1145-35-1100   **Baoling Ma*** (baoling.ma@millersville.edu) and **Qihua Huang** (qihua@swu.edu.cn). *A Juvenile-Adult Model for an Amphibian Population with Distributed Birth and Metamorphosis Rates.* Preliminary report.

Habitat destruction, alteration and fragmentation, climate change, and pollution are most serious causes of amphibian population declines worldwide. Amphibian larvae respond to environmental changes by varying metamorphosis rate, or size at metamorphosis. A general mathematical model is developed where larvae may metamorphose into adult frogs of different sizes and at different rates. A finite difference scheme is developed to numerically solve the model. Convergence of this scheme to a weak solution with bounded total variation is proved. Numerical simulations are provided to understand the effects of distributed metamorphosis rates in an urban American green tree frog (*Hyla cinerea*) population. (Received September 18, 2018)