

Abstract of student research conducted at Green Wing Environmental Laboratory
Research in Field Biology, a pilot course for Senior Inquiry
June 2007

Do lichen and moss grow more frequently on the North side of trees?

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In northern latitudes, it is reported that moss grows on the shaded, north-facing sides of trees. During my preliminary observations of mosses at Green Wing Environmental Laboratory, I found mosses to grow on all sides of tree trunks. One complicating factor was the discovery of lichens and mosses growing on trees. Did the lay public also consider lichens as mosses and consider these life forms as mosses too? I wanted to quantify moss and lichen growth on tree trunks as it relates to cardinal direction. Study 1 examined how canopy cover was related to frequency of moss and lichen on the north side of trees. I found no pattern of growth on tree trunks related to cardinal direction. Thus, mosses and lichens were found to grow somewhat evenly on a tree trunk, not predominantly on the north side of trees. Study 2 examined the difference in occurrence of mosses and lichens between two habitats, an oak savannah and a deciduous forest, comparing growth on the north and south sides of trunks. I found that mosses were more often found on the north sides of trees in the oak savannah than in deciduous forest, whereas in the deciduous forest moss growth was more often continuous around the tree trunk. Study 3 quantified the amount of lichen and moss on either side of a tree and, using a t-test, I found that there is a significant difference for moss and lichen in the oak savannah. Taken together, moss is mostly found on the north side of trees when it is exposed to large amounts of sunlight, such as within oak savannah, but tends to grow on all sides of the trunk in closed canopy forests.