

Case Study

Derek, Sandra and Elspeth were spending the first week of summer vacation hiking the Appalachian Trail. They had started at Springer Mountain and after about 2 weeks they had made it to North Carolina. At the higher elevations they had noticed some areas where trees had distinctly yellowing leaves and others where the majority of trees in the local area were dead or dying. Approximately 25 miles south of Clingmans Dome they found what looked to them to be a dead zone, nothing but the skeletons of trees and very sparse underbrush. As biologists they were very concerned and puzzled. They couldn't figure out why the plant life, in particular the trees had died. They took some soil samples and some samples of the leaf litter and decaying wood from around the dead trees.

The group had plans to meet with some friends, also biology majors at Appalachian State University in Boone, NC. Their friends met them one of trailheads and took them back to Boone. When they told their friends about their adventure and the stands of dead trees, the local students suggested that the trees either died from acid rain or from imported beetle damage. They went into the lab the next day to test these hypotheses.

1. Write a hypothesis to explain the death of trees at higher altitudes along the Appalachian Trail.

2. What would you need to test your hypothesis?

3. Describe how you would test your hypothesis.
