A person wearing a red jacket is looking at a field guide outdoors. The field guide is open to a page with a photograph of a lichen. The person is holding a blue folder or book. The background shows a tree trunk and some foliage.

# How to Conduct a Lichen Inventory

## Learning Lichens Lesson 3

Funded by: White Mountain Interpretive Association,  
Kiwanis International

Cooperating organizations: White Mountain National  
Forest, Prospect Mt. High School, Alton, NH

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# Lesson 3 Objectives

- Students will develop and investigate a field research question regarding lichen
- Students will lay out a belt transect
- Students will identify and inventory lichen in the forest or schoolyard
- Students will gather and analyze data
- Students will write up and present their data and research conclusions



# Developing Research Questions

- Indoors, review the inventory data sheet with students
- Form groups of 3-4 students
- Have students make a list of the data that they will be collecting
- Have students brainstorm 3 questions about lichen and possible effects by these factors and agree upon one question, consult with teacher

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## Lesson 3: Lichen Field Transect and Research Question\*

This lesson will be conducted by groups of 3-4 students. It will require about 90-100 minutes to complete.

### Objectives:

- Students will be able to conduct biomonitoring inventory
- Students will develop and investigate a research question
- Students will gather, analyze and present data to investigate their research question
- Students will be able to identify common lichen

### Materials for each group:

- DBH or metric measuring tape
- Hand lens
- 2 Data sheets (double sided)
- clipboard
- Pencil
- Pins
- Compass
- 50m measuring tape
- Flagging
- Labels for trees 2 and 2 branches
- ID photos or guidebook
- Camera

Clipboard Font Paragraph Styles Editing

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AaBbCcI AaBbC AaBbCcI AaBbCcI

Emphasis Heading 1 Normal Strong

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Names: \_\_\_\_\_ Date: \_\_\_\_\_

### Lichen Lesson 3: Transect Inventory Data Sheet

Tree or branch (circle one) Tree or branch # \_\_\_\_\_ Location: \_\_\_\_\_

Tree Species: \_\_\_\_\_ Transect Bearing: \_\_\_\_\_

Tree DBH or branch length: \_\_\_\_\_ cm Tree/branch Dist. from origin: \_\_\_\_\_ m

Lower Transect Hits at .5m high	Cm mark on DBH tape	Photo #	Lichen, moss or liverwort species	Notes
1				
2				
3				
4				
5				
6				
7				

# Equipment Needs?

## Kit available on loan from WMNF



Contact [rperron@fs.fed.us](mailto:rperron@fs.fed.us)

3/16/2016

# Laying out Belt Transect

- Each group of 3-4 students (or teacher) will lay out a transect within which they will collect data
- See “How to Lay out a Belt Transect” for procedure



# Select and flag two trees within your transect



- Ideally, use trees between 10 and 30 cm in diameter
- Select two trees of different species, if possible

Measure DBH with diameter tape,  
record DBH and species of tree



For a large tree, measure DBH with distance tape



# Upper Tree Transect

- Measure and record DBH at 1.37m above ground level
- Repeat the steps to record “hits” and identify species



# Record Hits

- On data sheet, record which pins “hit” a lichen, moss or liverwort

Names: Rosina + Mikayla Date: 4-11-14

**Lichen Lesson 3: Transect Inventory Data Sheet**

Tree or branch (circle one) Tree or branch # 3 Location: \_\_\_\_\_

Tree Species: white oak Transect Bearing: \_\_\_\_\_

DBH: 64.5 cm in. Tree Dist. from transect origin: 9 m

Lower Transect Hits .5m	Cm mark on DBH tape	Photo #	Lichen, moss or liverwort species	Notes
1	76	3	Flavoparmelia	
2	67			
3	63			

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# Lower Tree Transect

- At .5 m off the ground, measure DBH
- Push pins into tree at every cm mark around the tree



# Identify Lichen

- See “Lichen Slide Gallery” slide show
- In the field, use photos of most common lichens, mosses and liverworts
- Complete one data sheet for each tree or branch transect



# Select two downed branches



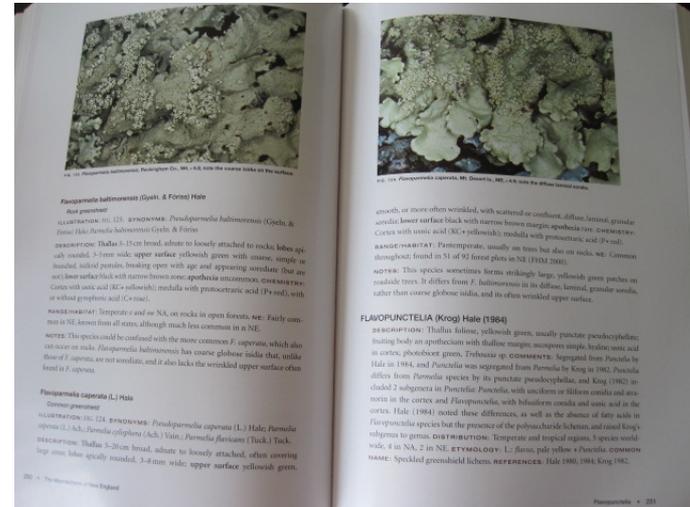
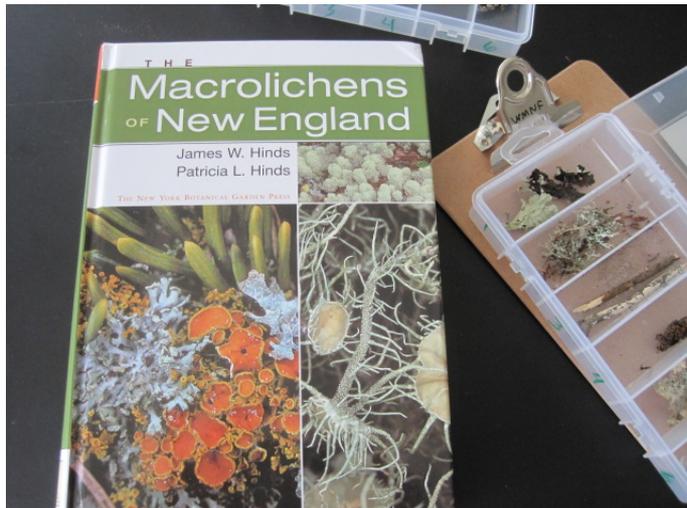
- Branches should ideally be from the canopy, which contains different lichen species from tree trunks
- Measure and record the length of the branch
- Mark “hits along the branch and record species

# Collecting Samples



- If feasible, remove a sample of the lichen from a branch to bring inside, record the origin of the samples
- Removing samples from tree trunks is not recommended unless you can avoid damaging the bark

# Use Hinds Guidebook to confirm identifications indoors



# Complete data sheet.

Do you have all the information you need to answer your research question?

