

REQUEST FOR PROPOSALS (RFP)

FOREST RESILIENCY RESTORATION SERVICES

Des Moines County Conservation

RFP Release	September 22, 2026
Pre-Bid Field Tours	October 15, 2026
Proposals Due	Friday, October 23, 2026 by 3:00 PM
Anticipated Award	November 4, 2026 Conservation Board Meeting
Project Period	2026-2030; field work subject to written Notice to Proceed

Contact:

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INTRODUCTION

The Conservation Department of Des Moines County, acting through the Des Moines County Conservation Board (hereinafter “County” or “DMCC”), invites qualified forestry, habitat-restoration, vegetation-management, and tree-planting contractors to submit proposals for forest resiliency work at Big Hollow Recreation Area, Hickory Bend Conservation Area, Hunt Woods, and Starr’s Cave Park and Preserve.

The work is supported by the Iowa Forest Resiliency Partnership Program Grant and related Wildlife Habitat Stamp funding. The project includes mechanical invasive-species removal, herbicide application, mid-story thinning, crop-tree release, site preparation, and hardwood tree planting. Contractors may submit proposals for one or more bid items and are not required to bid the entire project. DMCC may award different bid items to different contractors.

Contractor selection may occur before DMCC receives the final executed grant agreement; however, no field work, purchase of project materials, mobilization, or other reimbursable project expense may begin until DMCC issues a written Notice to Proceed. Award of a bid item does not itself authorize the Contractor to incur project costs.

BACKGROUND AND PROJECT PURPOSE

DMCC is implementing a coordinated forest resiliency initiative to restore oak-hickory woodland systems, reduce invasive woody vegetation, improve regeneration, diversify stand structure, and strengthen wildlife habitat across four public conservation properties. The work has been developed with Iowa DNR District Forester Lisa Louck and is guided by DNR-approved forest stewardship and planting plans.

- Big Hollow: invasive-species control following a 2024 shelterwood harvest, followed by mid-story thinning/site preparation and foliar follow-up treatment.
- Hickory Bend: machine removal of invasive shrubs in Stands 3 and 4, foliar follow-up treatment in Stand 4, and crop-tree release in Stands 4-6.
- Hunt Woods: forestry-mulcher treatment followed by foliar invasive-species control in Stands 1 and 5-7.
- Starr’s Cave: site preparation, herbicide treatment, and planting of 6.5 acres of bottomland hardwoods, with multi-year competition control and optional supplemental replanting.

CONTRACTING APPROACH

This solicitation is for natural-resource management and related professional/contractual services and is not being administered as a public-improvement bid under Iowa Code Chapter 26. DMCC intends to select responsive and responsible contractor(s) based on qualifications, demonstrated ability, schedule, references, compliance with technical requirements, and price. DMCC is not obligated to select the lowest-priced proposal if another responsive and responsible proposal better serves the County’s overall interests.

Each bid item will be evaluated separately. A contractor may be awarded one, several, or all bid items for which it submits a proposal. Optional Starr’s Cave maintenance items may be accepted, rejected, or deferred without affecting award of the base bid items.

PROCUREMENT TIMELINE

Milestone	Date / Time
RFP issued	September 22, 2026
Pre-bid field tours	October 15, 2026
Questions encouraged by	October 19, 2026
Proposals due	October 23, 2026 by 3:00 PM
Staff evaluation / reference checks	October 24-November 3, 2026

Anticipated Conservation Board award	November 4, 2026
Notice to Proceed	After executed grant authorization and contract execution

DMCC reserves the right to modify this timeline by written addendum. Project work windows are described below. Weather, site conditions, grant authorization, threatened/endangered species requirements, and other conditions may require schedule adjustments approved by DMCC and the DNR Project Manager.

PRE-BID FIELD TOURS

Bidders are strongly encouraged to inspect the treatment areas before submitting a proposal. Scheduled field tours will be held October 15, 2026. Attendance is not mandatory. Tanner Gebhardt, DMCC Natural Resource Manager, and Lisa Louck, Iowa DNR District Forester, will be available for the scheduled tours.

Approx. Time	Location	Purpose
8:00-10:00 AM	Big Hollow Recreation Area	Review Stands 21-26 and 24, 25, 29-31; access and equipment considerations.
10:30 AM-12:30 PM	Hickory Bend Conservation Area	Review Stands 3-6; invasive-removal and crop-tree release areas.
1:30-3:00 PM	Starr's Cave Park and Preserve	Review 6.5-acre planting site, access, site-prep and planting requirements.
3:30-5:30 PM	Hunt Woods	Review Stands 1 and 5-7; equipment access and invasive-treatment areas.

Bidders unable to attend on October 15 may contact Lisa Louck to arrange an alternate site visit, subject to her availability. Maps are provided for reference; bidders are responsible for understanding site conditions, access constraints, slopes, drainages, and treatment-area boundaries before bidding.

GENERAL TECHNICAL REQUIREMENTS

1. All forestry and silvicultural work shall conform to the applicable Iowa DNR Forest Stewardship Plans, Starr's Cave Woodland Stewardship Project Outline, Iowa Forestry Practices Technical Guide, label requirements for any pesticide used, and written direction from DMCC and the DNR Project Manager.
2. The Contractor shall furnish all labor, supervision, equipment, fuel, herbicides, surfactants/penetrants, dye, tree stock, planting materials, protective materials, and incidental supplies necessary to complete awarded bid items unless specifically stated otherwise.
3. The Contractor shall protect desirable trees, regeneration, trails, roads, fences, utilities, drainages, wetlands, streams, lakeshores, structures, cultural resources, and other public property. Damage caused by the Contractor shall be reported immediately and repaired at the Contractor's expense to the satisfaction of DMCC.
4. Forestry equipment shall be operated only when soil and site conditions are suitable. Excessive rutting, soil displacement, streambank damage, or unnecessary disturbance is prohibited. DMCC may suspend work when conditions are unsuitable.
5. All roads and trails used for access shall be kept passable and left clear upon completion. Best Management Practices shall be followed near water resources and on steep terrain.
6. The Contractor shall clean equipment as reasonably necessary before entering treatment sites to reduce transport of invasive seed, soil, or plant material from other properties.
7. The Contractor shall comply with current state and federal threatened/endangered-species restrictions and any site-specific work windows communicated by the DNR Project Manager. When restrictions are more protective than the dates in this RFP, the more protective requirement controls.
8. DMCC and the DNR Project Manager may inspect work at any time. Work not meeting specifications shall be corrected by the Contractor at no additional cost before final acceptance/payment.

HERBICIDE AND PESTICIDE REQUIREMENTS

1. Contractors performing pesticide applications shall hold all licenses and certifications required by the Iowa Department of Agriculture and Land Stewardship. License numbers shall be provided with the proposal or before work begins.
2. The Contractor shall supply proposed product labels and Safety Data Sheets before application. DMCC and the DNR Project Manager shall review and approve proposed herbicides, adjuvants, application rates, and timing before use. Contractor recommendations are welcome when consistent with the approved management objective.
3. Herbicides shall be applied strictly according to label direction and all federal and state requirements. The label is controlling where a plan or specification conflicts with the product label.
4. Where specified, cut or mechanically treated invasive stems shall receive an appropriate labeled herbicide treatment, including required surfactant/penetrant and visible dye, within the labeled treatment interval.
5. Foliar treatments shall achieve sufficient coverage and control to materially suppress targeted invasive vegetation and prevent the treated area from immediately returning to pre-treatment condition. DMCC will evaluate effectiveness by visual inspection and may require retreatment of clearly missed or inadequately treated areas when caused by poor application rather than later reinvasion or uncontrollable conditions.
6. The Contractor shall maintain application records sufficient to document date, location, acreage, product, rate, weather conditions, applicator, and license information.

SCOPE OF SERVICES AND BID ITEMS

The following work windows reflect DMCC's revised schedule as of September 2026. They supersede the earlier milestone dates shown in the draft DNR Scope of Work for purposes of this solicitation, subject to final DNR/grant approval. Unless otherwise approved in writing, work shall be completed within the stated window.

BID ITEM 1 – BIG HOLLOW PHASE 1 INVASIVE SPECIES CONTROL

Treatment area: 29.5 acres, Stands 21-26

Work window: Earliest start: November 2026; complete by March 31, 2027

- Remove invasive woody species including honeysuckle, autumn olive, multiflora rose, and other invasive woody vegetation identified by the DNR Project Manager.
- Remove woody invasive stems larger than 1 inch DBH to ground level primarily with a forestry mulcher. Cutting at the base or another method may be used only when appropriate and approved.
- All invasive stems removed mechanically that require chemical treatment shall be treated with an appropriate herbicide within the labeled application interval.
- Protect desirable oak, hickory, walnut, other desirable hardwoods, regeneration, and retained habitat trees.

BID ITEM 2 – BIG HOLLOW MID-STORY THINNING / SITE PREPARATION

Treatment area: 28.8 acres, Stands 24, 25, 29-31

Work window: Earliest start: February 2027; complete by February 29, 2028

- Prepare the site for natural regeneration of oak by reducing undesirable mid-story competition.
- Target ironwood, hackberry, maple, basswood, and bitternut hickory generally between 1 and 10 inches DBH as directed in the DNR scope/plan.
- Approved treatment methods include double chainsaw girdle with chemical treatment, basal bark, hack-and-squirt, or felling followed by chemical treatment.
- Stands 29-31 may proceed independently when authorized. Work in Stands 24 and 25 shall follow completion of the applicable Phase 1 invasive-removal work.

BID ITEM 3 – BIG HOLLOW PHASE 2 FOLIAR INVASIVE CONTROL

Treatment area: 29.5 acres, Stands 21-26

Work window: March 2028 through October 31, 2028

- Foliar-treat invasive woody stems, resprouts, and new invasive growth generally less than 1 inch DBH following Phase 1 mechanical treatment.
- Contractor shall provide herbicide, adjuvants, penetrant/surfactant, dye, labor, and equipment.
- Application timing shall be selected to maximize effective control while remaining consistent with label requirements and DNR direction.

BID ITEM 4 – HICKORY BEND STAND 3 INVASIVE / BRUSH REMOVAL

Treatment area: 25.4 acres, Stand 3

Work window: Earliest start: November 2026; complete by July 31, 2027

- Machine grind/remove honeysuckle, autumn olive, and other invasive woody growth to the base of the plant using a forestry mulcher.
- Remove at least 50 percent of cedar between approximately 1 and 12 inches DBH, as directed by the DNR Project Manager.
- Treat mechanically removed invasive stems as appropriate to prevent resprouting; cedar does not require herbicide unless otherwise directed.
- Work may occur concurrently with Bid Item 5.

BID ITEM 5 – HICKORY BEND STAND 4 INVASIVE SPECIES REMOVAL

Treatment area: 22.0 acres, Stand 4

Work window: Earliest start: November 2026; complete by July 31, 2027

- Remove very-heavy growth of autumn olive, honeysuckle, multiflora rose, and other invasive vegetation.
- Use a forestry mulcher as the primary treatment method. Hand cutting and immediate stump treatment may be used where appropriate.
- Grind/cut honeysuckle and autumn olive approximately 1/2 inch stem diameter and larger and treat as necessary to prevent resprouting. Treat multiflora rose as feasible and directed.

BID ITEM 6 – HICKORY BEND STAND 4 PHASE 2 FOLIAR CONTROL

Treatment area: 22.0 acres, Stand 4

Work window: July 2027 through November 30, 2027

- Foliar-treat resprouting honeysuckle, autumn olive, multiflora rose, and remaining invasive plants after mechanical treatment.
- Work may begin in portions of the stand after Bid Item 5 is complete in that treatment area.
- Contractor shall furnish all herbicide, adjuvants, dye, labor, and equipment.

BID ITEM 7 – HICKORY BEND CROP-TREE RELEASE

Treatment area: 57.9 acres, Stands 4-6

Work window: October 2027 through March 31, 2028

- Identify approximately 20-50 crop trees per acre and release each selected crop tree on all four sides whenever practicable.
- Favor a diverse mix including walnut, white oak, bur oak, red oak, black oak, shagbark hickory, cherry, and silver maple where present, with hackberry, locust, and basswood as secondary crop trees where appropriate.
- Final selection and treatment intensity shall be coordinated with Tanner Gebhardt and Lisa Louck. Stand 4 guidance generally targets approximately 25-40 crop trees per acre.

- Work is intended for the dormant/winter season.

BID ITEM 8 – HUNT WOODS PHASE 1 INVASIVE SPECIES CONTROL

Treatment area: 23.6 acres, Stands 1 and 5-7

Work window: Earliest start: November 2026; complete by August 31, 2027

- Remove invasive woody species including honeysuckle, autumn olive, winged euonymus, black locust where applicable, and other invasive vegetation identified by the DNR Project Manager.
- Remove woody invasive stems larger than 1 inch DBH to ground level primarily with a forestry mulcher; treat cut/mechanically removed invasive stems as required to prevent resprouting.
- Protect desirable hardwoods and habitat trees. Current bat/tree-cutting restrictions shall be observed.

BID ITEM 9 – HUNT WOODS PHASE 2 FOLIAR INVASIVE CONTROL

Treatment area: 23.6 acres, Stands 1 and 5-7

Work window: August 2027 through July 31, 2028

- Foliar-treat invasive woody stems less than approximately 1 inch DBH, resprouts, and missed/new invasive growth after mechanical treatment.
- Treatment may proceed by completed Phase 1 area when approved by DMCC/DNR.
- Contractor shall furnish all herbicide, adjuvants, dye, labor, and equipment.

BID ITEM 10 – STARR’S CAVE SITE PREPARATION

Treatment area: 6.5 acres, Fields 1 and 2

Work window: February 2027 through August 31, 2027

- Brush hog and/or machine grind larger woody growth, annual weeds, and grasses as needed to prepare the planting area.
- Allow 4-6 weeks of regrowth before broadcast herbicide treatment. Vegetation should be actively growing and generally 6-12 inches tall at application where consistent with label requirements.
- Broadcast spray existing competitive vegetation as directed by the DNR planting plan, followed by 4-foot-wide band treatment centered on future tree rows at or near planting. The planting plan identifies Roundup and Princep; final products must be label-compliant and approved before application.
- If required by the DNR Project Manager, establish ground cover using perennial rye at 10 pounds/acre with a no-till drill after site preparation.

BID ITEM 11 – STARR’S CAVE TREE PLANTING

Treatment area: 6.5 acres, Fields 1 and 2

Work window: October 1 through November 30, 2027

- Plant 500-700 trees per acre. Rows shall generally be 10-12 feet apart with trees approximately 7-10 feet apart within rows, accurately spaced for future mowing and spraying.
- Use at least six species, with more preferred, selected from the DNR planting plan: swamp white oak, bur oak, pin oak, shellbark hickory, pecan, river birch, sycamore, Kentucky coffeetree, black walnut, pawpaw, and persimmon. Species shall be reasonably mixed across the site and matched to site conditions.
- Contractor shall furnish all planting stock and materials. Seedlings shall be stored at 34-40°F until planting and protected from drying and sunlight before installation.
- Planting shall comply with DNR specifications and be subject to inspection before acceptance.

BID ITEM 12 – STARR’S CAVE YEAR 1 POST-PLANT COMPETITION CONTROL

Treatment area: 6.5 acres

Work window: Complete no later than April 1, 2028

- Control grass, weeds, brush, and other competition within a 4-foot-wide band centered on each tree row.
- Reapply an approved post-emergent/pre-emergent herbicide program consistent with the DNR planting plan and label requirements.
- Contractor shall protect planted seedlings from herbicide injury and correct any application errors attributable to Contractor negligence.

OPTIONAL BID ITEMS – STARR’S CAVE

The following items shall be priced separately. DMCC may award, decline, or later exercise any option independently of the base bid items, subject to funding, grant eligibility, site conditions, and need.

Option	Scope	Anticipated Window
A1	Year 2 competition control: repeat 4-foot band herbicide/vegetation control across the 6.5-acre planting.	Complete no later than April 1, 2029
A2	Supplemental replanting as directed following year-two survival assessment. Bid as unit pricing per installed replacement tree, including plant material and installation.	Fall 2029 and/or Spring 2030 planting window
A3	Year 3 competition control: repeat 4-foot band herbicide/vegetation control across the 6.5-acre planting.	Complete no later than April 1, 2030

MINIMUM CONTRACTOR QUALIFICATIONS

1. Demonstrated experience successfully completing work comparable to the bid item(s) proposed. Forestry-mulching bidders should identify similar woodland/invasive-removal projects and the equipment proposed.
2. Adequate personnel, equipment, supervisory capacity, and financial resources to complete awarded work within the specified window.
3. For herbicide work, all legally required Iowa commercial pesticide applicator licenses/certifications.
4. At least three references for comparable work completed within the past five years, if available.
5. Ability to comply with DNR technical direction, site-protection requirements, insurance requirements, and applicable safety/environmental laws.
6. No debarment, suspension, or other legal restriction that would make the Contractor ineligible to perform work funded by state or federal grant funds.

INSURANCE

Before beginning work, the selected Contractor shall provide certificates of insurance evidencing coverage at least as follows. DMCC may accept equivalent coverage when appropriate to the Contractor’s operations and risk profile.

Coverage	Minimum Limit
Commercial General Liability	\$1,000,000 each occurrence / \$2,000,000 general aggregate
Commercial Automobile Liability	\$1,000,000 combined single limit for owned, hired, and non-owned vehicles used on the project
Workers’ Compensation	Statutory Iowa limits
Employer’s Liability	\$1,000,000 each accident / disease policy limit / disease each employee
Contractor’s Pollution / Chemical Application Liability	\$1,000,000 each occurrence and aggregate for contractors performing herbicide/pesticide application

Des Moines County shall be named as an additional insured on applicable liability policies, as its interests may appear. The Contractor shall provide a waiver of subrogation where available and at least 30 days’ advance written notice of cancellation or material reduction in coverage to the extent provided by the policy/carrier.

PRICING AND PAYMENT

1. Bidders shall use the Bid Sheet in Appendix B and provide a separate price for each bid item proposed.
2. Forestry and vegetation-management items should be bid as a unit price per acre and extended total, unless the Bid Sheet specifies another unit. The County will use mapped/approved acres for payment unless an authorized change is documented.
3. Starr's Cave planting may be bid as a lump-sum price for the complete 6.5-acre installation or as a per-acre price with extended total, as shown on the Bid Sheet. Optional supplemental replanting shall be bid on a per-tree installed basis.
4. Prices shall include all labor, mobilization, equipment, materials, herbicides, tree stock, freight, supervision, insurance, taxes, permits/licenses, travel, and incidentals required to complete the work.
5. Contractors may invoice after completion and acceptance of a bid item or approved portion/milestone. Partial progress invoices may be approved for larger multi-month items when supported by documented acres completed and accepted.
6. DMCC will not pay for work performed before written Notice to Proceed, work outside the awarded scope without written authorization, or work rejected for failure to meet specifications.

INFORMATION TO ACCOMPANY PROPOSAL

Proposals will be accepted electronically by email. PDF format is preferred. Proposals must be received by the Conservation Office no later than 3:00 PM on Friday, October 23, 2026. Email submissions to conservation@dmccounty.com with the subject line "Forest Resiliency RFP – [Contractor Name]."

1. Contractor contact information, including company name, mailing address, phone number, email address, and primary contact.
2. A completed Bid Sheet identifying each bid item being proposed.
3. Qualifications and relevant experience, including a brief description of available staff and equipment.
4. At least three references for comparable work, when available.
5. For pesticide work, applicable Iowa commercial applicator license number(s) and categories, or a statement describing how licensing will be satisfied before work begins.
6. Any proposed subcontractors and the work they would perform.
7. Any exceptions, assumptions, proposed alternative methods, or requested clarifications to the RFP requirements.
8. Evidence of the ability to meet the insurance requirements. A certificate of insurance may be supplied with the proposal or prior to contract execution.

EVALUATION AND AWARD

DMCC will evaluate each bid item independently. Selection will be based on the proposal that, in the opinion of DMCC, best serves the County's overall interests. Evaluation may consider:

- Responsiveness to the scope and technical specifications.
- Relevant forestry, restoration, invasive-species, herbicide, or planting experience.
- Equipment, staffing, and demonstrated ability to meet the schedule.
- References and past performance.
- Licensing, insurance, safety, and environmental compliance.
- Price and overall value to the County.

DMCC reserves the right to conduct reference checks, request clarification, verify qualifications and equipment, negotiate minor scope/schedule details consistent with the solicitation, reject any or all proposals, waive minor informalities, and award any combination of base or optional bid items. An award is not final until approved by the Des Moines County Conservation Board and a written contract is executed.

GENERAL CONTRACT CONDITIONS

1. Independent Contractor. The Contractor, its employees, agents, and subcontractors are independent contractors and are not employees of Des Moines County or DMCC.
2. Project Representatives. Tanner Gebhardt, DMCC Natural Resource Manager, will serve as DMCC's primary field representative. Lisa Louck, Iowa DNR District Forester, will serve as the DNR technical/project representative. Directions affecting cost or contract scope must be authorized by DMCC in writing.
3. Subcontracting. Subcontracting is permitted only when disclosed and approved by DMCC. The prime Contractor remains fully responsible for all subcontracted work and compliance.
4. Safety. The Contractor is solely responsible for its employees, equipment, work methods, jobsite safety, and compliance with applicable OSHA and other safety requirements. Public-use areas shall be managed to avoid unreasonable hazards to visitors.
5. Damage and Restoration. The Contractor shall immediately report damage caused by its operations and restore roads, trails, fences, gates, turf, structures, utilities, and other property damaged by the Contractor.
6. Changes. No additional compensation will be paid for changes unless approved in writing by DMCC before the changed work is performed.
7. Inspection and Acceptance. Payment does not constitute acceptance of defective work. DMCC may require correction or retreatment of nonconforming work within a reasonable period.
8. Records. Contractor shall maintain invoices, treatment records, pesticide records, payroll/subcontractor records as applicable, and supporting documentation reasonably required for grant administration and audit.
9. Grant Compliance. Contractor shall comply with applicable provisions of the final Iowa DNR grant agreement and any required state/federal subaward provisions supplied by DMCC. If the final grant agreement imposes a requirement not included in this draft RFP, DMCC may incorporate the requirement by addendum or contract before Notice to Proceed.
10. Termination. DMCC may terminate an awarded contract for material breach, failure to perform, failure to maintain required insurance/licensing, unsafe practices, violation of law, or loss/withdrawal of grant authorization. DMCC may also terminate for convenience upon written notice, with payment limited to accepted work properly completed through the termination date.
11. Indemnification. To the fullest extent permitted by law, the Contractor shall indemnify, defend, and hold harmless Des Moines County, the Des Moines County Conservation Board, and their officers, employees, and agents from claims, damages, losses, and expenses arising from the negligent or wrongful acts or omissions of the Contractor, its employees, agents, or subcontractors, except to the extent caused by the negligence or wrongful act of the County.

APPENDIX A – PROJECT LOCATIONS AND TECHNICAL DOCUMENTS

The following documents are incorporated by reference and will be provided with the final solicitation package or made available electronically to bidders:

- Project treatment maps identifying applicable stands and treatment boundaries.
- Big Hollow Forest Stewardship Plan / applicable treatment maps.
- Hickory Bend Forest Stewardship Plan.
- Hunt Woods Forest Management Plan and current DNR updates applicable to project stands.
- Starr's Cave Woodland Stewardship Project Outline – Machine Tree Planting (Plan Date 10/8/2025).
- Iowa DNR Scope of Work for the DMCC Forest Resiliency project, as revised/approved to reflect the current project schedule.
- Applicable Iowa Forestry Practices Technical Guide requirements.

If a conflict exists between a general statement in this RFP and a more specific DNR treatment prescription, the more specific approved DNR prescription controls unless DMCC issues a written clarification or addendum.



Forest Stewardship Plan

Prepared for:

Big Hollow Recreation Area-DMCC

18829 Ranger Lane Sperry, Iowa 52650

(319) 985-2502-shop

yostj@dmccounty.com

Written by Iowa DNR District Forester:

Lisa Louck

260 Mulberry Street, suite 4 Wapello Iowa 52653

(319) 523-2216

lisa.louck@dnr.iowa.gov

Date of Original Plan Completion: 9/24/2012

Revision date(s): __Stands 6-15 added 2/10/2014, Stands 16-26 7/28/2015, Stands 27-33 4/3/2018





Property Description

Legal property description: T71N, R03W, section 17 Franklin twp. Des Moines County

Nearest city or town: Mediapolis

Total ownership acreage: 442 Total forested acreage: Mapping is ongoing due to lake construction

Total acreage covered by this plan: 15, 72 total 2/10/2014 amendment, 84.4 total acres 7/28/2015 amendment, 52.5 4/4/18 amendment

Number of unique stands of trees: 5, 15 total 2/10/2014 amendment, 20 total 7/28/2015 amendment, 33 total as of 4/4/18

Do you reside on the property? Public ground

Basic topography: Moderately sloped, with some flatter uplands and steeper areas close to lake.

Soils: Soils found on your woodland areas include Clinton and Lindley silt loams, which are both moderately well drained and well suited to a wide variety of native hardwoods.

Road Conditions: Access is available from gravel/service roads in park, also added access by new campground with RV access.

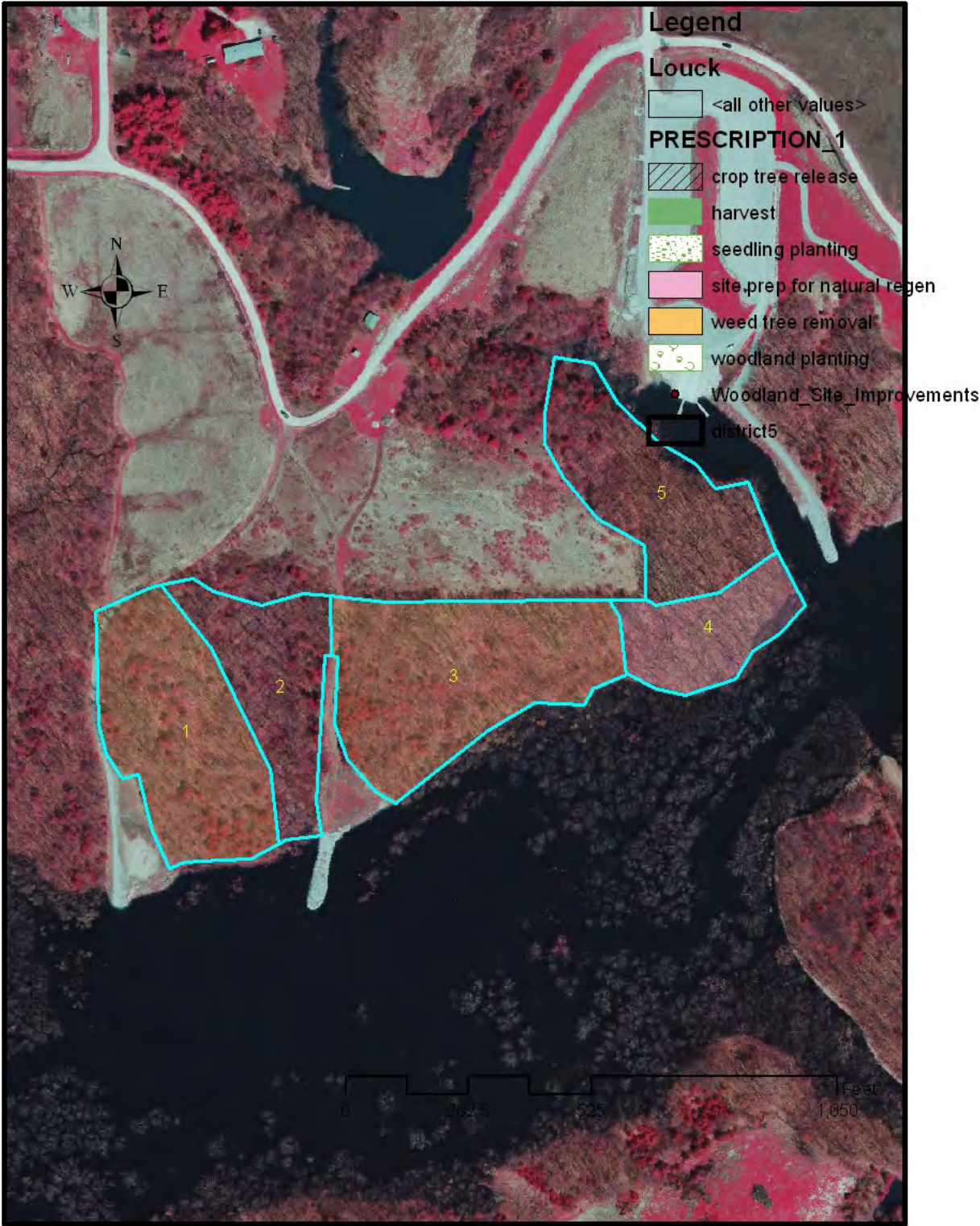
Which watershed is the property located in: Big hollow Creek, Flint River watershed

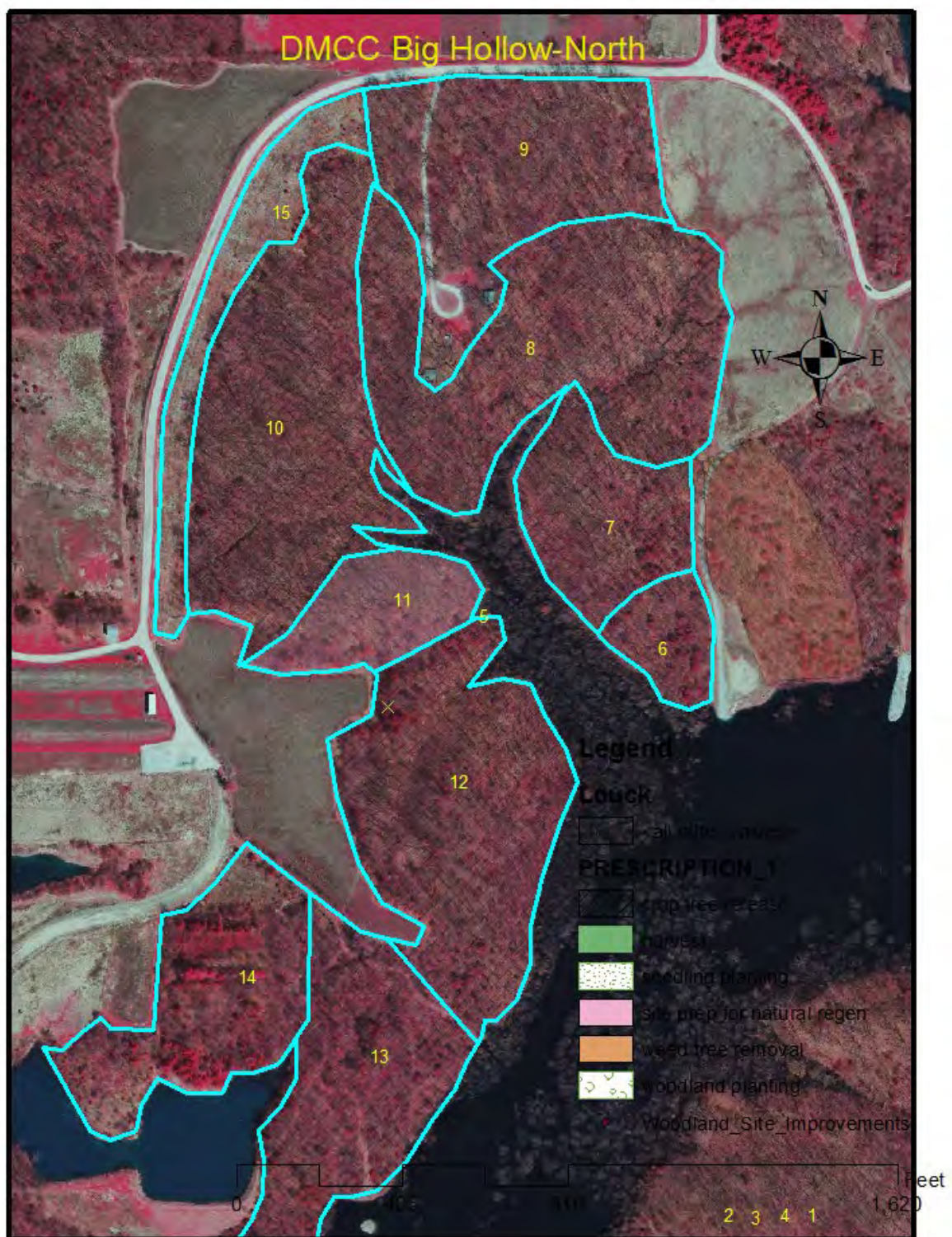
Forest Health Issues (Invasive species, diseases): There is honeysuckle and multi-flora rose present in many areas of the timber. There is autumn olive present in a few areas of the timber. These species should be controlled wherever possible and should be a part of any TSI work and is the focus of upcoming work to remove invasive species and create savannah/view-shed openings. Information is attached with this plan for continued honeysuckle and olive control after mechanical control has been completed.

Property History: Big Hollow Lake was created in 2009 to increase recreation and fishing opportunities in Des Moines County. The 5 stands to be covered in this plan are adjacent to a new RV/tent campground that was formerly a food plot/prairie field. There has been no recent grazing and no recent harvest activity. Rx fire has been implemented in a portion of this area.

Forest Management Goals: The primary goals include recreation, aesthetics, wildlife habitat, and healthy forest management for sustainability for the long term.

Big Hollow DMCC 2012 project





DMCC Big Hollow South



Legend

LOUCK

all other values

PRESCRIPTION_1

crop tree release

harvest

seedling planting

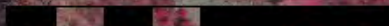
site prep for natural regen

weed tree removal

woodland planting

Woodland_Site_Improvements

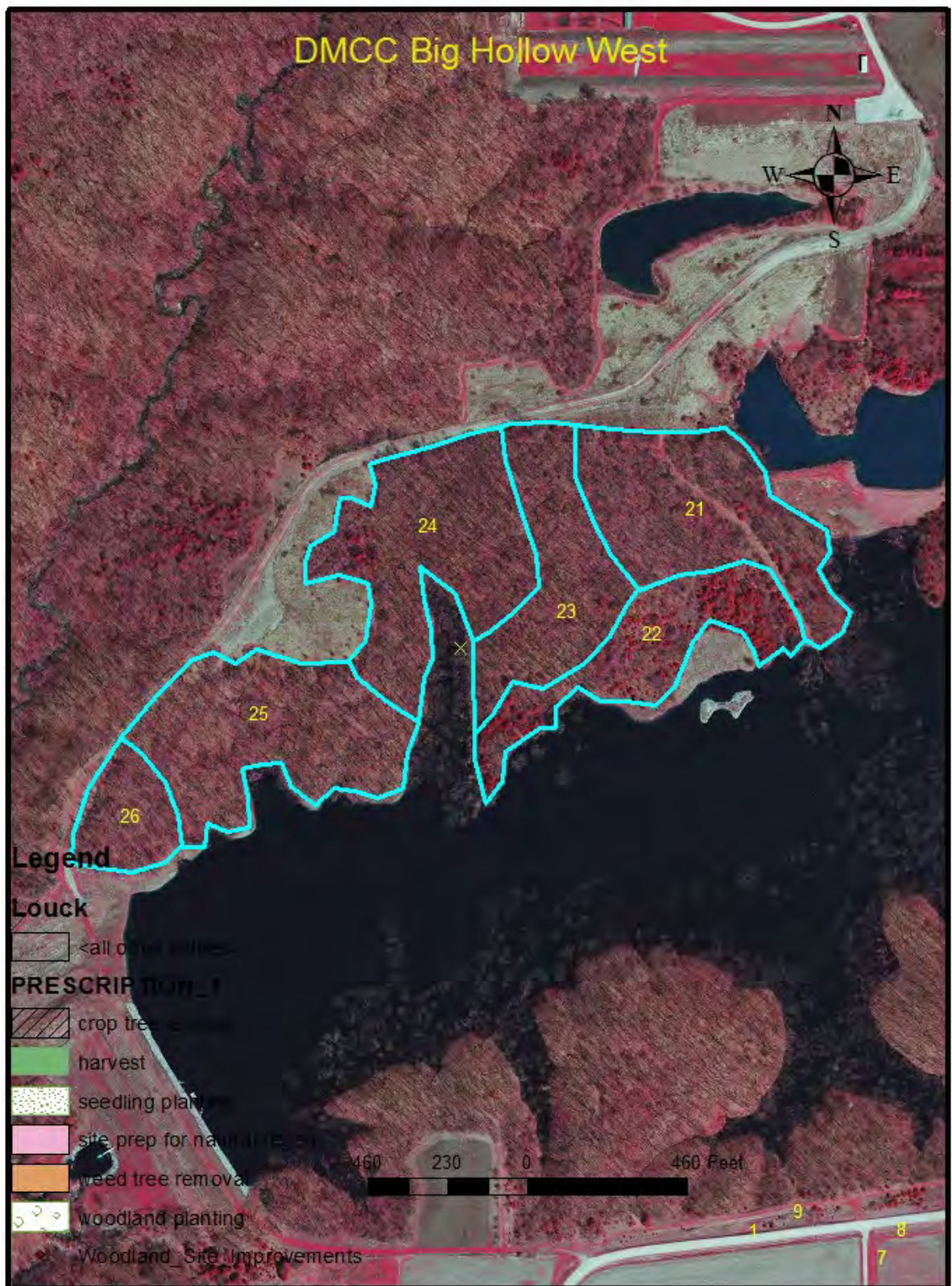
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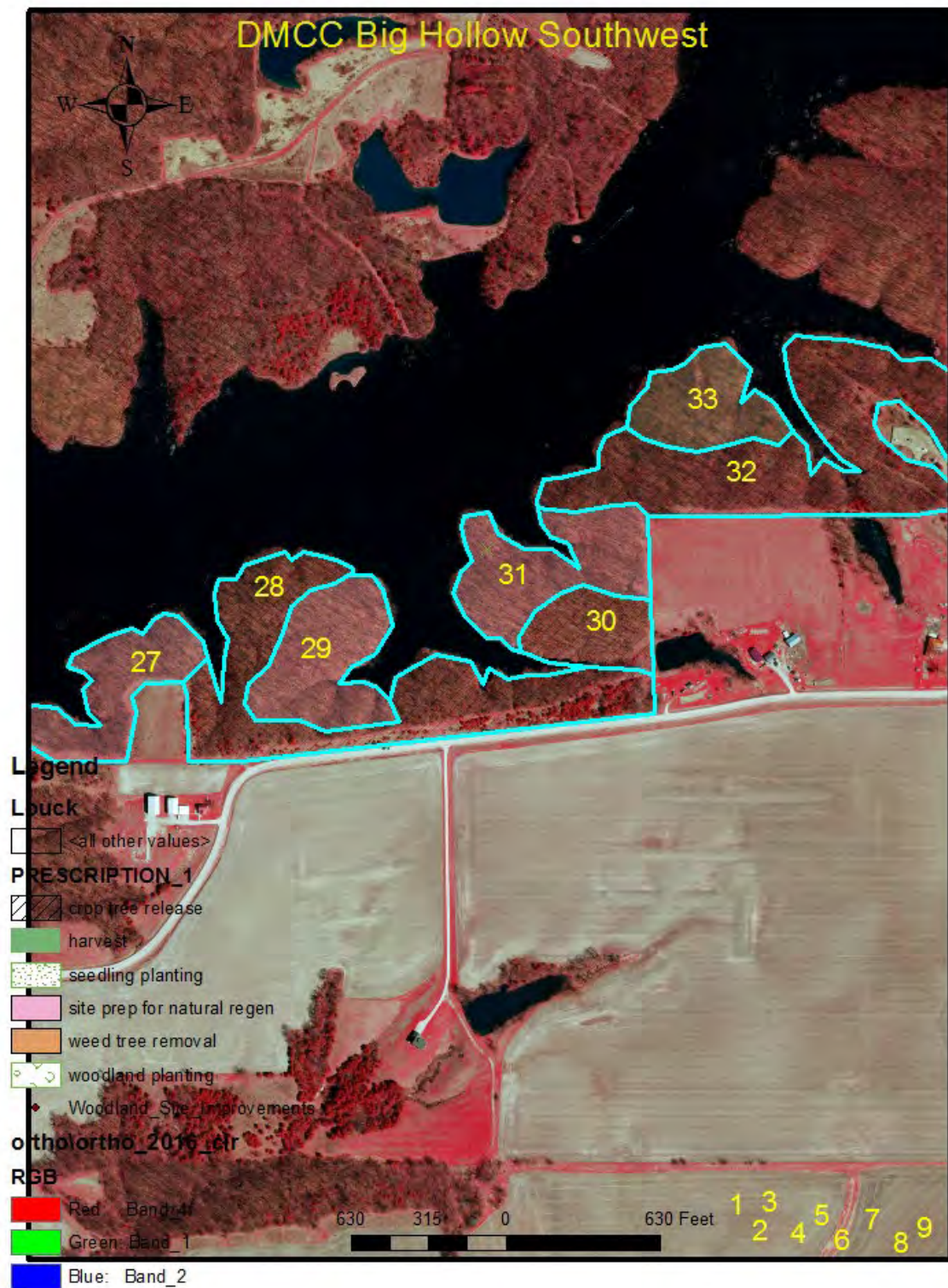


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Forest Natural Resources Enhancement and Protection

Protect Special Sites & Social Considerations

Special sites: None known, please review and adjust plan if such sites are found.

Adjacent stand or ownership concerns: None known, please re-evaluate plan if concerns arise

Recreation: Recreation is a goal and will be considered in management decisions.

Access: Access to all sides by road or owners property/easement

Air, Water, and Soil Protection

What goals do you have, or what steps will you take to conserve, protect and enhance your forest's air, water and soil resources?

Soil protection: Follow Best Management Practices (BMP's) when harvesting or doing any work near streams. BMP guidelines available

Roads: Road construction for forest work to be done according to BMP's, All roads/trails to be left clear after work is completed.

Streams, wetlands, ponds, lakeshore: There are various small drainages and all stands are directly adjacent to Big Hollow Lake. Identify all water resources before beginning any work and take steps to minimize any risks

Effects of Natural Disasters: A well stocked and healthy stand of trees is often better able to withstand natural disasters than an unmanaged stand.

Fish, Wildlife and Biodiversity

Describe the resources on your property and the activities you are planning to accommodate your goals.

Fish & Wildlife: Many species of wildlife are present on property.

State and Federal threatened or endangered species - plants or animals: This property is within the Indiana Bat habitat range. Follow applicable guidelines when cutting in areas of possible habitat, which include not cutting down or disturbing any loose barked trees from April 1-September 15. Further information is available upon request

Management of Forest Resources

Protection from Pests: Monitoring for diseases/insects. Oak wilt may be present in stand 1 of your woodlands with dead shingle oak present here.

Prescribed Fire/Burns: A Rx burn was completed in 2011 and is planned as follow up to honeysuckle and weed tree removal work. 2-10-14 Update: Rx burning was completed over stands 1,2,6 and part of 7 in late fall of 2013 that successfully burned many larger honeysuckle and most small honeysuckle stems.

Management Plan Implementation Constraints: None known, possible constraints include unavailability of contractor, lack of cost share funds, lack of personal funds, ect. Please contact relevant state or federal agency if cost share is involved and plan cannot be implemented.

Best Management Practices/Permits: Your forester or state/federal agency can provide information on Iowa and National "Best Management Practices (BMP'S)" guide. BMP's are applicable for harvesting work, stream work, trail construction, dirt moving, ect.

Stand Level Information

Tree Size Classes Diameter at breast height (DBH)

Sawtimber: 18" above Small Sawtimber: 12-16" Pole: 5-12" Sapling: 2-5" Seedling: <2"

Stand 1 Objectives/Current Conditions

Stand 1 Acres: 3.4

Objectives: To increase the growth and improve the diversity of this stand.

General description, including density/structure, forest type and diameter size class: This stand is located at the far west end of the new campground with a lake access trail bordering to the west and the campground to the north. The species here include small sawtimber and sawtimber black oak, shingle oak, some white oak and walnut. There are pole and small sawtimber honey locust, elm and cherry. There is sapling shagbark hickory and heavy honeysuckle shrub throughout. The density is lower through most of stand and the canopy should not be opened up too much during timber improvement work to not open up canopy to sunlight that will allow honeysuckle to further grow and spread. The length of this area between campground and lake is too long to manage for lake-views.

Stand 1 Desired Future Stand Condition

A denser stand of mixed hardwoods

Stand 1 Forest Management Activities

Forest Health Management Activities/Monitoring: Weed tree removal of honeysuckle as possible through mechanical, chemical or manual treatment. Rx fire as a follow up to one of the mentioned treatments is recommended. Weed tree removal of honey locust, elm or shingle oak as needed to improve growth of walnut, white oak, black oak. Monitor for oak wilt, cut out as needed to decrease spread. 2-10-14 Update: Rx burning completed in fall 2013 along with weed tree removal of honey locust.

Harvesting/Post Harvest Activities/slash management: Not applicable at this time

Stand 2 Objectives/Current Conditions

Stand 2 Acres: 2.1

Objectives: To increase growth of walnut and mixed hardwoods

General description, including density/structure, forest type and diameter size class: This stand is located east of stand 1 with another lake trail bordering to east and the campground to north. The species present here include pole and small sawtimber black oak, ash, walnut, cherry, honey locust, cedar and shingle oak. There are small pole and sapling elm, cherry and some oak with sapling/seedling shagbark hickory and dogwood. There is thick honeysuckle present here with both small plants in some areas and larger overall with 2-3" stems in many areas. There is also Multi-flora rose (MFR) present through much of this stand. The density is low in much of the stand. The length of this area between campground and lake is too long to manage for lake-views.

Stand 2 Desired Future Stand Condition

Better growth of hardwoods and less invasive infestation of honeysuckle and MFR.

Stand 2 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of walnut, black oak, cherry in that order. Remove vines from walnuts in this stand and any others where walnuts are being favored. Remove honeysuckle as possible with other work. Mechanical removal may be best option with the larger plants. Follow up in area with foliar herbicide spray in late summer or first thing in spring (possibly both in one growing season). Consider RX burning as another option of follow up after mechanical but take care to remove debris away from walnut and cherry stems to minimize damage to trunks of these trees. 2-10-14 Update: Rx burning completed fall of 2013.

Stand 3 Objectives/Current Conditions

Stand 3 Acres: 4.1

Objectives: To improve species composition and increase view-shed/visibility through stand to move towards a savanna type forest.

General description, including density/structure, forest type and diameter size class: This stand is located east of stand 2 and has the lake trail at the west side and the campground to north. The species here include sawtimber and small sawtimber shingle oak, black oak, elm, honey locust, few walnuts. There are pole elm, honey locust, walnut, cherry, cedar and shingle oak. The sapling trees include elm, shagbark hickory, dogwood, with a few black and shingle oak. There is heavy MFR through most of stand, larger honeysuckle shrubs comparable to those in stand 2 and some autumn olive present (some larger shrubs but most small re-sprouts from past cutting/management). The density is low to moderate throughout stand, with some areas of larger canopy openings.

Stand 3 Desired Future Stand Condition

A more desirable lower canopy that is also more open and accessible.

Stand 3 Forest Management Activities

Forest Health Management Activities/Monitoring: Weed tree removal of honeysuckle, olive with mechanical control. Follow up mechanical with herbicide or RX fire to control re-sprouts and new honeysuckle/olive seedlings. Weed tree removal of honey locust and elm as needed to open stand canopy to desired amount.

Harvesting/Post Harvest Activities/slash management: Not applicable at this time, some shingle oak, walnut may be harvested/cut if stand is to be opened up more. Firewood from the cut tree tops could be used for campground.

Stand 4 Objectives/Current Conditions

Stand 4 Acres: 1.5

Objectives: To manage for white oak production and growth as a savanna type forest

General description, including density/structure, forest type and diameter size class: This stand is located east of stand 3 and borders the southeast corner of campground at the north end of stand. The species here include sawtimber white oak (dominant), black oak and some shagbark hickory. The few pole and sapling trees include ironwood, elm, shagbark hickory and a few black cherry. Rx burning has been done here recently. The density is high in this stand.

Stand 4 Desired Future Stand Condition

Scattered large trees with limited but desirable new forest growth

Stand 4 Forest Management Activities

Forest Health Management Activities/Monitoring: Site preparation for natural regeneration to remove mid and under story layer of trees and allow space and sunlight for some oak seed and also grass/prairie plants to grow. After cutting most of ironwood, elm, shagbark hickory to 1" stems, continue to RX burn at least 1-3 times to prepare seedbed for acorn drop and further control ironwood, elm, other woody vegetation.

Harvesting/Post Harvest Activities/slash management: Not applicable at this time, some white oak, black oak and hickory may need to be harvested/cut to allow increased canopy space and sunlight to forest floor. Any merchantable harvest of this area should be in conjunction with stand 3 and any other areas nearby where harvest cutting is done for health of forest (in other words, any of these areas by themselves is too small with too few trees to attract log buyers, plan on looking at a few areas at once to put out sale). If no merchantable harvest is planned, cutting as needed in each stand and utilizing firewood and other log products is recommended.

Stand 5 Objectives/Current Conditions

Stand 5 Acres: 2.8

Objectives: To increase growth of walnut and mixed hardwoods

General description, including density/structure, forest type and diameter size class: This stand is located east of campground and north of stand 4. The species in this stand include some scattered sawtimber black oak, red oak and shagbark hickory. The majority of stand is large pole with black oak, red oak, walnut, basswood, shingle oak, shagbark hickory, and cherry. There is one butternut, or white walnut tree present in stand and this tree should be chosen as crop tree and monitored for Butternut canker. There is sapling ironwood, elm, with some shagbark hickory and hackberry. There is some MFR and some honeysuckle. This area has been RX burned in the past. The density is moderate to high in some areas.

Stand 5 Desired Future Stand Condition

Better growth of a diversity of hardwoods

Stand 5 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of walnut, red oak, black oak, cherry and shagbark hickory in that order. Control honeysuckle and MFR as possible with chemical and/or Rx fire. Prepare/clear area around base of trees if more RX burning is done to minimize damage to stems.

Stand 6 Objectives/Current Conditions

Stand 6 Acres: 1.4

Objectives: To manage for mixed hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 1 (Trail intersecting stands 6 and 1) and is bordered to south by lake. The species present here include pole average ash, shingle oak, black oak, elm, bitternut hickory, honey locust, cedar and some hackberry. There is ½-1" honeysuckle throughout stand and especially along trail. This area was part of fall 2013 Rx burn and many larger stems here had damage. The density of stems per acre is high.

Stand 6 Desired Future Stand Condition

A more moderately stocked stand of most desirable hardwoods with less invasive component.

Stand 6 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of black oak, bitternut hickory, hackberry and cedar. Continue Rx burning to control honeysuckle. This is a lower priority stand in species composition. Take care with crop tree release near trail.

Stand 7 Objectives/Current Conditions

Stand 7 Acres: 3.6

Objectives: To manage for mixed hardwood growth, diversity and invasive species control.

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 6, the trail borders east edge and the lake borders west edge. The species here include a few scattered sawtimber shagbark hickory and some larger black oak and cedar, with majority pole size shagbark hickory, honey locust, shingle oak, black oak, cherry, elm, cedar and some walnut. Density is moderate to high. There is honeysuckle and some autumn olive less than 1" stem average. A Rx burn was done in fall 2013 that burned partially in some areas and did not damage all invasive stems.

Stand 7 Desired Future Stand Condition

A more moderately stocked stand of most desirable hardwoods with less invasive component.

Stand 7 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of black oak, cedar, cherry, walnut and hickory. Remove vines from walnuts.

Stand 8 Objectives/Current Conditions

Stand 8 Acres: 9.9

Objectives: To manage for mixed oak growth and diversity.

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 7 and surrounds the shelter house to west. The species here include small sawtimber and some sawtimber black oak, shingle oak, white oak, shagbark hickory. There is pole black

oak, shagbark hickory, elm and areas of white oak. Smaller pole and sapling ironwood, hackberry, elm and shagbark hickory are present throughout most of stand. The hickory becomes dominate on the west side of stand. There is prickly ash patches and there is light to moderate honeysuckle, getting heavier on west side with hickory. The density is moderate.

Stand 8 Desired Future Stand Condition

A stand with increased younger oak component.

Stand 8 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor white oak, any red oak, black oak, shagbark hickory in that order. Favor even small white oak trees over more common hickory and shingle oak that are larger. Control honeysuckle through a RX burn. In the next 10-20 years a weed tree removal of understory trees like hackberry, ironwood as well as a full removal of invasive species can be done to make space and allow sunlight to forest floor for oak regeneration. Rx burning will be needed as a follow up to a weed tree removal.

Stand 9 Objectives/Current Conditions

Stand 9 Acres: 7.1

Objectives: To manage for mixed hardwood diversity and health, campsite/trail here.

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 8 and is bordered to east by RV campground, to north by range road and to west by shelter/new tent camp drive. The species present here include small sawtimber and sawtimber shagbark hickory, red oak, with pole shagbark hickory, elm, shingle oak, cherry and a few red/white/black oak. The sapling species are elm, shagbark hickory, shingle oak and ironwood. There is honeysuckle and olive present, especially near north and east edge, some too large for RX burning to control.

A stand with decreased invasive species.

Stand 9 Forest Management Activities

Forest Health Management Activities/Monitoring: Weed tree removal/site preparation for natural regeneration can be done here to increase desirable regeneration and decrease honeysuckle and olive. This is a lower priority stand with trail/campsite and invasive control is top priority here.

Stand 10 Objectives/Current Conditions

Stand 10 Acres: 9.3

Objectives: To manage for mixed oak forest growth and diversity.

General description, including density/structure, forest type and diameter size class: This stand is bordered to north and west by range road and to the south by field and stand 11. The species present here includes small sawtimber white oak, black oak, few red oak and bitternut hickory. The pole species are shagbark hickory, black oak, cherry with sapling ironwood. There is honeysuckle and olive present. The average size class is pole and the density is moderate to high. There is sapling white oak growing well in patches here and this should be a higher priority to favor what is already present.

Stand 10 Desired Future Stand Condition

A stand with increased growth of most desirable species.

Stand 10 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor white oak, red oak, black oak and hickory in that order.

Stand 11 Objectives/Current Conditions

Stand 11 Acres: 2.4

Objectives: To manage for two aged oak/hickory forest and control invasive species.

General description, including density/structure, forest type and diameter size class: This stand is located south of stand 10 with the lake bordering to the east and a field to the west. The species here include sawtimber black oak with small sawtimber shagbark hickory. There are a couple sawtimber white oak and red oak. The pole species are shagbark hickory, with a few black oak and elm. Sapling species present are ironwood with few shagbark hickory, red oak and white oak. There is olive and honeysuckle present here, especially along edge where cedar and shingle oak are also present in first 20' from field. The density is moderate and the average size is small sawtimber.

Stand 11 Desired Future Stand Condition

A two aged oak stand with decreased invasive species.

Stand 11 Forest Management Activities

Forest Health Management Activities/Monitoring: Site Preparation for Natural Regeneration. Cut most pole shagbark hickory, elm, olive and honeysuckle stems down to 1". Rx burn for 2-4 years to control smaller and re-sprouted olive/honeysuckle and prepare ground for seed drop. After sufficient regeneration has occurred, cut largest shagbark hickories to further open up stand and sunlight. Another manual cutting of olive/honeysuckle may be needed when RX burning stops and young oaks are very young.

Harvesting/Post Harvest Activities/slash management: Not applicable at this time

Stand 12 Objectives/Current Conditions

Stand 12 Acres: 8.6

Objectives: To manage for mixed hardwood growth and diversity.

General description, including density/structure, forest type and diameter size class: This stand is located south of stand 11 with lake at east edge and field at west edge. The species found here include scattered sawtimber shagbark hickory, with elm, red oak, cedar and cherry in smaller amounts. The pole trees include shagbark hickory, elm, bitternut hickory, cedar, shingle oak, cherry, with some walnut, honey locust, basswood, white oak and hackberry. There is heavier honeysuckle in central part of stand. The average size lessens slightly as you move south in stand. The average size class is pole and the density is moderate to high.

Stand 12 Desired Future Stand Condition

A stand with increased growth of most desirable species

Stand 12 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor white oak, walnut, cherry, cedar, hickory in that order. This is a slightly lower priority based on other stand compositions.

Stand 13 Objectives/Current Conditions

Stand 13 Acres: 6.6

Objectives: To manage for walnut and mixed hardwoods.

General description, including density/structure, forest type and diameter size class: This stand is south of stand 12 with a trail intersecting stands 12, 13. The lake borders this stand to the east, and stand 14 is to the west. The species here include scattered sawtimber hackberry, honey locust and walnut, with pole elm, walnut, cedar, and some honey locust, shingle oak and hackberry. There is heavy honeysuckle component here, the average size class of trees is pole.

Stand 13 Desired Future Stand Condition

Improved walnut component with decreased honeysuckle.

Stand 13 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor walnut, cedar, some hackberry. Remove vines from walnuts. Walnuts are moderate form, coppicing may be beneficial on some. Manual removal of honeysuckle here, as the stems are too large for RX fire and the leaf litter will not carry a good burn. Cut and chemically treat stems to prevent re-sprout. Follow up with foliar spray, brush mowing or another cutting 1-3 years after initial removal of honeysuckle.

Stand 14 Objectives/Current Conditions

Stand 14 Acres: 5.2

Objectives: To manage for planted evergreens and control invasive species.

General description, including density/structure, forest type and diameter size class: This stand is west of stand 13 with pond bordering to south and levee/dam trail to north. The trees here include planted scotch and white pine, with pole black oak and shingle oak and heavy honeysuckle. The pines are dying in some spots (Scotch pine is dying from pine wilt and will continue to decline all scotch), and white pine should be monitored here for any decline. The density is moderate due to pine death.

Stand 14 Desired Future Stand Condition

A healthy evergreen stand with less honeysuckle.

Stand 14 Forest Management Activities

Forest Health Management Activities/Monitoring: Control honeysuckle as possible through manual/chemical and machine removal/treatment. Consider planting into areas with cedar or mix of other

evergreens to maintain areas as brushy and thermal cover. Protect any planted seedlings from animal browse and control woody and grass competition for 3 years after any planting.

Stand 15 Objectives/Current Conditions

Stand 15 Acres: 3

Objectives: To manage for planted trees and diversity

General description, including density/structure, forest type and diameter size class: This stand is bordered to east by stand 10 and to west by range road. The species present in this large sapling/small pole average stand include pin oak (dominant in areas), swamp white oak, bur oak, white oak, black oak, ash with some volunteer cedar, shingle oak and also olive. The density is moderate.

Stand 15 Desired Future Stand Condition

Maintain good growth and diversity of planting.

Stand 15 Forest Management Activities

Forest Health Management Activities/Monitoring: Monitor for need for crop tree release when the canopies have closed in and the grass component is lessened. Also, trees other than outside row will start to self prune lower branches. Control olive as possible through manual/chemical or mechanical methods. Follow up any olive removal with foliar spray or another manual/chemical application 1-2 years after first.

Stand 16 Objectives/Current Conditions

Stand 16 Acres: 2.8

Objectives: To manage for mixed walnut and oak growth and diversity.

General description, including density/structure, forest type and diameter size class: This stand is located on the south side of the lake near the access point with restrooms. It is bordered to south by a lake finger. The species present here include very scattered sawtimber black oaks with a few white oaks. The pole species include honey locust and shagbark hickory (heavy) along with elm, black oak, and walnut. The average diameter for this stand is 9.5" d.b.h. and stocking level is moderate at 70%.

Stand 16 Desired Future Stand Condition

A stand with better growth of more desired species.

Stand 16 Forest Management Activities

Forest Health Management Activities/Monitoring: Light crop tree release (CTR) to favor walnut, black oak, and some shagbark hickory. Remove vines from all walnut crop trees. This is low priority stand due to heavy amount of honey locust and small amount of oak.

Stand 17 Objectives/Current Conditions

Stand 17 Acres: 4.8

Objectives: To manage for mixed walnut and oak growth and diversity.

General description, including density/structure, forest type and diameter size class: Stand 17 is located north west of stand 16 and bordered by the lake to the west. The species in this stand include small sawtimber shagbark hickory, honey locust, and a few walnut. The pole and sapling species include elm, hackberry, shagbark hickory, walnut, and a few black oak. There is heavy Autumn olive and multi-flora rose (MFR). The average diameter for this stand is 11.5" d.b.h. and stocking is moderate at 65%.

Stand 17 Desired Future Stand Condition

Better growth of most desired species.

Stand 17 Forest Management Activities

Forest Health Management Activities/Monitoring: Light CTR to favor walnut, black oak, and shagbark hickory in that order. Remove vines from all walnut crop trees. This stand is a moderate priority stand with more desirable species compared to stands 16-20.

Stand 18 Objectives/Current Conditions

Stand 18 Acres: 2.0

Objectives: To manage for existing oaks and oak regeneration.

General description, including density/structure, forest type and diameter size class: North of stand 17, bordered by the lake on the west and private property to the east. The species include sawtimber and large sawtimber white oak. Pole species, or current/future forest composition, include heavy ironwood with black cherry and elm. There is seedling/sapling heavy ash with hackberry, bitternut hickory, and white oak. The current desired regeneration (white oak) is not in high enough numbers. The average diameter is 25.7" d.b.h. in this stand.

Stand 18 Desired Future Stand Condition

Increase regeneration of oaks.

Stand 18 Forest Management Activities

Forest Health Management Activities/Monitoring: Site preparation for regeneration. Weed tree removal of ironwood, some elm, and black cherry down to 2" and chemically treat stems to open up mid-story canopy and allow more sunlight to reach ground floor. Rx burn 1-4 times over the next 5 years to kill out heavy ash and hickory and to favor oak regrowth. Monitor after each RX burn to check success and need for other burns. A shelterwood harvest can be done here in the next 5-10 years (after some burning and/or weed tree work) to further open up canopy to allow sunlight to help growth of oak seedling/sapling.

Harvesting/Post Harvest Activities/slash management: If a shelterwood harvest is completed the tree tops 8" would be left as is on site. These could be managed by cutting in to smaller pieces and left for habitat.

Stand 19 Objectives/Current Conditions

Stand 19 Acres: 1.2

Objectives: Better growth of most desired species.

General description, including density/structure, forest type and diameter size class: North of stand 18, bordered by the lake to the north and west. The species in this stand include pole and sawtimber honey

locust, hackberry, and few ash, black oak, and black cherry. There is heavy sapling ironwood and seedling ash. Heavy honeysuckle is present throughout stand. Average diameter is 9" and stocking is very low.

Stand 19 Desired Future Stand Condition

Increased growth of black oak, black cherry, and hackberry.

Stand 19 Forest Management Activities

Forest Health Management Activities/Monitoring: Light CTR of black oak, shingle oak, black cherry, and any white oak will be helpful. This stand has very low stocking so only CTR of the best trees is recommended so you don't open up too much space for honeysuckle growth or decrease overall density too much.

Stand 20 Objectives/Current Conditions

Stand 20 Acres: 2.0

Objectives: To manage for regeneration of white oak.

General description, including density/structure, forest type and diameter size class: This stand is located to the east of stand 16 and south of stand 17 with the trail bordering along the east. This stand has somewhat scattered saw white oak, pole cherry, ash, iron, and elm and seedling ironwood and sapling hackberry. The average diameter is 12" and has low to moderate stocking.

Stand 20 Desired Future Stand Condition

More desirable regeneration of pole and sapling species.

Stand 20 Forest Management Activities

Forest Health Management Activities/Monitoring: Weed tree removal of iron, elm, and hackberry down to 2" then chemically treat stems. Prescribe burn 1-4 times, monitor after each burn for oak regeneration and need for more burns.

Harvesting/Post Harvest Activities/slash management: A full or shelter wood harvest could be done after sufficient oak regeneration has started, depending on harvest activities elsewhere.

Stand 21 Objectives/Current Conditions

Stand 21 Acres: 6.0

Objectives: To manage for mixed hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is located on the north side of the lake, west of the pond/stand 15 and south of the ranges. The species here include a few scattered small sawtimber black oak, black cherry, and a couple sawtimber red oak and honey locust. The majority of stand is pole size and consists of honey locust, black cherry, with some shingle oak, shagbark hickory and elm. There is a lot of dead elm throughout this stand. There is olive present throughout stand and heavy in spots, with some honeysuckle. The density of stems per acre is low here due partially to heavy elm death. The average size is pole at around 8".

Stand 21 Desired Future Stand Condition

A stand with increased growth of desirable regeneration.

Stand 21 Forest Management Activities

Forest Health Management Activities/Monitoring: No action at this time. There is not enough density to need any crop tree work, and too heavy of understory of olive and honeysuckle to start regeneration work. This stand could have RX burning done anytime in next few years, and also would benefit from forestry mower work if applicable. Re-evaluate stand in 5 years for need of any other work.

Stand 22 Objectives/Current Conditions

Stand 22 Acres: 4.2

Objectives: To manage for cedar and mixed hardwoods

General description, including density/structure, forest type and diameter size class: This stand is located south of stand 21 and is bordered on the south by the lake. The dominant species in this stand is red cedar, ranging from pole average to some small sawtimber. The other species here include few pole walnut, box elder and elm, with heavy olive throughout stand. The walnut are few and far between, and the cedar are self pruning in many areas to around 10' due to density.

Stand 22 Desired Future Stand Condition

Increased growth of cedars to provide habitat

Stand 22 Forest Management Activities

Forest Health Management Activities/Monitoring: No action is needed at this time. The cedars could be managed for continued growth and a light thinning could benefit these trees over next few years. Any walnuts could be released from competition and have vines removed, but these are very few. This area could be kept as heavy to cedar to provide habitat not available too many other places in park, especially on this south facing slope that would provide natural thermal cover as well as cover from cedars.

Stand 23 Objectives/Current Conditions

Stand 23 Acres: 4.5

Objectives: To manage for mixed hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 21 and is bordered in part to the west by a lake finger. The species here include scattered sawtimber black oak, with pole black oak, black cherry, honey locust, elm, with a couple white oak, hackberry and shingle oak. The density is moderate, and there is heavy MFR here.

Stand 23 Desired Future Stand Condition

Increased growth of most desirable species.

Stand 23 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of white oak, black oak, cherry, shingle oak and hackberry in that order. Do not treat honey locust as weed tree here so density is not lessened too much. Rx fire could go through here but is not needed at this time.

Stand 24 Objectives/Current Conditions

Stand 24 Acres: 6.7

Objectives: To manage for mixed hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 23 and lake finger borders to the south and east. The trail leading to dam borders to the north. The species here include a few sawtimber black oak and red oak. The majority of stand is small sawtimber black oak, with few shingle oak, shagbark hickory and a couple white oak and honey locust. There is pole shagbark hickory with some elm, hackberry, black cherry and shingle oak. There is honeysuckle present in much of stand, though not very heavy throughout most of stand. The density is moderate to high in majority of stand, the average size is small sawtimber.

Stand 24 Desired Future Stand Condition

A stand with increased growth of most desired species and increased desirable regeneration.

Stand 24 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor white oak, red oak, black oak, shagbark hickory in that order. Shingle oak can be a secondary crop tree where no others are present. The crop tree work will be light as the average diameter of crop trees is larger. In the next 5-15 years some weed tree removal work can be done to minimize the pole elm and hackberry layer and try to encourage oak regeneration. Rx burning work could be done here in next 5 years to keep new elm, hackberry and other growth down prior to starting weed tree work later.

This stand should be monitored for oak wilt and oak decline and harvest work can be considered if there is death/decline.

Harvesting/Post Harvest Activities/slash management: Not applicable at this time

Stand 25 Objectives/Current Conditions

Stand 25 Acres: 6.5

Objectives: To manage for oak regeneration and diversity of hardwoods

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 24 and is bordered to south by the lake. The species here include sawtimber and small sawtimber white oak, with black oak, shagbark hickory and a few cherry, bitternut hickory and shingle oak. The pole species include elm, with some cherry, hackberry, ironwood, and white oak. There is some honeysuckle and MFR here, but much less than other stands. The density is moderate through most of stand, and the average diameter is small sawtimber.

Stand 25 Desired Future Stand Condition

A stand with increased oak regeneration

Stand 25 Forest Management Activities

Forest Health Management Activities/Monitoring: Site Preparation for Natural regeneration work can be started here. Rx burning 1-4 times over next 4-5 years can start to minimize less desirable under-story/ground layer. A weed tree removal in next 3-7 years to cut/treat stumps of elm, ironwood, hackberry and any honeysuckle will allow needed space and sunlight to reach forest floor. Re-evaluate after Rx burning and before start of weed tree removal work. A partial harvest could be done here after some initial Rx burning and/or weed tree work is completed, re-evaluate before beginning harvest work.

Stand 26 Objectives/Current Conditions

Stand 26 Acres: 1.9

Objectives: To manage for mixed hardwood growth.

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 25 and is bordered to south by the lake and the west by the open area leading to dam. The species present include small sawtimber basswood with a few black cherry. The pole species are elm, hackberry and bitternut hickory. There are a couple of very scattered sawtimber white oak, with some death/decline that is likely oak wilt. The density is low to moderate in this stand.

Stand 26 Desired Future Stand Condition

A stand with increased desirable growth

Stand 26 Forest Management Activities

Forest Health Management Activities/Monitoring: No action at this time. Monitor for oak wilt and decline that may lead into stand 25. A woodland planting is a possible option here to increase desirable growth and diversity. A weed tree removal would need to accompany any woodland planting. Some basswood and cherry could be included in harvesting that may be done in nearby stands, depending on follow up to improve overall stand composition (a woodland planting would be done if a harvest was completed here).

Stand 27 Objectives/Current Conditions

Stand 27 Acres: 4.9

Objectives: To manage for continued growth and natural regeneration of oaks.

General description, including density/structure, forest type and diameter size class: This stand is located in the SW of the park, south of dam and adjacent to private land and perimeter trail to the south, surrounding food plot. The species here include scattered and somewhat scattered sawtimber white oak, with a few black walnut and wolf white oak at west end. The small sawtimber and pole species include basswood, black oak, with some walnut and a few honey locust-especially at west end-with a couple hard maple. The small pole and sapling species are ironwood, with hard maple and some hackberry and elm. Honeysuckle and some olive occur along all edges and west edge. The average diameter of all trees is 16.1", with 19.2" of all trees 14" and above. Rx burning was done here fall of 2017.

Stand 27 Forest Management Activities

Forest Health Management Activities/Monitoring: Site Prep for Natural Regeneration, including weed tree and invasive species removal, continued Rx burning and some selective harvesting to remove declining trees. Invasive removal work can be done by pulling, cutting/herbicide of stumps or possibly machine work in flattest areas. Weed tree removal of hard maple, honey locust, most ironwood and some basswood from 1-10" diameter will remove what Rx burning will not kill. This may be a higher priority as burn was done and may have killed some of maple and ironwood and weed tree work can continue that opening of ground layer to light.

Stand 28 Objectives/Current Conditions

Stand 28 Acres: 12.8

Objectives: To manage for continued growth of best diversity of trees.

General description, including density/structure, forest type and diameter size class: This stand is located East of stand 27 and extends from south edge to north tip ending in lake. The species here include some scattered or very scattered sawtimber white oak, black oak and shagbark hickory. The majority pole size is basswood (many double stems), shagbark hickory, ash, with less black oak and walnut. There is a handful of pole and large sapling bitternut hickory, hackberry, cherry and white oak. Sapling/seedling hard maple, with some elm, and lighter ironwood than other stands is found in varying amounts throughout this area. The west side is brushy and has some shingle oak and honey locust as well as heavier olive east of field. Honeysuckle and some olive are present in rest of stand, as well as heavier MFR in spots. The average diameter is 12.1.

Stand 28 Forest Management Activities

Forest Health Management Activities/Monitoring: Control invasive species through pulling and cutting/herbicide. There are some flatter areas of this stand that could have machine clearing done. Crop tree release to favor mix of walnut, white oak, black oak, shagbark hickory, cherry, and basswood in that order. Remove vines from all walnut crop trees. Rx burning can be done to minimize the ironwood, maple and invasive species component 1-5 times over next few years, but this area is lower priority to control maple as majority size class still has years to grow before SPNR or any planting work would be needed. Some of the mature trees may be selected to include with harvest to remove declining or poorly formed trees.

Stand 29 Objectives/Current Conditions

Stand 29 Acres: 5.9

Objectives: To manage for oak growth and natural regeneration.

General description, including density/structure, forest type and diameter size class: This stand is located between stand 28 on a NE/E facing slope. The species here include sawtimber white oak, with a few black oak and shagbark hickory, with a couple hard maple at west edge of stand. There are a few small sawtimber and mostly pole shagbark hickory, basswood, with less pole elm, black oak, walnut, cherry and heavy ironwood. The sapling trees are heavy ironwood, with hard maple found in most spots. There is moderate to heavy honeysuckle, with some plants 8' and above with some MFR found here. The average diameter is 15.6 of all trees sampled, and 19.7 of all trees above 14".

Stand 29 Forest Management Activities

Forest Health Management Activities/Monitoring: Site Prep for Natural Regeneration, including weed tree and invasive species removal, Rx burning and a shelterwood harvest to remove close to 50% of canopy overall. Invasive removal work can be done by pulling, cutting/herbicide of stumps or possibly machine work in flattest areas. Weed tree removal of hard maple, most ironwood and some basswood from 1-10" diameter will remove what Rx burning will not kill. There is a higher number of mature trees per acre here than most other stands, with stand 31 being similar to this stand. More will be harvested from these two stands to open up canopy to allow enough sunlight into stand, in addition to more weed tree work being needed with heavier ironwood and more stems per acre of that.

Stand 30 Objectives/Current Conditions

Stand 30 Acres: 3.4

Objectives: To manage for continued growth of diversity of trees.

General description, including density/structure, forest type and diameter size class: This stand is located at east end of stand 28 and south of stand 31. The species here include scattered to very scattered sawtimber white oak, with small sawtimber and pole majority ash, shagbark hickory, basswood, white oak, red oak, with couple cherry and elm. The sapling and seedling trees are ironwood with some light honeysuckle and olive. The average diameter of all trees is 12.7".

Stand 30 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor mix of white oak, red oak, black oak, hickory and basswood in that order. Rx burning can be done to minimize the ironwood, any maple and invasive species component 1-5 times over next few years, as many white oaks are the most mature in stand and if natural regeneration of white oaks will occur the seed trees will need to be utilized sooner than later.

Stand 31 Objectives/Current Conditions

Stand 31 Acres: 6.3

Objectives: To manage for oak growth and natural regeneration.

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 30. The species here include sawtimber white oak, with some black oak and small sawtimber white oak, with few black oak, walnut and shagbark hickory. The pole trees include ash, basswood, with some hard maple and the seedling/sapling trees are ironwood, with some elm, basswood and some hackberry, ash, cherry and hard maple. The honeysuckle and olive are moderate through most of stand with some plants over 10' in a few spots. The average diameter of all trees is 16.9", with 20" average of all stems over 14".

Stand 31 Forest Management Activities

Forest Health Management Activities/Monitoring: Site Prep for Natural Regeneration, including weed tree and invasive species removal, Rx burning and a shelterwood harvest to remove close to 50% of canopy overall. Invasive removal work can be done by pulling, cutting/herbicide of stumps or possibly machine work in flattest areas. Weed tree removal of hard maple, most ironwood and some basswood

from 1-10" diameter will remove what Rx burning will not kill. There are a higher number of mature trees per acre here than most other stands, with stand 29 being similar to this stand. More will be harvested from these two stands to open up canopy to allow enough sunlight into stand. Larger invasive plants should be controlled before any harvest work occurs to minimize seeding ability of these large and mature plants.

Stand 32 Objectives/Current Conditions

Stand 32 **Acres: 14.8**

Objectives: To manage for mixed hardwood growth and diversity.

General description, including density/structure, forest type and diameter size class: This stand is located north and east of stand 31 and surrounds the parking area/toilet area. The species here include sawtimber and scattered sawtimber/small sawtimber shagbark hickory, with a few white oak and black oak. The pole trees are majority shagbark hickory, and black oak, with elm, basswood, cherry, walnut, shingle oak and a few hackberry. The seedling/sapling species are majority ironwood, with some hackberry. Honeysuckle and some olive is found in this stand, especially along edges with some scattered cedar. The average diameter of this stand is 13.8", with 18.5" average of all stems over 14".

Stand 32 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor white oak, walnut, red/black oak, cherry, hackberry and shagbark hickory in that order. Remove vines from any walnut crop tree. Control invasive species as possible with pulling, cutting/chemical or machine removal, but there is a lot of edge in this stand and controlling the largest seed bearing shrubs in the most open areas may be most efficient.

Stand 33 Objectives/Current Conditions

Stand 33 **Acres: 4.2**

Objectives: To manage for oak growth and regeneration, to diversify stand.

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 32. The species here include sawtimber white oak, with a couple shagbark hickory. There is pole, sapling and seedling ironwood, with some pole cherry, black oak, shingle oak, hickory and elm. An old trail intersects this stand and there is heavy olive in this opening, as well as honeysuckle throughout stand. There is some oak death/decline in this stand. The average diameter is high at 18".

Stand 33 Forest Management Activities

Forest Health Management Activities/Monitoring: Shelterwood harvest to salvage dying/declining oaks and open up stand. Invasive removal should be done prior to any harvest to minimize large olive and heavy seed source before opening up canopy. A weed tree removal of ironwood and some others species like shingle oak, elm and cherry as needed from 1-10" to open up stand around remaining oaks to naturally regenerate.

Stand 34 Objectives/Current Conditions

Stand 34 Acres:

Objectives:

General description, including density/structure, forest type and diameter size class:

Stand 34 Forest Management Activities

Forest Health Management Activities/Monitoring:

Harvesting/Post Harvest Activities/slash management: Not applicable at this time

Recommended Management Activity Schedule and Tracking

Stand	Unit (Acres/ Feet, etc)	NRCS Practice Code*	Treatment Activity Short Description (or reference to description in Plan)	Dates		Incentive Program (s) Used?	Net Cash Flow (optional)	
				Planned	Completed		Cost	Income
1	3.4		Weed tree removal		2013 Rx burn			
2	2.1		Crop tree release, invasive control		2013 Rx burn			
3	4.1		weed tree removal, invasive control		2014 TSI			
4	1.5		site prep for natural regeneration	2015- 2016	2012 Rx burn			
5	2.8		Crop tree release(CTR)	2014- 2015				
6	1.4		Rx burn, CTR- 2017-18	2018	2013 Rx burn, 2014 TSI			
7	3.6		Crop tree release	2016	2014 TSI			
8	9.9		Crop tree release	2014				
9	7.1		invasive control, site prep? campsite	2017				
10	9.3		Crop tree release	2015				
11	2.4		Site prep, Rx burning	2015				
12	8.6		Crop tree release	2017				
13	6.6		Crop tree release	2016				
14	5.2		Invasive control, possible evergreen planting	2018-2019				
15	3		Monitor for need for thinning, future CTR	Ongoing, 2018				

Stand	Unit (Acres/ Feet, etc)	NRCS Practice Code*	Treatment Activity Short Description (or reference to description in Plan)	Dates		Incentive Program (s) Used?	Net Cash Flow (optional)	
				Planned	Completed		Cost	Income
16	2.8		Light crop tree release	2018				
17	4.8		Crop tree release	2017				
18	2.0		RX burn, weed tree	2015				
19	1.2		Crop tree release	2018				
20	2.0		RX burn, weed tree	2015				
21	6.0		No action					
22	4.2		No action					
23	4.5		Crop Tree release	2017				
24	6.7		Crop tree release	2017	Invasive removal?			
25	6.5		Rx burn, weed tree	2015, 2018	Invasive removal?			
26	1.9		No action					
27	4.9		SPNR, Rx burn weed tree, shelterwood harvest					
28	12.8		Crop Tree Release					
29	5.9		SPNR, shelterwood harvest					
30	3.4		Crop Tree Release					
31	6.3		SPNR, shelterwood harvest					
32	14.8		Crop Tree Release					
33	4.2		SPNR, shelterwood harvest					

American Tree Farm Program

I certify that this Forest Management Plan meets the requirements of the American Forest Foundation's American Tree Farm System.

ATFS Inspecting Forester

Number

Date

Certified Tree Farm Number: (e.g. AL 1234) _____

Date of ATFS Certification: _____

The logo for the Iowa Department of Natural Resources (DNR) features a stylized outline of the state of Iowa. The outline is filled with horizontal bands of blue, green, and orange. Overlaid on this is the text 'DNR' in large, bold, yellow letters with a blue outline.

Forest Stewardship Plan

Prepared for:

Hickory Bend Recreation Area-Des Moines County

11627 Starr's Cave Park Road Burlington, Iowa 52601

Written by Iowa DNR District Forester:

Lisa Louck

260 Mulberry Street, suite 4 Wapello Iowa 52653

(319) 523-2216

lisa.louck@dnr.iowa.gov

Date of Original Plan Completion: 10/6/2025

Revision date(s):

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Property Description

Legal property description: T71N R03W, section 32 Franklin twp. Des Moines County

Nearest city or town: Burlington

Total ownership acreage: Total forested acreage: Around 150

Total acreage covered by this plan: 132

Number of unique stands of trees: 8

Basic topography: Steep to rolling slopes, wider bottoms and some flatter/moderately sloped uplands.

Soils: Soils found on your woodland areas are Lindley and Clinton silt loams along the uplands, with Clinton on the flatter ridgetops and upper slopes and Lindley on the lower slopes. There is Nodaway silt loam along the second bench bottom and Klum fine sandy loam along the lower bottom adjacent to the creek. There is Coppock silt loam around the SW most open field, which is occasionally flooded. All soils are well suited to grow diverse mix of upland or bottomland hardwoods.

Road Conditions: Access throughout property by maintained trails and field edges

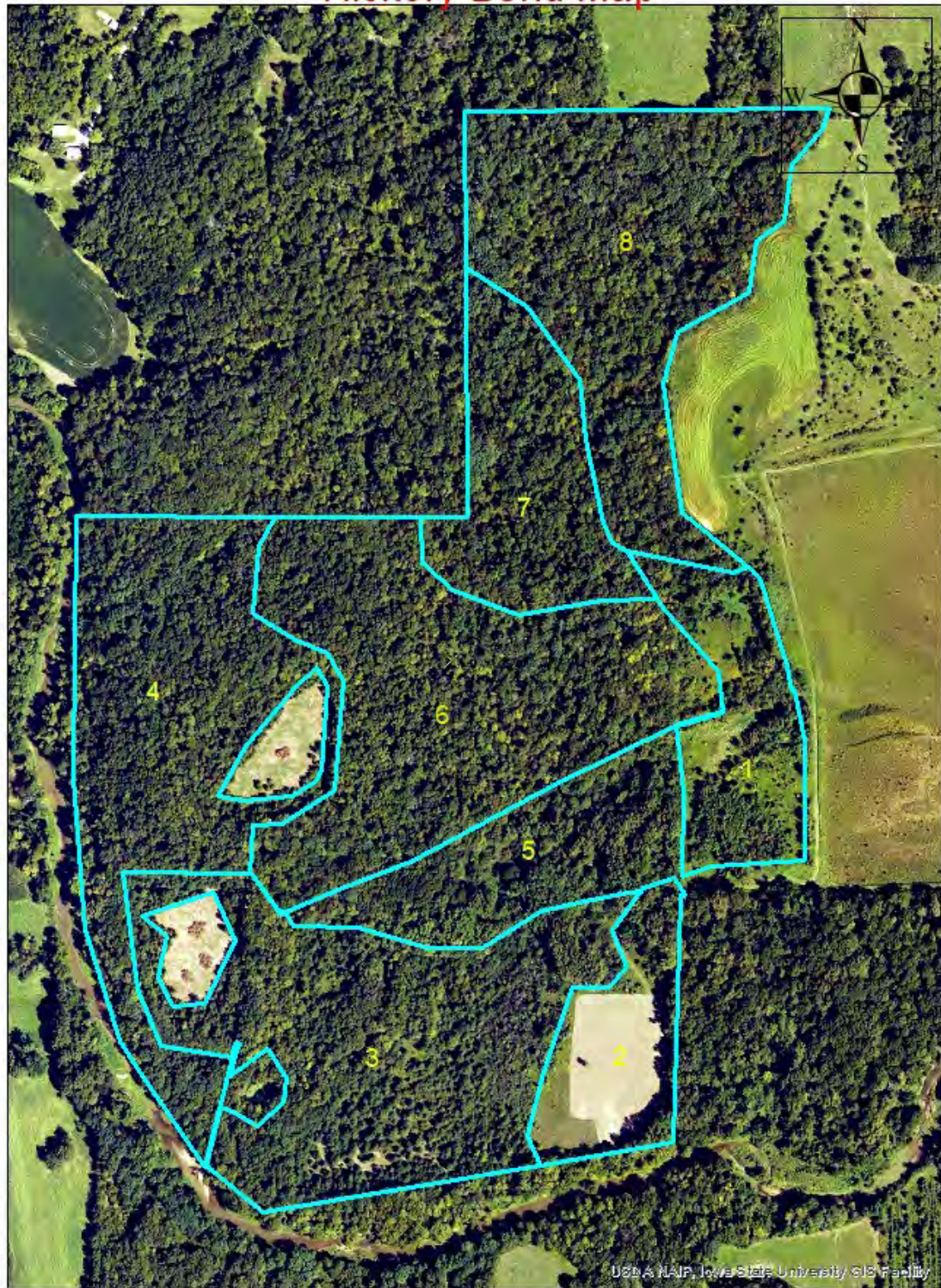
Which watershed is the property located in: Flint Creek, Mississippi River

Forest Health Issues (Invasive species, diseases): There is honeysuckle, autumn olive and multi-flora rose present in many areas of the timber. These species should be controlled wherever possible and should be a part of any TSI work.

Property History: No recent forest management aside from trail update and maintenance. Tree planting maintenance of DOT planted trees was done for years after planting.

Forest Management Goals: The primary goals include diversity of wildlife and native woodland habitat and healthy forest management for sustainability for the long term.

Hickory Bend Map



Forest Natural Resources Enhancement and Protection

Protect Special Sites & Social Considerations

Special sites: None known, please review and adjust plan if such sites are found.

Adjacent stand or ownership concerns: None known, please re-evaluate plan if concerns arise.

Gas/power line ROW access and management may need to be evaluated with company personnel.

Recreation: Recreation is a goal and will be considered in management decisions.

Access: Access to all sides by road or owner's property/easement

Air, Water, and Soil Protection

What goals do you have, or what steps will you take to conserve, protect and enhance your forest's air, water and soil resources?

Soil protection: Follow Best Management Practices (BMP's) when harvesting or doing any work near streams. BMP guidelines available

Roads: Road construction for forest work to be done according to BMP's, All roads/trails to be left clear after work is completed.

Streams, wetlands, ponds, lakeshore: A tributary of Devil's creek and a large pond, as well as smaller drainages. Identify all water resources before beginning any work and take steps to minimize any risks

Effects of Natural Disasters: A well stocked and healthy stand of trees is often better able to withstand natural disasters than an unmanaged stand.

Fish, Wildlife and Biodiversity

Describe the resources on your property and the activities you are planning to accommodate your goals.

Fish & Wildlife: Many species of wildlife are present on property.

Special Note on Northern Long-Eared Bat, Indiana Bat, and Tricolored Bat For use with USDA and REAP funded projects

The Indiana Bat (*Myotis sodalis*) is a federal (50CFR Part 17) and state (Code of Iowa, Chapter 481B) endangered species that occurs in southern Iowa as far north as Highway 30. The Northern Long-Eared Bat (*Myotis septentrionalis*) is a federally Endangered Species that can occur in any county of Iowa. The Tricolored Bat (*Perimyotis subflavus*) is a federally Proposed Endangered Species that can occur in any county in Iowa. All three bats can be active from April through September in forested areas. Female Indiana bat and Northern Long-Eared Bats may roost and rear young in standing trees 3" DBH and larger, either dead or alive, with loose, shaggy, or peeling slabs of bark, cavities in the trunk or large limbs, or large cracks or openings. Tricolored bats roost in similar forested habitat but roost within leaf clusters instead of under loose bark.

To protect summer habitat for all three species of bats, adhere to the following guidance:

- Avoid felling any dead standing or live trees 3" DBH and larger that contain cavities, cracks or crevices, or loose, platy, peeling, or shaggy bark from April 1st through September 30th.
 - Such trees meeting the above criteria may be felled beginning October 1 through March 31; however, in all forest management projects, retain a minimum of 9 suitable habitat trees per acre if present above this rate.

- Live trees may be girdled any time of year to create habitat snags in Forest Stand Improvement operations.
- Avoid conducting prescribed burns in woodlands from April 1st until September 30th.
 - If prescribed burning operations must take place after April 1st through September 30th, then protect trees 9" DBH and larger that contain cavities, cracks or crevices, or loose, platy, peeling, or shaggy bark.
- Avoid clearcuts, seed tree harvests, or site preparation projects larger than 10 acres that could negatively affect suitable habitat.

If the above guidance cannot be adhered to, an individual consultation with the U.S. FWS Rock Island Field Office is needed to determine how to best avoid adverse effects to Indiana Bat, Northern Long-Eared Bat, and/or Tricolored Bat.

Management of Forest Resources

Protection from Pests: Monitoring for diseases/insects

Prescribed Fire/Burns: Not planned at this time

Management Plan Implementation Constraints: None known, possible constraints include unavailability of contractor, lack of cost share funds, lack of personal funds, etc. Please contact relevant state or federal agency if cost share is involved and plan cannot be implemented.

Best Management Practices/Permits: Your forester or state/federal agency can provide information on Iowa and National "Best Management Practices (BMP'S)" guide. BMP's are applicable for harvesting work, stream work, trail construction, dirt moving, etc.

Stand Level Information

Tree Size Classes Diameter at breast height (DBH)

Sawtimber: 18" above Small Sawtimber: 12-16" Pole: 5-12" Sapling: 2-5" Seedling: <2"

Stand 1 Objectives/Current Conditions

Stand 1 Acres: 8.3

Objectives: To manage for bottomland hardwoods and invasive species

General description, including density/structure, forest type and diameter size class: This stand is located at the entrance of the wooded acres, north of the trail into the food plots/woods. The scattered canopy of this stand consists of pole and sapling sycamore, elm, mulberry, honey locust with reed canary grass and some multi-flora rose.

Stand 1 Forest Management Activities

Forest Health Management Activities/Monitoring: Monitor area as trees encroach into more open areas, thinning may be needed in 3-5 years in the densest pockets of trees. Possible management is Rx fire to reduce multi-flora rose and grass duff layer.

Stand 2 Objectives/Current Conditions

Stand 2 Acres: 7.1

Objectives: To manage edges of the field for early successional habitat

General description, including density/structure, forest type and diameter size class: This bottomland area is located south of stand 1 and includes a periodically mowed open field. This reclaimed open field has desirable trees and shrubs to the north and east, including pin oak, cedar, willow, walnut, with native dogwood shrub.

Stand 2 Forest Management Activities

Forest Health Management Activities/Monitoring: Edge feather or periodically cut back parts of this edge to create brushy habitat with increased nesting and browse potential.

The open part of the field could be planted to trees, shrubs, or another conservation cover in the future.

Stand 3 Objectives/Current Conditions

Stand 3 Acres: 25.4

Objectives: To control invasive species

General description, including density/structure, forest type and diameter size class: This stand is west of stand 2 in a former crop/open field. The species here are pole and large sapling cedar, elm, sycamore, with a few walnut. There is heavy autumn olive and honeysuckle within this field, that also has annual growth of mixed grasses and forbs like goldenrod, asters, mints.

Stand 3 Forest Management Activities

Forest Health Management Activities/Monitoring: Invasive brush removal of honeysuckle and olive. Machine grind all honeysuckle and olive to base of plant. Follow up with foliar spray any re-sprouting or new invasive stems.

Monitor for need of future Rx fire or foliar spray management.

A possible hardwood seed planting to fill in greater bottomland diversity (walnut, bur/swamp white/pin oak, shellbark hickory) within cedars and existing hardwoods can be done once invasive species are controlled.

Stand 4 Objectives/Current Conditions

Stand 4 Acres: 22.0

Objectives: To control invasive growth, to manage for mixed hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is located west of stand 3 along the creek edge bottomland and extending along the upland west facing slope to the NW corner of the property. The species here are small sawtimber walnut, honey locust, bitternut hickory, shagbark hickory, hackberry and some red oak. There is little mid-story canopy here, with buckeye making up most of the sapling/seedling stage. There is very heavy autumn olive, honeysuckle and multi-flora rose.

Stand 4 Forest Management Activities

Forest Health Management Activities/Monitoring: Invasive brush removal of autumn olive, honeysuckle, and multiflora rose. Machine grind to base of plant or hand cut and immediately chemically treat stump to prevent re-sprouting of all honeysuckle and olive $\frac{1}{2}$ " stem diameter and over, and multi-flora rose as possible.

The second invasive treatment will be foliar spray on any re-sprouting honeysuckle, olive and rose, and also foliar spray of remaining plants over 2' height.

Crop tree release to favor a mix of walnut, shagbark hickory, red oak with bitternut hickory, hackberry, and pod producing locust as secondary crop trees. Identify crop trees (between 25-40/acre) and release on four sides of crop trees' mid and upper crown whenever possible. Double girdle all competing trees, use herbicide only on locust if desired.

Stand 5 Objectives/Current Conditions

Stand 5 Acres: 10.4

Objectives: To manage for mixed bottomland hardwood growth and diversity

General description, including density/structure, forest type and diameter size class: This stand is north of stands 2 and 3, in areas of more mature timber than other bottomland areas. The species here are small sawtimber and pole silver maple, bitternut hickory, hackberry, honey locust and walnut. There is a small 1-2 acre area of only silver maple, with the rest of the stand heaviest to bitternut hickory. There is sapling and seedling buckeye in the understory, and annual growth (nettles, smartweeds, etc.) is present with little invasive growth in this dense canopy stand.

Stand 5 Forest Management Activities

Forest Health Management Activities/Monitoring: Crop tree release to favor a mix of all species, with form and diversity considered. Thin smaller trees out of silver maple grove, and use crop tree spacing of 25-35' for the rest of the stand. Identify crop trees and release on four sides of crop trees' mid and upper crown whenever possible. Double girdle all competing trees, use herbicide only on locust if desired. Cut any vines larger than 1" diameter from walnut crop trees.

Stand 6 Objectives/Current Conditions

Stand 6 Acres: 25.5

Objectives: To manage for mixed upland hardwood growth and future oak regeneration

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 5 on flatter and more SW facing slopes. The trees here are scattered sawtimber and small sawtimber red oak, bitternut hickory, with a few shagbark hickory, white oak, walnut, and honey locust. The more dominant size class of small sawtimber/pole trees are mainly shagbark hickory, hackberry, and elm. There is some oak regeneration here, with hickory, elm and hackberry regeneration also present. This stand has prickly ash and other native understory plants, with a few invasive species.

Stand 6 Forest Management Activities

Forest Health Management Activities/Monitoring: Weed tree removal/crop tree release. This stand will be ready for harvest work in the next 7-10 years, but more growth can be added to existing trees while the hackberry/elm is minimized to allow more sunlight for oak germination and regeneration. Crop tree release to favor white oak, walnut, red oak, shagbark hickory, with hackberry as a crop tree where these others are not present. Choose between 15-25 trees per acre. Release on minimum of two sides.

After crop tree is marked, weed tree removal near largest oaks and shagbark hickory to encourage oak/hickory regeneration. Kill hackberry and some elm between 5-12" diameter, treat to prevent re-sprout.

Rx fire in this stand periodically (every 2-5 years), monitor annually for oak regeneration and to determine harvest timing.

Harvesting/Post Harvest Activities/slash management: Some hickory, locust, hackberry, walnut and also a few oak trees may be included in next harvest cycle on land.

Stand 7 Objectives/Current Conditions

Stand 7 Acres: 10.8

Objectives: To control invasive species

General description, including density/structure, forest type and diameter size class: This stand is located north of stand 6 and west of the smaller creek that feeds into field to the east. The species here are a couple of wolf white oak, with pole and small sawtimber basswood and less pole shagbark hickory, honey locust, and a few walnut. There is very heavy honeysuckle here.

Stand 7 Forest Management Activities

Forest Health Management Activities/Monitoring: Invasive brush removal of honeysuckle. Machine grind to base of plant or hand cut and immediately chemically treat stump to prevent re-sprouting of all honeysuckle $\frac{1}{2}$ " stem diameter and over.

The second invasive treatment will be foliar spray on any re-sprouting honeysuckle and any rose, and also foliar spray of remaining plants over 2' height.

Stand 8 Objectives/Current Conditions

Stand 8 Acres: 22.5

Objectives: To control invasive species, to manage for oak regeneration

General description, including density/structure, forest type and diameter size class: This stand is located at the north and NE most wooded acres, and include mostly south facing slopes, with some west facing steeper slope along field edge and east of small creek. The species here are scattered sawtimber and small sawtimber red oak, shagbark hickory, bitternut hickory, with less elm and white oak. White oak is heavier in a few areas but red oak is more dominant. There is pole and large sapling hackberry, shagbark hickory, elm, black cherry, and some hard maple. There is very heavy honeysuckle here.

Stand 8 Forest Management Activities

Forest Health Management Activities/Monitoring: RX fire through this stand to kill as much honeysuckle as possible. Using slopes and smaller drainages the work can be broken into smaller stands as needed. Invasive brush removal of honeysuckle. Machine grind to base of plant or hand cut and immediately chemically treat stump to prevent re-sprouting of all honeysuckle $\frac{1}{2}$ " stem diameter and over.

The second invasive treatment will be foliar spray on any re-sprouting honeysuckle and any rose, and also foliar spray of remaining plants over 2' height.

Rx fire every 2-4 years as needed to control shade tolerant competition and any new invasive growth.

Weed tree removal of hackberry, hard maple, and bitternut hickory between 1-10" diameter after invasive species are controlled.

Recommended Management Activity Schedule and Tracking

Stand	Unit (Acres/ Feet, etc)	NRCS Practice Code*	Treatment Activity Short Description (or reference to description in Plan)	Dates		Incentive Program (s) Used?	Net Cash Flow (optional)	
				Planned	Completed		Cost Per acre	Income
1	8.3		Monitor for invasive Rx fire as needed					
2	7.1		Edge feathering Habitat planting					
3	25.4		Invasive control-heavy Likely machine	2026			\$300	
4	22.0		Invasive control-very heavy Invasive control-medium Crop tree release	2026 2026 2027			\$700 \$200	
5	10.4		Crop tree release	2027			\$200	
6	25.5		Crop tree/weed tree	2027			\$300	
7	10.8		Invasive control-very heavy Invasive control-medium					
8	22.5		Rx fire Invasive control-very heavy heavy					
9								
10								

American Tree Farm Program

I certify that this Forest Management Plan meets the requirements of the American Forest Foundation's American Tree Farm System.

ATFS Inspecting Forester

Number

Date

Certified Tree Farm Number: (e.g. AL 1234) _____

Date of ATFS Certification: _____

General Forest Management Practices

Regardless of your specific management objectives, active management is often needed to keep Iowa forests healthy, sustainable, and renewable. Keeping a forest properly stocked with desirable tree species and protected from external damaging influences is the key to the sustainability of our forest resources. General practices to follow include:

- 1). Protect your forest from damaging livestock grazing, wildfire, and soil erosion. Protecting your woodland from livestock grazing will make your property eligible for Forest Reserve status. This information is included with your plan. Livestock grazing causes long term soil compaction that slows tree growth and over time, impairs overall forest health and tree vigor, and the natural production of desirable tree species such as oaks, hickories, and black walnut trees. Grazing also greatly limits the effectiveness of forest improvement practices such as thinning and weed tree removal.
- 2). The best way to protect your forest from insect and disease problems is to maintain proper tree stocking levels and to monitor your woodland for obvious disease and insect problems on at least a yearly basis. If pests or damage is observed or suspected, especially if trees are dying in pockets or groups, contact you DNR Forester for assistance. To protect your forest from the possibility of spreading the Oak Wilt pathogen, it is recommended that the cutting, pruning, or wounding of oaks be limited to the time period from October 1 through March 31 each season.
- 3). Limit the time period for cutting (felling), wounding, or pruning oaks and hickories to October 1 through March 31 each year to protect potential Indiana Bat and Northern Long Eared Bat (NLEB) summer habitat. More information concerning bat habitat protection considerations can be found in the ***“Forest Natural Resources Enhancement and Protection”*** section of this plan, under the heading of *State and Federal Threatened or Endangered Species*.
- 4). All timber harvesting should be done to promote the sustainability of future forest benefits according to your management objective. Always contact your DNR District Forester or a private consulting forester prior to selling standing timber.

Never let a tree buyer mark (select) or tell you which trees to sell. The document entitled, ***“Timber Harvesting in Iowa”***, provides important timber harvesting information and details the steps involved with conducting a successful timber sale. This document is provided with other woodland management information as attachments to this plan.
- 5). Periodically control the encroachment of undesirable tree species or invasive unwanted plant and shrub species in your forest if they are competing with desirable tree species and/or impeding the natural reproduction of desirable tree species.
- 6). Keep the forest healthy by maintaining proper tree stocking levels. Properly stocked forests allow desirable tree species to fully utilize available growing space, moisture, and sunlight. This promotes vigorous tree growth, extended tree longevity, and more resistance to tree disease and insect problems. Understocked forests encourage the invasion of undesirable weed tree species and understory plants. Overstocked forests cause stagnated tree growth and make woodlands more prone to disease and insect problems. Practices needed periodically to adjust stocking levels may include thinning, tree planting, weed tree removal, and other vegetation manipulation to stimulate the natural re-production of desirable tree species.

Periodic forest overstory thinning and weed tree removal are the best management tools for improving overall forest health, wildlife mast production, and shorter rotation length timber

production. Thinning used to remove weed tree species from a forest helps to put all of the forest growth potential on the selected remaining tree species and helps get rid of unwanted tree species seed sources. Thinning to remove undesirable mid-story canopy level trees improves understory light levels that promote the natural reproduction of desirable tree species like oaks, hickories, and black walnuts, and will help build wildlife ground cover for loafing, hiding, fawning, and nesting. Your DNR Forester is the best source for determining the correct thinning method and timing of thinning to help you reach your management goals

7). It is a violation of Federal Law to store, handle, and apply pesticides inconsistent with product labeling. For all pesticide treatments, always try to minimize chemical contact with non-target plant, animal, and bird species. Always handle and apply pesticides according to product labeling to maximize effectiveness, and to minimize damage to the environment and danger to applicators.

Forest Stewardship Plan

5/15/2009

Landowner: Des Moines County Conservation

Address: Hunt woods

Phone/contact information:

Prepared by:

Lisa Louck, District Forester
260 mulberry Street, suite 4
Wapello, Iowa 52653
lisa.louck@dnr.iowa.gov

Location:

The following stewardship plan is designed to identify strategies and actions that will help obtain management goals. Benefits derived from properly managed woodlands and associated lands include improved wildlife habitat, watershed protection, soil conservation, enhanced recreational opportunities, increased timber product supply, and the protection and preservation of our forest resources

Owners Objectives: To manage area for forest demonstration and forestry goals such as improving oak resource, timber quality, growth of timber, and recognizing the wildlife benefits that accompany such work.

Description of Property: 58 acre woodland with 2-4 acres of prairie under power line ROW, an interpretive trail throughout area; a parking lot, picnic shelter, and bathroom facilities are located at the north end. There is a stream running along the southeast edge of the woods, and the property is bordered to the north and the south by secondary roads

Historic/Past management: Past management includes timber sales, timber stand improvement, and tree planting, predominantly aimed at oak management

Archeological, Cultural, or Historic Sites: There is a pioneer cemetery located south of the prairie

Threatened and Endangered Species: None known please see bat section near end of this plan and ask your forester for updates before starting work.

Soils and Topography of the area

The soils are all good timber soils that are well drained, have slow/moderate runoff, and have a high site index for many upland hardwood trees. A site index is a measurement of the height a tree can achieve in a certain time, based much on soils and geography, and if there are limiting factors in the trees growth, density and other factors may be the cause.

Stand Descriptions and Management Recommendations

Tree size classes:

1=large saw-20" and above

2=small saw- 12-20"

3=pole-5-12"

4=sapling-2-5

I tried to keep the stand numbers the same, though some are not exactly mapped as they appear now

Stand 1,2,3N description and management objectives: Stands 1,2,3N are located along the northeast corner of the property. This stand is a mix of saw size basswood, with scattered hackberry, ash, shagbark hickory. The pole size trees are walnut, bitternut hickory, cherry, elm, black oak, and hedge. The regenerating layer is elm, ash, hickory, couple oaks. The objective for this stand is to manage for any desirable trees and early succesional habitat.

Stand 1, 2, 3N Management Recommendations: This forest edge habitat can be managed to promote low height habitat like a shrub layer bordering the neighbors to the east as well as the forest edge to the north. Clear out basswood in next harvest, along with other saw size trees. Keep any walnut/cherry/oak as a diversity to area, plant rows of different shrubs like hazelnut/serviceberry/cranberry/.

Stand 3S, 4 description and management objectives: These stands have saw shagbark hickory, with scattered saw white oak, ash, elm, and a couple red oaks. The pole trees are basswood, elm, ash, red oak. The sapling and seedling trees are elm, bitternut hickory, and ash. The objective for this stand is to increase diversity of future forest or seedling/sapling layer.

Stand 3S, 4 Management Recommendations: An understory release to remove non-merchantable elm, ash, some basswood and bitternut hickory down to 2" will be done to clear areas for planting. The cut trees will be chemically treated when like species are not within root zone, other trees will be double girdled. The species planted will be a mix of oaks, cherry, shagbark hickory, walnut, pecan. The planted trees will be tubed and receive chemical treatment for 2-3 years to keep woody competition at bay. These areas can be harvested after enough regeneration has started and become advanced (4.5' high).

Stand 5,6,8,17 description and management objectives: These stands are a predominate saw white oak stands, with some areas having saw shagbark hickory, ash, few red oaks. The pole trees are ash, hackberry, elm, shagbark hickory, red oak., occasional white oak. The seedling/sapling trees, where present, are elm, hickory, ash, oaks. Wherever oaks are present in the ground level, they are overtopped by competition and/or outnumbered. The objective of this stand is to maintain the original goal of oak management.

Stand 5,6,8,17 Management Recommendations: Perform an understory removal on most areas, followed by 2-3 burns over next 3-5 years. This will promote most oak seedlings already on the ground and clear sunlight and space for additional seed to germinate. The burns will be timed to coincide with seed crops and will be done based on seedlings per

acre. In areas that do not have sufficient overstory oaks to allow for natural regeneration, a tsi will be done to favor a mix of trees. Varying amounts of burning can be done in different areas to promote different effects. A mix of fall/spring burns with some areas receiving 1 burn and others receiving 3-5 burns.

Stand 7,15 description and management objectives: Stand 7 has scattered saw white oaks (this stand may have some properties more like stands 5,6,8), shagbark hickory, ash. The pole trees are mixed elm, ash, hickory, and hackberry. In stand 15 where the salvage cut was done, there are currently pole ash, cherry, elm, black locust, ironwood, few cedars. The objective for both of these areas is to improve composition.

Stand 7,15 Management Recommendations: Weed tree removal of non-merchantable ash, elm, ironwood in small clearings. Plant into area with a mix of cedars, oaks. Plant cedars in pockets and alone, plant oaks throughout. Tube trees, chemically treat around trees for 2-3 years to remove woody competition. Treat black locust stands separately with herbicide to prevent locust re-sprout.

Stand 9,10 description and management objectives: these stands are located on the east edge of the property, with saw white oak, less shagbark hickory. The pole trees are oaks, hickory, elm, ash, cedar. In stand 10 the sapling ironwood (with some mulberry) gets thick. The objective of these stands is to manage for the next generation of oaks.

Stand 9,10 Management Recommendations: There are some pole oaks which can have Crop tree release performs on them mostly in stand 10. The rest of the area can have understory removal of ironwood, elm, mulberry to favor seed drop. The area can be mechanically prepared (disc, harrow) to show difference of burning from mechanical.

Stand 11,12 description and management objectives: Stands 11 and 12 had the strip harvest performed, with little/no follow up on the cut areas. Currently the cut areas have heavy sapling/pole elm, ironwood, hickory with some cherry/oaks. The competition has over-topped the intended species, and the objective of these areas is to return area to open ground for better trees to begin.

Stand 11,12 Management Recommendations: Along the cut strips, a burning is possible, though a mechanical removal with a forestry mower may be used to keep unwanted trees at bay. A manual cut is probably not efficient. The non-cut areas can be prepared for harvest with an understory removal of undesirables. A completion of the strip harvest area should not be done until better trees have gotten an advanced start.

Stands 14 and areas adjacent to power lines description and management objectives: This area is along the south edge of the property (along Brush college road) and also next to the power lines on either side. The species present here are sapling/small pole shagbark hickory, ash, elm, cherry, hackberry, red oak, white oak, hedge, bitternut hickory, few cedars. The objective for these areas is to manage for diversity.

Stand 14 Management recommendations: Crop tree release to favor mix of species. There are many less oaks along power lines and in these areas a mix of cherry, hackberry, cedar, hickory, elm, should be favored. Treat trees were possible, double girdle all other trees.

General observations about property:

- Winged euonymus is becoming an invasive problem and coming into many areas of edge within timber, should be removed/treated
- Area will benefit from shrub layer as this habitat type is absent from property.
- Many plans in place from years ago are still relevant because some of the practices did not work exactly like they should have, or may need another/follow up treatment.

Schedule of Management Recommendations			
Stand	Work Description	Year Scheduled	Date Completed
1,2,3N	stand conversion, shrub planting		
3S, 4	weed tree removal, planting		
5,6,8,17	weed tree removal, burn		
7,15	weed tree removal, plant/tube		
9,10	weed tree removal, mechanical site prep		
11,12	mechanical removal, understory clearing		
14	crop tree release		

Harvest areas include:

- Salvage: 1,2,3N, 7,15 (in next 1-10 years)
- Shelterwood/regen: 3S, 4, 5,6,8,17,9,10,11,12 (in next 5-15 years, depending on regeneration. Try to have 2 harvests for sufficient numbers of trees and sufficient time to regenerate).

ADDITIONAL MANAGEMENT CONSIDERATIONS

Historical/Cultural

Historical and cultural sites such as old home sites or old cemeteries are a look into the past and can give insight to past management of your land. These areas should be identified so that you can protect them with management activities. There are no known unique archeological sites on the property. If any unique archeological, cultural, or historical sites are found, current or proposed management practices may need to be altered.

Recreation & Aesthetics

Woodland management can decrease the short term recreational and aesthetic values of your property. Harvesting large trees will leave tops on the area and remove large trees that may have more value to you to look at. Timber stand improvement work that removes undesirable trees will allow more sunlight to reach the ground. Increased sunlight to the ground results in more weeds and brushy species for 5-10 years until young trees grow up and shade out the brush. Identify areas on your property that you value highly for recreation and natural beauty. You can manage these areas specifically for these values. Buffers of woodland can be left around critical areas and you can plant seedlings to create buffers and screens to reduce the visual impact of areas you are managing intensively.

Water Quality/Wetlands

Woodlands and tree plantings greatly improve water quality. Trees reduce erosion and filter silt and chemicals from the water entering the streams. It is wise to maintain a good tree buffer along your streams and plant trees in areas that will help reduce soil erosion and improve water quality. Trees can be harvested in buffers along rivers and streams, but it should be a selective harvest that maintains good tree cover.

Wetlands are excellent filtering systems that are important to maintaining good water quality. Wetlands also provide good habitat for a variety of wildlife species. If possible, do not route roads through wetlands and maintain a good buffer of trees and grasses around the wetland area.

If you have a wetland on your property, avoid running equipment in these areas and limit logging activity.

Fish and Wildlife Considerations

Your woodland does not contain any perennial streams or ponds that are deep enough to support a native fish population, but it is the home of deer and turkeys and many other species of game and non-game wildlife. As such, the management recommendations to improve your woodland for deer and turkey habitat will also impact other wildlife in the area. Tree cutting, such as thinning, should be geared to maintaining tree species diversity as well as maintaining homes, such as den and nesting trees for other wildlife species. Thinning around some trees will let more light into the woodland understory to enhance the growth of lower and mid-sized woody vegetation. This vegetation will provide added cover and food for deer, turkeys, and other wildlife species.

Endangered Species Considerations

(South of I-80 and in Indiana bat counties)

Threatened and endangered plant and wildlife species and their habitats should be protected when conducting woodland management activities. A visual reconnaissance of your woodland area was completed before writing the management plan to find out if any

threatened or endangered species are present and if they would be adversely affected by woodland management activities.

There were no observed threatened or endangered plant or wildlife species observed on the management area. However, your woodland may contain suitable summer habitat for the Indiana bat. The Indiana bat is a listed federal and state protected endangered species that is often found in southern Iowa...

Nursery colonies of the bat exist primarily between the months of May and August beneath the loose or peeling bark of certain trees located along streams and rivers and in upland forest areas. Your woodland management area may be suitable summer Indiana Bat habitat.

Timber stand improvement, timber harvests, and other forest management activities are not yet restricted in bat summer habitat areas on private property. However, the Iowa Department of Natural Resources Forestry Division recognizes the importance of the Indiana bat as a vital forest ecosystem component and encourages you to manage your woodland in accordance with guidelines that will enhance and protect the bat habitat. These guidelines are included at the end of this plan. Basically, the guidelines determine that woodland management practices should not include the cutting down of potential roost trees 9 inches in diameter and larger between April 1 and October 1. Such trees can be left standing live or dead, or killed standing during that time period.

For a complete current list of threatened and endangered plant and wildlife species in Iowa contact John Pearson (515-281-8676) or Daryll Howell (515-281-8524). They can also help you contact specialists who could be hired to do a comprehensive survey of your property.

LANDOWNER ASSISTANCE

1). Forestry Vendors:

Forestry practices can be contracted with professional forestry service vendors to help in completing the actual field work. A complete listing of firms and individuals who provide services in Iowa is included for your reference.

2). Public and Private Organizations:

Public and private agencies which provide forestry related services and programs are listed in the ISU publication F-340, "Forestry Contacts and Organizations in Iowa", included in the general information section following this plan.

3). Additional Forest Management Information:

Additional general woodland management information that you can obtain is listed as follows:

- Additional publications dealing with woodland management topics can be ordered from Iowa State University Extension using the publications list provided with this plan.

- A good reference to use as a practical guide for woodland owners is a book entitled, **Woodland Stewardship**. This is the training manual that we use at our Master Woodland Owner's Training Sessions. This book can be ordered by contacting the Minnesota Extension Service Distribution Center, University of Minnesota, 20 Coffey Hall, St. Paul, MN 55108. The phone number is 612-625-8173.
- For current information regarding woodland management in Iowa, you may want to have your name placed on the mailing list to receive the **Woodland Owners Newsletter**. This newsletter will give you up to date information on where and when Forestry Field Days and Master Woodland Manager Courses will be held. You can be placed on the newsletter list by calling ISU Forestry Extension at 515-294-1168.
- An excellent tree identification book, **Forest and Shade Trees of Iowa**, by Van Der Linden and Farrar, is available through the Iowa State University Press, Ames, IA 50010. This book is available at the Campus Book Store on the ISU campus.

Best Management Practices - a DNR forestry publication designed to help landowners protect water quality during and following woodland management activities. Available by calling 515-281-5145 or writing the Iowa DNR, Wallace State Office Building, Des Moines, IA 50319.

Management Assistance

Many of the management practices described in this plan such as tree planting, TSI, and others can be cost-shared through various federal and state programs. Most of these programs will cost share contract services by forestry vendors. Please contact your DNR district forester for cost share assistance before implementing any of the recommended practices listed. In addition, your district forester can provide you with a list of contract service vendors.

Any cost share program will need a written project plan approved by the DNR district forester. The project plan will be attached to this primary Stewardship plan.

Follow Up

Contact this office if you have any questions about implementing any part of this plan. Your progress and objectives should be reviewed every five years. This plan should be reviewed and/or updated in 2014.

Contact Information:

Lisa Louck
260 Mulberry Street, suite 4
Wapello, Iowa 52653
319-523-2216
lisa.louck@dnr.iowa.gov

Timber Stand Improvement Stewardship Project Outline

Note: This plan is an official part of your Cost-share contract. It is important that you follow it closely to help assure your eligibility.

Name and address: Des Moines County Conservation
Hunt Woods

Contact: Tanner Gebhardt-319-572-6865, Chris Lee-319-572-5860

Email: gebhardtt@dmcounty.com

Location: T69N, R03W, section 14 Union twp. Des Moines County

Plan date: 10/9/2025 Revised 2017 Stew plan

Landowner goals: Increase the wildlife value and growth of these forest areas.

The following is a stand by stand description of the work to be done:

Year 1:

Stand #5 is 10.1 acres: Brush management woody invasive-very heavy: This stand has small sawtimber and few scattered sawtimber white oak, with some hickory, red and black oak. Pole trees are hackberry, black cherry, ironwood and elm. There is very heavy honeysuckle, and also some multi-flora rose in this stand.

Brush management woody invasive-machine grind to base of all invasive plants ½” stem diameter and above. Hand cut and immediately chemically treat all plants not accessible by machine above ½” stem diameter.

Stand #6 is 7.3 acres: Brush management woody invasive-very heavy: This stand has small sawtimber and pole red and black oak, hickory, with some black cherry, basswood, and elm and little white oak. Pole trees are hackberry, black cherry, ironwood and elm. There is very heavy honeysuckle, and also some multi-flora rose in this stand.

Brush management woody invasive-machine grind to base of all invasive plants ½” stem diameter and above. Hand cut and immediately chemically treat all plants not accessible by machine above ½” stem diameter.

Stand #7 is 1.4 acres: Brush management woody invasive-very heavy: This stand has mainly pole black cherry, basswood, and elm and hickory. There is very heavy honeysuckle, and also some multi-flora rose in this stand.

Brush management woody invasive-machine grind to base of all invasive plants ½” stem diameter and above. Hand cut and immediately chemically treat all plants not accessible by machine above ½” stem diameter.

Year 2:

Stand #5 is 10.1 acres: Brush management of woody invasive-medium: Foliar spray any re-sprouting or remaining plants, foliar treat all honeysuckle and rose above 2' height.

Stand #6 is 7.3 acres: Brush management of woody invasive-medium: Foliar spray any re-sprouting or remaining plants, foliar treat all honeysuckle and rose above 2' height.

Stand #7 is 1.4 acres: Brush management of woody invasive-medium: Foliar spray any re-sprouting or remaining plants, foliar treat all honeysuckle and rose above 2' height.

Year 3:

Stand #5 is 10.1 acres: Crop tree release/weed tree: Crop tree species in this stand are white oak, red oak, black oak, hickory, elm, hackberry. Choose 20-30 crop trees per acre, release on four sides on all oak/hickory trees, minimum of two sides on all other species. Kill as many pole and sapling hackberry/ironwood as possible nearest most mature oaks.

Stand #6 is 7.3 acres: Crop tree release: Crop trees in this stand are any white oak, and mainly red/black oak, shagbark hickory and cherry. Choose between 25-40 crop trees per acre, release all crop trees on 3 sides minimum.

Stand #7 is 1.4 acres: Crop tree release: Crop trees in this stand are hickory, cherry, basswood and elm. Choose best stem and crown form of all species, choose 20-30 crop trees per acre and release all crop trees on three sides minimum.

Crop trees are relatively young, vigorously growing trees. Trees with good crown symmetry are preferred.

Spacing of crop trees should be guided by the $2D+10$ formula. Diameter times 2 plus 10, so a 12" diameter tree will have about 34' between it and next crop tree-ideally. Another rule of thumb is to space crop trees about 25-30' apart.

The maximum size of crop trees will seldom exceed 18 inches Dbh. The rule of thumb is not to treat a tree if it is within 6 inches Dbh of its anticipated final harvest diameter.

Consideration will be given to the maintenance of stand diversity and the protection of den trees, and Indiana Bat habitat.

Each crop tree will be released from sunlight competition. Free growing space will be provided on **all four sides of the tree whenever possible**. Competing trees will be killed using double chainsaw girdling. Girdling can be done at any convenient height.

Herbicides will not be used on any tree of the same species as crop trees in the area. These trees will be killed using a double chainsaw girdle, or a 4 inch wide ax girdle.

Practice Life: If any cost-share payments are accepted, then you have a legal obligation to maintain the practice for a specified period of time. You will be asked to sign a legally binding maintenance agreement.

Protection: The area must be protected from grazing and wildfire, and maintained as a forest for the duration of the Maintenance agreement.

Herbicides: The label is the law. You must follow the label exactly. If any instructions in this plan are contrary to the label in your possession, then contact the DNR District Forester for consultation. Herbicides must be used in accordance with their label.

FOREST STEWARDSHIP CONSIDERATIONS

****Important Note:** If any oak in this stand will be girdled or removed, this activity should only be done between November 1 and March 1 of a given year to avoid potential problems with the fungus that causes the disease oak wilt.

Planting Area Description:

The management areas are outlined on the property photo at the end of this plan.

Threatened or Endangered Species:

Threatened and endangered plant and wildlife species and their habitats should be protected when conducting woodland management activities.

Special Note on Northern Long-Eared Bat, Indiana Bat, and Tricolored Bat For use with USDA and REAP (Forestry/Native Grasses and Water Protection) funded projects

IPaC is the official source to determine the federal T&E species in the project area. IPaC can be accessed here: <https://ipac.ecosphere.fws.gov/>.

The Indiana Bat (*Myotis sodalis*) is a federal (50CFR Part 17) and state (Code of Iowa, Chapter 481B) endangered species that occurs in southern Iowa as far north as Highway 30. The Northern Long-Eared Bat (*Myotis septentrionalis*) is a federally endangered species that can occur in any county of Iowa. The Tricolored Bat (*Perimyotis subflavus*) is a federally proposed endangered species that can occur in any county in Iowa. All three bats can be active from April through September in forested areas. Female Indiana bat and Northern Long-Eared Bats may roost and rear young in standing trees 3" DBH and larger, either dead or alive, with loose, shaggy, or peeling slabs of bark, cavities in the trunk or large limbs, or large cracks or openings. Tricolored bats roost in similar forested habitat but roost within leaf clusters instead of under loose bark.

To protect summer habitat for all three species of bats, adhere to the following guidance:

- Avoid felling any dead standing or live trees 3" DBH and larger that contain cavities, cracks or crevices, or loose, platy, peeling, or shaggy bark from April 1st through September 30th.
 - Such trees meeting the above criteria may be felled beginning October 1 through March 31; however, in all forest management projects, retain a minimum of 9 suitable habitat trees per acre if present above this rate.
 - Live trees may be girdled any time of year to create habitat snags in Forest Stand Improvement operations.
- Avoid conducting prescribed burns in woodlands from April 1st until September 30th.
 - If prescribed burning operations must take place after April 1st through September 30th, then protect trees 9" DBH and larger that contain cavities, cracks or crevices, or loose, platy, peeling, or shaggy bark.
- Avoid clearcuts, seed tree harvests, or site preparation projects larger than 10 acres that could negatively affect suitable habitat.

If the above guidance cannot be adhered to, an individual consultation with the U.S. FWS Illinois-Iowa Field Office is needed to determine how to best avoid adverse effects to Indiana Bat, Northern Long-Eared Bat, and/or Tricolored Bat.

Bat Species that may be present in project area:

- X [Indiana Bat](#)
- X [Northern Long-Eared Bat](#)
- X [Tricolored Bat](#)

Special Note on Rusty Patched Bumble Bee For use with USDA and REAP (Forestry/Native Grasses and Water Protection) funded projects

IPaC is the official source to determine the federal T&E species in the project area. IPaC can be accessed here: <https://ipac.ecosphere.fws.gov/>.

The rusty patched bumble bee (*Bombus affinis*) is a federally endangered species (50CFR Part 17) that occurs in Iowa, primarily in north eastern Iowa. The rusty patched bumble bee overwinters in forested areas. During the spring and summer, the rusty patched bumble bee will forage and nest in grassy areas with nectar resources (at least 4 forb/legume species).

Information regarding the rusty patched bumble bee and its current range is located here: <https://ecos.fws.gov/ecp/species/9383>. *Note: the range is regularly reviewed and updated by the USFWS. Check link for current range.*

To protect winter habitat (forest) for the rusty patched bumble bee, adhere to the following guidance:

- ☐ Projects in forested areas **with** rusty patched bumble bee and **without** northern long-eared bat, tricolored bat, and/or Indiana bat:
 - Conduct projects from March 16 to October 14; maintain forested conditions.
 - Conduct prescribed burns in woodlands from March 16 to October 14.

- ☐ Projects in forested areas **with** rusty patched bumble bee and **with** northern long-eared bat, tricolored bat, and/or Indiana bat:
 - Contact U.S. Fish and Wildlife Service (FWS) for guidance.
 - Projects may be allowed to be conducted between August 1 and October 14; maintain forested conditions.
 - Conduct prescribed burns in woodlands from March 16 to October 14.
 - Protect trees 9" DBH and larger that contain cavities, cracks or crevices, or loose, platy, peeling, or shaggy bark.

If the above guidance cannot be adhered to, individual consultation with the U.S. FWS Illinois-Iowa Field Office is needed to determine how to best avoid adverse effects to the rusty patched bumble bee.

Historical/Cultural:

Historical and cultural sites such as old home sites, old cemeteries, or native American burial sites are a look into the past and can give insight to past management of your land. These areas should be identified so that you can protect them with management activities. There are no known unique archeological sites on the property. If any unique archeological, cultural, or historical sites are found, they should be protected and preserved and current or proposed management practices may need to be altered.

Soils:

The soil types in the project area are highly erosive when not vegetated. The trees listed for treatment on this site are well suited to the site. Therefore, it is critical that you treat the species specified, at the recommended priority, while maintaining stand diversity.

Wetland/ Water Quality:

Woodland improvement projects greatly improve water quality. Vigorously growing trees reduce erosion and filter silt and chemicals from the water entering the streams.

Once the forest is established, with tree crown canopies fully expanded and closed, a forest litter layer will begin to develop and your buffer strip planting will be fully functional to remove nutrients, sediment, organic matter, and other pollutants from surface flow and subsurface flow by deposition, absorption, plant uptake, denitrification and other processes, thereby protecting water quality.

Wetlands are excellent filtering systems that are important to maintaining good water quality. Wetlands also provide good habitat for a variety of wildlife species. If possible, do not route roads through wetlands and maintain a good buffer of trees and grasses around the wetland area.

If you have a wetland on your property, avoid running equipment in these areas and limit logging activity.

Fish and Wildlife:

Your property is comprised of a variety of wildlife habitat cover types that provide food and cover for a variety of game and non-game wildlife species. The project that you are about to complete will provide additional cover and food, improving the diversity of habitat.

This plan has been prepared by **Lisa Louck, District Forester**, 260 Mulberry street, suite 4 Wapello, Iowa 52653, phone: 319-759-1108.

Hunt Woods 2025 Stands 5-7



USDA NRI, Iowa State University GIS Facility

1 2 3 4 8 9 10

**WOODLAND STEWARDSHIP PROJECT OUTLINE
MACHINE TREE PLANTING**

Name and address: Des Moines County Conservation
Starr's Cave Preserve
11627 Starr's Cave Road
Burlington, Iowa 52601

CONTACT: Tanner Gebhardt-319-572-6865, Chris Lee-319-753-8260

LOCATION: T70N, R03W, section 24 Flint River

PLAN DATE: 10/8/2025

PROJECT ACRES: 6.5

LANDOWNER GOALS: Establish bottomland suited trees for habitat and diversity

SOILS: These planting sites contain the following classes of soils:

Nodaway silt loam is found on both planting areas, this is a great second bench soil suited to a wide variety of native trees and shrubs.

STEP 1: Grass, weed and brush control:

FIELDS: 1,2

SITE PREPARATION: This step is designed to kill existing strongly competitive grasses and woody growth.

Brush hog/machine grind any larger woody growth, as well as annual weeds and grasses. Allow re-growth to occur.

Must be broadcast sprayed with Roundup.

For effective spray cover the grass must be mowed from 4 to 6 weeks before the herbicide spray is scheduled, in order to allow sufficient re-growth. Mowing is required any time heavy growth would prevent the adequate penetration of the spray. The label specifies that there should be 6 to 12 inches of new growth. The grass must be actively growing when it is sprayed.

FIELDS: 1,2

Must be band sprayed with Roundup, Princep (2 lbs. active maximum per acre). These bands can be applied at or near the time of planting, but not during planting. The band must be 4 feet wide, and with the tree row centered within the band.

STEP 2: SEEDING OF GROUND COVER

Field Numbers: 1,2-as needed after step 1

Seeding for Groundcover: Follow the Natural Resources Conservation Service's specifications to establish a seeding using the following: Perennial rye - 10 pounds/acre.

Use a no till drill to seed this groundcover, which will help insure a good stand, and help reduce erosion and weed problems caused by tillage.

Maintenance During Contract Period: Maintenance of the established permanent cover during the contract period is the responsibility of the landowner. Noxious weeds and other undesirable plants shall be controlled - mechanical or chemical control may be necessary.

STEP 3: Tree Planting

Fall planting must be done from October 1 to December 1

Spring planting must be done from March 15 until June 1.

Plant the fields using the following species mixed across the field. Mix the species to minimize the possibility of root grafting between like species. Each species should be evenly represented across the field. Planting like species in groups of ten trees within the row is acceptable.

Row Spacing: The rows will be 10-12 feet apart and accurately spaced to assure that they can be efficiently mowed and sprayed in the future.

Within row spacing: Plant the trees 7-10 feet apart within the row.

Trees Per Acre: 500-700

8 x 8 = 680	10 x 8 = 540	12 x 8 = 450
9 x 8 = 600	11 x 8 = 500	12 x 12 = 300

FIELDS # 1,2_____ Use the following species in equal amounts unless otherwise indicated. Match species to site variations found within the field

Swamp white oak, Bur oak, Pin oak, Shellbark hickory, Pecan, River Birch, Sycamore, Kentucky Coffee tree, Walnut, Pawpaw, Persimmon

CARE OF SEEDLINGS All trees must be stored in refrigeration at 34 to 40 degrees Fahrenheit until the day they are planted. On planting day, all trees must be stored in full shade. Roots must be kept moist until the moment they are planted.

MAINTENANCE: All competition, including grass, weeds, and brush, must be controlled within the 4-foot-wide band for 3 years.

Princep and Roundup bands must be reapplied each year either Fall or Spring but no later than April 1. Apply according to the label.

MOWING: The area between the rows must be mowed at least twice a year, with a minimum of 3 mowings for the first growing season.

PROTECTION: The area must be protected from grazing and fire, and must be maintained as forest for the duration of the Maintenance Agreement.

Note on herbicides: The label is the law. You must follow the label exactly. If any instructions in this plan are contrary to the label that is in your possession, then contact the DNR Forester for consultation. Herbicides must be used in accordance with their labels.

This plan has been prepared by Lisa Louck, District Forester, 260 Mulberry Street, suite 4 Wapello, IA 52653, phone 319-759-1108.

LANDOWNER! It is important for you to understand that compliance with this planting plan is required for you to receive cost-share payment after the trees are planted. Make sure that work is not begun on the project before you receive written notice from the cost share agency that you have been funded and may begin work. Beginning work before receiving this notice will jeopardize your cost share payment eligibility.

Starr's Cave Planting Map



USDA NRI, Iowa State University GIS Facility

3 4 5 6 7 8 9 10

DMCC Forest Resiliency Grant — Implementation & Follow-Up Gantt

Working schedule based on September 2026 planning assumptions; contractor windows are allowable work periods, not continuous-duration estimates.

Phase	Site	Task	Start	End	Resp.	Dependency	Notes	Sep 26	Oct 26	Nov 26	Dec 26	Jan 27
Procurement	All Sites	Anticipated signed Iowa DNR agreement	Sep 2026	Sep 2026	DMCC / Iowa DNR		No project-related costs before executed agreement.					
Procurement	All Sites	Prepare and issue contractor RFP	Sep 2026	Oct 2026	DMCC	Executed agreement	Exact release date should follow receipt/review of signed agreement.					
Procurement	All Sites	Bid period / contractor site review / questions	Oct 2026	Oct 2026	DMCC / Bidders	RFP issued	Allow sufficient time for site review and bid preparation.					
Procurement	All Sites	Evaluate bids and prepare Board recommendation	Oct 2026	Nov 2026	DMCC	Bids received	Prepare award recommendation for Conservation Board.					
Milestone	All Sites	Conservation Board contractor award	Nov 2026	Nov 2026	Conservation Board	Bid evaluation	Target Board award date.					
Contractor	Big Hollow	Machine invasive species removal	Nov 2026	Mar 2027	Contractor	Board award	Initial machine treatment.					
Contractor	Big Hollow	Site prep / mid-story thinning	Feb 2027	Feb 2028	Contractor	Machine work underway	Can overlap initial machine work where site conditions allow.					
Contractor	Big Hollow	Post-machine / post-thinning spraying	Mar 2028	Oct 2028	Contractor	Site prep complete by treatment area	Follow-up herbicide treatment.					
Contractor	Hickory Bend	Stand 4 invasive species removal	Nov 2026	Jul 2027	Contractor	Board award	Stand 4 is the required first treatment area.					
Contractor	Hickory Bend	Stand 4 spraying	Jul 2027	Nov 2027	Contractor	Stand 4 machine work complete by area	May begin as machine work is completed.					
Contractor	Hickory Bend	Crop-tree release	Oct 2027	Mar 2028	Contractor	Stand 4 initial treatment	Winter-season work.					
Contractor	Hunt Woods	Machine work / invasive species removal	Nov 2026	Aug 2027	Contractor	Board award	Initial machine treatment.					
Contractor	Hunt Woods	Follow-up spraying	Aug 2027	Jul 2028	Contractor	Machine work complete by area	Start may move earlier/later based on actual machine completion.					
Contractor	Starr's Cave	Mow / grind existing vegetation	Feb 2027	Apr 2027	Contractor	Board award	Planting site preparation.					
Contractor	Starr's Cave	Pre-plant site spraying	Mar 2027	Aug 2027	Contractor	Site prep underway	Can overlap mowing/grinding.					
Contractor	Starr's Cave	Tree planting	Aug 2027	Nov 2027	Contractor	Adequate site preparation	Planting window from team schedule.					
Contractor	Starr's Cave	Post-plant spraying - Year 1	Apr 2028	Aug 2028	Contractor	Tree planting complete	Grant-funded follow-up establishment treatment.					
DMCC Follow-up	All Sites	Annual site evaluation / fixed photo points	Sep 2027	Sep 2030	DMCC	Treatments underway	Annual adaptive-management review; timing can be adjusted by site.					
DMCC Follow-up	All Sites	Invasive species density monitoring	Jun 2028	Oct 2030	DMCC	Initial treatments complete	Track progress toward <20% invasive cover by year 3.					
DMCC Follow-up	Starr's Cave	Vegetation control - Year 2	Apr 2029	Aug 2029	DMCC / Contractor	Planting established	Application commits to three years of weed/grass control.					

DMCC Follow-up	Starr's Cave	Year-2 planting survival assessment	Aug 2029	Oct 2029 DMCC	Tree planting complete	Target 70-80% survival at year two; identify replanting needs.
DMCC Follow-up	Starr's Cave	Supplemental replanting if needed	Oct 2029	DMCC / Contractor Apr 2030 TBD	Year-2 survival assessment	Only as needed based on monitoring.
DMCC Follow-up	Starr's Cave	Vegetation control - Year 3	Apr 2030	DMCC / Contractor Aug 2030 TBD	Planting established	Final year of initial three-year vegetation-control commitment.
DMCC Follow-up	All Sites	Year-3 invasive cover / regeneration assessment	Aug 2030	Oct 2030 DMCC	Follow-up management	Evaluate invasive cover and regeneration indicators.
Long-Term	All Sites	Ongoing adaptive forest management	Nov 2030	Dec 2030 DMCC	Initial grant follow-up complete	Continue prescribed fire, invasive control, regeneration monitoring, and maintenance beyond this chart.

Legend

- Procurement
- Contractor
- Milestone
- DMCC Follow-up
- Long-Term
- RFP / contracting actions
- Grant implementation work
- Board or major decision point
- Post-contractor monitoring / maintenance
- Continued stewardship beyond initial grant cycle



Feb 27	Mar 27	Apr 27	May 27	Jun 27	Jul 27	Aug 27	Sep 27	Oct 27	Nov 27	Dec 27	Jan 28	Feb 28	Mar 28	Apr 28	May 28	Jun 28	Jul 28	Aug 28	Sep 28	Oct 28	Nov 28	Dec 28
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Jan 29	Feb 29	Mar 29	Apr 29	May 29	Jun 29	Jul 29	Aug 29	Sep 29	Oct 29	Nov 29	Dec 29	Jan 30	Feb 30	Mar 30	Apr 30	May 30	Jun 30	Jul 30	Aug 30
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Sep 30	Oct 30	Nov 30	Dec 30
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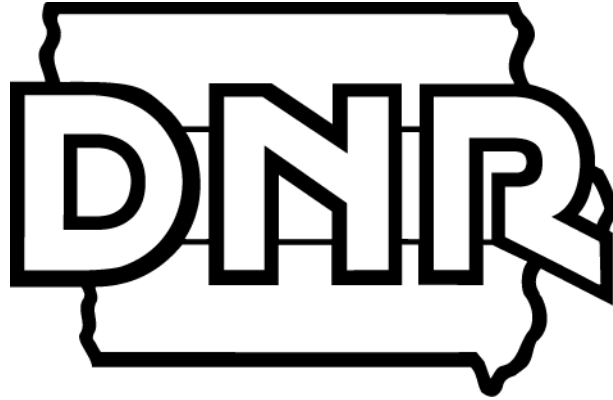




FORESTRY PRACTICES MANUAL

TECHNICAL GUIDE

IOWA DEPARTMENT OF NATURAL RESOURCES



FORESTRY PRACTICES MANUAL

TECHNICAL GUIDE

PURPOSE:

The Forestry Practices Manual serves as a technical guide to forestry for Iowa's woodland owners, conservation planners, and foresters. This Technical Guide also defines the conservation practice standards for forestry practices included in the REAP Forestry/Native Grasses Fund cost-share program administered by Iowa Department of Agriculture and Land Stewardship and other programs.

A Forest Management Plan (or associated project plans) must be approved by an Iowa Department of Natural Resources (DNR) District Forester before any management activities are started. Once project work is complete, a passing inspection is required prior to project certification (and the reimbursement/payment of associated project funds). This applies to private lands forestry projects involving State and Federal financial assistance, and forestry contracting work on state owned lands (WMA's, State Parks, etc.).

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1. FOREST CONSERVATION PLANS

A. FOREST PRACTICE PLAN/FOREST MANAGEMENT PROJECT PLAN

DEFINITION

A concisely-written plan describing detailed silvicultural activities that are recommended to achieve specific forest management objectives for a particular stand.

PURPOSE

Forest Practice Plans are written to provide detailed, succinct stand prescriptions or cost-shared activity requirements for a particular project. These plans typically address a single stand or area of a forested tract, a particular management concern, or landowner area of interest. Practice plans usually address immediate, short-term landowner needs. These stand-scale plans can be a component of a larger scale Forest Stewardship Plan, or can lead to more comprehensive planning in the future.

Forest Practice Plans are often used to document existing conditions and make management recommendations as required by Federal or State financial assistance programs, such as NRCS or REAP cost share practices (see list below). However, Forest Practice Plans may also be used to address resource needs when financial assistance programs are not being used.

Some common activities for which Forest Practice Plans are typically written for include:

- Forest Stand Improvement (666)
- Tree & Shrub Planting, Direct Seeding, and Regeneration (612)
- Invasive species control or Brush Management (314)
- Site preparation for natural regeneration (490)
- Prescribed Burning or wildfire mitigation (338)
- Storm Recovery/Rehabilitation (e.g., Emergency Forest Restoration Program)
- Harvest & Regeneration
- NRCS Design and Implementation (DIA) 165 (Formerly part of CAP 106)

SPECIFICATIONS

Each Forest Practice Plan should be prepared by a professional forest resource manager and include the following:

- Landowner's and plan writer's contact information.
- Property identification and location information.
- Landowner's objectives.
- Description of existing site conditions.
- Listing of any recent management activities.
- Detailed management recommendations and timeline for activities.
- Detailed map of practice area depicting silvicultural activities footprint and calculated acres for each prescription.
- Forest stand improvement projects should be planned to accommodate: State and Federal provisions for Threatened and Endangered species, forest insect and disease issues, and other relevant damaging agents.
- Forest Practice Plans must be written or approved by a DNR District Forester for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

B. FOREST STEWARDSHIP PLAN

DEFINITION

A comprehensive plan written for private, non-industrial forest landowners that identifies and describes voluntary actions they can take to achieve their individual ownership objectives while simultaneously protecting and/or enhancing forest resources that benefit society.

PURPOSE

Forest Stewardship Plans are a product of the national Forest Stewardship Program, which is a partnership between the federal US Forest Service (State, Private, and Tribal Forestry) and State forestry agencies. The purpose of the Forest Stewardship Program is to maintain and enhance the vital benefits private forestland provides to society by facilitating long-term stewardship of important private forest landscapes. These include fish and wildlife habitat, healthy soils, clean air, water quality, timber & other renewable wood products, outdoor recreation, threatened and endangered species, and more.

A Forest Stewardship Plan serves as the foundation for engaging forest landowners in a plan that addresses individual landowner objectives while adhering to national and state Forest Stewardship Plan guidelines.

An approved and active Forest Stewardship Plan is a requirement for landowners wishing to participate in many USDA Conservation Programs. The Farm Bill explicitly recognizes Forest Stewardship Plans and other forest management plans as eligible to meet program planning requirements for certain programs, where forest land is concerned. An active, written Forest Stewardship Plan is also a requirement for certification into the American Tree Farm System program.

All Forest Stewardship Plans must be written or approved by the DNR State Forester or a suitable representative.

SPECIFICATIONS

Forest Stewardship Plans may vary in layout and design but all plans must contain the following information and Resource Elements:

1. The landowner's and plan writer's contact information
2. The property identification and location information.
3. Clearly state landowner goals and objectives.
4. Current forest stand conditions which could include past management activities, current forest species composition of the overstory, understory, and forest floor, relevant stand stocking or quantitative data as needed and appropriate to the landowner goals, project objectives, and/or stand prescriptions (e.g., basal area, relative stocking percentage, trees per acre, volume per acre, crop trees per acre, tree diameters/size classes, growth rates, regeneration stocking, etc.). Such metrics may be required for Forest Stewardship Plan approval at the discretion of the IDNR Forester.
5. Describe desired forest stand conditions.
6. Include practices and activities aimed at reaching the desired forest condition or condition class for each stand.
7. Document a timeline for implementation of each practice and activity.
8. Describe any suggested monitoring activities to be done by the forester or landowner.
9. Be developed for a specified management period that adequately allows for progress with the landowner's long term stewardship objectives.
10. Be reviewed and renewed, revised, or rewritten at the end of the specified management period or sooner, as needed, to be considered current.
11. Landowners must be involved in plan development by setting clear objectives, timetables, and targets, and clearly understanding the plan's details and desired outcomes.
12. Resource Elements: The plan preparer will consider, describe, and evaluate resource elements present and their importance to the ownership. The extent to which a Forest Stewardship Plan addresses these elements will depend upon their prevalence on the property and their importance with respect to the landowner's primary objectives. The intent of this guidance is that all approved Forest Stewardship Plans be multi-resource in scope and adequately comprehensive with respect to forest ecosystem management.

The plan preparer will consider, describe, and evaluate resource elements and their importance to the ownership when they are present. Management recommendations and alternative strategies, consistent with landowner objectives, will be provided to protect or enhance all resource elements present. Resource elements to be considered include:

- Soil and water
- Biological diversity
- Range

- Agroforestry
 - Aesthetic quality and desired Timber species
 - Recreation
 - Wood and fiber production
 - Fish and wildlife
 - Threatened and endangered species
 - Forest health and invasive species
 - Conservation-based estate planning / legacy planning information
 - Archeological, cultural, and historic sites
 - Wetlands
 - Fire
 - Carbon Sequestration & Climate Resilience
 - Forests of Recognized Importance (FORI) - To be considered when aligning Forest Stewardship Plans with American Tree Farm System's Standards of Sustainability.
13. Prescriptions or treatments must be stand or site specific. An ownership map drawn to scale, or photo, which accurately depicts vegetation cover types, hydrology, and other significant forest related resources with a legend, is required.
14. The professional resource manager will discuss the Forest Stewardship Plan with the landowner, following completion, and periodically, to assure understanding and encourage plan implementation.
15. Additional Information: The landowner's understanding may be improved by including additional information appendices. Appendices might include:
- Descriptions of assistance available and financial incentive programs
 - Educational materials
 - A glossary of terms
 - An explanation of applicable Federal, State, and/or county regulatory programs, especially as they apply to:
 - Archeological, cultural, and historical sites
 - Wetlands
 - Threatened and Endangered Species

PLAN DURATION

All Forest Stewardship Plans are written to cover a time period of ten years unless otherwise stated in the plan.

SPATIAL DATA REQUIREMENTS

All Forest Stewardship Plans must have spatial data for the Plan boundary that is entered into the USFS SMART database. These spatial data allow plans to be located within or outside the state's designated federal investment area, and to be selected for monitoring for the purposes of calculating the federal accomplishment metrics and state funding allocation formula.

PLAN IMPLEMENTATION MONITORING

All active and approved Forest Stewardship Plans are subject to random sampling for monitoring purposes by the USFS. The intent of the Forest Stewardship Program's plan implementation monitoring effort is to reliably assess the extent to which current Forest Stewardship plans are being implemented and to demonstrate that landowners are managing their woods based on recommendations made in their Forest Stewardship plans. Forest Stewardship plan monitoring feeds into national accomplishment reporting and provides data for the following Fiscal Year's national allocation formula.

The Plan monitoring protocol collects meaningful, statistically reliable results. Forest Stewardship plan monitoring focuses on implemented on-the-ground activities that occur within Forest Stewardship federal investment areas.

2. TREE & SHRUB ESTABLISHMENT

A. TREE & SHRUB PLANTING

DEFINITION

Tree & shrub planting practices integrate the actual planting or interplanting of tree seedlings, transplants, cuttings or seed and the necessary cultural activities to establish or enhance a stand of desirable forest trees for conservation purposes.

PURPOSE

Tree planting practices are designed to establish a stand of trees and/or native shrubs suitable for forest products, wildlife habitat, soil protection, and/or water quality enhancement.

PLANTING PLAN

A written tree planting plan, written or approved by a DNR District Forester is required for all projects of state or federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS:

1. Species must be suited to soil and site conditions.
2. Promote the use of native species when feasible and appropriate.
3. Planting stock must be from regionally adapted seed sources as determined by the DNR District Forester. All projects will utilize bareroot seedling stock unless specified in plan.
4. Planting stock must have a proper balance of root to top.
5. Use of hardwood seed for stand establishment will be acceptable as determined by DNR District Forester and as outlined in the Direct Seeding section of this manual.
6. Non-forest site planting rates for conifers, hardwoods, and/or shrubs is 500 to 1,450 seedlings per acre. To promote diversity, no more than 25% of one species shall be planted on any acre or as determined in the plan. The DNR District Forester will determine proper interplanting rates of existing forest sites for each project, with a minimum 25 seedlings per acre or as determined in the plan. Natural regeneration may be used to supplement planted seedling density and diversity in existing forest sites.
7. If permitted by the specific cost-share program, a planting plan may incorporate the production of intermediate and/or non-traditional forest products (i.e. Christmas trees, firewood, nuts, native fruit, woody florals, etc.) along with the long term "PURPOSE" (see above paragraph) of planting. Trees (or resulting coppice stock) established for the long term "PURPOSE" must be maintained at an adequate stocking level in compliance with the planting plan and must be uniformly distributed throughout the planting.
8. Planting dates:
 - a. Spring planting:
 - i. From when the frost is out of the ground until May 31.
 - ii. May be extended as determined by IA DNR/DF based on stock, weather, and/or soil conditions.
 - b. Fall planting from October 15 until ground is frozen (deciduous species only).
9. Minimum standards for tree planting approval are 90% compliance with:
 - a. Seedlings must be uniformly distributed across the project footprint to cover all acres, allowing limited exclusions for natural regeneration, seed tree reserves, cavity trees, slash, etc.
 - b. Proper planting depth:
 - i. Root collars and any lateral roots must not be visible after planting.
 - ii. Hardwoods - root collar same depth to one inch deeper than grown in nursery bed.
 - iii. Conifers - root collar same depth to 1/2 inch deeper than grown in nursery bed.
 - c. Vertically planted such that the top does not lean from vertical by an angle more than 20 degrees.
 - d. Tamp seedlings in thoroughly to eliminate air pockets around the roots. Seedlings with proper firmness will not pull out of the ground with a slight tug.
 - e. Site preparation as specified in the plan.
10. Control of adversely competing vegetation, prior to and two years after planting, is essential and compliance with planting plan specifications is required for project approval. Methods of controls include mulch, herbicides, or mechanical practices. Minimum vegetation control must be 3-foot wide band centered over the tree row or

1.5-foot radius around each seedling for a minimum two years. Alternative ground covers may be used in lieu of or to complement traditional control methods as determined in the plan.

11. When root pruning is needed for proper installation, minimum tap root length is 10 inches below the root collar. Lateral roots should be appressed to the tap root and pruned at that length. If tap root is pruned, tops must be pruned or clipped to 8" above the root collar to achieve proper balance.
12. Chemicals used in performing this practice must be applied according to authorized use, label directions, and other federal and state policies and requirements.
13. Planting survival standards - initial five-year establishment period:
 - a. Adequate: Non-forest site minimum stocking of 300 trees per acre or forest sites of 75% survival. Not eligible for replanting cost-share assistance.
 - b. Inadequate: Non-forest site less than 300 trees per acre or less than 75% survival. May be eligible (if available) for replanting cost-share assistance if not due to negligence.
14. Planting survival standards - post five-year establishment period. Adequacy is determined by a DNR District Forester on an individual planting basis.
15. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

B. DIRECT SEEDING

DEFINITION

Direct seeding establishes a forest through the use of seed rather than seedlings.

PURPOSE

Direct seeding practices are designed to establish a stand of trees suitable for forest products, wildlife habitat, soil protection, and/or water quality enhancement.

PLANTING PLAN

A written tree planting plan approved by a DNR District Forester is required for all projects of state or federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Species must be suited to soil and site conditions.
2. Seed must be from regionally adapted seed sources as determined by the DNR District Forester.
3. Seed can be broadcast, drilled, or row planted. Methodology may be modified with approval of the DNR District Forester.
4. Seeding rates for non-forest sites will be determined by DNR District Forester to adequately reforest according to survival standards.
5. If permitted by the specific cost-share program, a planting plan may incorporate the production of intermediate products (i.e. firewood) along with the long term "PURPOSE" (see above paragraph) of planting. Trees must be maintained at a stocking level in compliance with the planting plan.
6. Seeding dates will be established in the plan as determined by the DNR District Forester.
7. Control of adversely competing vegetation, prior to and two years after planting, is essential and compliance with planting plan specifications is required for project approval. Methods of control must be suitable to seeding methodology and may include mulch, herbicides, or mechanical practices. Minimum vegetation control must be 3 feet wide band centered over the tree row or across the entire site for broadcast seedings for minimum two years. Chemicals used in performing this practice must be applied according to authorized use, label directions, and other federal and state policies and requirements.
8. Planting survival standards for direct seeding - initial five-year establishment period:
 - a. Adequate. Minimum stocking of 300 desirable tree seedlings per acre or as specified in the plan. Not eligible for replanting cost-share assistance.
 - b. Inadequate. Stocking level less than 300 desirable trees per acre or as specified in the plan. May be eligible (if available) for replanting cost-share assistance if not due to negligence.

9. Planting survival standards - post five-year establishment period. Adequacy is determined by DNR District Forester on an individual site basis.
10. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

C. TREE PROTECTION

DEFINITION

Protection of desirable seedlings and saplings.

PURPOSE

To protect desirable seedlings from animal damage that is altering form, and impeding growth and/or vigor.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS:

1. Tree grow tubes must be a minimum of five-feet tall and ventilated. Tree grow tubes are only for hardwood trees and shrubs.
2. Tree grow tube stakes must be 12" longer than the tube they are installed on, and driven 12" into the ground to ensure the stake runs the entire height of the tube.
3. Metal wire cage height and diameter must correlate to wire gauge and mesh opening size based on forester discretion. Wire cages can be used for conifers, hardwoods, and shrubs.
4. Stakes for cages or tubes must be made of PVC, fiberglass, treated wood, or steel. Untreated wood, bamboo and other materials are not allowed.
5. The treated area must be protected from domestic livestock, grazing, and destructive fire for the length of the cost-share program maintenance agreement and is encouraged long-term.

3. SITE PREPARATION FOR REGENERATION

DEFINITION

Site preparation is the mechanical and/or chemical work required to create conditions favorable for the natural regeneration of desirable tree species within or adjacent to forested sites.

PURPOSE

Site preparation practices are designed to establish a stand of trees for timber production and/or wildlife habitat enhancement.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Mechanical and/or chemical treatments will create site conditions favorable for the regeneration of desirable species through planting, seeding, sprouting or a combination thereof. Treatments can include vegetation control and/or forest floor scarification.
2. The minimum stocking of desirable species during the five year establishment period is 300 seedlings and/or sprouts per acre.
3. Adequacy of stocking after the five year establishment period is determined by the DNR District Forester on an individual stand basis.
4. Chemicals used in performing this practice must be applied according to authorized use, label directions, and other federal or state policies and requirements.

5. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

4. FOREST STAND IMPROVEMENT

DEFINITION

Forest Stand Improvement (FSI) is any silvicultural action (forest management) that improves the growing conditions and overall plant health in a stand of trees (forest).

PURPOSE

FSI practices are designed to improve: species composition, quality, survival, growth rates, forest health, and wildlife habitat (for multiple species). FSI practices include: thinning (weeding, understory/midstory removal, basal area thinning, crop tree release, coppicing), control of vine competition, pruning, forest prescribed fire, forest invasive plant control, and management to protect against or rehabilitate the stand following damaging agents (logging damage, wildlife damage, domestic livestock, weather, natural disasters, insects, disease, wildfire).

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. If FSI is used for intermediate treatments, the appropriate stocking guide (from the following list) must be used in order to maintain stocking levels appropriate to the site and plan objectives. Woodland/Savanna management has differing stocking charts (see below), and a woodland/savanna management plan is required by the DNR District Forester for use with FSI financial assistance. The following stocking charts/guides should be referenced for Iowa's many forest conditions:
 - Forester's Handbook (with stocking charts): https://www.iowadnr.gov/portals/idnr/uploads/forestry/forester_handbook.pdf
 - Technical Guide to Crop Tree Release in Hardwood Forests: <https://www.fs.usda.gov/research/treesearch/14228>
 - Crop Tree Management in Eastern Hardwoods: <https://cpb-us-w2.wpmucdn.com/u.osu.edu/dist/a/836/files/2016/02/CropTreeMgmt-1h35gph.pdf>
 - Manager's Handbook for Oaks in the North Central States: <https://www.fs.usda.gov/research/treesearch/10102>
 - Manager's Handbook for Elm-Ash-Cottonwood in the North Central States: <https://www.fs.usda.gov/research/treesearch/10162>
 - Manager's Handbook for Northern Hardwoods in the North Central States: <https://www.fs.usda.gov/research/treesearch/10104>
 - Oak Woodland/Savanna Silviculture: <https://www.fs.usda.gov/research/treesearch/54181>
 - Coppice Management of Iowa Hardwoods: <http://publications.iowa.gov/3415/1/F-327.pdf>
2. Practices may be accomplished by chemical and/or mechanical methods.
3. Chemicals used in performing this practice must be applied according to authorized use, label directions, and other federal or state policies and requirements.
4. Forest stand improvement projects should be planned to accommodate: state and federal provisions for threatened and endangered species, forest insect and disease issues, and other relevant damaging agents.
5. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.
6. Any forest stand improvement projects that include girdling, pruning, and potential wounding of oak species must only be completed between November 1 and March 14th unless otherwise specified in the project plan. These dates come from our state DNR Forest Health Site at <https://www.iowadnr.gov/Conservation/Forestry/Forest-Health/Oak-Wilt>.

7. Any desired changes to the Forest Management Plan (or associated project plans) must be approved by the DNR District Forester before any management activities are started.

5. RESCUE TREATMENTS

A. ALTERNATIVE COVER FOR COMPETITION CONTROL IN PLANTATIONS

DEFINITION

Alteration of existing ground cover to vegetation that is less competitive with trees within a plantation.

PURPOSE

To improve the survival and growth rate of a plantation that is being severely affected by competition with existing ground cover.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Mechanical and/or chemical treatments may be used to create a seedbed.
2. Chemicals used in performing this practice must be applied according to authorized use, label directions and other federal or state policies and requirements.
3. Where seeding, use non-competitive grasses and/or forbs.
4. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

B. PLANTATION REPLANTING

DEFINITION

The plantation replanting practice integrates the actual planting or interplanting of tree seedling, transplants, cuttings or seed and the necessary cultural activities to establish a plantation.

PURPOSE

To establish a tree planting that had “inadequate” survival Forestry Technical Guide - Tree & Shrub Planting, Item 13) due to conditions beyond control of the landowner.

PLANTING PLAN

A written tree planting plan approved by a DNR District Forester is required for all projects of state or federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. A replanting project is eligible for cost share only if the landowner has been in compliance with the original project’s planting plan and applicable maintenance agreements.
2. The replanting will be designed to bring the stocking to an adequate level as determined by the DNR District Forester
3. “Forestry Technical Guide - Tree & Shrub Establishment “specifications apply to this plantation replanting practice.
4. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

C. SEEDLING/SAPLING RESCUE

DEFINITION

An action taken implementing treatments to control plant competition that is impeding growth and vigor where intervention is necessary to prevent or mitigate significant mortality or decline in quality of desirable tree and shrub species whether artificially planted or naturally regenerated.

PURPOSE

Rescue treatments are designed to improve canopy position of targeted desirable trees and shrubs where they are being suppressed by less desirable plants. If needed actions are not taken, seedlings will be suppressed and eventually die.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Treatments include: Herbicide application, cutting (including felling or girdling) of competing woody plants, and/or coppicing of desirable species.
2. Rescue from woody competition will vary widely by site, stand condition, and optimum growing conditions of species needing rescue. Rescue treatment will be at forester discretion.
3. Practices may be accomplished by chemical and/or mechanical methods
4. Chemicals used in performing this practice must be applied according to authorized use, label directions, and other federal or state policies and requirements.
5. Projects should be planned to accommodate: state and federal provisions for threatened and endangered species, forest insect and disease issues, and other relevant damaging agents.
6. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.
7. Any projects that include girdling, pruning, and potential wounding of oak species should only be completed between November 1 and March 14th unless otherwise specified in the project plan. These dates come from our state DNR Forest Health Site at <https://www.iowadnr.gov/Conservation/Forestry/Forest-Health/Oak-Wilt>.

D. RODENT CONTROL

DEFINITION

Control of a rodent population whose damage is threatening the survival of a tree plantation.

PURPOSE

To improve the survival of a plantation that is being severely affected by rodent damage. The control is designed to enable the trees to grow beyond the size susceptible to rodent damage.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Mechanical and/or chemical treatment may be used to control rodent population.
2. Chemicals used in performing this practice must be applied according to authorized use, label directions and other federal or state policies and requirements.
3. The treated area must be protected from domestic livestock, grazing, and wildfire for the length of the cost-share program maintenance agreement and is encouraged long-term. Monitor project tree health on a regular basis.

6. EXCLUSION FENCING

DEFINITION

Installing permanent or temporary fencing to exclude domestic livestock, wildlife, or humans from existing forest, forest regeneration, or tree plantings.

PURPOSE

To protect an existing forest, forest regeneration, or tree plantation from damage caused by domestic livestock, wildlife, or humans.

MANAGEMENT PLAN

A management plan written or approved by the DNR District Forester is required for all projects of state and federal programs for which the DNR has technical responsibility. Compliance with this plan is required for project approval.

SPECIFICATIONS

1. Minimum fencing standards:
 - a. All barbed and woven wire fencing projects must follow the minimum standards as described in the Iowa NRCS Job Sheet found here: [Iowa | Field Office Technical Guide | NRCS - USDA](#)
 - b. All electric fencing projects must follow the minimum standards as described in the Iowa NRCS Job Sheet found here: [Iowa | Field Office Technical Guide | NRCS - USDA](#)
 - c. Corner and brace post standards shall be followed as diagramed here: [Iowa | Field Office Technical Guide | NRCS - USDA](#)
 - d. Wire shall not be attached to trees.
 - e. Wire gates shall be of materials of the same kind, grade and size specified for the field fence. Commercial panel gates are acceptable
 - f. Used materials may be acceptable if adequate condition to exclude livestock for a minimum of 20 years. The DNR determines acceptability of used materials.
2. The landowner is responsible for fence maintenance and protection of the area from domestic livestock for the duration of the practice.
3. Property line fencing may be required but will not be eligible for cost share assistance.
4. Special considerations should be made to the design when white-tailed deer exclusion is one of the primary purposes.

APPENDIX B – BID SHEET

Contractor: _____

Contact Person: _____

Phone: _____ Email: _____

Item	Description	Qty.	Unit Price	Extended Price
1	Big Hollow Phase 1 invasive control	29.5 ac	\$/acre	\$
2	Big Hollow mid-story thinning/site prep	28.8 ac	\$/acre	\$
3	Big Hollow Phase 2 foliar control	29.5 ac	\$/acre	\$
4	Hickory Bend Stand 3 invasive/brush removal	25.4 ac	\$/acre	\$
5	Hickory Bend Stand 4 invasive removal	22.0 ac	\$/acre	\$
6	Hickory Bend Stand 4 Phase 2 foliar control	22.0 ac	\$/acre	\$
7	Hickory Bend crop-tree release, Stands 4-6	57.9 ac	\$/acre	\$
8	Hunt Woods Phase 1 invasive control	23.6 ac	\$/acre	\$
9	Hunt Woods Phase 2 foliar control	23.6 ac	\$/acre	\$
10	Starr's Cave site preparation	6.5 ac	\$/acre or lump sum	\$
11	Starr's Cave tree planting	6.5 ac	\$/acre or lump sum	\$
12	Starr's Cave Year 1 competition control	6.5 ac	\$/acre or lump sum	\$
A1	OPTION: Starr's Cave Year 2 competition control	6.5 ac	\$/acre or lump sum	\$
A2	OPTION: Starr's Cave supplemental replanting	As needed	\$/installed tree	\$
A3	OPTION: Starr's Cave Year 3 competition control	6.5 ac	\$/acre or lump sum	\$

The undersigned certifies that the prices above include all labor, equipment, materials, mobilization, chemical, tree stock, insurance, supervision, and incidental costs necessary to complete the specified work, except as expressly noted below.

Exceptions / Clarifications:

Authorized Signature: _____ Date: _____

Printed Name / Title: _____

APPENDIX C – SAMPLE CONTRACT

This sample is intended to show the form of agreement anticipated by DMCC. The final contract may be revised to incorporate the final grant agreement, awarded bid items, insurance documentation, approved schedule, addenda, and negotiated administrative details consistent with the RFP.

FOREST RESILIENCY RESTORATION SERVICES AGREEMENT

This Agreement is entered into between the Des Moines County Conservation Board (“County”) and _____ (“Contractor”).

1. **Contract Documents.** The Agreement includes the RFP, addenda, Contractor’s accepted proposal and bid sheet, applicable DNR management plans and technical documents, certificates of insurance, and any written Notice to Proceed or approved change order.
2. **Scope.** Contractor shall perform the following awarded bid item(s): _____.
3. **Contract Price.** The County shall pay Contractor according to the accepted unit prices/extended prices shown on the Bid Sheet, subject to accepted quantities and authorized changes.
4. **Term.** This Agreement begins upon execution. Field work may begin only after County issues a written Notice to Proceed. Work shall be completed within the applicable bid-item work windows unless adjusted in writing.
5. **Performance Standard.** Work shall be performed in a professional and workmanlike manner and in accordance with the RFP, DNR technical prescriptions, pesticide labels, applicable laws, and written direction of the County/DNR representatives.
6. **Payment.** Contractor shall invoice for accepted work. County may withhold payment for incomplete, defective, unsupported, or unauthorized work.
7. **Insurance and Indemnity.** Contractor shall maintain the insurance required by the RFP and comply with the indemnification provisions incorporated herein.
8. **Independent Contractor.** Contractor controls the means and methods of its work and is solely responsible for employees, subcontractors, taxes, benefits, equipment, safety, and legal compliance.
9. **Termination.** County may terminate for cause or convenience as stated in the RFP. Contractor shall be paid only for accepted work properly completed through the effective termination date.
10. **Entire Agreement / Amendments.** Changes to scope, cost, or schedule must be in writing and authorized by the County. No verbal direction authorizes additional compensation.

DES MOINES COUNTY CONSERVATION BOARD	CONTRACTOR
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____