Woodland Stewardship Plan Rosenow Timber WMA

REVISED: September 1, 2024

DATE: December 23, 2016

LOCATION: Grove Township Section 22, Shelby Co. Iowa

WOODLAND ACRES: 114 acres



Missouri River Wildlife Unit – Iowa DNR 21914 Park Loop Road Onawa, IA 51040



PREPARED BY:

IDNR Forester Lindsey Barney 712 S. Highway 6, PO BOX 189 Oakland, IA 51560 712-482-6245



WOODLAND STEWARDSHIP PLAN - SITE AND STAND DESCRIPTIONS

WOODLAND MANAGMENT OBJECTIVES

The Iowa DNR seeks to manage Rosenow Timber for the following objectives:

- To improve and maintain forest health, tree species diversity, and varied age structure.
- To enhance habitat for forest dependent wildlife with an emphasis on species of greatest conservation need – and the associated hunting, trapping, and wildlife observation.

PROPERTY DESCRIPTION

INTRODUCTION AND HISTORY:

Maintaining the sustainability of these remnant bur oak timbers is an ongoing challenge in the face of many forest health issues. This woodland is very old. There is evidence throughout this woodland of prior harvest activities – mainly on bur oak. Oak was used heavily for construction materials and railroad ties during the 1800's settlement of Iowa. It is possible that the multi-stem oaks we see today may be the second or third full-sized tree that these old root systems have produced. Pasturing can sometimes place an added stress on woodlands – and there is evidence throughout this woodland of prior pasturing as well. The cumulative effects of prior land use can have dramatic impacts on the current health of the trees in the woodland. These stressors may predispose woodlands like this to diseases like Bur Oak Blight – which is the likely cause of the oak decline seen throughout the timber.

In order to improve and sustain wildlife habitat, we need to make sure that the oak species persist in this woodland. The main hindrance to regenerating oak species is shade, from both native and non-native plants. Amur honeysuckle, an invasive shrub, is the greatest threat (besides bur oak blight) to the long-term sustainability of this woodland. If the honeysuckle can be satisfactorily controlled, we will be in great shape to move forward with the next steps towards habitat improvement and encouraging natural oak regeneration.

This plan was written based on reconnaissance information and timber inventory data collected in December of 2016. This plan should be updated every 5-10 years, or as conditions change.

The following maps help give perspective to the changes that have taken place on the property over the past 80 years. Color infrared photos are good at showing terrain, differences in tree canopies, as well as the location of evergreen trees (which show up as red on the photos).





Rosenow Timber Iowa DNR IMAGERY: 2009 CIR over LIDAR DATE: 12.20.2016

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PREPARED BY: LINDSEY BARNEY IDNR DISTRICT FORESTER PO BOX 189 OAKLAND, IA 51560



PREFARED BY: LINDSEY BARNEY IDNE DISTRICT FORESTER POBOX 189 OAKLAND, IA 51560



Rosenow Timber Iowa DNR IMAGERY: 2015 with Soils DATE: 12.20.2016



SOILS: Two soils make up the uplands and drainages of this timber. Monona silt loam soils form the upland ridges and side hills, and the Judson-Nodaway-Colo silt loam soil association forms the valley bottoms. Both Monona and Judson-Nodaway-Colo soils are capable of producing highly productive stands of timber. Their limiting factor, of course, will be slope

steepness and aspect. The shortest oak trees are found on ridge tops and on south and west facing slopes.

TOPOGRAHY AND WATERSHED INFORMATION: This woodland drains either northeast or northwest. Both drainages eventually enter Mill Creek. Terrain throughout this timber is gentle to moderate, making management activities easily achievable by equipment and by hand.



WOODLAND STAND DESCRIPTIONS AND MANAGEMENT RECOMMENDATIONS

This property has been classified into 3 different forest types, and 7 units (stands) for management. Management recommendations are based on the species and successional stage of each particular stand. Succession refers to where the woodland is in terms of its age and progression towards a climax vegetation type. Each woodland unit/stand will be described based on the average size of the timber. Trees in each unit will be placed into five possible size categories: seedling-sized (less than 1 inch in diameter), sapling-sized (1-4 inches in diameter measured at breast height or 4.5 feet off the ground -called DBH), pole-sized trees (5 to 12 inches DBH), small sawtimber-sized (13-18 inches DBH), and large sawtimber-sized trees (greater than 18 inches DBH). Shrub and non-woody vegetation will also be listed when found in significant populations.

FOREST TYPE 1 – BUR OAK UPLANDS – 4 STANDS – 58.1 TOTAL ACRES:

Overstory Species (by percent of basal area)

- Bur oak 86%
- American Elm 4%
- Hackberry 3%
- Black Walnut 2%
- Red elm 1%
- Bitternut Hickory 1%
- Basswood 1%
- White Mulberry 1%



Midstory Species – The midstory is made up of dense ironwood, hackberry and green ash.

Understory Species – The understory varies in density – but generally consists of prickly ash, coralberry, gooseberry, sedges and silky wild rye.

Stand Density – This stand averages 103.2 square feet/acre at a 12.6" average diameter. This indicates a stocking rate of approximately 83% (which is considered fully stocked). For regenerative purposes, the stand density would need to be lowered to about 60% stocking, or a basal area of 75-80 square feet/acre. You will see huge improvements in understory cover just by removing the midstory layer.

Forest Health – The midstory density of this woodland is suppressing further colonization of honeysuckle shrubs (which is good). At this time, there are only scattered honeysuckle seedlings throughout the woodland. Aside from the honeysuckle, there are also small patches of oak decline. In mid to late summer these patches should be tested for bur oak blight which is a common disease of upland oaks in Western Iowa.

MANAGEMENT RECOMMENDATIONS- The main objective for managing this stand will be improving understory cover, and at the same time, encouraging natural oak regeneration. Here are the steps to achieve that goal:

1. Control honeysuckle in the adjacent units. The outline of the Honeysuckle infestation is displayed on the 2009 color infrared map, and consists of 12.5 acres of continuous, mature honeysuckle. I would recommend cut-stump treatments of full concentrate glyphosate from August through late February.

2. Prescribed Fire. After all the seed bearing shrubs are cut off and treated, the infestation area, as well as stands in forest type 1, could be burned to set back young honeysuckle shrubs throughout. Early to mid-spring prescribed fire would work best for this purpose. Note, if woodland ephemerals are present in this woodland, spring fire may set them back.

3. Monitor. The infestation site and the stands in this forest type should be monitored for 3-5 years. Resprouts or new seedlings should be treated by spot spraying glyphosate or triclopyr amine during the growing season. If needed, a second prescribed fire could be used within that 3-5 year timeline.

4. Midstory Removal. If honeysuckle is under control, midstory removal treatments could be implemented in areas you would like to target for more understory cover (south slopes for example). This treatment could be efficiently done from midsummer to early fall using the hack and squirt treatment. Hack and squirt (injection) works best on trees less than 5" in diameter (which most of the ironwood are this size), it leaves the understory free of debris, and it provides some shading (which moderates adverse flushes in understory woody plant growth). Leaving standing dead trees of varying DBH also provides foraging and cavity nesting opportunities for many bird species. Imazapyr (Polaris, Arsenal), when used according to the labeled rate for injection, is very effective for controlling ironwood. The trees can be killed by cut-stump treatment as well. This treatment leaves a lot of brush on the ground (which may be desirable for limiting deer browse on young seedlings, but is less desirable for WMA users). Regardless, I would recommend treating patches of 2-5 acres at a time.

5. Monitor for desirable regeneration. Within 3-5 years of the midstory removal (giving the oaks time to have gone through at least 1 mast year), there should be oak regeneration. If this has not happened within the given time frame, or if you want to speed up the process, bare root seedlings can be interplanted into the areas that have been thinned. Red oak, black oak, Kentucky coffee tree, black cherry, and black walnuts are all native cohorts that could be planted in this timber. I would recommend using "bottomland" bur oak seedlings, as they are supposed to be bur oak blight resistant. These thinned and planted units should be excluded from prescribed fire until the trees are a minimum of 12 inches in diameter.

6. Re-evaluate stands after 5-10 years.

FOREST TYPE 2 – Draw Bottom Timbers – 2 units – 46.4 total acres:

Overstory Species (by percent of basal area)

- Bitternut Hickory 49%
- Bur oak 19%
- Green ash 11%
- Ironwood 7%
- Black walnut 5%
- Hackberry 5%
- American Elm 3%
- Red Elm 3%
- White Mulberry 3%



Midstory Species – The midstory of this forest type is made up of sapling to pole-sized white mulberry, eastern red cedar, green ash, black walnut, black cherry, bitternut hickory, and the occasional downy hawthorn.

Understory Species – The understory of this forest type consists of an assortment of shrubs, grasses and forbs, which include: nettles, reed canary grass, silky wild rye, coralberry, gooseberry, prickly ash, rough leafed dogwood, and hackberry seedlings.

Stand Density – This stand averages 92 square feet/acre at a 10.4" average diameter. This indicates a stocking rate of approximately 78% (which is considered fully stocked). Were it not for the invasive honeysuckle in stand 2B, that particular stand would be regenerating with all kinds of native hardwood trees. Stand 2A remains static, due to midstory hackberry shade.

Forest Health – Again, the honeysuckle infestation in stand 2B is the biggest issue of this plan. Otherwise, the trees in these 2 stands appear healthy and the forests are well-stocked.

MANAGEMENT RECOMMENDATIONS- After the honeysuckle control work, consider interplanting a diverse mix of fast-growing native bottomland hardwoods and or native understory shrubs. This will help shade the site (and prevent further infestations) and will diversify the age structure of your woodland as whole. I would recommend planting: sycamore, silver maple, cottonwood, black cherry, hackberry, American elm, red oak, and possibly swamp white oak (or bottomland bur oak if you want to stick with truly native species). The planting rate will depend on what conditions are like after honeysuckle control

work is done. If random planting spots are only available in the 12.5 acre honeysuckle control unit, then I would shoot for planting 50 seedlings per acre.

In the extreme north finger of 2B and throughout stand 2A downy hawthorn can be found. Make sure to identify this tree, and do not eliminate these relics in management work. This species is very rare in woodlands and transitional areas in SW Iowa.

FOREST TYPE 3 – Walnut Draws – 1 unit – 9.6 total acres:

Overstory Species (by percent of basal area)

- Black walnut 75%
- Green Ash 17%
- Hackberry 8%

Midstory Species – The midstory is made up of moderately dense sapling to pole-sized hackberry.

Understory Species – The understory of this stand is virtually non-existent.



During the growing season, the understory is likely composed of stinging nettles.

Stand Density – This stand averages 80 square feet per acre at an average diameter of 13.8 inches. This density and average diameter yields a stocking rate that is hovering just above the understocked line.

MANAGEMENT RECOMMENDATIONS – This stand is of low stocking already, so no overstory thinning is needed to increase the growth rates of the excellent black walnut trees growing in this stand. The average diameter of walnut in this stand was 17.3 inches. I would recommend trying to let these trees grow to at least 24 inches in diameter before considering a harvest (which would be ~ 21 years). At that time, if harvest is desired, the entire stand (or pockets of ~1/2 to 2 acres) should be harvested. Harvesting in groups, rather than selectively, limits damage to residual trees, and creates conditions favorable for regeneration. Speaking of regeneration, walnut seedlings can be developed in the understory prior to harvesting. The same midstory removal treatment recommended for Forest Type 1 works well ahead of timber harvests too! In this instance, you would be targeting the smaller diameter hackberry for thinning. This would add the necessary sunlight to encourage walnut regeneration. The overstory density is low enough, right now, to support walnut regeneration (if the midstory shade was not present).

The species diversity in this stand is low, so I would recommend interplanting additional hardwood cohorts into this stand, including: black cherry, Kentucky coffee tree, and red oak. Six to ten dead trees including EAB-killed ash per acre will be left standing to provide bird and bat foraging, roosting, and cavity opportunities.

HISTORICAL AND CULTURAL CONSIDERATIONS

No culturally significant areas are known to exist on this property.

ENDANGERED SPECIES CONSIDERATIONS

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

The Indiana Bat is a federally endangered species that occurs in the eastern 2/3rds of Iowa and has not yet been found in Shelby County. Rosenow Timber may provide suitable habitat for northern long-eared bat (NLEB) and tri-colored bat which are both federally endangered species and found throughout the state. These species use loose-barked live trees such as shagbark hickory as well as sloughing bark of dead trees for their maternity colonies.

Basically, the guidelines prohibit felling of trees that may provide bat habitat from April 1 – October 1. Suitable habitat trees are shagbark hickory, live or dead, and dead deciduous trees with deep cracks or splits or slabs of loose or peeling bark on the trunks or limbs.

Multi-species inventory monitoring has not been completed at Rosenow Timber. MISM list is from nearby Yellow Smoke Recreation Area which has similar habitat except a waterbody is present at Yellow Smoke.

Common Name	Scientific Name	Common Name	Scientific Name
American Toad	Bufo americanus	Northern Leopard Frog*	Rana pipiens
Blanchards Cricket Frog*	Acris crepitans	Northern Prairie Skink*	Eumeces septentrionalis
Brown Snake	Storeria dekayi	Painted Turtle	Chrysemys picta
Bullfrog	Rana catesbeiana	Snapping Turtle*	Chelydra serpentina

MSIM detected herptile species.

MSIM detected mammal species.

Common Name	Scientific Name	Common Name	Scientific Name
Deer White Footed P Complex	Peromyscus sp	Muskrat	Ondatra zibethicus
Eastern Chipmunk	Tamias striatus	Raccoon	Procyon lotor
Eastern Cottontail	Sylvilagus floridanus	White-tailed Deer	Odocoileus virginianus
Fox Squirrel	Sciurus niger		

MISM detected bird species (* denotes SCGN).

Common Name	Scientific Name	Common Name	Scientific Name
American Crow	Corvus brachyrhynchos	Gray Catbird	Dumetella carolinensis
American Goldfinch	Carduelis tristis	Great Blue Heron	Ardea herodias
American Robin	Turdus migratorius	Green Heron	Butorides virescens
Baltimore Oriole*	Icterus galbula	Hairy Woodpecker	Picoides villosus
Barn Swallow	Hirundo rustica	House Sparrow	Passer domesticus
Barred Owl	Strix varia	House Wren	Troglodytes aedon
Bell's Vireo*	Vireo bellii	Indigo Bunting	Passerina cyanea
Belted Kingfisher*	Ceryle alcyon	Killdeer	Charadrius vociferus
Black-and-white Warbler	Mniotilta varia	Mourning Dove	Zenaida macroura
Black-capped Chickadee	Parus atricapillus	Northern Cardinal	Cardinalis cardinalis
Black-crowned Night-heron*	Nycticorax nycticorax	Northern Flicker*	Colaptes auratus
Blue-gray Gnatcatcher	Polioptila caerulea	Northern Parula	Parula americana
Blue Jay	Cyanocitta cristata	Osprey	Pandion haliaetus
Broad-winged Hawk*	Buteo platypterus	Red-bellied Woodpecker	Melanerpes carolinus
Brown-headed Cowbird	Molothrus ater	Red-eyed Vireo	Vireo olivaceus
Brown Creeper	Certhia americana	Red-headed Woodpecker*	Melanerpes erythrocephalus
Brown Thrasher*	Toxostoma rufum	Red-winged Blackbird	Agelaius phoeniceus
Canada Goose	Branta canadensis	Ring-necked Pheasant	Phasianus colchicus
Cedar Waxwing	Bombycilla cedrorum	Rose-breasted Grosbeak	Pheucticus ludovicianus
Chimney Swift*	Chaetura pelagica	Ruby-crowned Kinglet	Regulus calendula
Chipping Sparrow	Spizella passerina	Ruby-throated Hummingbird	Archilochus colubris
Cliff Swallow	Hirundo pyrrhonota	Sharp-shinned Hawk	Accipiter striatus
Common Grackle	Quiscalus quiscula	Song Sparrow	Melospiza melodia
Common Loon*	Gavia immer	Spotted Sandpiper	Actitis macularia
Common Yellowthroat*	Geothlypis trichas	Swamp Sparrow	Melospiza georgiana
Cooper's Hawk	Accipiter cooperii	Tree Swallow	Tachycineta bicolor
Dickcissel*	Spiza americana	Turkey Vulture	Cathartes aura
Downy Woodpecker	Picoides pubescens	Warbling Vireo	Vireo gilvus
Eastern Bluebird	Sialia sialis	White-breasted Nuthatch	Sitta carolinensis
Eastern Kingbird*	Tyrannus tyrannus	White-throated Sparrow	Zonotrichia albicollis
Eastern Meadowlark*	Sturnella magna	Wild Turkey	Meleagris gallopavo
Eastern Phoebe	Sayornis phoebe	Wood Duck	Aix sponsa
Eastern Screech-owl*	Otus asio	Wood Thrush*	Hylocichla mustelina
Eastern Wood-pewee*	Contopus virens	Yellow-billed Cuckoo*	Coccyzus americanus
European Starling	Sturnus vulgaris	Yellow-rumped Warbler	Dendroica coronata
Field Sparrow*	Spizella pusilla	Yellow Warbler	Dendroica petechia

MSIM detected butterfly species.

Common Name	Scientific Name	Common Name	Scientific Name
Black Swallowtail	Papilio polyxenes	Monarch*	Danaus plexippus
Cabbage White	Pieris rapae	Orange Sulphur	Colias eurytheme
Clouded Sulphur	Colias philodice	Painted Lady	Vanessa cardui
Common Wood-nymph	Cercyonis pegala	Question Mark	Polygonia interrogationis
Eastern Tailed-blue	Everes comyntas	Red-spotted Purple	Limenitis arthemis astyanax
Hackberry Emperor	Asterocampa celtis	Red Admiral	Vanessa atalanta
Least Skipper	Ancyloxypha numitor	Silver Spotted Skipper	Epargyreus clarus
Little Yellow	Eurema lisa	Variegated Fritillary,	Euptoieta claudia

MSIM detected Odonate species.

Common Name	Scientific Name	Common Name	Scientific Name
American Rubyspot	Hetaerina americana	Halloween Pennant	Celithemis eponina
Black Saddlebags	Tramea lacerata	Horned Clubtail	Arigomphus cornutus
Blue-fronted Dancer	Argia apicalis	Lance-tipped Darner	Aeshna constricta
Blue Dasher	Pachydiplax longipennis	Orange Bluet	Enallagma signatum
Common Baskettail	Epitheca cynosura	Powdered Dancer	Argia moesta
Common Green Darner	Anax junius	Ruby Meadowhawk	Sympetrum rubicundulum
Common Whitetail	Plathemis lydia	Slender Spreadwing	Lestes rectangularis
Eastern Amberwing	Perithemis tenera	Twelve-spotted Skimmer	Libellula pulchella
Eastern Forktail	Ischnura verticalis	Variegated Meadowhawk	Sympetrum corruptum
Eastern Pondhawk	Erythemis simplicicollis	Widow Skimmer	Libellula luctuosa
Familiar Bluet	Enallagma civile		

Re: Rosenow Timber FWSP review

Fullin, Katy

Nov 26, 2024, 11:35 AM (6 days ago)

to me

Hi Doug,

I read through the plan and in my opinion it's a good plan. I do have a couple of questions which are just more curiosity than anything. Firstly, has EAB impacted the green ash to any significant degree in the intervening years since this plan was written? And secondly, have any aspects of the plan already been carried out?

The only change I would suggest might also have been suggested by Kelly Poole or Mark Leoschke if they were able to get it reviewed. In the T&E species section, it might make sense to change the Indiana Bat statement to something even more general about listed bat species (since the # of listed bat species has been expanding over the years). Or a statement could be added that indicates that prior to management activities taking place, the current list of T&E species for the area will be reviewed and the T&E species program will be consulted about any needed avoidance and minimization measures that might be needed to avoid impacts to listed species.

Thanks for the opportunity to review, and have a great Thanksgiving!

Katy

Re: Rosenow Timber FWSP review

Lorenzen, John <john.lorenzen@dnr.iowa.gov>

Mon, Sep 30, 3:39 PM

to me

Doug,

Thanks for the opportunity to review. I read through it and have no concerns. Management activities proposed in this document would not lead to decreased water quality or downstream negative impacts to aquatic communities. Many of the BMPs listed to improve regeneration should ultimately improve water quality once those trees become established.

Let me know if you need anything else.

-John

to me

Howdy,

I have reviewed the plan and just have a few pretty inconsequential comments. I made them in Google Drive:

Let me know if you have troubles opening the link, thanks!

Litchfield, Tom <tom.litchfield@dnr.iowa.gov>

Oct 1, 2024, 6:46 PM

to me

Hello Doug,

I figured I might as well retype my review into Word, that way it would be easier on your end. The plan looked good and I did not have many comments, and I mostly noted typos, made a few suggestions, and asked a couple of questions. Regarding the question I directed to Linsey specifically, she will know what I am talking about as I just finished a plan review for her and Matt on

Friday (and for Andy Robbins yesterday!

- when it rains, it pours...).

I have attached the Word file of the plan below, please let me know if anything I did needs further clarification.

I hope you have a good week.

Take Care,

Tom



Bell, Liam <liam.bell@dnr.iowa.gov>

to me

I have read through this plan and have found a few things that I would re-word, and also added a few recommendations on content to add for consistency between management recommendations.

Liam Bell Natural Resource Technician II Wildlife Bureau Missouri River Wildlife Unit 21914 Park Loop Onawa, IA 51040 712-420-5637 Mobile liam.bell@dnr.iowa.gov www.iowadnr.gov

Re: Rosenow Timber FWSP review

Buckardt, Anna

Nov 21, 2024, 8:23 AM (12 days ago)

to me

Hi Doug,

Thanks for the opportunity to review the Rosenow Timber plan. I've added comments to the attached pdf.

Cheers,

Anna

Anna Buckardt Thomas, MS, CPM Avian Ecologist Wildlife Research Section Department of Natural Resources 1436 255th St., Boone, IA 50036 515-823-3945 anna.buckardt@dnr.iowa.gov www.iowadnr.gov to me

Mark Leoschke shared a document
Mark Leoschke (<u>mark.leoschke@dnr.iowa.gov</u>) has invited you to edit the following document:
Rosenow Woodland Stewardship Plan 2016

Re: Rosenow Timber FWSP review

Poole, Kelly

Fri, Nov 22, 5:30 PM (11 days ago)

to me

Hi Doug,

Thanks for the opportunity to review. The TE section should be updated for the northern long-eared bat (see comment in attached). Shelby County is outside the summer range for the Indiana bat.

The only other comment I have is that it would be great to retain live loose bark tree species (e.g., shagbark hickory) whenever possible to benefit bats and other wildlife that rely on snags/dead or dying trees with cavities or peeling bark. We typically recommend 6-10 snags per acre of varying DBH.

Have a great Thanksgiving break!

Hickman, Brian <brian.hickman@dnr.iowa.gov>

Mon, Sep 30, 3:19 PM

to me

My only comment is that the plan was written 8 years ago. She states that it should be updated every 5-10 years, which is where we are at right now. I'm wondering if we shouldn't have done that based on what you told me about the honeysuckle prevalence. This plan discusses it but doesn't seem to reflect the degree to which you stated.

Brian

Wildlife Bureau Department of Natural Resources 57744 Lewis Rd., Lewis, IA 51544 712-250-0518 mobile brian.hickman@dnr.iowa.gov