

A System to Track Exotic Herps in Tennessee

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With the dramatic increase in the importation, transport, breeding and sale of exotic reptiles and amphibians as pets and the increased importation of tropical plants and fruits (agents of transport); the possibility of exotic amphibians and reptiles escaping and becoming established in Tennessee has increased in recent years. Additionally, the deliberate (although illegal) release of captive animals into the wild poses a potential hazard to native ecosystems. The THS has established a new system for reporting, confirming and tracking exotic herp species in Tennessee. The author will outline this new THS program and ways to assist the program as well as how to report to the system.

MECHANISMS OF LARVAL COHORT SUPPRESSION AND POPULATION FLUCTUATION IN TIGER SALAMANDERS

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The mechanisms underlying population fluctuation have been well studied in mammals and insects but less research has focused on amphibians. Yet, the current global decline of amphibians requires that we understand these mechanisms, and be able to distinguish between anthropogenically induced declines and natural population fluctuations. We have followed a population of the Arizona tiger salamander, *Ambystoma tigrinum nebulosum*, over 16 years and through two cycles of population fluctuation, which is typified by the production of "boom" cohorts followed by suppression of larval recruitment by paedomorphic adults in this cohort. We tested two hypotheses for this suppression, cannibalism and resource depression, using a series of meso- and microcosm experiments. We found significant direct (mortality) and indirect (behavior, diet, growth rates) effects of cannibalism by larger larvae and paedomorphic adults on hatchling and 1st-year larvae, suggesting that both cannibalism and the threat of cannibalism play a large role in suppression of larval cohorts. In contrast, paedomorphic adults showed no substantial effects on larval survival, diet, or growth via resource depression, in part because paedomorphic adults reduced availability of large benthic invertebrates, while hatchlings fed primarily on smaller benthos and zooplankton. However, current experiments suggest that hatchlings can be impacted by cohorts of larvae that are more similar in size and diet. Our results lend insight into the mechanisms underlying fluctuations in this population, and suggest that a better understanding of natural population fluctuations will aid amphibian conservation efforts.