

How to find an arctic lichen without actually going to the tundra



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Stratification

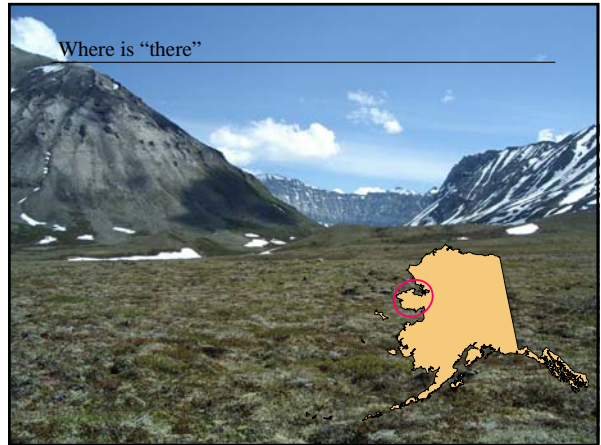


My Research Objectives

1. What lives there?
2. Why?



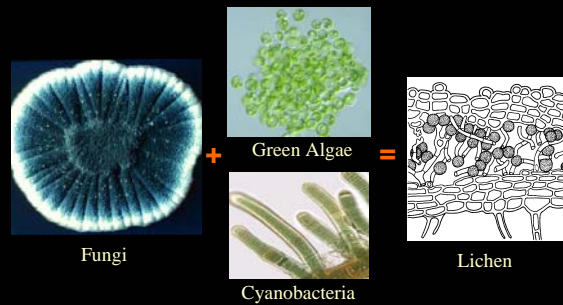
Where is "there"?

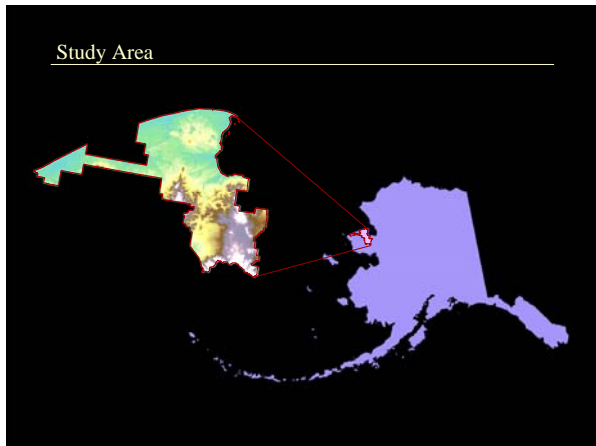


Who is the "what"?



Who is the "what"?





Logistical Hurdle

Where to sample?

1. Patch size
2. Number of patch types
3. Habitat factors
 - Geology, Soils
 - Physiography
 - Remotely-sensed vegetation

My Goals

1. Identify classifications that best describe lichen communities
2. Compare stratification attributes and their effectiveness at describing lichen communities

GIS Datasets

- Geology (1)
- Soil (2)
- Remotely-Sensed Vegetation (5)
- Elevation (1)
- Geography (1)
- Physiography (5)
- Watersheds (1)
- Reindeer Allotment Ownership (1)

Field Sampling

- Stratified random sample using cover types and geographic blocks
- Large circular plots (78 total)
- Abundance scale
 - 1 = rare (<3 thalli)
 - 2 = uncommon (4-10 thalli)
 - 3 = common (<1%)
 - 4 = abundant (1-5%)
 - 5 = prolific (6-25%)
 - 6 = dominant (>25%)

Which stratum is best?

MRPP

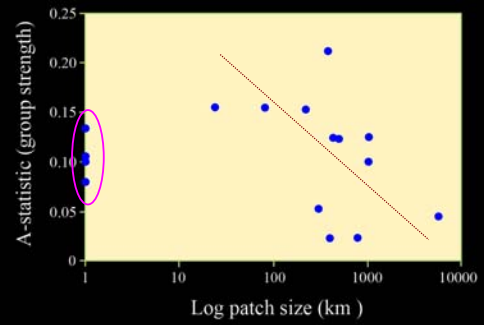
- Are groupings better than chance?
- How tight/ homogeneous are the groups?

Top 10 List

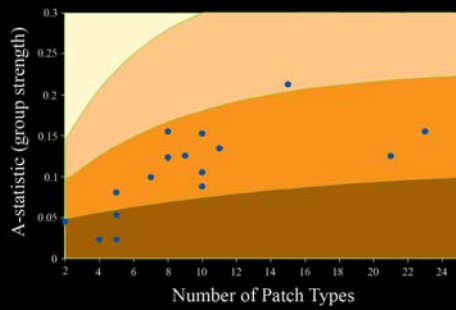
1. Alaska Subsections (0.21)
2. Soil Series (0.15)
3. Soil Units (0.15)
4. Surficial Geology (0.15)
5. Map Ecotypes-Vegetation (0.13)
6. Geographic Blocks (0.12)
7. UAF Vegetation (0.12)
8. Physiography (0.12)
9. Cover Type (0.11)
10. Map Vegetation Type (0.10)



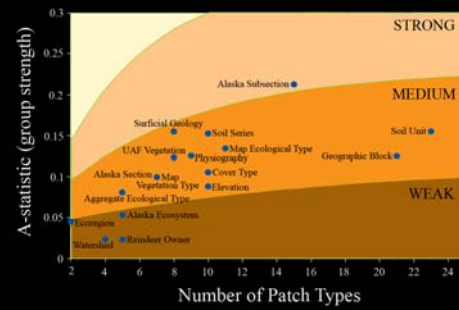
Patch Size



Number of Patch Types



Number of Patch Types



Conclusions

- All 17 classifications separated lichen communities more strongly than chance alone
- Differences may reflect underlying relationships of community composition and habitat factors, as well as the number of groups in each classification
- Strongest classifications was the Alaska Subsections
- Future work may benefit by using these classifications as preliminary stratification principles



Local and global implications

