Lesson 4: Lichens and Air Quality Monitoring Essay

Objective: *Students will be able to apply their knowledge of lichen structure and ecology to the task of biomonitoring for air pollution.*

Students will write a one page essay explaining why lichens <u>are</u> or <u>are not</u> good indicators of air quality. Use the references below and cite them in your paper. In the essay, students should explain:

1. Why do (or don't) lichen morphology and ecology make them well suited to be bioindicators or biomonitors?

2. To which pollutants are some lichen particularly sensitive and what research results support this conclusion?

3. What factors affect lichen health and diversity besides air pollution and how would you design a study to isolate the effects of air pollution on lichen? Did existing studies take these other factors into account?

References to use:

- Hinds, James W. and Hinds, Patricia L. <u>The Macrolichens of New England</u>, The New York Botanical Garden Press, 2007, p.60-61.
- Forest Inventory and Analysis National Program at http://www.fia.fs.fed.us/library/fact-sheets/p3-factsheets/lichen.pdf see Background section on pages 3-4 of the report.
- http://gis.nacse.org/lichenair/?page=airpollution#Ndep
- Other