

# 2022 MN State Envirothon

## Forestry Study Guide



### Identification

1. Parts of a tree- including tissue of roots, stem and leaves
  - i. [Parts of the tree](#)
  - b. Identify by leaves, bark, flower, or seeing for trees listed on [MN DNR website](#)
2. [Forest Types in MN](#)

### Forest Ecology

3. [Forest Structure](#)
  - a. Canopy, understory, shrub, ground
  - b. Regeneration and competition
4. Wildlife Benefits
5. [Forest Health](#)
  - a. Invasive species
  - b. Common insects and diseases
6. [Wildfire](#)

### Tree Uses

7. Products
8. [Urban Landscape trees](#)- economic, social, threats and values to communities
9. Watershed protection- benefits of trees near water
  - a. [Buffer zones](#) and filter strips

### Forest Management

10. Harvesting ([silvicultural techniques](#))
  - a. Thinning, shelterwood, clearcutting, seed tree, single tree or group selection
    - i. Even-aged, uneven-aged
  - b. Types of [equipment](#) used by logger
11. Tree measurements and [tools used to collect each](#)
  - a. Basal area (prism or angle gauge)
  - b. Diameter (diameter tape)
  - c. Height (clinometer)
  - d. Age (increment borer)

## Links:

### Forestry A Primer:

[https://files.dnr.state.mn.us/forestry/education/primer/allaboutminnesota'sforestsandtrees\\_a\\_primer.pdf](https://files.dnr.state.mn.us/forestry/education/primer/allaboutminnesota'sforestsandtrees_a_primer.pdf)

<https://www.fs.usda.gov/managing-land/national-forests-grasslands>

**Tree ID:** <https://www.dnr.state.mn.us/trees/native-trees.html>

### Parts of a tree:

<https://www.dnr.state.mn.us/forestry/education/foresttreasures/partsofatree.html>

**MN Trees & Tree Facts:** use left side table of contents for content

<https://www.dnr.state.mn.us/forestry/education/foresttreasures/index.html>

<http://files.dnr.state.mn.us/forestry/education/foresttreasures/minnesota-forest-treasures.pdf>

### Forest Health:

[https://www.dnr.state.mn.us/treecare/forest\\_health/index.html](https://www.dnr.state.mn.us/treecare/forest_health/index.html)

<https://www.fs.usda.gov/managing-land/invasive-species>

### Forest Management/Silviculture Techniques:

[https://www.nrs.fs.fed.us/fmg/nfm/docs/fm101\\_silv.pdf](https://www.nrs.fs.fed.us/fmg/nfm/docs/fm101_silv.pdf)

### Wildfire:

<https://www.rayonier.com/stories/how-forest-management-prevents-forest-fires/>

### Tree Products:

<http://www.gatrees.gov/resources/publications/WhatDoWeGetFromTrees.pdf>

<https://sciencing.com/what-products-are-made-from-trees-12217179.html>

### Urban:

<https://www.state.sc.us/forest/urbben.htm>

### Riparian Buffers:

<https://extension.umn.edu/agroforestry/riparian-buffers>

### Tools:

<https://www.nnrg.org/fieldguidetoforesterstools/>