4-H JUDGING TEAMS

A NATURAL FIT

Melissa Henry, Extension Agent
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I am the Lorax, I speak for the Trees!

- Forestry Judging
- Both indoor and outdoor components
- 8-10 practices, 1.5 hour each
- Rotate between indoor and outdoor events
National Contest Components

• Tree Identification
• Compassing
• Insect Identification
• Disease Identification
• Tree Measurement
• Topographic Maps
• Written Exam
• Quiz Bowl
• Site Evaluation
Tennessee Contest Components

• Juniors (4th and 5th grades)
  • Tree Identification and Pacing

• Junior High (6th – 8th grades)
  • Tree Identification, Pacing, Insect/Disease Identification and Tree Measurement

• Senior (9th – 12th grades)
  • Tree Identification, Compassing, Insect/Disease Identification, Tree Measurement, Wood Identification, and Site Evaluation
Equipment
Tree Identification

- Pocket Guides
- Have kids bring in samples
- Make a leaf collection
- Websites
Butterflies/Moths – 7

eastern tent caterpillar

forest tent caterpillar

white-marked tussock moth

fall webworm

gypsy moth

Nantucket pine tip moth

variable oakleaf caterpillar

Images from forestryimages.org
Tree Measurement
Compassing
Topographic Maps
Sample Identification

• Tree ID
• Insect ID
• Disease ID
eastern tent caterpillar

(Malacosoma americanum (F.))

The eastern tent caterpillar is primarily an aesthetic problem and has little adverse effect on the host trees. Species of the genus Prunus are preferred hosts, with black cherry being the primary, uncultivated host.

Full-grown larvae are between 2 to 21/2 inches (50 to 65 mm) in length. Caterpillars have black heads, with long, light brown body hairs. The back has a light stripe, bordered on each side with yellowish-brown and black waxy lines. The sides are marked with blue and black spots. Moths have a wingspread of about 2 to 21/2 inches (50 to 65 mm) and are yellowish-brown, with two narrow, light lines across the front wings.

The larvae construct a white web or tent in the crotch of a small branch. They consume the entire leaf, except the midrib.

Overwintering eggs hatch about the time black cherry buds open in the spring. Young larvae begin to construct a tent and enlarge the structure as they grow. Full-grown larvae construct tough, silken cocoons. Moths emerge in early summer and lay eggs in shiny, dark brown masses around small twigs or branches of host trees.
The southern pine beetle is one of the most destructive pests of pines in the southern United States, Mexico, and Central America. This insect kills a major amount of pine timber in the southern United States every year. The beetle occurs from Pennsylvania to Texas and from New Mexico and Arizona to Honduras. It attacks and can kill all species of pines, but prefers loblolly, shortleaf, Virginia, pond, and pitch pines.

The adult is short-legged, about 1/8-inch (3 mm) long, and dark reddish brown to black in color. The front of its head is notched, and the hind end of its body is rounded. The larvae are crescent-shaped and whitish, with an amber head. When fully developed, larvae are approximately the same length as adults. The pupae are also the same size and white. The eggs are pearly-white and found in notches along either side of the adult egg galleries.

The adults bore directly through the outer bark into the living bark. At each point of attack, the tree usually exudes resin which forms a small pitch tube about the size of a small piece of popped popcorn. Adult beetles construct winding, S-shaped galleries which cut across one another and girdle the tree. Blue-stain fungi in the sapwood, introduced by the beetles, hasten the death of the tree. The first indication of tree mortality is discoloration of the foliage. Needles become yellowish, change to a red color, and finally turn brown. Trees may be killed singly or in groups, ranging from a few trees to several hundred acres.

Adults construct winding galleries in the inner bark, where eggs are deposited in individual niches on each side of the galleries. The eggs hatch into small larvae within 4 to 9 days. The larvae mine for a short distance before boring into the outer bark where they pupate. One life cycle can be completed in about 30 days under ideal conditions. There are from three to seven generations per year, depending on latitude, elevation, and climate.
black knot

*Apisporina morbosa*

Black knot is an important disease of cherry, because it degrades this wood of this valuable veneer and lumber species. Except for southern Florida and southern Louisiana, this disease is found throughout the Southeast. Many species of cherry are affected, but black cherry is the only commercially important species. The disease is rarely fatal.

Swellings on the branch of the host plant are covered with an irregular, rough, fruiting layer of fungal tissue. Spore bearing fruiting bodies form within this fruiting layer. The fruiting bodies and the spores are easily recognized by a specialist.

Black knot is a disease that causes irregular black swellings on black cherry stems, branches, and twigs. Often a white fungus is found growing over the swellings. Later, the swellings blacken and appear rough. Infection occurs during the spring, and swellings develop the following spring. These swellings are overgrown by a black irregular mass of fungal fruiting bodies.
**spindle-shaped galls**

**orange fruiting body on oak leaves**

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**fusiform rust**

*Cronartium quercuum f. sp. fusiforme*

Fusiform rust infections that occur on the main stem within the first 5 years of a tree’s life normally cause tree death. Infections that occur later in the life cycle of the tree weaken the stem, resulting in wind breakage at the canker or quality loss at rotation. Losses in individual nurseries can exceed 80 percent. Loblolly and slash pine are the most susceptible species. Longleaf is fairly resistant, while shortleaf pine is highly resistant. Oak is the alternate host.

The fungus produces orange spores on the surface of fusiform-shaped pine galls in the spring. Orange spores are produced on the lower surface of the oak leaves. Later, hair-like structures are also produced on the leaf.

Spindle-shaped swellings or galls develop on the branches or main stem. Main stem infections on older trees are somewhat depressed on one side. Trees commonly break at the canker. In the spring, the galls turn orange. Infection on the oak host produces orange leaf spots and hair-like telia, which can cause cupping and curling of the leaf.
WHEP, There’s a Critter Over There

- Wildlife Habitat Education Program (WHEP)
- Began as Wildlife Judging
- Both indoor and outdoor components
- 8-10 practices, 1.5 hour each
National Contest Components

• Wildlife Challenge
  • Identify animal and answer question about it
  • Can be picture, pelt, skull, track, feather, call, etc.
  • Host state’s ecoregion, plus urban and wetland

• WMPs
  • Given 5-8 animals and scenario, must decide which management practices are appropriate for the area
  • Host state’s ecoregion is used

• Written Management Plan
• Oral Reasons
Tennessee Contest Components

• All divisions complete both sections (4th grade – 12th grade)
• Wildlife Challenge
  • Identify animal and answer question about it
  • Can be picture, pelt, skull, track, feather, call, etc.
  • EDF, SEM, Urban, and Wetlands
• WMPs
  • Given 5-8 animals and scenario, must decide which management practices are appropriate for the area
  • Eastern Deciduous Forest ecoregion only
• Written Management Plan
• Oral Reasons
mournning dove

• **Size & Shape**
  Plump-bodied and long-tailed, with short legs, small bill, and a head that looks particularly small in comparison to the body. The long, pointed tail is unique among North American doves.

• **Color Pattern**
  Mourning Doves often match their open-country surroundings. They’re delicate brown to buffy-tan overall, with black spots on the wings and black-bordered white tips to the tail feathers
great horned owl

• **Size & Shape**
  - These are large, thick-bodied owls with two prominent feathered tufts on the head. The wings are broad and rounded. In flight, the rounded head and short bill combine to create a blunt-headed silhouette.

• **Color Pattern**
  - Great Horned Owls are mottled gray-brown, with reddish brown faces and a neat white patch on the throat. Their overall color tone varies regionally from sooty to pale.
Largemouth bass

Largemouth bass are not really bass but members of the Sunfish family. Largemouth bass are the most popular freshwater sportfish in states where they are found.

They can be found in freshwater lakes, rivers, large streams, farm ponds, and brackish marshes.

Habitat requirements

**Diet:** young bass eat insects and other invertebrates (worms, crayfish, and zooplankton); adults eat small fish, such as bluegill, and a variety of minnows, as well as tadpoles, crayfish, and even ducklings

**Cover:** aquatic environments with submerged rocks, woody debris, and aquatic vegetation where small fish (prey) hide

**Water:** basic requirements include dissolved oxygen (minimum of 4 parts per million); pH should range between 6.5 and 9.0; water temperature should reach at least 70 F during summer (one foot below surface in shade)
UT Western Region 4-H
Wildlife Challenge

Place Contestant Label Here

1a) ___________________________ 11a) ___________________________
1b) ___________________________ 11b) ___________________________
2a) ___________________________ 12a) ___________________________
2b) ___________________________ 12b) ___________________________
3a) ___________________________ 13a) ___________________________
3b) ___________________________ 13b) ___________________________
4a) ___________________________ 14a) ___________________________
4b) ___________________________ 14b) ___________________________
5a) ___________________________ 15a) ___________________________
5b) ___________________________ 15b) ___________________________
6a) ___________________________ 16a) ___________________________
6b) ___________________________ 16b) ___________________________
7a) ___________________________ 17a) ___________________________
7b) ___________________________ 17b) ___________________________
8a) ___________________________ 18a) ___________________________
8b) ___________________________ 18b) ___________________________
9a) ___________________________ 19a) ___________________________
9b) ___________________________ 19b) ___________________________
10a) ___________________________ 20a) ___________________________
10b) ___________________________ 20b) ___________________________

Total Incorrect ________ Total Score ________

For Official Scoring Use Only

1 2 3 4 5
6 7 8 9 0
Sample Questions
Wildlife Challenge
1A. Identify

1B. Which of the following is the water requirement for this species?
A) Obtains water from food sources
B) Free-standing water required daily
C) Free-flowing water required daily
D) Needs water structures built to meet water needs
2A. Identify

2B. On average, how many litters does this species produce each year?
A) 1
B) 3
C) 5
D) 7
3A. Identify

3B. This species prefers water at what depth?

A) 1 foot
B) 3 feet
C) 5 feet
D) 7 feet
WMPs

Ecoregion Map

- Southeast Mixed and Outer Coastal Plain Forest
- Eastern Deciduous Forest
- Northeast Mixed Forest
- Tallgrass/Mixed Prairie
- Shortgrass Prairie
- Intermountain
- Prairie Brushland
- Woodland
- Pacific Coastal Forest
- Hot Desert
- Mediterranean
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Envirothon

• Open to 4-H, FFA, Science Clubs, etc.
• Team of 3-5 students
• All team stations, no individual work
• In Tennessee usually held near Earth Day
• 5 study areas
  • Forestry, Wildlife, Soils, Aquatics, Current Environmental Topic
A Natural Fit

• Afterschool programs
• In school clubs
• Science class
• Day camps
• Other STEM education
Websites

• National 4-H Forestry Invitational
  • www.4hforestryinvitational.org

• Wildlife Habitat Education Program
  • www.whep.org

• Envirothon
  • www.envirothon.org
Questions?