

Final

**PROGRAMMATIC ENVIRONMENTAL
ASSESSMENT FOR THE
IMPLEMENTATION OF THE
CONSERVATION RESERVE
ENHANCEMENT PROGRAM FOR
WISCONSIN**



**US Department of Agriculture
Farm Service Agency**

November 2005

EXECUTIVE SUMMARY

This Programmatic Environmental Assessment (PEA) describes the potential environmental consequences resulting from the proposed implementation of Wisconsin's Conservation Reserve Enhancement Program (CREP) Agreement and its Amendments (WI CREP, 2005). The environmental analysis process is designed to ensure the public is involved in the process and informed about the potential environmental effects of the proposed action; and to help decision makers take environmental factors into consideration when making decisions related to the proposed action. Throughout this executive summary, the term "CREP agreement" will refer to the original agreement and all the amendments that have succeeded the original document.

This PEA has been prepared by the United States Department of Agriculture (USDA), Farm Service Agency (FSA) in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and 7 CFR 799 *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act*.

Purpose and Need for the Proposed Action

The purpose of the proposed action is to implement Wisconsin's CREP agreement. Under the agreement, the State seeks to improve the water quality of several water bodies that drain agricultural lands throughout the State of Wisconsin. Wisconsin's CREP agreement includes over 95 percent of the waters include on the State's list of impaired waters that are impacted by agricultural activities. The State also seeks to reduce peak discharge flows from agricultural lands in the Lake Superior Basin that increase erosion and sedimentation in the streams and the outlets to Lake Superior. Within these designated areas, eligible farmland would be voluntarily removed from production and approved conservation practices, such as the establishment of permanent grasslands, grassed waterways, filter strips, riparian buffers, wetland restoration, rare and declining habitat restoration and wildlife habitat buffers would be implemented. Producers would receive annual rental payments and under certain conservation practices would be eligible for one-time payments to support the implementation of approved conservation practices. The Wisconsin CREP agreement is needed to assist the State in meeting the following conservation goals:

- Improve water quality,
- Protect drinking water,
- Protect threatened and endangered species,
- Improve wildlife habitat, and
- Assist the State in complying with environmental regulations that are related to agriculture.

Proposed Action and Alternatives

The proposed action would implement Wisconsin's CREP agreement. Under this agreement, a total of no more than 100,000 acres of farmland may be enrolled in all or a portion of the following counties: Ashland, Barron, Bayfield, Brown, Buffalo, Calumet, Chippewa, Clark, Columbia, Crawford, Dane, Dodge, Door, Douglas, Dunn, Eau Claire, Fond du Lac, Grant, Green, Green Lake, Iowa, Iron, Jackson, Jefferson, Juneau, Kewaunee, La Crosse, Lafayette, Manitowoc, Marathon, Marquette Monroe, Outagamie, Ozaukee, Pepin, Pierce, Portage, Racine, Richland, Rock, St. Croix, Sauk, Shawano, Sheboygan, Taylor, Vernon, Walworth, Waukesha, Waupaca, Waushara, Winnebago, and Wood.

The following watersheds have been identified by the State as areas that would benefit under this CREP agreement: Apple-Plum, Bad-Montreal, Baraboo, Beartrap-Nemadji, Black, Buffalo-

Whitewater, Castle Rock, Crawfish, Des Plaines, Door-Kewaunee, Duck-Pensaukee, Eau Claire, Grant, Jump, Kickapoo, La Crosse, Lake Dubay, Lake Winnebago, Lower Chippewa, Lower Fox, Lower St. Croix, Lower Wisconsin, Manitowoc-Sheboygan, Menominee, Milwaukee, Namekagon, Oconto, Pecatonica, Pike-Root, Red Cedar, Rush-Vermillion, Sugar, Trempealeau, Upper Chippewa, Upper Fox IL, Upper Fox, Upper Rock, Upper St. St. Croix, Upper Wisconsin, and Wolf.

Producers would participate in CREP by enrolling eligible farmland by entering into 14-15 year Conservation Reserve Program (CRP) contracts. The CREP would provide special incentives for the enrollment of sensitive lands, and allow producers to enter into either (1) a special concurrent 14-15 year agreement with the State for additional incentives to enroll that land in the program, or, (2) a perpetual easement granted to the State. The easement will provide further extended benefits as a result of the landowner’s involvement with the program and will provide further enhanced payments to the landowner as an incentive for that enrollment. Approved conservation practices would be established and maintained on enrolled lands for the contract duration. Producers would receive annual rental payments for the duration of the contracts as well as financial and technical support for implementing and maintaining the practices. For lands enrolled in CREP, annual rental payments would be the sum of the base soil rental rate, an incentive payment, and an annual maintenance rate. This PEA documents the analysis of the Proposed Action and the No Action Alternative. Under the No Action Alternative, no lands would be enrolled in CREP. None of the conservation practices or rental payments described above would be implemented.

Summary of Environmental Consequences

Below in Table ES-1 is a summary of the potential impacts identified in this PEA.

Table ES-1: Executive Summary Impacts Table

Resource	Proposed Action	No Action Alternative
Biological Resources	The proposed action is expected to contribute to vegetation and wildlife diversity. Positive impacts to threatened and endangered species, species of concern, and their habitats are expected.	Continued degradation of terrestrial and aquatic habitats; potential for invasion by exotic species.
Cultural Resources	There is high potential for encountering archaeological resources. Site specific archaeological and historic architectural surveys and coordination with SHPO are recommended prior to the installation of approved conservation practices. Consultation with several tribes that have traditional ties to the Wisconsin CREP areas affected may be required once sites are selected and could delay program enrollment.	No major impacts are expected, though negative impacts to cultural resources could result from changes in existing farming practices or the disturbance of previously undisturbed land.

Table ES-1: Executive Summary Impacts Table (continued)

Resource	Proposed Action	No Action Alternative
Water Resources	<p>Significant long-term positive impacts to surface and groundwater quality are expected. Wetlands acreages are expected to increase as a result of the proposed conservation practices. Temporary minor adverse impacts to existing wetlands, floodplains, and localized surface water quality may result from runoff during activities associated with the installation of the proposed conservation practices.</p>	<p>Continued degradation of surface and groundwater and wetlands is expected to result if the proposed action is not implemented. The surface drainage systems would continue to receive sediment from eroded soils and potential contaminants from agricultural wastes.</p>
Earth Resources	<p>Positive impacts to localized topography and soils are expected to result from implementation of the proposed action.</p>	<p>Continued erosion is expected to result in susceptible areas that are not vegetated, have unrestricted surface flow, or have unimproved channels if the proposed action is not implemented.</p>
Air Quality	<p>No impacts to attainment status or violations of State Implementation Plan standards would result from the proposed action. However, localized temporary adverse minor impacts to air quality may result from ground disturbing activities and the use of heavy equipment during the installation of approved conservation practices.</p>	<p>No change from current conditions is expected.</p>
Recreational Resources	<p>Positive long-term effects on recreational resources where proposed conservation practices are expected to increase habitat for game and non-game species. Water quality improvements would result in better recreation fishing and other water related recreation.</p>	<p>No change from current land-based recreational opportunities is expected; however, continued water quality degradation may affect game fish or other water related recreation.</p>
Socioeconomics and Environmental Justice	<p>Since most farm labor is performed with minimum assistance from seasonal laborers, there should be no adverse impacts on farm labor. Some impacts may be felt from reduced sales of seed and other crop supplies as land is removed from production.</p> <p>The CREP area is not considered an area of concentrated minority population, no significant impacts to Environmental Justice is expected.</p>	<p>No changes in current trends in socioeconomic conditions are expected.</p>

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States Department of Agriculture (USDA) Farm Service Agency (FSA) proposes to implement the Conservation Reserve Enhancement Program (CREP) agreement and its amendments for the State of Wisconsin. This Programmatic Environmental Assessment (PEA) has been prepared to analyze the potential environmental consequences associated with the Proposed Action and No Action Alternative in accordance with the requirements of the *National Environmental Policy Act* (NEPA); the Council on Environmental Quality (CEQ) regulations; and 7 CFR 799 *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act*. Throughout this PEA, the term “CREP agreement” will refer to the original agreement and all the amendments that have succeeded the original document.

1.2 BACKGROUND

The mission of FSA is to “ensure the well-being of American agriculture, the environment and the American public through efficient and equitable administration of farm commodity programs; farm ownership, operating and emergency loans; conservation and environmental programs; emergency and disaster assistance; domestic and international food assistance and international export credit programs.”

The Conservation Reserve Program (CRP) was authorized by the Farm Security Act of 1985 and is the Federal government’s largest voluntary land conservation program. CRP is a voluntary program that supports the implementation of long-term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land.

CREP was established in 1997 under the authority of the Secretary of Agriculture as a component of CRP. The purpose of CREP is to address agriculture-related environmental issues by establishing conservation practices (CPs) on farmlands using funding from State, tribal, and Federal governments as well as non-government sources. Federal funding is provided by the Commodity Credit Corporation (CCC).

CREP addresses high priority conservation issues in specific geographic areas such as watersheds. CREP programs are limited to 100,000 acres per state. Producers with land eligible for inclusion in CREP receive annual rental payments in exchange for installing approved CPs. In addition, producers may receive monetary and technical support for establishing these practices.

In 2003, a final Programmatic Environmental Impact Statement (PEIS) was prepared for the proposed nationwide CRP, authorized under the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) (FSA 2003). The PEIS contained the results of detailed analyses of the impacts of implementing CRP nationwide including the CREP component. The analyses of the impacts of implementing Wisconsin’s CREP agreement presented in this PEA tier from the nationwide PEIS. Wisconsin’s CREP agreement would enroll no more than 100,000 acres of eligible farmland in the Wisconsin watersheds to establish approved CPs on the land. Approximately 5,000 acres within the Lake Superior portion of the total Wisconsin CREP are to be enrolled through December 31, 2007. Specific tracts of land that would be enrolled in the program have not yet been identified. Once eligible lands are identified, site-specific NEPA analysis would be completed as provided for in Part 10 of the *Agricultural Resource Conservation Program Handbook 2-CRP*.

Wisconsin is a predominantly agricultural state, with 16.8 million acres, or about 47 percent of the state’s surface area devoted to agriculture (DATCP, 1998 Wisconsin Agricultural Statistics). Counties in the Wisconsin CREP program include 48 in the southern and central portion of the State: Barron, Brown, Buffalo, Calumet, Chippewa, Clark, Columbia, Crawford, Dane, Dodge, Door, Dunn, Eau Claire, Fond du Lac, Grant, Green, Green Lake, Iowa, Jackson, Jefferson, Juneau, Kewaunee, La Crosse, Lafayette,

Manitowoc, Marathon, Marquette Monroe, Outagamie, Ozaukee, Pepin, Pierce, Portage, Racine, Richland, Rock, St. Croix, Sauk, Shawano, Sheboygan, Taylor, Vernon, Walworth, Waukesha, Waupaca, Waushara, Winnebago, and Wood.

Four additional counties are situated along the southern bank of Lake Superior: Ashland, Bayfield, Douglas, and Iron counties. In general, the south and central areas of Wisconsin are characterized by grasslands and some riparian areas whereas the Lake Superior region is characterized by riparian areas and wetlands. Throughout this PEA where there are substantial differences between the environmental, cultural, or socio-economic features between these two regions, the two regions will be described separately.

Wisconsin CREP Goals

The State of Wisconsin proposes to implement the CREP program to improve water quality in predominantly agricultural areas that drain into the surface waters of lakes and rivers. The CPs proposed are anticipated to reduce sediment and nutrient loading. In addition, implementing CREP would enhance wildlife habitats, including threatened and endangered species, particularly within grassland areas.

South and Central Wisconsin Region

The specific goals of CREP in these areas are to:

- Reduce nutrient runoff from agricultural and pasture land of phosphorous (610,000 pounds) and nitrogen (305,000 pounds) by up to 10 percent
- Reduce sediment (335,000 tons) in runoff by up to 15 percent.
- Establish riparian buffers on up to 50 percent (about 3,700 miles) of drainage that currently does not have adequate buffers.
- Establish an additional 10 percent (15,000 acres) of grassland habitat acreage within the grassland regions to encourage increases in the population of endangered or threatened birds and other wildlife.

Lake Superior Region

CREP will focus on improving water quality by reducing peak discharge from agricultural lands by installing riparian buffers, filter strips, grassed waterways, and restoring wetland restorations. The environmental objectives of the project in the Lake Superior portion of the Wisconsin CREP are to:

- Reduce the peak runoff flow in critical areas of the Lake Superior Basin by 10 percent to 15 percent.
- Establish riparian buffers and filter strips on 50 percent of the stream miles that drain cropland and marginal pastureland (enroll land that buffers 80 miles of the estimated 160 miles of streams that drain cropland and marginal pastureland in the Lake Superior Basin) in the project areas that currently do not have adequate buffers to improve stream health. The goal is to enroll 5,000 acres (about 35 percent) of the estimated 13,200 acres of cropland and marginal pastureland that are within 300 feet of streams within the basin.

The reduction in peak flow will be greater in the upper portions of watersheds with large concentrations of agricultural lands. The infiltration rates of soils vary greatly among soil types and can be affected by subsurface permeability as well as surface intake. The process developed by the Natural Resource Conservation Service (NRCS) to measure this rate is referred to as hydrologic runoff curve numbers (RCN). On individual participating farmland, participation in CREP will reduce the overall RCN from an average RCN of 89 to an RCN of 77 for red clay soils on cropland and marginal pastureland soils. Based on models, this should reduce peak flow in streams thereby reducing stream scouring (bank cutting and erosion) and reducing sediment levels in the streams and to their outlets at Lake Superior.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the Wisconsin CREP is to provide an opportunity for the State to address environmentally sensitive areas in concert with Federal and local authorities. There are about 25,000 miles of streams

within the project area, with about 16,160 miles of streams draining from farmland. Approximately 20 percent of Wisconsin's assessed perennial streams (21,245 miles) are currently not meeting the standards to support their designated uses. They fail to meet the Environmental Protection Agency's (EPA) established fishable and swimmable standard or they fail to meet the Wisconsin water quality standards designed to implement Federal requirements. Agriculture is a significant source of non-point source pollution in the State. The primary pollutants of concern from agricultural non-point sources are sediment and nutrients. Specifically, the Wisconsin CREP will address these impairments and provide a mechanism for abating the agricultural non-point source.

In order to better address these environmentally sensitive areas, the State and FSA have determined that producers should be provided more enduring conservation benefits than normally achieved through CRP. This will be accomplished by allowing participating producers to enter into contracts for 14- to 15-years as well as providing special incentives for the enrollment of sensitive lands. In addition producers may enter into either:

- (1) a special concurrent 14 to 15-year agreement with the State for additional incentives to enroll that land in the program, or,
- (2) a perpetual conservation easement granted to the State which will further extend the benefits of the landowner's involvement with the program and which will provide further enhanced payments as an incentive for that enrollment.

The primary need for the CREP is to improve the water quality of several water bodies that drain agricultural lands throughout the State of Wisconsin, through a reduction of sediment and the nutrient loading to these water bodies. Improving water quality through CREP will assist in improving water quality in the State's list of impaired waters 303d list.

1.4 REGULATORY COMPLIANCE

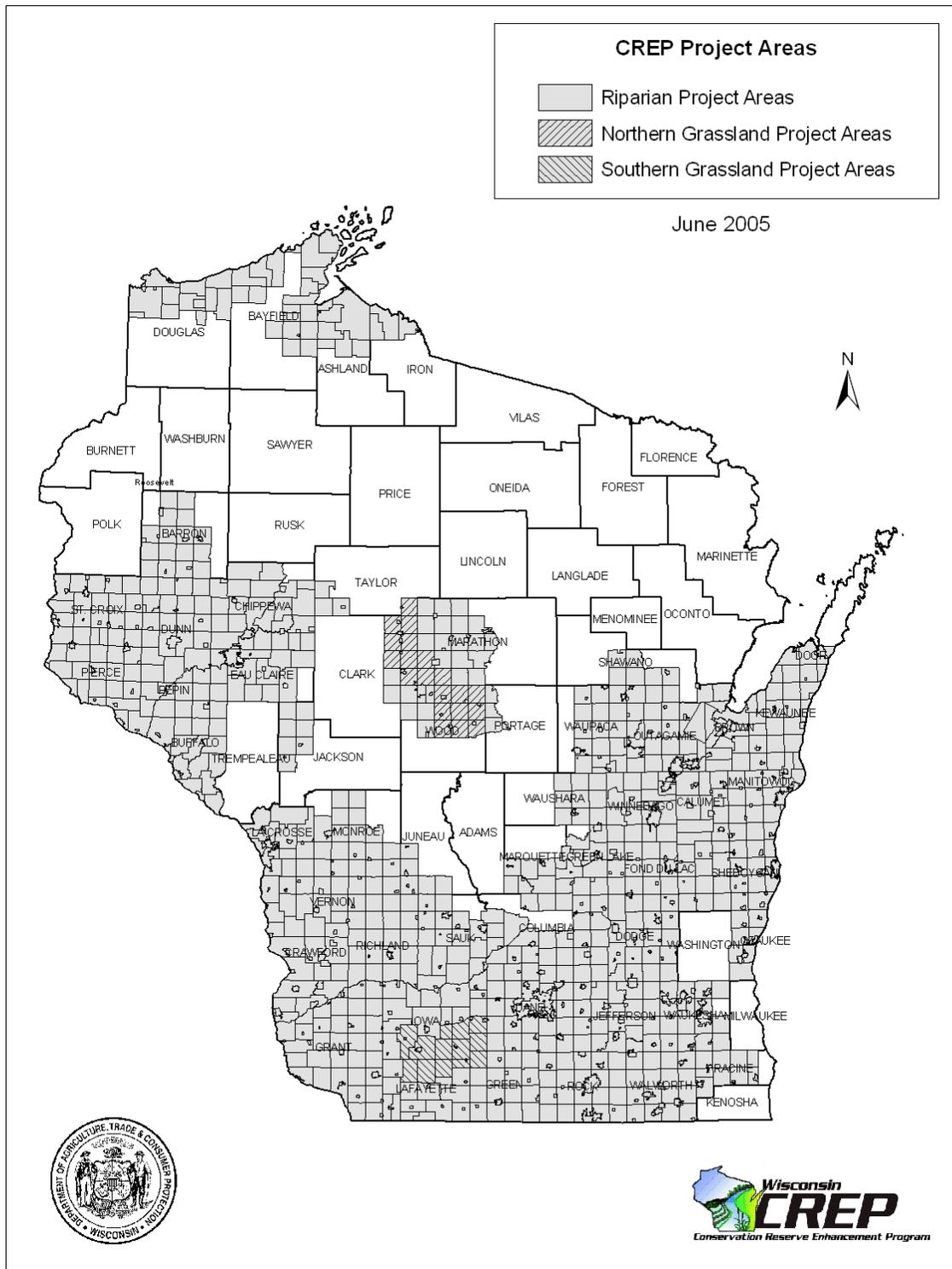
This PEA is prepared to satisfy the requirements of NEPA (Public Law 91-190, 42 United States Code 4321 et seq.); its implementing regulations (40 CFR 1500-1508); and FSA implementing regulation, *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act* (7 CFR 799). The intent of NEPA is to protect, restore, and enhance the human environment through well informed Federal decisions. A variety of laws, regulations, and Executive Orders (EO) apply to actions undertaken by Federal agencies and form the basis of the analysis presented in this PEA. These include but are not limited to:

- Endangered Species Act (ESA)
- National Historic Preservation Act (NHPA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- EO 11514, Protection and Enhancement of Environmental Quality
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

1.5 ORGANIZATION OF THE PEA

Chapter 1.0 provides background information relevant to the proposed action, and discusses its purpose and need. Chapter 2.0 describes the proposed action. Chapter 3.0 describes the baseline conditions (i.e., the conditions against which potential impacts of the proposed action and alternatives are measured) for each of the resource areas. Chapter 4.0 describes potential environmental impacts on these resources. Chapter 5.0 provides analysis of cumulative impacts and irreversible and irretrievable resource commitments. Chapter 6.0 is a list of the preparers of this document. Chapter 7.0 contains a list of persons and agencies contacted during the preparation of this document. Chapter 8.0 contains references. Chapter 9.0 is a glossary of terms used in the PEA.

Figure 1.2-1 Proposed Wisconsin Watersheds and Counties in the CREP Area



Wisconsin Department of Agriculture, Trade, & Consumer Protection

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

FSA proposes to implement the amended Wisconsin CREP agreement. The agreement would enroll lands in CREP by establishing contracts with eligible producers. Approved CPs would be established on up to 100,000 acres within the Wisconsin watersheds. Producers would receive cost share for installing and maintaining such practices as well as annual rental payments for lands enrolled in CREP. A summary of the Wisconsin CREP Program is shown in Table 2.1-1.

Table 2.1-1 Summary of Wisconsin CREP Program

CREP Practice	Lake Superior Basin Project Area	Riparian and Grassland Project Areas	Total Acres
Estimated Acres of Practices for 14-to 15-Year Agreements			
Filter Strips (CP21), Riparian Buffers (CP 22),	2,970 acres	55,512 acres	58,482 acres
Marginal Pastureland Wildlife Habitat Buffer (CP29), and Marginal Pastureland Wetland Buffer (CP30)	800 acres	*	800 acres
Grassed Waterway (CP8A)	50 acres	1,450 acres	1,500 acres
Wetland Restoration (CP23), Wetland Restoration non-flood plain (CP23A)	180 acres	3,573 acres	3,753 acres
Introduced Grasses (CP1), Introduced Native Grasses (CP2), & Grasses Already Established (CP10), Prairie Restoration (CP25)***	NA	10,465 acres	10,465 acres
Total Acres for 14-to 15-yr. Agreements	4,000 acres	71,000 acres	75,000 acres
Estimated Acres of Practices for Perpetual Conservation Easements			
Filter Strips (CP 21), Riparian Buffers (CP 22),	740 acres	19,253 acres	19,993 acres
Marginal Pastureland Wildlife Habitat Buffer (CP29), and Marginal Pastureland Wetland Buffer (CP30)	200 acres	*	200 acres
Grassed Waterway (CP8A)	NA**	NA**	NA**
Wetland Restoration (CP23)	60 acres	1,187 acres	1,247 acres
Introduced Grasses (CP1), Introduced Native Grasses (CP2), & Grasses Already Established (CP10), Prairie Restoration (CP25)***	NA	3,560 acres	3,560 acres
Total Acres for Conservation Easements	1,000 acres	24,000 acres	25,000 acres
GRAND TOTAL ACRES FOR PRACTICES	5,000 acres	95,000 acres	100,000 acres

*The estimated acres of Marginal Pastureland Wildlife Habitat Buffer (CP29) in the Riparian and Grassland Project area was recently added as a result of Amendment #2 and is included with the CP21 and CP22 practices in this table. The practice for Marginal Pastureland Wetland Buffer (CP30) is only eligible within the Lake Superior Basin project area.

** Wisconsin’s CREP application only allows that grassed waterways be established under 14-to-15 year agreements with USDA and the state and not as a state perpetual conservation easement

*** Within the state’s northern grassland project area, these grassland practices are capped at 5,000 acres and capped at 10,000 acres in the southern grassland project area.

The following conservation practices will be utilized for those lands enrolled in CREP.

Establishment of Permanent Introduced Grasses and Legumes	CP1*
Establishment of Permanent Native Grasses	CP2*
Grassed Waterways	CP8A
Vegetative Cover – Grass – Already Established	CP10*
Filter Strips	CP21
Riparian Buffer	CP22
Wetland Restoration	CP23
Wetland Restoration , Non-Floodplain	CP23A
Rare and Declining Habitat	CP25*
Marginal Pastureland Wildlife Habitat Buffer	CP29
Marginal Pastureland Wetland Buffer	CP30**

* Only eligible for grassland areas.

** Only eligible in the Lake Superior area.

Wisconsin’s proposed CREP agreement includes the following options for participation:

- 14-to 15-year contract with CCC and a concurrent 14-15 year agreement with the State of Wisconsin. The Federal payments would be made annually and the State payment would be made up-front (one-time).
- 14-to 15-year contract with CCC and a concurrent perpetual conservation easement with the State of Wisconsin. The Federal payments will be made annually and the State payment made up front (one-time) after signing the CCC contract and an easement document with the State of Wisconsin.

The proposed Wisconsin CREP agreement proposes enrolling a total of 5,000 acres in the Lake Superior Basin in addition to the ongoing enrollment of up to 15,000 acres of expanded grassland cover and 80,000 acres for riparian buffers, filter strips and other practices in the 48 central and southern Wisconsin counties. The initial goal is to enroll 25 percent of the acreage into a 14 to 15-year Federal CREP contract along with a concurrent perpetual conservation easement.

To achieve the goals of the CREP, implementation of the CREP for certain practices follows:

- For the Lake Superior Area only, the maximum average width of filter strips (CP21), riparian buffers (CP22), marginal pastureland wildlife habitat buffer (CP29), and marginal pastureland wetland buffer (CP30), would be 200 feet where the land slopes are 3 percent or less and 300 feet where the land slopes are greater than 3 percent.
- The maximum average width for implementation of the remainder of Wisconsin's CREP would be 150 feet wide. The additional width of the buffer areas enrolled would reduce the runoff volume and the associated peak downstream discharges, reduce the in-stream erosion and sedimentation, and provide additional wildlife habitat.
- The Federal incentive payment for all of the practices would be calculated using the annual soil rental rate, plus an additional 125, 160, or 185 percent, depending on the practice, to a level that should improve participation in the CREP by producers.

2.1.1 Eligible Lands

The Wisconsin CREP agreement would provide for the enrollment of no more than 100,000 acres of riparian buffer areas, restored wetlands, grassed waterways, and upland grassland areas.

1. Up to 15,000 total acres are eligible to be enrolled in the CREP within the grassland project areas, and up to 5,000 acres in the Lake Superior Basin project area. Acres enrolled must meet the eligibility rules in accordance with *Handbook 2-CRP* subject to the following additional specifications.
 - a. The CREP would enroll up to 15,000 acres in the grassland project area, 5,000 acres in the northern grassland project area (see the maps in Exhibit 1) will be enrolled that meet the cropland eligibility requirements in Handbook 2-CRP; that are established in CP1, CP2, CP10, or CP25; and that meet either of the following additional criteria:
 - The land is within 1,000 feet of a water body and is eligible for practice CP21 (filter strip), or
 - b. The land is either highly erodible land (HEL as determined by the USDA NRCS) or has a weighted erosion index (the EI is the portion of the universal soil loss equation which includes the runoff factor, soil erodibility factor, and slope and slope length factors) of 8 or greater.
 - c. Eligible cropland in the south grassland project area (see the maps in Exhibit 1) may be eligible for CP1, CP2, CP10, or CP25 only if it is located within 1,000 feet of a water body eligible for approval of CP21 and that meet either of the following criteria:
 - The land is highly erodible (HEL as determined by the USDA NRCS), or
 - The land has a weighted erosion index (EI) of 8 or greater.
 - d. It is decided that the CREP enroll up to 5,000 acres in the Lake Superior Basin project area based on eligibility requirements in Handbook 2-CRP.

Note: CP8A, CP21, CP22, and CP23 and CP23A acres enrolled in CREP in the grassland project areas are not included in determining the 15,000 maximum enrolled acreage for the combined grassland project areas.

Table 2.1-2 lists the acreage of potential agricultural land eligible for enrollment in the Wisconsin CREP.

Table 2.1-2 Acreage of Agricultural Land That May Be Eligible for Enrollment in CREP

County	Total Acres	Estimated Acres of Cropland	Estimated Number of Farms
Barron	569,711	233,945	1,647
Brown	341,087	170,555	1,117
Buffalo	451,792	167,059	1,128
Calumet	254,062	129,640	733
Chippewa	670,814	238,902	1,621
Clark	785,752	315,377	2,200
Columbia	505,884	264,572	1,526
Crawford	344,592	129,755	1,278
Dane	803,797	415,310	2,887
Dodge	581,010	340,969	1,968
Door	292,853	99,186	877
Dunn	562,982	254,868	1,683
Eau Claire	417,183	133,026	1,174
Fond du Lac	493,309	292,255	1,634
Grant	756,770	374,984	2,490
Green	379,852	247,639	1,490
Green Lake	240,255	116,464	670
Iowa	497,927	216,882	1,686
Jackson	635,445	132,880	914
Jefferson	378,738	194,368	1,421
Juneau	522,122	109,151	805
Kewaunee	221,284	142,526	915
La Crosse	310,271	95,439	868
Lafayette	404,511	264,340	1,205
Manitowoc	377,047	209,546	1,469
Marathon	1,022,577	341,340	2,898
Marquette	297,775	92,590	624
Monroe	585,589	185,821	1,938
Outagamie	411,435	220,919	1,430
Ozaukee	153,118	63,095	533
Pepin	153,000	68,984	501
Pierce	373,069	182,146	1,510
Portage	532,777	211,222	1,197
Racine	219,854	109,124	631
Richland	377,878	133,343	1,358
Rock	465,839	301,778	1,529
St. Croix	471,694	232,792	1,864
Sauk	544,882	223,473	1,673
Shawano	584,313	187,722	1,465

Table 2.1-2 Acreage of Agricultural Land Eligible for Enrollment in CREP (continued)			
County	Total Acres	Estimated Acres of Cropland	Estimated Number of Farms
Sheboygan	332,642	166,592	1,116
Taylor	633,619	133,194	1,056
Vernon	512,392	219,233	2,230
Walworth	369,723	185,829	988
Waukesha	364,609	80,705	762
Waupaca	487,391	171,522	1,398
Waushara	409,151	136,775	717
Winnebago	366,745	137,752	963
Wood	512,828	140,061	1,108
Lake Superior Basin Watersheds			
Ashland	629,784	29,353	227
Bayfield	972,509	59,887	468
Douglas	843,452	39,248	391
Iron	518,121	5,904	62

Source: USDA National Agricultural Statistics Service * Portions of certain counties are not included in the CREP Area

2.1.2 Provide Financial Support to Producers

Commitments by FSA, CCC, and Wisconsin are subject to the availability of funds. All CRP contracts under the Wisconsin CREP are subject to limitations set forth in the regulations at 7 CFR part 1410. Neither Wisconsin nor FSA may assign or transfer any rights or obligations under the Wisconsin CREP without prior written approval of the other parties and amendments.

2.2 ADDITIONAL ENVIRONMENTAL EVALUATION REQUIREMENTS

A site specific environmental evaluation would be completed by the Technical Service Provider (TSP) and FSA for each offer prior to approval of a contract as provided for in Part 10 of Handbook 2-CRP and other applicable guidance. The USDA Wisconsin Field Office currently uses the NRCS Environmental Evaluation Worksheet, Form NRCS-CPA-052, attached to this PEA in Appendix C. NRCS provides a completed copy of this form to FSA county offices.

2.3 ALTERNATIVES

Alternative A – Preferred

Under Alternative A, Wisconsin’s CREP Agreement would be implemented as described in Section 2.0. Up to 100,000 acres of eligible farmland in Wisconsin would be removed from production. Conservation practices would be established on those lands, and producers would receive annual payments and incentive awards in accordance with the provisions of the Agreement.

Alternative B – No Action

The no action alternative would not implement the Wisconsin CREP Agreement. No land in the targeted watersheds would be enrolled under CREP and the CREP program’s goals would not be achieved. Though eligible lands could be enrolled under CRP or other conservation programs, the benefits inherent to CREP would not be realized. This alternative will be carried forward in the analyses to serve as a baseline for comparing the impacts of the Preferred Alternative.

3.0 AFFECTED ENVIRONMENT

This Chapter describes relevant existing conditions for the resources potentially affected by the proposed action. In compliance with guidelines contained in NEPA and CEQ regulations, the description of the affected environment focuses on those resources potentially subject to impacts.

3.1 BIOLOGICAL RESOURCES

3.1.1 Description

Biological resources include living plant and animal species and the habitats in which they occur. These resources are divided into four categories: vegetation; wildlife; aquatic species; and threatened, endangered, and sensitive species and their defined habitat. Vegetation and wildlife refer to the plant and animal species, both native and introduced, which characterize a region. Threatened, endangered, and sensitive species refer to those species which are protected by the Endangered Species Act (ESA) or similar state laws. Critical habitat may be designated by the U.S. Fish and Wildlife Service (FWS) as essential for the recovery of a threatened or endangered species and like those species, is protected by ESA.

3.1.2 Affected Environment

Wisconsin contains portions of the Laurentian Mixed Forest Province and the Eastern Broadleaf Forest (Continental) Province (Bailey, 1995). Laurentian Mixed Forest Province is transitional between the boreal forest and the broadleaf deciduous forest zones. Mixed stands of a few coniferous species (mainly pine) and a few deciduous species (yellow birch, sugar maple, and American beech) are found. Mixed stands have several species of conifer, primarily northern white pine in the Great Lakes region, with a mixture of eastern hemlock. The Eastern Broadleaf Forest's dominant vegetation consists of oak-hickory forest. Dominant tree species are white oak, red oak, black oak, bitternut hickory, and shagbark hickory. The under story is usually well developed, often with flowering dogwood. Other under story species include sassafras and hophornbeam. The shrub layer is distinct, with some evergreens. Many wildflower species occur. Areas with more moisture typically feature an abundance of American elm, tuliptree, and sweet gum. Northern reaches of the oak-hickory forest contain increasing numbers of maple, beech, and basswood. The maple-basswood forest, dominated by sugar maple and American basswood, occurs from central Minnesota south through Wisconsin and northeastern Iowa.

Wisconsin has a diverse and varied landscape. The Wisconsin Department of Natural Resources (DNR) defines ecological landscapes as "areas of Wisconsin that differ from each other in ecological attributes and management opportunities." Their physical and biological characteristics which contribute to the ecosystem, such as climate, geology, soils, water, or vegetation result in different levels of biological productivity and habitat suitability. (*The Ecological Landscapes of Wisconsin*, WDNR)

Wisconsin has 16 ecological landscapes (Figure 3.1-1). These are:

- Northeast Sands
- Northern Lake Michigan Coastal
- Central Lake Michigan Coastal
- Southern Lake Michigan Coastal
- Southeast Glacial Plains
- Central Sand Hills
- Central Sand Plains
- Southwest Savannah
- North Central Forests
- Forest Transition
- Northern Highlands
- Superior Coastal Plains
- Superior Coastal Plains
- Northwest Sands
- Western Prairie
- Western Coulee and Ridges

The EPA further subdivides the State, but groups many of the communities into six major ecoregions, Northern Lakes and Forests, North Central Hardwood Forests, the Driftless Area, Southeastern Wisconsin Till Plains, Central Corn Belt Plains and Western Corn Belt Plains. Table 3.1-1 lists Wisconsin’s ecological landscapes with their corresponding EPA regions as well as the CREP counties that correspond with them.

Table 3.1-1 WDNR Ecological Landscapes, EPA Ecoregion(s) and CREP Counties

WDNR Ecological Landscapes	EPA Ecoregion(s)	CREP Counties
Northeast Sands	Northern Lakes and Forests	None
Northern Lake Michigan Coastal	North Central Hardwood Forests	Door, and Shawano
Central Lake Michigan Coastal	Southeastern Wisconsin Till Plains and North Central Hardwood Forests	Brown, Calumet, Kewaunee, Manitowoc, Outagamie, Ozaukee, Sheboygan and Waupaca
Southern Lake Michigan Coastal	Southeastern Wisconsin Till Plains and Central Corn Belt Plains	Racine
Southeast Glacial Plains	Southeastern Wisconsin Till Plains	Calumet, Columbia, Dane, Dodge, Fond du Lac, Green, Green Lake, Jefferson, Ozaukee, Rock, Sheboygan, Walworth, Waukesha, Waupaca, and Winnebago
Central Sand Hills	North Central Hardwood Forests	Columbia, Green Lake, Marquette, Portage and Waushara
Central Sand Plains	North Central Hardwood Forests	Clark, Jackson, Juneau, Monroe, Portage, and Wood
Southwest Savannah	Driftless Area	Dane, Grant, Green, Iowa, and Lafayette
North Central Forests	Northern Lakes and Forests	Ashland, Bayfield, Chippewa, Iron, and Taylor
Forest Transition	North Central Hardwood Forests	Barron, Chippewa, Clark, Marathon, Portage, Shawano, Taylor, Waupaca, and Wood
Northern Highlands	Northern Lakes and Forests	Iron
Superior Coastal Plains	Northern Lakes and Forests	Ashland, Bayfield, and Douglas
Northwest Lowlands	Northern Lakes and Forests	Douglas
Northwest Sands	Northern Lakes and Forests	Bayfield, and Douglas
Western Prairie	Western Corn belt Plains	Pierce and St. Croix
Western Coulee and Ridges	Driftless Area	Buffalo, Crawford, Dane, Dunn, Eau Claire, Grant, Iowa, Jackson, LaCrosse, Monroe, Pepin, Pierce, Richland, Sauk, and Vernon

Source: *Ecoregions of Wisconsin, 2000*

* Portions of certain counties are not included in the CREP Area

The relevant EPA ecoregions are briefly described below.

Western Corn Belt Plains was formerly tall grass prairie but is now 75 percent cropland. A combination of fertile soil, topography, and ample rainfall makes these very productive areas for corn and soybeans.

Northern Lakes and Forests is an area of poor glacial soil, coniferous and northern hardwoods, undulating till plains, morainal hills, broad lacustrine basins, and extensive sandy outwash plains. Due to lower temperatures and shorter frost-free periods, it is not well suited to agriculture and the primary land use is woodland and forest.

North Central Hardwood Forests area is transitional between the forested Northern Lakes Region and the more agricultural areas to the south. Physiography consists of nearly level to rolling till plains, lacustrine

basins, outwash plains, and rolling and hilly moraines. Land uses consist of forests, wetlands and lakes, agriculture, pasture and dairy operations. Agriculture is more predominant in this region than in the previous because of better soils and a longer growing season.

Driftless Area is distinguished by its hilly uplands and much of the area is a deeply dissected loess-capped plateau. Glacial deposits in this area have done little to affect the landscape as compared to other adjacent ecoregions. Livestock and dairy operations are the predominant land use.

Southeastern Wisconsin Till Plains supports a variety of vegetation types and represents a transition between the hardwood forests and oak savannahs to the west and the tall grass prairies of the Central Corn Belt Plains to the south. Land use in the region, like the Corn Belt Plains, is largely agricultural, but here crops historically have been forage and feed grains to support dairy operations

Central Corn Belt Plains was a prairie community, but crops have replaced native prairie species. Farms are now extensive on the dark, fertile soils that produce corn, soybeans and a variety of livestock, particularly hogs.

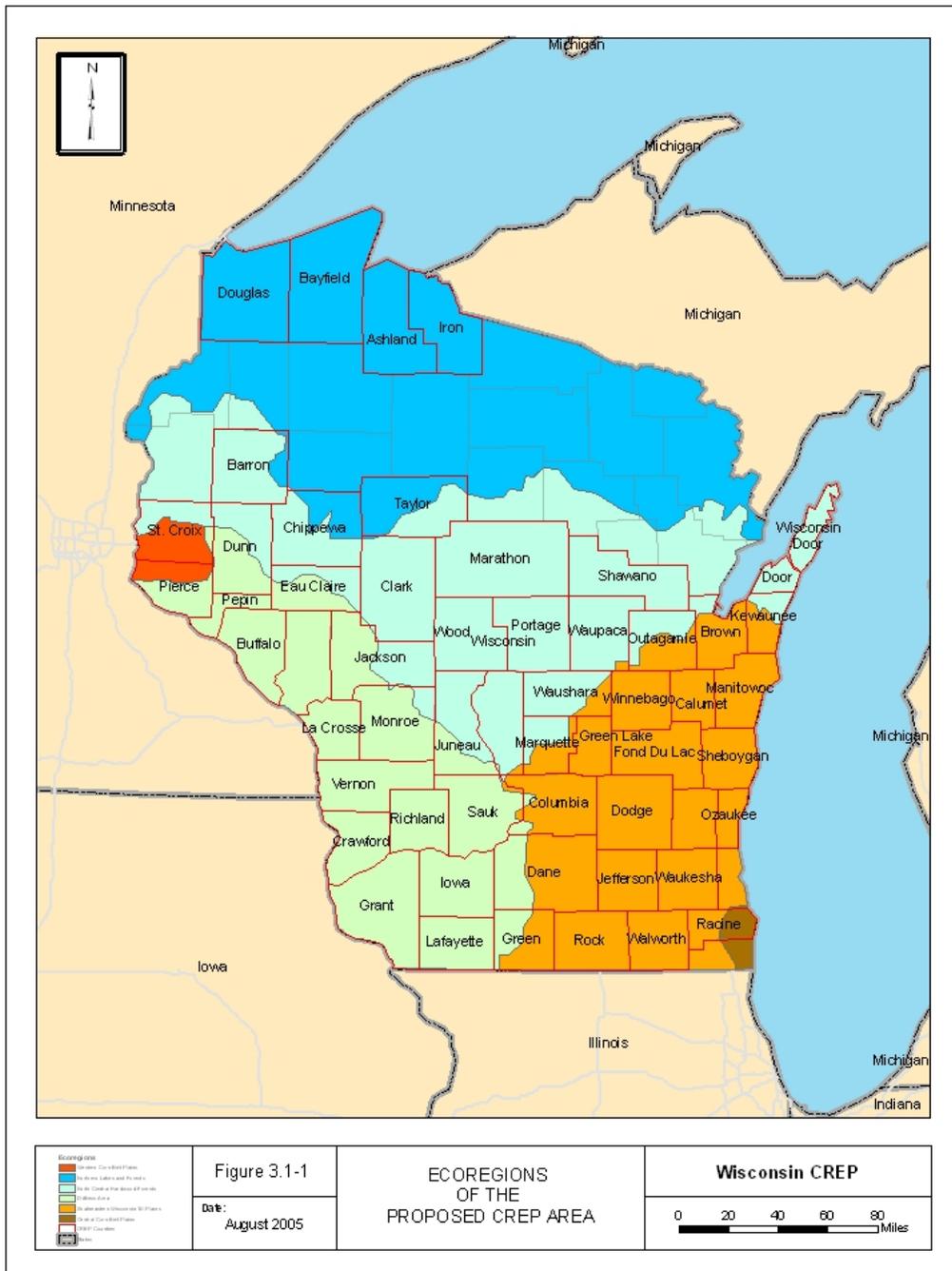


Figure 3.1-1 Ecoregions of the Proposed CREP Area

Vegetation

The proposed Wisconsin CREP area has very diverse geology and topography. As a result of this diversity, it contains many types of vegetation communities. Vegetation communities in the area include, but are not limited to savannas and woodlands, shrubs, upland forests, upland herbaceous, wetland forests, and wetland herbaceous communities. Some of the plant types which are found in these communities are listed in table 3.1-2.

Table 3.1-2 Wisconsin Plant Species

Savannas and Woodlands	
Common Name	Scientific Name
Red cedar	<i>Juniperus virginiana</i>
Red Maple	<i>Acer rubrum</i>
Paper birch	<i>Betula papyrifera</i>
Black oak	<i>Quercus velutina</i>
Bur oak	<i>Quercus macrocarpa</i>
Bluestem grasses	<i>Andropogon spp.</i>
Gramma grass	<i>Bouteloua spp.</i>
Prickly-pear cactus	<i>Opuntia comressa</i>
Flowering spurge	<i>Euphorbia corollata</i>
Stiff sandwort	<i>Arenaria stricta</i>
Shrub Communities	
Speckled alder	<i>Alnus incana</i>
Canada bluejoint grass	<i>Calamagrostis Canadensis</i>
Sphagnum mosses	<i>Sphagnum spp.</i>
Few seeded sedge	<i>Carex oligosperma</i>
Tamarack	<i>Larix laricina</i>
Poison-sumac	<i>Toxicodendron vernix</i>
Arrow-grasses	<i>Triglochin spp.</i>
Bog birch	<i>Betula pumila</i>
Pussy willow	<i>Salix discolor</i>
Bebb's willow	<i>Salix bebbiana</i>
Upland Forest	
White spruce	<i>Picea glauca</i>
Balsam-fir	<i>Abies balsamea</i>
White birch	<i>Betula papyrifera</i>
White cedar	<i>Thuja occidentatlis</i>
White pine	<i>Pinus strobes</i>
Balsam poplar	<i>Populus balsamifera</i>
Quaking aspen	<i>Populus tremuloides</i>
White oak	<i>Quercus alba</i>
Red oak	<i>Quercus rubra</i>
Black oak	<i>Quercus velutina</i>

Table 3.1-2 Wisconsin Plant Species (continued)

Upland Herbaceous Communities	
Bracken fern	<i>Pteridium aquilinum</i>
Penn sedge	<i>Carex pennsylvanica</i>
Kalm's bromegrass	<i>Bromus kalmii</i>
Canada bluegrass	<i>Poa compressa</i>
Prairie willow	<i>Salix humilus</i>
Lindley's aster	<i>Aster ciliolatus</i>
Gray goldenrod	<i>Solidago nemoralis</i>
Little bluestem	<i>Schizachyrium scoparium</i>
Side-oats grama	<i>Bouteloua curtipendula</i>
Purple prairie-clover	<i>Petalostemum purpeum</i>
Wetland Forest	
Black spruce	<i>Picea mariana</i>
River birch	<i>Betula nigra</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Swamp white oak	<i>Quercus bicolor</i>
Cottonwood	<i>Populus deltoides</i>
Green dragon	<i>Arisaema dracontium</i>
Black spruce	<i>Picea mariana</i>
Tamarack	<i>Larix laricina</i>
Jack pine	<i>Pinus banksiana</i>
Leatherleaf	<i>Chamaedaphne calyculata</i>
Wetland Herbaceous	
Woolly sedge	<i>Carex lasiocarpa</i>
Twig rush	<i>Cladium mariscoides</i>
Beaked bladderwort	<i>Utricularia cornuta</i>
Hudson Bay cotton-grass	<i>Scirpus hudsonianus</i>
Bog birch	<i>Betula pumila</i>
Sage willow	<i>Salix candida</i>
Speckled alder	<i>Alnus incana</i>
Marsh fern	<i>Thelypteris palustris</i>
Shrubby cinquefoil	<i>Potentilla fruticosa</i>
Shrubby St. John's-wort	<i>Hypericum kalmianum</i>
Ohio goldenrod	<i>Solidago ohioensis</i>

University of Wisconsin, Stevens Point Robert Freckmann Herbarium: Natural Communities

Wildlife

The Wisconsin Bureau of Wildlife Management, which is a division of the Wisconsin DNR, protects and manages Wisconsin’s wildlife and their habitats. This includes about 72 species of mammals, 408 species of birds, 54 species of reptiles and amphibians, and 159 species of fish and 51 species of mussels (DNR 2005). White-tailed deer and coyotes are common throughout the State, while black bears and bobcats are more common in the northern third and other select areas in the central and western central regions of the State. Smaller animals include rabbits, squirrels, river otters, raccoons and mink. Table 3.1-3 lists some of the more common mammals found in the State. Common birds include the blue jay, northern cardinal, mourning dove, purple finch and the robin.

Table 3.1-3 Wisconsin Wildlife Species, Scientific Name and Distribution

Common Name	Scientific Name	Distribution
Badger	<i>Taxidea taxus</i>	Northwest, west
Brown bat	<i>Eptesicus fuscus</i>	Statewide
Black bear	<i>Ursus americanus</i>	Northern third, central forest
Beaver	<i>Castor canadensis</i>	North, south, and Mississippi River
Bobcat	<i>Lynx rufus</i>	Northern third, Baraboo hills, Vernon, Richland and Crawford counties.
Eastern chipmunk	<i>Tamias striatus</i>	Statewide
Coyote	<i>Canis latrans</i>	Statewide
White-tailed deer	<i>Odocoileus virginianus</i>	State wide
Fisher	<i>Martes pennanti</i>	North and expanding into central
Gray fox	<i>Urocyon cinereoargenteus</i>	Southern third
Red fox	<i>Vulpes vulpes</i>	Statewide
Pocket gopher	<i>Geomys bursarius</i>	West of Wisconsin River, northwestern half
Snowshoe hare	<i>Lepus americanus</i>	North
American pine marten	<i>Martes americana</i>	Northern third (Rare)
Deer mouse	<i>Peromyscus maniculatus</i>	Statewide
Mink	<i>Mustela vison</i>	Statewide
Muskrat	<i>Ondatra zibethicus</i>	Statewide
Opossum	<i>Didelphis virginiana</i>	Southern half
River otter	<i>Lontra canadensis</i>	Statewide
Porcupine	<i>Erethizon dorsatum</i>	Northern and central

Aquatic Species

Several kinds of sports fish are found in Wisconsin. These include but are not limited to several varieties of trout, bass, salmon, northern pike and sturgeon. Table 3.1-4 list several of the common sport fish species that can be found in Wisconsin’s rivers and lakes including Lake Superior.

Table 3.1-4 Common Sports Fish Species in Wisconsin

Common Name	Scientific Name
Largemouth bass	<i>Micropterus salmoides</i>
Smallmouth bass	<i>Micropterus dolomieu</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
Bluegill	<i>Lepomis macrochirus</i>
Black bullhead	<i>Ictalurus melas</i>
Brown bullhead	<i>Ictalurus nebulosus</i>
Yellow bullhead	<i>Ictalurus natalis</i>
Muskellunge	<i>Esox masquinongy</i>
Northern pike	<i>Esox lucius</i>
Lake sturgeon	<i>Acipenser fulvescens</i>
Brook trout	<i>Salvelinus fontinalis</i>
Brown trout	<i>Salmo trutta</i>
Lake trout	<i>Salvelinus namaycush</i>
Steelhead (rainbow trout)	<i>Oncorhynchus mykiss</i>
Walleye	<i>Stizostedion vitreum</i>
White perch	<i>Morone americana</i>
Yellow perch	<i>Perca flavescens</i>

Source: Wisconsin Department of Natural Resources

Lake Superior Region

Lake Superior is the only Great Lake with a self-sustaining lake trout population and other self-sustaining populations of a number of other salmonids: brook trout, rainbow trout, brown trout, coho salmon and Chinook salmon. Among the environmental concerns of Lake Superior is the depleted population of lake brook trout, a once dominant native near-shore and tributary fish that is a target species for rehabilitation efforts by the international Great Lakes Fishery Commission. Tributaries to the lake are critical to the salmonid populations because of their role in providing spawning and nursery habitats. Current watershed conditions limit their reproductive success. Spawning migrations of salmonid species occur in both spring and fall.

There are a number of related ongoing efforts in the Lake Superior basin to restore the hydrologic conditions necessary to restore fish habitat. These efforts include conifer replanting on forested lands. These related efforts also involve work by the Bad River Tribe and the Red Cliff Tribe. The CREP activities are aimed at managing the rate and volume of runoff on the croplands and marginal pasturelands. By managing the rate and volume of runoff, the peak flow rates in the stream channels should decrease, the amount of stream bank erosion should decrease, and the sediment reaching downstream habitat should decrease.

Threatened and Endangered Species and Critical Habitat

As shown in Table 3.1.5, there are 15 federally listed threatened and endangered (T&E) species. FSA will consult as necessary with FWS when it is determined that its CREP related actions may affect one of these listed species.

There are 239 State-listed T&E species (Appendix C) identified by the DNR. According to this list, 13 bird species are endangered and 13 are threatened. For mammals one species is endangered and one is threatened. Seven reptiles/amphibians are listed as endangered and 3 are listed as threatened. Ten fish are listed as endangered and 11 are listed as threatened. Eleven mussels are listed as endangered and 7 are listed as threatened. Seventy-three species of plants are listed as endangered and 65 are listed as threatened.

Table 3.1-5 is adapted from Wisconsin’s Federally Threatened, Endangered, Proposed, and Candidate Species’ County Distribution List created by the U.S. Fish and Wildlife Service.

Table 3.1-5 Federally Threatened, Endangered, and Candidate Species’ within CREP Counties

Species	Scientific Name	Status	Counties in CREP Area
Mammals			
Gray wolf	<i>Canis lupus</i>	E	Ashland, Bayfield, Eau Claire, Clark, Douglas, Forest, Iron, Jackson, Juneau, Monroe, Taylor, Wood
Birds			
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	Breeding: Ashland, Barron, Bayfield, Brown, Buffalo, Chippewa, Clark, Crawford, Dodge, Door, Douglas, Dunn, Eau Claire, Grant, Green Lake, Iowa, Iron, Jackson, Juneau, LaCrosse, Manitowoc, Marathon, Outagamie, Pepin, Pierce, Portage, Richland, St. Croix, Sauk, Shawano, Taylor, Vernon, Waupaca, Waushara, Winnebago, Wood
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	Wintering: Brown, Buffalo, Calumet, Columbia, Crawford, Dane, Eau Claire, Grant, Iowa, Juneau, LaCrosse, Outagamie, Pepin, Pierce, St. Croix, Sauk, Shawano, Vernon, Waupaca, Winnebago
Kirtland’s warbler	<i>Dendroica kirtlandii</i>	E	Douglas, Jackson
Piping plover	<i>Charadrius melodus</i>	E	Counties in Great Lakes Watershed
Piping plover	<i>Charadrius melodus</i>	T	Counties Except those in Great Lakes Watershed
Mussels			
Higgins’ eye pearlymussel	<i>Lampsilis higginsii</i>	E	Buffalo, Crawford, Dane, Grant, Iowa, LaCrosse, Pierce, Richland, Sauk, St. Croix
Insects			
Hine’s emerald dragonfly	<i>Somatochlora hineana</i>	E	Door, Kewaunee, Ozaukee
Karner blue butterfly	<i>Lycaeides melissasamuelis</i>	E	Barron, Chippewa, Clark, Dunn, Eau Claire, Green Lake, Jackson, Juneau, Kenosha, Marquette, Monroe, Outagamie, Portage, St. Croix, Shawano, Waupaca, Waushara, Wood
Plants			
Dwarf lake iris	<i>Iris lacustris</i>	T	Brown, Door
Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	T	Dane, Jefferson, Ozaukee, Rock, Walworth, Waukesha, Sheboygan, Winnebago
Fassett’s locoweed	<i>Oxytropis campestris</i> <i>var .chartaceae</i>	T	Bayfield, Portage, Waushara
Northern monkshood	<i>Aconitum noveboracense</i>	T	Grant, Monroe, Richland, Sauk, Vernon
Pitcher’s thistle	<i>Cirsium pitcheri</i>	T	Door, Manitowoc, Sheboygan
Prairie bush-clover	<i>Lespedeza leptostachya</i>	T	Dane, Grant, Pierce, Rock, Sauk

CH – Critical Habitat Designated, T – Threatened, E – Endangered, C – Candidate Species

Source: County Distribution List created by the U.S. Fish and Wildlife Service

Aquatic Species

There are no federally listed threatened or endangered aquatic species except the mussels listed in the previous table. However, of the 159 species of fish known from Wisconsin, including 145 native species, there are ten state endangered, 11 state threatened, and 18 special concern species (DNR). Table 3.1-6 describes the endangered and threatened species in Wisconsin.

Table 3.1-6 State Listed Threatened and Endangered Fish Species in Wisconsin

Rare Fish Species	Scientific Name	Status	Location in CREP Area
Skipjack Herring	<i>Alosa chrysochloris</i> ,	E	Driftless Area, Mississippi River and lower St. Croix
Crystal darter	<i>Crystallaria asprella</i>	E	Driftless Area, Mississippi River, lower Wisconsin, lower Black, lower Trempealeau, lower Red Cedar, Chippewa
Blue sucker,	<i>Cycleptus elongatus</i> ,	T	Driftless Area, North Central Hardwood Forests, Northern lakes and Forests, Mississippi River drainage basin, lower St. Croix, Red Cedar, Chippewa, Black, LaCrosse and Wisconsin Rivers. Generally found as far upstream as the first dam
Gravel chub	<i>Erimystax x-punctatus</i>	E	Lower Rock River drainage, Pecatonica River, lower Sugar River, main channel Rock River, lower Turtle River
Bluntnose darter	<i>Etheostoma chlorosoma</i> ,	E	Driftless Area, Mississippi River and closely adjacent streams
Starhead topminnow	<i>Fundulus dispar</i>	E	Driftless Area, Southeastern Wisconsin Till Plains, Wisconsin River between Spring Green and Sauk City, lower Sugar River and Coon Creek of the Rock River Drainage, Mukwonago River in Fox River basin, and Black River near LaCrosse
Goldeye	<i>Hiodon alosoides</i>	E	Driftless Area, Mississippi River, lower St. Croix River (to St. Croix Falls), lower Wisconsin River and lower Chippewa River
Striped shiner	<i>Luxilus chrysocephalus</i>	E	Southeastern Wisconsin Till Plains, Fox River watershed (Winnebago County), Milwaukee River
Black redhorse	<i>Moxostoma duquesnei</i>	E	Driftless Area, Southeastern Wisconsin Till Plains, Wisconsin River at Wausau
Pallid shiner	<i>Notropis amnis</i>	E	Driftless Area, Mississippi River and the lower portions of major tributaries
Slender madtom	<i>Noturus exilis</i>	E	Rock and Pecatonica River systems, (northern limit of range)
Black buffalo	<i>Ictiobus niger</i>	T	Driftless Area, Southeastern Wisconsin Till Plains, at the northern limit of range in the Mississippi River drainage basin, Wisconsin River and lower Pecatonica River.
Longear sunfish	<i>Lepomis megalotis</i>	T	Northern Lakes and Forests, Southeastern Wisconsin Till Plains, generally in three widely separated distribution centers in southeastern, east central and northwestern Wisconsin within the Mississippi River and Lake Michigan drainage basins
Redfin shiner	<i>Lythrurus umbratilis</i>	T	Driftless Area, North Central Hardwood Forests, Southeastern Wisconsin Till Plains, at the northern limit of its range in the Mississippi River and Lake Michigan drainage basins, disjunctly distributed in the southern half of Wisconsin.

Table 3.1-6 State Listed Threatened and Endangered Fish Species in Wisconsin (continued)

Rare Fish Species	Scientific Name	Status	Location in CREP Area
River redhorse	<i>Moxostoma carinatum</i>	T	Mississippi, Rock, lower St. Croix, Sugar, Wisconsin, Black, Chippewa and the Yellow Rivers
Greater redhorse	<i>M. valenciennesi</i>	T	North Central Hardwood Forests, Southeastern Wisconsin Till Plains, Northern Lakes and Forests, widely scattered localities within the Mississippi River and Lake
Pugnose shiner	<i>Notropis anogenus</i>	T	Driftless Area, Mississippi River and Lake Michigan drainage basins. Mainly in southeastern and northwestern Wisconsin

Source: Wisconsin Department of Natural Resources

Specially Designated Habitats

Prior to European habitation of Wisconsin, a variety of natural communities, ranging from prairies and oak savannas in the south, to pine forests and boggy wetlands in the north existed in the State. However, since the early 1800s Wisconsin has seen intensive settlement and the quality and extent of natural resources has declined. In order to restore and protect some of Wisconsin’s more valuable environmental resources the State, in 1951, developed the State Board for the Preservation of Scientific Areas. This was the first program of its kind in the nation. That board has since evolved into the State Natural Area (SNA) Program.

The SNA Program has now grown to nearly 400 areas encompassing more than 150,000 acres of land and water. SNAs can now be found in 70 of Wisconsin’s 72 counties. Figure 3.1-2 displays the SNAs that are within the proposed CREP area.

Through the Natural Heritage Inventory (NHI) Program the State of Wisconsin conducts field surveys for rare species and natural resources throughout the State. The State has conducted surveys for the Niagara Escarpment, Fox River Headwaters, Wolf River Basin, and Coastal Wetlands. These surveyed areas are briefly described below.

Niagara Escarpment

The Niagara Escarpment has emerged as a statewide critical natural resource area in recent years due to its unique geology, the presence of rare plants and animals, and growing development pressure. It is a priority study area for the Bureau of Endangered Resources and the Department of Natural Resources (DNR), as well as other regional and state agencies and private conservation organizations in Wisconsin. The majority of the Niagara Escarpment is located within seven counties, Brown, Calumet, Dodge, Door, Fond du Lac, Kewaunee, and Manitowoc.

There have been 241 documented occurrences of rare species and natural communities within the Niagara Escarpment in Wisconsin. Of these, 106 were animal occurrences, 99 were plants, and 36 were natural communities and other natural features. Currently, the landscape around the Escarpment is highly altered by agricultural, residential, recreational, and industrial developments. Only on the Door Peninsula from the Sturgeon Bay area north do substantial remnants of natural vegetation remain. The most extensive of these remnants are forests, which at some locations still cover hundreds or thousands of contiguous acres. Important canopy trees include sugar maple, beech, basswood, white pine, white cedar, red pine, paper birch, hemlock, and balsam fir. Site conditions vary from dry to wet-mesic and as a result the mosaic of forest communities can be quite complex. Lake Michigan has influenced the climate of this area, resulting in cooler summers, warmer winters, and higher precipitation than at inland locations away from the Lake.

Fox River Headwaters

The Fox River Headwaters Ecosystem (FRHE) lies in the south central and northeast regions of the state. Its boundaries enclose 823,558 acres or 2.3 percent of the total area of Wisconsin and includes parts of the following counties: Marquette, Gen Lake, Waushara, Colubia, Adams, Winnebago, Fond du Lac, and Dodge. All of these counties are within the proposed CREP area with the exception of Adams.

Approximately 4 percent, or 30,212 acres, of the FRHE is open water. Of the approximately 218 lakes, Green Lake (7,436 acres) is the largest in the area and, at 236 feet it is the deepest natural lake in the State. The FRHE has 16 lakes listed as rare natural communities by the NHI, including excellent examples of both deep and shallow hard water lakes.

Extensive wetlands occupy about one-fifth of the FRHE. About 34,000 acres, representing 17 percent of the total wetland area in the FRHE, are currently under state ownership. A few of the largest wetland areas, including the White River, Germania, and the Grand River Marshes, are partially protected State Wildlife Areas.

The Fox River is the major warm water stream in the area and flows through two large impoundments, Buffalo Lake and Lake Puckaway. The White River is a significant stream below the dam in Neshkoro. Numerous cool to coldwater streams, including the Upper White and Mecan Rivers, and Wedde, Chaffee, Tagatz and Caves Creeks, originate from the terminal moraine in the northwest portion of the area. Most of these headwater areas are partially protected by one of five State Fishery Areas that occupy some 20,000 acres.

The FRHE is especially significant because it contains a high percent of certain natural communities which are rare throughout the rest of the state. Table 3.1-7 list these natural communities and their percent of the statewide total.

Table 3.1-7 Natural Communities within the FRHE

Natural Community	Element Occurrences	Statewide Total
Coastal plain marsh	3	50 percent
Oak woodland	2	33 percent
Calcareous fen	23	28 percent
Wet-mesic prairie	18	24 percent
Southern tamarack swamp (rich)	4	18 percent
Oak barrens	5	14 percent
Wet prairie	3	13 percent
Southern dry forest	13	13 percent
Southern sedge meadow	21	12 percent
Lake-shallow, hard, seepage	6	11 percent
Springs and spring runs (hard)	7	10 percent

Source: The FRHE: An Ecological Assessment for Conservation Planning, NHI

Coastal Wetlands

The state of Wisconsin is bordered by Lake Superior to the northwest and Lake Michigan to the east. The 820 miles of combined shoreline make up a complex arrangement of ecosystems that contain a rich variety of natural features. Ashland, Bayfield, Douglas, Door, Iron, Kewaunee, Manitowoc, Ozaukee, Racine, and Sheboygan counties all contain area within the State’s designated coastal wetlands.

Wetlands found near the coasts of the Great Lakes include marshes, bogs, fens, sedge meadows, shrub swamps, hardwood swamps, coniferous swamps, spring seeps, and others. Wetlands specific to the Great Lakes coasts include freshwater estuaries, interdunal wetlands, ridge and swale systems, and lakeplain prairies. While there is no universally accepted definition of a coastal wetland, there are some significant characteristics distinguishing them from their inland counterparts and other wetlands found along the coast. Coastal wetlands exist because of their historic and present-day interactions with the Great Lakes. They serve as spawning grounds for fish, stopovers or staging grounds for migratory and breeding birds, and critical habitat for many rare plants and animals.

Wetlands throughout Wisconsin provide critical habitat for a diverse set of both aquatic and terrestrial plant and animal species. A number of coastal wetland sites host extremely rich assemblages of flora and fauna, including dwarf lake iris and Piping Plover both of which are rare globally. Some rare plant species such as the coast sedge (*Carex exilis*), English sundew (*Drosera anglica*) and marsh bedstraw (*Galium palustre*), a Wisconsin special concern species, are found only in coastal wetlands. Long-term monitoring stations along the Great Lakes have documented high concentrations of migratory birds, over 100 of which are Neotropical Migrants or birds that winter in the Neotropics or southward (Finch 1991). The Great Lakes serve as migrant corridors and coastal wetlands offer critical food and shelter resources. In addition, some of the larger forested wetlands along Lake Michigan serve as ecological refuges for breeding bird species that are now more commonly found in northern Wisconsin.

Coastal wetlands near Wisconsin’s Great Lakes include several important natural communities and other natural features such as Forested Ridge and Swale, Great Lakes Dunes, and Interdunal Wetlands.

Wolf River Basin

The Wolf River Basin is 3671 sq. miles or 6.6 percent of Wisconsin’s land base. The counties included in the proposed CREP agreement that are within the borders of the Wolf River basin are; all of Waupaca county, and parts of Forest, Langlade, Marathon, Menominee, Oneida, Outagamie, Portage, Sahawan, Waushara and Winnebago counties.

Agriculture is the principal land use of the region, except in the north, where the climate and the hilly morainal topography lend itself more to forestry. Natural community types are not extensive within the basin but are significant because of their rarity statewide, their quality and condition, and/or because they provide habitat for locally or regionally rare species are listed in table 3.1-8.

Table 3.1-8 Natural Communities in the Wolf River Basin

Natural Communities	Species
Northern Wet-mesic forest	White cedar
Oak barrens	Oaks, prairie grasses and forbs
Pine barrens	Jack pine, oaks, prairie grasses and forbs
Southern mesic forest	Maple and basswood terraces
Southern dry forest	White oak and black oak
Northern dry-mesic forest	White pine, red oak, and red maple
Northern sedge meadow	Canada bluejoint grass
Tamarack swamp	Tamarack, Labrador tea, sedges, and mosses
Open bog	Sphagnum mosses and leatherleaf
Muskeg	Sphagnum mosses, ericaceous shrubs, black spruce and tamarack
Wet prairie	Prairie cordgrass and Canada bluejoint grass
Wet-mesic prairie	Big bluestem and prairie dock
Sand prairie	Little bluestem and junegrass

Source: Wolf River Biotic Inventory and Analysis, Wisconsin’s NHI Program



Figure 3.1-2 Wisconsin State Natural Areas within or near the CREP AREA

3.2 CULTURAL RESOURCES

3.2.1 Description

Cultural resources consist of prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and traditional cultural properties (TCP).

Archaeological resources are locations and objects from past human activities.

Architectural resources are those standing structures that are usually over 50 years of age and are of significant historic or aesthetic importance to be considered for inclusion in the National Register of Historic Places (NRHP).

TCPs hold importance or significance to American Indians or other ethnic groups in the continuation of traditional culture.

The significance of such resources pursuant to the National Historic Preservation Act, American Indian Religious Freedom Act, the Archaeological Resources Protection Act, Native America Graves Protection and Repatriation Act, EO 13007, and/or eligibility for inclusion in the NRHP is considered a part of the EA process. The regulations and procedures in 36 CFR 800, which implements Section 106 of the National Historic Preservation Act, require Federal agencies to consider the effects on properties listed in or eligible for inclusion in the NRHP. Prior to approval of the proposed action, Section 106 requires that the Advisory Council on Historic Preservation be afforded the opportunity to comment.

3.2.2 Affected Environment

3.2.3.1 Archaeological Resources

Wisconsin has a rich cultural history reflected in many American Indian sites, mound sites, and the remnants of 17th and 18th century fur traders, immigrant settlers and loggers.

Prehistoric Period

Wisconsin's rich cultural history spans more than 10,000 years. The earliest inhabitants were the Paleoindians, a nomadic people who hunted large mammals including woolly mammoth, bison and mastodon using large spears. Around 8,000 years ago, as the climate warmed and the environment changed the Archaic Period emerged. People became less nomadic and began to settle into small family groups. Archaic habitation sites are found in caves, rock shelters and along water sources. Families gathered plants and hunted smaller game such as deer and elk. The Archaic Period last until about 3,000 years ago. At this time the Woodland Period had evolved. The Woodland Period saw the emergence of large villages and changes in tool technology. The bow and arrow are introduced to more effectively hunt smaller game. The Woodland people also introduced pottery for the first time. In addition, they built the large effigy mounds. The Woodland Period gave way to the Mississippian Period around 1,000 years ago. The Oneota, as the culture became known, lived in villages and cultivated corn, beans and squash. They developed a complex trade network that extended to both the Atlantic and Gulf coasts. (Wisconsin Historical Society, 2005)

Historic Period

In 1634, Jean Nicolet, a French explorer, arrived in Wisconsin. He encountered the resident tribes including the Ho Chunk (Winnebago), Potawatomi, Menominee, and Chippewa Indians. This marked the beginning of the Historic Period.

The French maintained control of the region until the French and Indian War ended with the Treaty of Paris which ceded all French territory east of the Mississippi River to Britain. The British continued the thriving fur trade until the end of the American Revolution when Britain ceded all its territories east of the Mississippi River. The British maintained unofficial control until after the War of 1812 when American settlement began. At this America took control of the fur trade. Lead mining caused a major settlement expansion in the 1820s. Completion of the Erie Canal in 1825 stimulated the second major influx of settlers most of whom became farmers with wheat as the primary crop. The state continued to grow and expand (Microsoft® Encarta® Online Encyclopedia 2005)

Prehistoric and historic archaeological resources may represent any of these historic periods or events and may be found throughout the state.

3.2.3.2 Architectural Resources

Wisconsin's historic architectural resources include homes, banks, stores, churches, businesses, hospitals and schools that reflect various aspects of the state's cultural heritage. There are approximately 1,114 historic buildings and structures and 211 historic districts located in CREP area counties listed on the NRHP.

3.2.3.3 Traditional Cultural Properties

A TCP is defined as a property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that are (a) rooted in that community's history, and (b) important in maintaining the continuing cultural identity of the community. In most cases, TCPs are associated with American Indians but may also be associated with other sociocultural or ethnic groups. TCPs may be difficult to recognize and may include a location of a traditional ceremonial location, a mountaintop, a lake, a plant species or a stretch of river, or culturally important neighborhood. Currently there are no TCPs listed in the NRHP.

Table 3.2-1 Properties Listed with the NRHP within or near the CREP Area

Wisconsin Counties	Historic Bldgs & Structures	Historic Districts	Historical Sites
Ashland	19	1	12
Barron	3	2	2
Bayfield	18	2	2
Brown	27	8	
Buffalo	11	1	
Calumet	3	1	6
Chippewa	11	1	
Clark	10	2	
Columbia	23	10	3
Crawford	12		12
Dane	152	43	28
Dodge	23	5	2
Door	37	8	12
Douglas	19		1
Dunn	3	1	1
Eau Claire	52	5	
Fond du Lac	27	7	2
Grant	19	3	7
Green	19	3	7
Green Lake	10	3	1
Iowa	19	6	12
Iron	4	1	
Jackson	1	1	1
Jefferson	26	7	9
Juneau	5	1	2
Kewaunee	8	2	
La Crosse	37	6	8
Lafayette	8	2	
Manitowoc	14	3	2
Marathon	23	2	1
Marquette	2	2	1
Monroe	8	1	1
Outagamie	35	10	1
Ozaukee	25	6	1
Pepin	2		
Pierce	5	1	1
Portage	14	1	
Racine	39	6	
Richland	6	3	1
Rock	107	23	2
St. Croix	29	4	
Sauk	37	6	5
Shawano	3	1	
Sheboygan	33	3	3
Taylor	6	1	1
Vernon	6	5	9

Table 3.2-1 Properties Listed with the NRHP in the CREP Area (continued)

Wisconsin Counties	Historic Bldgs & Structures	Historic Districts	Historical Sites
Walworth	34	5	3
Waukesha	137	24	7
Waupaca	18	5	1
Waushara	1	1	1
Winnebago	63	12	10
Wood	9	3	1
Total	1262	261	159

Source: National Register of Historic Places

3.3 WATER RESOURCES

3.3.1 Description

The Clean Water Act (CWA) is the primary Federal law that protects the nation’s waters including lakes, rivers aquifers, wetlands, and coastal areas. For this analysis, water resources include surface water, impaired waters, groundwater, wetlands, and floodplains. Surface water includes streams and rivers. Impaired waters are defined by the EPA as those surface waters with levels of pollutants that exceed state water quality standards. Every two years, states must publish lists of impaired rivers: those streams and lakes that do not meet their designated uses because of excess pollutants (EPA 2004a). Wild and Scenic Rivers are addressed in Sections 3.6 and 4.6, Recreational Resources.

Groundwater refers to subsurface hydrologic resources, such as aquifers, that are used for domestic, agricultural, and industrial purposes. For this analysis, groundwater includes sole source aquifers. Wetlands are defined by the COE as areas which are characterized by a prevalence of vegetation adapted to saturated soil conditions. Wetlands can be associated with groundwater or surface water and are identified based on specific soil, hydrology, and vegetation criteria defined by COE. For this analysis floodplains are defined as 100-year floodplains, designated by the Federal Emergency Management Agency (FEMA) as those low lying areas that are subject to inundation by a 100-year flood, a flood that has a 1 percent chance of being equaled or exceeded in any given year.

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the U.S. This law focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources. The Act authorizes EPA to establish safe standards of purity and requires all owners or operators of public water systems to comply with primary (health-related) standards. State governments, which assume this power from EPA, also encourage attainment of secondary standards (nuisance-related such as odor, taste, and color). (USEPA, 2004a)

Wetlands are defined by the USACE as areas that are characterized by specific hydrological conditions, hydric soil, and the presence of vegetation adapted to saturated soil conditions. These criteria defined by USACE Section 404 of the CWA established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. Section 404 of the CWA requires that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. Permits describe that applicants have:

- taken steps to avoid wetland impacts where practicable;

- minimized potential impacts to wetlands; and
- provided compensation for any remaining, unavoidable impacts through activities to restore or create wetlands.

Activities regulated under Section 404 of the CWA are controlled by a permit review process. An individual permit is usually required for potentially significant impacts. However, for most discharges that will have only minimal adverse effects, the USACE may grant general permits. These may be issued on a nationwide, regional, or state basis for particular categories of activities (for example, minor road crossings, utility line backfill, and bedding) as a means to expedite the permitting process. Section 404(f) exempts some activities from regulation under Section 404. These activities include many ongoing farming, ranching, and silviculture practices. (USEPA, 2004b)

Floodplains are defined in this PEA as 100-year floodplains designated by the Federal Emergency Management Agency (FEMA). Floodplains are areas that are subject to inundation by a “100-year” flood, a flood that has a one percent chance of being equaled or exceeded in any given year. FSA must address potential impacts to floodplains as required by EO 11988, Floodplain Management.

The current condition of specific tracts of agricultural land and their suitability for implementation of the CPs included in the Wisconsin CREP would be evaluated as provided for in Part 10 of FSA Handbook 2-CRP.

Table 3.3-1 Wisconsin CREP Counties and Watersheds

County	Watersheds
Ashland	Beartrap-Nemadji, Bad-Montreal, Upper Chippewa, Flambeau
Barron	Red Cedar, Upper St. Croix, Upper Chippewa, Lower St. Croix
Bayfield	Beartrap-Nemadji, Upper St. Croix, Bad-Montreal, Namekagon
Brown	Duck-Pensaukee, Lower Fox, Door Kewaunee
Buffalo	Buffalo-Whitewater, Trempealeau, Lower Chippewa
Calumet	Lake Winnebago, Manitowoc-Sheboygan, Lower Fox
Chippewa	Lower Chippewa, Upper Chippewa, Red Cedar, Eau Claire
Clark	Eau Claire, Castle Rock, Lake Dubay, Black
Columbia	Lower Wisconsin, Upper Rock, Crawfish, Upper Fox
Crawford	Lower Wisconsin, Coon-Yellow, Kickapoo
Dane	Pecatonica, Sugar, Upper Rock, Lower Wisconsin
Dodge	Crawfish, Upper Rock
Door	Door-Kewaunee
Douglas	St. Louis, Namekagon, Beartrap-Nemadji, Upper St. Croix
Dunn	Lower Chippewa, Red Cedar
Eau Claire	Eau Claire, Buffalo Whitewater, Lower Chippewa
Fond du Lac	Milwaukee, Manitowoc-Sheboygan, Lake Winnebago, Upper Fox
Grant	Apple-Plum, Grant-Little, Lower Wisconsin
Green	Pecatonica, Sugar
Green Lake	Upper Fox, Upper Rock
Iowa	Pecatonica, Lower Wisconsin

Table 3.3-1 Wisconsin CREP Counties and Watersheds (Continued)

County	Watersheds
Iron	Black Presque Isle, Flambeau, South Fork Flambeau, Upper Chippewa, Bad Montreal
Jackson	Eau Claire, Black, Trempealeau, Buffalo Whitewater
Jefferson	Upper Rock, Crawfish
Juneau	Castle Rock, Baraboo
Kewaunee	Door-Kewaunee, Manitowoc Sheboygan
La Crosse	Coon-Yellow, La Crosse-Pine
Lafayette	Apple-Plum, Pecatonica
Manitowoc	Manitowoc Sheboygan
Marathon	Lake Dubay, Castle Rock, Wolf
Marquette	Upper Fox
Monroe	Coon-Yellow, Castle Rock, Kickapoo, La Crosse-Pine, Black, Baraboo
Outagamie	Duck Pensaukee, Lower Fox, Wolf
Ozaukee	Milwaukee, Manitowoc-Sheboygan
Pepin	Buffalo-Whitewater, Lower Chippewa, Rush-Vermillion
Pierce	Rush-Vermillion, Lower Chippewa, Lower St. Croix
Portage	Wolf, Castle Rock, Lake Dubay
Racine	Pike-Root, Upper Fox
Richland	Lower Wisconsin, Kickapoo, Baraboo
Rock	Pecatonica, Sugar, Lower Rock, Upper Rock
St. Croix	Lower St. Croix, Rush-Vermillion, Lower Chippewa, Red Cedar
Sauk	Lower Wisconsin, Baraboo, Castle Rock
Shawano	Wolf
Sheboygan	Milwaukee, Manitowoc Sheboygan
Taylor	Jump, Lower Chippewa, Eau Claire, Lake Dubay, Black
Vernon	Coon-Yellow, Kickapoo
Walworth	Upper Rock , Upper Fox
Waukesha	Upper Rock , Upper Fox
Waupaca	Wolf
Waushara	Upper Fox, Castle Rock, Wolf
Winnebago	Lake Winnebago, Upper Fox, Wolf
Wood	Lake Dubay, Black, Castle Rock

* Portions of certain counties are not included in the CREP Area

3.3.2 Affected Environment

Surface Water

The CREP AREA for the surface water environment is the watersheds or portions of the watersheds within a portion or all of certain counties of the proposed Wisconsin CREP agreement. Figure 3.3-1 is a map of water resources in Wisconsin and the proposed CREP area.

Lake Superior Region

Lake Superior is the largest body of fresh water in the world by surface area and contains 10 percent of the world’s supply of fresh water. Lake Superior has been recognized by the US and Canadian governments for its unique resource values and have agreed to collectively manage the Lake Superior Basin to maintain its high quality and use the basin as a “zero discharge” demonstration zone.

The water resources in the Lake Superior Basin can be characterized as lakes in the headwater areas drained by moderate to high gradient streams. Some of the streams, such as the Bois Brule, flow directly to Lake Superior. Others, such as the Bad River, feed sloughs and vast wetland areas before discharging into Lake Superior. The Lake Superior clay plain – located throughout the middle of the basin - has few lakes. As a whole, the Lake Superior Basin in Wisconsin has 2,991 miles of river and stream. Nearly half of the named streams either currently support or have the potential to support a coldwater fishery. Many of the streams support migratory fish runs from Lake Superior.

Both the land cover and land management practices of the drainage areas in the Wisconsin portion of the Lake Superior Basin have changed the characteristics of the watershed over time. In pre-settlement time, about 35 percent of the forest canopy was white pine forests. These tall trees cover large surface areas provided by the clusters of needles and were very effective in capturing precipitation and diminished the raindrop energy in the region. Much of the forested areas are now forested with deciduous trees. Land used for agricultural purposes reached a peak in 1928. While the amount of agricultural land has declined there has been a continuing trend to landscape fields and pastures to create surface drains and accelerate the removal of storm water as quickly as possible from the fields. Much of the agriculture is located on red clay soils where infiltration rates are low. Many pastures are overgrazed.

Over 85 percent of the active dairy operations in Ashland County are located within in the northern half of the county. All of these farms are situated in the Marengo/White/Bad River Watershed that subsequently drains into Chequamegon Bay on Lake Superior. In Bayfield County about 70 percent of all active dairy farms in the county are located in the White River Watershed, the Fish Creek watershed, and the Whittlesey Creek watersheds. These watersheds also drain into Lake Superior around Chequamegon Bay. In Douglas County approximately 60 percent of the active dairy operations are located in the Maple-Poplar area east of the City of Superior. The other 40 percent are located in the Foxboro and South Range areas, less than 15 miles south of Superior. Douglas County has numerous small creeks that each drain independently into Lake Superior. All of the active dairy farms in Iron County are located in the Gurney-Saxon area that also consists of numerous creeks that drain independently to Lake Superior.

Impaired Waters

Table 3.3-1 lists the watersheds within the proposed Wisconsin CREP Agreement area, their assigned hydrologic unit codes (HUC), and the numbers of impairments identified in each. Appendix D contains the fact sheets with additional information regarding the impairments and maps of each watershed in the Wisconsin CREP.

Table 3.3-2 Number & Type of Impairments Reported in the Wisconsin Watersheds

Watershed	General Impairment Name																										
	Total Impairments	Other Habitat Alterations/Algal Blooms	Organic Enrichment Low DO	Sediment/Siltation	Nutrients	Fish Consumption Advis. Hg, PCB, Cd	Metals	Priority Organics	Thermal Mod.	Total Toxics	Turb./TDS/Cond.	Non-priority Organics	pH	PCBs	Phosphorus	Inorganic Nitrogen	BOD	PAHs	Petroleum	Coal Tar	Bacteria	Pesticides	Ammonia	Fish Kills	Chlorophyll A	Nitrates	
Apple-Plum	18	5	1	6	1		2			2						1											
Bad-Montreal	14					14																					
Baraboo	12	3	2	3	1						1				2												
Beartrap-Nemadji	31					15	2			5								4	4	1							
Black	45	12	1	13	3	8			5			1		1								1					
Black-Presque Isle	*																										
Brule	*																										
Buffalo-Whitewater	59	8		8		26					8	9															
Castle Rock	12		3		1	1							1		4		1					1					
Crawfish	38	11	5	10	3	3									5							1					
Door-Kewaunee	13	1		1		6	2			2																	
Duck-Pensaukee	12	4	2	2	2										2												
Eau Claire	11		1	2	3	1							2		2												
Flambeau	*																										
Grant-Little Maquoketa	18	7	2	7											2												
Kickapoo	6	3		2		1																					
Kishwaukee	*																										
La Crosse-Pine	30	5		3	2	12			2		1	1	1		1								2				
Lake Dubay	26		4			11	1			3					4							3					
Lake Winnebago	6	1		1		1	1			2																	
Lower Chippewa	65	7	1	9	1	5	1		4	1	1		9		10												
Lower Fox	64	11	10	8	6	4	2		3	4	2			1	10								1	2			
Lower Rock																											
Lower St. Croix	70		1	1	2	3	31				2	1	4		5		1								1		
Lower Wisconsin	28	9	2	10		1			1	2					1		1						1				

Table 3.3-2 Number & Type of Impairments Reported in the Wisconsin Watersheds (continued)

Watershed	General Impairment Name																										
	Total Impairments	Other Habitat Alterations/Algal Blooms	Organic Enrichment Low DO	Sediment/Siltation	Nutrients	Fish Consumption Advis. Hg, PCB, Cd	Metals	Priority Organics	Thermal Mod.	Total Toxics	Turb./TDS/Cond.	Non-priority Organics	pH	PCBs	Phosphorus	Inorganic Nitrogen	BOD	PAHs	Petroleum	Coal Tar	Bacteria	Pesticides	Ammonia	Fish Kills	Chlorophyll A	Nitrates	
Manitowoc-Sheboygan	40	5	5	6	1	13				2					5			1			1			1			
Menominee	17	2			1	10	1			1								1									
Milwaukee	75	12	5	7	2	11	7		3	8				1				1		1	11				1		
Namekagon	6					6																					
Oconto	3					3																					
Ontonagon	*																										
Pecatonica	61	20	2	18	1		1		2	2	3		1	1	4		3						2				
Peshigo	*																										
Pike-Root	29	3	1	7	2	1	2			4					4									2			
Red Cedar	24		2	1	5	8							3		5												
Rush-Vermillion	52	3		3	3	31			3		6	2											1				
South Fork Flambeau	*																										
Sugar	19	8	1	8											1		1										
Trempealeau	24	8	2	8		1			3		1				1												
Upper Chippewa	29			2	2	19	1		1	1			1		1								1				
Upper Fox	21 1	38	20	27	2 7	1	1	3	10	2	14			6	27							10		13			3
Upper Fox	16	4		4	1	2			2	1			1		1												
Upper Rock	13 7	34	16	34		10	2		8	4	6				16		1										
Upper St. Croix	14					14																					
Upper Wisconsin	62					60	1			1																	
Wolf	22	4	2	2		12									2												

Source: EPA 2004 TMDL Watershed Fact Sheet

* Portions of certain counties are not included in the CREP Area



Figure 3.3-1 Water Resources within or near the Proposed CREP Area

Groundwater

Wisconsin's groundwater occurs in four principal aquifers: sand and gravel aquifers, dolomite aquifers (eastern Wisconsin), sandstone and dolomite aquifers, and crystalline bedrock aquifers. (*WNR Magazine, 1999*)

Sand and Gravel Aquifers

The sand and gravel aquifer is the surface material covering most of the State except for parts of southwest Wisconsin. It is made up mostly of sand and gravel deposited from glacial ice or in river floodplains. Surface glacial deposits are typically loose and unconsolidated and may be identified as soil in some areas. However, these deposits include more than just a few feet of topsoil and are more than 300 feet thick in some places in Wisconsin. The glaciers of past ice ages had a predominant role in Wisconsin's recent geology. Glaciers in the Wisconsin region reached a maximum thickness of almost two miles. The ice sheet spread over Canada, and part of it flowed in a general southerly direction toward Wisconsin and neighboring states. This ice sheet transported a great amount of sand and rock debris, called glacial drift, within the past million years. As the ice melted, "outwash plains" were deposited that now contain large quantities of groundwater, some of the best aquifers in Wisconsin. Pits also were formed in the outwash where buried blocks of ice melted and are now lakes. Many of the irrigated agricultural lands in central, southern and northwestern Wisconsin use glacial outwash aquifer groundwater. In some places where large glacial lakes were formed and accumulated thick deposits of clay, aquifers do not yield or transmit much water. The tops of most sand and gravel aquifers coincide with the land surface for most of Wisconsin and are highly susceptible to human-induced and naturally occurring pollutants.

Eastern Dolomite Aquifers

Eastern dolomite aquifers occur in eastern Wisconsin from Door County to the Wisconsin-Illinois border. These aquifers consist of Niagara dolomite that are underlain by Maquoketa shale and deposited 400 to 425 million years ago. Dolomite, a sedimentary rock similar to limestone, holds groundwater within cracks and pores. The amount of water a particular well in this aquifer may yield depends mostly upon the number and size of fractures the well intercepts. Wells in close proximity may vary greatly in the amount of water they can draw from these aquifers. The groundwater in shallow portions of the eastern dolomite aquifer can easily become contaminated where the fractured dolomite bedrock occurs at or near the land surface. In portions of Door, Kewaunee and Manitowoc counties there is little soil to filter pollutants carried or leached by precipitation. Little or no filtration takes place once the water reaches large fractures within the dolomite. Groundwater quality problems, such as bacterial contamination from human and animal wastes, increasingly occur in these areas. The Maquoketa shale, formed from low-permeability clay, is beneath the dolomite and is important as a confining layer that acts as a barrier or shield between the eastern dolomite aquifer and the sandstone and dolomite aquifer.

Sandstone and Dolomite Aquifers

The sandstone and dolomite aquifers consist of layers of sandstone and dolomite bedrock that vary greatly in their water-yielding and transmitting properties. In dolomite aquifers, groundwater mainly occurs in fractures as described above. In sandstone aquifers, water occurs in pore spaces between loosely cemented sand grains. These formations can be found throughout Wisconsin except in the north central portion of the State. In eastern Wisconsin, the sandstone aquifer lies below the eastern dolomite aquifer and the Maquoketa shale layer. In other areas, it lies beneath the sand and gravel aquifer. These strata tend to gently dip toward the east, south, and west, away from north central Wisconsin, becoming much thicker and extending to greater depths below the land surface in the southern part of the state. The rock formations that make up the sandstone and dolomite aquifer were deposited between 425 and 600 million years ago. The sandstone and dolomite aquifer systems are the principal bedrock aquifers in the southern and western portions of the state. In populous eastern Wisconsin, substantial quantities of groundwater from these formations are used by cities and industries.

Crystalline Bedrock Aquifers

The crystalline bedrock aquifer system in Wisconsin is composed of a variety of some of the oldest known rock types formed during the Precambrian Era that occurred from more than 4,000 million years ago until about 600 million years ago, when the rocks in the sandstone and dolomite aquifers began to be formed. Sediments, some of which were rich in iron and now are mined as iron ores, were deposited in the ancient oceans; volcanoes distributed ash and lava; and mountains were created and eroded away as molten rocks from the earth's core emerged through cracks in the upper crust throughout this lengthy period of geologic history. The rocks that remain in these areas of Wisconsin today consist of granite with crystalline structures created from igneous processes. These rocks underlie the entire state and comprise the "basement" geologic formation of much of the North American Continent. In the north central region of Wisconsin these are the only formations occurring beneath the sand and gravel aquifers. The cracks and fractures in these dense rocks that may store and transmit water are not spaced uniformly. Some areas may contain numerous fractures while others contain very few or none. To obtain water from a crystalline rock aquifer, a well must intersect water-bearing cracks and the amount of water available between wells can vary within a single site. Crystalline bedrock aquifers typically do not provide adequate quantities of water for larger municipalities, large dairy herds, or industries. Many wells in crystalline bedrock aquifers have provided good quality water. However, most of these wells do not penetrate deeply into the rock. Water samples from deep mineral exploration holes near Crandon and deep iron mines near Hurley have yielded brackish (highly mineralized) water.

Groundwater Quality and Existing Sources of Pollution

In rural areas, less groundwater is used and different threats to groundwater quality exist including animal waste, septic systems, fertilizers and pesticides. Excessive or improper application of manure and fertilizer is Wisconsin's leading source of nitrate pollution in groundwater. Nutrients that plants can't use will leach into groundwater. Plants can be over-fertilized if farmers don't account for the nutrients contained in the manure they spread on their fields. About 10 percent of the private well samples analyzed for nitrate in rural areas show groundwater contamination above the state groundwater standard. Insecticides, herbicides and fungicides used in Wisconsin agriculture can reach groundwater when spilled at storage, mixing and loading sites, or when over-applied to fields. Discarded "empty" pesticide containers not properly disposed of are another source of contamination from agricultural chemicals.

Septic systems have been installed at almost 690,000 private sites in Wisconsin and serve approximately 30 percent of all households in the state. Most of these septic systems are located in unincorporated areas. The wastewater from these systems seeps into the soil and is used by plants, or leaches into soils and groundwater. When septic systems fail to treat wastewater properly, bacteria, nitrates, viruses, detergents, household chemicals, and chloride compounds may contaminate groundwater and surface water, and pose hazards to public health. Even properly installed septic systems may pollute groundwater if they are not used and maintained correctly. About nine percent of the nitrates reaching groundwater in Wisconsin is estimated to originate from septic systems.

Abandoned water wells and drainage well systems may be conduits for contamination. In years past, wells dug by hand with picks and shovels were gradually replaced with "well pits" – a six to ten-foot-deep hole through which a well was drilled or driven and are now being replaced by drilled wells that provide more sanitary water. Old wells that are not properly plugged, filled with cement, bentonite clay or other impermeable materials, may provide a direct channel for pollutants from the surface to groundwater and to other nearby wells. Thousands of old wells in Wisconsin that are no longer used, but are still open at the soil surface, are potential entry points of contamination to Wisconsin's groundwater. Wisconsin law allows well owners to abandon certain types of wells using procedures developed by the DNR. Licensed well drillers and pump installers are routinely hired to fill old wells. Drainage wells are used to draw water off a section of wet ground by piercing a clay layer and allowing surface water to run directly into groundwater. Drainage wells have been prohibited in Wisconsin since 1936, but may still exist, and are often discovered when contamination is discovered in a well on nearby property.

Activities in urban areas of Wisconsin that pose significant threats to groundwater quality include industrial and municipal waste disposal, road salting, and the storage of petroleum products and other hazardous materials. In the early 1970s, about 2,000 dumps were identified by DNR. Those located near navigable waters, within floodplains, wetlands or critical habitat were ordered closed since that time period. Remaining landfills posing a threat to the environment due to their hydro geologic setting or poor operations were required to monitor groundwater and nearby surface waters. The monitoring data indicated that some landfills and open dumps were causing groundwater pollution. Based on the data, and current state and Federal regulations, all landfills in Wisconsin are now required to have a composite liner system (a plastic membrane on top of four feet of compacted clay) and a leachate collection system to keep liquid waste out of the groundwater. Municipal dumps that did not meet these design standards were closed in 1992. In addition to solid waste disposal, municipalities, industrial facilities, and other businesses use ponds, lagoons and other methods to store, treat and dispose of wastewater on their property. Examples of these include community sewage plants where lagoons are used for storage of treated wastewater prior to releasing them to rivers or streams, or applied to land. Lagoons are usually sealed with compacted clay or plastic liners. Nevertheless, burrowing animals or movement of the underlying or adjoining soils may cause leaks. Open air lagoons are also subject to precipitation and freezing weather that can interfere with the treatment processes and may cause damage to the impoundment systems. Some industries may be permitted to dispose of their wastewater by applying it to agricultural areas and fields. The wastewater is applied to these areas according to the capacity of water and nutrients the soil and crops are calculated to absorb. When these processes are not managed properly and excessive wastewater is applied to the land, or if the operator fails to reduce the amount of wastewater applied to accommodate precipitation, surface and groundwater may be contaminated.

Sources of Natural Contamination

Minerals existing naturally in Wisconsin soils and rocks dissolve in groundwater, giving it a particular taste, odor or color. Radium, radon gas, uranium, arsenic, barium, fluoride, lead, zinc, iron, manganese and sulfur are undesirable elements found naturally in some Wisconsin groundwater sources. Naturally occurring radioactivity in groundwater, including uranium, radium and radon, has recently become a concern in Wisconsin and may expose persons drinking the water to an elevated risk of cancer. Wisconsin routinely tests groundwater for radioactivity and recent sampling and analysis has detected radionuclide in some north central Wisconsin groundwater. Alpha radiation activity and radium have also been found in water supplies in eastern Wisconsin. The problems posed by most natural groundwater contaminants are usually aesthetic more than safety. Iron, found in groundwater throughout Wisconsin, stains plumbing fixtures and laundry, and can give drinking water an unpleasant taste and odor. Excess levels of fluoride, manganese, sulfur, lead and arsenic are less common and more localized. In some parts of Wisconsin the groundwater is naturally acidic and can corrode pipes and plumbing, leading to elevated levels of lead and copper stripped from plumbing fixtures in drinking water distribution systems.

Groundwater Protection Programs

Chapter 160, dubbed the "Groundwater Law," of the Wisconsin statutes was signed into law on May 4, 1984. It has been regarded as the most comprehensive regulatory program for groundwater in the US. Agencies involved in groundwater protection must adhere to numerical standards that define the level at which regulatory agencies must act to clean up pollutants in groundwater. These standards were established to protect public health, public welfare, and the environment. An aquifer classification system implemented in other states to categorize the use, value, or vulnerability of each aquifer has not been employed in Wisconsin. A major tenet of Wisconsin's groundwater law is the belief that any groundwater is capable of being used for citizens to drink, and must be protected to assure that it can be. The map of Groundwater Contamination Susceptibility in Wisconsin (appendix F) – developed by DNR, the USGS and the Wisconsin Geological and Natural History Survey – shows areas of the state that are more (and less) sensitive to contamination because of the soil and rock overlying the groundwater. Table 3.3-3 lists the State agency groundwater responsibilities.

Table 3.3-3 State Agency Groundwater Responsibilities in Wisconsin

Agency or institution	Responsibilities
Department of Health and Family Services	<ul style="list-style-type: none"> • holds public meetings on contaminated water supplies • recommends enforcement standards for substances of health concern • investigates health effects from contamination • inspects water supplies at restaurants, hotels, motels and campgrounds
Department of Commerce	<ul style="list-style-type: none"> • inspects and keeps records on underground storage tanks • enforces septic system regulations • approves home water treatment devices • runs the Brownfield grant program • educates businesses and landowners about tank laws
University of Wisconsin	<ul style="list-style-type: none"> • researches the occurrence, effects and prevention of groundwater pollution • educates students and working professionals about groundwater issues • maintains water resource references
Wisconsin Geological and Natural History Survey/University of Wisconsin	<ul style="list-style-type: none"> • maps and inventories groundwater resources and geological formations • writes technical reports and assists regulatory agencies • monitors groundwater levels and water quality • educates about hydrology and groundwater resources
State Lab of Hygiene	<ul style="list-style-type: none"> • analyzes private well water samples • researches virus and pathogen occurrence in groundwater
United States Geological Survey	<ul style="list-style-type: none"> • researches surface and groundwater interactions • monitors groundwater levels
County government	<ul style="list-style-type: none"> • issues permits and inspects septic systems • with DATCP, establishes standards for manure storage pits

Table 3.3-3 State Agency Groundwater Responsibilities in Wisconsin (continued)

<p>Department of Natural Resources</p>	<ul style="list-style-type: none"> • regulates sewage lagoons, municipal and industrial wastewater systems • regulates landfills, solid waste and hazardous waste disposal • regulates environmental consequences of mining • responds to hazardous spills • regulates public drinking water systems • regulates well drilling • provides water quality planning • sets drinking water standards • monitors groundwater, samples well water • sets state groundwater quality standards • issues permits for animal waste management • administers the land recycling (Brownfield) program • educates school children and adults about groundwater
<p>Department of Transportation</p>	<ul style="list-style-type: none"> • conducts road salt and groundwater research • regulates road salt storage
<p>Department of Agriculture, Trade and Consumer Protection</p>	<ul style="list-style-type: none"> • regulates pesticide use and cleanup • inspects fertilizer and pesticide storage facilities • inspects water supplies of food processors and Grade A dairy farms • licenses water bottlers • educates food and agricultural interests about groundwater • researches where pesticides have entered groundwater • oversees farm nutrient management
<p>University of Wisconsin Cooperative Extension: UWEX county offices and the Central Wisconsin Groundwater Center at UW-Stevens Point</p>	<ul style="list-style-type: none"> • tests private wells • educates homeowners and local government about groundwater issues • provides community outreach • conducts applied research about groundwater
<p>Individual citizens, organizations</p>	<ul style="list-style-type: none"> • ensure proper use and disposal of household chemicals • maintain wells and septic systems • stay active in community land use issues • report illegal or abandoned waste sites to DNR • participate in community recycling programs

Table 3.3-4 Acreages of Wetlands Based on National Wetland Inventory (WI DNR)

County Name	Wetland Acreage
Ashland	168,388
Barron	42,640
Bayfield	80,252
Brown	28,257
Buffalo	44,934
Calumet	24,736
Chippewa	78,399
Clark	100,338
Columbia	75,404
Crawford	27,331
Dane	51,418
Dodge	110,558
Door	50,990
Douglas	194,169
Dunn	44,222
Eau Claire	43,646
Fond du Lac	69,128
Grant	22,869
Green	12,301
Green Lake	58,816
Iowa	16,500
Iron	151,065
Jackson	113,070
Jefferson	59,280
Juneau	122,485
Kewaunee	27,436
La Crosse	37,667
Lafayette	3,116
Manitowoc	48,758
Marathon	172,293
Marquette	68,881
Monroe	56,842
Outagamie	74,221
Ozaukee	16,265
Pepin	7,235
Pierce	7,397
Portage	92,748
Racine	13,529
Richland	15,210
Rock	19,424
St. Croix	14,254
Sauk	32,145
Shawano	127,778
Sheboygan	40,447
Taylor	120,979
Vernon	14,511
Walworth	28,746
Waukesha	54,913
Waupaca	112,761
Waushara	58,725
Winnebago	44,380
Wood	130,725

3.4 EARTH RESOURCES

3.4.1 Description

In this analysis, earth resources are defined as topography and soils. Topography describes the elevation and slope of the terrain, as well as other visible land features. Soils are assigned to taxonomic groups and can be further classified into associations.

3.4.2 Affected Environment

Topography and Geology

The State of Wisconsin was formed by ancient igneous processes as well as by glacial activities from recent Ice Ages. Three predominant physiographic regions are identified in Wisconsin: the Lake Superior Upland, the Driftless Area, and the Baraboo Range.

The Superior Upland of Wisconsin and Minnesota is a large surface exposure of the ancient (2.6 to 1.6 billion years old) core of the North American continent, known geologically as the Canadian Shield. In the present age, this is an area of low topographic relief. However, these metamorphic rocks once formed mountains located at the margin of a continent. Some of these highly altered rocks have been important sources of iron, copper, and other industrial minerals.

The Driftless Area, located primarily in southwestern Wisconsin, forms isolated patches of rough terrain in unglaciated areas that stand out from the surrounding, smoothed glaciated ground. Thoroughly dissected by tributaries of the Mississippi River, the topography within these "islands" was engulfed but never overridden by the glacial ice. The appearance of the Driftless Area landscape is today probably much like that of adjacent glaciated landscapes prior to the first Pleistocene ice advance that occurred about 1.8 million years ago. The Pleistocene Epoch ended with the retreat from Wisconsin of the last glaciers 11,000 years ago.

The Baraboo Range provides a "window" into the ancient continent that existed in what is now southern Wisconsin. This relatively low prominence is a small east-west trending ridge about 25 miles long. The Precambrian quartzite, resistant to erosion, created the topographic feature that formed from an erosional remnant, or "monadnock", as long ago as the late Precambrian 500 million years ago. These ancestral mountains were buried by Paleozoic Era (250 million years ago) sedimentary strata and are still being exhumed by erosion of the softer overlying rocks.

Glaciation during the actual Wisconsin ice maximum occurred about 18,000 years ago. The massive ice formation was apparently diverted around the Lake Superior Highlands and spread into Wisconsin as several lobes. From west to east these are known as the St. Croix Lobe (along the Minnesota border), Chippewa, Wisconsin Valley, Langlade, Green Bay (very long lobe in eastern Wisconsin), Delavan (near Illinois border) and Lake Michigan Lobes. Moraines between the latter three lobes form the Kettle Moraine complex.

The large lake in central Wisconsin is Glacial Lake Wisconsin. It formed when the ice blocked the Wisconsin River near Portage and drained west to the Mississippi River. Failure of the ice dam, a characteristic of ice-dammed lakes, allowed the lake to drain catastrophically, cutting the channels and rock forms of Wisconsin Dells.

Lake Superior Region

The Lake Superior Basin ranges in elevation from the ancient Gogebic-Penokee Iron Range (about 1,800 feet above mean sea level [MSL]), to about 600 feet MSL at the rugged Lake Superior shoreline. The most significant geological feature that is relevant to the proposed CREP agreement is the Lake Superior Clay Plain where most of the agricultural land uses are located in the basin. The Lake Superior Clay Plain is dominated by heavy red clay and stretches inland 8 to 12 miles near Superior (in the western portion of the basin) to as much as 20 miles inland south of Ashland. The streams in the clay plain tend to be cut deeply into the clay, forming steep-walled valleys; limiting the meandering of the streams.

These step valleys are subject to slumping particularly where sand lenses occur. Due to the limited infiltration capacity of the red clay soils, runoff rates and volumes are great. Much of the portion of the Lake Superior Basin south of the clay plain is within the Chequamegon National Forest.

Soils

West Central Region

The west central region of Wisconsin is characterized by six different general soil types:

- **Silty and Loamy Mantled Firm Till Plain:** These are gently sloping to very steep dissected till plain and major river valleys. Soils are mostly well drained and are formed in silty material over loamy till, underlain by sedimentary bedrock. Uses include cropland and grazing land on ridge tops and valley bottoms with a mix of dairy, beef and cash grain agriculture. Primary resource concerns are cropland erosion, surface water quality, grazing land and woodland productivity, and soil erosion during timber harvest.
- **Driftless Loess Hills and Bedrock:** Highly dissected hills and valleys, including several major river valleys. Well drained and moderately well drained silty soils over bedrock residuum. Primary resource concerns are cropland soil erosion, surface water quality, grazing land and forestland productivity, stream bank erosion, and erosion during timber harvest.
- **Cropped and Forested Central Sands:** Nearly level and gently sloping sandy soils. Moderate development pressure. Primary resource concerns are wind erosion, groundwater protection, forage quality on grazing land, timber management, and wildlife habitat management.
- **Forested Central Sands:** Nearly level and gently sloping, wet, sandy, loamy, and organic soils underlain by sandstone and shale bedrock which is close to the surface in many areas. Wildlife habitat management and recreational uses are the primary resource concerns. Surface water quality is a localized concern.
- **Northern Green Bay Lobe Moraine:** Gently sloping to moderately steep hummocky glacial moraine. Well drained loamy and organic soils over outwash or sandy loam till. Primary resource concerns are cropland soil erosion, soil erosion during timber harvest, and nutrient management.
- **Dense Till Ground Moraine:** Nearly level and gently sloping moderately well and somewhat poorly drained loamy soils underlain by dense loamy glacial till, residuum and bedrock. Primary resource concerns include nutrient management, cropland and forestland soil erosion, surface water quality, grazing land productivity, upland wildlife habitat management, and forestry management.

South Central Region

The south central region of Wisconsin is characterized by three different general soil types:

- **Driftless Loess Hills and Bedrock:** Highly dissected hills and valleys, including several major river valleys. Well drained and moderately well drained silty soils over bedrock residuum. Primary resource concerns are cropland soil erosion, surface water quality, grazing land and forestland productivity, stream bank erosion, and erosion during timber harvest.
- **Southern Wisconsin and Northern Illinois Till Plain:** Nearly level to strongly sloping till plain with prominent drumlins. Well drained silty and loamy soils with poorly drained organic soils in the depressions. Primary resource concerns include cropland and construction site erosion, surface water quality, storm water management, and wetland habitat protection and restoration.

- Southern Green Bay Lobe Morain: Gently sloping to moderately steep hummocky moraine with scattered swamps. Mostly well drained loamy, clayey, and sandy soils with organic soils in the depressional areas. Primary resource concerns are cropland, soil erosion, surface water quality and wetland habitat protection and restoration.

Northeast Region

The northeast region of Wisconsin is characterized by five different general soil types:

- Northern Green Bay Lobe Moraine: Gently sloping to moderately steep hummocky glacial moraine. Well drained loamy and organic soils over outwash or sandy loam till. Primary resource concerns are cropland soil erosion, soil erosion during timber harvest, and nutrient management.
- Southern Wisconsin and Northern Illinois Till Plain: Nearly level to strongly sloping till plain with prominent drumlins. Well drained silty and loamy soils with poorly drained organic soils in the depressions. Primary resource concerns include cropland and construction site erosion, surface water quality, storm water management, and wetland habitat protection and restoration.
- Eastern Wisconsin Till Plain: Gently sloping till plain with moderately well drained to somewhat poorly drained loamy and clayey soils, and poorly drained organic soils in the depressions. Lake Winnebago and Lake Michigan shorelines and significant wetland complexes are included. Primary resource concerns are cropland and construction site erosion, stormwater management, nutrient management, surface water and groundwater quality, and wetland habitat restoration and management.
- Door/Esanaba Peninsulas and Lake Plains: Gently sloping and well drained silty and loamy soils over bedrock with common wetlands and swamps. Significant development pressure on the Green Bay shoreline. Primary resource concerns are groundwater and surface water quality, nutrient management, cropland and construction site erosion, and recreation use.
- Loamy Till Ground Moraines and Drumlins: Nearly level to moderately steep, loamy, sandy, and organic soils. Primary resource concerns are timber management, wildlife habitat, recreation and agricultural forage production. Surface water quality is a localized concern.

Southeast Region

The southeast region of Wisconsin is characterized by two different general soil types:

- Southern Wisconsin and Northern Illinois Till Plain: Nearly level to strongly sloping till plain with prominent drumlins. Well drained silty and loamy soils with poorly drained organic soils in the depressions. Primary resource concerns include cropland and construction site erosion, surface water quality, storm water management, and wetland habitat protection and restoration.
- Southern Green Bay Lobe Morain: Gently sloping to moderately steep hummocky moraine with scattered swamps. Mostly well drained loamy, clayey, and sandy soils with organic soils in the depressional areas. Primary resource concerns are cropland, soil erosion, surface water quality and wetland habitat protection and restoration.

Lake Superior Region

The Lake Superior Basin is underlain by Precambrian age Keweenawan formations composed of sandstone with interbedded shale strata. These bedrock formations are typically covered by glacial and lake deposited sediments. The Pleistocene glacial deposits are derived from recurring southward advances of ice out of the Lake Superior basin.

The red, clayey glacial till, (derived from old lake sediments) was smeared onto the land by advancing ice, covering most of the lower portion of the Lake Superior watershed basin, from lake level at 600 feet elevation, to about 1,050 feet. The upper watershed, above 1,050 feet, consists of predominately sandy outwash deposits.

Soils types can be grouped into natural land types that serve as a basis for resource actions. There are six major land types that are characteristic of the Lake Superior Basin: Upland Clay Plain, Steep Clayey Ravines, Upland Sandy Areas, Sloping/Stratified Sands to Clays, Coastal Wetlands, and Floodplains. These land types are briefly described below:

Upland Clay Plain – broad, relatively flat landscapes where soils are typically red clay five-feet thick or more. These areas are gently sloping, convex landforms lying between steep ravines with 2 to 6 percent slopes. Some areas are essentially flat (<2 percent slopes), resulting in a mosaic of moderately dry and saturated soil conditions, with ponds of water that accumulate in minor depressions.

- Steep Clayey Ravines - form in areas where streams have cut deep, narrow incisions into the clay. The slopes are very steep, ranging from 25 percent to 60 percent, and are relatively unstable, with slope caving and slumping common. These clayey soils are commonly underlain by stratified sandy and loamy materials within 40 to 60 inches of the surface. Slumping is particularly active in these areas due to undercutting of the looser sandy soils that cause the overlying clay to collapse into the ravine. Sandy layers are conduits for groundwater recharge, causing further slumping. These clayey ravines typically support greater conifer tree populations than other land types.
- Upland Sandy Areas – represent former shorelines of Lake Superior. These sandy deposits are gently sloping to moderately steep. Glacial processes typically left deeper sand as beaches or deltas on upslope positions, resulting in recharge areas to stream headwaters.
- Sloping Stratified Sands to Clays – moderately steep sloping landscapes lying adjacent to the clayey basin as transitional soils. The farthest southern extent of clay soil is characterized by thin clayey till (typically 1 to 4 feet thick) inter-layered with outwash and lake sediments. This area has numerous seeps and springs where subsurface water flows from upslope surfaces that form the headwaters for many tributaries feeding the major river systems.
- Coastal Wetland soil – areas consisting of thick organic material, underlain by fine sands, with thin inter-bedded layers of silts and clays that occurs at the mouths of streams and the continually saturated conditions that prevent decomposition of dead plant matter.
- Floodplain soil – nearly level topography along drainages that are subjected to flooding and high water tables. Soils typically consist of stratified sands, fine sands, and silts, but may be occasionally gravelly or clayey.

Current Conditions of Agricultural Land

Much of the property eligible for CREP has been previously impacted by the producers who may have, or have not, utilized various NRCS conservation practice standards throughout the years. Among the key conservation practice standards are Nutrient Management and Drainage Water Management which is a common theme throughout the propose CREP region.

Lake Superior Basin

Agriculture in the Lake Superior Basin did not occur until the early 1900s when forestland was clear-cut allowing cultivation and pastureland development. Most agricultural operations in the four-county region were situated within red clayey till soils and involved relatively small livestock herds and dairy farms. Dairy farms consisted of typically 10 to 20 cows through the 1960s. Agriculture in the area did not reach its peak until after World War II when modern developments such as electricity, tractors, and milking

machines became available. Small farms and dairy operations in the area declined since World War II with the last creamery closing in the 1980s. However, the acreage of agricultural land in the area has remained relatively constant throughout the years, despite the decline in the number of small dairy operations due to the existence of large dairy operations and other agricultural activities. Many of the former small dairy operations have turned to part-time or avocational operations. Currently, part-time livestock operations in the area outnumber dairy operations.

An indication of the number of livestock operations in the four counties is their participation in the USDA Livestock Compensation Program that was available to all beef, dairy and sheep/goat producers. FSA estimates that about 90 percent of the producers in the region have participated in this program. There are 58 livestock operations in Ashland County, 93 in Bayfield County, 72 in Douglas County and 10 in Iron County that participated, or a total of 233 operations.

It is likely that the number of small, part-time livestock operations will remain relatively constant in the Lake Superior Basin based on current trends. The number of active dairy operations will likely continue to decline, although at a slower pace than in the past. It is likely that the remaining diaries will continue to increase the size of their livestock herds that are concentrated in smaller areas on these farms. Without appropriate controls, this is anticipated to increase runoff into these watersheds.

While the amount of agricultural land has declined there has been a continuing trend to shape fields and pastures to create surface drains and accelerate the removal of storm water as quickly as possible from the fields. Much of the agriculture land is located on red clay soils where infiltration rates are low and many pastures are overgrazed. Much of the farmland natural drainage was modified during the 1940s to expedite drainage. These features still exist in many areas, exacerbating runoff rates.

3.5 AIR QUALITY

3.5.1 Description

The Clean Air Act requires the maintenance of National Ambient Air Quality Standards (NAAQS). NAAQS, developed by EPA to protect public health, establish limits for six criteria pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), lead (Pb), and respirable particulates [particulate matter less than 10 microns in diameter] (PM₁₀). The Clean Air Act requires states to achieve and maintain the NAAQS within their borders. Each state may adopt requirements stricter than those of the national standard. Each state is required by EPA to develop a State Implementation Plan (SIP) that contains strategies to achieve and maintain the national standard of air quality within the state. Areas that violate air quality standards are designated as non-attainment areas for the relevant pollutants. Areas that comply with air quality standards are designated as attainment areas for relevant pollutants.

3.5.3 Affected Environment

The State of Wisconsin DNR Air Management Program protects human health and the environment while accommodating economic growth by developing air quality implementation plans and collaborating with local, state, regional and international partners. Air quality trends, the status of attaining the ambient air quality standards, and the need for public health advisories are determined through air monitoring operations. The division implements and regulates many air toxic reduction programs throughout the state. These programs focus on prevention measures for pollutants that pose the greatest risk to the public and environment.

The State of Wisconsin uses the Air Quality Index (AQI) as an approximate indicator of overall air quality that can be easily interpreted by the public. The AQI converts concentrations of all criteria air pollutants into one normalized number (0 – 500) that defines the air quality for the area. The AQI establishes air quality categories of good (0 – 50), moderate (51 – 100), unhealthy for sensitive groups

(101 – 150), unhealthy (151 – 200), very unhealthy (201 – 300), and hazardous (301 – 500). Wisconsin DNR publishes AQI values for all monitoring sites as a means of informing the public of the current conditions. These values can fluctuate and are therefore updated hourly. Almost all of the counties in the proposed CREP area are in attainment; however, there are three counties which are non-attainment areas for Ozone 1-hour and seven counties which are in nonattainment areas for Ozone 8-hour. Table 3.5-1 shows the 1-hour and 8-hour attainment status for all the counties in the proposed CREP area.

Table 3.5-1 One-Hour and Eight-Hour Ozone NAAQS Attainment Status within or near the CREP AREA

Counties	NAAQS Attainment Status		
	In Attainment	Non-Attainment 1-Hour Ozone	Non-Attainment 8-Hour Ozone
Ashland	X		
Barron	X		
Bayfield	X		
Brown	X		
Buffalo	X		
Calumet	X		
Chippewa	X		
Clark	X		
Columbia	X		
Crawford	X		
Dane	X		
Dodge	X		
Door			X
Douglas	X		
Dunn	X		
Eau Claire	X		
Fond du Lac	X		
Grant	X		
Green	X		
Green Lake	X		
Iowa	X		
Iron	X		
Jackson	X		
Jefferson	X		
Juneau	X		
Kewaunee			X
La Crosse	X		
Lafayette	X		
Manitowoc			X
Marathon	X		
Marquette	X		
Monroe	X		
Outagamie	X		
Ozaukee		X	X
Pepin	X		
Pierce			
Portage	X		
Racine		X	X
Richland	X		
Rock	X		

Table 3.5-1 One-Hour and Eight-Hour Ozone NAAQS Attainment Status within the CREP AREA (continued)

Counties	NAAQS Attainment Status		
	In Attainment	Non-attainment 1-Hour Ozone	Non-attainment 8-Hour Ozone
St. Croix	X		
Sauk	X		
Shawano	X		
Sheboygan			X
Taylor	X		
Vernon	X		
Walworth	X		
Waukesha		X	X
Waupaca	X		
Waushara	X		
Winnebago	X		
Wood	X		

Source: EPA 2005, Nonattainment Areas Map – Criteria Air Pollutants

* Portions of certain counties are not included in the CREP Area

3.6 RECREATIONAL RESOURCES

3.6.1 Description

Recreational resources are those activities or settings either natural or man-made that are designated or available for recreational use by the public. In this analysis, recreational resources include lands and waters utilized by the public for hunting, fishing, hiking, birding, canoeing and other water sports, and water-related activities. Figure 3.6-1 is a map showing the locations of State and Federal recreational lands.

3.6.2 Affected Environment

Because the lands eligible for enrollment in the CREP program are privately held, the producers control access to these lands for recreational activities. However, in the proposed CREP area there are numerous public lands available for recreation.

There are 43 State parks, five State forests, one national park (Apostle Islands National Lakeshore), two wild and scenic rivers (St. Croix National Scenic River and a 24 mile stretch of the Wolf River), two National Scenic Trails and two National Forests. In addition, there are 14 National Natural Landmarks in the proposed counties. These public lands provide recreational activities such as hunting, hiking, camping, fishing, biking, and backpacking.

3.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.7.1 Description

For this analysis, socioeconomics includes investigations of farm and nonfarm employment and income, farm production expenses and returns, agricultural land use, and recreation spending. EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires a Federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.” A minority population can be defined by race, by ethnicity, or by a combination of the two classifications.

According to CEQ, a minority population can be described as being composed of the following groups: American Indian or Alaska Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic, and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ 1997). The U.S. Census Bureau (USCB) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is further defined as “a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race” (USCB 2001).

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income and are dependent upon the number of persons within the household. Individuals falling below the poverty threshold are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as poverty areas (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

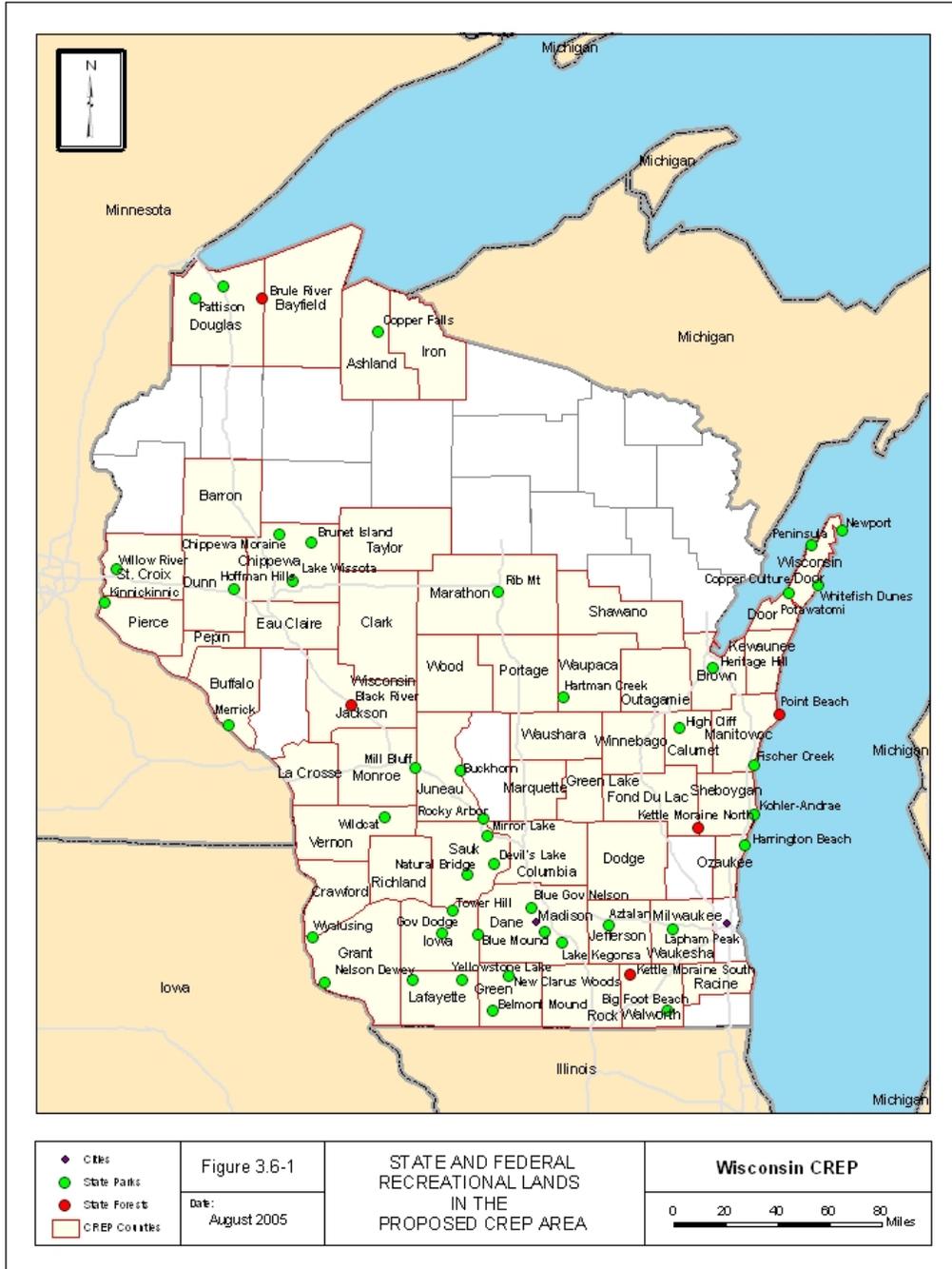


Figure 3.6-1 State and Federal Recreational Lands in Proposed CREP Counties.
 Note: Some of the Recreational Lands are Outside the Proposed CREP Area

3.7.2 Affected Environment

The affected socioeconomic environment is summarized in this section and in Tables 3.7-1, 3.7-2, and 3.7-3.

3.7.3.1 Demographic Profile

The total population within the CREP area exceeded 3.7 million people in 2000, which was approximately a 12 percent increase over the population of 1990 (USCB 1990, 2000). The majority of the population (65 percent) was located within urban areas or urban clusters (USCB 2000). Only 4.6 percent of the total CREP area population was located on farms (USCB County and City Data Book 2000).

Demographically the CREP area population was 93 percent White, non-Hispanic, 2 percent Black or African American, non-Hispanic; 0.7 percent American Indian or Alaska Native, non-Hispanic; 1.6 percent Asian, non-Hispanic; 0.02 percent Native Hawaiian or Pacific Islander, non-Hispanic; 0.1 percent all other races or combination of races, non-Hispanic; and 2.5 percent Hispanic (USCB 2000). The total minority population within the CREP AREA was 247,687 or 7 percent of the total CREP AREA population (USCB American Fact Finder 2000). The CREP AREA is not a location of a concentrated minority population.

In 2002, Hispanics operated 531 farms within the CREP AREA, Black or African Americans operated 31 farms, American Indians operated 97 farms, Native Hawaiians or Other Pacific Islanders operated 4 farms, and Asians operated 73 farms (USDA NASS 2002). The CREP area accounts for 69 percent of all minority farm operators within the State of Wisconsin, while these 736 farms account for 1.1 percent of the total number of farms within the CREP area (USDA NASS 2002).

3.7.3.2 CREP Region Employment, Income, and Poverty Rates

Median household income in 2000 was \$43,268 within the CREP area. The highest median household income occurred in Waukesha County (\$67,047) and the lowest median household income occurring in Iron County (\$30,882) (USCB Small Area Income and Poverty Estimates 2000). The average poverty rate for the CREP area in 1999 was 8.1 percent, a decrease of approximately 2.9 percent from the 1990 poverty rate (USCB 1990, 2000). The 2000 poverty rate varied from a high of 14.2 percent in Vernon County to a low of 2.6 percent in Ozaukee County (USCB 2000). None of the counties within the CREP area would be considered as poverty areas as defined by the USCB.

3.7.3.3 Recreational Values

An analysis of the 2001 National Surveys of Fishing, Hunting, and Wildlife Associated Recreation indicated that nearly 3.2 million Wisconsin residents and non residents, 16 years old and older, fished, hunted, or wildlife watched in Wisconsin. Total expenditures for wildlife-related recreation activities were approximately 3.6 billion in 2001 with approximately \$801 million spent on hunting; \$1 billion on fishing; and \$1.3 billion on wildlife watching.

Table 3.7-1 Farm Labor as a percent of Total Production of Total Production Expenses

Area	2002				1997			
	Hired Farm Labor (\$000)	Contract Labor (\$000)	Total Production Expenses (\$000)	Labor as a percent of Total Production Expenses	Hired Farm Labor (\$000)	Contract Labor (\$000)	Total Production Expenses (\$000)	Labor as a percent of Total Production Expenses
Wisconsin	515,473	20,181	4,642,287	11.5	431,317	22,092	4,430,522	10.2
Ashland	320	9	5,372	6.1	251	10	474	55.1
Barron	11,682	758	125,223	9.9	8,821	1,356	126,129	8.1
Bayfield	1,456	71	11,605	13.2	621	56	7,942	8.5
Brown	13,767	396	116,427	12.2	8,841	695	99,703	9.6
Buffalo	5,772	299	79,992	7.6	4,930	607	85,910	6.4
Calumet	7,042	189	64,189	11.3	4,864	271	58,705	8.7
Chippewa	7,194	358	83,578	9.0	7,860	599	92,541	9.1
Clark	12,823	721	132,848	10.2	9,219	611	124,012	7.9
Columbia	5,994	513	96,528	6.7	5,933	277	95,124	6.5
Crawford	2,880	60	39,039	7.5	1,958	142	33,175	6.3
Dane	25,595	1,060	212,538	12.5	17,720	814	205,273	9.0
Dodge	14,353	649	144,932	10.4	12,394	484	144,296	8.9
Door	3,068	D	34,008	D	4,219	105	31,220	13.9
Douglas	602	24	5,519	11.3	268	97	5,300	6.9
Dunn	9,119	251	92,051	10.2	7,317	607	92,790	8.5
Eau Claire	2,797	347	42,343	7.4	4,792	81	45,891	10.6
Fond du Lac	16,315	1,149	139,470	12.5	8,658	943	116,467	8.2
Grant	11,691	630	162,744	7.6	9,169	636	162,076	6.0
Green	7,851	395	104,096	7.9	7,294	248	98,845	7.6
Green Lake	2,323	D	34,496	D	2,387	172	32,386	7.9
Iowa	7,503	306	98,098	8.0	5,912	224	91,425	6.7
Iron	93	6	1298	7.6	50	D	795	D
Jackson	8,798	455	53551	17.3	10,180	317	58374	18.0
Jefferson	18,511	307	114,495	16.4	14,268	349	111,945	13.1
Juneau	5,240	234	43,064	12.7	5,456	275	40,510	14.1
Kewaunee	12,845	140	80,722	16.1	7,397	149	62,107	12.1
La Crosse	2,892	73	38,435	7.7	3,411	98	37,399	9.4
Lafayette	6,592	239	107,037	6.4	5,583	377	105,801	5.6
Manitowoc	15,049	532	115,803	13.5	12,866	419	103,294	12.9
Marathon	22,083	770	167,163	13.7	18,950	1,228	161,339	12.5
Marquette	4,111	120	30,980	13.7	3,101	172	25,467	12.9
Monroe	9,532	542	81,311	12.4	10,038	466	81,011	13.0
Outagamie	11,341	605	117,292	10.2	11,541	470	106,000	11.3
Ozaukee	5,097	240	31,739	16.8	3,567	162	27,853	13.4
Pepin	2,299	207	28,444	8.8	1,627	186	22,652	8.0
Pierce	5,972	118	65,760	9.3	4,066	89	62,653	6.6
Portage	17,437	538	111,331	16.1	15,602	402	90,754	17.6
Racine	8,868	758	59,228	16.3	8,955	537	61,164	15.5
Richland	4,190	261	48,561	9.2	3,658	193	50,443	7.6
Rock	9,683	255	110,506	9.0	8,541	607	110,534	8.3
St. Croix	9,805	292	85,449	11.8	6,429	407	79,090	8.6
Sauk	10,279	700	101,729	10.8	9,051	502	100,687	9.5
Shawano	10,289	185	106,475	9.8	7,309	681	83,554	9.6

Table 3.7-1 Farm Labor as a percent of Total Production of Total Production Expenses (continued)

Area	2002				1997			
	Hired Farm Labor (\$000)	Contract Labor (\$000)	Total Production Expenses (\$000)	Labor as a percent of Total Production Expenses	Hired Farm Labor (\$000)	Contract Labor (\$000)	Total Production Expenses (\$000)	Labor as a percent of Total Production Expenses
Sheboygan	11,947	241	81,674	14.9	7,383	469	71,031	11.1
Taylor	4,101	218	46,742	9.2	4,292	259	53,169	8.6
Vernon	5,690	358	79,612	7.6	4,543	195	75,003	6.3
Walworth	10,382	321	78,804	13.6	7,978	291	79,879	10.4
Waukesha	5,471	99	34,666	16.1	5,978	470	38,259	16.9
Waupaca	8,244	388	71,290	12.1	6,595	408	70,258	10.0
Waushara	12,623	204	71,778	17.9	10,675	377	62,154	17.8
Winnebago	4,892	258	48,617	10.6	5,146	222	50,939	10.5
Wood	10,625	261	62,013	17.6	13,452	245	69,195	19.8

Source: USDA National Agricultural Statistics Survey * Portions of certain counties are not included in the CREP Area (D): Withheld to avoid disclosing Data for Individual Farmers

Table 3.7-2 Average Farm Production Expense and Return per Dollar of Expenditure 2002

Area	Average Size of Farm (Acres)	Average Total Farm Production Expense	Average Cost/Acre	Average Net Cash Return/Farm	Average Net Cash Return/Acre	Average Return/\$ Expenditure
Wisconsin	204	60,185	295	17946	87.97	0.30
Ashland	259	23,666	91	4143	16.00	0.18
Barron	214	76,031	355	19878	92.89	0.26
Bayfield	239	24,797	104	6383	26.71	0.26
Brown	176	104,232	592	3528	20.05	0.03
Buffalo	280	70,540	252	22654	80.91	0.32
Calumet	205	87,690	428	28043	136.80	0.32
Chippewa	231	51,338	222	20684	89.54	0.40
Clark	210	60,551	288	23225	110.60	0.38
Columbia	228	63,173	277	13410	58.82	0.21
Crawford	199	30,523	153	6118	30.74	0.20
Dane	179	73,365	410	32845	183.49	0.45
Dodge	205	73,532	359	23663	115.43	0.32
Door	154	38,734	252	8708	56.55	0.22
Douglas	217	14,114	65	-245	-1.13	(0.02)
Dunn	237	56,477	238	10740	45.32	0.19
Eau Claire	174	36,221	208	10941	62.88	0.30
Fond du Lac	211	85,407	405	29345	139.08	0.34
Grant	243	65,596	270		0.00	0.00
Green	206	70,004	340	16046	77.89	0.23
Green Lake	221	51,180	232	21528	97.41	0.42
Iowa	218	58,322	268	19683	90.29	0.34
Iron	206	20,942	102	(D)	(D)	(D)
Jackson	282	58,719	208	20537	72.83	0.35
Jefferson	174	80,517	463	20166	115.90	0.25
Juneau	224	53,763	240	13388	59.77	0.25
Kewaunee	190	87,741	462	34726	182.77	0.40
La Crosse	201	44,127	220	8292	41.25	0.19
Lafayette	284	88,534	312	27797	97.88	0.31
Manitowoc	175	79,155	452	27562	157.50	0.35
Marathon	183	57,405	314	15987	87.36	0.28

Table 3.7-2 Average Farm Production Expense and Return per Dollar of Expenditure 2002 (continued)

Area	Average Size of Farm (Acres)	Average Total Farm Production Expense	Average Cost/Acre	Average Net Cash Return/Farm	Average Net Cash Return/Acre	Average Return/\$ Expenditure
Marquette	233	49,728	213	12011	51.55	0.24
Monroe	182	41,913	230	14872	81.71	0.35
Outagamie	184	81,850	445	26181	142.29	0.32
Ozaukee	142	59,772	421	20616	145.18	0.34
Pepin	222	56,662	255	17178	77.38	0.30
Pierce	177	43,492	246	9895	55.90	0.23
Portage	177	93,477	528	27649	156.21	0.30
Racine	197	93,864	476	24303	123.37	0.26
Richland	190	35,891	189	5939	31.26	0.17
Rock	225	73,321	326	10398	46.21	0.14
St. Croix	166	45,695	275	10795	65.03	0.24
Sauk	211	61,025	289	12154	57.60	0.20
Shawano	185	72,829	394	26654	144.08	0.37
Sheboygan	175	73,054	417	24004	137.17	0.33
Taylor	244	44,221	181	12860	52.70	0.29
Vernon	171	35,733	209	11107	64.95	0.31
Walworth	222	79,923	360	19888	89.59	0.25
Waukesha	129	45,553	353	6716	52.06	0.15
Waupaca	177	50,958	288	13335	75.34	0.26
Waushara	269	99,830	371	25585	95.11	0.26
Winnebago	177	50,642	286	14756	83.37	0.29
Wood	206	56,171	273	20423	99.14	0.36

Source: USDA National Agricultural Statistics Survey

* Portions of certain counties are not included in the CREP Area

(D): Withheld to avoid disclosing Data for Individual Farmers

Table 3.7-3 Average Value per Farm of Land, Buildings, Machinery and Equipment 2002

Area	Average Size of Farm (Acres)	Average Value of Land & Buildings	Average Value of Machinery & Equipment
Wisconsin	204	464,127	72,300
Ashland	259	297,017	45,528
Barron	214	332,765	73,329
Bayfield	239	270,969	42,317
Brown	176	507,662	81,893
Buffalo	280	405,616	76,187
Calumet	205	518,429	95,762
Chippewa	231	336,964	76,125
Clark	210	304,762	71,450
Columbia	228	576,455	80,777
Crawford	199	324,768	40,850
Dane	179	580,806	79,725
Dodge	205	483,293	111,569
Door	154	380,435	67,519
Douglas	217	288,771	26,576
Dunn	237	433,524	66,769
Eau Claire	174	305,577	46,570
Fond du Lac	211	514,396	97,653
Grant	243	481,634	81,950
Green	206	493,188	85,736
Green Lake	221	447,838	65,190
Iowa	218	490,693	62,660
Iron	206	222,960	33,524
Jackson	282	435,336	65,511
Jefferson	174	555,490	90,242
Juneau	224	421,416	72,155
Kewaunee	190	485,851	100,913
La Crosse	201	425,490	59,139
Lafayette	284	643,185	110,598
Manitowoc	175	490,353	89,166
Marathon	183	327,014	72,025
Marquette	233	481,505	65,603
Monroe	182	345,102	54,494
Outagamie	184	555,885	89,987
Ozaukee	142	579,814	62,885
Pepin	222	417,311	61,754
Pierce	177	439,725	60,998
Portage	177	735,832	97,225
Racine	197	800,951	74,494
Richland	190	411,654	51,167
Rock	225	705,051	77,699
St. Croix	166	520,418	54,852
Sauk	211	551,470	76,711
Shawano	185	484,166	71,699
Sheboygan	175	498,165	77,259
Taylor	244	318,219	57,930
Vernon	171	320,270	49,612
Walworth	222	854,302	97,364
Waukesha	129	615,239	63,282
Waupaca	177	386,288	62,161
Waushara	269	725,229	93,896
Winnebago	177	418,923	73,577
Wood	206	390,246	73,246

Source: USDA National Agricultural Statistics Survey

* Portions of certain counties are not included in the CREP Area

In 2002 approximately 12.9 million acres of land within the CREP area were actively used for agricultural purposes including, cropland, hay land, and pastureland. This was a decrease of approximately 15.2 percent from the 1997 (14.9 million acres). Table 3.7-4 lists the acreage for different agricultural land uses in 1997 and 2002 and the percent change during the period.

Table 3.7-4 Agricultural Land Use Acreage within the CREP Area

Land Use	2002	1997	Percent Change
Cropland ¹	9,350,042	9,597,752	(2.6)
Hayland ²	1,731,410	3,070,797	(77.4)
Pastureland ³	1,874,754	2,255,606	(20.3)
Woodland ⁴	1,998,012	2,002,858	(.2)
House lots, ponds, roads, wasteland, etc.	886,832	964,826	(8.8)
CRP & WRP ⁵	543,081	650,637	(19.8)
Active Agriculture ⁶	12,956,206	14,924,155	(15.2)
Total Land in Farms ⁷	16,384,131	18,542,476	(13.2)

1 Cropland excludes all harvested hayland and cropland used for pastureland and grazing
2 Hayland includes all harvested cropland used for alfalfa, other tame, small grain, wild, grass silage, green chop etc.
3 Pastureland includes all pasture, including cropland, grazed woodland, and rangeland not considered cropland or woodland
4 Woodland excludes all wooded pasture lands
5 CRP & WRP acreages are included as active agricultural lands
6 Active agricultural lands include the sum of cropland, hayland, and pastureland
7 Total land in farms include the sum of cropland, hayland, pastureland, woodland, and house lots, etc.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter provides anticipated environmental consequences from implementation of the proposed action and also the No Action alternative. Appendix C contains Form NRCS-CPA-052, which when completed, provides summary documentation of the environmental evaluation at the sites.

4.1 BIOLOGICAL RESOURCES

4.1.1 Alternative A – Preferred

Implementation of Alternative A would result in beneficial impacts to biological resources in the proposed CREP area and the waters downstream from the area. The agricultural land eligible for enrollment in the proposed CREP area consists of previously disturbed and extensively managed landscapes. Vegetation; wildlife; aquatic species; and threatened, endangered, and sensitive species have been displaced from years of crop production on these lands. Implementation of the Preferred Alternative would not have adverse impacts on biological resources.

The project objectives to reduce nutrient runoff of phosphorous (610,000 pounds) and nitrogen (305,000 pounds) by up to 10 percent, sediment (335,000 tons) in runoff by up to 15 percent from cropland and pastureland, and the peak runoff flow in critical areas of the Lake Superior Basin by 10 to 15 percent in the project areas by the end of the 10-year implementation period would improve habitat conditions for wildlife, especially aquatic species. Enrollment of riparian areas or HEL, including alluvial floodplain soil and upland areas with potential to deliver sediment runoff to watercourses would benefit all biological resources. Providing perpetual conservation easements for all riparian corridor and wetland and wildlife practices would result in long-term benefits for biological resources in the proposed CREP area.

Vegetation

Every CP that is proposed for implementation under the CREP agreement would contribute to vegetation diversity in the proposed CREP area. In addition, the establishment of native plant communities would help to reduce occurrences of exotic plant species. Vegetation restoration would increase biodiversity and improve water quality throughout the 100,000 acres proposed for enrollment.

Wildlife

Associated with improved habitat conditions, wildlife diversity in the proposed CREP area would increase from implementation of CPs. In comparison to the existing conditions on most of the eligible cropland, wildlife habitat and wildlife diversity would thrive after establishment of each CP. Grassland birds, generally absent from croplands, would benefit primarily from establishment of grasses such as CP 1, CP2, CP10, and CP25. Nongame and game wildlife would benefit primarily from establishment of rare and declining habitat (CP25), wetland restoration (floodplain) (CP23), wetland restoration (CP23A) wetland restoration (non-floodplain), and establishment of filter strips (CP21). Establishment of riparian buffers (CP22) would enhance stream corridor quality and important habitat for neo-tropical and other migratory and nesting birds.

Increased wildlife populations, especially game birds and deer, could enhance the socioeconomic value of agricultural lands for hunting, wildlife watching, and other outdoor recreational activities. However, the expected improvements would not be realized until several years after implementation of the proposed CREP agreement because of the time required for development of vegetation and travel corridors.

Aquatic Species

Aquatic biodiversity in the proposed CREP area would benefit from reduced levels of nutrient and sediment loading to surface waters from agricultural activity. Lower nutrient concentrations in the streams would improve the health of fish and invertebrate communities, as well as stream corridor quality. In particular, establishment of filter strips (CP21), riparian buffers (CP22), wetland restoration in floodplains (CP23), and wetland restoration non-floodplain (CP23A), would enhance aquatic biodiversity in the CREP area and downstream. Aquatic species would benefit from the targeting of CPs to alluvial floodplain soils, hydric, and hydric-included soils, and HEL. These CPs would provide filter strips, riparian buffers, and wetland restoration areas both inside and outside the boundaries of the 100-year floodplain for protection and enhancement of water quality, which would increase aquatic biodiversity in the proposed CREP area.

Threatened and Endangered Species and Critical Habitat

Implementation of the proposed CREP would have positive impacts on threatened and endangered (T&E) species and critical habitat. Benefits to T&E species and critical habitat would be minimal in the short term as vegetative communities develop and water quality improves. However, positive benefits to T&E species and habitats would be expected to increase in the long term following CP implementation. Brief but don't change.

Prior to a producer being approved for participation in CREP, the TSP and FSA will complete an environmental evaluation to determine what effects the installation of proposed CPs will have on T&E species and critical habitat. If FSA determines that the proposed action may affect a species or critical habitat, consultation with the appropriate office of FWS will occur. Any required consultation will be documented as an appendage to the environmental evaluation, NRCS-CPA-052.

4.1.2 Alternative B - No Action

Under the No Action Alternative the proposed CREP would not be implemented and there would be no change to existing biological resources in the Wisconsin watersheds CREP area.

4.2 CULTURAL RESOURCES

4.2.1 Alternative A – Preferred

Archaeological Resources

Due to the rich cultural history of the CREP agreement area, the potential for encountering archaeological resources during implementation of CREP contracts is considered high. CPs that are ground disturbing beyond what is normally disturbed from agricultural plowing have the potential to impact both known and unknown archaeological resources.

In order to determine whether proposed ground disturbing CPs would impact archaeological resources listed in or eligible for listing in the NRHP, appropriate archaeological review will be completed prior to implementation of the contract as part of the environmental evaluation. Results and recommendations from the review should receive concurrence for the Wisconsin SHPO prior to project implementation.

Architectural Resources

The CREP agreement area contains a rich architectural history related to early settlement, industrial and agricultural themes of Wisconsin's history. Should proposed conservation practices include the removal or modification of historic architectural resources included in or eligible for the NRHP, a historic architectural resources survey (Wisconsin Historic Inventory) would be required in order to determine whether such resources are present. The SHPO would be consulted.

Traditional Cultural Properties

Because individual lands to be enrolled under the CREP agreement are not yet defined, no American Indian sacred sites or TCPs are identified. Once these areas are defined, consultation with American Indian tribes that have traditional ties to the lands may be needed to determine whether such properties exist on affected lands. Federally recognized tribes to be contacted may include the Bad River Band of Lake Superior Chippewa Indians; Red Cliff Band of Lake Superior Chippewa Indians; Ho-Chunk Nation of Wisconsin; Forest County Potawatomi Indian Community; Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin; Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin; Menominee Indian Tribe of Wisconsin; Oneida Tribe of Indians of Wisconsin; Sokaogon Chippewa (Mole Lake) Community of Wisconsin; St. Croix Chippewa Indians of Wisconsin; and Stockbridge Munsee Community of Wisconsin.

4.2.2. Alternative B - No Action

Under the No Action Alternative, farming practices in the CREP area would continue. Though the continuation of farming in previously disturbed areas is not expected to impact cultural resources, a change in farming practices that would disturb previously undisturbed areas or plowing in areas not previously plowed, could result in impacts to known or unknown archaeological, architectural, or traditional cultural resources.

4.3 WATER RESOURCES

4.3.1 Alternative A – Preferred

Implementation of the proposed CPs listed in Section 2.1 would improve surface water quality within the proposed CREP area by reducing agricultural nutrient and sediment loading within the region's streams and rivers. Reductions in nutrient and sediment loading, would occur as a result of the proposed action. Short-term impacts associated with activities such as vegetation clearing and soil disturbance may occur during the installation of CPs. These installation activities could result in temporary and minor impacts to surface water quality resulting from runoff of sediment. Use of filter fencing or similar measures would reduce these impacts as well as compliance with all applicable Federal and State permitting requirements for stormwater runoff.

Implementing the proposed CPs is expected to have positive long term impacts on groundwater quality in the proposed CREP area. Agricultural acreages would be reduced which would decrease the amount of nutrients leaching into groundwater and surface water sources.

Implementation of CP8A, CP21, CP22, CP23A, CP23, CP29, and CP30 is expected to increase the acreages of wetlands and riparian habitat in the proposed CREP area. Short-term impacts similar to those discussed for the CPs associated with surface water quality may occur from installation of CPs.

4.3.2 Alternative B - No Action

Under Alternative B, the No Action Alternative, the CPs described in Section 2.1 would not be implemented and no change to existing surface water, groundwater or wetland acreage would occur. Continued runoff of agricultural chemicals, nutrients, erosion of soils, and the impacts of these to surface and groundwater quality would continue if no action was implemented.

4.4 EARTH RESOURCES

4.4.1 Alternative A – Preferred

Under Alternative A, potential long-term positive impacts to earth resources are expected to occur. Implementation of the proposed CPs would result in localized stabilization of soils and control of nutrients as a result of reduced erosion and runoff. In pasturelands, exclusion of cattle from streams and riparian areas bordering streams would increase stream bank stabilization, resulting in reduced rates of sedimentation and subsequent improvements to water quality (see section 4.3 for a discussion of surface

water quality). Establishing permanent native vegetation on former croplands would reduce erosion caused by wind and water. Short-term disturbance to soils could include tilling, or installation of various structures such as fences, certain water development for livestock watering, or certain water control structures to prevent erosion that may be necessary in association with the implementation of CPs. These activities may result in temporary minor increases in soil erosion, particularly prior to the establishment of new vegetation. The potential impacts to soil associated with specific tracts of agricultural land and their suitability for implementation of the CPs included in the Wisconsin CREP agreement would be evaluated as provided for in Part 10 FSA Handbook 2-CRP.

Any CPs being installed within 100-year floodplains would require strict compliance with EO 11988. No CPs would be installed that could be considered as unwise actions that may increase the severity and frequency of floods or expose new areas to risk. Those CPs listed in section 2.1 have been reviewed on an individual basis and should not cause an increase in the severity or frequency of floods. Therefore, this PEA will serve as a class review as allowed by EO 11988 since the CPs can be considered as repetitive actions. FSA will make a determination on an individual basis by completion of the site specific environmental evaluation whether CPs being located within a floodplain will require the completion of a site specific EA.

4.4.2 Alternative B – No Action

Under Alternative B, the No Action Alternative, the CPs described in Section 2.1 would not be implemented and continued erosion associated with normal agricultural practices would be expected to occur, causing further alteration of topography and loss of soils.

4.5 AIR QUALITY

Any impacts to air quality in attainment areas would be considered significant if pollutant emissions associated with the proposed action: caused, or contributed to a violation of any national, state, or local ambient air quality standard; exposed sensitive receptors to substantially increased pollutant concentrations; or exceeded any significance criteria established by SIP.

4.5.1 Alternative A – Preferred

Implementation of Alternative A would result in establishment of CPs as described on up to 100,000 acres of farmland in 52 counties in the Wisconsin watershed. Preparing the lands for CPs could include activities such as tilling, burning, and installation of various structures in water or on land. These activities would have a temporary minor impact to the local air quality. It is not expected that any of these practices would change the current attainment status or violate standards in the SIP.

These land preparation activities would have localized temporary minor impacts to air quality. Tilling would temporarily increase the PM10 concentrations in the immediate area; however, this increase is not expected to be significant. Watering exposed soils during and after tilling would reduce the release of PM10. The amount of open burning that would take place in conjunction with clearing and preparing lands for installation of CPs is not known. Burning could release PM10, CO, hydrocarbons and nitrous oxide into the atmosphere (EPA 1992). The type and quantity of these pollutants would be determined by the type of vegetation being burned, the configuration of the burned material, and the weather conditions. It is not anticipated, however, that this burning would have a significant impact on the local air quality. Heavy equipment and construction vehicles used to install roads, firebreaks, dams, levees, and other structures would release CO and PM10. Like tilling and burning, impacts from the use of heavy equipment is expected to be temporary and minor and limited to the immediate construction area.

4.5.2 Alternative B - No Action

Implementation of Alternative B, the No Action Alternative, would not change existing air quality conditions. The CPs described in Section 2.1 would not be implemented.

4.6 RECREATIONAL RESOURCES

4.6.1 Alternative A – Preferred

Implementation of Alternative A would have a positive long-term impact on recreational resources by increasing game species of birds, fish and mammals. Installation of the proposed CPs would increase habitat for game bird and mammal species. An increase in water quality would allow for the replenishment of game fish species. The CPs listed in Section 2.1 would increase the desirability of land to be used for hiking, boating or camping by improving aesthetics. A short term negative impact to recreational activities may occur during the installation of the proposed CPs due to unsightly construction activities or displacement of game species.

4.6.2 Alternative B - No Action

Under Alternative B, the No Action Alternative, the CPs described in Section 2.1 would not be implemented and no change to existing recreational activities would occur. Continued degradation of water quality would be expected, affecting water-related recreational opportunities.

4.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.7.1 Alternative A – Preferred

Implementing the proposed action would result in positive net present values for land rentals within the CREP AREA. Enrollment in the CREP would improve wildlife habitat for game species and non-game species. This improved and expanded wildlife habitat would be likely to increase wildlife-related recreation opportunities within the CREP AREA. This increased/improved habitat would be likely to improve wildlife-recreation generated economic activity within the CREP AREA.

Since the CREP AREA would not be considered an area of concentrated minority population or a poverty area, there would be no adverse impacts from selecting the proposed action, and there would be no CREP AREA-wide impacts due to environmental justice.

4.7.2 No Action Alternative

Under the no action alternative, the Wisconsin CREP agreement would not be implemented. Socioeconomic conditions would be expected to continue to follow the trends associated with the CREP AREA and larger Wisconsin and north central US region. The continued loss of wildlife habitat could result in wildlife enthusiasts spending more of their activity dollars in adjacent states with similar opportunities and forego the remaining wildlife-related recreation opportunities. There would be no impacts from selecting the no action alternative as there would be no CREP AREA-wide impacts due to environmental justice.

5.0 CUMULATIVE IMPACTS AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE IMPACTS

5.1.1 Definition of Cumulative Impacts

CEQ regulations stipulate that the cumulative impacts analysis within an EA should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present and reasonably foreseeable actions regardless of what agency or person undertakes such other actions.” CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative impacts most likely arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time tend to have potential for cumulative effects.

For this PEA, the geographic boundary for cumulative impacts analysis is the CREP area. For the purposes of this analysis, the goals and plans of Federal programs designed to mitigate the risks of degradation of natural resources are the primary sources of information used in identifying past, present, and reasonably foreseeable actions.

5.1.2 Past, Present, and Reasonably Foreseeable Actions

In addition to CRP and the regional CREP, NRCS maintains and implements numerous programs in the State of Wisconsin authorized by the 2002 Farm Bill to conserve and enhance the natural resources of the area. These programs include, but are not limited to, the Wildlife Habitat Incentives Program (WHIP), Grassland Reserve Program (GRP), Environmental Quality Incentives Program (EQIP), Grazing Lands Conservation Initiative (GLCI), and the Wetlands Reserve Program (WRP). Although these programs are required to be implemented on separate lands (i.e. a particular tract of land cannot be used for acquiring funding on more than one government program), the cumulative impacts from their implementation would provide an overall beneficial cumulative impact on water, soil, biological, and other natural resources.

5.1.3 Analysis of Cumulative Impacts

The cumulative impacts resulting from implementation of the proposed CREP would be mostly positive as they relate to improvement in water quality, wildlife, and air quality.

Resource	Cumulative Impacts
Biological	Positive improvements would result by developing or improving habitat for T&E species as well as declining species.
Cultural	Removing additional land from agricultural production would lessen the impact on cultural resource sites.
Water	Water quality would be improved by removing sediment, nutrients, and other pollutants associated with agricultural production.
Earth	Erosion would be reduced as conservation programs such as CREP would remove land from intensive agricultural production.
Air	Air quality would be improved by reducing emissions associated with normal agricultural production.

Resource	Cumulative Impacts
Recreation	More land would be available for recreational opportunities and with improvements in water quality, more water related recreation would occur.
Socioeconomics and Environmental Justice	Producers would experience some positive effects to their agricultural operations by removing less productive land from production, resulting in lower operating costs. Some adverse effects could be experienced by agribusiness as demand for agricultural supplies such as equipment, seed, and fertilizer would be reduced.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources has on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. For the proposed action, no irreversible or irretrievable resource commitments are expected.

Participation in the Wisconsin CREP may result in some permanent changes in land uses, particularly with regard to the restoration, enhancement, or establishment of wetlands. Under current Federal policies, particularly the National Wetlands Mitigation Plan, no net loss of wetlands is a primary goal. Wetlands that become established as a result of implementation of CREP conservation practices would be subject to these policies. Additionally, land that has been restored to provide habitat for wildlife, particularly endangered and threatened species, would be subject to provisions of the ESA. Although regarded as beneficial consequences, it should be recognized that such permanent changes in land uses would be regarded as irretrievable commitments of agricultural production resources.

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Appendix A

Wisconsin CREP Agreement and Amendments

AGREEMENT
BETWEEN THE U.S. DEPARTMENT OF AGRICULTURE,
THE COMMODITY CREDIT CORPORATION
AND
THE STATE OF WISCONSIN

I. PURPOSE

This is an Agreement between the Commodity Credit Corporation (CCC) of the United States Department of Agriculture (USDA), and the State of Wisconsin (the State), through the State's Department of Agriculture, Trade and Consumer Protection to implement the Wisconsin Conservation Reserve Enhancement Program.

II. INTRODUCTION

The intended outcome of this Agreement is to allow, where deemed desirable by USDA, CCC, and the State of Wisconsin, certain acreage to be enrolled under the Conservation Reserve Enhancement Program (CREP). The areas eligible for the CREP are shown on the project area map in Exhibit 1 attached to this Agreement. Specifically, the State seeks to improve the water quality of several water bodies that drain agricultural lands throughout the State of Wisconsin, through a reduction of sediment and the nutrient loading to these water bodies. Improving water quality through CREP will assist in improving water quality in the State's list of impaired waters (303d list). Wisconsin's CREP includes over 95 percent of the waters included on the State's list of impaired waters that are impacted by agricultural activities. The State seeks to enhance wildlife habitats for endangered grassland birds and other wildlife species in two grassland project areas in north central and south central Wisconsin; the goal is to improve habitat for several grassland birds included under the Endangered Species Act. The specific goals for Wisconsin's CREP are to:

- Reduce nutrient runoff of phosphorus (610,000 pounds) and nitrogen (305,000 pounds) by up to 10% and sediment (335,000 tons) in runoff by up to 15 percent from cropland and pastureland in the project areas.
- Establish riparian buffers on up to 50 percent (about 3,700 miles) of the stream miles in the project area that drain farmland which currently is without adequate buffers.
- Establish an additional 10 percent (15,000 acres) of grassland habitat acreage within the grassland project areas to increase populations of endangered or threatened grassland birds.

The CREP provides an opportunity for the State to address these environmentally sensitive areas in concert with Federal and local authorities. The State seeks to provide more enduring

conservation benefits than normally achieved through the Conservation Reserve Program (CRP) by having participating landowners to enter into special 14-15 years CRP contracts under

the CRP which will provide special incentives for the enrollment of sensitive lands, and by allowing those landowners, in addition, to enter into either (1) a special concurrent 14-15 year agreement with the State for additional incentives to enroll that land in the program, or, (2) a perpetual conservation easement granted to the State which will further extend the benefits of the landowner's involvement with the program and which will provide further enhanced payments as an incentive for that enrollment.

This Agreement is not intended to supersede any rules or regulations, which have been, or may be, promulgated by either USDA, CCC, the State of Wisconsin, or other governmental entity participating in the Wisconsin CREP. This Agreement is intended to primarily facilitate existing authorities through a cooperative effort of USDA, CCC, the State, and counties.

III. AUTHORITY

A. Federal

This Agreement is authorized and administered pursuant to the CRP provisions of the Food Security Act of 1985, as amended (1985 Act)(16 U.S.C.3830 *et seq.*), and the regulations at 7 CFR Part 1410.

B. State

Wisconsin has the statutory authority to perform the activities contemplated by this Agreement pursuant to 1999 Wisconsin Act 9 under s. 93.70, Wis. Stats.

IV. GENERAL PROVISIONS

A. This Agreement contemplates enrollment of no more than 100,000 acres of riparian buffer areas, restored wetlands, grassed waterways, and upland grassland areas within the CREP project areas. The eligible practices are:

- CP1 - Establishment of Permanent Introduced Grasses
- CP2 - Establishment of Permanent Native Grasses
- CP8A - Grassed Waterways
- CP10 - Grass Already Established
- CP21 - Filter Strips
- CP22 - Riparian Buffer
- CP23 - Wetland Restoration
- CP25 - Rare and Declining Habitat: Prairie Ecosystem Restoration and Tallgrass Prairie/Oak Savanna and Savanna Ecosystem Restoration

B. The CREP will offer landowners an opportunity to voluntarily enter into a standard CRP contract, as outlined herein, plus either the 14-15 year concurrent State agreement or, in lieu thereof, the State perpetual easement, as referred to above. The participants shall be required to agree to either the concurrent State agreement or the State easement in order to participate in the federal CRP contract under this CREP, and vice versa.

- C. All obligations under this agreement are subject to the availability of funds and subject to all program eligibility provisions that are provided in this agreement or elsewhere, including those provided for by federal regulation or by the terms of the federal or state contracts with the participants. Enrollment under this CRP shall be available under December 31, 2002, unless an extension of that period is allowed by law and agreed to by the parties.
- D. Enrollments in CREP will be accomplished using both existing CRP procedures and procedures established for Wisconsin's CREP and approved by the USDA Deputy Administrator for Farm Programs.
- E. The State and its designees will be solely responsible for enforcement of the State's conservation easement under this CRP but such enforcement and terms must be consistent with this agreement and not inconsistent with the terms of the CRP contract. All producers must be willing to enter into those arrangements with the State except that the State may reject any such offer for participation as it deems warranted. If however, the State rejects the offer, the would-be participant shall also be ineligible for the CRP agreement under this CREP except as noted below. The State and USDA will coordinate its efforts to assure that these joint obligations are handled and resolved in a timely manner. Further, CCC may on its own allow the would-be participant to be treated as a regular CRP participant as the agreed upon terms should the would-be CREP participant be rejected for the State program in which case the enrollment would count against any goals that might have been set for participation under this agreement. The previous sentence shall apply only to the extent that the CCC's enrollment was intended, in good faith, to be an enrollment under this CREP.
- F. Under the State's agreement or easement, the State will pay the participant a one time payment equal to: (1) for easements, 12 times the final CRP annual rental rate (the rental rate without the maintenance payments, additional incentive and practices incentives payments), and (2) for agreements, 1.5 times the one-year base rental rate.
- G. All installed practices must be consistent with applicable USDA Natural Resources Conservation Service (NRCS) Field Office Technical Guides (FOTG) and the USDA Farm Service Agency Handbook 2-CRP.
- H. In determining CCC's share of the cost of practice establishment, CCC shall use appropriate CRP statute and regulations and such cost shares shall be subject to normal limits as stated in program procedures.
- I. Eligible producers will not be denied the opportunity to offer eligible acreage for enrollment during general or continuous CRP enrollment periods.

V. FEDERAL COMMITMENTS

USDA and CCC agree to:

- A. Subject to the acceptance of the land in the State's CREP, CCC will accept for enrollment, consistent with this agreement, eligible CREP land for 14 to 15-year CRP contracts. All land to be enrolled in the program must meet all provisions set forth at 7 CFR Part 1410.
- B. Make an annual rental payment under the CRP contract. The annual payment shall be comprised of three components. The three components will consist of a base soil rental rate (paragraph C), an incentive payment (paragraph D), and an annual maintenance payment (paragraph E).
- C. Determine the base soil rental rate by calculating the weighted soil rental rate for the three predominant soil types using the current CCC posted applicable soil rental rates found in Handbook 2-CRP.
- D. Make an additional annual incentive payment, as a percentage of the base CRP contract annual rental rate otherwise applicable to the land to be enrolled in the CREP (as calculated under paragraph V. B. without regard to other incentive payments), in the following amounts:
 - (1) for land to be established as filter strips (CP21), riparian buffers (CP22), grassed waterways (CP8A), establishment of permanent introduced grasses (CP 1), establishment of permanent native grasses (CP2), and grasses already established (CP10) at 35 percent of base soil rental rate (paragraph C); and
 - (2) for land to be established as wetland restorations (CP 23) and rare and declining habitat: prairie ecosystem restoration and tallgrass prairie/oak savanna ecosystem restoration (CP25), at 60 percent of the base soil rental rate (paragraph C).
- E. Make an annual maintenance payment consistent with applicable CRP statute and regulations where payment for all purposes will be treated as a rental payment and not a cost share.
- F. Make a one-time Signing Incentive Payment (SIP) for land enrolled in practices CP21, CP22, and CP8A, in like manner are for regular continuous CRP enrollments under the terms of the Farm Service Agency Handbook 2-CRP.
- G. Make a one-time Practice Incentive Payment (PIP) for practices CP21, CP22, and CP8A in accordance with Farm Service Agency Handbook 2-CRP procedure. This will be treated as a rental payment and not a cost share for all purposes.
- H. Lands enrolled in wetland restorations (CP23), will be eligible for an additional federal payment equal to 25 percent of the cost to establish the hydrology consistent with the

terms of Farm Service Agency Handbook 2-CRP. This will be treated as a rental payment and not a cost share, for all purposes.

- I. All practices must meet, and may exceed the minimum specifications of the Natural Resources Conservation Service (NRCS) Field Office Technical Guide and Farm Service Agency Handbook 2-CRP.

VI. STATE COMMITMENTS

The State agrees to:

- A. Contribute not less than 20 percent of the overall annual in-kind and direct program costs (total aggregate cost of the CREP and associated CREP costs) of the Wisconsin CREP. To determine the overall costs, the following costs will be considered: the total land retirement costs, which will include the CRP payments made by the CCC (see paragraph V.B.) and the agreements and easement payments made by the State; the total reimbursement for conservation practices paid by the CCC and the State; and the aggregate costs of technical assistance, including those expenses incurred by the State and county Land Conservation Committees for implementing conservation plans, contracts, agreements and easements. The State's minimum costs will be compared to the present value of the stream of federal payments using an 8 percent discount rate.
- B. Fulfill its 20 percent obligation in VI A., in the event the State has not already obligated at least that amount of the overall costs through incentive payments and signed 14 to 15-year State agreements or conservation easements, by paying the shortfall to participating landowners or by paying such shortfall directly to the CCC within 90 days, unless the State can show that payments will be made within the first 6 months of the subsequent federal fiscal year.
- C. Enroll eligible land in the Wisconsin CREP through 14 to 15-year agreements or perpetual conservation easements as applicable. Only lands enrolled in a 14 to 15-year CRP contract will be eligible.
- D. Make Wisconsin incentive payments of 20 percent of the eligible reimbursement costs for the conservation practices listed in section IV. B. The total cost share payments from all sources may not exceed 100 percent of the reimbursable costs. In accordance with 2-CRP Handbook rules, PIP is not considered as a cost share payment. The State's 20 percent incentive payment is not a cost share payment.
- E. Provide assistance to participants, through county Land Conservation Committees and departments and NRCS or their designees, to develop conservation plans for each enrollment and assist landowners in the completion of paperwork necessary for enrollment in the CREP.

- F. Establish a CREP statewide advisory committee appointed by the Secretary of the Wisconsin Department of Agriculture, Trade and Consumer Protection as a steering committee for the State's role in the CREP.
- G. Set priorities and target contacts with landowners, based on advice of the CREP Advisory Committee, local county land conservation committees or local committees established to provide guidance for the CREP, as set forth in the Wisconsin CREP application to USDA.
- H. Report, by January 15, 2002, and annually thereafter, to the CCC describing progress in accomplishing the goals of the program including: the number of acres enrolled the last federal fiscal year in CREP, the type of restoration to be done on those lands, estimated environmental benefits, the extent and type of State assistance to be provided, and how the area fits into the Wisconsin CREP priorities. The annual report will also include a review of the CREP accomplishments for the entire program, to date, through the end of the previous fiscal year.
- I. It is understood that a portion of the State's contribution to its share of the CREP payments comes from selling tax exempt bonds by the State of Wisconsin.

VII. OTHER PROVISIONS

A. The following additional provisions are agreed to provisions for the CREP:

- 1. Up to 15,000 total acres are eligible to be enrolled in the CREP within the grassland project areas. Acres enrolled must meet the eligibility rules in accordance with Handbook 2-CRP subject to the following additional specifications.
 - a. It is decided that the CREP enroll of these 15,000 acres, 5,000 acres in the northern grassland project area (see the maps in Exhibit 1) will be enrolled that meet the cropland eligibility requirements in Handbook 2-CRP; that are established in CP1, CP2, CP10, or CP25; and that meet either of the following additional criteria:
 - The land is within 1000 feet of a water body eligible for generating approval of a practice under practice CP21 (filter strip), or
 - The land is either highly erodible land (HEL as determined by the USDA NRCS) or has a weighted erosion index (the EI is the portion of the universal soil loss equation which includes the runoff factor, soil erodibility factor, and slope and slope length factors) of 8 or greater.
 - b. Eligible cropland in the south grassland project area (see the maps in Exhibit 1) may be enrolled in CREP with CP1, CP2, CP10, or CP25 only if it is located within 1000 feet of a water body eligible for practice generating approval of a practice under CP21 (filter strip) and that meet either of the following criteria:

- The land is highly erodible (HEL as determined by the USDA NRCS), or
- The land has a weighted erosion index (EI) of 8 or greater.

Note: Grassed waterways (CP8A), filter strips (CP21), riparian buffers (CP22), and wetland restorations (CP23) acres enrolled in the CREP in the grassland project areas are included in determining the 15,000 maximum enrolled acreage for the combined grassland project areas.

2. All areas with concentrated flow according to the FOTG that drain directly to an area that is entered into the CREP will be eligible for cost-sharing to construct grassed waterways (CP8A), if the land meets CRP eligibility rules in FSA Handbook 2-CRP. This eligibility may extend to land up to maximum of 1000 feet from the edge of a filter strip or riparian buffer to solve the resource issue. The area of the waterway (CP8A) is not eligible for a State perpetual conservation easement. The waterway (CP8A) is eligible for a 14 to 15-year CRP contract, 14 to 15 year State agreement, and the CREP enhanced funding.
3. Except for those instances during the federal CRP contract period where emergency haying or grazing is allowed by the U. S. Secretary of Agriculture for local CRP enrollments, persons signing a perpetual conservation easement with the State on an area including a filter strip or riparian buffer will be allowed to graze or remove the vegetation for hay or harvest the timber from the land in CREP only after the federal CRP contract expires, if the activity is based on a conservation plan, including a grazing or harvesting plan, or a forest management plan approved by the county land conservation department. This allowance of haying and grazing does not apply during the federal 15-year CRP contract unless the land is released by FSA as a result of an emergency declaration. A conservation plan allowing for pasturing, haying, or timber harvesting of the lands must protect the conservation values of the CREP.
4. In the riparian buffer area, a wetland is eligible to be enrolled if the following conditions are met:
 - a. A new filter strip (CP21) or riparian buffer (CP22) will be installed,
 - b. The wetland is hydrologically connected to the enrolled buffer area,
 - c. The enrolled wetland and surrounding buffer area is no more than 40 acres and the enrolled buffer area average width is not more than 150-feet wide,
 - d. The land to be enrolled must have the cropping history as required in FSA Handbook 2-CRP, must have a runoff contributing area of cropland or pastureland or contain organic soils, as determined by the NRCS, and must be situated such that its inclusion in the program will provide sufficient program benefits as determined

by NRCS in the same manner as such determinations are made by NRCS for normal CRP enrollments, and

- e. The areas must be mapped as a wetland eligible to be restored [mapped farmed wetlands (FW) or prior converted (PC)], as determined by NRCS, and consistent with FSA Handbook 2-CRP.
5. For any wetland restoration located on lands included within legal drainage districts, the landowner must get written permission from the county drainage board prior to signing a contract to restore the wetland. The permission from the drainage board is to ensure that the wetland restoration will not impact the district's drainage structures or legal drainage mission.
 6. For purposes of Wisconsin's CREP, the maximum average width for enrollment as a filter strip (CP21) or riparian buffer (CP22) on cropland is 150 feet. In the case where the eligible land entered into CREP as a filter strip comprises more than 60 percent of the field, based on the previous three years of cropping patterns, the filter strip (CP21) or riparian buffer (CP22) enrolled into the CREP may be increased up to a maximum average width of 210 feet, providing the remaining acreage is otherwise eligible according to FSA Handbook 2-CRP procedure.
- B. Any amendments to the Agreement must be in writing and must be executed by the same parties who executed the original Agreement, their successors in office, or their designees.
 - C. This MOA will remain in effect until December 31, 2002, and may be modified or extended upon mutual written agreement or cancelled unilaterally by the CCC or the State.
 - D. Wisconsin reserves the right to request waivers, on a case by case basis, that adjust the special provisions with written approval from the state committee of the Farm Service Agency. The county and State will consider the significance of the projected enhancement of grassland habitat and projected improvements to water quality when making a request to vary a decision. The State will not request a waiver that would be in conflict with any federal statute, rule or policy related to CRP. The following are the specific variances that would be delegated to the state committee of the Farm Service Agency for approval:
 1. Increase the length of grassed waterway that is enrolled in CREP beyond the 1000-foot maximum distance from the enrolled filter strip or riparian buffer.
 2. Increase the maximum acreage of wetland restoration and associated buffer area enrolled in CREP above the maximum of 40 acres to the amount otherwise eligible for enrollment under the continuous signup for CRP or other CRP rules.

3. Increase the maximum average width for a CP22, riparian buffer to 180 feet, consistent with the width currently available under the continuous CRP signup.
4. Increase the maximum average filter strip width around enrolled wetland restorations beyond the requested maximum average width of 150 feet to what would be allowed under current rules for the continuous sign-up for CRP.
- E. The State of Wisconsin will temporarily release participants from any contractual restriction on crop production during the CRP contract period if such release is determined to be necessary by the Secretary of Agriculture in order to address a national emergency. The exception to this will be for persons that enroll their lands under a State perpetual conservation easement or otherwise has an obligation to the State under this arrangement undertaken in this CREP.
- F. Obligations under this agreement are subject to the availability of funds and each side may terminate the Agreement on notice to the other but said termination will not effect private obligations to producers already undertaken.

IT IS SO AGREED:

**FOR THE UNITED STATES DEPARTMENT OF AGRICULTURE AND THE
COMMODITY CREDIT CORPORATION**

BY:

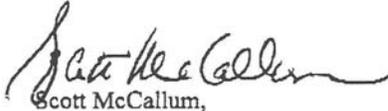


Ann Veneman
Secretary
U.S. Department of Agriculture
Chairman of the Board
Commodity Credit Corporation

DATE: OCT 26 2001

FOR THE STATE OF WISCONSIN

BY:



Scott McCallum,
Governor
State of Wisconsin

DATE:

10/22/01

AMENDMENT #1 TO THE AGREEMENT
BETWEEN THE U.S. DEPARTMENT OF AGRICULTURE,
THE COMMODITY CREDIT CORPORATION
AND
THE STATE OF WISCONSIN

I. PURPOSE

The purpose of this amendment to the agreement between the U.S. Department of Agriculture, the Commodity Credit Corporation, and the State of Wisconsin to implement the Conservation Reserve Enhancement Program.

II. AMENDMENT

Section IV. General Provisions, item C. is amended to read:

All obligations under this agreement are subject to the availability of funds and subject to all program eligibility provisions that are provided in this agreement or elsewhere, including those provided for by federal regulation or by the terms of the federal or state contract with the participants. Enrollment under this CRP is available until December 31, 2007, unless an extension of that period is allowed by law and agreed to by the parties.

Section VII. Other Provisions, item A.6 is amended to read:

6. For purposes of Wisconsin's CREP, the maximum average width for enrollment as a filter strip (CP21) or riparian buffer (CP22) on cropland is 150 feet. In the case where the eligible land entered into CREP as a filter strip comprises more than 60 percent of the field, based on the previous three years of cropping patterns, the filter strip (CP21) or riparian buffer (CP22) enrolled into the CREP may be increased up to a maximum average width of 250 feet, providing the remaining acreage is otherwise eligible according to FSA Handbook 2-CRP procedure.

Section VII. Other Provisions, the note under item A.1.b. is amended to read:

Note: Grassed Waterways (CP8A), filter strips (CP21), riparian buffers (CP22), and wetland restorations (CP23) acres associated with CP21 and CP22 practices that are enrolled in CREP in the grassland project areas are not included in determining the 15,000 maximum enrolled acreage for the combined grassland project areas.

Section VII. Other Provisions, item C is amended to read:

This MOA will remain in effect until December 31, 2007, and may be modified or extended upon mutual written agreement or cancelled unilaterally by the CCC or the State.

Exhibit 1, the project area maps for CREP are revised and attached to this Amendment #1.

IT IS SO AGREED:

FOR THE UNITED STATES DEPARTMENT OF AGRICULTURE AND THE COMMODITY CREDIT CORPORATION

BY:  DATE: 12-9-07

John Johnson, Deputy Administrator for Farm Programs
U.S. Department of Agriculture
Chairman of the Board
Commodity Credit Corporation

FOR THE STATE OF WISCONSIN

BY:  DATE: 11/27/07

Scott McCallum, Governor
State of Wisconsin

AMENDMENT #2 TO THE AGREEMENT
BETWEEN THE U.S. DEPARTMENT OF AGRICULTURE,
THE COMMODITY CREDIT CORPORATION
AND
THE STATE OF WISCONSIN

I. PURPOSE

The document amends the Memorandum of Agreement between the U.S. Department of Agriculture, the Commodity Credit Corporation, and the State of Wisconsin to implement the Conservation Reserve Enhancement Program.

II. AMENDMENT

Section IV. General Provisions, item A. is amended to read:

- A. This Agreement contemplates enrollment of no more than 100,000 acres of riparian buffer areas, restored wetlands, grassed waterways, and upland grassland areas within the CREP project areas. The eligible practices are:

- CP1 - Establishment of Permanent Introduced Grasses
- CP2 - Establishment of Permanent Native Grasses
- CP8A - Grassed Waterways
- CP10 - Grass Already Established
- CP21 - Filter Strips
- CP22 - Riparian Buffer
- CP23 - Wetland Restoration
- CP25 - Rare and Declining Habitat: Prairie Ecosystem Restoration and Tallgrass Prairie/Oak Savanna and Savanna Ecosystem Restoration
- CP29 - Marginal Pastureland Wildlife Habitat Buffer

Section V. Federal Commitments, item D. (1) is amended to read:

- (1) for land to be established as filter strips (CP21), riparian buffers (CP22), grassed waterways (CP8A), establishment of permanent introduced grasses (CP 1), establishment of permanent native grasses (CP2), grasses already established (CP10), and Marginal Pastureland Wildlife Habitat Buffer (CP29) at 35 percent of base soil rental rate (paragraph C); and

Section VII. Other Provisions, item A.3. is amended to read:

- 3. Except for those instances during the federal CRP contract period where emergency haying or grazing is allowed by the U. S. Secretary of Agriculture for local CRP enrollments or where FSA Handbook 2-CRP allows the landowner to hay or graze the CRP enrolled acres, persons signing a perpetual conservation easement with the State on an area including a filter strip or riparian buffer will be allowed to graze or remove the vegetation for hay or harvest the timber from the land in CREP only after the federal CRP contract expires, if the activity is based on a conservation plan, including a grazing or harvesting plan, or a forest management plan approved by the county land conservation department. This allowance of haying and grazing does not apply during the federal 15-year CRP contract unless the land is released by FSA as a result of an emergency declaration or is released for haying and grazing based on FSA Handbook 2-CRP. A conservation plan allowing for pasturing, haying, or timber harvesting of the lands must protect the conservation values of the CREP. Timber harvesting is only allowed after the 15-year CRP agreement expires.

Section VII. Other Provisions, item A.7. is added and reads:

- 7. For the purposes of Wisconsin's CREP, the maximum average width for enrollment as a marginal pastureland wildlife habitat buffer (CP29) on pastureland is 150 feet. The lands eligible to enroll the CP 29 practice is the same as that for the riparian buffer (CP22) and is not eligible to be enrolled for sinkholes or karst areas or other permanent water bodies where there is not runoff from the protected water body.

Section VII. Other Provisions, item A.8. is added and reads:

- 8. Lands enrolled in Establishment of Permanent Introduced Grasses (CP1), Establishment of Permanent Native Grasses (CP2), and Grass Already Established (CP10) may be released for haying and grazing of vegetation during the federal 15-year agreement pursuant to the provisions of FSA Handbook 2-CRP or as otherwise authorized by the Secretary of Agriculture..

Exhibit 1, the project area maps for CREP are revised and attached to this Amendment #2.

IT IS SO AGREED:

FOR THE UNITED STATES DEPARTMENT OF AGRICULTURE AND THE COMMODITY CREDIT CORPORATION

BY:

DATE:

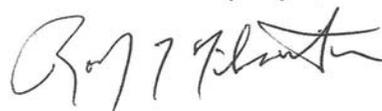
John Johnson, Deputy Administrator for Farm Programs
U.S. Department of Agriculture
Chairman of the Board
Commodity Credit Corporation

FOR THE STATE OF WISCONSIN

BY:


James Doyle, Governor
State of Wisconsin

DATE: 12/16/03



AMENDMENT #3 TO THE AGREEMENT
BETWEEN THE U.S. DEPARTMENT OF AGRICULTURE,
THE COMMODITY CREDIT CORPORATION
AND
THE STATE OF WISCONSIN

I. PURPOSE

The purpose of this amendment to the agreement between the U.S. Department of Agriculture, the Commodity Credit Corporation, and the State of Wisconsin is to implement a modified Conservation Reserve Enhancement Program.

II. AMENDMENT

Section II. Introduction, the opening paragraph is amended to read:

The intended outcome of this Agreement is to allow, where deemed desirable by USDA, CCC, and the State of Wisconsin, certain acreage to be enrolled under the Conservation Reserve Enhancement Program (CREP). The areas eligible for the CREP are shown on the project area map in Exhibit 1 attached to this Agreement. Specifically, the State seeks to improve the water quality of several water bodies that drain agricultural lands throughout the State of Wisconsin, through a reduction of sediment and the nutrient loading to these water bodies. Improving water quality through CREP will assist in improving water quality in the State's list of impaired waters (EPA 303d list). Wisconsin's CREP includes over 95 percent of the waters included on the State's list of impaired waters that are impacted by agricultural activities. The State seeks to enhance wildlife habitats for endangered grassland birds and other wildlife species in two grassland project areas in north central and south central Wisconsin; the goal is to improve habitat for several grassland birds included under the Endangered Species Act. The State seeks to reduce peak discharge flows from agricultural lands in the Lake Superior Basin that increase erosion and sedimentation in the outlets to Lake Superior. The specific goals for Wisconsin's CREP are to:

Section II. Introduction, is amended to add a bullet point as an additional goal for Wisconsin's CREP:

- To reduce the peak runoff flow in critical areas of the Lake Superior Basin by 10 percent to 15 percent as estimated in 2004, the baseline year.

Section IV. General Provisions, item A. is amended to read:

- A. This Agreement contemplates enrollment of no more than 100,000 acres of eligible cropland or marginal pastureland within certain CREP project areas. The eligible practices are:
- CP1 - Establishment of Permanent Introduced Grasses and Legumes
 - CP2 - Establishment of Permanent Native Grasses and Legumes
 - CP8A - Grassed Waterways – Noneasement
 - CP10 – Vegetative Cover - Grass - Already Established
 - CP21 - Filter Strips
 - CP22 - Riparian Buffer
 - CP23 - Wetland Restoration
 - CP23A – Wetland Restoration - Non-floodplain
 - CP25 - Rare and Declining Habitat
 - CP29 – Marginal Pastureland Wildlife Habitat Buffer
 - CP30 – Marginal Pastureland Wetland Buffer

Section IV. General Provisions, item F. is amended to read:

- F. Under the State’s agreement or easement, the State will pay the participant a one time payment equal to: (1) for easements, 12 times the final CRP annual rental rate (the base rental rate without the maintenance payments, additional incentive payments and practices incentives payments) in the grassland and riparian project areas and 24 times the CRP annual rental rate in the Lake Superior Basin project area, and (2) for agreements, 1.5 times the one-year base rental rate in the grassland and riparian project areas and 2.5 times the CRP annual rental rate in the Lake Superior Basin project area,

Section V. Federal Commitments, item D. is amended to read:

- D. Make an additional annual incentive payment, as a percentage of the base CRP contract annual rental rate otherwise applicable to the land to be enrolled in the CREP (as calculated under paragraph V. B. without regard to other incentive payments), in the following amounts:
- (1) In the grassland and riparian project areas:
- a. for land to be established as the following practices, at 35 percent of base soil rental rate (paragraph C):
- CP1 - Establishment of Permanent Introduced Grasses and Legumes
 - CP2 - Establishment of Permanent Native Grasses and Legumes
 - CP8A - Grassed Waterways – Non-easement
 - CP10 – Vegetative Cover - Grass - Already Established
 - CP21 - Filter Strips
 - CP22 - Riparian Buffer
 - CP29 – Marginal Pastureland Wildlife Habitat Buffer

* This incentive payment is considered a rental payment for payment limitation purposes.

- b. for land to be established as the following practices, at 60 percent of the base soil rental rate (paragraph C):
 - CP23 - Wetland Restoration
 - CP23A – Wetland Restoration - Non-floodplain
 - CP25 - Rare and Declining Habitat

* This incentive payment is considered a rental payment for payment limitation purposes.

Section V. Federal Commitments, the following is added to item D.:

- (2) In the Lake Superior Basin project area:
 - a. for land to be established as the following practices, at 85 percent of the base soil rental rate (paragraph C):
 - CP8A - Grassed Waterways – Non-easement
 - CP21 - Filter Strips
 - CP22 - Riparian Buffer
 - CP23 - Wetland Restoration
 - CP23A – Wetland Restoration - Non-floodplain
 - CP29 – Marginal Pastureland Wildlife Habitat Buffer
 - CP30 – Marginal Pastureland Wetland Buffer

* This incentive payment is considered a rental payment for payment limitation purposes.

Section VII. Other Provisions, the opening paragraph in item A. 1. is amended to read:

- 1. Up to 15,000 total acres are eligible to be enrolled in the CREP within the grassland project areas, and up to 5,000 acres in the Lake Superior Basin project area. Acres enrolled must meet the eligibility rules in accordance with the national CRP directives subject to the following additional specifications.

Section VII. Other Provisions, is amended to add item A. 1. c., and the note in the current agreement is amended to read:

- c. It is decided that the CREP enroll up to 5,000 acres in the Lake Superior Basin project area based on eligibility requirements in the national CRP directives. Eligible cropland and marginal pastureland for each offer will be predominately (51% or more) made up of land that is mapped as hydrologic soil group D soils (as determined by the USDA NRCS or technical service provider). The enrollment for CP29 (Marginal Pastureland Wildlife Habitat Buffer) and CP30 (Marginal Pastureland Wetland Buffer) shall be limited to 1,000 acres

Note: Grassed waterways (CP8A), filter strips (CP21), riparian buffers (CP22), wetland restorations (CP23), and wetland restorations non-floodplain (CP23A) acres

enrolled in the CREP in the grassland project areas are not included in determining the 15,000 maximum enrolled acreage for the combined grassland project areas.

Section VII. Other Provisions, item A.8. is added and reads:

6. For the purposes of Wisconsin's CREP, in the Lake Superior Basin project area, the maximum average width for enrollment as a filter strip (CP21), riparian buffer (CP22), marginal pastureland wildlife habitat buffer (CP29), or as a marginal pastureland wetland buffer (CP30) is 300 feet and the minimum average width is 200 feet wide.

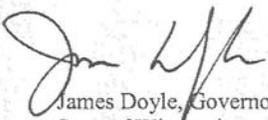
Exhibit 1, the project area maps for CREP are revised and attached to this amendment #3.

IT IS SO AGREED:

FOR THE UNITED STATES DEPARTMENT OF AGRICULTURE AND THE COMMODITY CREDIT CORPORATION

BY:  DATE: 8-2-05
John Johnson, Deputy Administrator for Farm Programs
U.S. Department of Agriculture
Chairman of the Board
Commodity Credit Corporation

FOR THE STATE OF WISCONSIN

BY:  DATE: August 8, 2005
James Doyle, Governor
State of Wisconsin

Appendix B

Environmental Evaluation Worksheet

WI-CPA-52

ENVIRONMENTAL ASSESSMENT WORKSHEET – REFER TO HANDBOOK FOR EXPLANATION (April 20, 2001)

1. Client:	2. Tract:	3. Field(s):	4. Location: T	R	Sec.
5. Federal Program:			Could Federal cost share become available? <input type="checkbox"/> Yes <input type="checkbox"/> No		6. County:
7. Purpose and Need Statement:					
8. Description of Proposed Project including a No-Action Alternative and any other Alternatives:					
9. Name and Title of Person(s) Completing Worksheet and Agencies Consulted:					

- This worksheet is used to document the effects a proposed activity may have on natural, human, and cultural resources, in compliance with NEPA and NRCS NEPA Policy (General Manual 190, Section 410).
- For Blocks 38-45-Effects are to be documented for both beneficial and adverse effects. Use “NA” if not applicable. Use “O” for neutral effects. Reference the evaluation procedure used. Attach additional sheets and narrative as necessary.
- Onsite and offsite effects must be documented.

Special Environmental Concerns (Attach Documentation)					
Proposed or Other Alternatives					
	10. Present		11. Special Action Needed		
	YES	NO	YES	NO	
12. Prime and Unique Farmland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Other Requirements 26. Project within Drainage District <input type="checkbox"/> Yes <input type="checkbox"/> No 27. Have required permits been applied for <input type="checkbox"/> Yes <input type="checkbox"/> No 28. Mitigation required <input type="checkbox"/> Yes <input type="checkbox"/> No 29. Public controversy about activity <input type="checkbox"/> Yes <input type="checkbox"/> No 30. Landowner informed to ID known/visible hazardous/toxic material <input type="checkbox"/> Yes <input type="checkbox"/> No 31. Landowner informed to ID all utilities <input type="checkbox"/> Yes <input type="checkbox"/> No
13. Threatened and Endangered Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. Landscape Resource	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Natural Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. Wild and Scenic Rivers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Wetlands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. Riparian Areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. Special Aquatic Sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. Floodplain Management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. Coastal Zone Management Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. Stream Channel Modification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23. Cultural Resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Invasive Species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25. Migratory Birds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

32. Are there effects on:	33. No Effect	34. Short Term (+/-)	35. Long Term (+/-)	36. Cum. Effect (+/-)	37. Reference Notes:
38. SOIL					
A. Natural soil surface	<input type="checkbox"/>				
B. Soil fertility	<input type="checkbox"/>				
C. Unique geologic or natural features	<input type="checkbox"/>				
D. Wind or water erosion	<input type="checkbox"/>				
E. Prime and Unique Farmland	<input type="checkbox"/>				
F. Other	<input type="checkbox"/>				
39. WATER					
A. Stream channel characteristics	<input type="checkbox"/>				
B. Surface water	<input type="checkbox"/>				
C. Quantity and quality of ground water	<input type="checkbox"/>				
D. Quantity and quality of surface water	<input type="checkbox"/>				
E. Unique rivers/waters	<input type="checkbox"/>				
F. Flooding	<input type="checkbox"/>				
G. Wetlands	<input type="checkbox"/>				
H. Other	<input type="checkbox"/>				

WI-CPA-52

32. Are there effects on:	33. No Effect	34. Short Term (+/-)	35. Long Term (+/-)	36. Cum. Effect (+/-)	37. Reference Notes:
40. AIR					
A. Air quality/odors	<input type="checkbox"/>				
B. Dust or smoke	<input type="checkbox"/>				
C. Other	<input type="checkbox"/>				
41. PLANTS					
A. Plant diversity	<input type="checkbox"/>				
B. Federal T & E species	<input type="checkbox"/>				
C. State T & E species	<input type="checkbox"/>				
D. Native plants	<input type="checkbox"/>				
E. Other	<input type="checkbox"/>				
42. ANIMALS (Fish, Mammals, Birds, Reptiles, Amphibians, Invertebrates)					
A. Diversity of species	<input type="checkbox"/>				
B. Federal T & E species	<input type="checkbox"/>				
C. State T & E species	<input type="checkbox"/>				
D. Native animals	<input type="checkbox"/>				
E. Existing habitat	<input type="checkbox"/>				
F. Other	<input type="checkbox"/>				
43. HUMAN CONSIDERATIONS					
A. Noise levels	<input type="checkbox"/>				
B. Present or planned land uses	<input type="checkbox"/>				
C. Recreational opportunities	<input type="checkbox"/>				
D. Cultural Resources	<input type="checkbox"/>				
E. Visual aesthetics	<input type="checkbox"/>				
F. Other	<input type="checkbox"/>				
44. ECONOMICS					
A. Capital	<input type="checkbox"/>				
B. Labor	<input type="checkbox"/>				
C. Management level	<input type="checkbox"/>				
D. Risk	<input type="checkbox"/>				
E. Profitability	<input type="checkbox"/>				
F. Other	<input type="checkbox"/>				
45. SOCIAL					
A. Client well being	<input type="checkbox"/>				
B. Community well being	<input type="checkbox"/>				
C. Environmental Justice	<input type="checkbox"/>				
D. Other	<input type="checkbox"/>				

46. Findings and Recommendations

- Based upon the conclusions, I find that this is not a major Federal action significantly affecting the quality of the human environment. No further environmental analysis is required. The assessment indicated work should proceed.
- Further analysis is necessary, including the possible need to prepare an Environmental Impact Statement. The landowner will be informed not to proceed until further assessment is completed.

Conclusions, based upon the assessment (rational for the findings above):

Signature	Title (District Conservationist)	Date
Primary Planner	Title	Date

Appendix C

Agency and Public Comments Received on the Draft Programmatic Environmental Assessment

SUMMARY OF COMMENTS RECEIVED ON THE DRAFT PROGRAMMATIC ENVIRONMENTAL ASSESSMENT AND RESPONSES

One comment was received on the draft Programmatic Environmental Assessment for the Wisconsin CREP during the public comment period. This comment and the FSA response are summarized below.

1. Comment

700 College St. Box 1158
Beloit, WI 53511
(608) 363-4586
berdanie@stu.beloit.edu

26 October 2005

State Environmental Coordinator
Farm Service Agency
8030 Excelsior Drive
Madison, WI 53717

Dear Mr. Hipenbecker:

After reviewing the Draft Programmatic Environmental Assessment (PEA) for the proposed Wisconsin Conservation Reserve Enhancement Program (WI CREP), I am writing to offer my support for the implementation of the program.

Based on my training in the biological sciences and my understanding of ecological systems, I consider the WI CREP to be an effective plan for improving the ecological integrity of the State of Wisconsin's water resources. It is my professional view that the voluntary "establishment of permanent grasslands, grassed waterways, filter strips, riparian buffers, wetland restoration, rare and declining habitat restoration and wildlife habitat buffers" on eligible farmland is not only important and beneficial, but is also essential for ensuring the long-term environmental health of waterways throughout the State.

I find any potential negative consequences of the plan to be minimal and inconsequential in comparison to the proposed benefits and thus enthusiastically encourage the U.S. Department of Agriculture, Farm Service Agency to enact the WI CREP.

Sincerely,

Aaron B. Berdanier
Undergraduate Environmental Biology student
Department of Biological Sciences
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Agency Response

The Wisconsin CREP will greatly improve water quality as stated in the comment. Also, as stated in the comment, the CREP is essential for ensuring the long-term environmental health of waterways throughout the State. The Final PEA fully addresses how CREP will aid in improving the State's water quality.

Appendix D

Glossary

Aquifer: A geologic formation that is water bearing. A geological formation or structure that stores and/or transmits water, such as to wells and springs. Use of the term is usually restricted to those water-bearing formations capable of yielding water in sufficient quantity to constitute a usable supply for people's uses.

Categorical Exclusions: An agency-defined category of actions that do not individually or cumulatively have a significant effect on the human environment and have been found to have no such effect in procedures adopted by the agency pursuant to NEPA. Projects qualifying for a “categorical exclusion” are not required to undergo additional NEPA analysis or documentation.

Conservation Practices: A series of NRCS approved agricultural practices and management techniques designed to control nonpoint pollution.

Environmental Assessment: A concise public document prepared in compliance with NEPA, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (FONSI).

Environmental Impact Statement: A detailed written statement required by section 102(2)(C) of NEPA, analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short term uses of the environment versus the maintenance and enhancement of long term productivity, and any irreversible and irretrievable commitment of resources. A *programmatic* EIS or EA: covers general matters in broader terms and analyzes conceptual or planning alternatives. In such cases, at least one more level of site-specific NEPA analysis is necessary before implementation can proceed.

Erosion: A geomorphic process that describes the wearing away of the land surface by wind, water, ice or other geologic agents. Erosion occurs naturally from weather or runoff but is often intensified by human land use practices.

Exotic species: A species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities. Also known as an *introduced species*.

Groundwater: The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs. Because ground water is a major source of drinking water, there is growing concern over contamination from leaching agricultural or industrial pollutants or leaking underground storage tanks.

Hydric soils: Soil that, in its undrained state, is flooded long enough during a growing season to develop anaerobic (lacking air – saturated) conditions that support the growth and regeneration of hydrophytic vegetation.

Hydrophytic vegetation: Plants specialized to grow in water or in soil too waterlogged for most plants to survive.

Listed species: Under the Endangered Species Act, or similar state statute, those species officially designated as threatened or endangered through all or a significant portion of their range. See also: *Threatened and endangered species*.

Nonpoint source (pollution): Cause of water pollution that is not associated with point (fixed) sources. Nonpoint sources include runoff from agricultural, urban, construction, and mining sites, as well as septic systems and landfills.

Nutrients: Chemical compounds in a usable form and have nutritive value for plants and/or animals.

Recharging groundwater: Refers to water entering and replenishing an underground aquifer through faults, fractures, or direct absorption.

Riparian: Refers to a stream and all the vegetation on its banks.

Sediment loading: Describes the excessive inputs of sediment into a waterbody.

Siltation: The deposition of finely divided soil and rock particles upon the bottom of stream and river beds and reservoirs.

Stormwater runoff: Water from precipitation that runs straight off the ground without first soaking into it. It does not infiltrate into the ground or evaporate due to impervious land surfaces, but instead flows onto adjacent land or water areas.

Threatened and endangered species: Under the Endangered Species Act, those species officially designated by the National Marine Fisheries Service or U.S. Fish and Wildlife Service as being in danger of extinction (i.e., endangered) or likely to become endangered (i.e., threatened) within the foreseeable future through all or a significant portion of their range. Threatened and endangered species are protected by law. See also: *Listed species*.

Traditional Cultural Properties: Places that are eligible for inclusion in the National Register of Historic Places because of their "association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community."

Watershed: 1.) Describes a cohesive, hydrologically-linked landscape that is drained by a waterway leading to a lake or reservoir. 2.) A geographic area delineated by its peaks and ridgelines, which divide surface water flow into two or more directions.