Eastern box turtles are state listed as a Species of Special Concern. The presence of this species does not impact management practices at this site. Along with Eastern box turtles, common snapping turtles have been documented at the Toms River Armory and the West Orange Armory. Common snapping turtles do not have a state or federal listing. However, as a BMP, surveyors recommend:

1. Being mindful of how mowing, tree clearing, prescribed burning, and the use of heavy machinery may impact the box turtle species.
2. Considering mowing rotation, percent of area mowed, timing, mower style, blade height, directionality, and mower speed to optimize the reduction of box turtle mortality rates, especially from May 1 through September 15.
3. Being cautious of potential nesting areas (open-canopy areas that have well-drained soil) during the spring and summer.
4. Making sure that garbage, bird seed, and pet food are properly contained to deter skunk and racoon presence.
5. Being cautious of potential box turtle presence on roadways or areas where automobiles may be used.
6. Reporting any sighting of box turtles or snapping turtles to the NJDMAVA EMB Natural Resource Manager.
7. Making sure not to remove box turtles from their habitat unless they are injured. In that case, they are to be removed wearing sterile gloves and transported to a state rehabilitation center.
8. Implementing signage to inform site personnel not to remove box turtles from their habitat.

7.2.3 Spotted Turtle BMPs

Spotted turtles have been previously documented on some NJARNG properties, specifically the Toms River Armory. Spotted turtles are listed as endangered on both a state and federal level. As a result, surveyors recommend the following BMP:

1. Monitoring and controlling predator populations (raccoons, foxes, coyotes, and crows) of the spotted turtle.
2. Maintaining the upland forest buffer habitat between wetlands area and along stream riparian zones.
3. Refrain from using vehicles in any wetland area where spotted turtles may be present.
4. Report any sighting of spotted turtles to the NJDMAVA EMB Natural Resource Manager.

8.0 References

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Table 1

Weather Condition Data

Table HK1
 Weather Condition Data
 2021 Wood Turtle Survey

Hackettstown Armory Musconetcong River Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	5/6/21	Sunny, Clear	Sunny, Clear	6	0.00 inches	17.8	18.9	15.3	16.1
2	5/11/21	Warm, partly cloudy	Warm, sunny	7	0.13 inches	20.4	20	12.6	13.7
3	5/13/21	Warm, sunny, clear	Warm, sunny, clear	7	0.00 inches	20.9	18.8	15.3	11.8

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediction center.*

Table LVS1
 Weather Condition Data
 2021 Wood Turtle Survey

Lawrenceville NJDMAVA Shabakunk Creek Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	4/13/21	Partly cloudy and warm	Partly cloudy and warm	6	0.84 inches	13.3	15	unknown	unknown
2	4/19/21	Sunny, Clear	Sunny, Clear	6	0.00 inches	15.5	16.1	14.2	unknown
3	5/11/21	Cloudy, warm	Cloudy, warm	7	0.10 inches	22.5	21.3	15.5	15.9

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediciton center.*

Table LVLS1
 Weather Condition Data
 2021 Wood Turtle Survey

Lawrenceville NJDMAVA Little Shabakunk Creek Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	4/13/21	Partly cloudy and warm	Partly cloudy and warm	6	0.84 inches	15	15.6	unknown	unknown
2	4/19/21	Cloudy	Mostly Cloudy	6	0.00 inches	20.6	20.5	15.7	15.3
3	5/11/21	Cloudy	Cloudy	7	0.10 inches	22.1	21.9	15.4	16.5

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediciton center.*

Table TR1
 Weather Condition Data
 2021 Wood Turtle Survey

Toms River Armory Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	4/14/21	Partly cloudy and warm	Partly cloudy and warm	1	0.03 inches	21.7	22.2	unknown	No water
2	4/26/21	Sunny, Breezy, and no precipitation	Sunny, Breezy, and no precipitation	7	0.56 inches	20.3	18.9	13.1	No water
3	4/28/21	Sunny, clear	Sunny, clear	1	0.00 inches	33.3	30.6	19.4	No water

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediction center.*

Table PN1
 Weather Condition Data
 2021 Wood Turtle Survey

Princeton Warehouse Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	4/19/21	Cloudy	Cloudy	6	0.00 inches	21.2	23.4	14.3	13.9
2	5/11/21	Warm, sunny	Warm, sunny	7	0.10 inches	19.3	20.3	13.9	13.8
3	5/13/21	Warm, partly cloudy	Warm, sunny	7	0.00 inches	23.1	20.9	16.2	14.6

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediciton center.*

Table WO1
 Weather Condition Data
 2021 Wood Turtle Survey

West Orange Armory Bear Brook Tributary									
Survey #	Date	Weather @ start	Weather @ end	Average Daily UV index	Amount of precipitation one day prior to survey	Air temperature (C) @ start	Air temperature (C) @ end	Water temperature (C) @ start	Water temperature (C) @ end
1	4/20/21	Partly cloudy and warm	clear and sunny	5	0.00 inches	20.5	20.7	15.2	17.5
2	4/28/21	Partly cloudy, hot, no precipitation	Partly cloudy, no precipitation	1	0.00 inches	22.7	23	15.1	14.7
3	5/4/21	Warm, partly cloudy	Warm, cloudy	2	0.00 inches	24.7	21.8	16.6	14.9

*Air temperature data and air temperature were found either by multiparameter probe, via Weather Underground, or via on site observations.
 UV data was found from NOAA's database for UV index via their climate prediction center.*

Table 2

Field Survey Methodology Data

Table HK2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

Hackettstown Armory Musconetcong River Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	5/6/21	Upstream	On Foot	Rapid Assessment
2	5/11/21	Upstream and Downstream	On Foot	Rapid Assessment
3	5/13/21	Upstream and Downstream	On Foot	Rapid Assessment

Table LVLS2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

Lawrenceville NJDMAVA Little Shabakunk Creek Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	4/13/21	Upstream	On Foot	Rapid Assessmnet
2	4/19/21	Upstream	On Foot	Rapid Assessmnet
3	5/11/21	Upstream	On Foot	Rapid Assessmnet

Table LVS2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

Lawrenceville NJDMAVA Shabakunk Creek Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	4/13/21	Upstream	On Foot	Rapid Assessmnet
2	4/19/21	Upstream	On Foot	Rapid Assessmnet
3	5/11/21	Upstream	On Foot	Rapid Assessmnet

Table PN2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

Princeton Warehouse Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	4/19/21	Upstream	On Foot	Rapid Assessmnet
2	5/11/21	Upstream	On Foot	Rapid Assessmnet
3	5/13/21	Upstream	On Foot	Rapid Assessmnet

Table TR2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

Toms River Armory Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	4/14/21	Upstream	On Foot	Rapid Assessment
2	4/26/21	Upstream	On Foot	Rapid Assessment
3	4/28/21	Upstream	On Foot	Rapid Assessment

Table WO2
GLIN Field Survey Methodology Data
2021 Wood Turtle Survey

West Orange Armory Bear Brook Tributary				
Survey #	Date	Survey Direction	Method of Survey	Type of Survey Site
1	4/20/21	Upstream	On Foot	Rapid Assessmnet
2	4/28/21	Upstream	On Foot	Rapid Assessmnet
3	5/4/21	Upstream	On Foot	Rapid Assessmnet

Table 3

GLIN Survey Results Data

Table LVS3
 GLIN Survey Results Data
 2021 Wood Turtle Survey

Lawrenceville NJDMAVA Shabakunk Creek Tributary									
Survey #	Date	Weather @ start	Weather @ end	Air temperature @ start	Air temperature @ end	Water temperature @ start	Water temperature @ end	GLIN found?	Other species found?
1	4/13/21	Partly cloudy and warm	Partly cloudy and warm	13.333	15	unknown	unknown	No	No
2	4/19/21	Sunny, Clear	Sunny, Clear	15.5	16.111	14.2	unknown	No	No
3	5/11/21	Cloudy, warm	Cloudy, warm	22.5	21.3	15.5	15.9	No	Yes - Box turtle (notched 2900)

Table LVLS3
 GLIN Survey Results Data
 2021 Wood Turtle Survey

Lawrenceville NJDMAVA Little Shabakunk Creek Tributary									
Survey #	Date	Weather @ start	Weather @ end	Air temperature @ start	Air temperature @ end	Water temperature @ start	Water temperature @ end	GLIN found?	Other species found?
1	4/13/21	Partly cloudy and warm	Partly cloudy and warm	15	15.556	unknown	unknown	No	No
2	4/19/21	Cloudy	Mostly Cloudy	20.6	20.5	15.7	15.3	No	No
3	5/11/21	Cloudy	Cloudy	22.1	21.9	15.4	16.5	No	No