Kelsey Wallisch Simon: Land Resources & Environmental Sciences
Mentor: Anthony Hartshorn -- Land Resources & Environmental Sciences
Can We Help Worms Help Us?

Scientists have been studying earthworm's effects on soil chemistry, specifically how they can affect the mobility and bioavailability of heavy metals in a contaminated soil. Studies have shown that their effects of this specific piece of soil chemistry vary greatly with soil properties such soil texture, pH and actual earthworm species. Very little data exists with respect how Montana worms influence Montana soils. This study looks at *Lumbricus rubellus* across two different contaminated soils from Montana: Neihart mine tailings outside of Helena, Montana and Silver Bow/Butte Parrot Mine tailings. Two soil amendments were used to assist the earthworms' survival and productivity. Lime is used in graduated increments to define the worms' pH tolerance. Organic matter is often sparse across mine tailings and is added as an additional treatment for soil physical, chemical and biological processes. Water and weak acid (ammonium acetate) were used to extract the metal-contaminated soils; these extracts were used to quantify the lead (Pb) mobility. This study is designed to mimic a low-cost, long-term approach to vermi-remediation of lead-contaminated soil to provide a model across mine tailings and the Northern Rocky Mountains.