**Eames Preserve Herpetological Public Report
Reporter: Mark Manning**

**Survey Year: 2015**

**General Profile:**

 The Eames Preserve is a 76-acre land preserve owned and managed by the Friends of Hopewell Valley Open Space. The preserve features a diversity of habitats within its boundaries, including several small fields, a section of deciduous forest in various stages of maturity, and a small stretch of the Woodsville Brook. A spring seep that serves as the head of a small stream that flows into Woodsville brook is found on the property, and serves as a hibernacula and winter residence for several species of amphibians. The headwaters of a tributary of the Stony Brook originate in the Southeast section of the preserve. There are no vernal pools known to exist on the property, however a during a nighttime anuran call survey, vocalizations of the wood frog (*Lithobates sylvaticus*) were heard nearby. The property is located on the Piedmont physiographic region. There are several shale banks within the forest and on the banks and bed of Woodsville Brook and the headwater streams of the Stony Brook. Several rock walls are present in the preserve, which may be used at times by snakes.

**Survey Methodology:** The herpetological data collected during this project was taken using both visual and auditory surveys. Visual surveys were done for specimens by searching likely habitat, as well as turning cover objects on land, adjacent to water, and within streams. Species-specific surveys were done using patterns in breeding phenology and predicted habitat preferences for various species. Coverboards were employed for use in collection of snake data. Visual and auditory 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. Incidental frog call data was also collected during daytime surveys. Care was taken not to excessively disturb any sensitive habitat, such as spring seeps or rotting logs. The specimens were not harmed, nor were they unnecessarily handled. Snake specimens were routinely handled to be 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 lieu of a GPS, a map was printed and divided into sections, and the locations of the specimens were reported in reference to the sections on the map. All recorded data will be provided along with the report.

**Breeding Populations:**
 Ongoing visits during the survey consistently provided records of the same common species in the same areas, demonstrating the stability of their population. Many species are widespread throughout the preserve, limited only by appropriate habitat. Due to population densities of many species identified in the survey, it is likely that these species are maintaining breeding populations at this location. Eastern garter snakes were seen in high enough population densities to suggest breeding. Several juveniles were observed during the survey. Northern water snakes are very robust and resilient snakes, and the presence of abundant cover and prey at both the Stony Brook headwater stream and the Woodsville Brook suggests that this species is at least occasional if not stable here. Breeding vocalizations of the wood frog, spring peeper, Northern green frog, and Northern gray treefrog were heard within or near the preserve, although due to a very dry spell in the spring, it is likely that the breeding of these species was impacted. Several juvenile pickerel frogs were observed, however, and a very large number of juvenile Northern green frogs was observed as well. The salamanders showed the greatest population densities, with the Northern dusky and Northern two-lined salamanders being the most common, both in the spring seep area feeding Woodsville Brook (S6 on the map) and at the Stony Brook headwater area (S17 on the map).

 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. 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. No vernal pools have been located on the Eames property, however obligate vernal pool breeders have been heard vocalizing in areas just outside of the preserve boundaries.

**Results**In total five frog/toad species, three salamander species and two snake species (total species count 10) were observed during surveys at Eames Preserve in 2015. A list of individual species is provided below. Based on these findings, Eames Preserve hosts populations of *at least* 14% 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,Eames Preserve hosts populations of *at least* 20% species, not including potentially extirpated species.

**Cumulative Assessment Total-Complete Species List for 2015 for the Eames Preserve (10 species):**

* Northern dusky salamander (*Desmognathus fuscus*)
* 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
* Northern green frog (*Lithobates clamitans melanota*) F
* Pickerel frog (*Lithobates palustris*) F
* Wood frog (*Lithobates sylvaticus*) O
* Northern water snake (*Nerodia sipedon sipedon*)
* Eastern garter snake (*Thamnophis sirtalis sirtalis*)

O obligate vernal pool breeders
F facultative vernal pool breeders

**About the Surveyor:**
All surveys results, along with an official report, were submitted by Mark Manning. 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.