

Overstory



The Overstory activity takes inventory of the tallest trees in the FERN plot. Overstory trees create the canopy, or highest layer or branches and leaves, and determine how much light reaches lower levels of the forest. By identifying the species and measuring the size of overstory trees, we begin to develop an understanding of the form and function of our FERN plot.

Before you Start:

Take a few minutes to walk around your FERN plot. Work with your classmates to find the boundaries of the 1/10 acre plot and the embedded 1/50 acre and 1/1000 acre plots.

What do you notice about the forest around you?

What do you wonder?

Use your field notebook to record your thoughts. Make note of the date, the weather, and any other information you think might impact how you move through the activity today. One important key to data management is keeping good notes on what is going on around you while you're collecting your data. These factors impact how you do your work, and can give you helpful clues down the road if you notice that something might have gone wrong.

Overstory trees are defined in this activity as trees that have a **diameter at breast height (DBH)** of at least 5 inches.

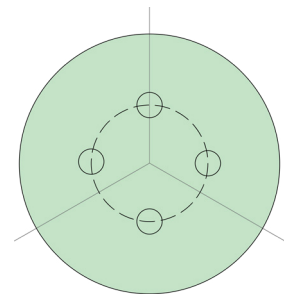
Look around you to get a sense of what trees you anticipate will fall into the overstory category. Look up. *How much of the sky do you see? What season is it? How much sky do you predict you'd be able to see from this spot in different seasons?*

One thing foresters pay attention to when they think about the overstory of a forest is canopy closure, or how much sky is covered by tree tops when you look up from the forest floor. *Why do you think canopy closure is important in the forest ecosystem? How do the crowns or tops of overstory trees impact smaller plants and animals in the forest?* Talk to your classmates about it. Make some notes about your conversation in your field notebook.

This activity takes place in the 1/10 acre FERN plot. *Why do you think we collect overstory data at this scale and not at the smaller 1/50 acre scale or even smaller 1/1000 acre scale?* Talk to your classmates about it.

What You'll Need

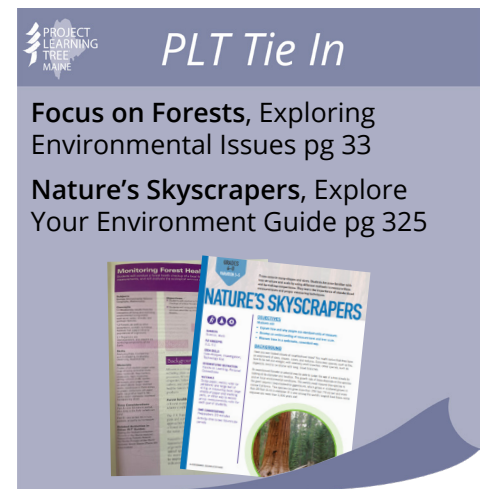
- biltmore stick
- compass
- clinometer
- data sheet
- diameter tape
- Forest Trees of Maine book
- field notebook
- measuring tape
- pencil
- tree ID Tags



This activity happens in the 1/10 acre FERN plot

Procedure:

1. Stand at plot center and face north (*hint: use your compass!*) The tree that is closest to directly in front of you is the tree you should record first.
2. Starting at this first tree, record the Tree ID number, species, **diameter at breast height (DBH)**, and tree status. Use your Forest Trees of Maine book to help figure out the species. Potential tree statuses are listed on your data sheet, they include: living, **dead standing**, **dead harvested**, **dead downed**. Consult the definitions below if you need help.
3. Move through the plot in a clockwise direction to collect data on each overstory tree (*overstory trees are defined as any tree with a DBH greater than 5.0 inches*). Trees closer to plot center should be recorded before trees further on the edge. If you encounter a tree that doesn't have a Tree ID tag yet, ask your teacher or forester guide for help to install a new tag. *Remember to keep the tape level and check your DBH height when measuring each tree.*
4. Repeat the same clockwise sweep through the plot to record the status of stumps and **dead downed** trees. *Note: if a tree is **dead harvested** or **dead downed**, there is no need to collect DBH measurements, only the status is needed.*
5. Estimate and record the heights of the tallest tree of each species in the plot using either the clinometer or biltmore stick. *Hint: Your forester guide can help with this step.*
6. Return to your classroom and check the accuracy of your data. If the plot has been measured before, compare the measurements you just took with the previous measurements to make sure they make sense (*trees should not change species or shrink!*)
7. Once the data is verified, share your findings with Maine TREE and the FERN network for analysis.



Definitions:

Diameter at breast height: often shortened to **DBH**, this is a standardized height used to maintain consistency in reporting the diameter of trees. The diameter of a trunk is not consistent from the ground to the crown. Thanks to this rule, we know that changes we see in diameter across years are due to growth, not measuring different parts of the tree. DBH is defined as the diameter measurement taken at breast height, or the point on the trunk that is 4.5 ft up from the ground measured from the uphill side of the tree. This is where you should take your diameter measurement (*hint: use your measuring tape!*)

Dead standing: refers to a tree that is still upright, but is no longer living. In the spring, summer, and early fall, you can tell if a standing tree is dead by the needles or leaves: are there any? Do they look like they're photosynthesizing? In the winter it's harder to tell, your forester can help.

Dead harvested: refers to a tree that was harvested. You will see a cleanly cut stump.

Dead downed: refers to a tree that has died and fallen over. You will see a tree, or a large section of a tree, lying horizontal on the ground.