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Tardigrades are microscopic animals living in moss, lichen, and various aquatic environments. Also known as water bears for their bear-like movements, they are arguably the cutest extremophiles there are, able to survive extreme temperatures and the vacuum of space. Species are distinguishable by their unique claws and mouthparts. Tardigrade research is an exciting prospect in West Virginia, as very little research has been conducted and there is much to be discovered about tardigrades around the state. In 1989, Donald Tarter and his students from Marshall University published the first records of tardigrade species in West Virginia, but little to no research has been performed to add to their findings. In collaboration with NASA's WV Space Grant Program and researchers at Baker University in Kansas, a year-long population study on tardigrades is being conducted that focuses on the response of tardigrade density to seasonal changes in precipitation and temperature. Two sites, Valley Falls State Park and a private residence in Bruceton Mills, WV, are sampled twice a month. Moss is collected from rocks at these sites and examined under a microscope to count the number of tardigrades present. Data have been collected since July of 2016, and the experiment will continue until May of 2017. Data has shown high levels of variability in tardigrade density, with little correlation to temperature and precipitation data. It is suspected that we have observed seasonal hatching events, as upwards of 3000 tardigrades have been found in less than a gram of moss on several occasions.