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Analyzing the Deteriorating Effects of Acid Precipitation on Natural Landscaping

The purpose of this project was to explore the susceptibility of various rocks to weathering when exposed to acid rain as compared to "normal" rain. I hypothesized that if the susceptibility of weathering with different types of rocks was compared, then the weathering of the rock will increase for all of the rocks when compared to the control, but metamorphic rocks would weather the least. Six different rock types were obtained and measured to have a volume of 100 cm3. Rainwater solutions were created for "normal" rain and the acid rain. The starting mass (grams) of each rock was measured. Each rock type was placed under the sprinkler system for 7 consecutive days. After the 7 days, the rocks were rinsed with distilled water and allowed to dry. The ending mass (grams) of each rock was measured to find the percent loss. The data collected partially supported the original hypothesis. When comparing the metamorphic rocks to the other types of rocks, only one metamorphic rock weathered the least. On average, the metamorphic rock, 'Table Mountain,' had a 0% loss and 'Mountain Granite,' had 0.14%. The sedimentary and igneous rocks varied in weathering. These findings lead me to conclude that the susceptibility to weathering depends more on the minerals in the rock. How fast the rock deteriorates does not appear to be due to the type of rock. Further testing is necessary, including an extended period of time, in order to confirm results.