

Survey Protocol for
Mabee's Salamander (*Ambystoma mabeei*) and
Tiger Salamander (*A. tigrinum*)
In Virginia - 2021



Mabee's Salamander (Photo: J.D. Kleopfer)



Tiger Salamander (Photo: J.D. Kleopfer)

By
John (J.D.) Kleopfer
The Virginia Department of Wildlife Resources

In cooperation with:
Alan Savitzky (Old Dominion University); Joseph Mitchell (Mitchell Ecological Research Service, LLC); Chris Hobson (Virginia Natural Heritage Program)

Purpose: This document provides DWR's approved survey protocols for Mabee's Salamanders and Eastern Tiger Salamanders in Virginia. Any person proposing to survey a site for presence of these species should follow these protocols, unless otherwise approved by DWR.

These species often do not breed on an annual basis; therefore surveys should be conducted for **2 consecutive years**. Adults have been reported moving as early as December and as late as March. Although the fossorial nature of the adults makes them hard to find, searching under logs around the edges of the wetland during this time period should still be conducted. Be aware that searching for the adults can result in a false-negative determination of presence/absence. A more successful methodology is surveying for the larvae. The larvae of both species occupy the pools from February through May. Each site should survey at least 4 times per year, with each survey period at least one week apart. Fifty percent of the site should be surveyed during each survey period.

Adults

Although both species typically are found moving to breeding sites during February and March, adult Tiger Salamander (*A. tigrinum*) have been found as early as January. When surveying for adults, search both in the water and under cover objects around the area. Surveys are best done at night after "warmish" winter rains. Egg masses are similar in appearance to Spotted Salamander egg masses (Photo E), but are "looser" and not as well organized (Photo F).

Larvae

Spring (late-March-May) – You can perform dip net survey for larvae during the day or night. If you survey during the day, be sure to dip net the leaf-litter where the larvae seek refuge. At night, the larvae can be found in the water column. Use a fine mesh dip net or seine net (1.5-7mm). A seine net can cover a large area quickly and is very effective for night surveys. Mabee's Salamander (*Ambystoma mabeei*) larvae (picture A) have a distinctive longitudinal white-stripe. Although larvae maybe present as early as February, in April and May the larvae are larger and more easily identified. *Ambystoma tigrinum* larvae (Photo B) can often be found late in the summer.

Special Note

Marbled Salamanders (*A. opacum*) and Spotted Salamanders (*A. maculatum*) are common throughout the Coastal Plain of Virginia and are sometimes found in the same pools as Mabee's salamanders. Marbled Salamander larvae are distinguished by a series of longitudinal, very small golden dots on their sides (Photo C). Spotted Salamander (Photo D) larvae are rather drab and lack any distinguishing markings of other sympatric Ambystomids.

For additional information:

www.virginiaherpetologicalsociety.com

A) Mabee's Salamander larvae



Mabee's Salamander, larval form
Ambystoma mabeei

Image courtesy of SC Department of Natural Resources
Santee Coastal Reserve

snakesandfrogs.com

B) Tiger Salamander larvae



Photo: Scott Bolick

C) Marbled Salamander larvae

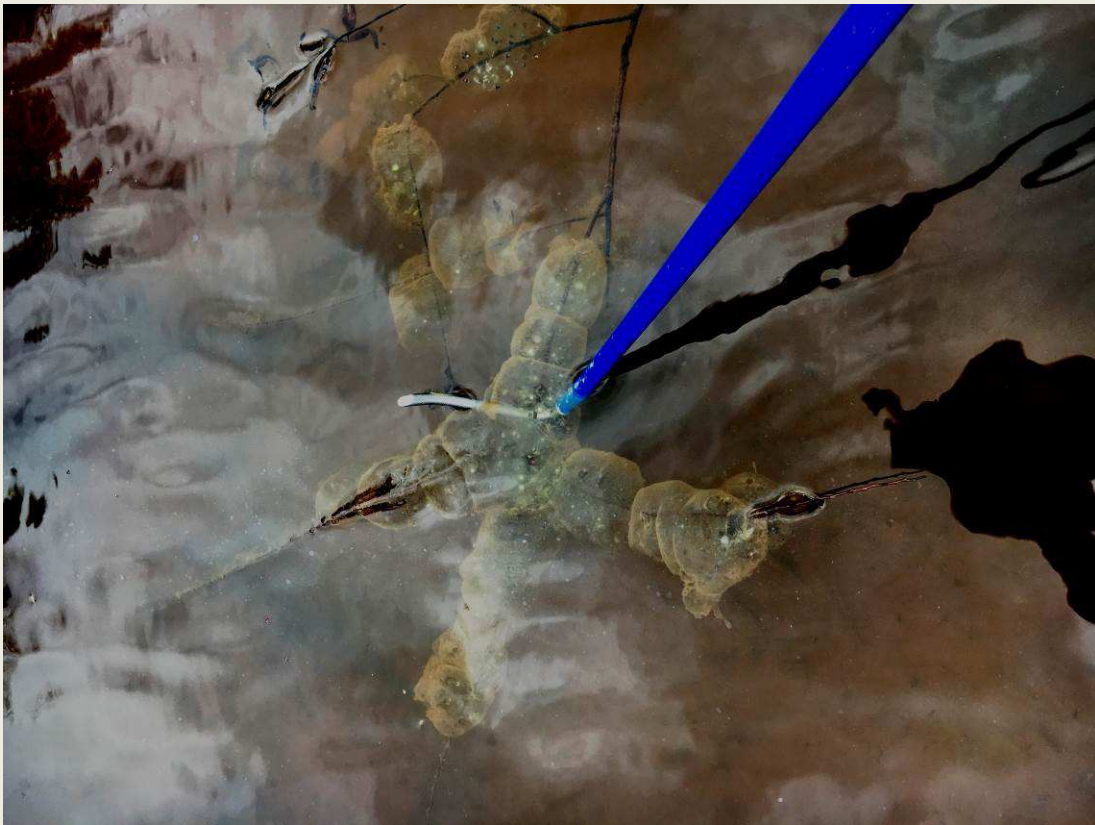


D) Spotted Salamander larvae





E) Spotted Salamander egg masses



F) Tiger Salamander egg masses