

Southern Appalachian Creature Feature Podcasts

A new study looks at pesticide and frog deaths

Greetings and welcome to the Southern Appalachian Creature Feature.

It's become a right of spring in our home to venture to the neighbor's backyard ponds, get a handful of frog eggs, put them in a jar in the middle of the dining room table and watch them mature into frogs.

Hopefully this is a tradition we can maintain for years to come. It's well-known that amphibians around the globe are experiencing a die-off. In studying this die-off, University of Pittsburgh professor Rick Relyea has focused on possible pesticide links, and recent research, published in the journal *Ecological Applications*, draws a disturbing link between tadpole mortality and malathion – the most popular insecticide in the United States.

Using simulated ponds and leopard and wood frogs, Relyea and Nicole Diecks found that adding small, weekly doses of malathion didn't hurt the tadpoles. However, what it did was kill off the zooplankton that eat the algae that float in the water, so the floating algae grew rapidly, preventing sunlight from reaching the bottom-dwelling algae the tadpoles eat. This breakdown of the food chain occurred over the course of weeks, and the wood frogs, which develop faster, were unaffected, but nearly half of the leopard frog tadpoles couldn't get the nourishment they needed to mature.

While natural ponds are far more complex than the simulated ponds of the experiment, the research highlights the fragility of a food chain and the importance of searching for those unintended impacts that can profoundly alter an ecosystem.

For WNCW and the U.S. Fish & Wildlife Service, this is Gary Peeples