

**AQUATIC AND TERRESTRIAL EXPOSURE OF ANURAN AMPHIBIANS TO  
ESTROGENIC ENDOCRINE DISRUPTING CONTAMINANTS**

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**ABSTRACT**

Hormones play an important role in shaping growth and development. Endocrine disrupting contaminants (EDCs) come from the external environment and can mimic or block internal hormone pathways. Many amphibians begin to develop major body systems, both reproductive and non-reproductive, while they are aquatic larvae. Because this critical period of development occurs in water, amphibian larvae can also be exposed to and surrounded by EDCs that find their way into the water via direct spraying, surface water runoff, and even rainfall. Further, as they metamorphose into terrestrial juveniles, they are subject to exposure on land, especially in agricultural landscapes. The main objective of my research was to investigate how low, ecologically relevant concentrations of EDCs (atrazine, estradiol) could impact both reproductive and non-reproductive endpoints, and further, how these effects might impact amphibian population persistence.

The results presented in my thesis make important contributions to the literature in both reproductive and non-reproductive chemical exposure assessments. Moreover, this research emphasizes the importance of examining both aquatic and terrestrial exposure as well as reproductive and non-reproductive endpoints when investigating the impact of EDC exposure on individuals and on population persistence.