



# Interim Forest Management Plan

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## Property Identifiers

Property Name and Designation: **Buffalo River Fishery Area (REM – Buffalo River)**

County: **Jackson, Trempealeau**

Property Acreage: **1164 acres Jackson Cty, 83 acres Trempealeau Cty**

Forestry Property Code(s): **2702, 6211**

Master Plan Date: **Concept Element Document – April, 1983.**

Property Manager: **Dan Hatleli**

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## Part 1: Property Assessment (1-2 pages maximum)

The following items should be considered during the property assessment. Not all sections may be relevant for all properties.

### General Property Description

- Landscape and regional context
- History of land use and past management

## LANDSCAPE AND REGIONAL CONTEXT

**Hydrology:** The Buffalo River Fishery Area lies within the Western Coulee and Ridges Ecological Landscape. Dendritic drainage patterns are well-developed in this mostly unglaciated Ecological Landscape. Natural lakes are restricted to the floodplains of large rivers. Large warm water rivers are especially important here, and include the Wisconsin, Chippewa, and Black. The Mississippi River forms the Ecological Landscapes' western boundary. Numerous spring-fed (coldwater) headwater streams occur here. Cool water streams are also common.

**Current Land Cover:** The Western Coulee and Ridges Ecological Landscape is a mosaic of forest, cropland and grassland with wetlands mostly in the river valleys. Primary forest cover is oak and hickory. Maple and basswood forests, dominated by sugar maple, basswood and red maple, are common in areas that were not burned frequently. Bottomland hardwoods dominated by silver maple, swamp white oak, river birch, ashes, elms and cottonwood are common within the floodplains of the larger rivers. Relict "northern" mesic conifer forests composed of hemlock, white pine and associated hardwoods such as yellow birch are rare but do occur in areas with cool, moist microclimates. Dry rocky bluffs may support xeric stands of native white pine, sometimes mixed with red or even jack pine. Prairies are now restricted to steep south or west facing bluffs, unplowed outwash terraces along the large rivers, and a few other sites. They occupy far less than 1% of the current landscape. Mesic tallgrass prairies are now virtually nonexistent except as very small remnants along rights-of-way or in cemeteries.

The Buffalo River Fishery Area is a state owned property with the primary objectives of providing fishing, hunting and trapping opportunities, and protecting water quality. The North and South Forks of the Buffalo River originate in northwestern Jackson County and run west into northeastern Trempealeau County. This Fishery Area lies within the Western Coulee and Ridges Ecological Landscape. North and South Forks of the Buffalo River in Jackson County are class 1 trout streams and in Trempealeau County both are Class II trout streams. All forks contain



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Exceptional Resource Waters (ERW) and are considered "Areas of Special Natural Resource Interest" (ASNRI).

The Buffalo River Fishery Area acquisition boundary was approved by the Wisconsin Department of Natural Resources in 1969 with an acreage goal of 720 acres. Establishment of the area was to preserve and protect coldwater habitat and allow a variety of public recreation uses with the knowledge that opportunities for management of fish and wildlife resources were assured under public ownership. In 1974, the acreage goal was increased to 1220 acres.

Several management practices have been completed on the acquired lands. Approximately 1.2 miles of instream habitat in the North Fork were improved using various techniques such as plunge pools, overhead covers, bank stabilization, riffles, and current deflectors. An additional 4500 feet of stream bank was brushed and 8.6 miles fenced to exclude livestock from stream banks. In the South Fork, 2970 feet of stream underwent habitat restoration (techniques similar to North Fork) and 11.5 miles fenced. Forty-one livestock watering areas and/or stream crossings were constructed.

Two large wooden routed fishery area signs were installed on each of the forks as well as two parking areas along the North Fork and three on the South Fork. All of the property boundaries were posted with "Public Fishing and Hunting" signs on fee ownership or "Public Fishing" signs on easements. Signage is checked on an annual basis.

Electrofishing surveys of the fish populations in the North and South Forks were conducted in various years from 1962 to present. Since 2007, three trend sites (surveyed annually) were established in the North Fork and two trend sites in the South Fork.

Beaver activity is common throughout the Fishery Area. Annual removal of beaver dams and trapping are necessary to prevent damage to both the North and South Forks.

Some timber harvesting and remnant prairie management (prescribed fire and shrub clearing) have taken place on the property over the years.

The Buffalo River State Trail is a 36-mile long, abandoned section of Chicago and Northwestern Railroad right-of-way running between the Village of Fairchild in Eau Claire County to the City of Mondovi in Buffalo County. This trail generally parallels the North Branch for approximately 6 miles in Jackson County and 3 miles in Trempealeau County. Contiguous acquisition of the right-of-way was completed in November, 1982. Uses of the trail include hiking, snowmobiling, ATV use, biking, and horseback riding.

## PROPERTY CONTEXT/LANDSCAPE

Contextually, the Buffalo River Fishery Area is situated in an area that is highly dissected and fragmented with agricultural fields and other open areas. Subsequently, opportunities for large block old forest development for area sensitive forest interior birds is limited. However, this more fragmented setting offers great opportunities for "edge" species and early successional game and "Species of Greatest Conservation Need" as identified within the state's Wildlife Action Plan. See below for species/opportunities.

## WILDLIFE ACTION PLAN/SPECIES OF GREATEST CONSERVATION NEED

Although the property is not specifically listed in the Wildlife Action Plan's Implementation document for the Western Coulee and Ridges Ecological Landscape (WCREL), two priority



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natural community types are listed in the document that the property contains; Coldwater stream and Dry-mesic prairie (listed as a Driftless Area Feature of Continental Significance).

Species of Greatest Conservation Need associated with Dry-mesic prairie, Coldwater streams, Springs and Spring runs, early successional forest, pockets of old forest, as well as the shrublands, and wetlands of the property include; Bells Vireo, Blue-winged Warbler, Brown Thrasher, Field Sparrow, Northern Bobwhite quail, American Woodcock, Red-headed Woodpecker, Whip-poor-will, Willow Flycatcher, Pickerel Frog, Four-toed Salamander, Wood Turtle, Bullsnake, North American racer, Big Brown bat, Eastern red bat, Prairie vole, Water shrew, Dusted Skipper, Leonard's Skipper, Ottoe Skipper, Whitney's Underwing moth, Wild Indigo Dusky Wing, Columbine Dusky Wing, Red-tailed Leafhopper, and Prairie Leafhopper.

## CONSERVATION OPPORTUNITY AREA

The property does not fall within a Conservation Opportunity Area as Identified within the 2005 WAP Implementation document.

## NATURAL HERITAGE INVENTORY (NHI)/RARE SPECIES

A search of the Natural Heritage Inventory database indicates there are 2 state special concern species and 1 state threatened species known from the general area.

## HIGHVALUE CONSERVATION FORESTS (HVCF) OR OTHER RESOURCES/NATURAL COMMUNITY TYPES LIMITED IN THE LANDSCAPE

The property contains The Buffalo River Trail Prairies State Natural Area (NO. 358) which contains 4 rare remnant prairie areas.

See: <http://dnr.wi.gov/topic/Lands/naturalareas/index.asp?SNA=358> For maps of the various units of the State natural Area.

## Location

Jackson and Trempealeau County. T24N-R6W, Sections 5, 6. T24N-R7W, Sections 1, 2. T24N-R8W, Sections 15, 16, 17. T24N-R9W, Section 7. T24N-R10W, Section 12. 153 acres.

## Description

Buffalo River Trail Prairies contains four high quality remnants located along the Buffalo River State Recreation Trail. Once an old railroad right-of-way near the meandering Buffalo River, the trail now harbors diverse stretches of prairie that were historically maintained by the unintentional fires sparked by passing railcars. The four prairie remnants stretch between Eleva and Osseo. One is located west of Eleva, two east of Strum and the largest --a five-mile stretch east of Osseo. The prairies contain numerous species with grasses including big and little blue-stem and Indian grass. Showy forbs include stiff goldenrod, prairie coreopsis, spiderwort, and flowering spurge. Buffalo



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River Trail Prairies is owned by the DNR and was designated a State Natural Area in 2002.

## BIOTIC INVENTORY STATUS

NR 44 compliant Rapid Ecological Assessment was completed in 2012:  
[http://intranet.dnr.state.wi.us/int/land/er/nhi/reports/DASStreamsREA\\_int.pdf](http://intranet.dnr.state.wi.us/int/land/er/nhi/reports/DASStreamsREA_int.pdf)

Management considerations identified within the Rapid Ecological Assessment: Maintenance of high-quality native terrestrial and riparian communities will help maintain high water quality in the river and thus benefit the rare invertebrates that live there. The Buffalo River Fishery Area was sampled for aquatic invertebrates at 6 locations in 2011, and one location within this primary site. The section of river within the primary site had excellent water quality. Thirty-four species were collected, including four uncommon species: *Cymbiodyta chamberlaini*, *Hydrobius melaenum*, *Lepidostoma libum*, *Sperchopsis tessellates*.

Restoring and maintaining ecological reference conditions for Dry-mesic Prairie and protecting high-quality aquatic features (sedge meadow, spring runs and seeps, riparian shrubs) are high priorities for this site. For the prairie, this may require a continued prescribed fire management program, along with tree/shrub control using tree harvest and brushing. Surveys for non-native invasive terrestrial and aquatic plants and development of an invasive species management plan represent high-impact conservation actions.

It is recommended that riparian wetlands within adjoining Fishery Area lands be managed in a similar manner to that of the primary site, i.e., promote growth of diverse native vegetation. This will not only provide a buffer area for the high-quality prairie of the primary site, but will also expand and improve habitat for small mammals that utilize open grasslands and wetlands, and will maintain and improve river conditions for diverse aquatic invertebrates.

### Deferral/Consultation

The Rapid Ecological Assessment lead to the designation of the 153 acre Buffalo River Trail Prairies State Natural Area "Consultation" site:

<http://intranet.dnr.state.wi.us/int/land/div/InterimPlanning/dc.asp>

It will be very important that the State Natural Area "Consultation" sites are not used for log landings that may compromise the rare ground layer vegetation without first discussing with the Area Ecologist and property manager(s).

## CULTURAL AND ARCHEOLOGICAL SITES (INCLUDING TRIBAL SITES)

The Fishery Area has both Cultural and Archeological sites located within its boundaries. Contact with the State Historical Society is required prior to any activities near known sites.



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## RECREATIONAL USE

Fishing, hunting, and trapping are the primary recreational uses of the property. Access is provided by numerous public road crossings and two parking areas on the North Fork and three parking areas on the South Fork.

The North Fork contains 10.93 miles of Class I and 4.82 miles of Class II trout water. The South Fork contains 11.2 miles of Class I and 5.43 miles of Class II trout water. Both streams contain brook and brown trout. Brook is the dominant species. Hunting opportunities exist for whitetail deer, wild turkey, grouse, woodcock, squirrels, and black bear. Trapping opportunities exist for beaver and muskrats.

Other recreational uses:

- Hiking
- Snowmobiling Trail
- ATV Trail
- Cross Country Skiing
- Wildlife Viewing
- Bird Watching
- Biking
- Berry Picking
- Canoeing

## INVASIVE SPECIES

Several invasive species including knapweed, common buckthorn and honeysuckle are scattered throughout the area.

## SOILS

Soil composition consists largely of Northfield, Norden and Hixton loams, with Boone sand in Jackson County and the Billett-Sparta Gotham soil series in Trempealeau County. The nature of soil and topography leaves the area moderately flood and erosion prone resulting in exposed sandstone outcroppings. Relief is predominantly 4 – 30%, with 50% as the extreme.

## Current Forest Types, Size Classes, and Successional Stages

### TREMPEALEAU COUNTY

The REM – Buffalo River Property has 73 forested acres (2007-2015 reconnaissance) that are comprised of:

Central Hardwoods: 6 acres (8%) - 100% is 6 years of age with size classes of 0-5".

Oaks: 6 acres (8%) - 100% older than 79 years in the 11-15" and 15+" size classes.

Red Pine: 24 acres (33%) -100% range from 24 to 47 years old and are in the size class of 5-9" and 9-15".

Swamp Hardwoods: 37 acres (51%) - 100% is 75 years of age in the 11-15" size class.

Prairie Grass: 6 acres (60%).

Lowland Brush: 4 acres (40%).

### JACKSON COUNTY



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The Buffalo River Fishery Area property has 683 forested acres (57%) and 481 non-forested acres. The forested acres are primarily oak stands (173 acres), red maple stands (224 acres), and pine stands (254 acres). Non-forested acreage is made up of 352 acres of lowland brush and 94 acres of true grasses, with other smaller cover types mixed in. The forest stand specifics are as follows:

The Buffalo River Fishery Area property has 173 acres of oak stands, making up 23% of its forested acres. This oak varies, as some of it is <10 years old and is seedling and sapling size, and some is 85 years old and is in the 15+” dbh size class.

The property contains pine stands as well, making up 254 acres, or 37% of its wooded acres. This pine is mostly red pine (145 acres), but also has white pine (84 acres) and jack pine (25 acres). The pine on this property is mostly 15-30 years old and in the 5-9” dbh size class.

The property also contains 224 acres of red maple, making up 33% of its forested acres. This red maple varies from <10 year old saplings, to 30 year old trees in the 5-11” dbh size class, to 75 year old trees in the 15+” dbh size class.

In addition, Buffalo River also has a 13 acre stand of white spruce that is 35 years old and in the 5-9” dbh size class.

## Part 2: IFMP Components (1-2 pages maximum)

### Forest Management Objectives:

These properties are managed primarily to restore habitat conditions within the stream corridor, protect water quality, and to provide quality wildlife habitat. Forest management objectives include maintaining existing forest types and developing a diversity of age classes including both young and old forest areas for both game and non-game species dependent on these types. This will largely be accomplished through sustainable silvicultural systems that will increase the diversity and structural complexity of wildlife habitat while at the same time avoiding disturbance to riparian areas along the stream corridor.

**Property Prescriptions** (Identify specific and pertinent prescriptions by area or forest type, including passive management areas, extended rotation, and other information that will help achieve the objectives):

**OAK** - Smaller, even-age harvests, over the next 10 years will be used to diversify the oak age class. Maintain and promote oak through planting, timber stand improvement methods, thinning, coppice, overstory removal, shelterwood, and other techniques described in the DNR Silviculture and Forest Aesthetics Handbook. Promote the growth and retention of large oak through techniques such as thinning and green tree retention of patches of larger trees within harvested stands.. Reserve/legacy trees should be retained as groups or individuals throughout the property within harvested stands to maintain a component of large mast trees and promote both snag trees and course woody debris for wildlife.

**CONIFERS** – Thin red pine plantations and dry site white pine every 8-10 years or when stocking warrants maintaining healthy, vigorous stands. Consider managed old forest or passive management of moist site white pine to develop large diameter trees, snags, and course woody debris for both wildlife and aesthetics. Leave dead and dying trees for wildlife habitat. Protect hydrology of moist sites through appropriate BMP's for water quality. Examine opportunities



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under jack pine, red pine plantations, and white spruce for removal/harvest to release rare native prairie vegetation-especially adjacent to the State Natural Area parcels.

**RED MAPLE/OTHER SPECIES** – Primarily utilize even aged harvests (coppice, overstory removal, shelterwood) to promote young early successional forest. Include reserve/legacy trees and green tree retention to retain a component of older trees within harvested stands.

## ALL STANDS:

- Follow proper BMP's to protect streams on the property.
- Identify invasive species and use proper BMP practices and treatment options to eradicate or minimize impact.
- Identify and protect rare and endangered species and provide habitat for these species.
- Use thoughtful planning with forest management practices to enhance recreation opportunities on the properties.
- Retain reserve/legacy/green tree retention trees as groups or individuals throughout the property within harvested stands

Prescriptions shown for the property below reflect planning through WisFIRS. These prescriptions may not all be completed, depending on if the stand develops slower than expected or if the maximum allowable cut for the Jackson and Trempealeau Other State Lands properties is already exceeded.

### **Buffalo River Fishery Area Property #2702:**

- 2017: Comp. 218 Stands 4,5 – 27 acres of red pine intermediate treatment thinning.  
Comp. 226 Stands 3,4 – 26 acres of red pine intermediate treatment thinning.
- 2018: Comp. 215 Stands 3,5 – 6 acres of red pine thinning and 18 acres of oak regeneration harvest.  
Comp. 212 Stand 2 – 2 acres of Jack pine overstory removal.  
Comp. 214 Stand 2 – 19 acres of red pine thinning.  
Comp. 217 Stand 1 – 2 acres of red pine thinning.
- 2019: Comp. 210 Stand 1 – 19 acres of Oak regeneration harvest.  
Comp. 221 Stands 4,9 – 18 acres of red pine thinning.
- 2020: Comp. 207 Stand 1 – 7 acres of red pine thinning
- 2023: Comp. 204 Stand 1 – 5 acres of red maple regeneration harvest.  
Comp. 205 Stand 2 – 6 acres of red pine thinning  
Comp. 208 Stand 1 – 32 acres of white pine thinning.  
Comp. 209 Stands 1,4,5 – 31 acres of white pine thinning, 14 acres of red maple thinning.
- 2028: Comp. 221 Stand 3 – 21 acres of white pine thinning.



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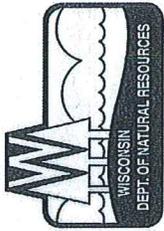
Approvals:

*Paul V. Bartz* For 11/1/16  
Regional Ecologist Armond Bartz Date

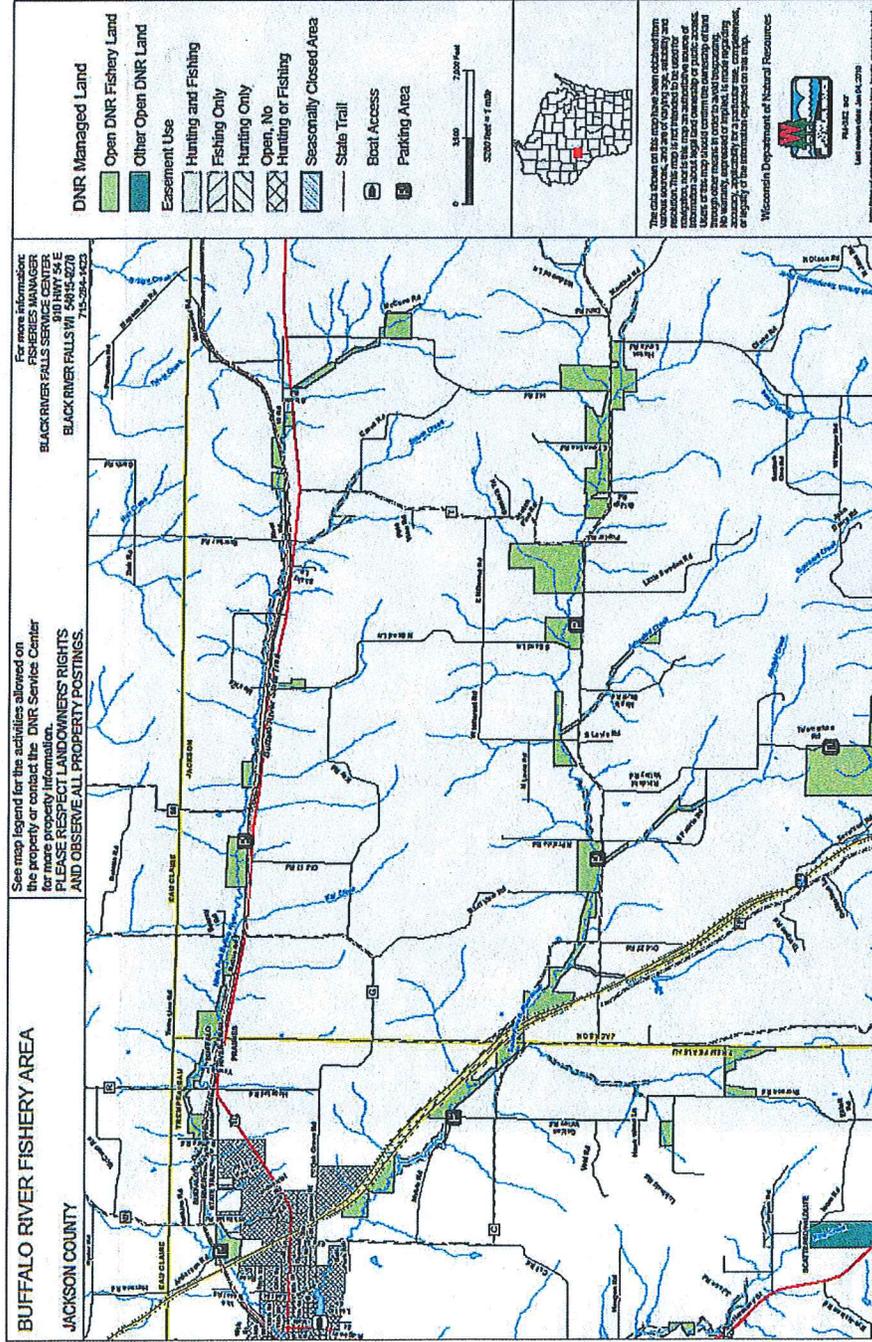
*Cliff Hill* 9/11/16  
Forester Date

*Daniel C. Bartz* 9/13/16  
Property Manager Date

*Eric Zenz* 9/12/16  
Area/Team Supervisor (of property manager) Date



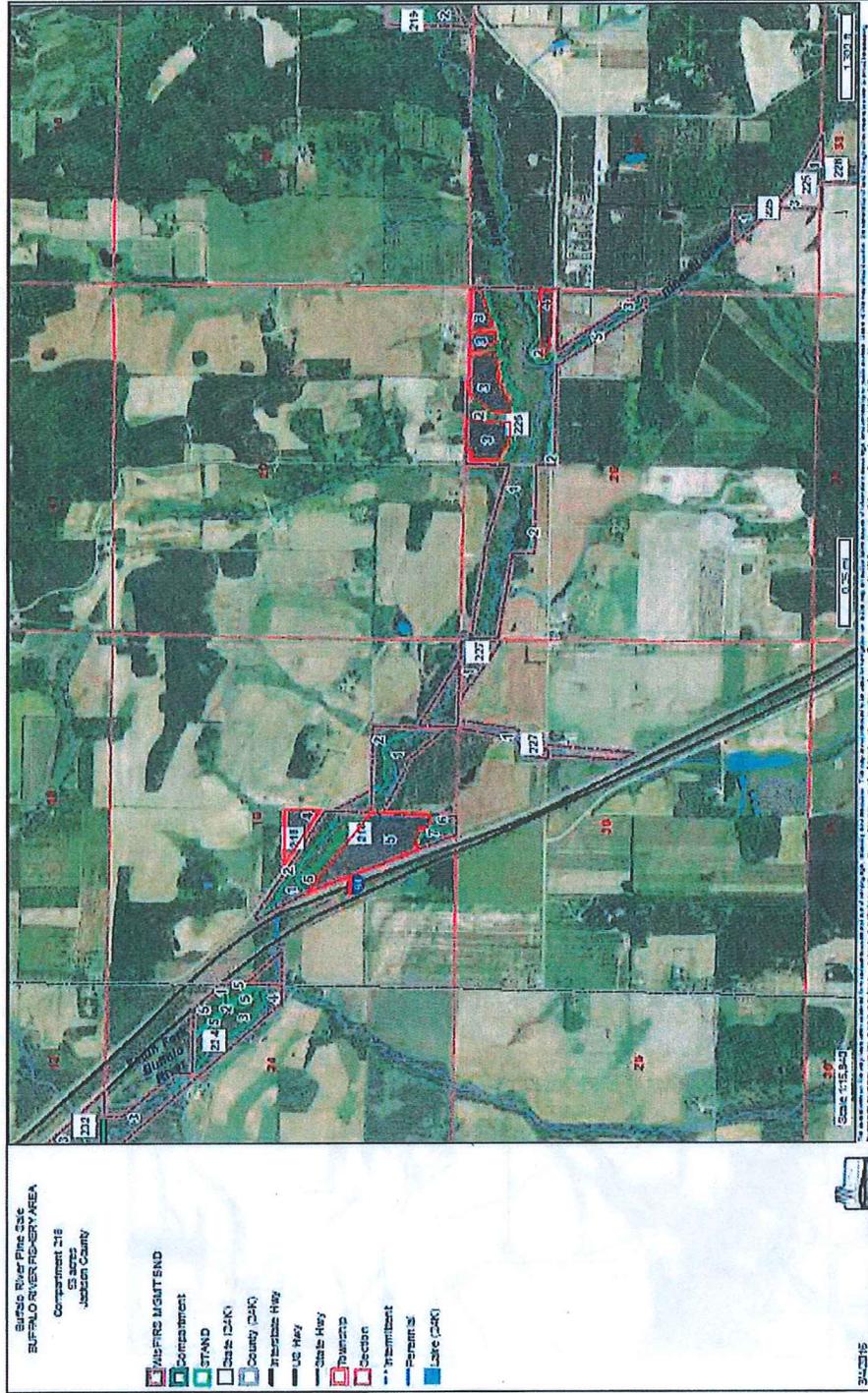
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Buffalo River Fishery Area 2017 Proposed Timber Sale – 53 acres  
Red pine thinning





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Buffalo River Fishery Area 2018 Proposed Timber Sale Map - 43 acres  
 Red pine thinning and oak regeneration harvest





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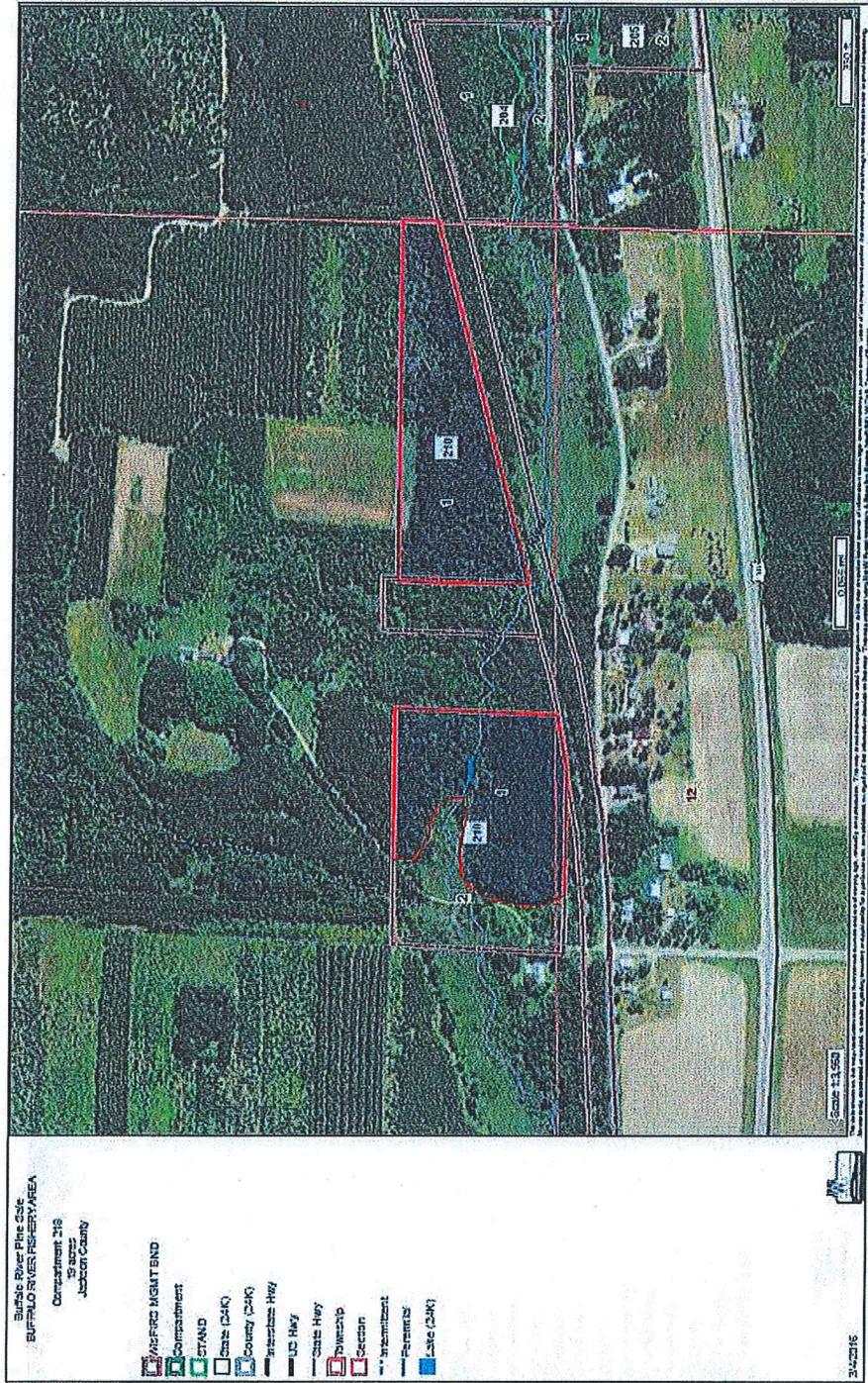
Buffalo River Fishery Area 2018 Proposed Timber Sale Map - 4 acres  
 Red pine thinning and jack pine overstory removal  
 (would be combined with sale on previous page)





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Buffalo River Fishery Area 2019 Proposed Timber Sale Map – 19 acres  
Oak regeneration harvest





# Interim Forest Management Plan

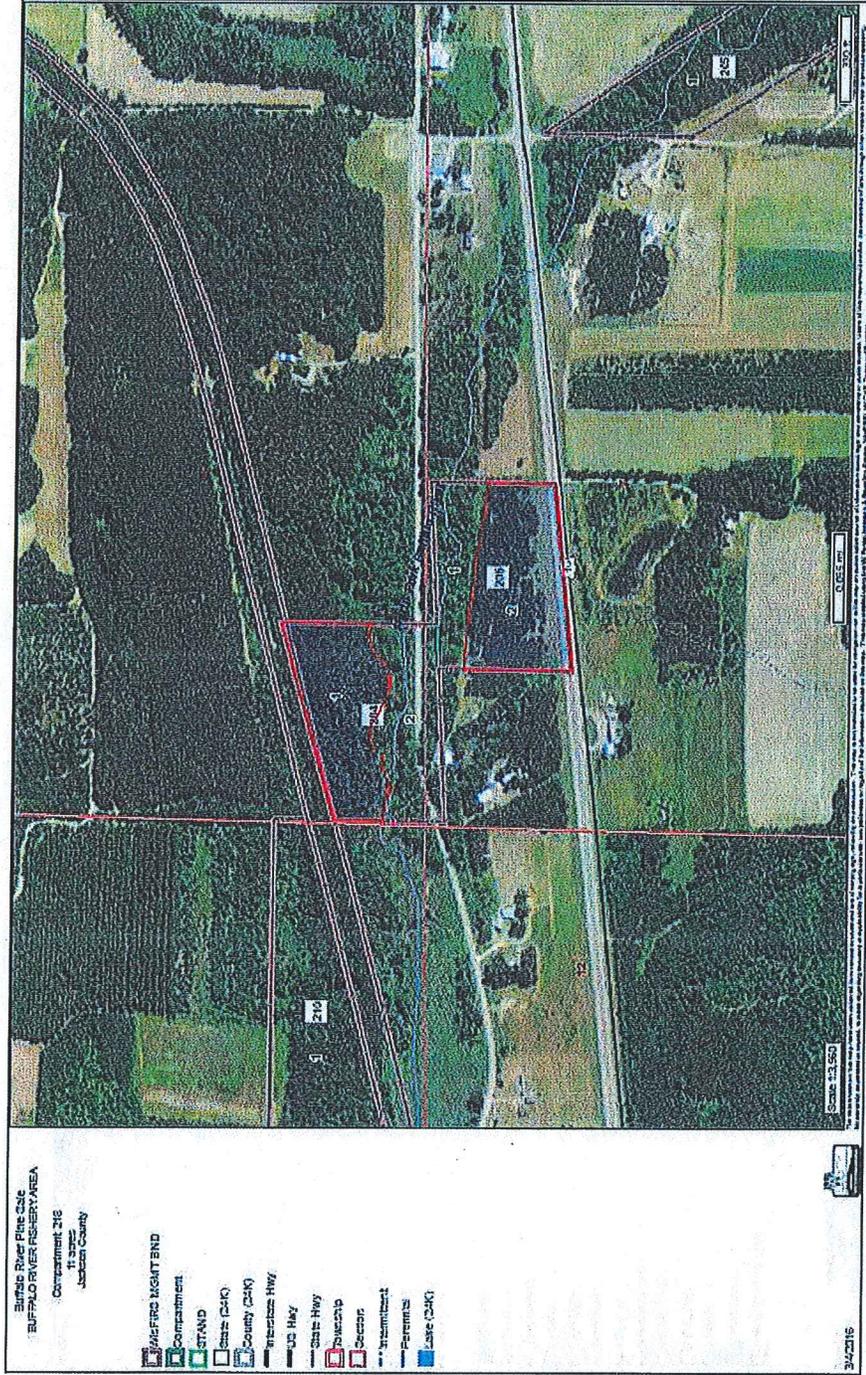
Buffalo River Fishery Area 2019 Proposed Timber Sale Map – 18 acres  
 Red pine thinning





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Buffalo River Fishery Area 2023 Proposed Timber Sale Map - 11 acres  
 Red pine thinning and red maple regeneration harvest





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Buffalo River Fishery Area 2023 Proposed Timber Sale – 77 acres  
 White pine thinning and red maple regeneration harvest

