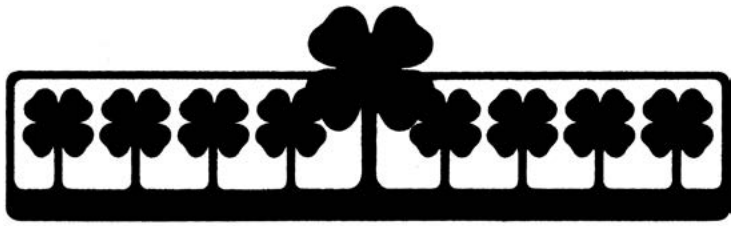
4-H Forestry Project No. 8
Identifying Forest Insects and Diseases



Forests are an entirely different world than open fields or other biological settings. Various insects and diseases that depend on trees for their existence are an extremely important part of this "forest world."

Remember, not all insects or fungi are harmful. In fact, forest ecosystems depend on insects, fungi, and bacteria for breaking down dead wood, twigs, bark, and leaves for incorporation into the mineral soil. This is a form of fertilizer, much like compost used in many gardens.

However, many insects, fungi, and bacteria considered important can also be destructive or damaging to trees. In the South, insects and diseases destroy and damage more trees than forest fires. Enough trees for hundreds of new houses, thousands of new books and newspapers, or enough furniture to furnish thousands of homes are destroyed every year.

Unlike fire, which is easy to see and does damage quickly, some insects and diseases are slow acting and often go unnoticed until a tree is seriously damaged or dead. While fires are contained quickly, insect and disease problems may go unchecked for long periods.

The ability to identify the major insects and diseases of the forest is important. Only when these pests are positively identified can you know what to expect—are they beneficial, or will they destroy acres of trees?

Spend some time with this project. Learn to identify these important pests of the forest.

Project References

- Insects and Diseases of Trees of the South. USDA Forest Service General Report R8-GR5. 98 pages.
- Oak Pests—A Guide to Major Insects, Diseases, Air Pollution, and Chemical Injury. USDA Forest Service General Report SA-GR11. 69 pages.
- Insects on Trees and Shrubs Around the Home. USDA Home and Garden Bulletin No. 214. 51 pages.
- Forest, insect, and disease references at http://extension.msstate.edu/.
- www.bugwood.org

Project Materials

- Paper (legal pad)
- 3-ring binder or notebook
- Black pen or a computer and printer

Optional items:

- A 32-by-40-inch piece of poster board or display foam board available at your local discount or art supply store
- A 32-by-40-inch piece of stiff cardboard or quarter-inch plywood (not needed if you use the display foam board)
- Felt-tip marker
- One example of insect damage and one example of disease damage from the list of major forest pests
- Two 3-by-5-inch index cards
- Sharp knife or small saw

Sources of Help and Information

- County Extension coordinator or 4-H youth agent, Mississippi State University Extension Service
- County service forester, Mississippi Forestry Commission
- Extension Forestry Department, Mississippi State University Extension Service
- District conservationist, Natural Resources Conservation Service, US Department of Agriculture
- Project forester or district ranger, US Forest Service, US Department of Agriculture
- Industry foresters with local forest industries
- Consulting foresters, self-employed
- Garden clubs and other local conservation groups
- Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology, Mississippi State University

Major Forest Pests in Mississippi

Diseases

- Fusiform rust
- Annosus root rot
- Brown spot needle blight
- Black knot
- Needle casts
- Mistletoe
- Cedar apple rust
- Red heart
- Oak wilt
- Hypoxylon canker
- Needle rust

Insects

- Southern pine beetle
- Ips beetle
- Black turpentine beetle
- Nantucket pine tip moth
- Eastern tent caterpillar
- Fall Webworm
- Pales weevil
- White oak borer
- Pine webworm
- Locust borer

Instructions

1. Using the references listed, prepare a brief written report on each insect or disease listed as a major forest pest in Mississippi. Each report should be on a separate page and should include the following information: importance of the pest, how to identify it, how to identify injuries caused by the pest, as well as its biology and how to control it. Please limit each report to 300 words or fewer.
2. Assemble a notebook from these reports. Learn the types of damage caused by each of these pests. You may want to include a picture of the insect and/or its damage in your report. Identifying injuries and how they occur is the first step in controlling any insect or disease problem.

Optional Project Exhibit

If you want to make this project extra special and have a great visual aid, you can prepare an exhibit of insect and disease damage.

1. Make your exhibit board by gluing white poster board (32-by-40-inch) on one side of a piece of heavy cardboard or a piece of quarter-inch plywood. This gives your exhibit enough rigidity to hold its shape. Or, you can use display foam board.
2. Using your reference materials, prepare a 3-by-5-inch index card for each type of insect or disease damage you plan to exhibit. Type or clearly print the common name and a brief description of each insect or disease.
3. Title your exhibit "Forest Insect and Disease Identification." Write or type the title in block letters 11/2 inches high, 1 inch from the top of the board.
4. Collect a sample of the damaged tree that clearly shows the associated injury. These samples could range from bark pieces showing the feeding galleries of bark beetles to twigs showing the evidence of defoliation. If possible, visit a local forester for assistance in locating a tree with damage.
5. Now you are ready to put your exhibit together. First, place your index cards and damaged specimens on the board without glue. Arrange the materials so all items fit and are neatly and evenly spaced on the board.
6. After you are satisfied with the arrangement, glue the cards and samples onto the board.
7. Now that your exhibit is complete, get some good use from it as a visual presentation at club meetings or school. You might also want to use it as a window display or at a county fair.
8. If possible, have someone take a picture of you and your finished exhibit. You may want to include a photograph in your 4-H member's record book.
9. If possible, get a local forester to check your exhibit and sign your record sheet when your subject has been completed. Clip the record sheet and include it in your current year's record book.
10. Save this project sheet and other materials for future reference as you continue in other 4-H forestry projects.

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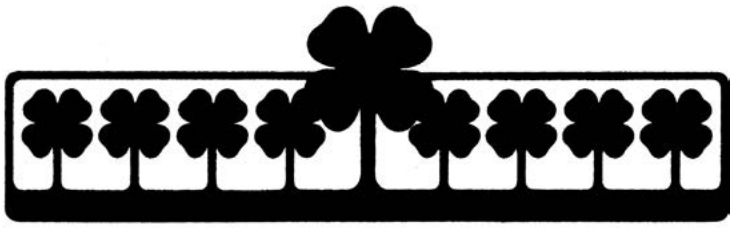

Full name _____ Age _____ Date of birth _____

Grade _____ Years in 4-H _____ Name of club _____

Your parents' names _____

Your address _____

Adult leaders' names _____

1. List the common names of forest pests you studied that cause the following damage:

   a. Defoliation _____

   b. Bark damage _____

   c. Foliage disease _____

   d. Stem or branch disease _____

2. What was the most interesting forest pest you studied? Why? _____

_____

_____

3. What did you like most about studying forest pests? _____

_____

_____

4. What sources of information did you consult for help? _____

_____

_____

5. Did you complete the optional exhibit? If so, have you used your exhibit since you finished it?

_____

_____

_____

6. Write down suggestions on how this project can be improved. _____

_____

_____

_____

As a forester, I have checked the exhibit and found the specimens to be correct.

_____

Forester

As a 4-H leader, I have checked the notebook and found it to be completed satisfactorily.

_____

4-H leader

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