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Assessing Multiple Endpoints of Atrazine Ingestion on Gravid Northern Watersnakes (*Nerodia Sipedon*) and Their Offspring [Abstract]

Ecotoxicological studies that focus on a single endpoint might not accurately and completely represent the true ecological effects of a contaminant. Exposure to atrazine, a widely used herbicide, disrupts endocrine function and sexual development in amphibians, but studies involving live-bearing reptiles are lacking. This study tracks several effects of atrazine ingestion from female Northern Watersnakes (*Nerodia sipedon*) to their offspring exposed *in utero*. Twenty-five gravid *N. sipedon* were fed fish dosed with one of the four levels of atrazine (0, 2, 20, or 200 ppb) twice weekly for the entirety of their gestation period. Endpoints for the mothers included blood estradiol levels measured weekly and survival more than 3 months. Endpoints for the offspring included morphometrics, clutch sex ratio, stillbirth, and asymmetry of dorsal scales and jaw length. Through these multiple endpoints, we show that atrazine ingestion can disrupt estradiol production in mothers, increase the likelihood of mortality from infection, alter clutch sex ratio, cause a higher proportion of stillborn offspring, and affect scale symmetry. We emphasize the need for additional research involving other reptile species using multiple endpoints to determine the full range of impacts of contaminant exposure.