Voluntary Management Hardwood Tree Thinning

PURPOSE

Management Activities in the Conservation Reserve Program (CRP) ensure plant diversity and wildlife benefits are enhanced throughout the contract period while maintaining soil and water resources. From the 2018 Farm Bill, USDA with input from other federal, state, and local partners, identified practices that require management activities and those that are voluntary. In Indiana, management activities for tree practices were approved as voluntary and are not required. The document described the Tree Thinning practice option for Mid Contract Management.

Tree plantings can become overtopped and overcrowded by competing undesirable trees, thus reducing tree growth and reducing wildlife benefits. Thinning can release slow growing overcrowded trees to enhance wildlife benefits by removing undesirable woody vegetation, removing diseased trees, developing fuller crowns to improve seed production, and developing heavier herbaceous plants for wildlife escape cover.

FREQUENCY

Tree Thinning is only offered as voluntary Management Activity for re-enrollments in Indiana. This restriction is due to the narrow time frame of new CRP contracts and typical hardwood tree planting densities and growth rates.

On re-enrolled CRP tree acres, the Tree Thinning activities can begin as soon as technically feasible. All management practices must be completed by the end of year 6 of a 10-year contract and by the end of year 9 of a 15-year contract.

PLANNING

Thinning operations will follow the Forest Stand Improvement (666) Standard in the NRCS Field Office Technical Guide (FOTG).

SPECIFICATIONS

The following are specifications for tree thinning on CRP acreage in Indiana:

- Specifications must include the frequency, time period, and specific actions for the thinning.

- To protect federally-listed bats (such as the Indiana bat and Northern Long-Eared bat), thinning activities on trees ≥ 3 inches diameter-breast height (DBH) will only be conducted between October 1 and March 31. Thinning is best done when the vegetation is dormant, in winter or early spring.

- With prior approval from the FSA County Committee (COC), it may be possible to stack removed trees into brush piles or girdle the trees and leave them standing to provide added wildlife habitat features.

- Brush piles on CRP will follow Upland Wildlife Habitat Management (645) Standard and the Indiana Wildlife Brush Piles Job Sheet.

Subject to approval, the CRP participant may make commercial use of forest refuse resulting from thinning if the participant agrees to:

- Protect the area from erosion by establishing adequate wildlife cover

- Burn debris or otherwise treat the forest refuse to improve resource condition and enhance wildlife habitat and reduce the spread of insect and disease.
CRP Tree Thinning – Specifications Sheet

<table>
<thead>
<tr>
<th>Landowner:</th>
<th>County:</th>
</tr>
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<tbody>
<tr>
<td>Farm:</td>
<td>Tract:</td>
</tr>
</tbody>
</table>

CONCURRENCE OF IDNR DISTRICT FORESTER OR TSP (If required*):

*Required on CP3, CP3A, and CP31, or as requested by FSA or NRCS

Restrictions:
Thinning activates should minimize disturbances to the site such as rutting, soil compaction, excessive disturbance to the litter layer, and the addition of fill material. Facilitate efficient and safe tree removal by controlling the method, felling direction, and timing of tree cutting. Protect sensitive areas such as vernal pools, riparian zones, and cultural resources.

No trees larger than three (3) inches in DBH will be felled during the reproductive season (April 1 – September 30) of the federally endangered Indiana Bat (Myotis sodalis) and the federally threatened Northern long-eared bat (Myotis septentrionalis).

Use of large mobile equipment such as tractors, skid steers, feller bunchers, etc. are not authorized during the primary nesting season (April 1 - August 1).

Kill unwanted trees, shrubs, and vines by any of the following means: (check all that apply)
- ☐ Cutting – Trees are cut down. Re-sprouting will often occur on trees less than 12 inches in diameter, unless herbicide is applied to the stump’s cut surface.
- ☐ Girdling- Two horizontal cuts 2 and 4 vertical inches apart, 1 to 1 ½ inches deep, completely around the tree when no herbicide is used and one horizontal cut when herbicide is used.
- ☐ Basal bark spray - Spraying the lower 12 to 18 inches of the trunk with herbicide. Effective on trees less than 4 to 6 inches in diameter and thin bark species
- ☐ Frilling - Done with an ax or hatchet with downward angled cuts completely around the tree, with or without herbicide.
- ☐ Stem injection – Done with a modified ax, hatchet, or hypo-hatchet, generally 2 inches long and 1 to 3 inches apart. A small amount of concentrated herbicide is injected into the cut.
- ☐ Foliar spray on small trees – Herbicide sprayed directly on green actively growing foliage.

Tree Thinning recommendations can be based on basal area (BA) reduction, trees per acre killed, OR crop trees per acre to release. Table 1 illustrates general spacing and stocking levels for stands with average diameters of 4 to 12 inches DBH. Crop Tree Thinning focuses on releasing pre-selected individual trees that produce benefits consistent with CRP wildlife objectives and landowner goals and site objectives.

Table 1. General Thinning Guide for Hardwood Plantations

<table>
<thead>
<tr>
<th>Average Tree Diameter (inches)</th>
<th>Spacing (feet)</th>
<th>Basal Area (sq. ft.)</th>
<th>Trees/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>8-10</td>
<td>38-60</td>
<td>440-680</td>
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<tr>
<td>6</td>
<td>10-13</td>
<td>43-70</td>
<td>220-360</td>
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<tr>
<td>8</td>
<td>13-17</td>
<td>45-75</td>
<td>130-220</td>
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<tr>
<td>10</td>
<td>16-20</td>
<td>55-93</td>
<td>100-170</td>
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<tr>
<td>12</td>
<td>18-24</td>
<td>55-94</td>
<td>70-120</td>
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Source: FNR-15, McKenna and Woeste (2006)
For Crop Tree Release Thinning, select 30 to 75 crop trees per acre based on the following criteria:

- Dominant or codominant canopy tree
- Healthy crown
- Minimal epicormic branching
- Good form
- Free of defects and disease
- Desired species
- Adapted species

Remove all trees in direct, adjacent competition with the crop trees. For optimum response, provide at least 10 to 15 feet of crown growing space on all quadrants of residual crop trees. (See figures below)

### Figure 1. Identify Crop Trees

![Image of Crop Trees]

### Figure 2. Remove Competing Trees

![Image of Removing Trees]

### Tree Thinning Recommendations:

<table>
<thead>
<tr>
<th>CRP Field #</th>
<th>Acres</th>
<th>Pre-Thinning BA/ac.</th>
<th>Post Thinning BA/ac.</th>
<th>Pre-Trees/Ac</th>
<th>Post Trees/ac</th>
<th>Crop Trees/ac Released</th>
<th>Time of Year [Month(s)]</th>
<th>Year</th>
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**Additional Thinning Information/Comments:** i.e. Desirable- trees species, form, spacing (feet), etc.

**Additional Specifications (Check all that apply)**

- Do not treat stumps with herbicide
- Treat all stumps with an approved herbicide
- Treat only the stumps of undesirable species with an approved herbicide
- Remove unwanted or undesirable trees down to _____ inches in diameter (DBH)
- Maintain maximum stump height of _____ inches for desirable coppiced species and _____ inches for undesirable species
If chemical application is needed, use the following products at label rates:

<table>
<thead>
<tr>
<th>CRP Field #</th>
<th>Acres</th>
<th>Herbicide-Type</th>
<th>Treatment</th>
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When choosing herbicides, review leaching, runoff potential, flashback, setback requirements, persistence, and toxicity ratings of chemical formulations. Use the safest available herbicide. Herbicides used improperly can be injurious to man, animals, and plants. Follow all labels.

**Additional Specifications to Provide Wildlife Habitat: (Check all that apply)**

- Favor soft and hard-mast producing trees for target wildlife species on suitable sites.
- Create, recruit, and/or maintain seven snags and seven den trees greater than 6 inches Diameter Breast Height (DBH) per acre.
- Leave three to four native vines per acre. Favor trees with grapevines as den trees.
- Consider heavy thinning to encourage fuller crown development, increased seed production, and heavier herbaceous plant and woody browse development.
- With COC approval, create brush piles for wildlife cover with materials left from thinning work. Follow Upland Wildlife Habitat Management (645) Standard and the Indian Wildlife Brush Piles Job Sheet in the FOTG, Section IV.

**Optional/Additional Specifications for Treatment of Forest Refuse/Debris: (Subject to COC approval)** Forest refuse left on site must not pose a significant wildfire, safety, environmental, or pest hazard.

- The CRP participant desires to make commercial use of forest refuse resulting from thinning.

**Additional Considerations & Specific Actions:**

**Maintenance:**
- Rotate thinning through each stand to establish various stages of plant succession and age classes
- Monitor treated acres for invasive species and take appropriate action to control/suppress such species
- Monitor treated acres for possible insect and/or disease outbreaks