USDA United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E666P

CONSERVATION STEWARDSHIP PROGRAM

Summer roosting habitat for native forest-dwelling bat species

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest, Associated Ag Land, Farmstead

RESOURCE CONCERN: Animals

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description

Create new potential roost trees within upland and riparian forests to achieve desired summer habitat for forest-dwelling bat species.

Criteria

- States will apply general criteria from the NRCS National Conservation Practice Standard Forest Stand Improvement (Code 666) as listed below, and additional criteria as required by the NRCS State Office.
- These criteria and any tree removal activities will be coordinated with U.S. Fish and Wildlife Service (USFWS). This includes the establishment of minimum criteria to meet the habitat requirements of the bat species of concern while avoiding potentially detrimental disturbances during the maternity period.
- Create additional snags within the forested acres by girdling/killing live trees. When choosing trees to kill, consider that the majority of snag-roosting bats prefer the largest available snags, which often extend above the forest canopy and retain bark for a longer period of time. Also focus on killing trees that are undesirable for quality forest products due to species or form.
- Promote use of live trees with loose or exfoliating bark by killing all trees adjacent (canopies within 15 feet of habitat tree) to trees determined to have desired bark characteristics, as defined by NRCS state technical staff. Larger diameter trees should be considered as habitat trees, as desirable bark characteristics tend to improve with the

size and age of the tree. Large/mature trees also develop splits, breaks, dead limbs, and cavities that serve as roosting areas.

- Habitat trees should be distributed evenly across the treated acres.
- The combined snags and live, loose bark trees should be created or maintained at a combined rate as determined to be necessary to meet the habitat requirements of the bat species of concern and the specific forest type, as defined by the USFWS and NRCS state technical staff.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.
- When determining which trees will be killed for snag creation, and/or used to create loose/exfoliating bark, consider effects on the remaining stand.
    - Identify and retain preferred tree and understory species to achieve all planned purposes and landowner objectives.
    - Use available guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained. Schedule treatments to avoid overstocked conditions using approved silvicultural stocking guides.
    - Implement forest stand improvement activities in ways that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.

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Documentation and Implementation Requirements:

Participant will:

- ☐ Prior to implementation, work with NRCS to complete a wildlife habitat evaluation guide or State equivalent.
- ☐ Prior to implementation, obtain a wildlife habitat management plan for the targeted species suite which includes:
  - Wildlife Habitat Evaluation Guide scores for benchmark and desired conditions.
  - The minimum criteria to meet the targeted species habitat requirements.
  - A plan map indicating the stands and individual trees selected for the treatment.
  - A list of NRCS Conservation Practice Standards that will be applied to reach the desired habitat conditions
- ☐ During implementation, keep a field log which includes:
  - Treatment dates
  - Count of treated (girdled) trees and treatment actions completed (i.e. removal of canopies within 15 feet of habitat tree).
- ☐ During implementation, notify NRCS of any planned changes, notify NRCS of any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, notify NRCS that implementation has been completed.
- ☐ After implementation, make the follow items available for NRCS review to verify implementation of the enhancement:
  - Wildlife Habitat Management Plan.
  - Wildlife habitat plan treatment map.
  - Field log.
  - Digital photographs.

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NRCS will:

- ☐ Prior to implementation, assist the participant in completing the state's approved NRCS Wildlife Habitat Evaluation Guide (WHEG) or State equivalent. **Target Bat Species of concern: _____**
  Current/Existing Condition WHEG score:_____
  Planned WHEG score after implementation:_____
- ☐ Prior to implementation, provide participant assistance in the development of a wildlife habitat management plan.
- ☐ Prior to implementation, provide participant with additional technical assistance to the, as requested.
- ☐ During implementation, as needed, evaluate any planned changes to verify they meet the enhancement criteria.
- ☐ After implementation, verify implementation of the wildlife habitat management plan, by reviewing field log records kept and digital photographs taken during enhancement implementation.
- ☐ After implementation, complete the state's approved NRCS Wildlife Habitat Evaluation Guide (WHEG) or State equivalent. **WHEG score after implementation:_____**

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____
NRCS Technical Adequacy Signature Date

2024 CSP ENHANCEMENTS – GUIDANCE & PERFORMANCE CERTIFICATION

E666P – Summer Roosting Habitat for Native Forest-Dwelling Bat Species

Conservation Practice 666: Forest Stand Improvement

BRIEF DESCRIPTION OF ENHANCEMENT: This enhancement will be used to create new potential roost snags for forest-dwelling bat species.

Some important things to note:

- **Eligible Treatment Areas:** Hardwood forests and mixed pine-hardwood forests. Pine is not an eligible treatment area because prescribed fire will destroy standing snags.
- **Recommended Treatment Implementation:** It is preferable to treat some acres at the start of the contract and the balance of the acres at the end of the contract, to spread out the time frame of available snags on the property. Ideally, the conservation plan will include roughly half the acres in the first 2 years of the contract and the other half of the acres in the last 2 years of the contract.
- **Green tree retention-Future Snags:** Leave as many cull trees as possible as "leave trees" to become future snags. Cull trees include those with broken tops, wounded areas (ex: lightning strikes) or other defects that reduce their commercial value and increase future mortality. These can be girdled or injected with herbicide as snag creation as needed in the future if they don't die on their own.
- **Green tree retention-Species with Loose Bark:** Leave as many large live trees as possible of species that have loose/exfoliating bark. Species such as white oak, shellbark hickory and shagbark hickory are excellent examples.
- **Existing Snag Retention***: Retain all existing snags that are not a safety hazard. (Avoid all disturbance of snags during non-volant (pupping) season from May 1-July 15.) ***Please note that snag retention is not a part of this enhancement; only new snags created will count toward fulfilling this enhancement.***
- **Snag Creation—*Medium AND Large snags must be created for this enhancement.***
- **Snag Creation—Medium Trees**: Create a minimum of 3 snags per treated acre; between 8 inch diameter at breast height (dbh) and 10 inches dbh and 30' in height **OR** create a minimum of 8 snags per treated acre; between 5 inch dbh and 8 inch dbh and greater than 25' in height. These sizes may be combined (For example: Create 2 eight inch snags per ac and 3 six inch snags per ac) **AND**
- **Snag Creation—Large Trees:** Create a minimum of 2 snags per 5 treated acres; greater than 15-inch dbh and greater than 50' in height **OR** create a minimum of 1 snag per treated acre; between 10-inch dbh and 15 inch dbh and greater than 40' in height. These sizes may be combined. (For example: one snag of greater than 15-inch dbh along with 3 trees of 10"-15" dbh per 5 acres of treated area.)
- **Snag Distribution—**Snags that are created can be scattered across the treatment area or they can be created in groups or clusters.

- **Snag Creation**—Snags can be created by girdling or by injection with herbicides. IF girdling is the method of choice then a chainsaw should be used to make a solid cut through the bark and cambium into the wood that is carried all the way around the tree and crosses the cut made at the starting point. It is very important to ensure the cut gets down into the wood and completely severs the nutrient and water flow from the roots to the crown. Herbicide injection tends to be more effective on tree deadening than girdling, but herbicides can have residual effects if care isn't taken. Soil active herbicides dripping out of the cut on the target tree can damage other surrounding trees, so use soil active herbicides with caution. Also keep in mind that herbicides can sometimes travel from a target tree to a nearby non-target tree of the same species through root grafts. Follow all herbicide label directions.

ATTACH COPIES OF REQUIRED DOCUMENTS AS NOTED BY THE ENHANCEMENT JOB SHEET. CHECK THE BOX OR OTHERWISE IDENTIFY THE SUPPORTING DOCUMENTATION.

- ☐ MAPS OF THE AREA or LOCATION(S) WHERE THIS PRACTICE WAS APPLIED
- ☐ REPRESENTATIVE DIGITAL IMAGES/PHOTOS OF SOME TREATED TREES AND INDICATE AREA ON MAP
- ☐ DATES OF COMPLETED ACTIVITY

The attached documents support the full implementation of this Conservation Stewardship Enhancement.

_____ _____

CSP Participant Name Date

*SNAG RETENTION Information: According to the document referenced below, "Forest Management and Bats": "In general, retain snags in the early stages of decay rather than more-decayed ones, tall and large-diameter snags rather than smaller ones, and snags with more bark cover than those with little cover." (See *Figure 1*, Classes 2 through 4.) "Snags should be well distributed across the landscape, including along drainage bottoms, upland slopes and ridge tops. Preference should generally be given to maintaining snags along forest-stand edges and other open areas where they receive more sunlight. When practicing even-aged management, such as clearcuts, shelterwoods and seed-tree cuts, and where silvicultural and logging safety objectives are not compromised, consider leaving snags either evenly distributed across harvest units or in patches. Leaving snags in patches interspersed with green trees helps keep them from being blown over by high winds, as will leaving them in locations with protection from prevailing winds. This also makes it easier to conduct management operations. In landscapes that are intensively managed for timber, snags can be maintained primarily in streamside management zones, forested corridors and other less-intensively managed habitats. In coniferous forests, foliage-roosting bats that prefer broadleaf deciduous trees often are concentrated within riparian zones, since they usually contain more broadleaf vegetation."

References

Taylor, Daniel A. R. 2006. Forest Management and Bats. Bat Conservation International, National Fish and Wildlife Foundation, USDA Natural Resources Conservation Service.

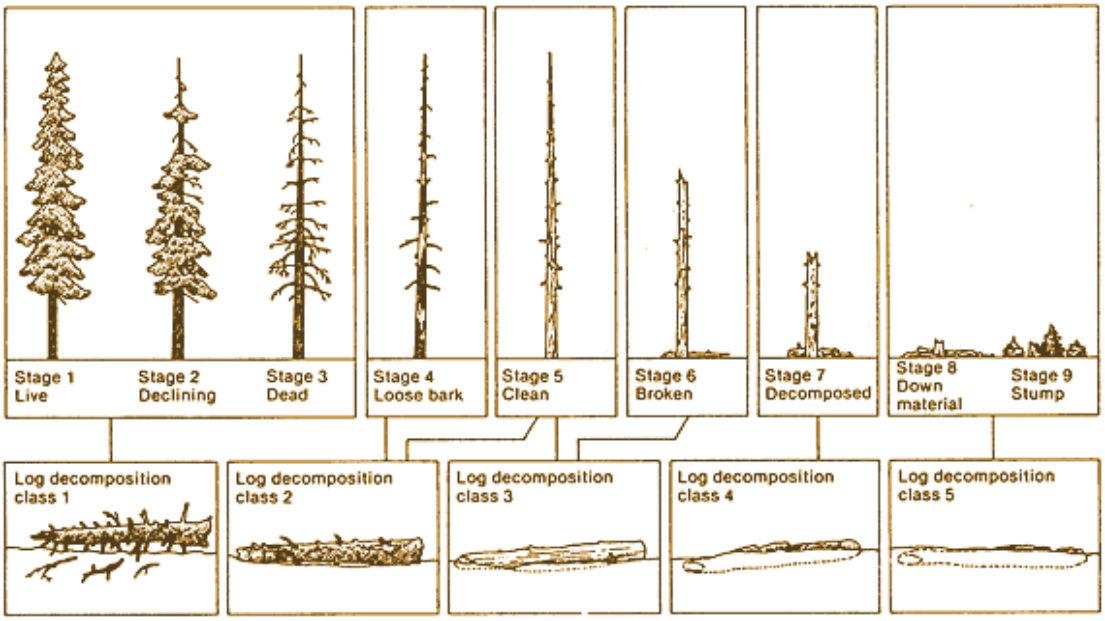

Figure 1. Snag and down wood decay classification system (Maser et al. 1979)

CSP				
E666P **Summer Roosting Habitat For Native Forest-Dwelling Bat Species**				
Producer Name:			Date:	
Tract Number:			County:	
Field Number	Total Number of Medium Snags (5 to 8 inch) Acre	Total Number of Medium Snags (8 to 10 inch) Acre	Total Number Large Snags (10 to 15 inch) Acre	Total Number Large Snags (15+ inches) / 5 Acres