**Heritage Preserve Herpetological Public Report
Reporter: Mark Manning
Survey Years: 2013-2015**

**General Profile:**

 The Heritage Preserve is owned and managed by the Friends of Hopewell Valley Open Space. The preserve is a 66-acre area of preserved open space that features a diversity of habitats within its boundaries, including fields, small streams, immature and mature deciduous forest, and four vernal pools (an obligate vernal pool breeder, the wood frog, *Lithobates sylvaticus*, was observed breeding in all four of them). The property is the site of a former farm, and is located on the Piedmont physiographic region.

**Survey Methodology:** The herpetological data collected during this project was taken using both visual and auditory surveys. Species-specific searches were done using patterns in breeding phenology and habitat preferences for various species. Coverboards were employed for use in collection of snake data. Visual vernal pool surveys were done during spring emergence to check for vernal pool breeders. Auditory frog call surveys were done in the evenings during appropriate times of the year, as well as incidental frog call data collected during daytime surveys. Cover objects were turned on land, in streams, and on stream banks. Care was taken not to excessively disturb any sensitive habitat, such as vernal pools or rotting logs. The specimens were not harmed, nor were they unnecessarily handled. Snake specimens were checked for signs of *Ophidiomyces* infection, and no signs were found to be present on specimens. No equipment was used that might transmit fungal infections. All data was recorded to include the date, time of visit, and weather conditions. In leiu of a GPS, a map was divided into sections and the locations of the specimens found were reported within these sections. This data will be provided along with the report.

**Breeding Populations:** Based on population densities of many species identified in the survey, it is likely that these species are maintaining breeding populations at this location. Population densities of Eastern garter snakes are high, and one neonate was observed during the survey. Juvenile bullfrogs were seen near the property. Wood frogs were observed in amplexus and eggs developed and hatched on the property. Huge numbers of spring peepers were observed in one vernal pool, and territorial vocalizations were heard. Large numbers of Northern green frogs were observed. Wood frog, spring peeper, Northern green frog, and Northern gray treefrog breeding vocalizations were heard, although due to a very dry spell in the spring, metamorphosis of early spring breeders could not be observed. Northern two-lined salamanders were found in healthy numbers in Ewing Creek, and stable numbers of red-backed salamanders were found beneath woodland debris in spring of 2015 and autumn of 2014 outside of the unusually dry periods common within the past two years.

Many amphibians and some reptiles use vernal pools, which are temporary pools created by snowmelt or spring rains. These pools are selected by amphibians largely because of the lack of fish predation on the tadpoles. There are at least three such pools at the Heritage Preserve. Vernal pool breeders are classified as either ***obligate******breeders***, which are species that must use a vernal pool to breed, or ***facultative******species***, which will gravitate toward vernal pools if available, but will use other semi-permanent or permanent wetlands if vernal pools are not found.

**Results:**
In total, one turtle species, five frog/toad species, two salamander species and one snake species (total species count 9) were observed during surveys at Heritage Preserve in 2015 and during casual observations in 2013 and 2014. A list of individual species is provided below. Based on these findings, Heritage Preserve hosts populations of *at least* 13% of the possible reptile and amphibian species native to New Jersey ***including*** *potentially extirpated species and species native only to the New Jersey Pine Barrens.* Of the possible reptile and amphibian species native to Mercer County,Heritage Preserve hosts populations of *at least* 18% species, not including potentially extirpated species. One species, the eastern box turtle, is listed as a Species of Special Concern by the State of New Jersey, as there is concern over their habitat loss and their vulnerability because of it. Box turtles are declining in number because of several threats. Nest predation is very common, and habitat fragmentation has resulted in the road mortality of many females from various turtle populations because of their nesting migration, frequently made across roads. There is also concern about illegal collecting. This species is certainly in need of monitoring and protection within its range in New Jersey.

**Cumulative Assessment Total-Complete Species List for 2015 for the Heritage Preserve (9 Species):**

* Northern two-lined salamander (*Eurycea bislineata*)
* Eastern red-backed salamander (*Plethodon cinereus*)
* Northern gray treefrog (*Hyla versicolor*) F
* Northern spring peeper (*Pseudacris crucifer crucifer*) F
* American bullfrog (*Lithobates catesbeianus*) F
* Northern green frog (*Lithobates clamitans melanota*) F
* Wood frog (*Lithobates sylvaticus*) O
* Eastern box turtle (*Terrapene carolina carolina*)\*
* Eastern garter snake (*Thamnophis sirtalis sirtalis*)

\* Species of Special Concern
O Obligate vernal pool breeder
F Facultative vernal pool breeder

**About the Surveyor:**
Mark is a teacher of chemistry and toxicology at Hopewell Valley Central High School in Pennington, New Jersey, a volunteer naturalist for the Friends of Hopewell Valley Open Space, and a board member at the Washington Crossing Audubon Society. He has experience leading nature walks and outdoor programs on poisonous plants, reptiles and amphibians, and birding for beginners, as well as teaching virtual programs on poisonous plants of the Northeastern United States. His greatest passions are exploring the outdoors with his family, and introducing people to the natural wonders of New Jersey.