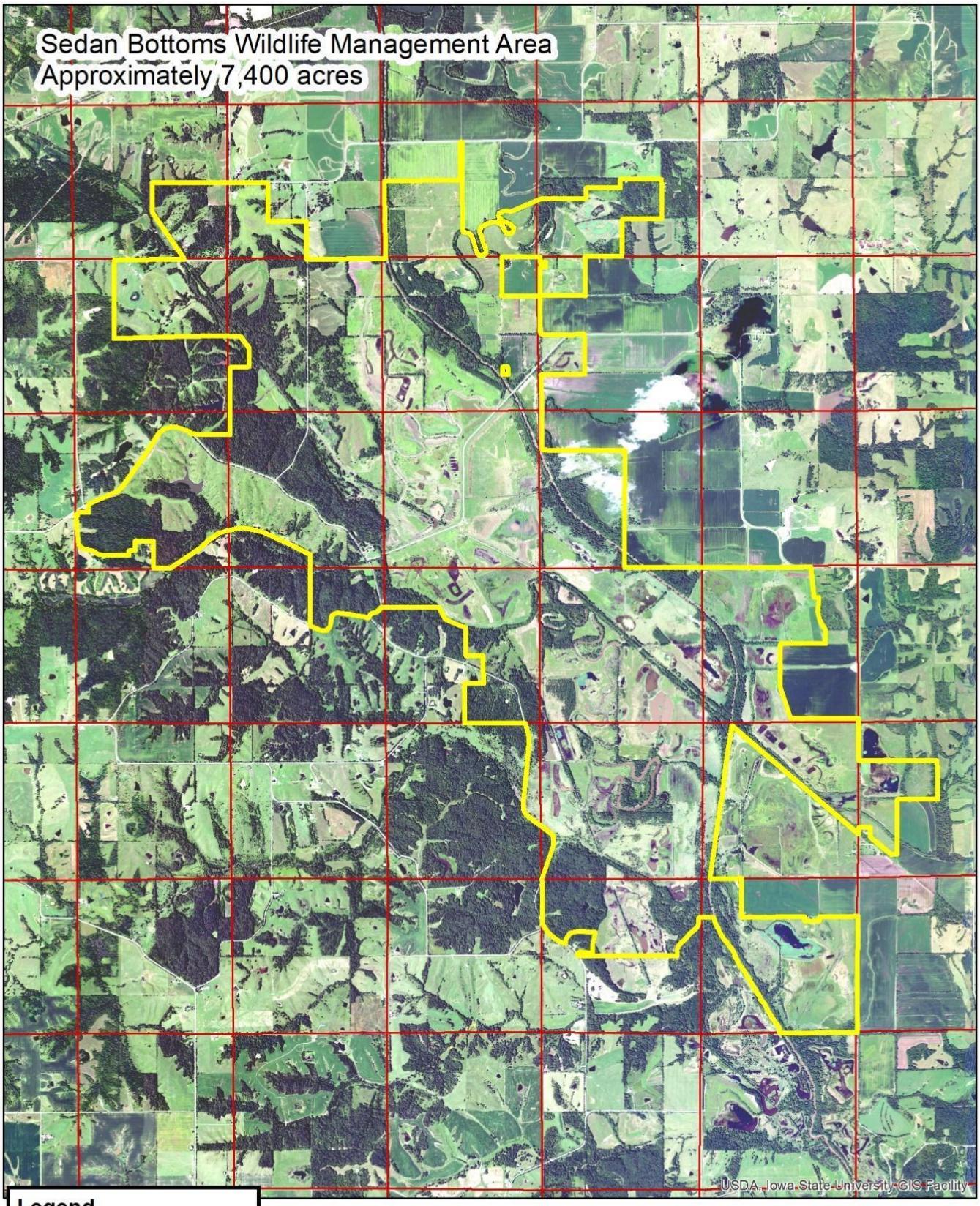
FOREST MANAGEMENT PLAN FOR SEDAN BOTTOMS WILDLIFE MANAGEMENT AREA

Actively managing the forestlands owned by the Iowa DNR Wildlife Bureau are critical to improving habitat for a variety of wildlife species and improving the forest ecosystem structure and function. Stand maps and work summary tables are provided to direct the forest management across 1,983 acres of forestland at Sedan Bottoms Wildlife Management Area in Appanoose County, Iowa. Plan developed by Jeremy Cochran, District Forester, and Heath Van Waus, Wildlife Biologist.

September 22, 2023

Contents

Introduction	4
Forest/Wildlife Habitat Goals	5
Current Distribution of Forest Size Classes on Sedan Bottoms WMA	6
Current Overstory Forest Types on Sedan Bottoms WMA	8
Forest Management Systems for Sedan Bottoms WMA	11
Sustainable Forestry Guidelines for Sedan Bottoms WMA	15
Income from Timber Harvests	15
Work Plan for Sedan Bottoms WMA	15
Summary of Stands	16
Iowa Natural Areas Inventory Species found on Sedan Bottoms WMA	20
List of Endangered, Threatened & Special Concern Species in Appanoose County	20
Guidelines for Protecting Indiana Bat Summer Habitat	23
Special Note on Northern Long-eared Bat	24
Sedan Bottoms Tract Map	25
Sedan Bottoms Forest Stand Maps	26


Sedan Bottoms Wildlife Management Area
Approximately 7,400 acres
USDA, Iowa State University GIS Facility
Legend
cons_rec_lands
sections
N
Prepared by Jeremy Cochran: 8/22/2023
0 1,750 3,500 7,000 10,500
Feet

Introduction

The Department of Natural Resources (DNR) Wildlife Bureau has recognized and acted on the need for a forest wildlife stewardship plan to properly manage the forest resources at Sedan Bottoms Wildlife Management Area (WMA). The manager determines the objectives to address the habitat needs for Species of Greatest Conservation Need (SGCN) as determined by Iowa's Wildlife Action Plan and the forestland condition of each area. Sedan Bottoms is also a State-designated Bird Conservation Area (BCA). Sedan Bottoms WMA includes ~7,400 acres and more than 26% is forestland. The forest acreage is 1,983 acres which includes 62% upland forest and 37% bottomland forest. Additionally, there are many miles of tree buffered creeks, streams, wetlands, and levees. Managing forests is essential to improve the areas for wildlife and recreation.

Manager: Heath Van Waus, Wildlife Biologist

Address: Rathbun Wildlife Unit

28248 415th Street

Russell, Iowa 50238

Telephone: 641-203-6179

This project is a cooperative effort among DNR staff including the Rathbun Wildlife Unit and District Forester. The wildlife biologist and technicians are responsible for the day to day operations of the WMA. The forester will implement the forestry plan in coordination with the wildlife biologist.

This plan is the result of stand mapping by the District Forester. One hundred twenty-five unique stands are identified by tree species, tree size, relative stand density, topography, and management system. The biologist and forester discuss the options for each stand and how management of that stand will fit into the overall management for the area. The forester's prescriptions are designed to manage each stand to reach the established goals and objectives for the WMA and to implement the goals and strategies of the 2020 Iowa Forest Action Plan as well as the 2015 Iowa Wildlife Action Plan.

According to 2012 land and canopy cover data, Sedan Bottoms WMA comprises 7,400 total acres with 2,400 of those acres being tree cover (32%). Sedan Bottoms cover type acreages, at that time, consisting of Woodland (2,400), Old Field Successional (655), Agricultural (285), Wetland/Pond (1,750) and Grassland (2,310).

Sedan Bottoms WMA was purchased in Multiple tracts. The largest and first tract was gifted to the State in 1997 (2,600 ac); the most recent tract was purchased in 2022 bringing the total acreage to 7,400 acres.

Purchased in multiple tracts –

TRACT	YEAR	ACRES
SPURLIN FARMS	1997	2,650
PERKINS, DAVID& MARTHA	1998	728
FOSTER, MARGARET	1998	178
BAKER, LARRY & CLEO	1999	691
APLER, JOHN P. & BARBARA I.	2000	50
MILLER, PETER A. & PHYLISS J.	2000	195
GESICKI, RAYMOND & EDITH	2004	590
JOHNSON, DALE	2006	39
APPLER, JOHN	2007	36
BROWN, RUSSELL & PEGGY	2007	350
INHF (ROSENCRANTS)	2011	81
INHF (ARA MAY - EAST)	2014	125
INHF (ARA MAY - MIDDLE)	2015	266
INHF (MILLER - NORTH)	2016	119
INHF (ARA MAY - NORTH)	2016	139
INHF (ARA MAY - SOUTH)	2016	190
INHF (KETCHUM)	2016	295
INHF (CURRIN)	2019	454
INHF (MCCOY)	2022	206

Forest/Wildlife Habitat Goals

The Sedan Bottoms WMA forestry plan is an ecologically based forest management plan. Goals are focused toward improving forest health and maintaining the forest ecosystem structure and function, with all other forest uses being considered, but not being the primary management goal. With Sedan Bottoms WMA being classified as a wildlife management area and Bird Conservation Area, work conducted on this site will be geared towards conserving plant and animal species that utilize this area. “Species of greatest conservation need” will be important for consideration as well as common species, other game and/or nongame wildlife.

Funding for the acquisition and management of Sedan Bottoms WMA has been almost exclusively hunter generated monies, i.e. license fees and excise taxes on sporting equipment. A primary objective for management of the area is to improve habitat for game species such as white-tailed deer, wild turkey, squirrels, bobwhite quail, and waterfowl. On the other hand, the IDNR recognizes the effects of its management actions on nongame species as well, particularly those that are threatened, endangered or species of greatest conservation need. The Iowa DNR’s Iowa Wildlife Action Plan (IWAP) identifies certain wildlife species as species of “greatest conservation need”. Sedan Bottoms WMA is home to many SGCN as listed in the tables found on pages 20-23.

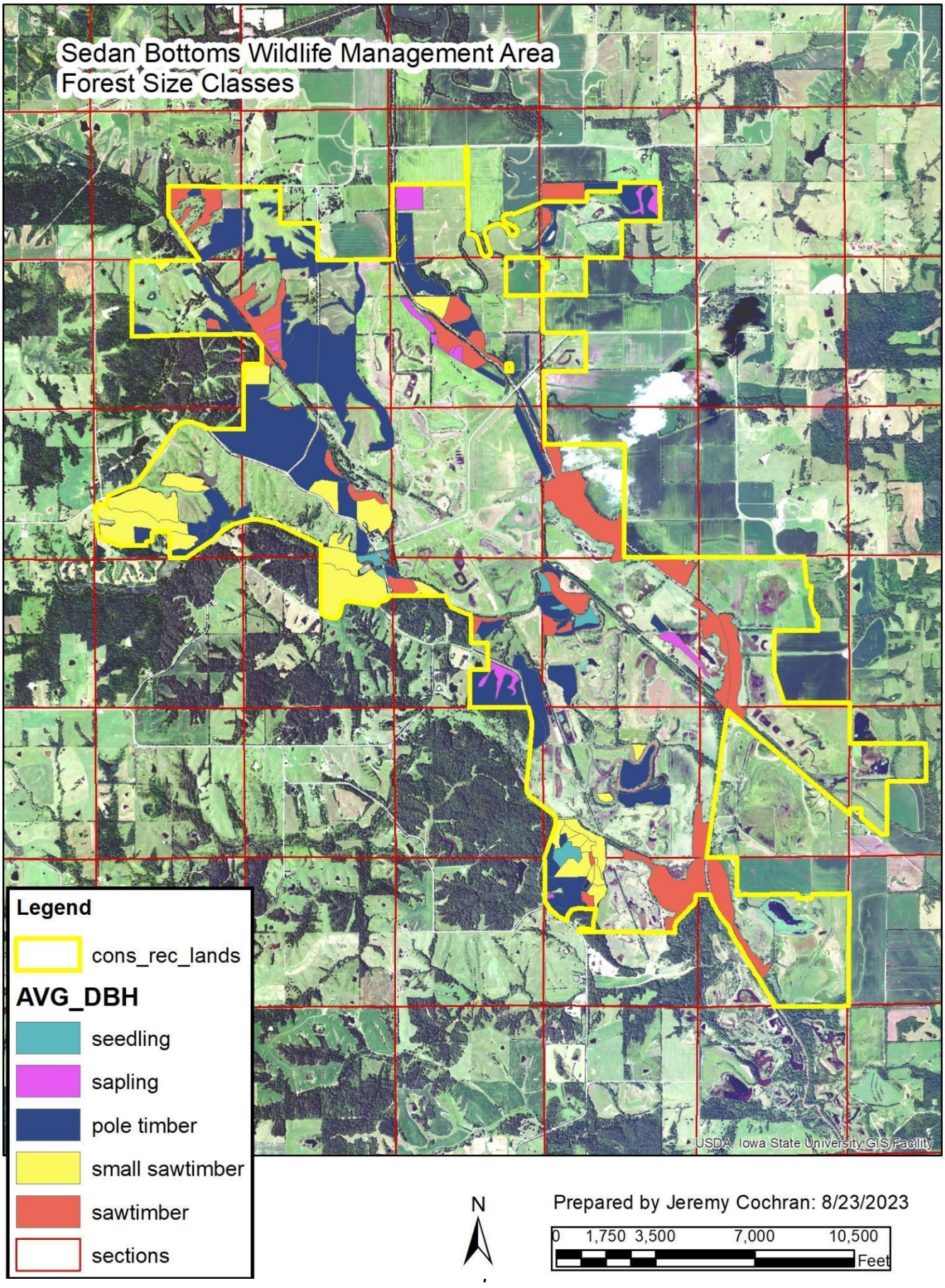
Other stewardship considerations that are incorporated into forest management decisions are the relevant goals and strategies of the 2020 Iowa Forest Action Plan, protection of identified threatened and endangered plant and wildlife species, best management practices (BMP’s) to protect soil and water quality, forest health considerations, and the protection of any identified “special sites”.

The Sedan Bottoms WMA forestry plan is a guideline for recommended wildlife management work. Detailed prescriptions will be developed prior to scheduled or recommended management practices in order to take into account the unique stand conditions and more specific targeted wildlife habitat needs. These specific prescriptions will be in the form of detailed practice project plans, developed with collaboration between the District Forester and Wildlife Biologist. A record of the completed management activities will be kept on file at both the area manager's and District Forester's office so that evaluations can be made and compared to determine if management objectives are being met by this work.

Current Distribution of Forest Size Classes on Sedan Bottoms WMA

The forest stands were cruised and mapped according to average tree size classes. Refer to the map on the following pages.

Size Classes	No. of Stands	Acres	Percent
Seedlings (<1" DBH)	7	35	2%
Saplings (1-3" DBH)	12	76	4%
Pole size (4-11" DBH)	53	963	49%
Small sawlog size (12-17"DBH)	24	375	19%
Sawlog size (≥18" DBH)	29	535	27%


Sedan Bottoms Wildlife Management Area
Forest Size Classes
Legend
cons_rec_lands
AVG_DBH
seedling
sapling
pole timber
small sawtimber
sawtimber
sections
USDA, Iowa State University GIS Facility
N
Prepared by Jeremy Cochran: 8/23/2023
0 1,750 3,500 7,000 10,500
Feet

Current Overstory Forest Types on Sedan Bottoms WMA

Oak-hickory is the most common forest community at Sedan Bottoms WMA, making up 60% of the forestlands. Upland forests make up 62% of the acreage while bottomland forests are 37%. Refer to the map on the following pages.

Overstory	No. Stands	Acres	Percent
Oak-hickory	62	1,182	60%
Bottomland hardwoods, second bench	28	299	15%
Bottomland hardwoods, first bench	18	436	22%
Plantations	8	30	2%
Others	6	10	<1%

Oak-Hickory: The density of the overstory canopy can vary from closed canopy (forest) to open canopy (woodland) and anywhere in between. The understory and herbaceous layers are also highly variable due to different levels of sunlight penetration. Oak-hickory forests are dependent on regular disturbances of prescribed fire. Species like oak are specially adapted to fire because of their ability to repeatedly stump sprout after being top killed and because their heavy bark, as they get older, is fire tolerant. With frequent fires (4-6 years), this early successional community can be maintained indefinitely. All the common species are intolerant of shade and include: white oak, red oak, bur oak, black oak, shingle oak, shagbark hickory, and black walnut. Associated species include just about anything in the Central Hardwoods and Maple-Basswood forest types.

Central Hardwoods: This forest cover type is also called mixed hardwoods. No species dominates in this cover type. Most of these upland stands have experienced disturbances such as livestock grazing, harvesting and storm damage. These stands frequently develop on retired pasturelands and retired crop fields. Common species include: shingle oak, northern red oak, white oak, shagbark hickory, bitternut hickory, black cherry, black walnut, basswood, ash, American elm, red elm and ironwood. Associated species include: boxelder, hackberry, cottonwood, eastern red cedar, black oak, and honey locust.

Bottomland Hardwoods, First Bench: The major species for this cover type are adapted to life in wet and poorly drained bottomlands. These areas experience frequent flooding from long to short durations. Flood waters can cause heavy scouring or heavy alluvial depositions. Common species include: cottonwood, silver maple, willows, green ash, boxelder and river birch. Associated species include: sycamore, American elm, and rock elm.

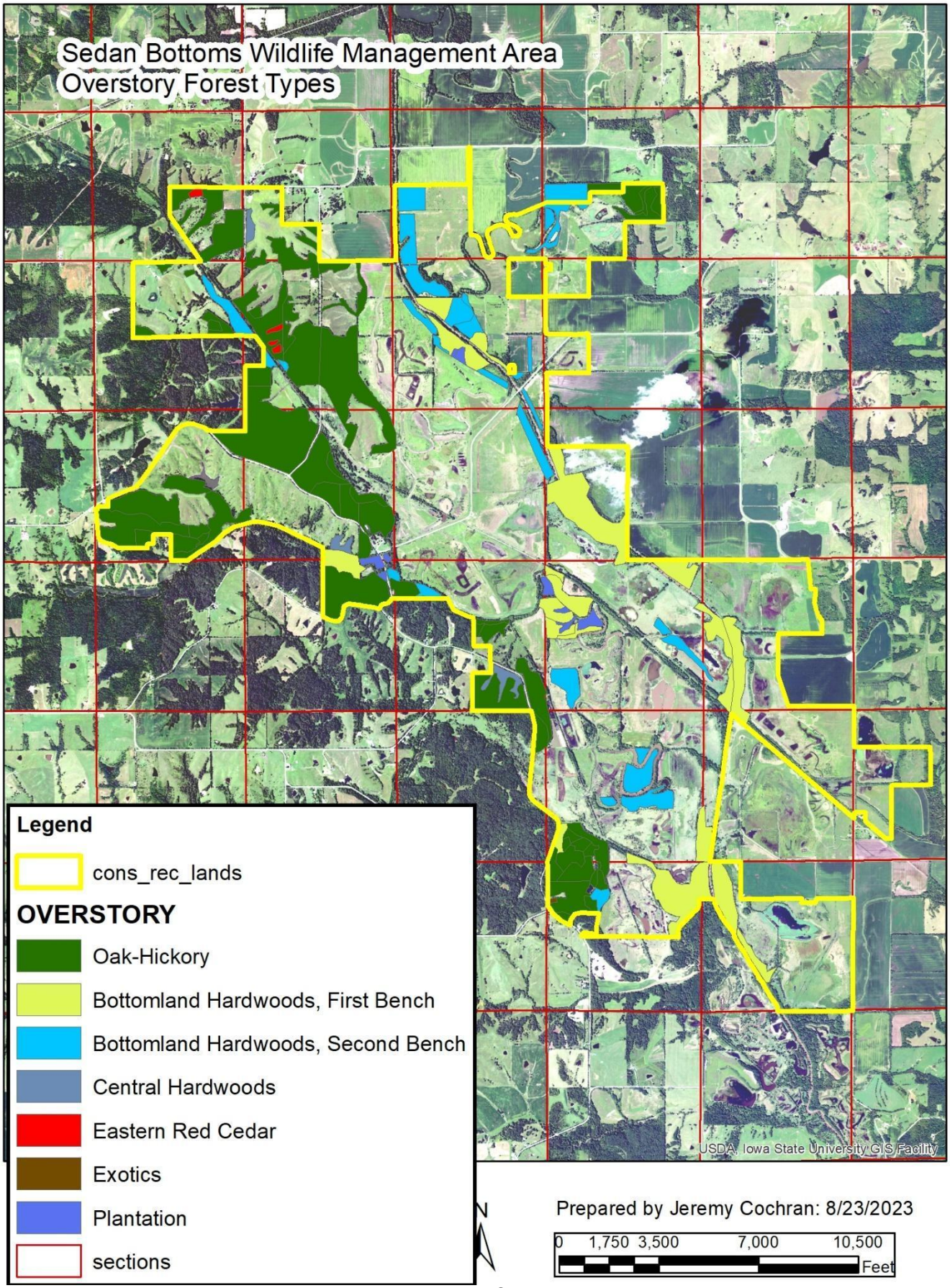
Bottomland Hardwoods, Second Bench: These stands occur on somewhat poorly drained to moderately well-drained soils that are occasionally flooded with light scouring and alluvial depositions. Common species include: cottonwood, silver maple, black walnut, green ash, hackberry, white elm, pin oak, swamp white oak and sycamore. Associated species include: bur oak, river birch, willows, basswood, shellbark hickory, and boxelder. (Black walnut can grow on second bench sites but sometime suffers from damaged caused by fusarium root rot which is probably caused by

waterlogged soils. Walnut is also sometimes prone to frost damage in narrow river valleys where cold air can settle.)

Eastern Red Cedar: Eastern red cedar makes up greater than 50% of the overstory. These sites are often doughtier poorly maintained open pasturelands with south to west aspects. Eastern red cedar can be problematic on open pasturelands and native prairie remnants. Common associated species include: black walnut, shagbark hickory, bitternut hickory, hackberry, white elm, red elm, black cherry, aspen, white birch, shingle oak, bur oak, black oak, red oak, ironwood, white ash, boxelder, hard maple and basswood.

Plantation: Includes stands of recently planted hardwoods, conifers or mixed. Stands are usually even-aged looking.

Other forest associations include stands of conifers or exotic/invasive trees.


Sedan Bottoms Wildlife Management Area
Overstory Forest Types
Legend
cons_rec_lands
OVERSTORY
Oak-Hickory
Bottomland Hardwoods, First Bench
Bottomland Hardwoods, Second Bench
Central Hardwoods
Eastern Red Cedar
Exotics
Plantation
sections
USDA, Iowa State University GIS Facility
N
Prepared by Jeremy Cochran: 8/23/2023
0 1,750 3,500 7,000 10,500
Feet

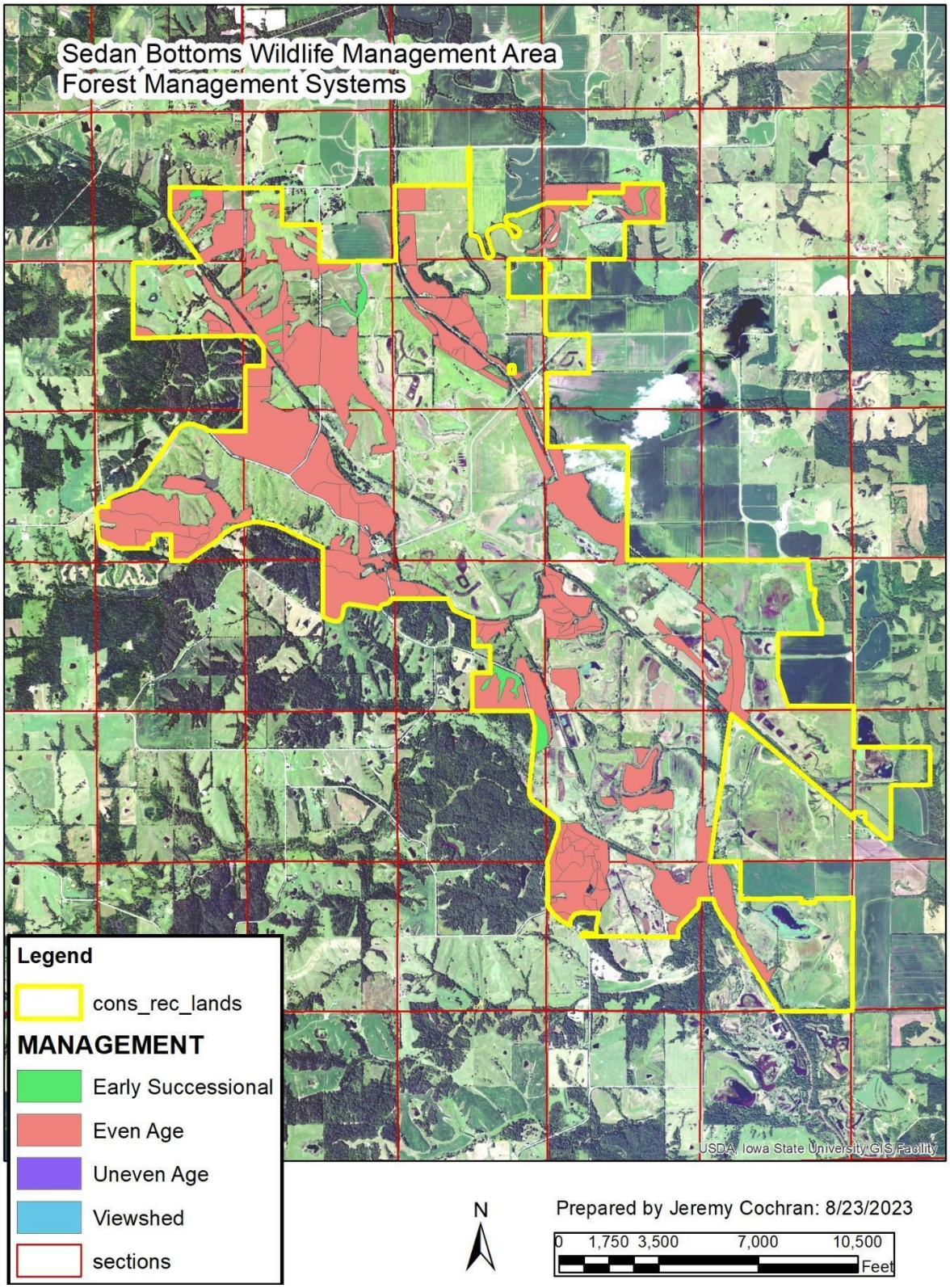
Forest Management Systems for Sedan Bottoms WMA

One of four management systems is specified for each of the 125 unique forest stands. This identifies the overall management system for that stand and designates the “road map” for what work will take place on the site in the future.

Recommendations for each stand were based on whether the area will be managed to create early successional growth, even age system, uneven age system, or as viewshed. The decision on what system will be used was based on the objectives for the area to maintain a healthy oak-hickory component, develop a diverse woodland landscape, protect fragile sites, improve water quality and increase the acres of early successional growth.

Based on recommendations for the areas, the acres under each management system are as follows. Refer to the map on the following pages.

Management System	No. Stands	Acres	% of Total Area
Early Successional	9	49	2%
Even Age	117	1,934	98%
Uneven Age	0		
Viewshed	0		


Sedan Bottoms Wildlife Management Area
Forest Management Systems
Legend
cons_rec_lands
MANAGEMENT
Early Successional
Even Age
Uneven Age
Viewshed
sections
USDA, Iowa State University GIS Facility
N
Prepared by Jeremy Cochran: 8/23/2023
0 1,750 3,500 7,000 10,500
Feet

Even Age Management involves growing a stand of trees which are close to the same age. At some point in a stand's life, the area is clearcut which results in the even age structure. This type of management creates excellent habitat for deer, turkey, squirrels and other game and nongame wildlife species. It is essential for regeneration of oak, which requires full sunlight. The only way that oak can be maintained as a component of the forest, over the long run, is by practicing some form of even age management.

Each stage or age class of an even age stand provides habitat for a suite of wildlife species. For example, regenerating stands are seedling size (1-10 years old) and benefit the same species as do early succession stands, i.e. black-billed cuckoo, yellow-billed cuckoo, eastern towhee, as well as bobwhite quail and American woodcock.

Sapling to small pole size stands between 10-20 years old may be used by black and white, Kentucky, and worm-eating warblers. Pole size to medium size trees (20-60 years) tend to be used by canopy nesters such as scarlet tanagers and ground nesters such as ovenbirds and black and white warblers.

Mature stands of 60-125+ years of age are used by birds such as the wood thrush, Acadian flycatcher, ovenbird, worm eating warbler, and scarlet tanager.

As woodland stands age, they constantly lose trees to competition, insects, disease, etc. The dead and dying trees provide habitat for cavity nesters such as woodpeckers, nuthatches, titmice, and creepers. The federally endangered Indiana bat and Northern Long-eared bat use loose barked live trees such as shagbark hickory as well as the sloughing bark from dying trees for their maternity colonies.

Thus, even age management has the potential to provide a large variety of age classes that can meet the needs of a variety of wildlife species.

While there are many methods to open a stand to sunlight, clearcutting and shelterwood harvesting are the most common. Clearcutting is a practice that opens the stand all at once. Clearcutting also provides highly desired early successional plants for the first 15-20 years until the tree canopy closes. Regeneration via clearcutting requires there be sufficient oak seedlings or advanced regeneration present. Minus these seedlings, bare root planting may be necessary following clearcutting.

Shelterwood harvests are one way of recruiting seedling production prior to a clearcut. Shelterwood harvests include several thinnings done prior to the final clearcut. If the shelterwood is done correctly, the trees left after the thinnings will provide seed and the forest will be open enough to allow sunlight to reach the forest floor. The trees left will also help provide shade that limits the growth of undesirable or invasive plant species. This method can take 10-20 years to create the next oak stand and may need mechanical or fire disturbance to keep out undesirable species. After sufficient seedling or advanced regeneration is present, the stand needs to be clearcut to successfully regenerate the oak stand.

Crop tree release is discussed in this plan as a type of timber stand improvement. This practice is done most frequently when the trees are pole sized. The goal of the practice is to choose up to 50 trees per acre that are considered to have the best genetics. These trees are typically tallied and

marked with paint, and then the trees that touch the canopy of the crop tree are killed to allow the crop tree to reach maximum growth potential, increase mast production, and improve forest health.

Thinning the understory or weed tree removal is a practice also used in even age management. This practice involves removing trees that are below the main canopy to allow more sunlight to get to the forest floor. Ironwood, bitternut hickory, buckeye, elm, hackberry, and other shade tolerant species warrant this practice when species like oak are wanted in the future.

Prescribed fire is an effective and relatively inexpensive tool that has a long history of use and continues to be studied in managing oak stands. Occasional burning of the leaf layer in the woods will top-kill thin barked species that are less than two inches' diameter such as hackberry, hard maple, buckeye, cherry, elm, bitternut hickory and ironwood. Fire will expose mineral soil and open up the ground to sunlight. These conditions favor the natural regeneration of oak. Depending on the extent of root system development, some oak seedlings will tolerate fire better than others, but as a whole, oaks tolerate fire better than other tree species. The top of an oak seedling often will die back following fire, but the roots will send up new growth soon thereafter. Oak has a superior competitive advantage thanks to their strong root collar and ability to sprout. Most shade tolerant trees, such as elm, bitternut, ironwood, and hackberry do not possess strong resprout capabilities.

Uneven age management develops a stand of trees with all DBH size classes. The stand structure is developed by selectively harvesting mature and defective trees, and removing unwanted small trees that are damaged or defective. Because uneven age stands always have large trees present, this system favors species that will grow in shade such as hackberry, hickory, hard maple and basswood. Sustainable harvest guidelines dictate the ability to selectively harvest mature and defective trees every 20 to 25 years in these stands.

Uneven age management areas will provide continuous tracts of woodland with infrequent disturbance. Large tracts of uneven age management will provide necessary habitat for Neotropical migratory bird species such as cerulean, hooded, Canada, and Kentucky warblers. Selective harvesting will create small openings in the canopy, which will increase ground cover, and enhance stand structure. Den trees will be left to provide cavities for wildlife such as woodpeckers, bats, and squirrels. Large oaks that are healthy will be left to provide acorns for many wildlife species. Timber stand improvement and selective harvesting will create woody debris on the forest floor for reptiles and amphibians.

Early successional management provides high density tree and shrub thickets with highly diverse forbs, sedges, and grasses. Many bird species such as turkey, bobwhite quail, American woodcock, blue-winged warbler, black-billed cuckoo, yellow-billed cuckoo, and eastern towhee are dependent on the early successional stages of woody growth. The high stem density of both trees and shrubs provides suitable nesting habitat and protection from predators. The majority of early succession management prescribed in this plan is on the woodland edges during timber stand improvements. This work will "feather" the edges and make a gradual transition from the field edges to the larger trees. Feathering and softening the edges may lessen nest parasitism of interior forest bird species by brown-headed cowbirds. The early succession management areas will be managed on a 10-20-year rotation. In other words, every 10-20 years the stands will be cut to create areas with high stem density. Shelterwood and clearcut harvesting will also increase the early successional acreage over time.

Viewshed management areas are typically areas with poor access, steep fragile slopes and areas along streams that are best left to naturally progress through succession. Viewsheds may also be used to protect areas for endangered species or be used to protect certain public use facilities. Management can take place in these areas where desirable, but the major objective is to have minimal disturbance. Certain Neotropical migrants will benefit from the areas designated as viewshed.

Sustainable Forestry Guidelines for Sedan Bottoms WMA

The following guidelines may vary depending on several factors including stand location, access, and nearby management needs. Insect/disease or forest health issues may also affect the sustainable harvesting guidelines.

Sustainable timber harvesting guidelines for upland forest should be implemented on 10.7 acres annually or 53.5 acres every five years. This assumes 1,182 acres of even age management and 110-year rotation age for upland hardwoods (oak-hickory).

Sustainable timber harvest guidelines for bottomland forest should be implemented on 10.5 acres annually or 52.5 acres every five years. This assumes 735 acres of even age management and 70-year rotation age for bottomland forest.

Approximately 971 acres of forest, with sawtimber size trees, have the potential to be harvested and regenerated today. However, based on the allowable cut, it will require approximately 44 years to complete these acres alone. Many trees will continue to become overmature before they can be harvested. Additionally, without adequate regeneration, succession will continue to slowly change these stands to shade-tolerant, less desirable hardwood species (i.e. hackberry, elm, hickory, ironwood). Furthermore, today's small sawtimber size trees will grow to become sawtimber size, increasing this acreage.

Income from Timber Harvests

Income generated from timber harvesting operations must be reinvested into the area for reforestation and timber stand improvement, and other silvicultural practices to promote oak regeneration, and otherwise manage forests for habitat. Without this reinvestment, there is little chance that the WMA annual budget will allow the recommendations in this plan to be implemented. Harvesting is a significant portion of this plan to regenerate stands of trees and increase the acreage of early successional communities. The majority of work recommended is directed at thinning young stands so the oak is not shaded by other trees and at removing undesirable species to encourage regeneration of desirable trees.

Work Plan for Sedan Bottoms WMA

The work plan for Sedan Bottoms WMA is designed to aid the District Forester and Wildlife Biologist in the implementation of forest management practices. It is written with the presumption that these professionals have a basic understanding of forest management principles and techniques. Every detail or narrative for individual stands have not been outlined in the plan because the document would become too long to be of practical use. This plan is intended to get work accomplished on the ground. Individual project plans/specifications will be developed for practices as they are implemented.

Summary of Stands

STAND #	OVERSTORY	PRESCRIPTION	Completed	ACRES	TRACT
1	Oak-Hickory	crop tree release	1995	32.9	Ketchum
2	Bottomland Hardwoods, First Bench	harvest		5.8	Ketchum
3	Oak-Hickory	crop tree release		29.4	Ketchum
3	Oak-Hickory	prescribed fire		18.4	Ketchum
4	Oak-Hickory	weed tree removal		3.7	Ketchum
5	Oak-Hickory	harvest		12.6	Ketchum
6	Oak-Hickory	crop tree release	2013	9.7	Ketchum
7	Oak-Hickory	prescribed fire		16.0	Ketchum
8	Oak-Hickory	prescribed fire		5.0	Ketchum
9	Oak-Hickory	crop tree release	2013	2.4	Ketchum
10	Conifers	harvest		3.5	Ketchum
11	Oak-Hickory	no action		1.5	Ketchum
12	Exotics	crop tree release		2.5	Ketchum
13	Oak-Hickory	weed tree removal	2013	0.8	Ketchum
14	Bottomland Hardwoods, Second Bench	weed tree removal		5.0	Ketchum
15	Oak-Hickory	harvest		7.2	Ketchum
16	Oak-Hickory	harvest	2013	4.2	Ketchum
17	Bottomland Hardwoods, Second Bench	prescribed fire		3.2	Kujo NW
18	Bottomland Hardwoods, Second Bench	crop tree release	2021	20.8	Kujo NW
19	Bottomland Hardwoods, Second Bench	crop tree release	2021	18.6	Refuge Bottomland
20	Bottomland Hardwoods, Second Bench	no action		8.2	Kujo West
21	Bottomland Hardwoods, Second Bench	crop tree release	2021	10.9	Refuge Bottomland
22	Bottomland Hardwoods, Second Bench	crop tree release		5.2	Big Bottom
23	Bottomland Hardwoods, Second Bench	no action		17.1	North Crawdad
24	Bottomland Hardwoods, Second Bench	crop tree release		20.2	Knife
25	Plantation	crop tree release		4.0	Refuge Bottomland
26	Bottomland Hardwoods, Second Bench	no action		4.4	Refuge Bottomland

27	Bottomland Hardwoods, Second Bench	crop tree release		2.5	Kujo West
28	Bottomland Hardwoods, Second Bench	no action		1.8	Kujo West
29	Bottomland Hardwoods, Second Bench	no action		3.7	Big Bottom
30	Bottomland Hardwoods, Second Bench	crop tree release		4.4	Miller
31	Bottomland Hardwoods, Second Bench	no action		19.6	Knife
32	Plantation	no action		11.4	Fosters
33	Oak-Hickory	crop tree release		3.1	Gesickes
34	Oak-Hickory	crop tree release		35.6	Gesickes
35	Oak-Hickory	crop tree release		43.7	Gesickes
36	Oak-Hickory	crop tree release		8.2	Gesickes
37	Oak-Hickory	crop tree release		53.0	Gesickes
38	Oak-Hickory	weed tree removal		11.3	Gesickes
39	Oak-Hickory	crop tree release		6.1	Gesickes
40	Oak-Hickory	crop tree release		16.7	Gesickes
41	Oak-Hickory	prescribed fire		2.4	Silver Gate
42	Oak-Hickory	crop tree release		136.3	Silver Gate
43	Oak-Hickory	crop tree release		39.7	Refuge Timber
44	Oak-Hickory	prescribed fire	2021	4.8	Refuge Timber
45	Oak-Hickory	prescribed fire	2021	9.2	Refuge Timber
46	Oak-Hickory	basal area thinning		27.4	Refuge Timber
47	Oak-Hickory	crop tree release		14.7	Refuge Timber
48	Oak-Hickory	crop tree release		15.4	Refuge Timber
49	Bottomland Hardwoods, Second Bench	crop tree release		14.7	Silver Gate
50	Bottomland Hardwoods, Second Bench	harvest		3.6	Silver Gate
51	Oak-Hickory	harvest		1.8	Aramay Middle
52	Oak-Hickory	harvest		40.8	Aramay Middle
53	Eastern Red Cedar	crop tree release		2.9	Aramay
54	Eastern Red Cedar	early successional mgmt.		2.1	Aramay
55	Eastern Red Cedar	early successional mgmt.		1.1	Aramay
56	Oak-Hickory	early successional mgmt.		1.6	Aramay Middle
57	Oak-Hickory	crop tree release		13.9	Aramay Middle

58	Oak-Hickory	crop tree release		7.5	Aramay
59	Oak-Hickory	prescribed fire	2019	111.7	Aramay NW
60	Oak-Hickory	weed tree removal		3.1	Aramay NW
61	Oak-Hickory	prescribed fire		17.8	Aramay NW
62	Eastern Red Cedar	weed tree removal		10.7	Aramay NW
63	Oak-Hickory	early successional mgmt.		3.0	Aramay NW
64	Oak-Hickory	prescribed fire		37.0	Aramay Middle
65	Oak-Hickory	crop tree release		3.8	Aramay Middle
66	Oak-Hickory	crop tree release		4.2	Aramay Middle
67	Central Hardwoods	crop tree release		25.8	Aramay Middle
68	Oak-Hickory	crop tree release		5.9	Aramay Middle
69	Oak-Hickory	crop tree release		4.5	Aramay East
70	Oak-Hickory	crop tree release		8.6	Aramay East
71	Oak-Hickory	early successional mgmt..	2019	12.7	Gesickes
72	Bottomland Hardwoods, First Bench	crop tree release		67.4	Gesickes
73	Central Hardwoods	harvest		20.9	Gesickes
74	Oak-Hickory	harvest		7.0	Gesickes
75	Oak-Hickory	basal area thinning		8.2	Sand Hill
76	Bottomland Hardwoods, Second Bench	harvest		13.4	Sand Hill
77	Bottomland Hardwoods, Second Bench	no action		6.7	Sand Hill
78	Oak-Hickory	crop tree release		3.2	Foster
79	Oak-Hickory	crop tree release		9.0	Foster
80	Oak-Hickory	prescribed fire		3.1	Perkins
81	Central Hardwoods	crop tree release		45.6	Perkins
82	Oak-Hickory	early successional mgmt.		12.9	Foster
84	Oak-Hickory	prescribed fire		11.5	Foster
85	Oak-Hickory	crop tree release		6.1	McCoy
86	Bottomland Hardwoods, Second Bench	harvest		15.1	Kujo West
87	Bottomland Hardwoods, First Bench	crop tree release		13.9	Kujo West
88	Bottomland Hardwoods, First Bench	harvest		9.5	Refuge Bottomland
89	Bottomland Hardwoods, First Bench	harvest		24.7	Refuge Bottomland

90	Bottomland Hardwoods, Second Bench	harvest		4.5	Robbie's North
91	Oak-Hickory	crop tree release		40.8	Robbie's North
92	Oak-Hickory	crop tree release		7.2	Robbie's North
93	Oak-Hickory	early successional mgmt.		4.0	Robbie's North
94	Bottomland Hardwoods, Second Bench	harvest		22.7	Robbie's North
95	Bottomland Hardwoods, Second Bench	crop tree release		15.6	Robbie's North
96	Bottomland Hardwoods, First Bench	harvest		20.7	Buckshot
97	Bottomland Hardwoods, First Bench	harvest		35.5	Browns
98	Bottomland Hardwoods, First Bench	harvest		92.0	Big Bottom
99	Bottomland Hardwoods, First Bench	harvest		29.9	Currin
100	Bottomland Hardwoods, First Bench	harvest		12.2	Currin
101	Bottomland Hardwoods, First Bench	harvest		69.8	Ketchum
102	Oak-Hickory	crop tree release		10.6	McCoy
103	Oak-Hickory	site prep for natural regen		3.4	McCoy
104	Bottomland Hardwoods, Second Bench	crop tree release		19.9	McCoy
105	Oak-Hickory	crop tree release		1.5	McCoy
106	Oak-Hickory	prescribed fire		2.5	McCoy
107	Bottomland Hardwoods, First Bench	harvest		29.1	Knife
108	Oak-Hickory	prescribed fire	2019	52.0	Aramay
109	Oak-Hickory	prescribed fire		3.8	Foster
110	Bottomland Hardwoods, First Bench	harvest		18.4	Ketchum
111	Bottomland Hardwoods, First Bench	harvest		20.2	Fosters
112	Bottomland Hardwoods, First Bench	harvest		9.5	Fosters
113	Plantation	no action		7.5	Fosters
114	Plantation	no action		1.8	Fosters
115	Plantation	no action		4.6	Fosters

116	Plantation	no action		1.3	Fosters Bottom
117	Plantation	no action		5.4	Fosters Bottom
118	Plantation	no action		1.6	Fosters Bottom
119	Bottomland Hardwoods, First Bench	crop tree release		14.5	Fosters
120	Bottomland Hardwoods, First Bench	crop tree release		5.9	Fosters
121	Bottomland Hardwoods, First Bench	crop tree release		3.5	Fosters
122	Bottomland Hardwoods, Second Bench	no action		3.2	
123	Bottomland Hardwoods, Second Bench	crop tree release		22.0	
124	Bottomland Hardwoods, Second Bench	no action		3.9	
125	Bottomland Hardwoods, Second Bench	crop tree release		21.1	

Iowa Natural Areas Inventory Species found on Sedan Bottoms WMA
King Rail – 2008 Tom Johnson

Barn Owl -2007-Ehresman

Pale Green Orchid – 2004 – Tom Madsen

Southern Bog Lemming – 2005 - Christiansen

Western Worm Snake- - 2005- Christiansen

Northern Diamondback Water snake -2011-MSIM

Winged Monkey flower – 2011 – Pearson

Henslow's Sparrow – 2012 – Ehresman

Red-Shouldered Hawk – 2012- Ehresman

Twayblade Orchid – 2023 – Van Waus/Utt

List of Endangered, Threatened & Special Concern Species in Appanoose County
(Updated 12/1/22).

County	Common Name	Scientific Name	Class
Appanoose	Bald eagle	*Haliaeetus leucocephalus*	Birds
Appanoose	Red-shouldered hawk	*Buteo lineatus*	Birds
Appanoose	Broad-winged hawk	*Buteo platypterus*	Birds

Appanoose	Northern bobwhite	*Colinus virginianus*	Birds
Appanoose	American woodcock	*Scolopax minor*	Birds
Appanoose	Black-billed cuckoo	*Coccyzus erythropthalmus*	Birds
Appanoose	Yellow-billed cuckoo	*Coccyzus americanus*	Birds
Appanoose	Upland sandpiper	*Bartramia longicauda*	Birds
Appanoose	Whip-poor-will	*Caprimulgus vociferus*	Birds
Appanoose	Red-headed woodpecker	*Melanerpes erythrocephalus*	Birds
Appanoose	Acadian flycatcher	*Empidonax virescens*	Birds
Appanoose	Common nighthawk	*Chordeiles minor*	Birds
Appanoose	Northern Flicker	*Colaptes auratus*	Birds
Appanoose	Eastern wood peewee	*Contopus virens*	Birds
Appanoose	Brown creeper	*Certhia americana*	Birds
Appanoose	Veery	*Catharus fuscescens*	Birds
Appanoose	Wood thrush	*Hylocichla mustelina*	Birds
Appanoose	Eastern kingbird	*Tyrannus tyrannus*	Birds
Appanoose	American white pelican	*Pelecasnus erythrorhynchos*	Birds
Appanoose	Purple martin	*Progne subis*	Birds
Appanoose	Sedge wren	*Cistothorus platensis*	Birds
Appanoose	Common yellowthroat	*Geothlypis formosus*	Birds
Appanoose	Grasshopper sparrow	*Ammodramus savannarum*	Birds
Appanoose	Henslow’s sparrow	*Ammodramus henslowii*	Birds
Appanoose	Dickcissel	*Spiza Americana*	Birds
Appanoose	Bobolink	*Dolichonyx oryzivorus*	Birds
Appanoose	Eastern meadowlark	*Sturnella magna*	Birds
Appanoose	Baltimore oriole	*Icterus galbula*	Birds
Appanoose	Eastern towhee	*Pipilo erythrophthalmus*	Birds
Appanoose	Golden-winged warbler	*Vermivora chrysoptera*	Birds
Appanoose	Canada warbler	*Wilsonia canadensis*	Birds
Appanoose	American tree sparrow	*Spizella arborea*	Birds
Appanoose	Olive-sided flycatcher	*Contopus cooperi*	Birds
Appanoose	Harris’s sparrow	*Zonotrichia querula*	Birds
Appanoose	Rusty blackbird	*Euphagus carolinus*	Birds
Appanoose	Northern myotis	*Myotis septentrionalis*	Mammals
Appanoose	Indiana bat	*Myotis sodalis*	Mammals
Appanoose	Silver haired bat	*Lasionycteris noctivagans*	Mammals
Appanoose	Ermine	*Mustela ermine*	Mammals
Appanoose	Smallmouth salamander	*Ambystoma texanum*	Amphibians

Appanoose	Cope's gray treefrog	*Hyla chrysoscelis*	Amphibians
Appanoose	Eastern gray treefrog	*Hyla versicolor*	Amphibians
Appanoose	Slender glass lizard	*Ophisaurus attenuatus*	Reptiles
Appanoose	Northern leopard frog	*Lithobates pipiens*	Amphibians
Appanoose	Snapping turtle	*Chelydra serpentine*	Reptiles
Appanoose	Smooth earth snake	*Virginia valeriae*	Reptiles
Appanoose	Prairie ringneck snake	*Diadophis punctatus*	Reptiles
Appanoose	Western hognose snake	*Heterodon nasicus*	Reptiles
Appanoose	Prairie kingsnake	*Lampropeltis calligaster*	Reptiles
Appanoose	Eastern hognose snake	*Heterodon platirhinos*	Reptiles
Appanoose	Northern redbelly snake	*Storeria occipitomaculata*	Reptiles
Appanoose	Western ribbon snake	*Thamnophis proximus*	Reptiles
Appanoose	Plains garter snake	*Thamnophis radix*	Reptiles
Appanoose	Western Diamondback watersnake	*Nerodia rhombifer*	Reptiles
Appanoose	Spotted spreadwing	*Lestes congener*	Insects
Appanoose	Amber-winged spreadwing	*Lestes eurinus*	Insects
Appanoose	Sedge sprite	*Nehalennia Irene*	Insects
Appanoose	Canada darter	*Aeshna Canadensis*	Insects
Appanoose	Variable darter	*Aeshna interrupta*	Insects
Appanoose	Spicebrush swallowtail	*Papilio Troilus*	Insects
Appanoose	Henry's Elfin	*Callophrys henrici*	Insects
Appanoose	Gorgone checkerspot	*Chlosyne gorgone*	Insects
Appanoose	Monarch	*Danaus plexippus*	Insects
Appanoose	Juvenal's duskywing	*Erynnis juvenalis*	Insects
Appanoose	Northern broken-dash	*Wallengrenia egeremet*	Insects
Appanoose	Little glassywing	*Pomperius verna*	Insects

Guidelines for Protecting Indiana Bat Summer Habitat

Indiana bats have been documented at Sedan Bottoms WMA. These guidelines were prepared to provide information about the Indiana bat and its summer habitat requirements in Iowa and to prevent inadvertent harm to the species through various human activities. This update of the guidelines is in response to changes in the US Fish and Wildlife Service requirements for protecting this endangered species. The changes include:

- No cut dates changed to April 1 through September 30
- Updated US Fish and Wildlife Service guidelines for mist net surveys

The Indiana bat is a federal (50CFR Part 17) and state (Code of Iowa, Chapter 481B) endangered species that occurs in southern Iowa from April through September.

Female Indiana bats *(Myotis sodalis)* have their young beneath loose or peeling tree bark. Most nursery colonies have been found on the trunk or large branches beneath the bark of standing dead trees. The nursery colonies are located along streams and rivers or in upland forest areas.

Trees that retain sheets or plates of bark that provide space beneath the bark when dead, such as red oak, post oak, and cottonwood, are potential roost trees. Live trees such as shagbark and shellbark hickory are also occasionally used as roosts.

Indiana bats have also been captured on the edge of urban areas. It is likely that the bats would use the edge of urban areas only if there is suitable habitat such as a greenbelt or a large park with a natural forest component. This would exclude city parks that are maintained as mowed areas.

In Iowa, records for the Indiana bat have occurred in areas of 10% or greater forest cover and near permanent water. Trees with slabs or plates of loose bark are considered suitable as summer roosts.

Suitable summer habitat in Iowa is considered to have the following within a one-half or one mile radius of a location:

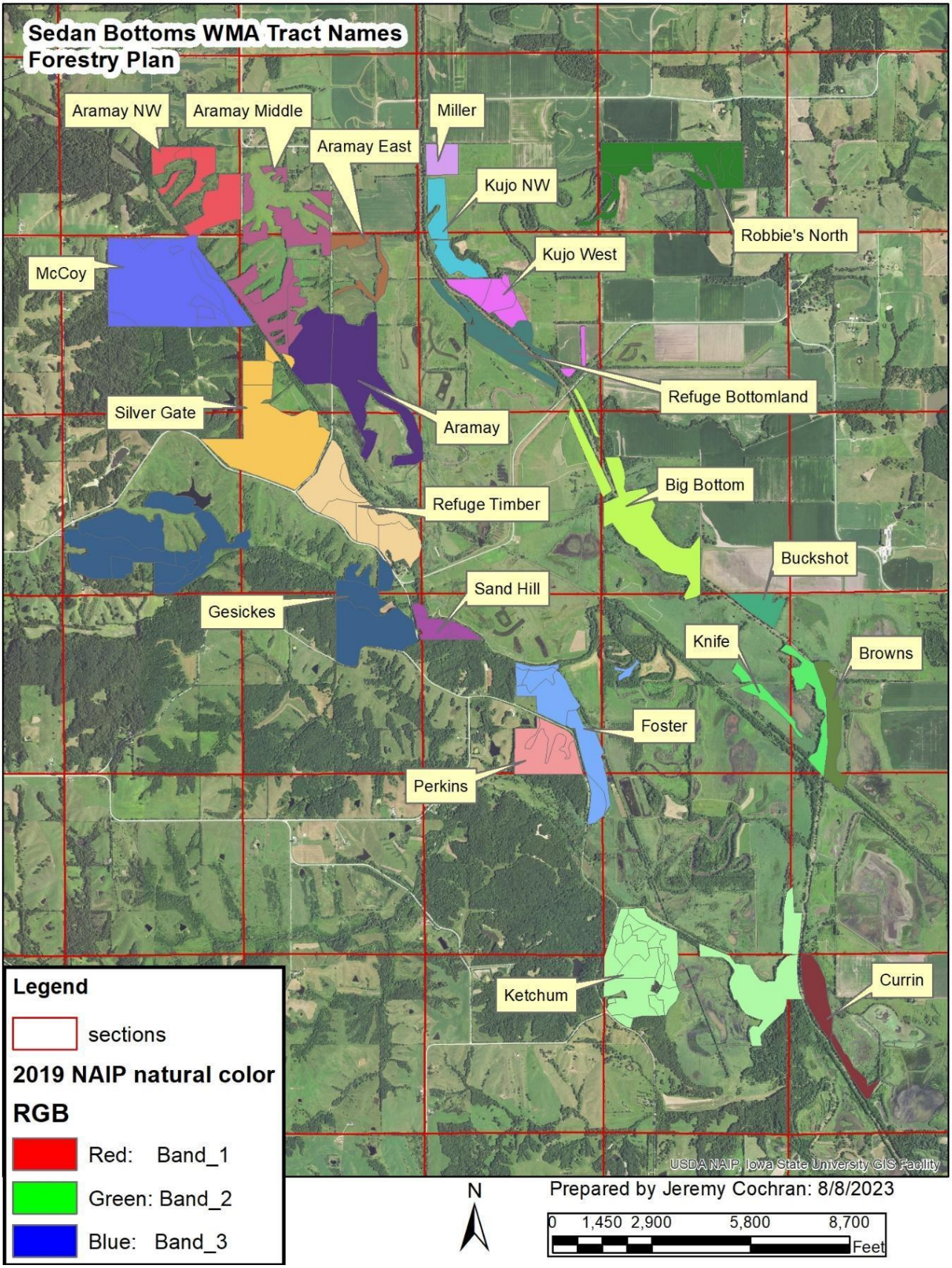
- Forest cover of 10% or greater within one-half mile.
- Permanent water within one-half mile.
- The potential roost trees ranked as moderate or high for peeling or loose bark within one mile.

Do not cut down potential roost trees between April 1 and September 30. Such trees can be left standing live or dead, during that time period.

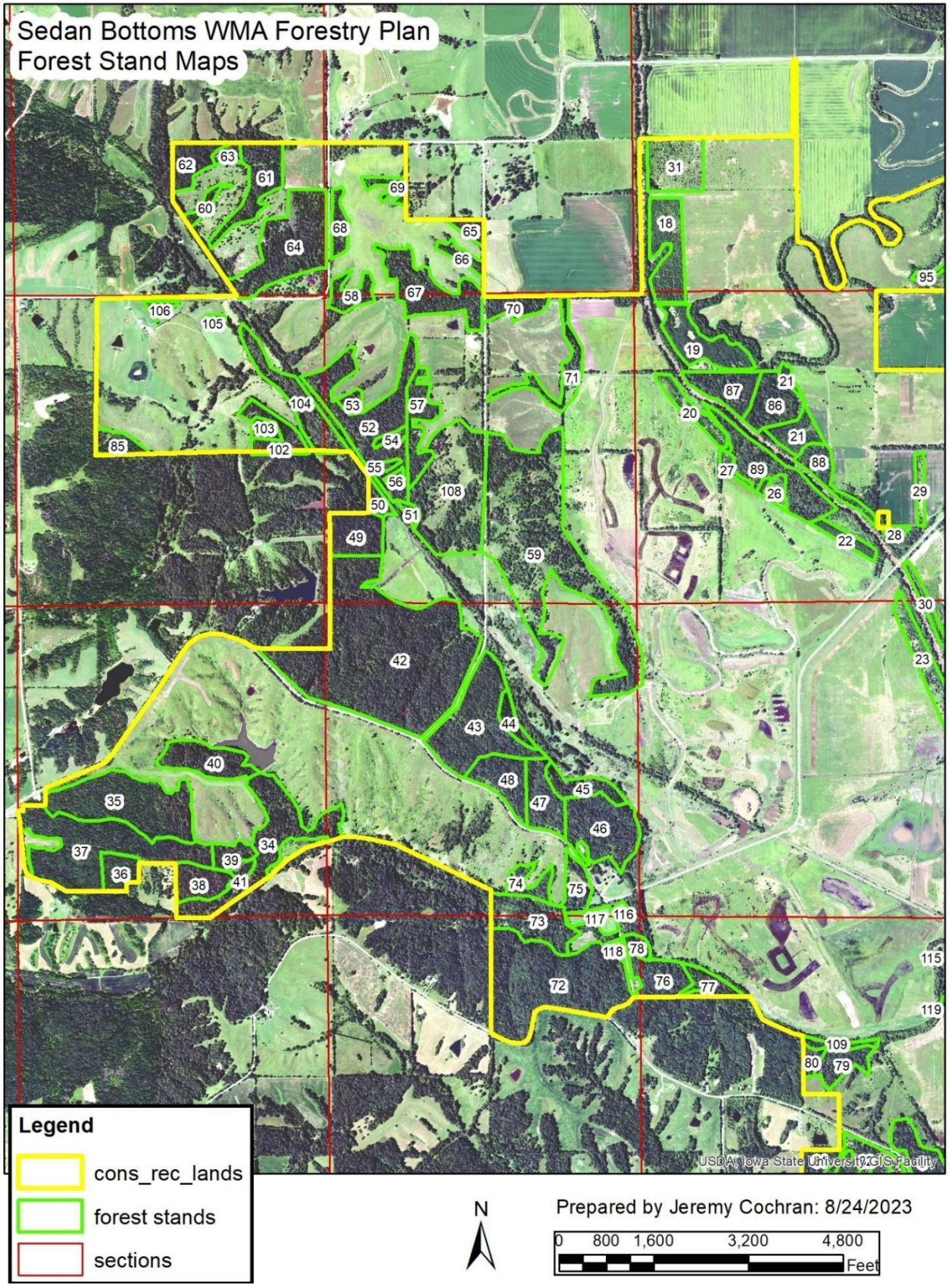
Special Note on Northern Long-eared Bat

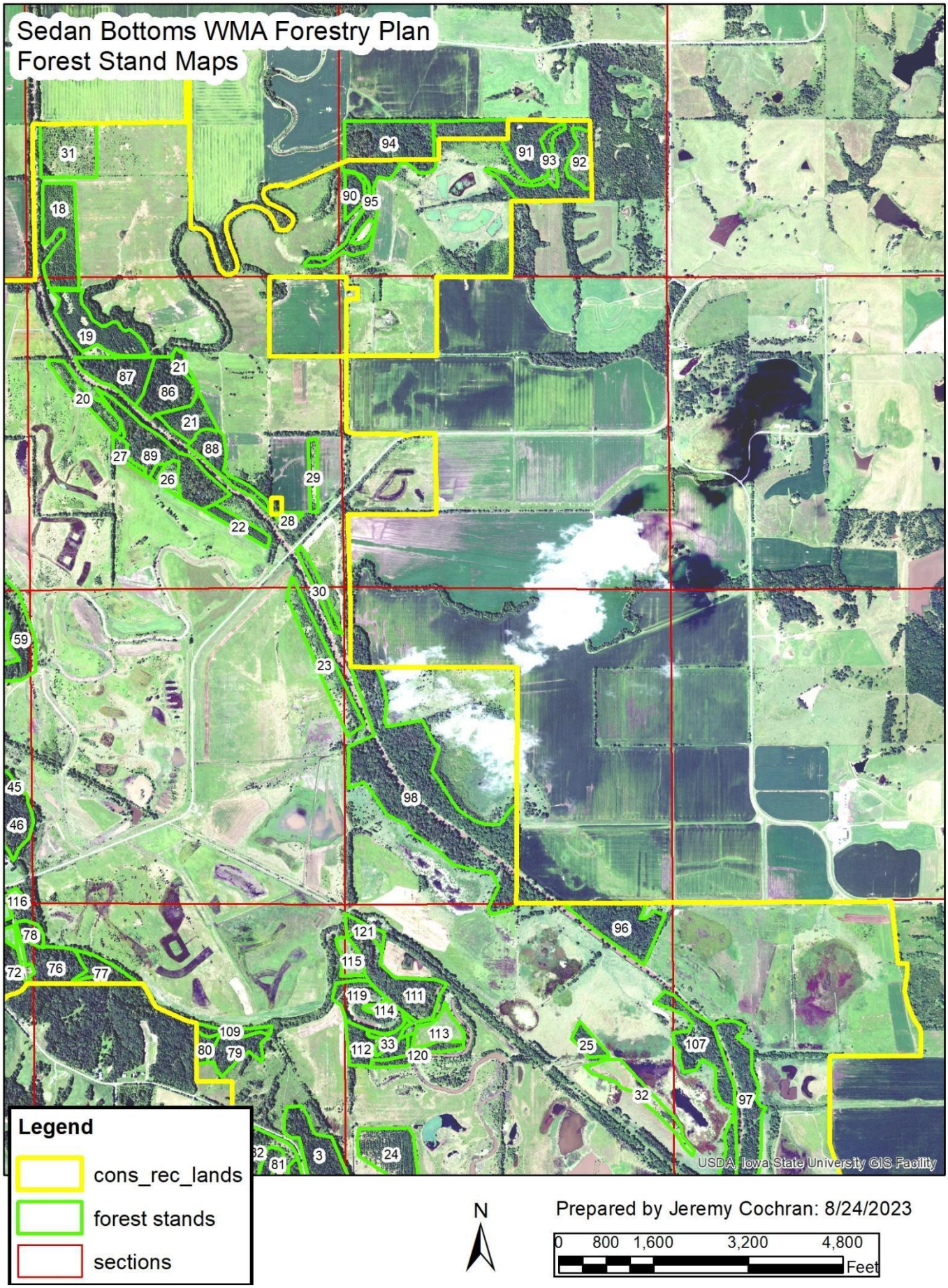
The Northern Long-eared Bat (NLEB) is a federally Threatened Species that can occur in any county of Iowa. To protect summer habitat for NLEB, tree removal should not occur within 0.25 miles of a known hibernaculum, and no trees within a 150-foot radius of a known, occupied maternity roost tree may be cut nor destroyed during the pup season (June 1 through July 31). Please contact the U.S. Fish and Wildlife Service (USFWS) for maps of known hibernacula and the most up-to-date information pertaining to the NLEB. Visit the USFWS Midwest Region Endangered Species webpage at: https://www.fws.gov/midwest/endangered/index.html

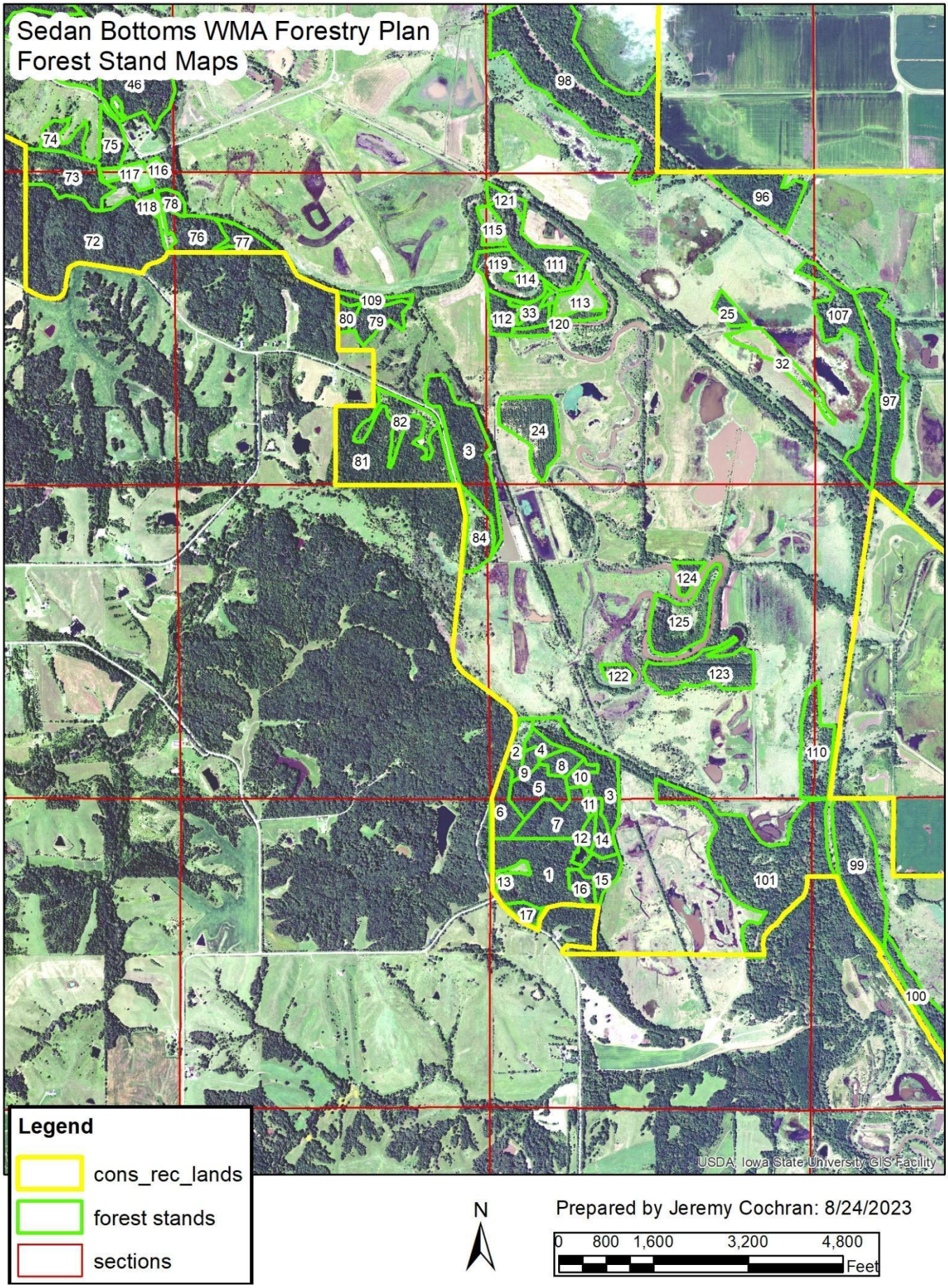
Sedan Bottoms Tract Map

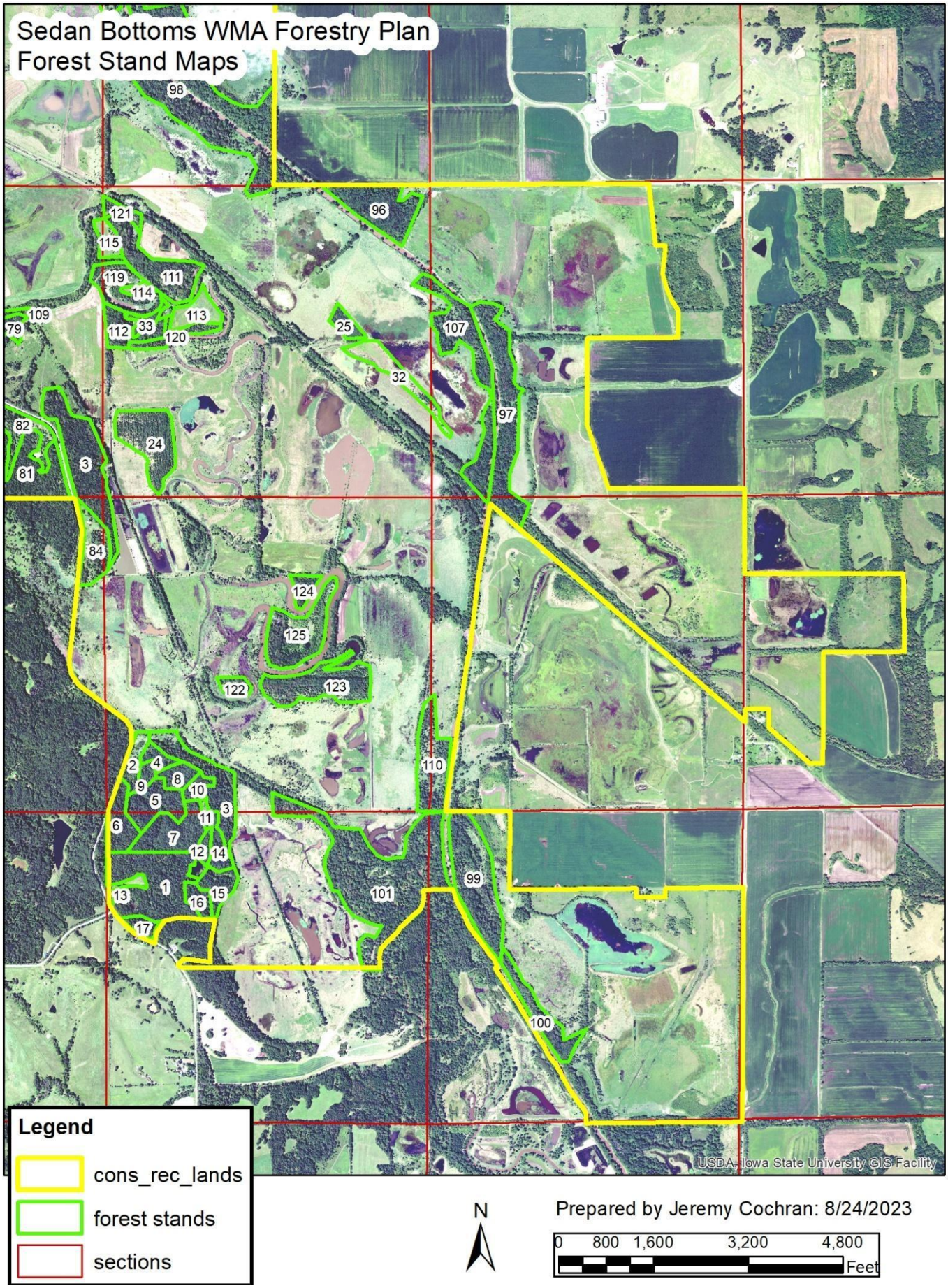


Sedan Bottoms Forest Stand Maps




Sedan Bottoms WMA Forestry Plan
Forest Stand Maps
Legend
cons_rec_lands
forest stands
sections
N
Prepared by Jeremy Cochran: 8/24/2023
0 800 1,600 3,200 4,800
Feet
USDA, Iowa State University GIS Facility


Sedan Bottoms WMA Forestry Plan
Forest Stand Maps
46
74
75
73
117
116
118
78
72
76
77
98
121
115
119
111
114
113
112
33
120
109
80
79
82
81
3
24
84
96
25
107
32
97
124
125
122
123
110
2
4
8
9
10
5
11
3
6
7
12
14
13
1
16
15
17
101
99
100
USDA, Iowa State University GIS Facility
Legend
cons_rec_lands
forest stands
sections
N
Prepared by Jeremy Cochran: 8/24/2023
0 800 1,600 3,200 4,800
Feet


Sedan Bottoms WMA Forestry Plan
Forest Stand Maps
98
121
96
115
119
111
114
109
113
79
112
33
120
25
107
32
97
82
24
3
81
84
124
125
122
123
110
2
4
9
8
10
5
3
11
6
7
12
14
1
13
16
15
17
101
99
100
USDA, Iowa State University GIS Facility
Legend
cons_rec_lands
forest stands
sections
N
Prepared by Jeremy Cochran: 8/24/2023
0 800 1,600 3,200 4,800
Feet