**Project Title:** C-04-02 : Placement of Structures for Amphibians and Reptiles
**PIN:** R020-62-881
**Responsible Unit:** Environmental Analysis Bureau
**Project Manager:** Nelson, Debra

**Project Goal:**
Wildlife passage across highways for breeding, foraging or migration often results in mortality that can contribute to population decline and reduced genetic diversity. Little work has been done to alleviate the impacts of highways on amphibians and reptiles and habitat fragmentation.

The goals of this proposal are to (1) develop research protocol for evaluating the effects of roadways on amphibians and reptiles, (2) to evaluate current reptile and amphibian crossing structure efficacy and (3) investigate the optimal placement of functional wildlife crossing structures for smaller fauna. NYSDOT will then have a systematic program to incorporate structures into capital projects that require highway crossing features to mitigate impacts to small animal populations. Also addressed will be safety concerns related to wildlife/vehicle accidents caused by wildlife crossing highways.

**Actions Proposed:**
The project would include:
A literature search and compilation on mitigation measures that have occurred in the northeast. A summary and analysis of findings would be included; An evaluation of the effect of highway mortality on the viability of amphibian and reptile populations, based on the literature review and original research; An assessment of the use and effectiveness of crossing structures which allow amphibians and reptiles to safely cross roadways. Research will focus on structures such as tunnels, drift and barrier fences, signage, bridge extensions, and culvert modifications as well as the contexts in which each type would be most useful; and, Development of a GIS-based predictive model and planning toolbox that will forecast hot spots for amphibian and reptile crossings across the state. This program can be used by the department as part of their mitigation planning process for future road projects.

**Anticipated Work Products and Accomplishments:**
Compiled literature list, annotated bibliography, and project file and summaries for amphibian and reptile highway crossing references related to NYS and the northeast US.
- Analysis of crossing structure designs, configurations and costs, and their effectiveness in aiding amphibians and reptiles in crossing highways. Test sites will be established and studied which replicate typical NYS highway conditions.
- Analysis of the importance of road mortality for the viability of amphibian and reptile populations in NYS. Movement of species in relation to highways will investigated.
- A GIS-based predictive model that will identify potential crossing hotspots in NYS to allow mitigation measures to be effectively incorporated into the NYSDOT highway design

**Proposed Budget:** $189,000