

COULEE EXPERIMENTAL STATE FOREST

REGIONAL AND PROPERTY ANALYSIS



Wisconsin Department of Natural Resources

Division of Forestry

April 2008

Draft

COULEE EXPERIMENTAL STATE FOREST REGIONAL AND PROPERTY ANALYSIS

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I. INTRODUCTION

The purpose of the Regional and Property Analysis is to provide background information on the Coulee Experimental State Forest (CESF) and surrounding region. These analyses are important for developing informed management alternatives in the master plan process while simultaneously providing a broader context in which to place the Coulee Experimental State Forest. Master planning covers a wide range of issues, forest uses, recreational opportunities and forest management practices that are sustainable and beneficial to natural communities as well as sensitive to local and regional economies. The Regional and Property Analysis identifies opportunities and limitations of the property and what niche the property occupies within a regional setting.

A. Property History and Overview

The Coulee Experimental State Forest has its beginnings in the mid-1950s when a need was identified for long term studies to investigate forest watershed problems in the unglaciated areas of southwestern Wisconsin, southeastern Minnesota, and northeastern Iowa (often called the “Driftless Area”). It had long been recognized that the Driftless Area had many land and resource management challenges due to its generally steep “ridge and coulee” topography. Up to that time, a great deal of research had been done in the Driftless Area by resource agencies focusing strictly on agricultural lands.

In 1956, the Wisconsin Forestry Advisory Committee recommended a research center for the area. The Wisconsin Conservation Commission and the USDA Forest Service (USFS) came to agreement that a suitable tract of forested land would be purchased by the Commission, and the Forest Service would conduct research to investigate forest watershed problems and develop forest and land management practices designed to improve water quality and forest yields.

By 1958, a suitable tract of land had been identified in La Crosse County, and land acquisition began. Although acquisition continued until 1964, a formal dedication of the property was conducted in June of 1960. The property was originally administered by the Black River State Forest manager, but responsibility was transferred in 1970 to the La Crosse Area Forester. Timber volumes at this time were estimated at over two and a half million board feet of timber and almost 6,000 cords of pulpwood.

Also in 1958, the La Crosse field unit of the USDA Forest Service’s Lake States Experiment Station was established. Research was conducted out of that office until its’ closing in 1975. Over 60 studies regarding soil and water erosion, soil freezing, spring flow, groundwater and reforestation were conducted by Director Richard Sartz between 1960 and 1975. The original 15 year research lease between the USFS and the WDNR was renewed in 1972, 1987 and in 2004. The USFS has recently reiterated its’ interest in continued research projects on the CESF.

The CESF is characteristic of southwestern Wisconsin's Driftless Area. The name “Coulee” comes from an old French word meaning ravine. The name accurately describes the area, as the

forest has many of these deep gulches or ravines formed by water erosion. This area of the state is often called “Coulee Country”.

The Coulee Experimental State Forest is located approximately 15 miles east of the city of La Crosse in La Crosse County. The forest consists of approximately 3,000 acres of public land open for hunting, cross-country skiing, hiking, horseback riding and wildlife viewing. No camping or campfires are permitted. Primary game species include deer, ruffed grouse, squirrels, turkeys, and rabbits. The habitat consists primarily of upland hardwood forests and open fields. The forest has two primary entrances that provide access to the property and its 12 miles of recreational trails.



Figure 1: Location of Coulee Experimental State Forest

II. ANALYSIS OF THE REGION AND PROPERTY

A. Regional Context

The area of La Crosse County was first inhabited by Native Americans about 12,000 years ago and the first Euro-Americans did not begin settling the area until the 1850's (La Crosse County Historic Preservation Sites Commission 1995). The lumber industry of the north gave rise to the communities in the La Crosse Valley because it was a prime location for sawmills along the flat Mississippi River route and as a port at the terminus of the Black River bringing logs from the north. This was a short lived boom because the timber lands were soon depleted which directly affected sawmills and secondary lumber industry in the region. Focus was then placed on the agricultural potential of the region and this continues today.

Regional and Property Scale

To assess the ecological, social and economic significance of the Coulee Experimental State Forest, this analysis utilized information from a variety of sources. These complex documents, however, cover different geographical areas, time periods and scale, which then creates challenges for consistently comparing data. For this reason, there is no uniform defined "region" in this report. Rather the "region" shifts depending on the particular focus being described. For example, some of the "regions" include the Upper Great Lakes, the State of Wisconsin, the Western Coulee and Ridges Ecological Landscape, the National Hierarchical Framework of Ecological Units (NHFEU) sections, subsections and land type associations (See the Eco-regions section on page 11 for descriptions), La Crosse County and the surrounding counties or a property based perspective.

Existing Assessment Reports

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) was used to assess the recreational resources. For ecological analysis the Rapid Ecological Assessment for the Coulee Experimental Forest, La Crosse County, WI (WDNR 2007), the Natural Heritage Inventory (WDNR 2006), the Strategy for Wildlife Species of Greatest Conservation Need: the Wisconsin (WDNR 2005), the Ecological Landscapes of Wisconsin (WDNR), Wisconsin's Biodiversity as a Management Issue (WDNR 1995), forest reconnaissance and many other sources listed in the bibliography were utilized.

1. Population Centers

The Coulee Experimental State Forest is located in La Crosse County. Housing and population density in the region are relatively high compared to other parts of the state. La Crosse County's population has grown between 10 and 15 percent each of the past several decades. In 2005, the population was 110,302 (La Crosse County 2006a) with a population density of 236.5 persons per square mile, while the statewide average was 98.8 persons per square mile. It is roughly a twenty to thirty minute drive from the CESF to La Crosse (See Appendix A, Map 1: Regional Population Map). The CESF is directly south of the Village of Bangor (population 1,474) and roughly three miles southeast of the Village of West Salem (population 4,540), one of the fastest growing communities in the area (La Crosse County 2006a).

Table I: Regional County Population Estimates and Projected Increases

County	Population Estimate 2004	Projected Increase 2010-2020
La Crosse	109,616	5,035
Trempealeau	27,765	1,286
Monroe	42,626	3,310
Vernon	28,928	2,193

SCORP, 2005

2. Transportation Networks

The CESF lies along the major east-west transportation route of Interstate 90 which connects Chicago, Madison, La Crosse and the Twin City metropolitan area of Minnesota. State Highways 162, 16, and 33 run near the property and are used mainly for inter-county travel. The CESF is accessed most directly from Interstate 90 and State Highway 162.

Due to the idyllic rural nature and undulating topography of La Crosse County, driving for pleasure is a popular past time that draws tourists to the area. The county has three State designated Rustic Roads and the Great River Road which runs along the Mississippi River. These roads offer beautiful vistas of the Mississippi River Valley, rolling farmland, forested valleys and coulees.

3. Public and Private Lands

At almost 3,000 acres, the CESF is one of the largest publicly owned properties in La Crosse County and is the largest block of contiguous upland forest under public ownership (See Appendix A, Map 2: Regional Property Ownership). The Van Loon Wildlife Area is approximately 4,000 acres and is located northwest of Holmen along the Mississippi River. There are three State Natural Areas in La Crosse County. The largest publicly owned property is the 200,000 acre Upper Mississippi River National Fish and Wildlife Refuge. La Crosse County has two small county forests, the Hoeth Forest and the Raymond C. Bice Preserve. These publicly owned resources overall make up a small percentage of the land ownership in the region.

The majority of southwestern Wisconsin is privately owned agricultural land. Agriculture constitutes more than 60% of the land area in southwestern Wisconsin and approximately 30% of the land value. Forests make up another 23% of the region's area and 5% of the land value (Marcouiller and Mace 1999). In La Crosse County, 45% of the land acreage is forested (WDNR 2006a). There are 12,553 acres of publicly owned forestland and 118,994 acres of privately owned forestland in La Crosse County.

4. Land Use and Land Ownership Patterns and Trends

The Wisconsin Department of Administration estimates that La Crosse County will develop over 5,000 acres of land and grow by 8,000 new households over the next 20 years. By 2025, it is estimated that over 1,300 acres of current agricultural/open space in the Townships of Bangor,

Barre, Greenfield, Hamilton and Washington (surrounding the CESF) will be developed (La Crosse County 2006a). The growth development is projected to be highest around the city of La Crosse and the communities along the interstate corridor. Between 1990 and 1997, close to eight percent of the agricultural acreage around the La Crosse area was converted to other uses (La Crosse County 2006b). The steep slopes in the area pose development constraints and results in more development along flat ridge tops and valley bottoms.

5. Regional and Local Demographic Trends

Housing in the greater CESF region (La Crosse, Trempeleau, Monroe, and Vernon Counties) is growing at a faster rate than the 12.9% state average.

Table II: Regional Housing Unit Change

County	Percent Change in Total Housing Units 1990-2000
La Crosse	13.7%
Trempeleau	13.7%
Monroe	17.9%
Vernon	14.6%
Statewide	12.9%

MRPC County Profiles, 2007

The La Crosse County Development Plan and the Coulee Visions Plan (2006c) recommend a “planned development center” approach to growth. Some key components of this growth alternative that are relevant to the CESF are:

1. Maintain and preserve “greenbelts” or existing open spaces between communities.
2. Protect additional bluff lands from development.
3. Limit the rezoning of “Exclusive Agricultural Lands”.
4. Allow limited growth in rural areas. Prohibit rezoning for new subdivisions (5 or more lots).
5. Use “conservation” design principles for low-density, rural development.
6. Develop ordinances that allow the “clustering” of rural housing.

B. Biological Resources and Ecological Capability

1. Ecological Landscape

The Western Coulee and Ridges Ecological Landscape is characterized by its highly eroded, unglaciated topography and relatively extensive forests. Soils are wind-blown silt loams (loess) and sandy loams over sandstone residuum over dolomite. Several large rivers including the Wisconsin, Mississippi, Chippewa, Kickapoo and Black flow through or border the Ecological Landscape.

Historical vegetation in the Western Coulee and Ridges consisted of southern hardwood forests, oak savanna, prairie, and floodplain forests and marshes along the major rivers. With Euro-American settlement, most of the land on ridge tops and valley bottoms was cleared for agriculture, eliminating much of the oak savanna and prairie. The steep slopes between valley bottom and ridge top, unsuitable for raising crops, grew into oak-dominated forests after the ubiquitous wildfires were suppressed. This pattern is also true of La Crosse County. Historically, the majority of La Crosse County was characterized as oak forest, oak opening or prairie. The only notable exceptions to this vegetation pattern were the lowland areas, particularly near the La Crosse and Mississippi rivers.

Current vegetation in the Western Coulee and Ridges Ecological Landscape is a mix of forest (40%), agriculture (36%), and grassland (14%) with some wetlands in the river valleys. La Crosse County also has a similar mix of forest (40%), agriculture (32%) and grassland (8%) with wetland types in the La Crosse and Mississippi river valleys. The primary forest cover is oak-hickory (51%), dominated by oak species in association with shagbark and bitternut hickory. Maple-basswood forests (28%), dominated by sugar maple, basswood and red maple, are common in areas that were not subjected to repeated pre-Euro-American settlement wildfires. Bottomland hardwoods (10%) are common in the valley bottoms of major rivers and are dominated by silver maple, ash, elm, cottonwood, and red maple. Relict conifer forests of white pine or hemlock are rare natural communities found on the cooler, steep, north-slope microclimates. A small number of dry prairies still exist around rock outcroppings and steep bluff faces, but most have become overgrown by forest cover (See Appendix A, Map 3: Regional Land Cover Map).



Figure 2: The Western Coulee and Ridges Ecological Landscape shaded in gray

There are no natural lakes in this Ecological Landscape, but there are a number of impoundments. There are many cold-water streams and larger river systems. Levels of stream and groundwater pollution are worse than average, according to Wisconsin DNR watershed rankings.

Eco-regions

The National Hierarchical Framework of Ecological Units (NHFEU) defines eco-regions as geographic areas of similar physical, chemical, and biological characteristics in a hierarchical framework (Avers et al 1994). The CESF is located within Province 222, Eastern Broadleaf Forest. It lies within Section 222L, the North Central U.S. Driftless and Escarpment Section, and Subsection 222Lc, the Mississippi/Wisconsin River Ravines. It also lies entirely within the Rountree Ridges, Tunnel City Hills, and Valleys-South Land Type Association (LTA 222Lc13). See Appendix A, Map 4: Regional Landscape Classifications. The characteristic landform pattern of this LTA is hilly with wide summits surrounded by lower hills and very narrow valleys.

2. Overview of Regional Natural Resources

Forest Resource

The Western Coulees and Ridges Ecological Landscape is noted for relatively extensive forest cover, compared to other parts of southern Wisconsin that have a larger percentage of agricultural land. These forests have long been prized for their high quality hardwood sawtimber, especially for Northern red oak and black walnut logs. In 2005 northern red oak removals were 164% of their annual growth in the Driftless region. As the oak timber has been harvested over past few decades, many forest sites have converted to a mixture of central hardwoods (e.g., hickory, black cherry, elm) and northern hardwoods (e.g., sugar maple, basswood, ash,). The region still supports an active forest products industry, with many locally owned sawmills specializing in fine hardwood lumber.

Wildlife Resource

The region is home to both common and rare wildlife species. Perhaps the most common game species in the region are white-tailed deer, gray and fox squirrel, wild turkey, and migratory waterfowl. The abundance of these species has fostered a strong hunting tradition within the local communities.

The extensive forest cover is also known to support significant populations of neo-tropical migratory songbirds. Several rare species, not found in other parts of southern Wisconsin, thrive within the large, contiguous blocks of forest cover.

Rare Animals

The region contains a diverse set of habitats that support wildlife not found in other regions of Wisconsin. The Natural Heritage Inventory (NHI) program has recorded 170 rare animal species in the Western Coulee and Ridges Ecological Landscape, including 5 mammals, 28 birds, 17 herptiles, 26 fish, and 94 invertebrates. Also recorded were 5 different “Miscellaneous Elements” including bat hibernacula, herptile hibernacula, bird rookeries, mussel beds, and a migratory bird concentration site.

State Endangered or Threatened Animals

There are 33 documented State endangered species in the Western Coulee and Ridges Ecological Landscape, including 5 birds, 5 herptiles, 7 fishes, and 16 invertebrates. There are also 31 documented State threatened species including 11 birds, 2 herptiles, 9 fishes, and 9 invertebrates.

Federal Endangered or Threatened Animals

There are 6 documented animals that are federally listed in the Western Coulee and Ridges Ecological Landscape including 2 endangered (Karner Blue Butterfly, Higgins’ Eye Mussel), 1 threatened but being considered for delisting (Bald Eagle) and 3 species being considered for listing (Eastern Massasauga Rattlesnake, Spectacle Case Mussel, Bullhead Mussel).

Natural Communities

The diverse and unglaciated topography supports natural communities that are uncommon elsewhere in the state, such as dry prairies, hemlock and pine relicts, oak savannas, dry and moist cliffs and coldwater streams. These communities in turn support a host of rare plants.

Rare Vascular Plants

The NHI program has recorded 122 rare plant species in the Western Coulee and Ridges Ecological Landscape. Of those, 2 species (Northern Wild Monkshood and Prairie Bush-clover) are federally listed as threatened, 17 are listed as Wisconsin endangered, 26 are listed as Wisconsin threatened and 77 are listed as Wisconsin special concern species. Twenty-three of the 122 species have only been documented in the Western Coulee and Ridges Ecological Landscape, and 31 others have at least 50% of their documented populations in this Ecological Landscape.

Grassland and Prairie Habitats

Dry prairies were once common, generally along exposed ridge tops and on steep south and west facing slopes. Some good quality remnant prairies still exist and the Western Coulees and Ridges Ecological Landscape offer some of the best opportunities to manage for this prairie community. Also, there are many examples of “surrogate grasslands”, often old agricultural fields which have been planted to native or non-native grasses, which offer habitat for many species such as grassland birds.

Streams and Rivers

The region is well-known for its abundant rivers and streams. Major rivers include the Mississippi, Wisconsin, Black, Kickapoo, La Crosse and Chippewa. Spring-fed coldwater streams are common within most primary valleys and feed the major river systems. Several are considered world-class trout fishing streams. The CESF however, has no significant water resources.

Soils and Geology

The Western Coulee and Ridges Ecological Landscape in southwestern and west central Wisconsin is within the “Driftless Area” or unglaciated portion of the state (Figure II.2). The dissected topography of this erosional landscape is characterized by deeply incised, steep-walled valleys and ridgetops with outcrops of Paleozoic bedrock. Rivers in the area carried meltwater from glaciation further to the north, filling some of the major valleys with glacial outwash materials.

Soils on the hills are formed in loess (i.e., wind-blown silt), silty alluvium, loamy to clayey residuum, and loamy colluvium over limestone or sandstone. They range from well drained to moderately well drained and typically have silt loam to sandy loam surface textures, moderate permeability, and moderate available water capacity. Some of the larger valleys in the La Crosse area contain stream terraces deposited by

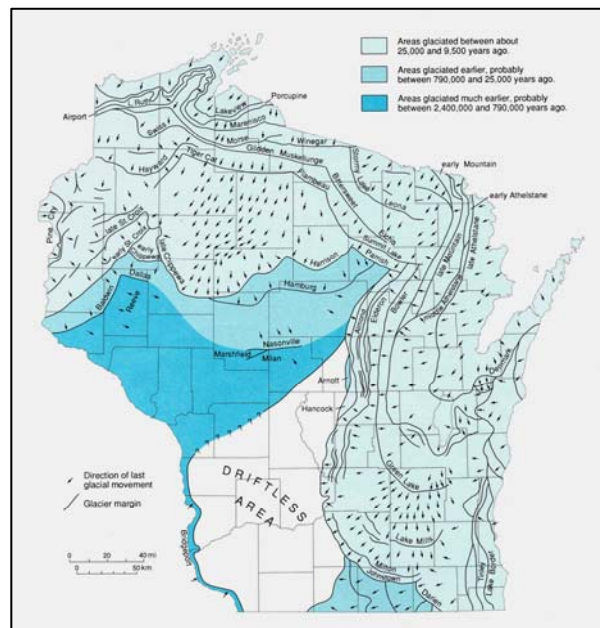


Figure 3: Driftless Area of Wisconsin

outflow from glaciation, where soils formed in outwash sands. Soils of the narrower valleys that occur within the CESF are mostly silty and loamy residuum and alluvium. These soils range from well drained to very poorly drained, and have areas subjected to periodic flooding. The soils of this area are generally very productive in terms of forest growth and agriculture. However, many ridge tops and slopes have been severely eroded since Euro-American settlement due to agriculture and grazing practices. The erosive nature of these soils combined with the steep topography, still presents challenges to agriculture and forest management.

C. Recreational Resources and Use

1. Supply, Distribution, Demands and Trends in Recreational Resources

La Crosse County is included in the Mississippi River Corridor (MRC) region as described in the Statewide Comprehensive Outdoor Recreation Plan (SCORP) along with the other counties that border the Mississippi River from St. Croix County in the north to Grant County in the south. As part of the SCORP process, outdoor recreation participation surveys were broken down to the regional level. Regional participation is based on a number of factors including environmental resources, seasonal variation, and demand of residents ages 16 and older. Participation rates in the Mississippi River Corridor range from 0% to 100% depending on the recreational activity (WDNR 2006).

The Mississippi River, which runs along La Crosse County's western border, is the primary recreational resource in the region. The river is used for a variety of water-based recreational activities such as boating, swimming and fishing. Streams extending off the Mississippi and its backwaters support an excellent coldwater fishery, with 16 streams classified as trout waters.

Due to the unique topography in this part of the state, the region also provides many opportunities for scenic drives on rustic roads such as the Great River Road, a thoroughfare that follows the Mississippi for 250 miles and connects over 50 local parks and beaches.

According to the SCORP survey, the forest-based recreational activities having the highest percentage of participants in Mississippi River Corridor region include: walking for pleasure (86%), family gathering (79%), driving for pleasure (59%), and picnicking (52%). When compared to other regions, the forest-based recreational activities in Mississippi River Corridor region that rated as having the highest percentage of participants include: visiting a farm or agricultural setting (40%), developed camping (38%), off-road driving with an ATV (35%), and hunting upland birds (19%). Activities popular with residents are somewhat different from non-Wisconsin residents. Non-residents visiting from both the Chicago area and the Twin Cities had 3 of the top 5 activities in common which were sightseeing, picnicking, and camping (WDNR 2006). Table III shows a list of the top four highest demanded recreation activities by resident or non-resident.

Table III: Highest Demanded Forest-based Recreation Activities

Wisconsin Residents	Non-Wisconsin Residents (Twin Cities)	Non-Wisconsin Residents (Chicago)
Walking for Pleasure	Bird-watching	Downhill Skiing
Family Gathering	Sightseeing	Sightseeing
Driving for Pleasure	Hiking	Picnicking
Picnicking	Picnicking	Camping

WDNR Scorp, 2006

The Wisconsin Land Legacy Report identifies places considered most important to meet Wisconsin's conservation and recreation needs over the next 50 years. The places in this area that were identified in the report include the Kickapoo River, Upper Mississippi River National Fish and Wildlife Refuge, Lower Chippewa River and Prairies, Coulee Coldwater Riparian Resources and the Black River (WDNR 2006). There are also a number of specialized recreation areas in the County consisting of golf courses, rod and gun clubs, fair grounds, a ski resort, heritage and nature centers, which total 2,620 acres (La Crosse County 2006c).

SCORP has projected that the MRC region will see a 0.78% population increase by 2010. This rate of growth is second highest out paced only by the Southern Gateways region which includes Dane, Jefferson, Green, Rock, Richland, Sauk, Columbia and Dodge Counties. This population increase will place a greater demand on regional recreational opportunities (WDNR 2006).

Public Land Open to Recreation

La Crosse County is home to numerous federal and state recreational areas that provide a variety of recreational activities (See Appendix A, Map 5: Regional Recreation Map). Over 12,000 acres of land area (22,000 total land and water acres) of the 240,000 acres which make up the Upper Mississippi River Fish and Wildlife Refuge (UMRFWR) is located in La Crosse County. The refuge includes portions of the Mississippi River shoreline, the Black River Delta, and Mississippi River islands. The area is open to fishing, hunting, wildlife observation, interpretation and photography.

The Van Loon State Wildlife Area is also in La Crosse County and offers around 4,000 acres of sloughs, marsh and forest which are open for hunting duck, deer, squirrels, raccoons, waterfowl, and turkey. This area is also open for hiking, fishing, canoeing, wildlife observation and plant study¹.

The CESF represents the largest block of upland forest under public ownership in La Crosse County, with approximately 3,000 acres.

¹ See <http://dnr.wi.gov/org/land/wildlife/reclands/westcentral.htm>.

Although most of the public land in the county is within fishery or wildlife areas, there are approximately 2,200 acres of county and municipal parks (WDNR 2006).

Table IV: Comparison of Regional Public Land Acreage by County

Public Conservation and Recreation Lands	La Crosse	Jackson	Monroe	Trempealeau	Vernon
Federally-owned acres	12,192	1,697	15,529	4,207	6,863
State-owned acres ¹	7,145	75,592	5,149	6,545	5,582
Municipally-owned acres ²	5,328	122,996	7,578	489	1,624
Total acres	24,665	200,285	28,256	11,241	14,069

SCORP, 2005 Appendix D: Conservation and Recreation Lands in Wisconsin

Supply and Demand by Activity Type

- **Horse Trails** - A supply shortage at the county level and on a larger regional scale was identified by both SCORP and the La Cross County Recreation Plan. For comparison, in nearby Jackson County there are 44 miles of state-owned trails designated for horseback riding.
- **Cross-country Ski Trails** - Demand in the region is low with only 8.3% of the population participating in this activity. Within La Crosse County there are 27 county, 39 municipal and 5 state-owned trail miles. There are also two regional trails, the Great River State Trail at 24 miles, and the La Crosse River State Trail with 21.5 miles. All together there are a total of 117.5 miles in the County. When compared to neighboring Trempealeau and Vernon counties who have 40 and 20 miles respectively, La Crosse County has almost three times as many miles within a smaller area. However, a supply shortage was identified by SCORP at the regional level with a 7% participation rate (WDNR 2006).
- **Mountain Bike Trails** - When comparing neighboring counties, La Crosse County's total of 11 miles falls below Vernon and Trempealeau which have 12 miles and 27 miles respectively. According to Human Powered Trails Inc., a La Crosse area nonprofit organization, it plans to add an additional 8-10 miles of trails to the upper Hixon Forest. Monroe and Jackson Counties make up part of the Western Sands region and have 1 mile and 64 miles respectively. It is clear that there is a wide range of available trail miles within these two regions. With a low regional participation rate of 25%, the supply of mountain bike trails was considered by SCORP to be sufficient (WDNR 2006).
- **ATV Trails** - In La Crosse County there are currently no designated trail miles. On the regional level, the Mississippi River Corridor also has no designated summer or winter use ATV trails on public land. The Western Sands region has 227 summer-use and 944

¹ State-owned acres include: state forests, wild rivers, state parks, and wildlife areas.

² Municipally-owned acres include: county parks, county forests, city parks, town parks and village parks.

winter-use trail miles. Across the Mississippi River in Minnesota there are 39 miles of trails within the closest 3 counties to La Crosse County.

With a participation rate of 34.6%, the Mississippi River Corridor scored the highest rate of participation in all SCORP planning regions across the state. Western Sands reported the second highest level of use at 34.1%. The supply of trails available in the region was identified by SCORP as an issue (WDNR 2006). The Quad County Trail in northern Trempealeau County has about 38 miles of year-round trail, but it is not recognized in SCORP data. ATVs are not allowed on the snowmobile trails in La Crosse County during the winter months.

- **Snowmobile Trails** - There are 1,959 miles of trails in public ownership and numerous more miles that are privately maintained within the Mississippi River Corridor. This is slightly less than the 2,856 miles found in the Western Sands Region (WDNR 2006). About 130 of those miles are within La Crosse County. SCORP reported that regional participation for snowmobiling was low, at 22% in the Mississippi River Corridor and 25% in the Western Sands. There were no issues identified in SCORP related to demand for this activity.
- **Nature Centers or Environmental Education Opportunities** - Within La Crosse County there are four locations for environmental education including the Hixon Forest Nature Center, Stry Nature Center, Norskedalen Nature and Heritage Center, and the Upper Mississippi River National Fish and Wildlife Refuge. These centers provide educational experiences geared toward plants and wildlife (explorewisconsin.com & amethyst-dragon.com). At the regional level, the Mississippi River Corridor has a total of 18 nature centers compared to the Western Sands region which only has 14. Even with only 8% of the population reporting that they participated in this activity, nature centers were included in the list of recreational supply shortages for the Mississippi River Corridor (WDNR 2006).
- **Hunting** - There are approximately 7,000 acres of state-owned land in the county including state forest, wildlife, fisheries and streambank protection areas. Most of these acres are open to hunting. Of those total acres, almost 4,000 of them are located within the Van Loon Wildlife Area and almost 3,000 within the Coulee Experimental State Forest. Waterfowl hunting is popular at the Van Loon Wildlife Area, as well as within the larger river corridors. Deer and small game hunting are popular at the CESF and the La Crosse County forests.
- **Camping** - Camping is a popular recreational activity within the county with just under 400* campsites in 8 different campgrounds (WDNR 2006) available on 1,277 acres (La Crosse County Plan). Within La Crosse County, there are roughly 115 more electric sites than non-electric with the emphasis on trailer or camper-style camping. The campgrounds are located throughout the county and provide residents and visitors with excellent opportunities to enjoy the outdoors in La Crosse County.

When looking at the surrounding counties, La Crosse County is the second highest provider of campsites (see public and private campsites table). However, at the regional level, the Mississippi River Corridor has the greatest demand for developed camping across all planning regions state-wide with over 36% of the population reporting participation in this activity. It was also identified as a nature-based supply shortage in the region (WDNR 2006).

Table V: Number of Public and Private Campsites by County

Counties with Public & Private Campsites	Electrical Campsites	Non-electrical Campsites	Total Sites
Monroe	389	386	775
La Crosse	256	142	398
Jackson	62	57	119
Trempealeau	50	54	104
Vernon	65	15	80

SCORP, 2005

2. Coulee Experimental State Forest as a Recreational Resource

The Coulee Experimental State Forest is not a well-known recreational destination for the region. The property is relatively small (i.e., approximately 3000 acres) and management emphasis has been on forest research and not on recreation. For these reasons few recreational facilities have been developed apart from access parking areas and a small trail system. However, many local citizens and tourists alike have found the property to be an enjoyable destination for hunting, hiking, wildlife observation, cross-country skiing and horseback riding. Recreation management on this state forest has emphasized non-motorized, day-use activities that are compatible with forest management and research.

The CESF represents one of the few large, publicly owned, upland forests in La Crosse County. As such, the property meets the needs of users looking for an upland habitat, such as deer and small game hunters, hikers, morel mushroom hunters, cross-country skiers, snowshoers and horseback riders. Although no formal recreational-use statistics have been collected on the CESF, Department staff has reported seeing a steady increase in use over the past decade. Given the close proximity to growing population centers, such as La Crosse, Onalaska and West Salem, the CESF will continue to be an important part of the region's recreational resources.

D. Socio-economics

1. General Socio-economic Conditions

La Crosse County has a diverse workforce which is well balanced between various sectors due to the strong business development in the city of La Crosse. In the greater region (i.e., Trempealeau, Monroe, Vernon Counties), a much higher percentage of the workforce is in the farming and manufacturing sectors.

Table VI: La Crosse County Major Occupations

La Crosse County Major Occupations	Percent Employed
Management, professional and related	30.8%
Service	16.8%
Sales and office	27.4%
Farming, fishing, and forestry	0.3%
Construction, extraction, and maintenance	7.6%
Production, transportation, and material moving	17%

U.S. Bureau of the Census 2000

The forest industry in the counties surrounding the CESF is well established but is primarily made up of sawmills. There is a competitive market in this region for the quality sawtimber but a limited demand for the pulpwood and lower quality timber. There is also a very large population of Amish sawmills located in these counties which are not included in the data bases. We estimate there could be as many as 60 small sawmills and related secondary operation in the Amish community.

Table VII: Primary and Secondary Wood Using Industry in the Region

County	Primary	Secondary
Jackson	4 sawmills, 1 chip plant	5 firms
La Crosse	1 sawmill, 1 wood treating and post/poles firm	13 firms
Monroe	4 sawmills	13 firms
Trempealeau	4 sawmills, 2 shavings firms	12 firms
Vernon	13 sawmills	2 firms

WI DNR, 2006

In the southwest region of Wisconsin, growth to removal ratios of hardwood is extremely high for public lands and there is a declining hardwood resource base on privately owned lands (Marcouiller and Mace 1999). The public lands in the southwest are providing a valuable and sustainable hardwood resource. The USDA Forest Service's Forest Inventory and Analysis (FIA) data are often used to assess the timber resource. The FIA uses statistical sampling at selected plots¹. FIA data showed private non-industrial forest lands in the southwest produced over \$51 million of average annual sawtimber removals-the greatest value for all regions of the state. In comparison, state forests in this region produced over \$500,000 in sawtimber removals during the same period. For softwoods in the southwest, private lands have an expanding resource base (i.e., more softwood tree planting) and public lands are currently at an above average growth to removal rate.

¹ More information about FIA methods is available at: *Forest Inventory and Analysis Data Base Retrieval System*
<<http://www.srsfia.usfs.msstate.edu/scripts/ew.htm>>

2. Socio-economic Role of the Coulee Experimental State Forest

La Crosse County provides a wide range of recreation options and draws a great number of tourists to the area. Tourists visiting for forest-based recreation, including quiet recreationists, hunters and motorized recreationists, have different effects on the local economy. Marcouiller and Mace (1999) found quiet recreationists prefer state public land whereas motorized recreationists prefer a wider range of types of forest ownership to recreate on. The CESF only allows quiet, non-motorized recreation and hunting; eliminating motorized users as a visitor. Quiet recreationists were found to spend a greater proportion of their household expenditures in the local area they recreate in. Overall, motorized recreationists spend more on all aspects of recreation than other user groups. A large portion of this is in their home community, not the recreation destination. (Marcouiller and Mace 1999).

Marcouiller and Mace (1999) found that southwestern Wisconsin's tourism sensitive economic sectors' output was almost twice as great as its wood-based economic sector. Even though the wood sector does not generate a large portion of the region's output, the economic impact of the primary and secondary wood processing industry on: 1) industry output, 2) personal income, and 3) employment is one of the highest in the state. This is explained by the remarkably high value of hardwoods in the region. Comparatively, the economic impact of the region's tourism sector is one of the lowest for the same three variables. The region's forests offer an interesting blend to the wood and tourism economy. The forests may not be producing a high volume of timber, but the impacts of the processing are great. Whereas the tourism sector generates a proportionally greater economic output for the region but its impact is not as high as other areas of the state.

State Forests in Wisconsin are certified sustainable by two independent, third party forest certification systems: Sustainable Forest Initiative (SFI) and Forest Stewardship Council (FSC). The demand for certified wood products is a growing trend internationally, nationally, as well as locally. The CESF offers wood industries in the region a source for certified wood products.

III. PROPERTY DESCRIPTION FOR THE COULEE EXPERIMENTAL STATE FOREST

The Coulee Experimental State Forest is located in the east central portion of La Crosse County, comprising approximately 3,000 acres of publicly owned, upland forest (See Appendix A, Map 6: Base Map of the Coulee Experimental State Forest). Situated in Wisconsin's "Driftless Area", the CESF topography and ecology are characteristic of the state's unglaciated region. The forest was established in 1958 as a site for watershed and forestry research. Since its establishment, activities on the CESF have included forest management, research, day-use recreation, agricultural sharecropping, educational events and general property administration and maintenance. The following property analysis will provide a detailed examination of the CESF ecology and management.

A. Physical Environment

1. Topography and Soils

The location of the Coulee Experimental State Forest was selected because the landscape was representative of the Driftless Area. This rough topography is the result of geomorphic processes that eroded ridges, cut into the underlying Cambrian rock, and transported soil and rock debris to adjacent streams. These processes were active during the last glacial period when vegetation was absent, but have also been active during the past century due to poor agricultural practices. The result is a dissected landscape with narrow to broad ridges (broader in the southern part of the county), narrow sloping shoulders, steep to very steep valley sides, escarpments and narrow to broad valley floors. A thin to thick mantle of silt covers most of the landscape with the thickest being in the valleys. Stream cutting and deposition formed floodplains, terraces, sloughs, and marshes along rivers on valley floors.

The most common soil map unit on the CESF is the Dorerton, very stony-Elbaville complex, 30-60 percent slopes. These soils formed in loamy loess and erosional sediments on shoulders and sideslopes of hills. They are deep and very deep soils, well drained, with dolomite fragments of various sizes making up as much as 80% of the lower horizons. Elbaville soils are finer-textured, with silt loam and clay loam in the upper horizons. Another common soil unit is the Churchtown silt loam, 20-30 percent slopes, moderately eroded. These soils formed in loamy sediments from loess and sandy bedrock residuum. They are deep and very deep soils, well drained, and found on side slopes or foot slopes. Soils on the CESF are often classified as eroded, reflecting the steep topography, erodible nature of the soils and history of intensive agriculture. As a result, careful consideration must be given to soil conservation and water quality issues when planning resource and recreation management on the property.

2. Climate

The Coulee Experimental State Forest lies south of the "tension zone" which is a climatic transition area that crosses Wisconsin from northwest to southeast, and separates the conifer-hardwood forests of northern Wisconsin from the mosaic of prairie, savanna, and mainly deciduous forests of the south (Curtis 1959). This region has a continental climate with cold

winters and warm summers. Two-thirds of the annual precipitation falls during the freeze-free growing season. The mean annual temperature at the La Crosse Municipal Airport was 47.3 °F; mean annual precipitation was 32.36 inches during the period from 1971-2000¹.

B. Water Resources and Aquatic Habitats

1. Lakes, Steams, and Open Water Wetlands

There are no streams, lakes, or wetlands on the CESF, however there are several small springs scattered throughout the forest. They occur at scattered locations and are classed as gravity contact springs. Most fluctuate greatly in base flow (10-200 gallons per minute) with early spring being the period of greatest output. None provide enough water for fish management purposes or water based recreation on the property, but they do feed several local trout streams. Such streams as the Russlan Coulee, Pleasant Valley, Dutch, and Bostwick Creeks are all dependent upon spring sources to maintain cool summer water temperature.

2. Water Use Limitations and Opportunities

There are no lakes, rivers or streams within the boundaries of the CESF.

C. Vegetation

1. Historic Vegetation

Data from the original Public Land Surveys are often used to infer vegetation cover types for Wisconsin prior to European settlement. Public Land Surveys for the portion of La Crosse County containing the CESF were conducted in the late 1840s. Finley's Original Vegetation Map (1976) described the area that now comprises the CESF as dominated by oak openings (bur oak, white oak, and black oak) with small areas of prairie, prior to European settlement. The majority of La Crosse County was characterized as oak forest, oak opening, or prairie representing a continuum between these types. The only notable exceptions to this vegetation pattern were the lowland areas, particularly near the La Crosse and Mississippi rivers.

Similar to the surrounding region, the ridge tops and valleys of the CESF were cleared for agriculture by the new settlers. The steep slopes, unsuitable for raising crops, grew into oak-dominated forests after wildfires were suppressed. Many of the CESF's forests show signs of grazing by livestock during this settlement period.

2. Current Vegetation and Natural Communities

Forests Resources

Today the forests of the CESF are mainly comprised of oak and central hardwood species (i.e., hickory, elm, black cherry, etc.) located along ridges and within narrow valleys (See Appendix

¹ NOAA. Unique local climate data. National Weather Service Forecast Office, La Crosse, WI. At http://www.weather.gov/climate/local_data.php?wfo=arx. Accessed 7.19.2007)

A, Map 7: Property Land Cover Map). Many of the oak forests were subject to grazing and harvesting after European settlement, and have since developed into a more dense mixture of oak and central hardwoods. Aspen and birch stands have developed in areas that were abandoned field or pasture. Some of the ridge tops and valleys that were once cleared for farming have either been planted to red pine and white pine, or been used for experimental plantings and progeny tests with European larch, Norway spruce, balsam fir, red oak, and others.

Based on the Forest Habitat Type Classification System (FHTCS) the most common habitat types on the CESF are ArCi-Ph (*Acer rubrum/Circaea, Phryma variant*) on dry mesic, medium to rich sites and lower elevations with elements of ATiDe and ATiDe(Pr) (*Acer saccharum-Tilia/Desmodium, Prunus serotina phase*) on dry-mesic, nutrient rich sites of all slope aspects. Dry south and west slopes, rocky ridges and outcrops are unclassified due to heavy disturbance during European settlement. Though native forest site quality is generally high, there is a noticeable absence of sugar maple in the woods. This can be attributed to historical fires, grazing and timber harvesting that favored intolerant species and eliminated sugar maple seed sources. White ash and basswood are common in many regenerating stands, but are eclipsed by black cherry, slippery elm, bitternut and shagbark hickory, thus moving these stands to central hardwoods rather than a sugar maple – basswood climax condition. Table IX describes the most common cover types based on recent forest reconnaissance data.

Table VIII: Current cover types for the Coulee Experimental Forest

Cover Type	Acreage	Percent of Total Forest
Oak	1,600	54%
Central Hardwoods	460	15.5%
Aspen	250	8.4%
Red Pine	150	5.0%
White Birch	170	5.7%
Fir, Fir-Spruce	20	.7%
Northern Hardwoods	70	2.4%
Grass / Herbaceous	78	2.6%
White Pine	67	2.3%
Tamarack	20	.6%
Upland Brush	10	0.43%
Agriculture / Other	77	2.5%
Total	2,972	100%

WDNR Forest Reconnaissance data

Unique Forest Features

The CESF contains several large blocks of ecologically intact, contiguous forest. In some areas there are stands that are beginning to exhibit characteristics associated with old-growth forests, such as the presence of large, biologically mature trees, standing snags, tip-ups, and coarse woody debris. The Rapid Ecological Assessment for the Coulee Experimental Forest (WDNR 2007) identified two major blocks of forestland, the Northeast Forest and Cliffs and Russian Coulee Woods West, with these characteristics. Some of these areas feature rich soils on cool,

moist, north-facing slopes. Numerous fern species and other mesic understory plants are present. Northern red oak is the dominant tree species in these stands. Many red oak stands are biologically mature with an average stand age of 100-140 years old and the trees are beginning to experience significant mortality. Little or no oak regeneration is present in these stands to perpetuate the oak cover type. Some succession to shade tolerant hardwoods, such as basswood and red maple, is occurring here. Sugar maple is still a minor component.

Within the Coulee Experimental State Forest, the Natural Heritage Inventory has documented three natural community types that merit maintenance and protection: Southern Dry Forest, Southern Dry-mesic Forest and Dry Prairie.

Forest Management Opportunities

- **Oak Forests** – The lack of oak regeneration and decline of oak dominated forests is a well-documented concern throughout Wisconsin, especially within the Driftless Area where forests are naturally succeeding to mesic hardwoods due to a lack of fire disturbance. The CESF, as an experimental property dominated by oak forests, should provide excellent opportunities to experiment with various oak regeneration techniques. Some of this research has already been conducted on the property through Forest Service oak regeneration trials established in the 1970s. Fire management techniques could be a component of this work where feasible and safe. A long-term program could be established to monitor trial outcomes and provide useful information that would benefit the entire state.
- **High Conservation Value Forests** – Large, contiguous stands of oak with old-growth characteristics, such as those identified on portions of the CESF, are uncommon and declining in the Driftless Area. These older forests provide habitat for many rare species, especially forest interior songbirds. Stands identified on the CESF provide opportunities to feature management techniques that sustain and enhance these forest characteristics, especially as the trees become biologically mature and lack the oak regeneration necessary to maintain the oak cover type. The Dry Prairie communities associated with these areas are also considered High Conservation Value Forests for forest certification purposes and provide opportunities to restore and maintain this rare habitat.
- **Early Successional Forests** - Aspen and birch stands have developed in areas that were once agricultural fields or pasture. Many of these stands are currently 40-60 years old and are becoming biologically mature. Management opportunities exist to regenerate these stands in order to maintain a component of early successional forest on the CESF. This forest type would provide habitat for wildlife species, such as ruffed grouse and turkey.
- **Pine Plantations** – The past 50 years of forest management and research on the CESF has left a legacy of established red pine, white pine, European larch, Norway and white spruce and red oak plantations. The original research purpose of these plantations has been served. Now opportunity exists to manage and enhance these plantations as a unique feature of the property. Periodic thinnings have already started to maintain the health and vigor of these trees. Additional thinning can be conducted to increase tree size and diversify the forest structure.
- **Central Hardwood Forests** – The second most abundant cover type on the CESF is central hardwoods. The central hardwood type is defined as mixed upland hardwood

forest with predominant species of basswood, red maple, sugar maple, white ash, shagbark hickory, bitternut hickory, elm, oak, black cherry, black walnut and butternut. Similar to many forests in the region, these species have developed through natural succession as the dominant oaks have died or been harvested. Most of the central hardwood stands on the CESF range in age from 30-60 years old. These stands offer the opportunity to develop and demonstrate effective forest management techniques that can be applied to similar forest properties throughout the region. The diversity of hardwoods offers opportunity to enhance fine quality hardwood sawtimber, improve forest health through increased resistance to gypsy moth and other pests and diversify wildlife habitat.

- **Invasive Species Control** – A 2007 invasive plant survey on the property found several invasive species, including autumn olive (*Elaeagnus umbellata*), garlic mustard (*Alliaria petiolata*), honeysuckle (*Lonicera maackii*), black locust (*Robinia pseudoacacia*), multiflora rose (*Rosa multiflora*), buckthorn (*Rhamnus cathartica*), and japanese barberry (*Berberis thunbergii*). Control of these species on the property offers both a challenge to prevent further encroachment of native plant communities and an opportunity for restoration of degraded communities.
- **Forest Health** – In addition to invasive species threats to forest health, a multitude of forest insect and disease pests may be encountered on CESF. Hardwood forest cover has already been affected by Dutch elm disease, butternut decline, oak wilt and hickory dieback and mortality. White pine blister rust and larch needlecast disease have had negative impacts on tree growth in some conifer stands. Major insect threats looming on the horizon include the gypsy moth and emerald ash borer. A gypsy moth management plan has been approved for implementation if conditions warrant. Additional management strategies may be needed to minimize damage from potentially destructive pests in the future.

Grassland Communities

Dry Prairies occur on the upper slopes of several ridges with steep southern and western exposures. Conditions vary based on site characteristics, past land use, and the amount of active management that has occurred. DNR staff is restoring some of these sites by removing competing woody vegetation and using prescribed fire. Unmanaged areas are often overgrown with sumac, autumn olive, hazel, gray dogwood, eastern red cedar and other woody species and have become ecologically simplified, but likely have the potential to be restored. There are a few examples of Dry Prairie on the property that have retained a suite of native species that are characteristic of the type. The largest block, located adjacent to County Highway II and known as the “Berg Prairie,” is in the process of being restored by DNR staff.

The CESF contains several acres of fields that have either been planted to native grasses or are managed for agricultural crops, primarily corn and hay. These surrogate grasslands provide nesting and brood habitat for a variety of bird species. Management opportunities exist here to maintain a component of open, grassland cover on the property.

Cliff Communities

Cliff communities are characterized by rock faces and outcroppings that produce a unique environment. Rock type, exposure, surrounding vegetation, and other factors create a wide variety of environmental conditions that may influence species composition. The presence or

absence of fractures and other features that may hold soil particles and moisture, or the alternation of strata composed of different rock types that have different properties, can affect habitat suitability for plants and animals.

Within the Coulee Experimental State Forest, the NHI has documented two types: Dry Cliff and Moist Cliff. On this property, they often occur at the tops of ridges in association with other community types (i.e. Dry Prairie, Southern Dry-mesic Forest).

D. Wildlife Resources

1. Current Wildlife

The CESF has numerous natural communities that provide habitat for a variety of game and non-game wildlife species. The primary game animals include deer, ruffed grouse, gray and fox squirrels, turkeys, and rabbits. Other game birds found on the property but in less abundance include mourning dove, quail, crow, and woodcock. Furbearers found on CESF are raccoons, coyotes, foxes, opossum, skunk, mink and weasel. Some wildlife species like bear, bobcat, wolf, and fisher are expanding their populations regionally, ranging southward in the state and may be in the area in the near future, if not already.

There are numerous neo-tropical migratory song birds that use the CESF for breeding areas, summer range or migration stops. Common examples identified on the property include, red-eyed vireo, ovenbird, Eastern wood pewee, scarlet tanager and very. There are also common song bird species that live on CESF year round, such as black-capped chickadee and white-breasted nuthatch. Birds of prey include red-tailed hawk, harrier, turkey vulture, barred owl, screech owl and great horned owl.

There is some evidence that timber rattlesnakes historically inhabited the CESF, but as of the time of this analysis, there have been no recent confirmed reports. The CESF does support many common herptile species such as garter snakes, American toads, and several frog species.

2. Opportunities to Support Wildlife Species of Greatest Conservation Need

Species of Greatest Conservation Need (SGCN) associated with natural communities within the Western Coulee and Ridges Ecological Landscape and those identified on the CESF are listed in Appendix B. Stand level management that considers the entire forest and surrounding landscape in order to maintain a balance of common, uncommon and rare forest types will benefit the SGCN.

3. Habitat Needs and Management Opportunities

Wildlife habitat on the CESF is very diverse, from openings to closed canopy forests, providing multiple management opportunities to maintain and enhance these habitats. Management opportunities may include;

- **Dry Prairie, Grassland and Oak Savanna** – These grassland communities provide habitat for rare herptile, bird and insect species. Control of woody vegetation and

invasive plant species is critical to the health of these habitats. Management practices may include mechanical, chemical and prescribed burning.

- **Forest Diversity** – The CESF currently provides a diverse mix of forest types and age classes that benefit a variety of game and non-game species. Management opportunities exist to maintain and enhance this diversity. Examples include, maintenance of old forest structure for interior forest songbirds, regeneration of early successional forests for ruffed grouse and maintenance of oak forests for turkey and deer. Forest structure can be enhanced by maintaining cavity trees, creating diverse age classes, thinning pine plantations and developing coarse woody debris on the forest floor.
- **Wildlife Research** – Consistent with the experimental emphasis of the property, wildlife research opportunities exist to enhance our understanding of habitat management in the Driftless Area. This could include research and demonstration projects on invasive species control, deer browsing impacts, ruffed grouse populations and other wildlife/habitat interrelationships. Wildlife diseases will need to be monitored, studied and managed for as threats to wildlife populations emerge.
- **Cooperative Management** – In the past conservation organizations, such as the Ruffed Grouse Society, have partnered with the Department to improve habitat for game species. Future opportunities may exist to cooperate with conservation groups and state or federal agencies to improve habitats, sustainable recreational opportunities and to address other wildlife issues that may arise over time.

E. Threatened, Endangered, and Special Concern Species

1. Rare Plants

Several rare plant species have been documented on the CESF (Table X). Yellow gentian (*Gentiana alba*) is the only state designated threatened species. In addition to the species listed, American ginseng (*Panax quinquefolius*) is found in small numbers on the property, a species that is not actively tracked by NHI but for which information is collected and maintained in manual files.

Table IX: Rare and Threatened Plants on the CESF

Common Name	Scientific Name	Year Last Observed	State Rank	Global Rank	State Status
autumn coral-root	<i>Corallorhiza odontorhiza</i>	2006	S3	G5	SC
jewelled shooting star	<i>Dodecatheon amethystinum</i>	2006	S2	G4	SC
purple-stem cliff-brake	<i>Pellaea atropurpurea</i>	2006	S2	G5	SC
shadowy goldenrod	<i>Solidago sciaphila</i>	1976	S3	G3G4	SC
White camas	<i>Zigadenus elegans var. glaucus</i>	2006	S2S3	G5T4T5	SC
yellow gentian	<i>Gentiana alba</i>	2007	S3	G4	THR

The existence of rare plant species, as well as good representation of more common species in the proper ecological context generally indicates the quality of the natural communities in which they exist. Many locations within the CESF (both forested and non-forested) display a healthy combination of both common and rare plants.

2. Rare Animals

Several rare animal species have also been documented on the CESF (Table XI). As noted with rare plant species, the occurrence of rare animals may indicate the health of the habitats they rely on, or it may indicate that there are relatively few habitats in the larger area such that rare animals are concentrated where suitable habitat exists. On the CESF, the rare animals listed are most often associated with older, closed canopied interior forest or dry prairies.

Table X: Rare Animals on the CESF

Common Name	Scientific Name	Year Last Observed	State Rank	Global Rank	State Status
Acadian Flycatcher	<i>Empidonax vireescens</i>	2006	S3B	G5	THR
Cerulean Warbler	<i>Dendroica cerulea</i>	2006	S2S3B	G4	THR
Kentucky Warbler	<i>Oporornis formosus</i>	1995	S1S2B	G5	THR
Louisiana Waterthrush	<i>Seiurus motacilla</i>	2006	S3B	G5	SC/M
smooth coil	<i>Helicodiscus singleyanus</i>	1986	S3	G5	SC/N
western slender glass lizard	<i>Ophisaurus attenuatus</i>	2006	S1	G5	END
wing snaggletooth	<i>Gastrocopta procera</i>	1986	S3	G5	THR

F. Recreational Facilities and Use

1. Current Recreational Uses and Facilities

Many tourists come to “Coulee Country” to drive along the Mississippi River, fish or boat on several rivers, and pedal or hike the state trails. However, the CESF is not well-known as a recreation destination, as many other State Forests are in their particular regions. The early emphasis on research on the property did not lead to the more common recreational infrastructure developments seen on many other State Forests. Recreational facilities have been limited to access parking lots and primitive hiking and cross-country skiing trail systems. As a result the property is most commonly used by local users and especially those seeking quiet day-use activities.

Current users visit for specific activities such as hunting, hiking, cross-country skiing, or horseback riding. The CESF has approximately 12 miles of designated cross-country ski trails. Unlike other State Forests, visitors do not need to purchase a State Parks and Forests sticker to enter the property, or a trail pass to use the ski trail. The eastern parking lot provides access to the ski trailhead. No designated bridal trails exist on the property; however horseback riders are allowed access on existing ski trails, field edges and forest roads. Many visitors explore the property on foot or horseback by utilizing the ski trail system during non-snow conditions. Except for County Highway II and roads leading to public parking lots, no mountain biking or public motorized vehicles are allowed on the property. Overnight camping is also not allowed.

It is likely that repeat users frequent the property looking for a quiet day use activity, with relatively few new visitors. There are no surveys or counts to determine actual use of the property today.

The forest has two designated parking areas, one on the eastern side and one on the western side of the property. To access the eastern parking lot and ski trailhead: from Bangor take Hwy. 162 south to County Road II, (approximately 1.5 miles) turn right on the forest road at the top of the hill, parking area is at the end of the road. To reach the western side parking lot: take Hwy. 33 east from La Crosse, then north on County Road M, right on Russlan Coulee Road (just east of Barre Mills), parking areas are at the end of the road. In addition to the two designated parking lots, pull-offs located next to trailhead and forestry road gates offer limited parking.

2. Recreation Use Trends and Issues

Based on SCORP's description of the recreational activities Wisconsin residents are looking for when they visit the Mississippi River Corridor (notably boating, fishing and camping), the CESF does not provide those recreational needs. However, with no motorized vehicle uses allowed, the property is suitable to visitors who are looking for hiking, hunting, horseback riding, sight-seeing, bird watching, nature study and other quiet, day-use activities.

Horseback Riding

Horseback riding has been allowed on the CESF since development of the first Master Plan in 1978, however there are no designated bridal trails on the property. Public horseback riding trails are not extensive in the region surrounding the CESF. The property provides fairly accessible, but short trail rides. While overall use has been low to moderate, management estimates there is someone riding on the property most days of the week except during the winter season. Riders commonly request to have fallen trees cleared from pathways to enhance horseback riding on the property. At least one large annual riding event is organized by private citizens. Anecdotal evidence suggests that overall rider use has been increasing, as evidenced by noticeable horse paths forming on the major forest roads. Continued heavy usage on the steeper road grades and the ski trail have led to management concerns over erosion and increased trail maintenance costs. These problems may become more serious as ridership increases. Another issue identified by the recent invasive plant survey was the presence of "satellite" populations of the invasive species, garlic mustard, concentrated along well-used horseback and hiking trails.

Cross-country Skiing

Cross-country skiing is the most significant recreational use that requires developed infrastructure on the property. The local ski club has groomed the 12 mile trail system for many years, while DNR staff has maintained the trail signage. Grooming during snow conditions for classical and skate skiing continues under a volunteer agreement. The current CESF ski trail system requires improvements in terms Department standards for clearance and hazard tree removal. Some areas of the trail also require improvements to the trail grade to make skiing more enjoyable. Some improvements have been made to date, however progress has been limited by staff and property resources. Since portions the ski trail system also serve as the major forest road system, occasionally conflicts arise with other trail users (i.e., timber harvesting, hikers, horseback riders, law enforcement access, etc.). Sometimes conflicts arise between the skiers themselves who prefer different types of cross-country styles (i.e., classical skiers vs. skate skiers). Maintaining trail signage has been difficult due to vandalism from target shooting.

Mountain Biking

Mountain or off-road biking is not a designated use on the CESF; however management has seen evidence of this activity on the property. Steep slopes and erodible soils limit the capability of CESF to safely provide this type of recreation.

Motorized Recreation

There is no motorized vehicle use allowed on the property except for forestry and farming machinery, law enforcement and service vehicles. Occasionally, ATVs have entered the property from neighboring lands but violations have been rare in recent years. Since the CESF is small and somewhat isolated, there are no good opportunities to connect to other ATV corridors within the region. Prior to gating the major forest roads in the 1970s, damage from vehicle rutting, dumping of trash, and illegal camping were commonly reported problems on the property. These problems have all but been eliminated in the interior of the property since motorized vehicles have been restricted. Additional gates may be needed on minor forest roads to further control vehicle access. Some maintenance is needed on the major forest roads and parking areas to improve visitor vehicle access. The main eastern entrance road and parking lot is in need of frequent re-grading to remove potholes. The CESF is one of the few public properties in the region without motorized vehicle access. This situation offers excellent quiet recreational opportunities.

Environmental Education

The CESF has frequently been used for educational events with local schools, conservation organizations, university classes and forest landowner organizations. A youth turkey hunt, public tree plantings, woodland owner field days, university astronomy classes and habitat restoration projects are few examples of past events. Forest management practices and research projects have also served as important educational opportunities for professional foresters and resource professionals across the state. The CESF is the largest publicly managed, accessible forest in the region and could provide forest based educational opportunities. The lack of Department resources required for this type of education is a limiting factor. Partnerships with local schools and organizations would need to be established to facilitate environmental education events. There are four nature centers and two registered school forests in the vicinity of the CESF at the present time.

Hunting

Hunting is probably the recreational use that draws the most people to the CESF. Species that are commonly hunted include white-tailed deer, ruffed grouse, squirrels, turkeys, and rabbits. The period of heaviest use is during the traditional 9-day gun deer season. Most of the hunters are from the local vicinity, but DNR staff has had contact with turkey and deer hunters from many other parts of the state as well as from surrounding states. DNR staff has also noted that many of the local small game hunters are Hmong, but no data has been collected on ethnicity or number of hunters. The overall hunting safety record for the property has been good, but there have been minor accidents and conflicts. Conflicts could often be avoided by the appropriate use of blaze orange during hunting seasons, by hunting and non-hunting users alike. There are opportunities to address potential conflicts before they arise and make sure the property maintains safe, enjoyable hunting opportunities. Habitat improvement projects implemented by public volunteers (organized by DNR law enforcement, wildlife and forestry staff) might educate new

hunters and exemplify the role hunters may take in the sustainability of their sport. Improved relations between hunters may also result from “a community project.”

There are currently a total of 1,899 acres of privately owned lands in the Managed Forest Law program open to public hunting in La Crosse County (WI DNR Smart Growth stats, 2006). This is only 10% of the total MFL acres in the county. This is a growing trend across the state; fewer private landowners are allowing public access to their forests. In an area of the state dominated by private ownership, access to public recreation lands, such as the CESF, is crucial. The demand placed on public fishing, hunting, and recreation land will increase as more private land is purchased by owners not willing to keep their property open to the public. The CESF represents one of the few large, publicly owned, upland forests in La Crosse County suitable for hunting a variety of forest game species.

Wildlife Viewing, Hiking, Scenic Vistas

Historically, Russlan Coulee Road crossed the property and was used for pleasure driving and sight-seeing. The 1978 plan called for the closure of this public road to reduce maintenance costs and wildfire incidents. Today the remnants of this road are maintained in a non-erodible condition and used for forestry, hunting, hiking, horseback riding and wildlife viewing. The designated ski trails and other forest roads are the main access for hikers seeking to view wildlife or enjoy the forest scenery. The 1978 Master Plan identified Scenic Areas on CESF, which amounted to the landscape adjacent to and visible from the former Russlan Coulee Road and the forested hillsides along County Highway II as it winds through the southeast part of forest.

Berry, Fruit, Nut and Mushroom Gathering

The gathering of nuts, berries and mushrooms has long been popular on the CESF.

Water-based Activities

There are no water bodies within the CESF. However, several natural springs present a unique scenic opportunity in the forest. The springs may be reached by hiking from several parking locations.

Camping

Overnight camping and fires are not allowed on the property. Violations sometimes occur, but are less frequent since the installation of gates on all main forest roads. Campfires and vandalism are more common problems in the designated parking areas.

G. Social/Cultural

1. Land Ownership

There are no private in-holdings within the property boundary, but there are 77 acres under sharecropping agreements with 4 local farmers who operate farms near the CESF boundary. The original master plan found mutual benefit for the forest and area farmers with the continuation of these agreements. These areas of row crops and hay provide open space, wildlife food and cover, maintain field sites for future tree planting and avoid establishment of invasive species and violation of local noxious weed ordinances on CESF.

Private property borders the CESF on all sides with minor trespass infringements. Four quarter-quarter sections remain in private ownership within the original CESF project boundary (see Base Map). As of 2006, there were 19,106 acres of forestland enrolled in the Managed Forest Law program in La Crosse County and seven of these private forests are adjacent to the CESF. The majority of land adjacent to the CESF is either in forest or agriculture and is zoned “Exclusive Agriculture.” However, the number of nearby residential homes has increase somewhat over the past decade. Due to its proximity to La Crosse and West Salem, the lands surrounding the CESF are under increasing development pressure.

2. Historical/Archeological

There were two historical sites on the property. One of the historical structures is a storage building that has not been assessed for listing on the National Register of Historic Places (NRHP). The other structure, a residence, was not NRHP eligible, and was removed.

There is one archeological site, a lithic scatter, which is just outside of the forest boundary to the southwest. There were no specific artifacts identified in the remains and they are dated generally from prehistoric (pre-1634) times (Dudzik 2007). There may be more historical or archeological sites on the property, but no others have been identified.

H. Administrative and Other Facilities

The management of the CESF is headed by the DNR Forester for La Crosse County with guidance and assistance from the DNR Conservation Warden, Wildlife Biologist, Regional Ecologist and Area Forestry Leader. These specialists are located at the La Crosse Service Center and there is no full time official Department presence on the forest. Facilities on the forest consist of access roads, ski trail markers and kiosk, one storage building, nine parking areas, ten gates and fence around the much of the perimeter. (See Appendix F: Base Map of the Coulee Experimental State Forest for location of noted facilities). Vandalism, alcohol use and litter have been noted as problems, probably due to the remote nature of the property. Continued maintenance (e.g., grading, gravel, etc.) is needed on the access roads, parking areas and gates to maintain safe and reasonable access to the property.

I. Additional Resource Management Issues

Research Partnerships

The CESF was originally established as a research forest and a history of the experiments are visible on the landscape today. Partnerships with the USDA Forest Service, universities, forest products industry, the Aspen/Larch Genetics Cooperative and others have fostered a rich tradition of forestry and watershed research on the property. This research has in turn helped guide resource management practices in the region and helped educate a generation of resource professionals. Research has declined since the mid seventies and current studies are intermittent. However, opportunities exist to foster further research, in cooperation with the Forest Service, universities and others, that will help inform and improve land management in the Driftless region. For example, the Forest Service recently renewed its 15-year research lease on the

property. Additional opportunities exist to maintain and build upon past research through the preservation of overgrown research plots and the maintenance of research data.

Landscape Scale Management

It is important to consider management at a landscape scale, and to consider stand level opportunities within the larger context of the surrounding landscape. The CESF offers an excellent opportunity within the Driftless area to manage for large blocks of contiguous forest and expand dry prairie communities. Maintaining larger areas of these natural community types will improve the long-term viability of the plant and animal populations that reside here. There are a number of properties adjacent to the CESF that are under the Managed Forest Law program (see Base Map). This potentially offers the opportunity to sustainably manage for a larger forested area, intermingled with other community types (i.e. cliffs and prairies). In order to manage on a landscape scale, it is important to increase cooperation and coordination across administrative boundaries. Management interest and emphasis may vary between public and private land ownerships, but there are still many opportunities to work cooperatively in conserving the region's resources on a landscape scale.

Project Boundary Expansion

Another way to conserve lands surrounding the CESF and increase the ecological, social, and economic benefits associated with a large, upland forest is to increase the number of acres in public ownership. Most of the land within the original CESF project boundary, except for four quarter-quarter sections, has been purchased by the state. If a new project boundary was considered, additional opportunities may exist to expand the contiguous state forest lands. A project boundary designation allows the DNR to make offers to willing sellers of land only.

Forest Management Practices for Water Quality

The entire Driftless region presents forest and agricultural management challenges in terms of the steep topography and erodible soils. The protection of the hydrology and water quality in the Driftless area is a major priority. The CESF in particular contains several springs that feed into nearby streams. The CESF provides many opportunities to develop and demonstrate "best management practices" for harvesting, erosion control and water quality that can help inform private lands management in the region. The property has already been a model for this type of research with the "ditch-saver" study that demonstrated a method to stabilize forest gully erosion.

J. Property Limitations

1. Planning Sideboards

State Forest Designation

The Regional and Property Analysis presented here is an important step in the process of developing a master plan for the Coulee Experimental State Forest. The Department's master planning rule (Wisconsin Administrative Code NR44) identifies that this analysis and the final property master plan must meet the statutory purpose of the property's designation. In this case, the property is a state forest as defined in Wisconsin Statutes 28.

State forests such as the CESF are an important part of the Department's broader mission to provide leadership in "all matters pertaining to forestry within the jurisdiction of the state...and advance the cause of forestry within the state" (§28.01). In order to define this mission, the purposes and benefits of state forests are outlined in the following language of 28.04 (2):

- (a) The department shall manage the state forests to benefit the present and future generations of residents of this state, recognizing that the state forests contribute to local and statewide economies and to a healthy natural environment. The department shall assure the practice of sustainable forestry and use it to assure that state forests can provide a full range of benefits for present and future generations. The department shall also assure that the management of state forests is consistent with the ecological capability of the state forest land and with the long-term maintenance of sustainable forest communities and ecosystems. These benefits include soil protection, public hunting, protection of water quality, production of recurring forest products, outdoor recreation, native biological diversity, aquatic and terrestrial wildlife, and aesthetics. The range of benefits provided by the department in each state forest shall reflect its unique character and position in the regional landscape.
- (b) In managing the state forests, the department shall recognize that not all benefits under par. (a) can or should be provided in every area of a state forest.
- (c) In managing the state forests, the department shall recognize that management may consist of both active and passive techniques.

Forest Certification

In addition, state forest management is now guided by dual forest certification under the Forest Stewardship Council (FSC) and the Sustainable Forest Initiative (SFI). To maintain this certification, the state of Wisconsin must manage our state forests using strict environmental, social, and economic standards as outlined in the certification agreement.

USDA Forest Service

In the particular case of the CESF, the USDA Forest Service holds a lease in order to "conduct forestry, research and related studies...with the object of supplying practical forest-land-management information to the owners of similar land". The lease further states: "The lands herein leased shall be available to the Department of Natural Resources for normal State Forest uses, provided that such uses do not hinder or interfere with the use of the lands for the purposes herein set forth".

2. Ecological Limitations

Parcelization

Parcelization is the subdivision of relatively large ownerships into smaller parcels. Currently, non-agricultural development is sparse around the property; the majority of land is in private agricultural ownership. As the greater La Crosse area grows, the buffer of predominantly agricultural land around the forest will diminish and the number of smaller parcels will increase. Development adjacent to CESF boundaries will limit boundary expansion opportunities, increase the potential for boundary conflicts and complicate forest management activities. Development

may also isolate the CESF and create an ecological island with reduced corridors to other natural areas. Zoning around the CESF is primarily “Exclusive Agricultural.” This classification gives a greater amount of protection from development than other classes. It should be noted that some residential development has already occurred near the property.

Habitat Fragmentation and Loss

Habitat fragmentation occurs when large contiguous patches of habitat are broken up into smaller isolated patches, usually with separate ownerships. Changes caused by habitat fragmentation can limit natural pollination and seed dispersal, increase predation and competition and decrease plant and animal populations. When Euro-American settlement took place during the 1800s, much of the richest forest and prairie land of the Driftless region was converted to agricultural uses and many native plant and animal populations suffered from habitat loss.

Habitat loss also occurs when mixed forest stands are intentionally converted to single species monocultures, resulting in lower plant and structural diversity. Dry prairie habitat loss is occurring on CESF simply through natural succession to woody plant species.

Ecological Simplification

Ecological simplification occurs when diverse, relatively natural habitats are “simplified” through various factors, resulting in fewer species and less complex ecosystems. Invasive species, excessive browsing and some traditional forestry practices contribute to ecological simplification. For example, historical livestock grazing on the dry prairies of the CESF likely resulted in the loss of some native plant species, contributing to ecological simplification of these sites.

Excessive Herbivory

Excessive browsing by white-tailed deer on CESF has the potential to limit young tree establishment and reduce the diversity of ground layer plants found within the forest. Negative economic consequences could result from a reduction in desirable tree establishment and the compromised ability of the forest ecosystem to ward off insects and diseases or recover from wind or ice storm damage. An overall reduction in the quality of deer habitat and health of the herd could also take place.

Invasive Species

Invasive plant species have the potential to displace native plants and associated wildlife from established natural communities. The Invasive Plant Survey completed in June 2007 in the CESF found garlic mustard, autumn olive, honeysuckle, buckthorn, multiflora rose and barberry, all species with the capability to further damage to the property

Soil Erosion

The steep slopes and erosive nature of CESF soils will result in soil erosion on agricultural fields without plants or crop debris for protective cover and on roads or trails where vegetative cover and forest litter have been removed. Prominent signs of historical erosion on CESF are the deep ravines that were formed soon after European settlement introduced traditional agricultural

practices of that era. Soil erosion on fields, the abandoned town road, logging trails and the designated ski trail is now prevented by best forest and agricultural management practices

IV. FINDINGS AND CONCLUSIONS

A. Ecological Significance and Opportunities of the Coulee Experimental State Forest

1. Overview

The Coulee Experimental State Forest is relatively small compared to other State Forests, but it represents a significant block of publicly owned, upland forest in a region dominated by agriculture and non-industrial private forests. The property's character is typical of the Driftless Area of Wisconsin in terms of its geology, topography, and ecology. Unique ecological features include mature oak forests, dry prairies, cliff communities, and a legacy of forest research. This diversity creates multiple opportunities in terms of forest management and research, wildlife habitat, and the promotion of rare species and natural communities.

The CESF is unique in Wisconsin due to its extensive research history. This research has helped inform and improve forest and watershed management practices across the entire region. With renewed interest from the USDA Forest Service and other research partners, additional research opportunities exist that may yield more information on sustainable management in the Driftless Area. The CESF offers an opportunity not available on other state lands in this region to increase our knowledge of sustainable forestry practices and to demonstrate best management practices that educate non-industrial private forest landowners. The research lease with the Forest Service does allow for normal State Forest uses, but it may also limit some recreation and management alternatives to be considered in the master planning process.

2. Forests

Supporting Relevant Forest Research

The original mission of the CESF was to support forest and watershed research to help guide better land management practices within the Driftless Area and this mission remains a central theme for the property. In many ways the property is still representative of the regional landscape and offers great opportunities to continue supporting this type of applied research. The combination of diverse upland forest types and agricultural lands provides research potential in the areas of hardwood forest management, forest hydrology, plantation management, natural community restoration and more. Opportunities also exist to maintain historical research information and field plots.

Promoting Contiguous Blocks of Forestland

At just under 3000 acres of forestland, the CESF represents one of the largest blocks of publicly owned, upland forest in the region. The size and quality of this forested ecosystem allows management opportunities for a diverse mix of forest types and age classes. This in turn supports a diversity of plant and animal species not found on smaller parcels. There may be future opportunities to improve and expand the effective size of this sustainably managed forest through cooperative efforts with neighbors (e.g., Managed Forest Law program, tree planting, etc.) and/or through widening the CESF project boundary.

Forest Certification

The CESF is certified sustainable by two independent, third party forest certification systems. Forest certification ensures that the CESF remains sustainably managed and continues to provide a source of certified forest products to local industry that in turn supports the regional economy. Participation in forest certification programs provides the opportunity to monitor and continuously improve forest management practices on the state forest.

High Conservation Value Forests

Property assessments have identified high quality examples of Southern Dry-mesic and Southern Dry Forests, including the associated Dry Prairies. Some forest characteristics that are ecologically important here include; large stand size, biologically mature trees, relatively intact canopies, standing snags, tip-ups and coarse woody debris. Large, contiguous stands with these old growth characteristics are uncommon and declining in the Driftless Area and are particularly critical habitat for forest interior songbirds. Most of these stands contain biologically mature oak trees with little or no oak regeneration in the understory. Forest management opportunities exist to feature techniques that sustain and enhance these high conservation values. This a potential opportunity for forest research on the CESF.

Maintaining the Oak Forest

Despite the fact that 54% of the CESF is currently dominated by oak forests, oak regeneration is not present or is limited within most stands, especially on north-facing slopes where the cool, moist growing conditions favor shade-loving trees, such as basswood and maple. The natural succession away from oak towards central and northern hardwood forests is a common occurrence throughout the region since the suppression of prairie and forest fires. Excellent opportunities exist on the CESF to experiment with various oak regeneration techniques, including the introduction of prescribed fire where feasible and safe. Sustaining the oak forests through active management would not only benefit this valuable timber and wildlife resource, it would provide research and demonstration ideas to benefit the entire region.

Maintaining Early Successional Forests

Early successional forest types, such as aspen and white birch, provide habitat for a variety of game and non-game wildlife species. Forest management opportunities exist to maintain a component of these forest types on the property.

Managing Pine Plantations

The CESF has a legacy of red pine, white pine, European larch, Norway spruce, white spruce and northern red oak plantations established over the past 50 years for forest management and research purposes. Since many of the plantations are no longer part of an active experiment, periodic thinning has been conducted to maintain tree vigor and health. Thinning allows the trees to increase in size and eventually will promote understory development and structure within the stand. Some plantations, often based on genetic trials, should be carefully maintained to preserve important plant material for future research.

Central Hardwood Forests

The second most abundant cover type (16% by area) on the CESF is central hardwoods. These diverse hardwood stands offer the opportunity to manage for fine quality hardwood sawtimber,

improve forest health through increased resistance to gypsy moth and other pests, diversify wildlife habitat and develop and demonstrate effective forest management techniques that can be applied to similar forests throughout the region

Controlling Invasive Species

A variety of invasive forest plant species have been found on the CESF. Most of these plant populations are considered well established, but have not yet spread across the entire property. Control measures are needed to prevent further spread of these populations and the degradation of native forest communities. Management options should be considered on recreational trails that appear to be a pathway for the spread of garlic mustard.

3. Wildlife

The CESF has numerous natural communities and diverse forest types that provide habitat for game and non-game species of wildlife. Management to maintain these populations will allow for continued hunting and viewing opportunities, two of the main recreational pursuits on the property. Developing a balance between the forest management opportunities listed above is critical for the long term support of the diverse wildlife found on the CESF.

Habitat for game species, such as grouse, turkey and rabbit can be enhanced by promoting early successional forest types, such as aspen and white birch that provide brood cover. Squirrel, turkey and deer habitat can be enhanced by sustaining the oak forest type that provides a critical food source. Habitat for neo-tropical migratory forest songbirds can be enhanced through the expansion and management of large, contiguous blocks of forest and the promotion of old forest structure. Grassland communities and their associated wildlife species can be enhanced through the restoration of dry prairies and the maintenance of native grass plantings and agricultural fields.

4. Natural Communities

The CESF is notable for its large blocks of Southern Dry and Southern Dry-mesic Forest communities within a matrix of generally agricultural land. Several rare plants and animals are found on the property, which speaks to the ecological quality of the forest. This is particularly important with the occurrence of rare birds with affinities for older, forest interior habitats (e.g., Cerulean Warbler) for which habitat in the region is limited. Opportunities exist to coordinate forest management and research efforts that investigate methods to sustain and enhance old forest qualities and at the same time sustain desirable forest composition.

The CESF includes several smaller areas of rare natural communities, including Dry Prairie and Cliff communities. Opportunities exist to restore and expand the dry prairie communities that have been overgrown by woody vegetation. Clearing and prescribed burning can be used to restore native prairie vegetation where safe and feasible.

5. Threatened, Endangered and Special Concern Species

The rare plants and animals found on the CESF, such as yellow gentian or Cerulean warbler, are most often associated with the interior forest, dry prairie and cliff habitats. Management consideration for the natural communities that support these species will hopefully help sustain viable populations within the forest.

6. Soil and Water Resources

The CESF contains topography, soils and hydrology comparable to much of the Driftless Area. These conditions provide both challenges in terms of forest and recreation management and opportunities to develop and demonstrate “best management practices” for harvesting, erosion control and water quality that can help inform land management in the region.

B. Recreational Significance and Capabilities of the Coulee Experimental State Forest

1. Overview

The Coulee Experimental State Forest supports a variety of day-use recreational opportunities that are compatible with the property goals and have limited availability elsewhere in the region. The forest is a popular destination for hunting, hiking, cross-country skiing, horseback riding, nature study and wildlife viewing. Certain activities have been limited because of property size, topography and soils, conflicts with other users, incompatibility with research goals and limited DNR resources. Today the balance between the capabilities and limitations of recreation on the CESF is more important than ever as the population and demand for public land increases. Future recreational activities on the forest must remain compatible with the overarching research and forest management goals for the CESF.

2. Hunting

Hunters are the main recreational users on the CESF. The region has a limited supply of upland forest that is open to public hunting and the property continues to be a popular spot to hunt deer, turkey, squirrel, rabbit and grouse. Demand for public hunting land will likely increase as the population increases and access to private lands becomes more difficult. Opportunities exist on the CESF to improve habitat for popular game species such as turkey, grouse and squirrel through forest management practices that are consistent with the other property goals. Maintenance of entrance roads, parking areas, gates and forest roads open to foot travel will allow good access for most hunters and at the same time control unwanted vehicle access and vandalism within the interior of the forest. Education can be used to promote safe hunting practices (e.g., use of blaze orange by all forest users) and reduce conflicts between user groups. Habitat improvement projects that involve public participation may introduce new hunters to the sport, exemplify hunter responsibilities and foster sound relations between hunters.

3. Hiking and Sight-seeing

The entire forest is open to year-round hiking. Many visitors enjoy a quiet hike for exercise, viewing wildlife and scenery, searching for morels and/or nature study. The designated ski trail and other forest roads are the primary access corridors used by most hikers. Maintenance of these corridors will allow for continued use by the public, with minimal impact to the forest resources. The main town and county roads around the property also provide good sight-seeing opportunities. The 1978 master plan identified Scenic Areas along these roads where consideration was given to the maintenance of aesthetics.

4. Cross-country Skiing

The 12 miles of designated ski trails remain a popular recreational draw to the CESF. The trail system has been groomed each winter by citizen volunteers and signage has been maintained by DNR staff. The trail system needs continual maintenance and improvements to meet Department standards for clearance and hazard tree removal. Trail grading is also needed in some areas to make skiing more enjoyable. Opportunities may exist to make skiing conditions better and reduce conflicts between user groups by improving the condition and layout of the trail system.

5. Horseback Riding

Horseback riding has been allowed on the CESF for many years, but there are no designated bridal trails on the property. Horseback riding opportunities are considered limited within the region. Riders primarily take short rides on the CESF using the designated ski trail and forest roads for access. Overall use has been generally low to moderate, however DNR staff have observed increased use over the past several years. Concerns with trail maintenance, erosion on steep road grades and movement of invasive species will need to be considered in planning, especially if ridership increases.

6. Environmental Education

The CESF can continue to provide environmental education opportunities for the region, especially by building off of its research history. Research and forest management demonstrations can continue to help guide better land management practices within the Driftless Area. Department resources for educational efforts are limited, so partnerships with local schools and conservation organizations would be critical in making this a reality.

7. Motorized Recreation, Mountain Biking and Camping

Motorized recreation, mountain biking and camping have not been allowed on the CESF due to several factors, including the small property size, erodible nature of the soils, conflicts with other users, incompatibility with research priorities and limited DNR resources to manage intensive recreation. Because the CESF is a relatively small and isolated property, it offers no good opportunities to connect with other motorized recreational corridors or provide desirable overnight camping. The CESF has rather found a niche supporting quiet, day-use recreation that is compatible with research and forest management and has limited availability elsewhere in the

region. This recreational niche appears consistent with the property's overall capabilities and limitations and is consistent with the property's primary vision and goals.

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