

Lichen community sampling and transplants at SPRUCE

Peter R. Nelson, Kaleigh Spickerman, Bruce McCune
Department of Botany and Plant Pathology, Oregon State University

Sarah Jovan
Forest Inventory and Analysis Program, USDA Forest Service

Background

- Lichens: symbiosis between ascomycete fungus, green algae and/or cyanobacteria
- Poikilohydric (no water conducting tissue) = makes them very sensitive to atmospheric conditions
- Relatively biodiverse in depauperate boreal vegetation communities

Goals for lichens at SPRUCE

- Monitor lichen community by repeatedly measuring lichen community on *Picea mariana* branches
- Detect changes in lichen growth rate using *Evernia mesomorpha*, a species common in boreal zone

Lichen community monitoring

- 30 cm length of *Picea mariana* branch centered on branch
- Branches at least 1.5 m off ground and at least 50 cm long
- Marked with orange plastic ring and red polyester thread
- Attempted to place them where ladders won't hit them and out of the way so other branches are available for tree physiology measurements

Lichen transplants

- Single thallus attached with monofilament line siliconed to lichen and loosely attached to branch with zip tie
- Only placed on *Picea mariana*
- Marked with white plastic tags
- Attempted to place them where ladders won't hit them and out of the way so other branches are available for tree physiology measurements

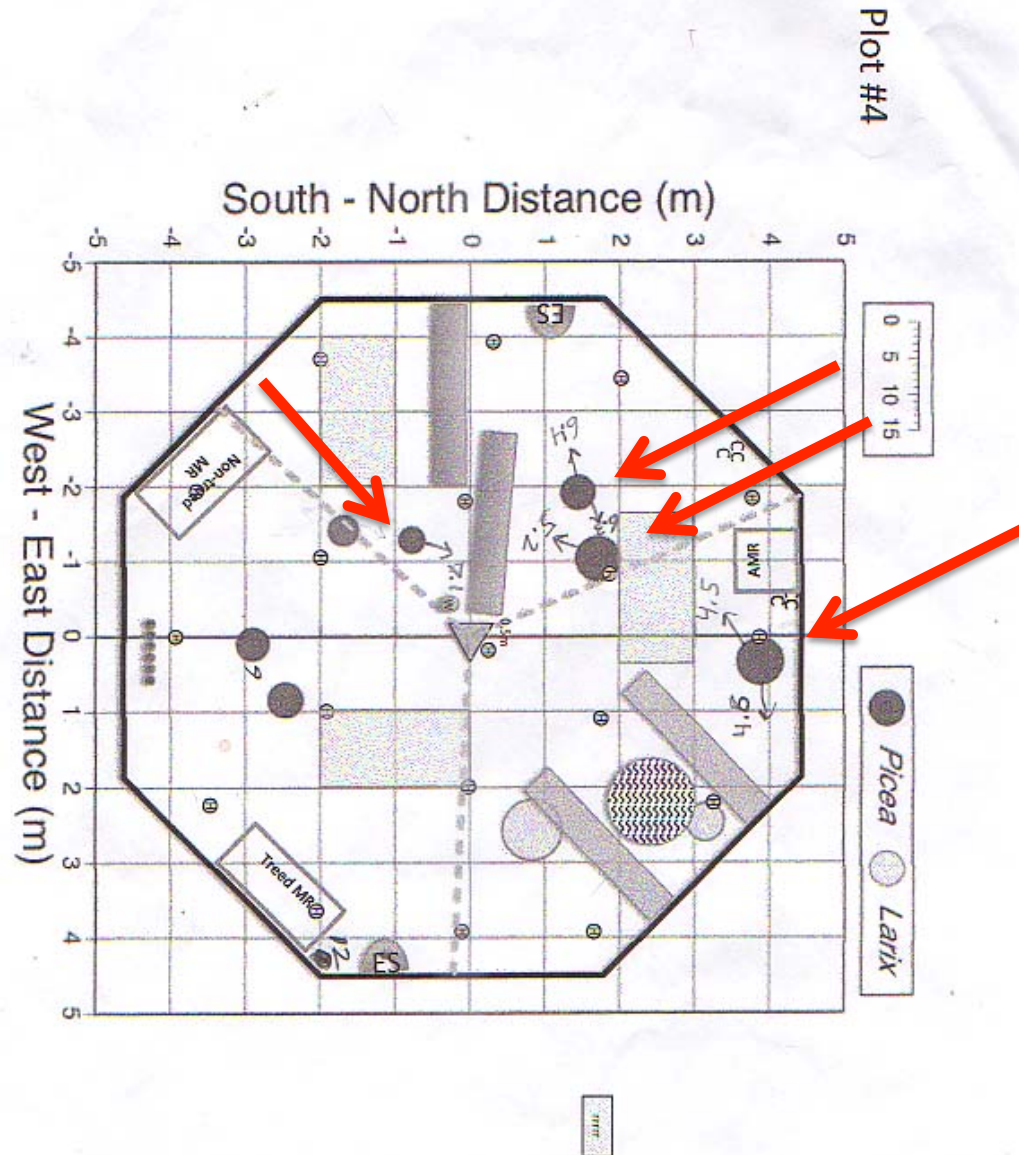
Example lichen community station



Example lichen community station



Example placement of community monitoring stations



Example lichen transplant



Progress

- In Aug., 2013, Nelson and Spickerman
 - installed 5-7 lichen community monitoring stations per enclosure
 - Placed 25-27 *Evernia mesomorpha* transplants per enclosure

How to avoid disturbing the lichens

- If possible, don't touch the transplants
- Avoid abrading branches with orange rings marking community monitoring stations