

# A Tree's Life

## Dendrometer Kit Information

### Materials included:

- One plastic dendrometer (“Tree Band”)
- One metal spring
- One shipping envelope (hold on to the envelope that your kit was sent in)

### Other materials needed, but not included:

- A red maple between ~ 6 and 11 inches in diameter
- A tape measure or ruler
- One pencil or marking pen
- Eye protection (safety glasses or safety goggles)
- A camera (the camera on your phone is appropriate)
- Optional: needle-nosed pliers

## Installing your dendrometer

- 1) First, select a red maple (*Acer rubrum*) in your yard. Please make sure that the tree you choose:
  - a. Is alive
  - b. Is between ~ 6 and 11 inches in diameter
  - c. Has a relatively straight trunk
  - d. Does not have multiple trunks, or branches within 54 inches of the ground (Fig. 1)
  - e. Does not have vines or other vegetation growing on it (or, remove other vegetation)
- 2) With your red maple selected, you can now determine where to install the dendrometer:
  - a. You will install the dendrometer 4.5 feet (54 inches; 1.37 meters) from the ground. This height is known as breast height (BH), which is a standardized height for tree trunk measurements, and diameter at breast height (DBH) is the standardized measurement of tree trunk size.
  - b. Measure 4.5 feet from the ground and mark the trunk with a marker or pencil. If your tree is on a slope, measure BH on the upslope side of the tree (Fig. 1). If your tree has a branch at BH, you will measure BH below it according to Fig. 1.
- 3) You are now ready to install the dendrometer as shown in Fig. 2 below
  - a. Make sure that the printed side is facing outward, away from the tree. The tail end should slide underneath the head end of the dendrometer (Fig. 3). The head end of the band will wrap clockwise around the tree.
  - b. While holding the dendrometer as securely as you can on the tree trunk, attach the provided metal spring to the hole at the head end of the dendrometer. Be sure to wear proper eye protection when installing the dendrometer.

- c. Then attach the other end of the spring to the first pre-punched hole that will result in the spring being under some tension. Note: You may find the need to use needle nose pliers (not provided) to attach the spring, if so, be careful and be sure to use proper eye protection.
    - d. If the dendrometer has become loose during installation, please adjust it so that it is as tight as possible while perpendicular to the trunk. This may also be accomplished by attaching spring to the next hole in the dendrometer.
    - e. Your dendrometer is installed properly when it is level with the ground and tight enough not to sag or slide down the trunk of the tree.
    - f. **Important: once the dendrometer is installed, please do not move or adjust it. Disturbances to the dendrometer will result in inaccurate monitoring.**
- 4) Take initial measurement
  - a. The dendrometer is printed with a ruler that measures the DBH in inches, with tick marks every 1/10 of an inch.
  - b. Record the DBH of your tree to the nearest 1/10 of an inch.
- 5) First data collection: 30 days after installation.
  - a. You will need to let the dendrometer settle on your tree for about 1 month. Once 30 days have passed, record the DBH of your tree (to the nearest tenth of an inch)
    - i. You may mark your dendrometer with a marking pen to indicate the starting DBH if you care to do so. It will serve as a visual cue of your tree's starting diameter.
  - b. Take a photograph of the dendrometer with the DBH measurement visible (see Fig. 2).
- 6) Tree height: Photograph with shipping envelope and tree
  - a. Since we know the height of the envelope, we can use it to estimate the height of your tree (if you do not have the original envelope use a ruler or yard stick).
  - b. Hang the envelope from the dendrometer so that it lays flat upon and is parallel to the tree trunk (Fig. 4).
  - c. Take a photograph that includes the entire height tree and envelope (its okay if some of the width of the tree is not in the photo as long as we can see the top and bottom of the tree; Fig. 4).
- 7) Data Delivery (We'll send you a reminder e-mail)
  - a. Once you have collected the DBH of your tree in step 5 and taken the photographs in steps 5 and 6 you, use the Data Entry portal at the A Tree's Life website ([www.ecoipm.org/a-trees-life/](http://www.ecoipm.org/a-trees-life/)) to provide us with your data. You will need your Participant ID to enter the data.

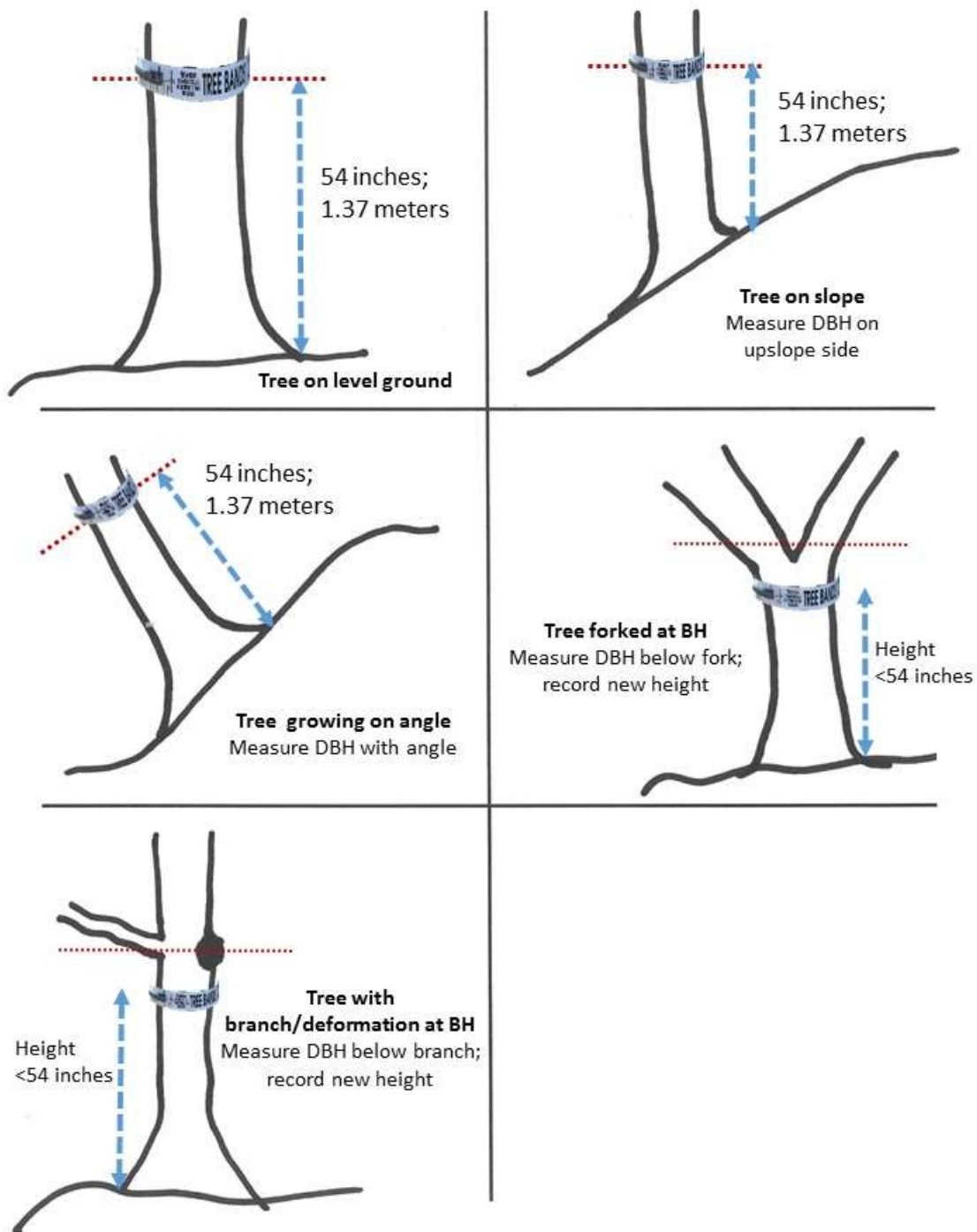


Fig.1 Where to measure DBH on your red maple. The measurement point will depend on your tree's characteristics. The standard BH (54 inches) is shown above as a red dotted line. In some cases, you will place your dendrometer below 54 inches.



Fig. 2 Correct placement of the dendrometer. This red maple has a DBH of 9.3 inches, as indicated by the dendrometer. When uploading your data, include a photograph like those on the right that show your tree's DBH.



Fig 3. Parts of the dendrometer: Head End, Tail End, and Spring.





Fig. 4. Placement of envelope, and example photograph of tree with envelope. Be sure to capture the entire height of the tree in your photograph. In this example, we used a paperclip to hold the envelope to the dendrometer. When hanging the envelope, take care not to disturb the dendrometer. If you don't have the envelope use a ruler or yard stick.

**Questions?**

E-mail us at [a-trees-life@ncsu.edu](mailto:a-trees-life@ncsu.edu)

**Thank you for your help!**