**2016 National FFA Forestry CDE**

Forest Management Evaluation - Timber Stand Improvements (TSI) and/or Thinning Practicum

You are the manager of this section of a State Forest, public forest land that is managed for multiple uses. In this stand, the objective is to maintain the oak-hickory component to benefit wildlife and timber production.

**Information to help you make your decision include:**

**Markets available**

Local markets include logs for lumber and veneer. Logs include those used for pallets, railroad ties, barrel staves, and grade lumber to be used in a variety of products. This forest is considered generally too far from any paper mills that would support a pulp market; therefore, no pulp market exists. A few sawmills will accept logs as small as eight inches in diameter measured inside the bark on the small end of the log. The shortest length of log used by any mill is eight feet six inches long. All the logs are scaled in six-foot increments. All species of hardwoods can be used at local mills.

**Wildlife considerations**

The only federally endangered species of wildlife inhabiting this state forest is the Indiana bat. This species was already listed as federally endangered prior to the onset of white nose syndrome (WNS) throughout the eastern US. WNS is a fungal disease that is fatal to nearly all bats that hibernate in caves. This bat prefers open understories and forest canopies where it can forage for insects. The females congregate in large numbers together with their babies (pups) in colonies on roost trees. They prefer to roost in dead trees with loose bark or live trees of certain species that have characteristic loose bark. Extra light exposure on the stems of roost trees is beneficial to keeping the pups warm while they grow. Other species of wildlife present either benefit from or are tolerant to timber harvesting, as nearly all of Indiana’s forests were cleared, grazed, and/or burned intensively by early settlers.

**Present condition of stand**

This stand is currently overstocked. There is a great deal of competition in the overstory, and the understory is too dense and too shaded for adequate advanced regeneration of tree seedlings to occur. The overstory is oak-hickory forest type; however, the midstory and understory are rapidly changing over to beech, a much different forest type.

**Management plan**

A timber harvest should occur to remove some of the trees competing in the overstory. Timber stand improvement should follow to eliminate additional trees that have no merchantable value but are causing issues with the proper development of the stand.

Each tree is worth 5 points.

On your ScanTron Sheet each tree should be marked according to the following:

A. Harvest - utilize the tree

B. Leave - the tree should remain in stand for a good reason

C. Deaden - Undesirable tree, not merchantable or beneficial to wildlife, should be deadened or cut down and left in the woods.

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| --- | --- | --- | --- |
| Tree Number  | Species | DBH | Category |
| 1 | American Sycamore | 9 | TSI |
| 2 | American Beech | 18 | Harvest |
| 3 | Black Oak | 16 | Leave |
| 4 | Yellow-Poplar | 30 | Harvest |
| 5 | Shagbark Hickory | 20 | Leave |
| 6 | Black Oak | 17 | Leave |
| 7 | Shagbark Hickory | 11 | Leave |
| 8 | Black Oak | 16 | Leave |
| 9 | American Beech | 8 | TSI |
| 10 | Shagbark Hickory | 12 | Leave |
| 11 | American Beech | 8 | TSI |
| 12 | Shagbark Hickory | 13 | Leave |
| 13 | Chinkapin Oak | 15 | Leave |
| 14 | American Beech | 15 | Harvest |
| 15 | American Beech | 15 | Harvest |
| 16 | Black Oak | 23 | Leave |
| 17 | American Beech | 11 | TSI |
| 18 | Northern Red Oak | 29 | Leave |
| 19 | Black Walnut | 18 | Leave |
| 20 | Yellow-Poplar | 21 | Harvest |

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**KEY**