Sam Patterson, MES candidate, School of Environmental Studies presents:

“Wetlands, Wood Frogs and Oil Sands Snowmelt”

“Oil sands operation in northern Alberta, Canada are major emitters of atmospheric pollutants, including polycyclic aromatic compounds (PACs) and heavy metals. Previous studies have documented elevated levels of atmospheric pollutants in snowpacks within a 50-km radius of two major bitumen upgrading facilities. Amphibians in northern Alberta during spring may be at risk of exposure to pulses of contaminants from melting snow. The goal of our study was to assess the effects of contaminated snowmelt on the growth, development and behaviour of a common amphibian species, Lithobates sylvaticus. We conducted an outdoor mesocosm experiment at Queen’s University Biological Station, in which frog embryos were exposed to snow collected from the Athabasca Oil sands region. Wood frog tadpoles were exposed to snowmelt for 25 days, and then were transferred to a clean water environment for an additional 55 days, to stimulate the flushing effects of spring rains. We measured tissue PAC concentration, malformations, expression levels for several genes related to development, body length, body weight, developmental stages and growth rates.”

Thursday, October 18th, 2018
2:30pm-4:00pm
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