Appendix A. Glossary

(including acronyms and abbreviations)

Adaptive Management: Refers to the process in which policy decisions are implemented within a framework of scientifically driven experiments to test predictions and assumptions inherent in management plans. Analysis of results help managers to determine whether current management should continue as is or it should be modified to achieve desired conditions.

Alternative: 1) A reasonable way to fix the identified problem or satisfy the stated need (40 CFR 1500.2); 2) Alternatives are different means of accomplishing refuge purposes and goals and contributing to the System mission (Draft Service Manual 602 FW 1.5).

AUM or Animal Unit Month: A measure of the quantity of livestock forage. Equivalent to the forage sufficient to sustain a 1,000 pound animal (or 1 cow/ calf pair) for 1 month during the normal range season.

Biological Control: The use of organisms or viruses to control weeds or other pests.

Biological Diversity: The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur.

CCP or Plan: Comprehensive Conservation Plan

Compatible Use: A wildlife-dependent recreational use or any other use of a refuge that, in the sound professional judgment of the Director, will not materially interfere with or detract from the fulfillment of the mission of the System or the purposes of the refuge.

Comprehensive Conservation Plan, Plan, or CCP: A document that describes the desired future conditions of the refuge and provides long-range guidance and management direction for the refuge manager to accomplish the purposes of the refuge, contribute to the mission of the System, and to meet other relevant mandates.

EA or Environmental Assessment: A concise public document, prepared in compliance with the National Environmental Policy Act, 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 and Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

Ecosystem: Dynamic and interrelated complex of plant and animal communities and their associated nonliving environment.

Ecosystem Approach: Protecting or restoring the natural function, structure, and species composition of an ecosystem, recognizing that all components are interrelated.

Endangered Species (Federal): A plant or animal species listed under the Endangered Species Act that is in danger or becoming extinct throughout all or a significant portion of its range.

Endemic Species: Plants or animals that occur naturally in a certain region and whose distribution is relatively limited to a particular locality.

Exotic and Invading Species (Noxious Weeds): Plant species designated by Federal or State law as generally possessing one or more of the following characteristics: aggressive or difficult to manage; parasitic; a carrier or host of serious insects or disease; or nonnative, new, or not common to the United States, according to the Federal Noxious Weed Act (PL 93-639), a noxious weed is one that causes disease or has adverse effects on man or his environment and therefore is detrimental to the agriculture and commerce of the United States and to the public health.

Fauna: All the vertebrate and invertebrate animal species of a determined area.

Federal Trust Resources: A trust is something managed by one entity for another who holds the ownership. The Service holds in trust many natural resources for the people of the United States of America as a result of Federal Acts and Treaties. Examples are species listed under the Endangered Species Act, migratory birds protected by the Migratory Bird Treaty Act and other international treaties, and native plant or wildlife species found on the System.

Flora: All the plant species of a determined area.

FONSI or Finding of No Significant Impact: A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a Federal Action will have no significant effects on the human environment and for which an Environmental Impact Statement, therefore, will not be prepared (40 CFR 1508.13).

Fragmentation: The process of reducing the size and connectivity of habitat patches.

Goal: Descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose but does not define measurable units (Draft Service Manual 620 FW 1.5).

Habitat: Suite of existing environmental conditions required by an organism for survival and reproduction. The place where an organism typically lives.

Habitat Restoration: Management emphasis designed to move ecosystems to desired conditions and processes, and/or to healthy forestlands, rangelands, and aquatic systems.

Integrated Pest Management: Methods of managing undesirable species, such as weeds, including: education; prevention, physical or mechanical methods of control; biological control; responsible chemical use; and cultural methods.

Issue: Any unsettled matter that requires a management decision; i.e., a Service initiative, opportunity, resource management problem, threat to the resources of the unit, conflict in uses, public concern, or the presence of an undesirable resource condition (Draft Service Manual 602 FW 1.5).

Migration: The seasonal movement from one area to another and back.

Mission Statement: A succinct statement of a unit's purpose and reason for being.

Mitigation: Measures designed to counteract environmental impacts or to make impacts less severe.

Monitoring: The process of collecting information to track changes of selected parameters over time.

National Wildlife Refuge (Refuge): A designated area of land or water or an interest in land or water within the System, including national wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and other areas (except coordination areas) under Service jurisdiction for the protection and conservation of fish and wildlife. A complete listing of all units of the Refuge System may be found in the current "Annual Report of Lands Under Control of the U.S. Fish and Wildlife Service."

National Wildlife Refuge System, Refuge System, or System: Various categories of areas that are administered by the Secretary for the conservation of fish and wildlife, including species that are threatened with extinction; all lands, waters, and interests therein administered by the Secretary as wildlife refuges; areas for the protection and conservation of fish and wildlife that are threatened with extinction; wildlife ranges; game ranges; wildlife management or waterfowl production areas.

Native Species: Species that normally live and thrive in a particular ecosystem.

Neotropical Migratory Bird or Neotropicals: A bird species that breeds north of the U.S. - Mexican border and winters primarily south of this border.

NEPA: National Environmental Policy Act of 1969

No Action Alternative: An alternative under which existing management would be continued.

Non-Priority Public Uses: Any use other than a compatible wildlife-dependent recreational use.

NWR: National Wildlife Refuge

Objective: A concise statement of what will be achieved, how much will be achieved, when and where it will be achieved, and who is responsible for the work. Objectives are derived from goals and provide the basis for determining management strategies, monitoring refuge accomplishments, and evaluating the success of the strategies. Objectives should be attainable and time-specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (Draft Service Manual 602 FW 1.5).

Opportunities: Potential solutions to issues.

Planning Team: A team or group of persons working together to prepare a document, such as this Comprehensive Conservation Plan. Planning teams are interdisciplinary in membership and function. Teams generally consist of a planning team leader; refuge manager and staff; biologists; staff specialists or other representatives of Service programs, ecosystems or regional offices; and other Federal and State governmental agencies as appropriate.

Plant Community: An assemblage of plant species unique in its composition; occurs in particular locations under particular influences; a reflection or integration of the environmental influences on the site – such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall; denotes a general kind of climax plant community, i.e., ponderosa pine or bunchgrass.

PILT: Payment-in-Lieu-of-Taxes

Prairie Grouse: Both sharp-tailed grouse and prairie chickens.

Preferred Alternative: This is the alternative determined (by the decision maker) to best achieve the Refuge purpose, vision, and goals; contributes to the Refuge System mission, addresses the significant issues; and is consistent with principles of sound fish and wildlife management. The Service's selected alternative at the Draft CCP stage.

Prescribed Fire: The skillful application of fire to natural fuels under conditions of weather, fuel moisture, soil moisture, etc., that allows confinement of the fire to a predetermined area and produces the intensity of heat and rate of spread to accomplish planned benefits to one or more objectives of habitat management, wildlife management, or hazard reduction.

Prescribed Natural Fire: A fire ignited by natural processes (usually lightning) and allowed to burn within specified parameters of fuels, weather, and topography to achieve specified resource management objectives.

Priority Public Uses: Compatible wildlife-dependent recreational uses (hunting, fishing, wildlife observation and photography, and environmental education and interpretation) are the priority general public uses of the System and shall receive priority consideration in refuge planning and management.

Proposed Action: The Service's proposed action for Comprehensive Conservation Plans is to prepare and implement the CCP.

Public: Individuals, organizations, and groups; officials of Federal, State, and local government agencies; Indian tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have indicated an interest in Service issues and those who do or do not realize that Service decisions may affect them.

Public Involvement: The process by which interested and affected individuals, organizations, agencies, and governmental entities are offered an opportunity to become informed about, to express their opinions and participate in the planning and decision making process of Service actions and policies. In this process, these views are studied thoroughly and thoughtful consideration of public views is given in shaping decisions for refuge management.

Purposes of the Refuge: The purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge sub-unit.

ROD or Record of Decision: A concise public record of decision prepared by the Federal agency, pursuant to the National Environmental Policy Act, that contains a statement of the decision, identification of all alternatives considered, identification of the environmentally preferable alternative, a statement as to whether all practical means to avoid or minimize environmental harm from the alternative selected have been adopted (and if not, why they were not adopted), and a summary of monitoring and enforcement where applicable for any mitigation (40 CFR 1505.2).

RMIS: Refuge Management Information System database

Refuge: short for Fort Niobrara National Wildlife Refuge

Refuge Operating Needs System or RONS: National database containing the unfunded operational needs of each refuge. Projects included are those required to implement approved plans, and meet goals, objectives, and legal mandates.

Refuge Use: Any activity on a refuge, except administrative or law enforcement activity carried out by or under the direction of an authorized Service employee.

Refuge Purposes: The purposes specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, a refuge unit, or refuge subunit (Draft Service Manual 602 FW 1.5)

Refuge Revenue Share Program or RRSP: provides payments to counties in lieu of taxes using revenues derived from the sale of products from refuges (see Appendix G: Refuge Revenue Sharing Act of 1935, as amended (16 U.S.C. 715s) for more details).

Reserve Acres: Lands that were Public Domain lands when first withdrawn to create the Refuge.

Riparian: Refers to an area or habitat that is transitional from terrestrial to aquatic ecosystems; including streams, lakes, wet areas, and adjacent plant communities and their associated soils which have free water at or near the surface; and area whose components are directly or indirectly attributed to the influence of water; of or relating to a river; specifically applied to ecology, "riparian" describes the land immediately adjoining and directly influenced by streams. For example, riparian vegetation includes any and all plant-life growing on the land adjoining a stream and directly influenced by the stream.

Secretary: short for Secretary of Interior

Service or USFWS: Short for U.S. Fish and Wildlife Service

Strategy: A specific action, tool, or technique or combination of actions, tools, and techniques used to meet refuge objectives.

Step-down Management Plan: A plan that provides the details necessary to implement management strategies identified in the CCP (Draft Service Manual 602 FW 1.5).

Sound Professional Judgement: A finding, determination, or decision that is consistent with principles of sound fish and wildlife management and administration, available science and resources, and adherence to the requirements of the Refuge Administration Act and other applicable laws.

Strategy: A specific action, tool, or technique or combination of actions, tools, and techniques used to meet unit objectives (Draft Service Manual 602 FW 1.5).

System or Refuge System: National Wildlife Refuge System

Threatened Species (Federal): Species listed under the Endangered Species Act that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Trust Species: Species for which the U.S. Fish and Wildlife Service has primary responsibility, including, most federally listed threatened and endangered species, anadromous fishes once they enter inland U.S. waterways, migratory birds, and certain marine mammals.

USFWS or Service: Short for U.S. Fish and Wildlife Service

Vegetation Type or Habitat Type: A land classification system based upon the concept of distinct plant associations.

Vision Statement: A concise statement of the desired future condition of the planning unit, based primarily upon the System mission, specific refuge purposes, and other relevant mandates (Draft Service Manual 602 FW 1.5).

Wetland: includes lakes, marshes, temporary wetlands, fens, rivers, and creeks but not subirrigated meadows.

Wilderness Area (or Designated Wilderness Area): An area designated by the U.S. Congress to be managed as part of the National Wilderness Preservation System (Draft Service Manual 602 FW 1.5).

Wildfire: A free-burning fire requiring a suppression response; all fire other than prescribed fire that occurs on wildlands (Draft Service Manual 602 FW 1.5).

Wildland: lands characterized by natural vegetation and landscapes where man-made structures and alterations are not evident.

Wildland Fire: Every wildland fire is either a wildfire or a prescribed fire (Draft Service Manual 602 FW 1.5).

Wildlife: Wild animals and vegetation, especially animals living in a natural, undomesticated state.

Wildlife Corridor: A landscape feature that facilitates the biologically effective transport of animals between larger patches of habitat dedicated to conservation functions. Such corridors may facilitate several kinds of traffic, including frequent foraging movement, seasonal migration, or the once in a lifetime dispersal of juvenile animals. These are transition habitats and need not contain all the habitat elements required for long-term survival or reproduction of its migrants.

Wildlife-Dependent Recreation/Wildlife-Dependent Recreational Use: A use of a refuge involving hunting, fishing, wildlife observation and photography, or environmental education and interpretation. The National Wildlife Refuge System Improvement Act of 1997 specifies that these are the six priority general public uses of the System.

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Appendix C.
Refuge Operating Needs System (RONS) List

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 99001 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

Also includes work on Sier National Wildlifge Refuge

ACTIVITY: *MONITORING & STUDIES* *Wildlife*

1.a. Surveys & Censuses

MEASURES

5 wildlife surveys will be conducted

5 habitat surveys will be conducted

0 % of survey will be off-refuge

100

TITLE: Refuge Manager for newly acquired Sier National Wildlife Refuge

DESCRIPTION:

In 1999 the Sier National Wildlife Refuge will become part of the National Wildlife Refuge System as a result of a generous donation by the Sier family. The refuge is about 2,000 acres in size and located 90 miles from the Fort Niobrara/Valentine NWR Complex Headquarters. An on site manager, GS -11, will be hired to prepare a comprehensive conservation plan, protect refuge resources, conduct initial wildlife and habitat surveys, and manage habitat, wildlife, and public use programs. Sound initial planning and management will insure that this generous donation of land and resources is best managed for wildlife and the public and serve as an example of how the US Fish and Wildlife Service can manage donated lands.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs.....	.....		
Operations: Personnel Cost.....	.....	.....$58	
Equipment Cost.....	.....$35		
Facility Cost.....	.....		
Services/Supplies.....	.....$20	.....$5	
Miscellaneous Costs.....	.....$64	.....$5	
TOTAL Operations Cost..	.....$119	.....$68	.....$187

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 97001 **Type:** NWR **District:** NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

Also includes work on Valentine NWR

ACTIVITY: *MONITORING & STUDIES* *Wildlife*

1.a. Surveys & Censuses

MEASURES

8 wildlife surveys will be conducted

0 habitat surveys will be conducted

0 % of survey will be off-refuge

TITLE: Endangered Species

DESCRIPTION:

Valentine NWR has endangered or threatened prairie fringed orchids, blowout Penstemon and American burying beetles. The locations and abundance of these species is not known as complete surveys have not been conducted. Surveys need to be conducted to establish baselines, determine suitable habitat and management actions. The refuge could play an important role in recovery of these listed species. As information is gathered, habitat management will be altered to enhance the presence of these species. It is also possible that these species and suitable habitat are present at Fort Niobrara NWR and would be included in the assessment.

FUNDS NEEDED ($1000s):

	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs			
Operations: Personnel Cost			
Equipment Cost			
Facility Cost			
Services/Supplies	$50	$5	
Miscellaneous Costs	$32	$3	
TOTAL Operations Cost	$82	$8	$90

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR **CD: NE03**

Project no.: 96011 **Type:** NWR **District:** NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

Also includes work on Valentine NWR; Holt Creek WMA; Yellowthroat WMA

ACTIVITY: *MONITORING & STUDIES* *Wildlife*

1.a. Surveys & Censuses

MEASURES

0 wildlife surveys will be conducted

10 habitat surveys will be conducted

10 % of survey will be off-refuge

TITLE: Consolidate Habitat Data for Complex

DESCRIPTION:

Obtain and consolidate habitat related data for Ft. Niobrara and Valentine NWRs, Holt Creek and Yellowthroat WMA's based on use of USDA-NRCS digitized soils data being developed. Overlay GIS information on habitat; obtain and incorporate new updated aerial infrared photography. With this project, Service resource management would be more efficient and effective. Without the project, Service ability to utilize new data and technology being developed by Partners including NRCS, Nebraska Game and Parks, etc, is limited.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs.....	.....		
Operations: Personnel Cost.....	$20	.....	
Equipment Cost.....	$12		
Facility Cost.....	.....		
Services/Supplies.....	$10	$5	
Miscellaneous Costs.....	$10	$5	
TOTAL Operations Cost..	$57	$10	$67

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 96005 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

Also includes work on Valentine NWR, Yellowthroat WMA, Holt Creek WMA

ACTIVITY: *PUBLIC EDUCATION & RECREATION* *People*

7.a. Provide Visitor Services

MEASURES
- 30,000 new visitors will be served
- 30,000 existing visitors will be served
- 100 % will support the top 6 priority public uses
- 0 % will support non-priority public uses

TITLE: Public Information Materials

DESCRIPTION:

Provide current and adequate public education and informational leaflets including hunting and fishing, general information, nature trail, bird lists, wildlife lists, auto and nature trail leaflets for Valentine and Fort Niobrara NWRs and Yellowthroat and Holt Creek WMA's. Shortfalls in budgets have resulted in old, outdated or near-obsolete informational materials, and in limiting distribution of the materials available. No leaflets are current with the new USFWS standards. Neither WMA has any kind of information leaflet. Without adequate funding, limited or no and lesser quality materials will continue to be distributed, resulting in a reduced understanding of the Service and its mission and in increased uninformed violation of rules and regulations.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs			
Operations: Personnel Cost	$8		
Equipment Cost			
Facility Cost			
Services/Supplies	~~$40~~	$10	
Miscellaneous Costs	$10	$2	
TOTAL Operations Cost	$58	$12	$70

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 97007 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *RESOURCE PROTECTION* *People*

6.e. Cultural Resource Management

MEASURES

1 investigations will be conducted

20 sites will be documented

0 museum property items will be maintained

TITLE: Conduct Cultural Resource Inventory at Fort Niobrara NWR

DESCRIPTION:

Fort Niobrara NWR contains numerous known or documented sites of cultural, archaeological or paleontological significance; however, no complete review of the resources exists. This project would facilitate compilation of known information, as well as inventory of non-documented areas. This project is necessary to the efficient and prudent planning and long term management of the Refuge. Failure to complete the project will result in a inability to properly implement the CMP or future management plans in an appropriate and economical manner.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs.....			
Operations: Personnel Cost.....			
Equipment Cost.....			
Facility Cost.....			
Services/Supplies.....	$60	$5	
Miscellaneous Costs.....	$16	$3	
TOTAL Operations Cost..	$76	$8	$84

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 97004 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *PUBLIC EDUCATION & RECREATION* *People*

7.a. Provide Visitor Services

MEASURES

20,000 new visitors will be served

6,000 existing visitors will be served

0 % will support the top 6 priority public uses

0 % will support non-priority public uses

TITLE: Staff Refuge Visitor Center

DESCRIPTION:

Seasonal staff will operate Visitor Environmental Education Center during peak tourist season, Mid-May through early September. With present staffing, the Visitor Center is staffed with volunteers on weekends. This project would allow better contact with the public on weekends and better service on weekdays throughout the summer.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs.....	.....		
Operations: Personnel Cost.....	.....	..... $24	
Equipment Cost.....	.....		
Facility Cost.....	.....		
Services/Supplies.....	..... $5	..... $10	
Miscellaneous Costs.....	..... $9	..... $5	
TOTAL Operations Cost..	..... $14	..... $39	..... $53

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 96001 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *PUBLIC EDUCATION & RECREATION* *People*

7.a. Provide Visitor Services

MEASURES
- 20,000 new visitors will be served
- 6,000 existing visitors will be served
- 95 % will support the top 6 priority public uses
- 5 % will support non-priority public uses

TITLE: Expand, improve and staff Ft. Niobrara Visitor Center / Education facility.

DESCRIPTION:

This project will enhance public education by expanding the existing Visitor Center and education facility to allow proper storage, display and interpretation of artifacts and fossils currently stored in a closed, unheated, non-climate controlled building. The project includes an addition to the interpretive wing of the existing Visitor Center building, displays, storage space, and seasonal interpretive staffing to operate the center. Without funding, the public will continue to have a diminished educational experience and will not have access to the fossils and artifacts currently in storage; the museum pieces will continue to be stored in an unsatisfactory manner.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs			
Operations: Personnel Cost	$30	$32	
Equipment Cost	$10		
Facility Cost	$265		
Services/Supplies	$10		
Miscellaneous Costs	$33		
TOTAL Operations Cost	$348	$32	$380

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 96027b **Type:** NWR **District:** NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *MONITORING & STUDIES* *Wildlife*

1.a. Surveys & Censuses

MEASURES

2 wildlife surveys will be conducted

0 habitat surveys will be conducted

0 % of survey will be off-refuge

TITLE: Conduct Wildlife and Wild Land Monitoring

DESCRIPTION:

We will monitor native grassland, wetland, riparian areas, and wildlife. One seasonal biological technician will conduct field monitoring of vegetation on the 19,122 acre Ft. Niobrara NWR. This project is critical to the managing the refuge, providing biological information for sound habitat and wildlife management, public use, and overall management planning and decision making. Without this project, critical future management decisions effecting all resources on the refuge will be made with limited biological information.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs.....			
Operations: Personnel Cost.....		$32	
Equipment Cost.....	$30		
Facility Cost.....			
Services/Supplies.....	$5	$5	
Miscellaneous Costs.....	$9	$3	
TOTAL Operations Cost..	$44	$40	$84

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 99002 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *PUBLIC EDUCATION & RECREATION* *People*

7.a. Provide Visitor Services

MEASURES

1,500 new visitors will be served

1,500 existing visitors will be served

90 % will support the top 6 priority public uses

10 % will support non-priority public uses

TITLE: Develop public information, interpretation and access point for the Ft. Niobrara Wilderness

DESCRIPTION:

This project would develop a new all weather access point for the public adjacent to the Ft. Niobrara Wilderness Area. It would include a parking area, overlook, information center, and trail head providing access to the north portion of the Ft. Niobrara Wilderness Area and Niobrara Scenic River corridor.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs			
Operations: Personnel Cost			
Equipment Cost			
Facility Cost	$175		
Services/Supplies			
Miscellaneous Costs	$26	$15	
TOTAL Operations Cost	$201	$15	$216

64520 Fort Niobrara NWR NE

HQ: Fort Niobrara NWR CD: NE03

Project no.: 96018 Type: NWR District: NE,KS,CO,UT

Main ecosystem: Platte/Kansas Rivers

ACTIVITY: *PUBLIC EDUCATION & RECREATION* *People*

7.a. Provide Visitor Services

MEASURES
20,000 new visitors will be served
6,000 existing visitors will be served
0 % will support the top 6 priority public uses
0 % will support non-priority public uses

TITLE: Fort Niobrara History Kiosk

DESCRIPTION:

Develop, install, and maintain an informational kiosk on the Ft. Niobrara vehicle tour route to interpret the military and frontier history of Ft. Niobrara.

FUNDS NEEDED ($1000s):	One-Time	Recurring Base	First Year Need
Construction Appropriation Costs			
Operations: Personnel Cost			
Equipment Cost			
Facility Cost	$45		
Services/Supplies	$12	$10	
Miscellaneous Costs	$17	$10	
TOTAL Operations Cost	$77	$20	$97

Appendix D. Maintenance Management System (MMS) List

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 87024 Project no. subelement: H (87024-h)

Prop desc: Big Game Corrals Prop #: 95

Project title: Rehab deteriorated big game handling facilities, Phase H: FY-2000

Project desc: Continue rehab of deteriorated big game corrals by replacing rotted wood posts, planks, walkways, handrails with steel; all materials and design upgraded to meet OSHA and Safety guidelines. Corrals were built in 1930's, rebuilt 1950's. Project is critical to insure safety of staff working with Bison, elk, and public observing. Project is being phased and done by Service personnel to insure annual usability

Measures: Number of structures/facilities: 1

Cost estimate: $75 Engineering cost included in cost est: $0

Cost est date: 1999 Cost est method: Historical/Manager Estimate FY group: 2000

Backlog: $75 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

○ TEA21 (Refuge Roads)	○ Fire	○ Contaminants
○ TEA21 (Other)	○ Quarters	○ Supplemental
○ Title V	○ RecFee	○ Other

Fix type: ◉ Repair/rehab ○ Replace ○ Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	CI	TOT	Type:	DM	CI	TOT	Safety?	C
100	0	0	0	100		100	0	100	☒	C

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
0	0	0	20	0	0	60	0	10	10	100

Maint code: 567 = *Other Structures/Facilities*

Station rank: 1 Dist rank: Reg rank: 999 Nat rank:

DOI rank: 1000

RO support needs: ☐ Engineering ☐ Contracting ☒ Force Account ☐ Hold

Project notes:

Phase H: rehab runway and east pens.
NOTE: Corrals and handling facilities MUST be usable for animal handling through May, and by September: ALL rehab must be completed by prefab oe or site June - August. Any contracting of prefab, etc, must meet this need. All on site work will be done by Refuge employees (regular or seasonal) to insure meeting of this time table.

Updated 12/17/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 90006 Project no. subelement: A (90006-a)

Prop desc: Cornell Dam Power plant Prop #: 140

Project title: Remove abandoned power plant building

Project desc: Remove abandoned power plant building and facilities, asbestos panels, etc. Naturalize the site following demolition. The Service was given the Cornell Dam and abandoned power plant, adjacent to high public use area on Niobrara River. The building is barricaded to prevent access and protect the public. This project would remove a safety hazard from along the National Scenic River.

Measures: Number of buildings: 1

Cost estimate: $430 Engineering cost included in cost est: $75

Cost est date: 1999 Cost est method: Historical/Manager Estimate FY group: 2004

Backlog: $430 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

○ TEA21 (Refuge Roads)	○ Fire	○ Contaminants
○ TEA21 (Other)	○ Quarters	○ Supplemental
○ Title V	○ RecFee	○ Other

Fix type: ○ Repair/rehab ○ Replace ◉ Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
50	0	0	50	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ C

Outcomes:

ES	WP	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
0	0	0	20	0	40	0	0	20	20	100

Maint code: 110 = *Other Buildings*

Station rank: 1 Dist rank: Reg rank: 999 Nat rank: 432

DOI rank: 650

RO support needs: ☒ Engineering ☒ Contracting ☐ Porce Account ☐ Hold

Project notes:

Area is posted and building is barricaded; however, break ins and vandalism have occurred in the past. Contaminant filled switch canisters were mitigated in 1995 by Electric Cooperative and FWS. Local contractor estimated $250,000+ to demolish and mitigate site in 1990. Anticipate more than one year process.

Updated 12/17/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 98004 Project no. subelement:

Prop desc: Complex Communication Sys Prop #: 144

Project title: Replace deteriorated communications wiring and components

Project desc: Replace or repair aged communications system and radio system. System used in law enforcement work, fire management and visitor assistance. Includes separation of radio and telephone wires to meet telephone company requirements and enable reestablishment of radio-telephone link.

Measures: Number of systems: 1

Cost estimate: $54 Engineering cost included in cost est: $10

Cost est date: 1999 Cost est method: Historical/Manager Estimate FY group: 2001

Backlog: $54 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

○ TEA21 (Refuge Roads)	○ Fire	○ Contaminants
○ TEA21 (Other)	○ Quarters	○ Supplemental
○ Title V	○ RecFee	○ Other

Fix type: ○ Repair/rehab ◉ Replace ○ Remove Condition assessment: Fair

Emphasis:

CHS	CRP	CM	OI	TOT
50	0	50	0	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ C

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	10	10	10	0	20	10	10	10	10	100

Maint code: 217 = *Communication Systems*

Station rank: 2 Dist rank: 999 Reg rank: 63 Nat rank: 286

DOI rank: 700

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

Includes replacing 1950's telephone lines serving FTN HQ, 1970's lines serving VLT, and bringing physical installation up to code to permit proper function of telecommunication and computer systems; installation of up to date telephone answering and intercom system to serve Complex. Also includes separation of radio and telephone wires to meet telephone company requirements and enable reestablishment of radio-telephone link. Project may be cost shared with Fire Program.

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 90006 Project no. subelement: B (90006-b)

Prop desc: Cornell Dam Prop #: 141

Project title: Rehab Cornell Dam Site

Project desc: Rehab area adjacent to Cornell Dam; stabilize deteriorated wing walls, place rip rap below raceway to prevent erosion, and restore disturbed terrain and vegetation adjacent to the dam. The Service was given Cornell Dam, immediately upstream from the main public canoe launch area on the Niobrara River. The project would stabilize and improve the appearance of an eyesore along the National Scenic River.

Measures: Number of dams: 1

Cost estimate: $202 Engineering cost included in cost est: $35

Cost est date: 1999 Cost est method: Historical/Manager Estimate FY group: 2002

Backlog: $202 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

○ TEA21 (Refuge Roads)	○ Fire	○ Contaminants
○ TEA21 (Other)	○ Quarters	○ Supplemental
○ Title V	○ RecFee	○ Other

Fix type: ◉ Repair/rehab ○ Replace ○ Remove Condition assessment: Fair

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	0	100	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ ☐

Outcomes:

BS	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
0	0	0	0	0	50	0	0	10	40	100

Maint code: 434 = *Low Hazard (Inventory) Dams*

Station rank: 2 Dist rank: 999 Reg rank: 999 Nat rank:

DOI rank: 300

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

Updated 5/7/99

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 91029 Project no. subelement:

Prop desc: Shop / Office - FTN Prop #: 109

Project title: Rehab shop work space and ventilation system, Ft. Niobrara NWR shop

Project desc: Rehabilitate work space and ventilation system to reduce dust and smoke in main shop. Virtually all vehicle and equipment repairs, as well as metal and wood fabrication are done here. Current layout and ventilation allow dust and fumes from welding or painting to build up in the building. This project will protect Government employees and equipment from injury and damage from dust and fumes.

Measures: Number of buildings: 1

Cost estimate: $25 Engineering cost included in cost est:

Cost est date: 4 Cost est method: Historical/Manager Estimate FY group: 2002

Backlog: $25 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

o TEA21 (Refuge Roads)	o Fire	o Contaminants
o TEA21 (Other)	o Quarters	o Supplemental
o Title V	o RecFee	o Other

Fix type: ⊙ Repair/rehab o Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT	Type:	DM	CI	TOT	Safety?	
100	0	0	0	100		100	0	100	⊠	C

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	0	0	30	0	20	10	0	10	20	100

Maint code: 108 = *Shop/Service Buildings*

Station rank: 3 Dist rank: Reg rank: 999 Nat rank: 23

DOI rank: 1000

RO support needs: ⊠ Engineering ⊠ Contracting ☐ Force Account ☐ Hold

Project notes:

Updated 12/31/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 97004 Project no. subelement: A (97004-a)

Prop desc: Storage Building Prop #: 7

Project title: Replace 100+ year old, rodent occupied storage building

Project desc: Construct a new rodent-resistant storage building. The current storage building was constructed as a hay shed by the army pre-1900; it and its contents are currently closed to use due to Hantavirus, histoplasmosis and rabies concerns; it is deteriorated, rodent and bat occupied. A new building is needed to protect Government materials and property from theft, vandalism, weather and rodents.

Measures: Number of buildings: 1 Square feet: 2860

Cost estimate: $298 Engineering cost included in cost est: $44

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2005

Backlog: $298 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

o TEA21 (Refuge Roads)	o Fire	o Contaminants
o TEA21 (Other)	o Quarters	o Supplemental
o Title V	o RecFee	o Other

Fix type: o Repair/rehab ● Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
50	0	50	0	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ C

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	0	0	30	0	20	10	0	20	10	100

Maint code: 106 = *Storage Buildings*

Station rank: 4 Dist rank: Reg rank: 108 Nat rank: 526

DOI rank: 700

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

The building to be replaced is a historic structure and will likely need to be retained and preserved in some form - see project phase B.

Updated 12/31/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 97004 Project no. subelement: B (97004-b)

Prop desc: Storage building Prop #: 7

Project title: Rehab and preserve 100+ year old historic military hay shed

Project desc: Rehab historic cavalry hay shed by installing rodent and bat barriers; relocate bat colony; clean and decontaminate the army pre-1900; it and its contents are currently closed to use due to Hantavirus, histoplasmosis and rabies concerns; it is deteriorated, rodent and bat occupied.

Measures: Number of buildings: 1 2860

Cost estimate: $240 Engineering cost included in cost est: $42

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2003

Backlog: $240 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

- o TEA21 (Refuge Roads)
- o TEA21 (Other)
- o Title V
- o Fire
- o Quarters
- o RecFee
- o Contaminants
- o Supplemental
- o Other

Pix type: ◉ Repair/rehab o Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	0	100	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ I

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
0	0	0	20	0	40	0	0	40	0	100

Maint code: 106 = *Storage Buildings*

Station rank: 5 Dist rank: 999 Reg rank: 999 Nat rank:

DOI rank: 300

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

The building to be replaced is a historic structure and will likely need to be retained and preserved in some form - see project phase B.

Updated 5/9/99

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 97002 Project no. subelement: C (97002-c)

Prop desc: Horse barn Prop #: 6

Project title: Rehab roof and roof ventilation on Ft. Niobrara NWR horse barn.

Project desc: Rehab roof and loft ventilation on horse barn by leveling sagging rafters, repairing underlayment, and installing low maintenance metal roof on Ft. Niobrara horse barn. The existing roof leaks; the project will protect the building, stored hay, saddles, horses, etc, used to handle Bison, elk, and to conduct Service operations in the Ft. Niobrara Wilderness Area.

Measures: Number of buildings: 1

Cost estimate: $35 Engineering cost included in cost est: $5

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2004

Backlog: $35 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:
- o TEA21 (Refuge Roads)
- o TEA21 (Other)
- o Title V
- o Fire
- o Quarters
- o RecFee
- o Contaminants
- o Supplemental
- o Other

Fix type: ⊙ Repair/rehab o Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	0	100	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ 1

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	0	0	0	0	30	30	0	0	30	100

Maint code: 108 = *Shop/Service Buildings*

Station rank: 6 Dist rank: 999 Reg rank: 999 Nat rank:

DOI rank: 300

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

Multiple buildings in the Ft. Niobrara Headquarters are identified as needing roofs; all are in close proximity; several are subject to historical / cultural resource considerations. All should be evaluated and reroofed in similar manner with similar materials to insure compatible appearance.

Updated 5/9/99

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 91027 Project no. subelement:

Prop desc: Office/visitor center Prop #: 101

Project title: Rehab office, archival and storage space: Ft. Niobrara Office

Project desc: Rehab office, archival, storage space in Ft. Niobrara NWR Office / Visitor Center by removing counters, etc and dividing large lab and meeting room to provide needed office and records storage space; rewire electrical accordingly. This project would permit better use of space as office and administrative space to facilitate operations on 90,000 + acres of Service owned lands, easements, etc.

Measures: Number of buildings: 1

Cost estimate: $225 Engineering cost included in cost est: $40

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2004

Backlog: $225 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

○ TEA21 (Refuge Roads)	○ Fire	○ Contaminants
○ TEA21 (Other)	○ Quarters	○ Supplemental
○ Title V	○ RecFee	○ Other

Fix type: ◉ Repair/rehab ○ Replace ○ Remove Condition assessment: Good

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	50	50	100

Type:

DM	CI	TOT
0	100	100

Safety? ☒ I

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	10	10	20	0	10	10	10	10	10	100

Maint code: 101 = *Office Buildings*

Station rank: 7 Dist rank: Reg rank: 999 Nat rank:

DOI rank: 350

RO support needs: ☒ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

Project will require Asbestos mitigation and some structural modification.

Updated 12/17/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 990009 Project no. subelement:

Prop desc: Excavator, Cat 120B Prop #: 617937

Project title: Rehab boom and hydraulics on 1992 Caterpillar Excavator

Project desc: Rehab hydraulic valves to allow operation so "thumb" to be installed in retrofit of boom on Cat Excavator. The excavator is used extensively for tree removal along dikes, bridges, etc, throughout the Complex and easements. Retrofit will allow safer and more efficient use of the machine in critical facility maintenance and rehab projects.

Measures: Number of vehicles: 1

Cost estimate: $15 Engineering cost included in cost est:

Cost est date: 1999 Cost est method: Historical/Manager Estimate FY group: 2005

Backlog: $15 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:

o TEA21 (Refuge Roads)	o Fire	o Contaminants
o TEA21 (Other)	o Quarters	o Supplemental
o Title V	o RecFee	o Other

Fix type: ⊙ Repair/rehab o Replace o Remove Condition assessment: Good

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	0	100	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ T

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	20	20	0	0	20	10	0	0	20	100

Maint code: 780 = *Agr/Const/Industrial Vehicles*

Station rank: 8 Dist rank: 999 Reg rank: 999 Nat rank:

DOI rank: 300

RO support needs: ☐ Engineering ☒ Contracting ☐ Force Account ☐ Hold

Project notes:

Updated 5/9/99

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 87023 Project no. subelement: A (87023-a)

Prop desc: Garage/machine shed Prop #: 109

Project title: Rehab substandard wiring, lighting, in Machine Storage Building

Project desc: Rehab substandard wiring in equipment storage bays with adequate circuits, lighting, and outlets. current electrical service to storage portion of the building will not support cold weather engine heaters on equipment during winter; lighting is not adequate for use. Implementation will result in safe, functional utilization of the building for year-round equipment and vehicle storage.

Measures: Number of buildings: 1

Cost estimate: $12 Engineering cost included in cost est: $2

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2005

Backlog: $10 FY completed: FY obligations: $0

Cumulative obligations: $2

Fund source: R = *Resource Management* Percent complete: 17%

Other possible fund source:

o TEA21 (Refuge Roads)	o Fire	o Contaminants
o TEA21 (Other)	o Quarters	o Supplemental
o Title V	o RecFee	o Other

Fix type: ◉ Repair/rehab o Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	50	50	100

Type:

DM	CI	TOT
100	0	100

Safety? ☒ I

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	0	0	30	0	30	10	0	10	10	100

Maint code: 106 = *Storage Buildings*

Station rank: 9 Dist rank: Reg rank: 999 Nat rank:

DOI rank: 350

RO support needs: ☒ Engineering ☒ Contracting ☒ Force Account ☐ Hold

Project notes:

Updated 12/17/97

RMIS - Maintenance Management System (MMS)
Record View

Station: Fort Niobrara NWR HQ: Fort Niobrara NWR

Main ecosys: Platte/Kansas Rivers

Org code: 64520 State: NE Cong dist: NE03

Project no.: 87023 Project no. subelement: C (87023-c)

Prop desc: Garage/machine shed Prop #: 109

Project title: Rehab approach apron in front of shop / vehicle storage building.

Project desc: Rehab apron/approach to garage by removing deteriorated material and replacing reinforced concrete. Virtually all vehicle and equipment repairs and inside storage is in this building; the area in front of he building is often rutted and muddy, the apron made up of broken asphalt and gravel. Completion of this project will facilitate all weather access to the building with all vehicles and equipment.

Measures: Number of buildings: 1

Cost estimate: $160 Engineering cost included in cost est: $24

Cost est date: 1999 Cost est method: Cost Estimating Guide FY group: 2005

Backlog: $160 FY completed: FY obligations: $0

Cumulative obligations: $0

Fund source: R = *Resource Management* Percent complete: 0%

Other possible fund source:
- o TEA21 (Refuge Roads)
- o TEA21 (Other)
- o Title V
- o Fire
- o Quarters
- o RecFee
- o Contaminants
- o Supplemental
- o Other

Fix type: ⊙ Repair/rehab o Replace o Remove Condition assessment: Poor

Emphasis:

CHS	CRP	CM	OI	TOT
0	0	0	100	100

Type:

DM	CI	TOT
100	0	100

Safety? o

Outcomes:

ES	WF	OMB	HEC	IAF	SDA	RW	FAR	PED	PRC	TOT
10	0	0	20	0	30	10	0	10	20	100

Maint code: 106 = *Storage Buildings*

Station rank: 10 Dist rank: Reg rank: 999 Nat rank:

DOI rank: 300

RO support needs: ☒ Engineering ☒ Contracting ☒ Force Account ☐ Hold

Project notes:

Updated 12/17/97

Appendix E. Compatibility Determinations

Station Name: Fort Niobrara National Wildlife Refuge

Date Established: 1912

Establishing and Acquisition Authorities:

Executive Order 1461 on January 11, 1912,
Executive Order 1642, on November 14, 1912
Executive Order 3256, on March 31, 1920
Executive Order 7301, on February 21, 1936

Purposes for which the Refuge was established:

The Refuge was originally established on January 11, 1912, from the public domain as a "preserve and breeding ground for native birds," and was expanded by Executive Order on November 14, 1912, setting aside additional lands as the Fort Niobrara Game Preserve for the preservation of bison and elk herds representative of those that once roamed the Great Plains. Executive Orders in 1920 and 1936 were for various purposes including roost sites for sharp-tailed grouse and prairie chickens, migratory bird food sites, and pronghorn antelope management.

Furthermore, the Wilderness Act of 1964 calls for designated wilderness areas within a National Wildlife Refuge to receive equal consideration in management decisions and become a supplemental purpose of the Refuge. Section 4. (a) of this Act reads: *"The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and national wildlife refuge systems are established and administered."* Thus, the purpose of the designated wilderness area within this Refuge is to be supplemental and not subservient to the other purposes of the Refuge.

Refuge Goals and Objectives

- **Habitat Management Goal:** Preserve, restore, and enhance the unique diversity of upland and riparian plant communities and associated water resources representative of the physiographic regions described as Sandhills Prairie, Mixed Prairie, Rocky Mountain Coniferous Forest, Eastern Deciduous Forest, and Northern Boreal Forest within the Northern Great Plains to ensure their rarity, richness, and representativeness is sustainable into the future.

Grasslands Objective: Maintain the approximate 14,264 acres of Sandhill Prairie and Mixed Prairie vegetation communities in early through late successional stages to meet nesting, brooding, feeding and/or protective cover requirements of various grassland dependent birds, fenced animals, and other wildlife. Species composition on a minimum of 90 percent of the grasslands will be middle-to-late successional stage and consist of 75-85 percent grasses, 5-10 percent grass-like plants, 5-10 percent forbs, and 5 percent shrubs (dominant species as described by Kaul and Rolfsmeier 1993, Schneider *et al.* 1996, USDA Soil Conservation Service 1983). Vegetation structure will exist in a range of heights and densities with complete visual obstruction to an average height of six inches in the fall on a minimum of 50 percent of the grassland acreage (Prose 1985; Prose 1987). A minimum of 50 percent of the grasslands will not have planned burning or grazing during the native bird breeding season (April 15 - July 15).

Ponderosa Pine Savanna/Woodland Objective: Manage the approximate 3,022 acres of Rocky Mountain Coniferous Forest community to provide nesting, brooding, feeding and/or protective cover requirements of various native birds, fenced animals, and other wildlife. Approximately 85 percent of the acreage will be maintained as savanna and consist of 70 percent grasses, 10 percent grass-like plants, 5 percent forbs, 5 percent shrubs, and 10 percent trees with the remaining acreage managed as a woodland/forest. Species composition to manage for will be based on descriptions by Kaul and Rolfsmeier 1993, Schneider *et al.* 1996, USDA Soil Conservation Service 1983. A minimum of 50 percent of this community type will not have planned grazing or burning during the native bird breeding season (April 15 - July 15).

Riparian Eastern Deciduous/Northern Boreal Forest Objective: Maintain and preserve the approximate 1,296 acres of Eastern Deciduous Forest/Northern Boreal Forest riparian community to provide nesting, brooding, feeding and/or protective cover requirements of various native birds and other wildlife. Species composition to manage for will be based on descriptions by Kaul and Rolfsmeier 1993 and Schneider *et al.* 1996. Habitat diversity will be enhanced by managing for a mix of trees (size and age classes with a minimum of 10 percent mature trees) and well-developed shrub and herbaceous layers. Strips of woodlands (150 acres) in habitat units utilized by fenced animals will be protected to the extent necessary to ensure regeneration. A minimum of 50 percent of this community type will not have planned grazing or burning during the native bird breeding season (April 15 - July 15).

Niobrara River and Associated Wetlands Objectives: Restore and maintain the approximate 375 acres of the Niobrara River and associated wetlands with emphasis on maintaining streambed quality, stream bank stability, water flow, water temperature, and quality. Use existing data on the Niobrara River water flow, quality (sediment, nitrate, pollutants) and water temperature as minimum baseline levels and repeat at five year intervals. Ensure vegetation adjacent to the River and streams are adequate to minimize erosion, dissipate water energy, and trap sediments.

Exotic and Invading Species Objective: Prevent additional exotic plant species from becoming established and reduce the occurrence, frequency, and stand density of existing invading and exotic vegetation. Target level of combined total of invading and exotic plant species is less than 5 percent of species composition. Invading and exotic plant species to manage include leafy spurge, purple loosestrife, Canada thistle, Kentucky bluegrass, smooth brome, downy brome, sweet clover, reed canary grass, eastern red cedar, Russian olive, and phragmites.

P Wildlife Goals: Preserve, restore, and enhance the ecological diversity and abundance of migratory and resident wildlife with emphasis on native birds.

Maintain representative breeding herds of nationally significant animals under reasonably natural conditions.

Prairie Grouse Objective: Maintain a five-year average density of one prairie grouse lek/1.4 square mile with an annual target of 100 sharp-tailed grouse and 65 prairie chicken breeding males in the grasslands (approximately 12,271 acres) south and east of the Niobrara River (USFWS, unpublished Refuge data).

Native Birds Objective: Maintain or increase breeding and migration use on Fort Niobrara by Species of Management Concern, U.S. Fish and Wildlife Service, Region 6, including northern harrier, ferruginous hawk, upland sandpiper, long-billed curlew, burrowing owl, short-eared owl, red-headed woodpecker, loggerhead shrike, dickcissel, lark bunting, grasshopper sparrow, chestnut-collared longspur, eastern meadowlark, and other habitat sensitive migratory birds such as western meadowlark, bobolink, clay-colored sparrow, belted kingfisher, willow flycatcher, and yellow-breasted chat. Monitor and document migration use by peregrine falcons as it occurs. Use existing data as minimum baseline levels and implement monitoring procedures that provide an index to overall species richness/diversity and document population trends of selected species over a five- year period.

Bison and Elk Objective: Preserve and maintain breeding populations of bison and elk with age and sex composition approximating historic herds. Implement management actions that maintain or increase levels of genetic variability to assure viable, sustainable populations according to accepted standards of conservation biology (Berger 1996, Berger and Cunningham 1994).

Rocky Mountain Bighorn Sheep Objective: Reintroduce, if feasible and in accordance with the State's future Bighorn Sheep Management Plan, Rocky Mountain bighorn sheep to the Refuge to restore an indigenous species into its historic range.

Prairie Dog Objective: Allow the expansion of the existing black-tailed prairie dog town in the Refuge to a manageable size to enhance Refuge biological diversity.

Other Indigenous Wildlife Objective: Ensure the diversity and abundance of other indigenous mammals, reptiles, amphibians, fish, and invertebrates continues. Use existing data as minimum baseline levels and monitor periodically to document population trends. (Bogan, 1995)

P Threatened and Endangered Species Goal: Contribute to the preservation and restoration of threatened and endangered flora and fauna that occur or have historically occurred in the area of Fort Niobrara NWR.

Blowout Penstemon Objective: Evaluate the Refuge for blowout penstemon habitat. If suitable habitat exists, establish plants in at least two sites

Bald Eagle Objective: Maintain a minimum of 10 percent of the woodlands within the Niobrara River corridor in mature or old-growth timber with an open and discontinuous canopy to provide undisturbed roosting habitat for wintering populations of bald eagles. Monitor and document eagle use on the Refuge and mortality in the area.

Whooping Crane, Piping Plover, and Least Tern Objective: Maintain the shallow braided River habitat above Cornell Dam for use by whooping cranes, piping plovers, and least terns during migration. Keep use areas free from human disturbance. Monitor and document migration use by whooping cranes, piping plover, and least terns as it occurs.

American Burying Beetle Objective: Determine if American burying beetles inhabit the Refuge. Implement appropriate management strategies if a population exists.

P Interpretation and Recreation Goal: Provide the public with quality opportunities to learn about and enjoy the ecological diversity, wildlands, wildlife, and history of the Refuge in a largely natural setting and in a manner compatible with the purposes for which the Refuge was established.

Interpretation, Wildlife Observation and Photography, and Environmental Education Objectives: Provide visitors with quality interpretation, environmental education, wildlife observation, and photography opportunities.

Ensure a safe, quality River-floating experience on the Wild and Scenic Niobrara River that follows the standards of the National Wild and Scenic Rivers Act, National Wildlife Refuge System, and maintains the integrity of the Fort Niobrara Wilderness Area.

Protect and interpret Refuge cultural and paleontological sites.

Fishing Objective: Provide opportunities for warm water fishing in the Niobrara River and Minnichaduza Creek.

Hunting Objective: Offer ethically sound, limited and strictly controlled hunting opportunities for elk and, if reintroduced, bighorn sheep to facilitate removal of herd excess.

P Ecosystem Goal: Promote partnerships to preserve, restore, and enhance a diverse, healthy, and productive ecosystem of which the Fort Niobrara and Valentine NWR's are part.

Ecosystem Objectives/Strategies for the Fort Niobrara/Valentine NWR Complex: Support the National Park Service and Niobrara River Council to meet desired future conditions of the Niobrara Scenic River.

Support the Sandhills Management Plan through Partners for Wildlife Program to enhance wildlife habitat on private lands.

Support use of Refuges as research areas for relevant natural resource studies. Conduct applied research on management of threatened and endangered plant and animal populations.

Develop an effective outreach program that results in two wildlife habitat/public use projects completed annually with nongovernmental organizations.

Develop greater cooperation with State and local governments that result in completion of at least two projects annually. Projects are to benefit area wildlife resources or enhance public use opportunities such as fish rearing in Refuge ponds.

Use this Plan to help in marketing Refuge needs through grant writing and networking with other entities.

Support the National Scenic River; coordinate and cooperate as appropriate with River management partners including the National Park Service, Natural Resource Districts, etc., to meet desired future conditions of the Niobrara Scenic River and related resources.

Other Applicable Laws, Regulations, and Policies:

Please refer to Appendix G. Compliance Requirements.

Description of Proposed Use
Wildlife Observation, Wildlife Photography, Interpretation and Environmental Education

Based on general observations and data collected in the visitor center and on the River, an estimated 100,000 people visit the Refuge annually for wildlife/wildland observation, photography, interpretation/education, picnicking, hiking, and floating on the Niobrara River. The majority of visits to the Refuge utilize the River or the auto tour route and Fort Falls nature trail. The 15-stop self-guiding auto tour route is located in the exhibition habitat unit and provides information on the prairie dog town, bison, elk, Texas longhorns, and other prairie inhabitants.

The Fort Falls nature trail is approximately one mile long and educates the hiker through a brochure describing the different vegetation communities and associated wildlife found in this unique, biologically diverse area.

The visitor center, with a variety of 20+-year-old displays interpreting the history of the military fort, area wildlife and habitat, and Refuge management, is open Monday through Friday year-round and on weekends Memorial Day to Labor Day with use recorded at approximately 6,000 visits.

Other interpretive facilities include a kiosk at the canoe launch with education panels titled "Niobrara Valley," "Welcome to Fort Niobrara," "Canoeing the Niobrara River"; the observation deck above Fort Falls includes education panels titled "Prairie Oasis," "Fort Falls," "Sand, Rock & Water"; and an interpretive panel to be located in the exhibition habitat unit providing information on elk and prairie dogs.

The Bur Oak Picnic area is located along the Niobrara River at the Refuge entrance. Tables and rest rooms are used mainly by people visiting the Refuge for wildlife observation.

The main portion of the Fort Niobrara Wilderness Area included in the habitat unit north of the Niobrara River and used as winter pasture for the main bison herd is also open to the public for wildlife observation and photography, accessible by foot, horseback, or cross country skiing. No accurate count of visitors has been made; however, estimates are less than 200 per year.

Interpretation and environmental education services are provided when staff are available and include talks or guided tours for school groups (elementary through college level), scouts, 4-H clubs, and special projects. The public is invited to observe fall roundups and auctions of bison and longhorns, participate in Migratory Bird Day activities, and other Refuge programs.

News releases on Refuge events are written and provided to area television, radio, and newspaper outlets. The Fort Niobrara/Valentine NWR Complex also hosts special events including the Nebraska Federal Junior Duck Stamp Contest, annual Kids Fishing Day, annual steel shot clinic, and nature fest.

The Comprehensive Conservation Plan (CCP) proposes continuing with the uses described and adding the following to improve interpretation and access for visitors:

- The Service will seek funds to construct and staff a new environmental education/visitor center to improve environmental education and interpretation of wildlife, cultural, and paleontological resources on the Refuge. A Site Plan, being developed, will include a concept design for the new center and suggestions for improving the existing visitor center until such time as a new center is constructed. Interim projects to complete include updating exhibits and broadening themes to include wildlife and their habitats; unusual ecological diversity; cultural and paleontological resources; and management. The Service will also investigate the possibility of a shared environmental education/visitor center with the Nebraska Game and Parks Commission, National Park Service, Forest Service, The Nature Conservancy, Valentine Chamber of Commerce, and others.

- Provide a wilderness access point. Use will be limited to three groups at one time with a maximum group size of five horses or ten people. An outfitter, selected by lottery, would be allowed to guide a maximum of one group per day and would be required to pay a fee and/or percent of gross receipts to the Refuge.

- Construct a trail to a scenic overlook of the Niobrara Canyon and provide appropriate interpretation.

- Establish a concessionaire contract to view and interpret the bison and elk herds during the summer tourist season.

- Continue to improve the main auto tour route by resurfacing with gravel and closing/revegetating the numerous side trails.

- Expand the display habitat unit and provide a more natural and aesthetic setting by removing and/or relocating fence.

- Staff and expand the hours of operation of the visitor/environmental education center.

- Update Refuge brochures to new Service standards.

- Develop a Refuge specific environmental education curricula for teachers to use independently.

Anticipated Impacts on Service Lands, Waters, or Interests:

Some disturbance to wildlife, both birds and mammals, will occur in areas of the Refuge frequented by visitors. In the past, visitation for these uses has been concentrated at the Office/Visitor Center area, exhibition pasture unit and on the River corridor. Use of the main unit in the Wilderness Area has been limited. It is anticipated that all uses will increase, particularly if better access and interpretation are offered. Monitoring of activities and their impacts, and regulation of the number and frequency of visits will maintain use at an acceptable level.

Construction of interpretive facilities, a new headquarters, and improved roads will result in the loss of a small amount of habitat for wildlife. The removal of some existing fence and improved roads may increase both the amount of traffic and vehicle speeds and result in increased wildlife mortality. Of particular concern is the occurrence of accidents involving the bison and elk herds. Due to the size of these animals, these accidents could result in serious injury to both wildlife and visitors.

Determination: Wildlife Observation, Wildlife Photography, Interpretation and Environmental Education are compatible.

The following stipulations are required to ensure compatibility:

- Monitor use, regulate access, maintain necessary facilities to prevent erosion in high public use areas.
- Monitor levels of use and effects on wildlife and habitat, especially in critical areas such as Wilderness Area.
- Implement additional educational and interpretive programs.
- Horseback and other Refuge tours will follow designated routes, schedules, and group size guidelines.
- Road or trail construction will focus on existing roads and trails.
- Speed limits on roads will be restricted to 25 mph.

Justification: Based upon the biological impacts presented above and in the Environmental Assessment, it is determined that wildlife observation, wildlife photography, interpretation, and environmental education within the Fort Niobrara National Wildlife Refuge will not materially interfere with or detract from the purposes for which this Refuge was established.

Although wildlife observation and other human activities have been shown to disturb wildlife, the stipulations presented above and in the Comprehensive Conservation Plan are sufficient to reduce impacts to a minimal level. One of the goals of the National Wildlife Refuge System is to provide opportunities for the public to develop an understanding and appreciation for wildlife. The four priority public uses identified in the National Wildlife Refuge System Improvement Act of 1997 will help meet that goal at the proposed Fort Niobrara National Wildlife Refuge, with only minimal conflicts with the wildlife conservation mission of the Refuge System.

Description of Proposed Use: Recreational Fishing

The Niobrara River, downstream of the Cornell Dam, and the Minnichaduza Creek are open to public sport fishing in accordance to Nebraska Game and Parks Commission established rules and regulations, with the exception of being closed to the taking of frogs, turtles, and minnows. Angler opportunities are limited with most fishing occurring immediately below Cornell Dam. Primary access is by foot, via a trail from the Refuge parking area off Nebraska Highway 12. Limited fishing also occurs throughout the remainder of the River downstream, with access generally by canoe. No motorboats are allowed. Fishing is primarily for catfish and occasionally trout. Fishing opportunities in the Niobrara River are limited and do not attract many visitors to the Refuge for this purpose.

A Kids Fishing Day is held annually in September and includes trout, catfish, and bluegill fishing in a NG&PC stocked pond located on the Refuge. The day's events include fish identification and casting contests, as well as, the opportunity to clean, cook, and eat fish. The event is cosponsored by the Nebraska Game and Parks Commission and is hosted with the assistance of the Fort Niobrara Natural History Association, volunteers, and Refuge staff.

The Comprehensive Conservation Plan (CCP) proposes continuing with the uses as described above.

Anticipated Impacts on Service Lands, Waters, or Interests:

A limited acreage of potential wildlife habitat (estimated at less than two acres) would be lost to access roads, parking lot, new trails and River bank trampling by people fishing below Cornell Dam. Virtually all fishing downstream from the Dam is from canoe with no impact on habitat.

Fishing and other human activities cause disturbance to wildlife, both birds and mammals.

Determination: Fishing is compatible.

The following stipulations are required to ensure compatibility:

- Parking lot, road, trail, and related access facilities will be maintained as necessary to prevent erosion.
- Public access for fishing immediately below Cornell Dam will be restricted to the number of people supported by size of the parking area.
- Taking of frogs, turtles, and minnows will not be allowed as part of public fishing.
- No additional streams, ponds or areas of the Niobrara River on the Refuge will be open to fishing.
- Motorboats will not be allowed.

Justification: Based upon the biological impacts presented above, it is determined that recreational fishing within the Fort Niobrara National Wildlife Refuge will not materially interfere with or detract from the purposes for which this Refuge was established.

One of the goals of the National Wildlife Refuge System is to provide opportunities for public fishing, and it is identified as a priority use in the National Wildlife Refuge System Improvement Act of 1997. Fishing meets part of the goal for interpretation and recreation with only minor conflicts with the wildlife conservation mission of the Refuge System.

Description of Proposed Use: Hunting

Fort Niobrara National Wildlife Refuge has never been open to hunting. However, the Comprehensive Conservation Plan (CCP) proposes to, as appropriate, offer limited, strictly controlled hunting opportunities for elk and, if reintroduced, bighorn sheep to facilitate removal of herd excess.

If and when hunting becomes feasible and appropriate, a Hunting Plan will be developed and implemented to assure a safe, ethical, quality opportunity.

Anticipated Impacts on Service Lands, Waters, or Interests:

Hunters both disturb non-target species and harvest target species. Those species proposed to be hunted on Fort Niobrara NWR are elk and bighorn sheep. Hunting will take place only when and if populations provide an identified harvestable surplus. Hunting will be strictly limited and will involve very few hunters, under regulated conditions, resulting in minimal disturbance to non- target wildlife.

Determination: Hunting is compatible.

The following stipulations are required to ensure compatibility:

- Hunting will be implemented only if determined appropriate based on herd size and a harvestable surplus.
- Hunting will be evaluated to provide an ethical, quality hunt. Special attention will be given to fair chase.
- Hunt will be coordinated with the Nebraska Game and Parks Commission in an effort to meet objectives of both the Fish and Wildlife Service and the State of Nebraska.
- Monitor these uses to assure they do not interfere with and are compatible with other wildlife-dependent recreational activities.

Justification: Based upon the biological impacts presented above and in the Environmental Assessment contained in the CCP, it is determined that hunting on the Fort Niobrara National Wildlife Refuge will not materially interfere with or detract from the purposes for which this Refuge was established.

The State of Nebraska has established a bighorn sheep herd in western Nebraska and has recently implemented a limited hunting program. Free-ranging herds of elk are in other areas of Nebraska, now also managed under a limited hunt. It is appropriate for the Service to participate in planning and implementing a complementing program for both species at Fort Niobrara.

Description of Proposed Use: River Recreation

Local commercial outfitters provide tubes, canoes, shuttle services, transportation, beverages and/or food for an estimated 95 percent of River users. A large share of canoeing and tubing takes place during the summer on weekends, particularly Saturdays. Canoers can take either a day trip or an overnight trip. Tubers generally take only half day or day trips. The Refuge portion of trips runs from the canoe launch site to the east Refuge boundary and takes from 1.5 to 3 hours to complete. In 1998, 18,658 people canoed and 8,658 tubed down the River through the Refuge. This use is concentrated on summer weekends, especially Saturdays. On a busy summer Saturday, one vessel launches every 16 seconds. For some, a trip down the River is a social event with a party atmosphere. Most other days of the week and times of year, the River is not crowded.

The Refuge provides a canoe launch area with six ramps. Eleven launch areas are designated for outfitters, and approximately 65 cars can park in the lot. Outfitters are required to shuttle their customers to the launch in buses on weekends during the summer. No camping or alcohol consumption is allowed on the Refuge. Landing areas for hiking are provided at Fort Falls and the Niobrara Wilderness Area near Buffalo Bridge. Canoers and tubers also stop on sandbars to sunbathe and rest. The portion of the Niobrara River from the Refuge's west boundary to the canoe launch area is seldom used by canoers or tubers because of the numerous sandbars and shallow water.

Outfitters are required to purchase a Special Use Permit for operating a commercial business on the Refuge. The cost of the Special Use Permit is a nominal administrative fee of $5.00. In addition, outfitters are required to purchase a $25 annual permit for each vessel launched on the Refuge. Individuals may purchase an annual permit for $25 or a daily permit for $2.00 per vessel. Permit revenues are used to defray operating costs of the River recreation program, which include law enforcement, maintenance, interpretation, facilities, trash disposal, rest room/outhouse pumping, information, administration, and supplies.

The majority of River recreation users begin their trip at the Refuge canoe launch site and travel to take out points and campgrounds downstream from the Refuge. Take out points are owned and/or managed by private individuals, outfitters, the Middle Niobrara Natural Resources District, the Nebraska Game and Parks Commission, and The Nature Conservancy.

The Niobrara River, including the portion on the Refuge, is part of the Wild and Scenic River System. The Niobrara River downstream of the launch area to the Refuge boundary is part of the National Wilderness Preservation System.

Anticipated Impacts on Service Lands, Waters, or Interests:

Presently, little disturbance to vegetation exists along the river. Most visitors do not get out of their canoe or off their tube except on sandbars. Two developed sites, Fort Falls Trail and the Niobrara Wilderness Access, are only lightly used and the only vegetation disturbed is on the foot path.

Visitor use results in disturbance to wildlife on the Refuge. Research on birds has shown that boat traffic, including canoes, can cause lower productivity, reduce use of habitat, and reduce use of refuges. Observations by Refuge staff are that birds roosting or feeding in the River are the most susceptible to disturbance and include herons, ducks, and shorebirds. Only small numbers, probably less than 10 from each group, of these birds use the part of the River most frequented by canoers and tubers. The portion of the River above the Cornell Dam is used more by these groups of birds and is an area only lightly used by visitors. Disturbance to birds using the riparian areas adjacent to the River may also occur.

Disturbance to soil is, at present, minor. In a few locations, people are climbing the River bluffs and steep banks, which hastens the erosion of these areas.

Presently, little impact on federally listed threatened and endangered species (peregrine falcon, bald eagle, least tern, and whooping crane) exists primarily because the majority of recreational use is confined to June, July, and August. With the exception of the State listed river otter, threatened and endangered species documented on the Refuge are present in spring, winter, and fall. If use expands into these seasons, however, potential for disturbance would exist.

Presently, opportunities exist for visitors to use and enjoy the wilderness area and experience solitude. Visitors to the Refuge during the off-season or on weekdays in the summer do not see large numbers of other visitors. As recreational use of the River increases, opportunities for solitude in these off-peak periods will decrease or be eliminated.

Determination: River recreation is compatible.

The following stipulations are required to ensure compatibility:

- P A River Recreation Plan will be prepared within the next two years to determine the number of visitors permitted to use the River for floating. This Plan will determine carrying capacity based upon the requirements of the Wilderness Act, the National Wildlife Refuge Improvement Act, the Wild and Scenic Rivers Act, and the effects of visitation on wildlife, vegetation, soils, and visitor experience.
- P Biological studies will be conducted to determine the impact of River floaters on Refuge wildlife, vegetation, and soils.
- P During the development of the River Recreation Plan, no additional permits for outfitting on the Refuge will be issued and River use will be capped at 1998 levels.
- P River recreation will not be developed in that part of River above Cornell Dam.
- P Permits will be required for groups such as Scouts, church, and educational institutions and limited to one group with a maximum of 30 people per day.
- P Bans on possession of alcohol, high volume radios (normally known as boom boxes), or any device whatsoever capable of shooting or directing a projectile or liquid at another person to include, but not limited to, water balloons, high pressure water guns (normally known as water cannons), paint ball guns, potato guns, and sling shots will be implemented. No more than five tubes will be allowed to be tied together.

Justification: Based upon the impacts presented, it is determined that River recreation within the Fort Niobrara National Wildlife Refuge will not materially interfere with or detract from the purposes for which this Refuge was established.

Although wildlife observation and other human activities have been shown to disturb wildlife and habitat, the stipulations presented above may result in only minimal impacts. The River Recreation Plan, to be prepared, will measure these impacts and adjust visitation to meet the compatibility standards of the National Wildlife Refuge System. People using the River come to observe wildlife and wildlands. Wildlife observation is one of the priority uses listed in the National Wildlife Improvement Act and is one of the goals of the National Wildlife Refuge System.

NEPA Compliance:

Categorical Exclusion _____
Environmental Assessment __X__
Environmental Impact Statement _____
FONSI _____

Signatures:

Project Leader: _____ Date: 9/30/99
Royce R. Huber
Fort Niobrara - Valentine NWR Complex

Concurrence:

_____ Date: 9/30/99
Refuge Supervisor

_____ Date: 5/3/00
Assistant Regional Director, Refuges and Wildlife

Appendix F. List of Animal and Plant Species at Fort Niobrara NWR

Birds (* = Species known to nest on the Refuge)

Grebes	
Pied-billed Grebe	*Podilymbus podiceps*
Horned Grebe	*Podiceps auritus*
Eared Grebe	*Podiceps nigricollis*
Western Grebe	*Aechmophorus occidentalis*
Clark's Grebe	*Aechmophorus clarkii*
Pelicans	
American White Pelican	*Pelecanus erythrorhynchos*
Cormorants	
Double-crested Cormorant	*Phalacrocorax auritus*
Bitterns, Herons	
American Bittern	*Botaurus lentiginosus*
Great Blue Heron	*Ardea herodias*
Cattle Egret	*Bubulcus ibis*
Green Heron	*Butorides virescens*
Black-crowned Night-Heron	*Nycticorax nycticorax*
Vultures	
Turkey Vulture	*Cathartes aura*
Geese	
Greater White-fronted Goose	*Anser albifrons*
Snow Goose	*Chen caerulescens*
Canada Goose*	*Branta canadensis*
Swans	
Trumpeter Swan	*Cygnus buccinator*
Ducks	
Wood Duck*	*Aix sponsa*
Gadwall*	*Anas strepera*
American Wigeon	*Anas americana*
Mallard*	*Anas platyrhynchos*
Blue-winged Teal*	*Anas discors*
Cinnamon Teal	*Anas cyanoptera*
Northern Shoveler*	*Anas clypeata*
Northern Pintail*	*Anas acuta*
Green-winged Teal	*Anas crecca*
Canvasback	*Aythya valisineria*
Redhead*	*Aythya americana*
Ring-necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Bufflehead	*Bucephala albeola*
Common Goldeneye	*Bucephala clangula*
Hooded Merganser	*Lophodytes cucullatus*
Common Merganser	*Mergus merganser*
Red-breasted Merganser	*Mergus serrator*
Ruddy Duck	*Oxyura jamaicensis*
Hawks, Kites, Eagles	
Osprey	*Pandion haliaetus*
Bald Eagle	*Haliaeetus leucocephalus*
Northern Harrier	*Circus cyaneus*
Sharp-shined Hawk	*Accipiter striatus*
Cooper's Hawk	*Accipiter cooperii*
Northern Goshawk	*Accipiter gentilis*
Red-shouldered Hawk	*Buteo lineatus*
Broad-winged Hawk	*Buteo platypterus*
Swainson's Hawk*	*Buteo swainsoni*
Red-tailed Hawk*	*Buteo jamaicensis*
Ferruginous Hawk	*Buteo regalis*
Rough-legged Hawk	*Buteo lagopus*
Golden Eagle	*Aquila chrysaetos*
Falcons	
American Kestrel*	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine Falcon	*Falco peregrinus*
Prairie Falcon	*Falco mexicanus*
Gallinaceous Birds	
Gray Partridge	*Perdix perdix*
Ring-necked Pheasant*	*Phasianus colchicus*
Ruffed Grouse	*Bonasa umbellus*
Sharp-tailed Grouse*	*Tympanuchus phasianellus*
Greater Prairie-Chicken*	*Tympanuchus cupido*
Wild Turkey*	*Meleagris gallopavo*
Northern Bobwhite*	*Colinus virginianus*
Rails	
Virginia Rail	*Rallus limicola*
Sora	*Porzana carolina*
American Coot	*Fulica americana*
Cranes	
Sandhill Crane	*Grus canadensis*
Whooping Crane	*Grus americana*
Plovers	
Semipalmated Plover	*Charadrius semipalmatus*
Piping Plover	*Charadrius melodus*
Killdeer*	*Charadrius vociferus*
Stilt, Avocet	
American Avocet	*Recurvirostra american*

Sandpipers

Greater Yellowlegs	*Tringa melanoleuca*
Lesser Yellowlegs	*Tringa flavipes*
Solitary Sandpiper	*Tringa solitaria*
Willet	*Catoptrophorus semipalmatus*
Spotted Sandpiper	*Actitis macularia*
Upland Sandpiper*	*Bartramia longicauda*
Long-billed Curlew*	*Numenius americanus*
Marbled Godwit	*Limosa fedoa*
Western Sandpiper	*Calidris mauri*
Least Sandpiper	*Calidris minutilla*
White-rumped Sandpiper	*Calidris fuscicollis*
Baird's Sandpiper	*Calidris bairdii*
Pectoral Sandpiper	*Calidris melanotos*
Dunlin	*Calidris alphina*
Long-billed Dowitcher	*Limnodromus scolopaceus*
Common Snipe	*Gallinago gallinago*

Phalaropes

Wilson's Phalarope	*Phalaropus tricolor*

Gulls

Franklin's Gull	*Larus pipixcan*
Ring-billed Gull	*Larus delawarensis*
California Gull	*Larus californicus*

Terns

Common Tern	*Sterna hirundo*
Forster's Tern	*Sterna forsteri*
Black Tern	*Chlidonias niger*

Pigeons, Doves, Parakeet

Mourning Dove*	*Zenaida macroura*

Cuckoos

Black-billed Cuckoo*	*Coccyzus erythropthalmus*
Yellow-billed Cuckoo	*Coccyzus americanus*

Owls

Eastern Screech Owl*	*Otus asio*
Great Horned Owl*	*Bubo virginianus*
Snowy Owl	*Nyctea scandiaca*
Burrowing Owl*	*Athene cunicularia*
Long-eared Owl	*Asio otus*
Short-eared Owl	*Asio flammeus*

Goatsuckers

Common Nighthawk*	*Chordeiles minor*
Common Poorwill	*Phalaenoptilus nuttallii*

Swifts

Chimney Swift	*Chaetura pelagica*

Hummingbirds

Ruby-throated Hummingbird	*Archilochus colubris*

Kingfisher

Belted Kingfisher*	*Ceryle alcyon*

Woodpeckers

Red-headed Woodpecker*	*Melanerpes erythrocephalus*
Downy Woodpecker*	*Picoides pubescens*
Hairy Woodpecker*	*Picoides villosus*
Northern Flicker*	*Colaptes auratus*

Flycatchers

Olive-sided Flycatcher	*Contopus cooperi*
Western Wood-Pewee*	*Contopus sordidulus*
Eastern Wood-Pewee	*Contopus virens*
Alder Flycatcher	*Empidonax alnorum*
Willow Flycatcher	*Empidonax traillii*
Eastern Phoebe*	*Sayornis phoebe*
Say's Phoebe*	*Sayornis saya*
Great Crested Flycatcher*	*Myiarchus crinitus*
Western Kingbird*	*Tyrannus verticalis*
Eastern Kingbird*	*Tyrannus tyrannus*
Scissor-tailed Flycatcher	*Tyrannus forficatus*

Shrikes

Loggerhead Shrike	*Lanius ludovicianus*
Northern Shrike	*Lanius excubitor*

Vireo

Bell's Vireo*	*Vireo bellii*
Warbling Vireo*	*Vireo gilvus*
Red-eyed Vireo*	*Vireo olivaceus*

Jays, Magpies, Crows, Ravens

Steller's Jay	*Cyanocitta stelleri*
Blue Jay*	*Cyanocitta cristata*
Clark's Nutcracker	*Nucifraga columbiana*
Black-billed Magpie*	*Pica pica*
American Crow*	*Corvus brachyrhynchos*

Lark

Horned Lark*	*Eremophila alpestris*

Swallows

Purple Martin	*Progne subis*
Tree Swallow*	*Tachycineta bicolor*
Northern Rough-winged Swallow*	*Stelgidopteryx serripennis*
Bank Swallow	*Riparia riparia*
Cliff Swallow*	*Petrochelidon pyrrhonota*
Barn Swallow*	*Hirundo rustica*

Chickadees, Titmice, Verdin, Bushtit

Black-capped Chickadee*	*Poecile atricapillus*

Nuthatches

Red-breasted Nuthatch	*Sitta canadensis*
White-breasted Nuthatch*	*Sitta carolinensis*

Creeper

Brown Creeper	*Certhia americana*

Wrens, Dipper

Rock Wren*	*Salpinctes obsoletus*
House Wren*	*Troglodytes aedon*
Sedge Wren	*Cistothorus platensis*
Marsh Wren	*Cistothorus palustris*

Kinglets

Ruby-crowned Kinglet	*Regulus calendula*

Thrushes, Bluebirds

Eastern Bluebird*	*Sialia sialis*
Mountain Bluebird	*Sialia currucoides*
Townsend's Solitaire	*Myadestes townsendi*
Gray-cheeked Thrush	*Catharus minimus*
Swainson's Thrush	*Catharus ustulatus*
Wood Thrush	*Hylocichla mustelina*
American Robin*	*Turdus migratorius*

Thrashers

Gray Catbird*	*Dumetella carolinensis*
Northern Mockingbird*	*Mimus polyglottos*
Brown Thrasher*	*Toxostoma rufum*

Starling

European Starling*	*Sturnus vulgaris*

Pipits

American (Water) Pipit	*Anthus rubescens*

Waxwings

Bohemian Waxwing	*Bombycilla garrulus*
Cedar Waxwing	*Bombycilla cedrorum*

Warblers

Golden-winged Warbler	*Vermivora chrysoptera*
Tennessee Warbler	*Vermivora peregrina*
Orange-crowned Warbler	*Vermivora celata*
Yellow Warbler*	*Dendrocia petechia*
Chestnut-sided Warbler	*Dendroica pensylvanica*
Yellow-rumped Warbler	*Dendrocia coronata*
Blackburnian Warbler	*Dendrocia fusca*
Palm Warbler	*Dendrocia palmarum*
Blackpoll Warbler	*Dendrocia striata*
Black-and-white Warbler*	*Mniotilta varia*
American Redstart*	*Setophaga ruticilla*
Prothonotary Warbler	*Protonotaria citrea*
Ovenbird*	*Seiurus aurocapillus*
Connecticut Warbler	*Oporornis agilis*
Common Yellowthroat*	*Geothlypis trichas*
Wilson's Warbler	*Wilsonia pusilla*
Yellow-breasted Chat*	*Icteria virens*

Tanagers

Scarlet Tanager*	*Piranga olivacea*
Western Tanager	*Piranga ludoviciana*

Towhee, Sparrows

Eastern Towhee*	*Pipilo erythrophthalmus*
American Tree Sparrow	*Spizella arborea*
Chipping Sparrow*	*Spizella passerina*
Clay-colored Sparrow	*Spizella pallida*
Field Sparrow*	*Spizella pusilla*
Vesper Sparrow*	*Pooecetes gramineus*
Lark Sparrow*	*Chondestes grammacus*
Lark Bunting	*Calamospiza melanocorys*
Savannah Sparrow*	*Passerculus sandwichensis*
Grasshopper Sparrow*	*Ammodramus savannarum*
Baird's Sparrow	*Ammodramus bairdii*
Fox Sparrow	*Passerella iliaca*
Song Sparrow	*Melospiza melodia*
Lincoln's Sparrow	*Melospiza lincolnii*
White-throated Sparrow	*Zonotrichia albicollis*
Harris' Sparrow	*Zonotrichia querula*
White-crowned Sparrow	*Zonotrichia leucophrys*
Dark-eyed Junco	*Junco hyemalis*
McCown's Longspur	*Calcarius mccownii*
Lapland Longspur	*Calcarius lapponicus*
Chestnut-collared Longspur	*Calcarius ornatus*

Grosbeaks, Buntings

Northern Cardinal	*Cardinalis cardinalis*
Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Black-headed Grosbeak*	*Pheucticus melanocephalus*
Blue Grosbeak*	*Guiraca caerulea*
Lazuli Bunting	*Passerina amoena*
Indigo Bunting	*Passerina cyanea*
Dickcissel	*Spiza americana*

Blackbirds, Orioles

Bobolink	*Dolichonyx oryzivorus*
Red-winged Blackbird*	*Agelaius phoeniceus*
Eastern Meadowlark*	*Sturnella magna*
Western Meadowlark*	*Sturnella neglecta*
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*
Rusty Blackbird	*Euphagus carolinus*
Brewer's Blackbird*	*Euphagus cyanocephalus*
Common Grackle*	*Quiscalus quiscula*
Brown-headed Cowbird*	*Molothrus ater*
Orchard Oriole*	*Icterus spurius*
Baltimore Oriole*	*Icterus galbula*

Finches

House Finch	*Carpodacus mexicanus*
Red Crossbill	*Loxia curvirostra*
Common Redpoll	*Carduelis flammea*
Pine Siskin*	*Carduelis pinus*
American Goldfinch	*Carduelis tristis*
Evening Grosbeak	*Coccothraustes vespertinus*

Old World Sparrow

House Sparrow*	*Passer domesticus*

Mammals

Virginia Opossum	*Didelphis virginiana*
Masked Shrew	*Sorex cinereus*
Northern Short-tailed Shrew	*Blarina brevicauda*
Least Shrew	*Cryptotis parva*
Eastern Mole	*Scalopus aquaticus*
Eastern Red Bat	*Lasiurus borealis*
Silver-haired Bat	*Lasionycteris noctivagans*
Big Brown Bat	*Eptesicus fuscus*
Desert Cottontail	*Sylvilagus audubonii*
Eastern Cottontail	*Sylvilagus floridanus*
Black-tailed Jackrabbit	*Lepus californicus*
White-tailed Jackrabbit	*Lepus townsendii*
Spotted Ground Squirrel	*Spermophilus spilosoma*
Thirteen-lined Ground Squirrel	*Spermophilus tridecemlineatus*
Black-tailed Prairie Dog	*Cynomys ludovicianus*
Eastern Fox Squirrel	*Sciurus niger*
Plains Pocket Gopher	*Geomys bursarius*
Olive-backed Pocket Mouse	*Perognathus fasciatus*
Plains Pocket Mouse	*Perognathus flavescens*
Hispid Pocket Mouse	*Chaetodipus hispidus*
Ord's Kangaroo Rat	*Dipodomys ordii*
Beaver	*Castor canadensis*
Western Harvest Mouse	*Reithrodontomys megalotis*
Plains Harvest Mouse	*Reithrodontomys montanus*
White-footed Mouse	*Peromysus leucopus*
Deer Mouse	*Peromyscus maniculatus*
Northern Grasshopper Mouse	*Onychomys leucogaster*
Eastern Woodrat	*Neotoma floridana*
House Mouse	*Mus musculus*
Prairie Vole	*Microtus ochrogaster*
Meadow Vole	*Microtus pennsylvanicus*
Common Muskrat	*Ondatra zibethicus*
Southern Bog Lemming	*Synaptomys cooperi*
Meadow Jumping Mouse	*Zapus hudsonius*
Common Porcupine	*Erethizon dorsatum*
Coyote	*Canis latrans*
Common Raccoon	*Procyon lotor*
Long-tailed Weasel	*Mustela frenata*
Least Weasel	*Mustela nivalis*
Mink	*Mustela vison*
American Badger	*Taxidea taxus*
Eastern Spotted Skunk	*Spilogale putorius*
Striped Skunk	*Mephitis mephitis*
Northern River Otter	*Lutra canadensis*
Bobcat	*Lynx rufus*
Elk	*Cervus elaphus*
Mule Deer	*Odocoileus hemionus*
White-tailed Deer	*Odocoileus virginianus*
Pronghorn	*Antilocapra americana*
American Bison	*Bison bison*
Texas Longhorn	*Bos indicus*

Amphibians and Reptiles

Tiger Salamander	*Ambystoma tigrinum*
Woodhouse's Toad	*Bufo woodhousii*
Plains Spadefoot	*Spea bombifrons*
Blanchard's Cricket Frog	*Acris crepitans*
Western Chorus Frog	*Pseudacris triseriata*
Bullfrog	*Rana catesbeiana*
Northern Leopard Frog	*Rana pipiens*
Western Spiny Softshell	*Apalone spinifera*
Common Snapping Turtle	*Chelydra serpentina*
Painted Turtle	*Chrysemys picta*
Blanding's Turtle	*Emydoidea blandingii*
Yellow Mud Turtle	*Kinosternon flavescens*
Ornate Box Turtle	*Terrapene ornata*
Prairie Racerunner	*Cnemidophorus sexlineatus*
Lesser Earless Lizard	*Holbrookia maculata*
Northern Prairie Lizard	*Sceloporus undulatus*
Eastern Yellow-bellied Racer	*Coluber constrictor*
Eastern Hognose Snake	*Heterodon platyrhinos*
Pale milk Snake	*Lampropeltis triangulum*
Northern Water Snake	*Nerodia sipedon*
Bullsnake	*Pituophis catenifer*
Plains Garter Snake	*Thamnophis radix*
Red-sided Garter Snake	*Thamnophis sirtalis*
Prairie Rattlesnake	*Crotalus viridis*

Plants

VASCULAR CRYPTOGRAMS (Pteridophytes)
Selaginellaceae Spikemoss Family
rock spikemoss — *Selaginella rupestris*

Equisetaceae Horsetail Family
field horsetail — *Equisetum arvense*
intermediate horsetail — *Equisetum ferrissii*
common scouring rush — *Equisetum hyemale*
smooth scouring rush — *Equisetum laevigatum*

Ophioglossaceae Adder's-tongue Family
grape fern — *Botrychium matricariifolium*
rattlesnake fern — *Botrychium virginianum*
adders tongue — *Ophioglossum vulgatum* var. *pseudopodum*

Polypodiaceae True Fern Family
bladder/fragile fern — *Cystopteris fragilis*
wood fern — *Dryopteris carthusiana*
shield/spinulose wood fern — *Dryopteris spinulosa*
sensitive fern — *Onoclea sensibilis*
marsh fern — *Thelypteris palustris*
Oregon woodsia — *Woodsia oregana*

Marsileaceae Pepperwort Family
western water clover — *Marsilea vestita*

Division PINOPHYTA (Gymnosperms)
Cupressaceae Cypress Family
creeping juniper — *Juniperus horizontalis*
eastern red cedar — *Juniperus virginiana*

Pinaceae Pine Family
blue spruce — *Picea pungens*
ponderosa pine — *Pinus ponderosa*

Division MAGNOLIOPHYTA (Flowering Plants)
Class MAGNOLIOPSIDA (Dicots)
Aceraceae Maple Family
box elder — *Acer negundo* var. *interius*

Amaranthaceae Pigweed Family
sandhills pigweed — *Amaranthus arenicola*
prostrate pigweed — *Amaranthus graecizans*
rough pigweed — *Amaranthus retroflexus*
field snake cotton — *Froelichia floridana* var. *campestris*
slender snake cotton — *Froelichia gracilis*

Anacardiaceae Cashew Family
fragrant sumac — *Rhus aromatica* var. *serotina*
fragrant sumac — *Rhus aromatica* var. *trilobata*
smooth sumac — *Rhus glabra*
poison ivy — *Toxicodendron rydbergii*

Apiaceae Parsley Family
water parsnip — *Berula erecta* var. *incisum*
bulbous water hemlock — *Cicuta bulbifera*
common water hemlock — *Cicuta maculata*
poison hemlock — *Conium maculatum*
cow parsnip — *Heracleum sphondylium* ssp. *montanum*
wild parsley — *Lomatium orientale*
sweet cicely — *Osmorhiza claytonii*
anise root — *Osmorhiza longistylis* var. *longistylis*
black snakeroot — *Sanicula canadensis*
water parsnip — *Sium suave*

Apocynaceae Dogbane Family
spreading dogbane — *Apocynum androsaemifolium*

Araliaceae Ginseng Family
wild sarsaparilla — *Aralia nudicaulus*

Asclepiadaceae Milkweed Family
sand milkweed — *Asclepias arenaria*
swamp milkweed — *Asclepias incarnata incarnata*
wooly milkweed — *Asclepias lanuginosa*
plains milkweed — *Asclepias pumila*
narrow-leafed milkweed — *Asclepias stenophylla*
whorled milkweed — *Asclepias verticillata*
green milkweed — *Asclepias viridiflora*

Asteraceae Sunflower Family
yarrow — *Achillea millefolium* ssp. *lanulosa*
false dandelion — *Agoseris glauca*
common/short ragweed — *Ambrosia artemisiifolia*
western ragweed — *Ambrosia psilostachya*
giant ragweed — *Ambrosia trifida*
field pussy toes — *Antennaria neglecta*
pussy toes — *Antennaria parvifolia*
common burdock — *Arctium minus*
biennial wormwood — *Artemisia biennis*
western sagewort — *Artemisia campestris caudata*
sand sagebrush — *Artemisia filifolia*
fringed sagewort — *Artemisia frigida*
white sage — *Artemisia ludoviciana*
white aster — *Aster ericoides*
smooth blue aster — *Aster laevis*
New England aster — *Aster novae-angliae*
aromatic aster — *Aster oblongifolius*
willowleaf aster — *Aster praealtus* var. *nebraskensis*
swamp aster — *Aster puniceus*
panicled aster — *Aster simplex*
nodding beggar-ticks — *Bidens cernua*
tickseed sunflower — *Bidens coronata*
beggar-ticks — *Bidens frondosa*
golden aster — *Chrysopsis stenophylla*
tall/roadside thistle — *Cirsium altissimum*
Platte thistle — *Cirsium canescens*
horse-weed — *Conyza canadensis*
spreading fleabane — *Conyza ramossima*
hawks beard — *Crepis runcinata runcinata*
fetid marigold — *Dyssodia papposa*
purple coneflower — *Echinacea angustifolia* var. *angustifolia*
annual fleabane — *Erigeron annuus*
western fleabane — *Erigeron bellidiastrum* var. *bellidiastrum*
Philadelphia fleabane — *Erigeron philadelphicus*
daisy fleabane — *Erigeron strigosus* var. *strigosus*

joe-pye weed *Eupatorium maculatum* var. *bruneri*
boneset *Eupatorium perfoliatum*
vicid euthamia *Euthamia gymnospermoides*
Indian blanket flower *Gaillardia pulchella*
curly-top gumweed *Grindelia squarrosa* var. *squarrosa*
snakeweed *Gutierrezia sarothrae*
cutleaf ironplant *Haplopappus spinulosus*
sneeze weed *Helenium autumnale*
common sunflower *Helianthus annuus*
sawtooth sunflower *Helianthus grosseseratus*
maximilian sunflower *Helianthus maximilianii*
Nutall's sunflower *Helianthus nuttallii nuttallii*
sunflower sp. *Helianthus nuttallii rydbergii*
rigid sunflower *Helianthus rigidus subrhomboideus*
Jerusalem-artichoke *Helianthus tuberosus*
ox-eye/false sunflower *Heliopsis helianthoides* var. *scabra*
fineleaf hymenopappus *Hymenopappus filifolius*
woolly white hymenopappus *Hymenopappus tenuifolius*
false boneset *Kuhnia eupatorioides* var. *corymbulosa*
wild lettuce *Lactuca canadensis*
blue lettuce *Lactuca oblongifolia*
blazing stars *Liatris aspera*
scaly gayfeather *Liatris glabrata*
dotted gayfeather *Liatris punctata*
gayfeather sp. *Liatris squarrosa* var. *glabrata*
skeleton weed *Lygodesmia juncea*
beaked skeleton plant *Lygodesmia rostrata*
wavyleaf agoseris *Microseris cuspidata*
Pectis angustifolia
prairie coneflower *Ratibida columnifera*
blackeyed-susan *Rudbeckia hirta*
ragwort *Senecio integerrimus*
prairie ragwort *Senecio plattensis*
riddell ragwort *Senecio riddellii*
groundsel sp. *Senecio tridenticulatus*
skeleton weed sp. *Shinnersoseris rostrata*
Canada goldenrod *Solidago canadensis* var. *gilvocanescens*
Canada goldenrod *Solidago canadensis* var. *scabra*
late goldenrod *Solidago gigantea*
late goldenrod *Solidago gigantea* var. *serotina*
grassleaf goldenrod *Solidago graminifolia* var. *media*
prairie goldenrod *Solidago missouriensis*
ashy goldenrod *Solidago mollis*
gray goldenrod *Solidago nemoralis*
rigid goldenrod *Solidago rigida*
showy-wand goldenrod *Solidago speciosa*
common tansy *Tanacetum vulgare*
common dandelion *Taraxacum officinale*
greenthread *Thelesperma filifolium*
Easter daisy *Townsendia exscapa*
goats beard *Tragopogon dubias*
ironweed *Vernonia fasciculata* var. *fasciculata*
cocklebur *Xanthium strumarium*

Balsaminaceae Touch-me-not Family
spotted touch-me-not *Impatiens biflora*
spotted touch-me-not *Impatiens capensis*

Betulaceae Birch Family
paper birch *Betula papyrifera*
hazelnut *Corylus americana*
hop-hornbeam/ironwood *Ostrya virginiana*

Boraginaceae Borage Family
borage sp. *Cryptantha minima*
American stickseed *Hackelia deflexa*
Virginia stickseed *Hackelia virginiana*
beggars lice/stickseed *Lappula redowskii*
puccoon *Lithospermum carolinense*
puccoon sp. *Lithospermum incisum*
forget-me-not *Myosotis laxa*
false gromwell *Onosmodium molle*

Brassicaceae Mustard Family
rock-cress *Arabis hirsuta* var. *pycnocarpa*
small seeded false flax *Camelina microcarpa*
shepard's purse *Capsella bursa-pastoris*
spring cress *Cardamine bulbosa*
blue mustard *Chorispora tenella*
tansy mustard *Descurainia pinnata*
herb-sophia *Descurainia sophia*
white whittlewort *Draba reptans*
western wallflower *Erysium asperum*
wormseed wallflower *Erysium cheiranthoides*
small flower wallflower *Erysium inconspicuum*
dame's rocket *Hesperis matronalis*
peppergrass *Lepidium densiflorum*
bladder pod *Lesquerella ludoviciana*
water cress *Nasturtium officinale*
marsh cress *Rorippa palustris*
tumbling mustard *Sisymbrium altissimum*
tall hedge mustard *Sisymbrium loeselii*
field pennycress *Thlaspi arvense*

Cactacea Cactus Family
nipple cactus *Mammillaria vivipara*
prickly pear *Opuntia compressa*
little prickly pear *Opuntia fragilis*

Campanulacceae Bellflower Family
tall bellflower *Campanula americana*
marsh bellflower *Campanula aparinoides*
harebell *Campanula rotundiflora*
blue cardinal flower *Lobelia siphilitica*
palespike lobelia *Lobelia spicata*
Venus' looking glass *Triodanis perfoliata*

Cannabaceae Hemp Family
hemp/marijuana *Cannabis sativa*

Capparaceae Caper Family
Rocky Mountain bee plant *Cleome serrulata*
cristatella *Cristatella jamesii*
clammy weed *Polanisia dodecandra*

Caprifoliaceae Honeysuckle Family
limber/wild honeysuckle *Lonicera dioica* var. *glaucescens*
common elderberry *Sambucus canadensis*
snowberry *Symphoricarpos albus*
western snowberry *Symphoricarpos occidentalis*

Caryophyllaceae Pink Family
grove sandwort *Arenaria lateriflora*
mouse-ear chickweed *Cerastium brachypodium*
white cockle *Lychnis alba*
sleepy catchfly *Silene antirrhina*
white champion catchfly *Silene pratensis*
chickweed/starwort *Stellaria longifolia*

Celastraceae Staff Tree Family
bittersweet *Celastrus scandens*
hornwort/coontail *Ceratophyllum demersum*

Chenopodiaceae Goosefoot Family
lamb's quarters *Chenopodium album*
maple leaf goosefoot *Chenopodium hybridum*
Standley goosefoot *Chenopodium standleyanum*
hyssoleaf tickseed *Corispermum hyssopifolium*
bugseed *Corispermum nitidum*
winged pigweed *Cycloloma atriplicifolium*
summer-cypress *Kochia scoparia*

Cistaceae Rockrose Family
frostweed *Helianthemum bicknelii*
pinweed *Lechea stricta*

Clusiaceae St. John's Wort Family
St. John's wort *Hypercum majus*

Convolvulaceae Morning Glory Family
field bindweed *Convolvulus arvensis*
Nuttal's evolvulus *Evolvulus nuttallianus*
bush morning glory *Ipomea leptophylla*

Cornaceae Dogwood Family
red osier *Cornus stolonifera*

Crassulaceae Stonecrop Family
ditch stone-crop *Penthorum sedoides*

Cucurbitaceae Cucumber Family
balsam apple/wild cucumber *Echinocystis lobata*

Cuscutaceae Dodder Family
dodder *Cuscuta coryli*

Elaeaganaceae Oleaster Family
Russian olive *Elaeagnus angustifolia*
buffalo-berry *Shepherdia argentea*

Elatinaceae Waterwort Family
waterwort *Elatine triandra*

Euphorbiaceae Spurge Family
three-seeded mercury *Acalypha virginica*
skunkweed *Croton texensis*
six-angled spurge *Euphorbia hexagona*
Missouri spurge *Euphorbia missurica*
leafy spurge *Euphorbia pseudovirgata*
round leaved spurge *Euphorbia serpens*

Fabaceae Bean Family
leadplant *Amorpha canescens*
false indigo *Amorpha fruticosa*
hogpeanut *Amphicarpaea bracteata*
groundnut *Apios americana*
Canada milk-vetch *Astragalus canadensis*
painted milk-vetch *Astragalus ceramicus*
ground/prairie plum *Astragalus crassicarpus*
lotus milk-vetch *Astragalus lotiflorus*
golden prairie clover *Dalea aurea*
white prairie clover *Dalea candida* var. *oligophylla*
nine-anther prairie clover *Dalea enneandra*
purple prairie clover *Dalea purpurea* var. *purpurea*
silky prairie clover *Dalea villosa*
Canada tickclover *Desmodium canadense*
tick-trefoil *Desmodium glutinosum*
wild licorice *Glycyrrhiza lepidota* var. *lepidota*
vetching/wild peas *Lathyrus polymorphus*
round-head lespedeza *Lespedeza capitata*
prairie trefoil *Lotus purshianus*
black medick *Medicago lupulina*
alfalfa *Medicago sativa sativa*
white sweet clover *Melilotus alba*
yellow sweet clover *Melilotus officinalis*
purple locoweed *Oxytropis lambertii* var. *lambertii*
white prairie clover *Petalostemon occidentale*
silver leaf scurf pea *Psoralea argophylla*
tall-bread scurf pea *Psoralea cuspidata*
palm-leaved scurf pea *Psoralea digitata*
prairie turnip *Psoralea esculenta*
little breadroot *Psoralea hypogaea* var. *hypogaea*
lemon scurf pea *Psoralea lanceolata*
wild bean *Strophostyles leiosperma*
alsike clover *Trifolium hybridum elegans*
red clover *Trifolium pratense*
white clover *Trifolium repens*
vetch *Vicia villosa* var. *villosa*

Fagaceae Oak Family
bur oak *Quercus macrocarpa*

Fumariaceae Fumitory Family
corydalis *Corydalis aurea* var. *occidentalis*

Gentianaceae Gentian Family
closed gentian *Gentiana andrewsii*

Geraniaceae Geranium Family
crane's bill *Geranium carolinianum*

Grossulariaceae Currant Family
wild black currant *Ribes americanum*
gooseberry *Ribes missouriense*
golden current *Ribes odoratum*
northern gooseberry *Ribes oxycanthoides*

Hydrophyllaceae Waterleaf Family
waterpod *Ellisia nyctelea*

Juglandaceae Walnut Family
black walnut *Juglans nigra*

Lamiaceae Mint Family
dragonhead *Dracocephalum parviflorum*
ground ivy *Glecoma hederacea*
false penny-royal *Hedeoma hispida*
American bugleweed *Lycopus americanus*
rough bugleweed *Lycopus asper*
field mint *Mentha arvensis*
wild bergamonts *Monarda fistulosa* var. *fistulosa*
wild bergamonts *Monarda fistulosa* var. *menthaefolia*
lemon mint *Monarda pectinata*
catnip *Nepeta cataria*
selfheal *Prunella vulgaris*
mountain mint *Pycnanthemum virginianum*
sage *Salvia pitcheri*
Rocky Mountain sage *Salvia reflexa*
marsh skullcap *Scutellaria galericulata*
blue skullcap *Scutellaria lateriflora*
small skullcap *Scutellaria parvula* var. *leonardi*
wood sage *Teucrium canadense* var. *occidentale*

Lentibulariaceae Bladderwort Family
bladderwort *Utricularia vulgaris*

Linaceae Flax Family
flax *Linum rigidum* var. *compactum*
flax *Linum rigidum* var. *rigidum*

Loasaceae Stickleaf Family
bractless mentzelia *Mentzelia nuda*
sand lily/ten petal mentzelia *Mentzelia decapetala*

Lythraceae Loosestrife Family
toothcup *Ammannia robusta*
loosestrife *Lythrum alatum* var. *alatum*
winged loosestrife *Lythrum dacotanum*
purple loosestrife *Lythrum salicaria*

Malvaceae Mallow Family
common mallow *Malva neglecta*
common mallow *Malva rotundiflora*
scarlet mallow *Sphaeralcea coccinea*

Mimosaceae Mimosa Family
prairie mimosa *Desmanthus illinoensis*
sensitive briar *Schrankia nuttalii*

Molluginaceae Carpetweed Family
carpet-weed *Mollugo verticillata*

Monotropaceae Indian Pipe Family
pine-drops *Pterospora andromedea*

Moraceae Mulberry Family
white mulberry *Morus alba*

Nyctaginaceae Four-O'Clock Family
hairy four-o'clock *Mirabilis hirsuta*
narrow leaf four-o'clock *Mirabilis linearis*
wild four-o'clock *Mirabilis nyctaginea*

Nymphaeaceae Waterlily Family
fragrant white waterlily *Nymphaea odorata*

Oleacae Olive Family
green ash *Fraxinus pennsylvanica* var. *pennsylvanica*
common lilac *Syringa vulgaris*

Onagraceae Evening Primrose Family
plains yellow primrose *Calylophus serrualtus*
enchanter's nightshade *Circaea lutetiana* ssp. *canadensis*
willow-herb sp. *Epilobium adenocaulon*
willow herb sp. *Epilobium ciliatum*
purple-leaved willow herb *Epilobium coloratum*
narrow-leaved willow herb *Epilobium leptophyllum*
scarlet gaura/butterfly weed *Gaura coccinea*
velvety gaura *Gaura parviflora*
marsh seedbox *Ludwigia palustris*
manyseed seedbox *Ludwigia polycarpa*
prairie primrose *Oenothera albicaulis*
evening primrose *Oenothera biennis*
cut-leaved evening primrose *Oenothera laciniata*
white stemmed evening primrose *Oenothera nuttallii*
four point evening primrose *Oenothera rhombipetala*

Orobanchaceae Broomrape Family
broomrape *Orobanche fasciculata*

Oxalidaceae Wood Sorrel Family
gray-green wood sorrel *Oxalis dillenii*
yellow wood sorrel *Oxalis stricta*

Papaveraceae Poppy Family
prickly poppy *Argemine polyanthemos*

Pedaliaceae Unicorn-Plant Family
unicorn plant *Proboscidea louisianica*

Plantaginaceae Plantain Family
common plantain *Plantago major*
buckhorn *Plantago patagonica* var. *patagonica*

Polemoniaceae Polemonium Family
collomia *Collomia linearis*
whiteflower gilia *Ipomopsis longiflora*
moss phlox *Phlox andicola*

Polygalaceae Milkwort Family
white milkwort *Polygala alba*
whorled milkwort *Polygala verticillata*

Polygonaceae Buckwheat Family
annual wild buckwheat *Eriogonum annuum*
knotweed *Polygonum achoreum*
water smartweed *Polygonum amphibium* var. *stipulaceum*
common knotweed *Polygonum arenastrum*
black bindweed *Polygonum convolvulus*
erect knotweed *Polygonum erectum*
nodding willow weed *Polygonum lapathifolium*
lady's thumb *Polygonum persicaria*
smartweed *Polygonum punctatum*
false buckwheat *Polygonum scandens*
slender knotweed *Polygonum tenue*
water/pale dock *Rumex altissimus*
sour/curly dock *Rumex crispus*
golden dock *Rumex maritimus* var. *fueginus*
dock sp. *Rumex stenophyllus*
sour greens/wild begonia *Rumex venosus*

Portulacaceae Purslane Family
fameflower/rock pink *Talinum calycinum*
prairie fameflower *Talinum parviflorum*

Primulaceae Primrose Family
western rock jasmine *Androsace occidentalis*
chaffweed *Centunculus minimus*
fringed loosestrife *Lysimachia ciliata*
tufted loosestrife *Lysimachia thyrsiflora*

Ranunculaceae Buttercup Family
Carolina anemone *Anemone carolinana*
candle anemone *Anemone cylindrica*
pasque flower *Anemone patens*
wild columbine *Aquilegia canadensis*
western virgins bower/western clematis *Clematis ligusticifolia*
virgins bower *Clematis virginiana*
prairie larkspur *Delphinium carolinianum*
prairie larkspur *Delphinium virescens*
small flowered buttercup /early wood buttercup *Ranunculus abortivus*
seaside crowfoot/shore buttercup *Ranunculus cymbalaria*
white water crowfoot *Ranunculus longirostris*
cursed crowfoot *Ranunculus scleratus* var. *scleratus*
white water crowfoot *Ranunculus subrigidus*
meadow rue *Thalictrum dasycarpum*

Rhamnaceae Buckthorn Family
New Jersey tea *Ceanothus herbaceus* var. *pubescens*
lance-leaved buckthorn *Rhamnus lanceolata* var. *glabratus*

Rosaceae Rose Family
hooked agrimony *Agrimonia gryposepala*
Saskatoon service-berry *Amelanchier alnifolia*
woodland strawberry *Fragaria vesca* var. *americana*
yellow avens *Geum aleppicum*
white avens *Geum canadense*
apple *Malus sylvestris*
ninebark *Physocarpus opulifolius*
tall cinquefoil *Potentilla arguta*
Norwegian cinquefoil *Potentilla norvegica*
cinquefoil *Potentilla pensylvanica*
brook cinquefoil *Potentilla rivalis*
wild plum *Prunus americana*
western sandcherry *Prunus besseyi*
sand/dwarf cherry *Prunus pumila*
chokecherry *Prunus virginiana*
wild prairie rose *Rosa arkansana*
western wild rose *Rosa woodsii*
black raspberry *Rubus occidentalis*

Rubiaceae Madder Family
cleavers *Galium aparine*
catchweed bedstraw *Galium circaezans*
sweet-scented bedstraw *Galium triflorum*

Rutaceae Citrus Family
prickly ash *Zanthoxylum americanum*

Salicaceae Willow Family
white/silver poplar *Populus alba*
cottonwood *Populus deltoides*
cottonwood *Populus sargentii*
quaking aspen *Populus tremuloides*
peach-leaved-willow *Salix amygdaloides*
sandbar/coyote willow *Salix exigua* ssp. *interior*
heart-leaved willow *Salix rigida* var. *rigida*

Santalaceae Sandalwood Family
bastard toadflax *Comandra umbellata*

Saxifragaceae Saxifrage Family
alumroot *Heuchera richardsonii*

Scrophulariaceae Figwort Family
gerardia sp. *Agalinis aspera*
gerardia sp. *Agalinis tenuifolia*
water hyssop *Bacopa rotundifolia*
downy paintbrush *Castilleja sessiliflora*
false pimpernel *Lindernia dubia*
roundleaf monkey-flower *Mimulus glabratus* var. *fremontii*
Alleghany monkey-flower *Mimulus ringens*
white beardtongue *Penstemon albidus*
narrow beardtongue *Penstemon angustifolius* var. *angustifolius*
slender beardtongue *Penstemon gracilis* var. *gracilis*
large beardtongue *Penstemon grandiflorus*
figwort *Scrophularia lanceolata*
common mullein *Verbascum thapsus*
brooklime/speedwell *Veronica americana*
waterspeedwell *Veronica anagallis-aquatica*
purslane speedwell *Veronica peregrina* var. *xalapenis*

Solanaceae Potato or Nightshade Family
matrimony vine *Lycium halimifolium*
clammy ground cherry *Physalis heterophylla*
Virginia ground cherry *Physalis virginiana*
black nightshade *Solanum americanum*
black nightshade *Solanum ptycanthum*
buffalo bur; Kansas thistle *Solanum rostratum*
cut-leaved nightshade *Solanum triflorum*

Tiliaceae Linden Family
linden/basswood *Tilia americana*

Ulmaceae Elm Family
hackberry *Celtis occidentalis*
American elm *Ulmus americana*
red elm *Ulmus rubra*

Urticaceae Nettle Family
false nettle *Boehmeria cylindrica*
woodnettle *Laportea canadensis*
pellitory *Parietaria pensylvanica*
clearweed *Pilea pumila*
stinging nettle *Urtica dioica* ssp. *gracilis*

Verbenaceae Vervain Family
lopseed *Phryma leptostachya*
prostrate vervain *Verbena bracteata*
blue vervain *Verbena hastata*
hoary vervain *Verbena stricta*
white/needle leaved vervain *Verbena urticifolia*

Violaceae Violet Family
Canada/tall white violet *Viola canadensis* var. *rugulosa*
northern bog violet *Viola nephrophylla*
meadow/blue prairie violet *Viola pratincola*

Vitaceae Grape Family
Virginia creeper *Parthenocissis quinquefolia*
woodbine/thicket creeper *Parthenocissis vitacea*
riverbank grape *Vitis riparia*

Zygophyllaceae Caltrop Family
puncture vine/goathead *Tribulus terrestris*

Class LILIOPSIDA (Monocots)
Agavaceae Agave Family
soapweed/yucca *Yucca glauca*

Alismataceae Water Plantain Family
water plantain *Alisma subcordatum*
arrowhead *Sagittaria engelmannia* var. *brevirostrata*
duck-patato/arrowhead *Sagittaria latifolia*

Commelinaceae Spiderwort Family
erect dayflower *Commelina erecta* var. *augustifolia*
spiderwort *Tradescantia occidentalis*

Cyperaceae Sedge Family
sedge *Carex aurea*
sedge *Carex blanda*
sedge *Carex brevior*
sedge *Carex comosa*
sedge *Carex diandra*
sedge *Carex eburnea*
sedge *Carex eleocharis*
sedge *Carex filifolia*
sedge *Carex granularis*
sedge *Carex heliophila*
sedge *Carex hystricina*
sedge *Carex interior*
sedge *Carex lanuginosa*
sedge *Carex meadii*
sedge *Carex nebraskensis*
sedge *Carex peckii*
sedge *Carex praegracilis*
sedge *Carex saximontana*
sedge *Carex scoparia*
sedge *Carex sprengelli*
sedge *Carex stipata*
sedge *Carex stricta*
sedge *Carex tetanica*
sedge *Carex vulpinoidea*
umbrella sedge *Cyperus acuminatus*
umbrella sedge *Cyperus aristatus*
umbrella sedge *Cyperus diandrus*
umbrella sedge *Cyperus erythrorhizos*
umbrella sedge *Cyperus odoratus*
umbrella sedge *Cyperus rivularis*
umbrella sedge *Cyperus schweinitzii*
umbrella sedge *Cyperus strigosus*
spikerush *Eleocharis acicularis*
spikerush *Eleocharis erythropoda*
spikerush *Eleocharis obtusa*
Fimbristylis puberula
bulrush sp. *Scirpus acutus*
bulrush sp. *Scirpus americanus*
bulrush sp. *Scirpus atrovirens*
bulrush sp. *Scirpus pallidus*
bulrush sp. *Scirpus validus*

Hydrocharitaceae Frog's-bit Family
water weed *Elodea nuttallii*

Iridaceae Iris Family
blue-eyed grass *Sisyrinchium montanum*

Juncaceae Rush Family
rush *Juncus alpinus*
rush *Juncus balticus*
rush *Juncus brachyphyllus*
rush *Juncus bufonius*
rush *Juncus dudleyi*
rush *Juncus longistylis*
rush *Juncus marginatus*
rush *Juncus nodosus*
rush *Juncus torreyi*

Juncaginaceae Arrowgrass Family
arrowgrass *Triglochin maritima*
arrowgrass *Triglochin palustris*

Lemnaceae Duckweed Family
duckweed *Lemna minor*
star duckweed *Lemna trisulca*
greater duckweed *Spirodela polyrrhiza*

Liliaceae Lily Family
onion *Allium perdulce*
wild asparagus *Asparagus officinales*
stargrass *Hypoxis hirsuta*
solomon's seal *Polygonatum biflorum*
false solomon's seal/spikenard *Smilacina stellata*

Smilaceae Catbrier Family
carrion-flower *Smilax herbacea* var. *lasioneuron*

Orchidaceae Orchid Family
northern green orchis *Habenaria hyperborea*
twayblade *Liparis loeselii*
ladies-tresses *Spiranthes cernua*

Poaceae Grass Family
X *Agrohordeum macounii*
slender wheatgrass *Agropyron caninum*
crested wheatgrass *Agropyron cristatum*
western wheatgrass *Agropyron smithii*
redtop sp. *Agrostis alba*
ticklegrass *Agrostis scabra*
redtop *Agrostis stolonifera*
short-awn foxtail *Alopecurus aequalis*
big bluestem *Andropogon gerardi*
sand bluestem *Andropogon hallii*
little bluestem *Andropogon scoparius*
three-awn sp. *Aristida basiramea*
three-awn sp. *Aristida longiseta*
Fendler three-awn *Aristida purpurea* var. *longiseta*
sideoats grama *Bouteloua curtipendula*
blue grama *Bouteloua gracilis*
hairy grama *Bouteloua hirsuta*
earleaf brome *Bromus altissimus*
fringed brome *Bromus ciliatus*

smooth brome	*Bromus inermis*
Japanese brome	*Bromus japonicus*
brome sp.	*Bromus latiglumis*
downy brome/cheatgrass	*Bromus tectorum*
buffalo grass	*Buchloe dactyloides*
bluejoint reedgrass	*Calamagrostis canadensis*
reedgrass sp	*Calamagrostis inexpansa*
northern reedgrass	*Calamagrostis stricta*
prairie sandreed	*Calamovilfa longifolia*
brookgrass	*Catabrosa aquatica*
sandbur	*Cenchrus longispinus*
woodreed	*Cinna arundinacea*
orchard grass	*Dactylis glomerata*
small prairie grass	*Dichanthelium acuminatum*
Scribner dicanthelium	*Dichanthelium oligosanthes*
wilcox dichanthelium	*Dichanthelium wilcoxianum*
hairy crabgrass	*Digitaria sanguinalis*
smallflower barnyard grass	*Echinochloa muricata* var. *microstachya*
Canada wild rye	*Elymus canadensis*
hairy wild rye	*Elymus villosus*
Virginia wild rye	*Elymus virginicus*
stinkgrass	*Eragrostis cilianensis*
teal lovegrass	*Eragrostis hypnoides*
Carolina lovegrass	*Eragrostis pectinacea*
purple lovegrass	*Eragrostis spectabilis*
sand lovegrass	*Eragrostis trichodes*
nodding fescue	*Festuca obtusa*
six-weeks fescue/blue bunchgrass	*Festuca octoflora*
American/tall manna grass	*Glyceria grandis*
fowl mannagrass	*Glyceria striata*
foxtail barley	*Hordeum jubatum*
little barley	*Hordeum pusillum*
junegrass	*Koeleria pyrimidata*
rice cutgrass	*Leersia oryzoides*
whitegrass	*Leersia virginica*
scratchgrass	*Muhlenbergia asperifolia*
plains muhly	*Muhlenbergia cuspidata*
pullup muhly	*Muhlenbergia filiformis*
common/wirestem muhly	*Muhlenbergia mexicana*
sand muhly	*Muhlenbergia pungens*
marsh muhly	*Muhlenbergia racemosa*
false buffalo grass	*Munroa squarrosa*
little seed ricegrass	*Oryzopsis micrantha*
common witchgrass	*Panicum capillare*
fall panicum	*Panicum dichotomiflorum*
switchgrass	*Panicum virgatum*
sand paspalum	*Paspalum setaceum* var. *stramineum*
timothy	*Phleum pratense*
Canada bluegrass	*Poa compressa*
Kentucky bluegrass	*Poa pratensis*
woodland bluegrass	*Poa sylvestris*
rabbitfoot grass	*Polypogon monspleliensis*
blowout grass	*Redfieldia flexuosa*
tumblegrass	*Schedonnardus paniculatus*
rye	*Secale cereale*
yellow foxtail	*Setaria glauca*
green foxtail	*Setaria viridis*
Indian grass	*Sorghastrum nutans*
prairie cordgrass/slough grass	*Spartina pectinata*
wedgegrass	*Sphenopholis obtusata*
sand dropseed	*Sporobolus cryptandrus*
needle-and-thread	*Stipa comata*
porcupine-grass	*Stipa spartea*
green needlegrass	*Stipa viridula*
sandgrass	*Triplasis purpurea*

Potamogetonaceae Pondweed Family

longleaf pondweed	*Potamogeton nodosus*

Sparganiaceae Bur-reed Family

bur-reed	*Sparganium eurycarpum*

Typhaceae Cat-tail Family

broad-leaved cattail	*Typha latifolia*

Zannichelliaceae Horned Pondweed Family

horned pondweed	*Zannichellia palustris*

Appendix G. Compliance Requirements

Many procedural and substantive requirements of Federal and applicable State and local laws and regulations affect Refuge establishment, management, and development. This appendix identifies the key permits, approvals, and consultations needed to implement the strategies.

In undertaking the proposed action, the Service would comply with the following Federal laws, Executive orders, and legislative acts:

In undertaking the proposed action, the following Executive Orders and legislative acts have been or will be acted upon.

American Indian Religious Freedom Act of 1978: Directs agencies to consult with native traditional religious leaders to determine appropriate policy changes necessary to protect and preserve Native American religious cultural rights and practices.

Americans With Disabilities Act of 1992: Prohibits discrimination in public accommodations and services.

Antiquities Act of 1906: Authorizes the scientific investigation of antiquities on Federal land and provides penalties for unauthorized removal of objects taken or collected without a permit.

Archaeological and Historic Preservation Act of 1974: Directs the preservation of historic and archaeological data in Federal construction projects.

Archaeological Resources Protection Act of 1979, as amended: Protects materials of archaeological interest from unauthorized removal or destruction and requires Federal managers to develop plans and schedules to locate archaeological resources.

Architectural Barriers Act of 1968: Requires federally owned, leased, or funded buildings and facilities to be accessible to persons with disabilities.

Bald and Golden Eagle Protection Act of 1940, as amended: Calls for the protection of these raptorial species on and off Federal Lands.

Clean Air Act of 1977, as amended: The primary objective of this Act is to establish Federal standards for various pollutants from both stationary and mobile sources and to provide for the regulation of polluting emissions via state implementation plants. In addition, and of special interest for National Wildlife Refuges, some amendments are designed to prevent significant deterioration in certain areas where air quality exceeds national standards, and to provide for improved air quality in areas which do not meet Federal standards ("non-attainment" areas). Federal facilities are required to comply with air quality standards to the same extent as nongovernmental entities (42 U.S.C. 7418). Part C of the 1977 amendments stipulates requirements to prevent significant deterioration of air quality and, in particular, to preserve air quality in national parks, national wilderness areas, national monuments, and national seashores (42 U.S.C. 7470).

Clean Water Act of 1977: Requires consultation with the Corps of Engineers (404 permits) for wetland modifications.

Emergency Wetlands Resources Act of 1986: The purpose of the Act is "To promote the conservation of migratory waterfowl and to offset or prevent the serious loss of wetlands by the acquisition of wetlands and other essential habitat, and for other purposes."

Endangered Species Act of 1973, as amended: Requires all Federal agencies to carry out programs for the conservation of endangered and threatened species. An Intra-Service Section 7 consultation was conducted prior to implementation of this CCP (attached to this CCP as an appendix). No significant impact is expected from the implementation of this Plan.

Executive Order 11644, Use of Off-Road Vehicles on Public Lands

Executive Order No. 11593, Protection and Enhancement of the Cultural Environment (1971). If the Service proposes any development activities that would affect the archaeological or historical sites, the Service will consult with Federal and State Historic Preservation Officers to comply with Section 106 of the National Historic Preservation Act of 1966, as amended.

Executive Order No. 11988, Floodplain Management. Each Federal agency shall provide leadership and take action to reduce the risk of flood loss and minimize the impact of floods on human safety, and preserve the natural and beneficial values served by the floodplains. No structures or other barriers that could either be damaged by or significantly influenced the movement of flood waters are planned for construction by the Service in the project area. This Plan supports the preservation and enhancement of the natural and beneficial values of floodplains.

Executive Order No. 11990, Protection of Wetlands. The proposal will help conserve the natural and beneficial values of the wetland habitat. The Service will undertake no activity that would be detrimental to the continuance of the vital wetlands.

Executive Order No. 12372, Intergovernmental Review of Federal Programs. The State of Nebraska and counties encompassing the Refuge were sent copies of the Draft Comprehensive Conservation Plan and Environmental Assessment for distribution to State and County agencies and departments. Coordination and consultation is ongoing with local and State governments, Tribes, Congressional representatives, and other Federal agencies.

Executive Order No. 12898, Environmental Justice in Minority Populations and Low-income Populations. This environmental justice analysis concluded that the socioeconomic, cultural, physical, and biological effects of the preferred alternative (the CCP) does not predict any outcomes that would cause disproportionately high and adverse human health impacts in any population, nor would they result in disproportionally high or adverse impact to low-income or minority populations, nor would create a greater burden on low-income households.

Executive Order 12996 Management and General Public Use of the National Wildlife Refuge System (1996): Defines the mission, purpose, and priority public uses of the National Wildlife Refuge System. It also presents four principles to guide management of the System. Through the development of this Comprehensive Conservation Plan, the Service has completed compatibility determinations for existing wildlife-dependent recreational activities that will be allowed to continue.

Executive Order 13007 Indian Sacred Sites (1996): Directs Federal land management agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and where appropriate, maintain the confidentiality of sacred sites.

Executive Order 13084, Consultation and Coordination with Indian Tribal Governments

Federal Noxious Weed Act of 1990: Requires the use of integrated management systems to control or contain undesirable plant species; and an interdisciplinary approach with the cooperation of other Federal and State agencies.

Fish and Wildlife Act of 1956: Established a comprehensive national fish and wildlife policy and broadened the authority for acquisition and development of refuges.

Fish and Wildlife Coordination Act of 1958: Allows the Fish and Wildlife Service to enter into agreements with private landowners for wildlife management purposes.

Land and Water Conservation Fund Act of 1965: Uses the receipts from the sale of surplus Federal land, outer continental shelf oil and gas sales, and other sources for land acquisition under several authorities.

Migratory Bird Conservation Act of 1929: Establishes procedures for acquisition by purchase, rental, or gift of areas approved by the Migratory Bird Conservation Commission.

Migratory Bird Hunting and Conservation Stamp Act (1934): Authorized the opening of part of a refuge to waterfowl hunting.

Migratory Bird Treaty Act of 1918: Designates the protection of migratory birds as a Federal responsibility. This Act enables the setting of seasons, and other regulations including the closing of areas, Federal or non-Federal, to the hunting of migratory birds.

National Environmental Policy Act of 1969 (40 CFR 1500): Requires all Federal agencies to examine the impacts upon the environment that their actions might have, to incorporate the best available environmental information, and the use of public participation in the planning and implementation of all actions. All Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documentation to facilitate sound environmental decision making. NEPA requires the disclosure of the environmental impacts of any major Federal action that affects in a significant way the quality of the human environment. The process, from its inception, to prepare this Plan complied with all of NEPA requirements.

National Historic Preservation Act of 1966, as amended: Establishes as policy that the Federal Government is to provide leadership in the preservation of the nation's prehistoric and historic resources. This Plan is in compliance with this law as the 1897 "hay barn" National Historic Building will not be affected by the implementation of the goals and objectives of this CCP.

National Trails System Act of 1968, as amended: Deals with the establishment of National Recreational Trails by the Secretaries of Interior or Agriculture on land wholly or partly within their jurisdiction, with the consent of the involved State(s), and other land managing agencies, if any. National Scenic and National Historic Trails may only be designated by an Act of Congress. The proposal contained in this Plan will not impact the 5 miles of Congressionally designated National Recreational Trail System trails that currently exist within the Refuge.

National Trails Act of 1982: Designated a portion of the Niobrara River through Fort Niobrara NWR a National Canoe Trail.

National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd-668ee. (Refuge Administration Act): Defines the National Wildlife Refuge System and authorizes the Secretary to permit any use of a refuge provided such use is compatible with the major purposes for which the refuge was established. The Refuge Improvement Act clearly defines a unifying mission for the Refuge System; establishes the legitimacy and appropriateness of the six priority public uses (hunting, fishing, wildlife observation and photography, or environmental education and interpretation); establishes a formal process for determining compatibility; established the responsibilities of the Secretary of Interior for managing and protecting the System; and requires the preparation and implementation of a Comprehensive Conservation Plan for each refuge by the year 2012. This Act amended portions of the Refuge Recreation Act and National Wildlife Refuge System Administration Act of 1966. This Plan is in compliance with the National Wildlife Refuge System Act of 1966, as amended.

Native American Graves Protection and Repatriation Act of 1990: Requires Federal agencies and museums to inventory, determine ownership of, and repatriate cultural items under their control or possession. No known Native American cultural items are known to exist or are in possession of the Refuge.

Refuge Recreation Act of 1962, as amended: Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purposes and when sufficient funds are available to manage the uses. This Plan is in compliance with the Refuge Recreation Act.

Refuge Revenue Sharing Act of 1935, as amended (16 U.S.C. 715s): provides for payments to counties in lieu of taxes, using revenues derived from the sale of products from refuges. Public Law 88-523 (1964) revised this Act and required that all revenues received from refuge products, such as animals, timber and minerals, or from leases or other privileges, be deposited in a special Treasury account and net receipts distributed to counties for public schools and roads. Payments to counties were established as: 1) on acquired land, the greatest amount calculated on the basis of 75 cents per acre, three-fourths of one percent of the appraised value, or 25 percent of the net receipts produced from the land; and 2) on land withdrawn from the public domain, 25 percent of net receipts and basic payments under Public Law 94-565 (31 U.S.C. 1601-1607, 90 Stat. 2662), payment in lieu of taxes on public lands. The current and proposed management of this Refuge under this Plan is in compliance with this Act.

Rehabilitation Act of 1973: Requires programmatic accessibility in addition to physical accessibility for all facilities and programs funded by the Federal government to ensure that anybody can participate in any program.

Secretarial Order 3127 (602 DM 2) Contaminants and Hazardous Waste Determination. No contaminants or hazardous waste are know to exist on the Refuge and none will be created.

Wild and Scenic Rivers Act of 1968 (16 U.S.C 1271-1287: This Public Law (90-542, as amended) states that: "It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes."

A 76 mile stretch of the Niobrara River including the River through Ft. Niobrara NWR was designated Scenic by Public Law 102-50 in 1991.

Wilderness Act of 1964 (Public Law 88-577 [16 U.S. C. 1131-1136]): defines wilderness as follows: "A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

The 4,635 acre Fort Niobrara Wilderness Area was established by Public Law 94-557 on October 19, 1976, as cited in Section 1.n of this Act.

Appendix H. NEPA Documentation

Finding of No Significant Impact and Decision Notice

Four management alternatives for Fort Niobrara National Wildlife Refuge were assessed as to their effectiveness in achieving the stated purpose of the Refuge and their impact on the human environment. Two alternatives, maximization of economic uses and placing the Refuge in custodial status, were briefly considered but discarded because they violate the National Wildlife Refuge System Improvement Act of 1997 and do not meet the mission and goals of Fort Niobrara and the National Wildlife Refuge System.

Based on the analysis in the Environmental Assessment, I have selected the Modified Historical (Preferred) Alternative, with slight modifications from its draft form, to be implemented on the Refuge.

The Preferred Alternative was selected because it is most responsive to the purposes for which the Refuge was established by Congress and is preferable to other alternatives considered in light of physical, biological, economic and social factors.

I find that the proposed action will not have a significant impact on the human environment in accordance with Section 102 of the National Environmental Policy Act and in accordance with the Service's Administrative Manual (30 AM.9B (2) (d)) and concluded that it is not necessary nor warranted to prepare an Environmental Impact Statement in order to proceed with the implementation of this Plan.

My rationale for this finding is as follows:

- The Modified Historical Alternative would not have detrimental impacts on threatened or endangered species or adversely modify their habitats.
- The Modified Historical Alternative would not adversely affect or cause damage, loss or destruction of any archaeological and / or historical resources within the Refuge.
- The Modified Historical Alternative would have long-term positive effects on public use and recreation, habitat and wildlife management, water management, fishing, and environmental education and interpretation through a balanced approach to management of all programs with benefits to both wildlife and people.
- The Modified Historical Alternative would have no negative impact on wildlife or wildlife habitats. Modifications to current public use and habitat programs are likely to reduce wildlife and wildlife habitat disturbance that will ultimately have positive consequences to Federal trust resources.
- There will be no impact on minority and low-income populations or communities.

Ralph O. Morgenweck

Regional Director, Region 6
Fish and Wildlife Service
Denver, Colorado

9/30/99
Date

Summary of the Environmental Assessment

Purpose of and Need for Action (Management of the Refuge)

Fort Niobrara NWR, located in north-central Nebraska is a unique and ecologically important component of the National Wildlife Refuge System. This Refuge was established in 1912 to provide habitat and preserve breeding grounds for native birds. Later that year, an Executive Order was issued enlarging the Refuge and its mission to encompass the preservation of bison and elk herds representative of those that once roamed the Great Plains.

However, some uses presently occurring in the Refuge were recently evaluated for compatibility with the purpose of the Refuge. It is necessary to take action to modify or eliminate all activities on the Refuge that are found to be incompatible with its purposes.

The Service recognized the need for strategic planning for all the components of its System and in September 1996, Executive Order 12996 was enacted which gave the System guidance on issues of compatibility and public uses of its land. Later on Congress passed the National Wildlife Refuge System Improvement Act in October 1997, which, for the first time in the System's history, required that Comprehensive Conservation Plans be prepared for all refuges within 15 years.

The comprehensive conservation planning effort is intended to help this Refuge to meet the changing needs of wildlife species and the public. The planning effort provided the opportunity to meet with Refuge neighbors, and customers, and other agencies to ensure that this Plan was relevant and truly addressed natural resource issues and public interests.

Fort Niobrara National Wildlife Refuge Vision Statement

Fort Niobrara NWR will strive to preserve, restore, and enhance the exceptional diversity of native flora and fauna and significant historic resources of the Niobrara River Valley and Sandhills of Nebraska for the benefit of present and future generations of Americans.

Fort Niobrara NWR habitat management goals will seek to maintain a healthy Refuge environment that will provide opportunities for visitors to enjoy wildlife-dependent uses of the Refuge in a natural setting. Interpreting a unique assemblage of habitats, wildlife, and the Refuge's historical heritage, as well as improving facilities will enhance the visitor's experience while protecting the cultural integrity of the area. To meet these challenges, the Service will seek partnerships with other agencies, interest groups, landowners, and local communities. These efforts will result in greater protection of wildlife, fish, and plant resources throughout north-central Nebraska.

Alternatives and Impacts

Four management alternatives were analyzed in the Environmental Assessment for this Plan. Of these four, the Modified Historical (with some modifications from its draft form) is the preferred one because, in light of physical, biological, economic and social factors, it is most responsive to the purposes for which the Refuge was established. The three other alternatives were as follows:

Alternative A. Current Management (No Action):

Continuing current management activities and public use

- Maintain winter population levels of 350 bison, 70 elk, and 250 Texas longhorns to receive primary consideration in management.
- Accomplish native bird management actions to the extent possible.
- Continue limited flexibility in habitat management programs with approximately 96 percent of the Refuge grazed annually.
- Maintain approximately 50 miles of interior fence and 50 miles of boundary fence to control timing of grazing and access/movement of bison, elk, and longhorn cattle.
- Manage less than 3 percent of Refuge through prescribed burning yearly to control cedars.
- Control exotic and invading plants with beneficial insects, grazing, and herbicides.
- Effect minimal management of Niobrara River, numerous streams, and associated riparian habitat.
- Maintain black-tailed prairie dog colony at 20 acres, not allowing it to expand.
- Effect limited biological monitoring of Refuge plant communities and animal populations.
- Effect minimal protection and interpretation of cultural and paleontological resources.
- Maintain current public use opportunities, including fishing, wildlife/wildland observation, photography, interpretation/education, picnicking, and hiking.
- Continue current level of 11 river-floating outfitters and no restriction on number of launches per outfitter.
- Continue cooperative agreements and partnerships in place.

Consequences of Implementing the Current Management (No Action) Alternative

On Natural Resources: Continuation of current management would result in bison, elk, and Texas longhorn herds receiving primary consideration in management. Maintaining the bison herd at 350 animals would allow the genetic integrity and variability of the herd to be maintained without introductions. Periodic introductions to the elk herd and longhorn exchanges between Wichita Mountains and Fort Niobrara NWRs would continue to be accomplished for genetic and health management purposes.

Little flexibility would continue in habitat management with emphasis placed on maintaining various habitats in their current condition and meeting the needs of the fenced animals. Bison, elk, and Texas longhorns will continue to consume and/or remove by trampling an estimated 8,400 AUMs of forage a year which is approximately 40 percent of total plant production, leaving approximately 60 percent of the vegetation for plant vigor and use by other wildlife (Waller *et al.* 1986, USDA Natural Resources Conservation Service 1996). Texas longhorns, exhibition herds, and government horses will be supplemented during the winter as conditions warrant with approximately 600 tons of prairie hay harvested from Valentine NWR.

Most of Fort Niobrara NWR's habitat management objectives would not be met due to numbers of bison, elk, and longhorns maintained on the Refuge. Refuge habitats rested one or more years would only total 4 percent of the acreage, approximately 30 percent of the Refuge would not be disturbed (no planned grazing or burning) during the native bird breeding season which is less than the desired level, and prescribed burning would have limited opportunity for use in invigorating native plants or control of cedar invasion.

Limited management efforts would be directed toward the Refuge's enabling legislative purpose of native birds. Numbers of birds (species and individuals) would probably remain unchanged because management actions necessary to improve habitat conditions for some of the native bird populations would not be possible. For example, prairie grouse populations would be present but at below optimal levels because residual grassland vegetation on many areas of the Refuge would not meet minimum habitat requirements. Various wildlife species associated with prairie dog habitat would remain at their current minimum population levels because the prairie dog town would be held to its current size of approximately 20 acres. Possible impacts of current management on the various vegetation communities, native bird populations, and other wildlife species would not be known because no additional biological monitoring would be accomplished. Woodland management would be limited and not adequately address concerns that some of the unique forest types are not regenerating, cedars are becoming dominant, and some woodlands are lacking in understory.

On Cultural and Paleontological Resources: Cultural and paleontological resources would have no additional protection or interpretation under current management. The historic barn, which currently houses the summer bat colony, would continue to deteriorate. The present level of interpretation provided by the existing visitor center would continue. No existing funds are available to improve interpretation of cultural and paleontological resources.

On Public Use: River floating under the current management alternative would continue with the number of outfitters maintained at 11 and no restriction on the number of launches per outfitter. This alternative, however, does not provide adequate measures to control growth, alleviate the crowding situation, nor does it protect the wilderness character and experience of this River section which ultimately could result in River floating through the Refuge being determined incompatible and shut down.

Other public use activities which include wildlife/wildland observation, environmental education/interpretation, and fishing will continue but not be improved or expanded.

On Socio-Economic Conditions: This alternative has the least initial consequences to the local area economy. Maintenance of bison herds and longhorn herds and their subsequent sale of excess animals would continue to contribute to Cherry County Revenue Sharing receipts.

The lack of controls on River use on the Refuge initially do not curtail the current growth occurring in the tourism industry of Cherry County. Ultimately, however, this increased growth, if not responsibly managed, could result in enough deterioration of wilderness quality on the Refuge, to force a closure of this use. Should that occur, serious economic consequences could occur for a number of businesses in the Valentine area.

This alternative maintains the other existing public uses. Revenues derived from out-of-town visitors to view animal herds in the exhibition habitat unit or use other facilities on the Refuge would remain unchanged.

Staffing and funding levels for the Refuge under this alternative would also remain unchanged. Expansion of staffs and increased efforts to expand the Refuge infrastructure under other alternatives being considered would not occur with this alternative. The multiplier effect of these changes through the economy would therefore also not occur.

Alternative B. Historical:

Manage Refuge habitats and wildlife to replicate pre-settlement conditions

- Maintain bison and elk herds at current management levels.
- Reintroduce Rocky Mountain bighorn sheep to the Refuge, and allow its population to grow to 50 animals.
- Texas longhorns would no longer be managed on the Refuge.
- Expand big game fence to enclose nearly the entire Refuge.
- Remove much of the interior fence to allow more natural grazing patterns.
- Increase prescribed burns to simulate historic fire intervals (Leenhouts 1995).
- Remove Cornell Dam and all tributary impoundments returning these areas to a natural state.
- Establish a second site for prairie dogs and allow it to expand to approximately 380 acres.
- Continue control of exotic/invading plants with beneficial insects, prescribed burns, and herbicides.
- Increase monitoring of the various habitats and wildlife populations.
- Increase management of cultural and paleontological resources.
- Continue current management opportunities for wildlife/wildland observation, photography, picnicking, hiking and fishing.
- Construct new visitor center to increase environmental education/interpretation.
- Periodic, limited, and strictly controlled bison, elk, and bighorn sheep public hunting opportunities to assist with population management.
- Reduce River floating by continuing the current restriction on number of outfitters and restricting the number of launches by all users to 1993 levels.
- Continue existing cooperative agreements and partnerships (except fish rearing in impounded tributaries as they would no longer be impounded). Seek additional partnerships.

Consequences of Implementing the Historical Alternative

On Natural Resources: This alternative would attempt to replicate historic ecological conditions to the extent possible on the Refuge. Bison and elk herds would be maintained at their current levels and the genetic integrity of the herds kept intact. Bighorn sheep would be reintroduced to the Refuge. Texas longhorns would no longer be managed on this Refuge. Removal of interior fence will enable bison and elk to establish more natural and historic distribution or habitat use patterns. Although highly mobile, bison show a strong preference for certain areas (influenced by plant growth stage, vegetation type and species, topography) during different seasons and have varying impacts. It is expected that bison will spend less time in the hills and more time on the more level and open areas. Fire, water, and salt will be used to distribute some of the use. Native prairie plant composition, height and density will be affected both positively and negatively by differing amounts and degrees of large ungulate grazing, fire, and rest. Large ungulate herds will consume and/or remove by trampling an estimated 5,610 AUMs of forage a year which is approximately 27 percent of total plant production, leaving approximately 73 percent of the vegetation for plant vigor and use by other wildlife (Waller *et al.* 1986, USDA Natural Resources Conservation Service 1996). At this level, forage consumption will be about 33 percent less than the current management regime which should result in increased standing vegetation (height and density) which should favor prairie grouse. Prairie dog acreage will increase providing additional habitat for various birds (i.e., burrowing owl, a species of management concern), mammals, reptiles, and insect species. Fire, a historic ecological force, will be used in various prescriptions to distribute bison grazing, invigorate grasslands, reduce cedar presence, and encourage regeneration of native tree species. Management efforts in the various woodland communities may have short-term negative effects on some species of native birds; however, the long-term effects will be positive after the tree, shrub, and herbaceous layers become more diverse and sustainable. The federally listed blowout penstemon would be established in suitable habitat which would enhance biological diversity. The Niobrara River would return to a more natural condition by removing Cornell Dam and tributary impoundments within the Refuge. This would allow increased flows into the River and upstream fish migrations would no longer be stopped. Braided sandy river habitat upstream of Cornell Dam would decrease, which would negatively affect the federally listed whooping crane, interior least tern, and piping plover migratory use. Overall, this alternative would result in a more natural mosaic of habitat conditions favoring most native bird species and thus allow the enabling purpose of the Refuge to be achieved.

On Cultural and Paleontological Resources: Management efforts towards cultural and paleontological resources under this alternative would increase with completion of a cultural resource survey and development of a management plan.

This alternative seeks to protect the historic barn from further degradation by supplying alternative bat habitat and preventing bats from re-entering the barn. Interpretation and education would also increase from current management.

On Public Use: The historic alternative returns the Niobrara River to a more natural condition by removing Cornell Dam. This would increase the length of the River on the Refuge that is suitable for canoeing and tubing.

This alternative would result in a reduction of River use to 1993 levels which would be approximately 74 percent of the current level. User fees initiated in 1998 would continue and be adjusted as necessary to assist with funding of law enforcement and maintenance of River recreation.

This alternative would seek to construct a new environmental education/visitor center which would allow increased interpretation of Refuge cultural, paleontological and natural resource programs. It would improve Refuge efforts to educate both school age groups and the general public about wildlife and the natural resources which exist in the Nebraska Sandhills.

This alternative would initiate a limited Refuge hunting program for large animals including bison, elk, deer, and bighorn sheep. The hunts would be primarily used to assist in control of excess animals, not to replace roundups and existing strategies for surplus animal removal.

On Socio-Economic Conditions: This alternative would reduce the amount of revenue sharing funds distributed to Cherry County as a result of a loss of annual longhorn cattle sales. Using 1997 levels as an example, it is estimated that the surplus longhorn cattle auction generated approximately $40,000 in Refuge receipts. Cherry County receives a percentage of these proceeds under the Refuge Revenue Sharing Act.

The use of prescribed fire may cause concern for local residents over the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that are necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

This alternative would reduce the number of people allowed to use the River through the Refuge. It is difficult to determine an actual economic impact from this reduction, because response of the public may be extremely varied. Some of the people that no longer use the River because of human congestion may return. Some of those denied use on the Refuge portion of the River may just put in further downstream or upstream, perhaps causing some additional costs to outfitters, but not a significant reduction in overall profits. Other more significant impacts would occur with those that simply canceled their trips to go elsewhere. The Refuge recognizes this cost and as a result is working with other agencies to provide other facilities for River use outside of the Refuge. This is important so that trip cancellations and opportunities to use the Scenic Niobrara River are present and viable for all concerned.

This alternative would increase Refuge expenditures on infrastructure. Infrastructure investment of this type would provide opportunity for local contractors to complete projects and thus add to the local economy.

Alternative C.
Intensive Wildlife Management:

Intensify and diversify management of Refuge habitats and wildlife

- Native birds would receive greater management emphasis.
- Manage approximately 225 bison, 50 elk, and 125 longhorns on the Refuge.
- Periodic use of Texas longhorns as a grazing tool on the Refuge.
- Reintroduce bighorn sheep and allow to expand to 50 animals.
- Establish second site for prairie dogs and allow to expand to approximately 380 acres.
- Retain boundary and interior fences in current configuration and habitat units managed under a deferred grazing rotation (reduced herd levels would increase management options).
- Increase prescribed fire and use to control cedars, invigorate native prairie, and encourage regeneration of woodlands.
- Increase use of fenced animals and rest as management tools.
- Maintain Cornell Dam and all functional tributary impoundments and restore breached impoundments based on their value to native birds and fishes.
- Increase control of exotic/invading plants with prescribed burns, grazing, beneficial insects and herbicides.
- Expand endangered and threatened species management.
- Increase monitoring of various habitats and wildlife populations.
- Increase protection and interpretation of cultural and paleontological resources.
- Expand wildland/wildlife observation, environmental education/interpretation, hiking, and horseback riding opportunities.
- Construct a new environmental education/visitor center.
- Periodic, limited, and strictly controlled elk and bighorn sheep public hunting opportunities to assist with population management.
- Decrease River floating through the Refuge after the Service determines acceptable peak use levels and management strategies that fairly distribute reduced floating opportunities among outfitters and the general public. During the interim, River use would be capped at 1998 levels and current restrictions on number of outfitters continued.
- Continue current cooperative agreements and partnerships and seek additional ones for bison management and possible acquisition of nondevelopment easements around the Refuge.

Consequences of Implementing the Intensive Wildlife Management Alternative

On Natural Resources: Management under this alternative would be very intense but would enable native bird needs to be considered in habitat management decisions as well as continue to provide habitat for bison, elk, and Texas longhorns. Fenced animal numbers would be reduced with the bison herd maintained at 225, elk at 50, and longhorns at 125. Bighorn sheep would be reintroduced to the Refuge. Maintaining lower herd numbers would require periodic introductions to meet genetic and health management needs of the fenced animals. Longhorn management would require increased cooperation with and management assistance from Wichita Mountains Wildlife Refuge. Habitat units would be managed similar to the current management program with herds moved under a deferred grazing rotation. Large ungulate herds will consume and/or remove by trampling an estimated 5,115 AUMs of forage a year which is approximately 24 percent of total plant production, leaving approximately 76 percent of the vegetation for plant vigor and use by other wildlife (Waller *et al.* 1986, USDA Natural Resources Conservation Service 1996). At this level, most habitat objectives should be met because forage consumption will be about 39 percent less than current management, acreage rested for at least one year would increase to 10 percent, and at least 50 percent of the Refuge would be rested during the native bird breeding season. An estimated 250 tons of prairie hay from Valentine NWR would be required for supplemental feeding of longhorns during the winter.

Prescribed fire would be used on at least 500 acres a year to reduce cedar invasion, renovate native prairie, and encourage regeneration of native tree species. It is expected that changes in grassland management will result in an increase in mid- and tallgrass abundance which will favor prairie grouse populations and other grassland birds.

Species diversity will be enhanced by allowing the black-tailed prairie dog colony to an estimated 400-acre size and by establishing endangered blowout penstemon.

Management efforts in the various woodland communities may have short-term negative effects on some species of native birds; however, the long-term effects will be positive after the tree, shrub, and herbaceous layers become more diverse and sustainable.

Biological monitoring efforts will increase providing better data to document habitat condition, wildlife populations, and evaluate management.

If the longhorns are used by the Valentine NWR habitat program described in Intensive Wildlife Management Alternative of the Valentine NWR CCP, habitat management flexibility on this Refuge would increase; however, costs (labor, equipment, facility maintenance) would increase.

On Cultural and Paleontological Resources: Management of cultural and paleontological resources will increase under this alternative. A Cultural and Paleontological Resource Management Plan will be developed and include a Refuge-wide cultural resource survey and paleontological resource inventory strategies. It will also include increased interpretation, education, and protection of cultural and paleontological resources of the Refuge.

This alternative seeks to protect the historic barn from further degradation by supplying alternative bat habitat and preventing bats from reentering the barn.

On Public Use: This alternative will initially stabilize River canoeing and tubing use by allowing only the existing 11 outfitters to launch on the Refuge and capping use on weekends during the summer at 1998 levels. The alternative provides for a research/ monitoring period of two years to determine River carrying capacities that will preserve wildlife use and wilderness character and values of solitude. It is expected that these final levels will be lower than use today. Ultimately, this alternative will reduce this use on the Refuge. The phased approach will allow River outfitters and recreationists time to adjust to the anticipated change. The Service will work with other entities to develop other take-in and take-out locations off Refuge to more equitably distribute use throughout the Scenic River corridor.

This alternative would seek to construct a new environmental education/visitor center which would allow increased interpretation of Refuge cultural, paleontological and natural resource programs. It would improve Refuge efforts to educate both school age groups and the general public about wildlife and the natural resources which exist in the Nebraska Sandhills.

This alternative would add an access point for hiking and horseback riding in the Wilderness Area, provide for one concessionaire to take people to view large animal herds, and provide a trail to a scenic Niobrara Canyon overlook on the Refuge.

This alternative would initiate a limited Refuge hunting program for elk, deer, and bighorn sheep. The hunts would be primarily used to assist in control of excess animals, not to replace roundups and existing strategies for excess animal removal.

On Socio-Economic Conditions: This alternative would have a small negative effect on Refuge Revenue Sharing to Cherry County. By reducing herd sizes of bison and longhorns, smaller numbers of excess animals would be sold, thus reducing Refuge receipts, and eventually County revenues. It is difficult to predict precise levels of reduction. The longhorn herd will be primarily a cow-calf herd with very small numbers of bulls and steers, so potential production and eventual animal turnover will be only slightly less than currently exists. Bison numbers will be reduced, and fewer bison will be at sales from this herd.

This alternative will have a phased in effect on River use and economic activity associated with that use. Initially, placing a ceiling on Refuge use will not cause reductions in business or tourism activity; it will maintain current levels. Growth of this use over 1998 levels will transfer into other areas of the River. This will expand opportunities for some businesses and landowners. Eventually, Refuge use will decrease. The phased in approach is being made because the Refuge is aware that this will cause loss of tourism and business activity associated with the Refuge. By delaying the reduction, River outfitters and area businesses are given the opportunity to adjust their businesses. Looking long-term, the stabilization of this use on the Refuge to acceptable levels will add security and stability to River outfitters. Without this, the specter of River use becoming incompatible on the Refuge is possible. If this occurred, it could result in a complete shutdown of River use on the Refuge.

This alternative would increase Refuge expenditures on infrastructure. Investment of this type would provide opportunity for local contractors to complete projects and thus add to the local economy. This alternative does not reduce the current work effort required by existing Refuge activities and adds a significant number of new work activities. To address that need, additional staff will be needed. Salary increases for Refuge staff add to the overall local economy.

The provision for a concessionaire to provide tours of the main bison herd would have a slight increase on Refuge receipts, and provide a local entrepreneur the opportunity to start a new business.

The use of prescribed fire may cause concern for local residents over the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the Refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that is necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Preferred (Modified Historical) Alternative

The selection of this alternative was based on an analysis of its environmental consequences, the requirement to manage for the Refuge's enabling legislated purpose of native birds, bison and elk, and the desire to implement a more natural/historic management regime

- Maintain bison herd at current population size and elk herd at 70-100.
- Rocky Mountain bighorn sheep could be reintroduced into the Refuge and allowed to expand to 50 animals if the Service determines that this action complies with the State's Bighorn Sheep Management Plan requirements.
- Texas longhorns would no longer be managed on the Refuge.
- Expand big game boundary fence to enclose nearly the entire Refuge and, where possible and feasible for habitat management goals, remove interior fence to manage grazing patterns.
- Implement management actions to improve health and sustainability of the various habitats and meet needs of various native bird populations and herds of bison, elk, and, if reintroduced, bighorn sheep.
- Increase and use prescribed fire to control cedars, invigorate native prairie, encourage regeneration of woodlands, and distribute bison and elk grazing.
- Maintain current condition of Niobrara River, tributaries, and associated riparian habitats while studying effects on these habitats by recreational River users.
- Continue control of invading and exotic plant species with beneficial insects, prescribed burning, and herbicides.
- Allow the expansion of the existing prairie dog colony to a manageable size.
- Accomplish sufficient biological monitoring to document diversity, population trends, health, and genetics.
- Increase protection and interpretation of cultural and paleontological resources.
- Expand opportunities for wildland/wildlife observation, environmental education/interpretation, hiking, and horseback riding.
- Seek funds to construct a new environmental education/visitor center and improve interpretive displays during the interim period.
- Periodic, limited, and strictly controlled elk and, if reintroduced and ethically sound, bighorn sheep public hunting opportunities to assist with herd management.
- Continue current fishing opportunities.
- Reduce River floating through the Refuge after the Service determines acceptable peak use levels and management strategies that fairly distribute reduced floating opportunities among outfitters and general public, and ensures compliance with statutes of the Wild and Scenic River and Wilderness Acts. In the interim, cap River use at 1998 levels and continue current restrictions on number of outfitters.
- Continue current cooperative agreements and partnerships and seek additional ones such as big game management, new environmental education/ visitor center, and possible acquisition of nondevelopment easements around the Refuge.

Consequences of Implementing the Modified Historical (Preferred) Alternative

On Natural Resources: The preferred alternative is a more natural, ecological approach to management of the Refuge's natural resources. Herds of bison and elk will continue to be managed at current populations.

Bighorn sheep might be reintroduced to the Refuge if, after deliberations with Nebraska's Game and Parks Commission, the Service finds this reintroduction to be feasible and in accordance with the State's future Bighorn Sheep Management Plan. Management strategies that maintain these animals as wild species to the extent possible will be employed. Animal introductions will be accomplished in accordance with recommendations from geneticists and population ecologists for genetic and health management purposes.

Texas longhorns will no longer be managed on the Refuge. As a consequence, more rest will be allowed on grasslands which will in turn favor development of adequate habitats for migratory and resident bird species.

Some interior fence will be removed enabling bison and elk to establish more natural and historic distribution or habitat use patterns. Although highly mobile, bison show a strong preference for certain areas (influenced by plant growth stage, vegetation type and species, as well as topography) during different seasons and have varying impacts. It is expected that bison will spend less time in the hills and more time on the more level and open areas. However, the Refuge will manage the movements and grazing patterns of bison with fencing as well as prescribed fire, salt supplementation, and water management.

Fire, a historic ecological force, will be used in various prescriptions to distribute bison grazing, invigorate grasslands, reduce cedar presence, and encourage regeneration of native tree species. Native prairie plant composition, height, and density will be affected both positively and negatively by differing amounts and degrees of large ungulate grazing, fire, and rest. Large ungulate herds will consume and/or remove by trampling an estimated 3,400 - 5,000 AUMs of forage a year which is approximately 16 to 28 percent of the total plant production, leaving approximately 72 to 84 percent of the vegetation for plant vigor and use by other wildlife (Waller *et al.* 1986, Natural Resources Conservation Service 1996). At these levels, forage consumption will be about 40 to 58 percent less than the current management regime which will increase management flexibility and result in increased standing vegetation (height and density) in the grasslands which will favor prairie grouse and other grassland birds.

Species diversity will increase with the establishment of the endangered blowout penstemon and an increase in prairie dog acreage. Prairie dogs and the burrow systems they create can provide important habitat for burrowing owls (a species of management concern), other birds, mammals, reptiles, and insects.

Prescribed burns in the various woody habitats may have short-term negative effects on native birds; however, the resulting regeneration and regrowth of the understory will be positive in the long-term.

Biological monitoring will be increased providing additional information on various vegetation communities and associated wildlife which will improve management strategies. This management should result in a more natural mosaic of sustainable habitats that meet the needs of native and migratory birds, mammals, and other wildlife.

On Cultural and Paleontological Resources: Management and subsequent protection of cultural and paleontological resources under this alternative will increase from the current management regime. Completion of a Refuge-wide cultural resource survey will meet legislated requirements and provide more comprehensive information to develop necessary protection/preservation strategies outlined in a cultural resource management plan. Cooperative agreements/ partnerships will be sought for completion of a paleontological survey. Interpretation and education will increase with the development of new interpretive displays utilizing information and specimens collected from previous work and new surveys. Future use of the historic barn will be determined with appropriate renovation measures completed after the bat colony is relocated.

On Public Use: This alternative will initially stabilize River canoeing and tubing use by allowing only the existing 11 outfitters to launch on the Refuge and capping use on weekends during the summer at 1998 levels. Two years of research/monitoring will be completed to determine River carrying capacities that will preserve wildlife habitat, wilderness character and values of solitude. It is expected that these final levels will be lower than use today. Ultimately, this alternative will reduce River use on the Refuge. The phased-in approach will allow River outfitters and recreationists time to adjust to the anticipated change. The Service will work with other entities to develop other take-in and take-out locations off Refuge to more equitably distribute use throughout the scenic River corridor.

Fishing opportunities will remain the same with fishing allowed on the Niobrara River and Minnichaduza Creek. Special youth fishing days will continue.

Hunting opportunities may be added to the public use program. Ethically sound, limited and strictly controlled elk and bighorn sheep (if introduced) hunts will be conducted periodically to remove surplus animals. It is expected that a high demand will exist for these limited opportunities.

Wildlife/wildland observation opportunities will be increased under this alternative with the establishment of an access point for hiking and horseback riding in the wilderness area and construction of a trail to a scenic overlook of the Niobrara Canyon. Also, this alternative enables a concessionaire to provide guided tours of the main herd of bison during the summer months.

Efforts to educate visitors (i.e., school groups, general public) would increase with implementation of this alternative through construction of a new environmental education/visitor center, and development of new displays, leaflets, and an outdoor education curriculum.

On Socio-Economic Conditions: This alternative will temporarily reduce Refuge revenue sharing to Cherry County. However, BLM payments to the County will make up for the difference and no net loss of income should occur (see explanation under Planning Issues section of the Plan). Under the existing formula in use, Cherry County would receive a portion of these receipts in revenue sharing.

This alternative will have a phased in effect on River use and economic activity associated with that use. Initially, placing a ceiling on Refuge use will not cause reductions in business or tourism activity; it will maintain current levels. Growth of this use over 1998 levels will transfer into other areas of the River. This will expand opportunities for some businesses and landowners. Eventually, Refuge use will decrease. The phased in approach is being made because the Refuge is aware that this will cause loss of tourism and business activity associated with the Refuge. By delaying the reduction, River outfitters and area businesses are given the opportunity to adjust their businesses. Looking long-term, the stabilization of this use on the Refuge to acceptable levels will add security and stability to River outfitters. Without this, the specter of River use becoming incompatible on the Refuge is possible. If this occurred, it could result in a complete shutdown of River use on the Refuge.

This alternative would increase Refuge expenditures on infrastructure. Infrastructure investment of these types would provide opportunity for local contractors to complete projects and thus add to the local economy.

This alternative does not reduce the current work effort required by existing Refuge activities and adds a significant number of new work activities. To address that need, the Refuge Complex will have to add staff. Salary increases for Refuge staff add to the overall local economy.

This alternative would have a positive effect through provision for a concessionaire to provide tours to the main herds. This will provide a local entrepreneur the opportunity to start a new business.

The Fort Niobrara/Valentine NWR Complex has long been an important contributor to the economy, recreation, and social atmosphere of Cherry County. Choices made by this alternative recognize that relationship, and the future Refuge activities and programs will continue to contribute in a positive way to the area and its people.

The use of prescribed fire may cause concern for local residents over the consequences of a prescribed burn that escapes containment and becomes a wildfire that burns off the refuge onto adjacent private land. The Refuge fire program will continue to minimize the risk of escapes by adhering to Service policy which requires that a Prescribed Burn Plan be approved before any prescribed burning takes place. The Burn Plan addresses the potential for escape and specifies the personnel and equipment needed, weather requirements, contingency plans, and many other aspects of the burn to ensure it stays within prescription. Additional personnel and equipment that is necessary to conduct prescribed burns will benefit the community by being available to assist local rural fire departments in the suppression of lightning and human caused wildfires that occur in the local area.

Appendix I. Summary of Public Involvement/Comments and Consultation/ Coordination

The National Environmental Policy Act requires all Federal agencies to examine the impacts upon the environment that their actions might have, to incorporate the best available environmental information, and the use of public participation in the planning and implementation of all actions. All public participation involved in the planning process that ultimately led to the development of this Plan was led and complied with the requirements of NEPA and sound stewardship of our Nation's natural resources.

Key steps in the development of this Plan, in its present form included: (1) preplanning; (2) identifying issues and developing a vision; (3) gathering information; (4) analyzing resource relationships; (5) developing alternatives and assessing environmental effects; (6) identifying a preferred alternative; (7) publishing the Draft Plan and soliciting public comments on the Draft Plan; (8) reviewing comments and effecting necessary and appropriate changes to the Draft CCP; and, (9) preparing this final Plan for approval by the Region 6 Regional Director, and finally (10) implementing the Plan.

In January, 1997 at a meeting at Fort Niobrara NWR, a core team was formed to prepare this Plan by following the Service's planning process and ensuring NEPA procedures for public involvement were followed. A review team was set up to provide guidance and direction to the core planning team. Public involvement began when a working group was organized to provide interchange of information between Service personnel, outside agencies, and interested stakeholders of the Refuge.

On March 20, 1997, in an effort by the Service to disseminate information and involve the public, an open house scoping session was held in the Cherry County Hall meeting room, Valentine, Nebraska. The open house provided participants an opportunity to learn about the Refuge's purposes, mission and goals, and issues currently facing management. People attending were provided the chance to speak with Service representatives and to share their comments.

On October 28, 1997, a meeting was held with Refuge permittees that are actively involved with canoeing and tubing on the Niobrara River through the Fort Niobrara NWR to discuss the issues of common interest on the future uses of this River. The Service scheduled this and other meetings to let people know what the Service was doing to manage the wildlife and habitats of the Refuge and to elicit their input on topics of interest to them.

The Draft CCP/EA was the first opportunity that these groups and the public had to review the entire planning effort and the Draft Plan. The Draft Plan was released on the last week of April 1999 and distributed in the first week of May 1999. A 60-day comment period was provided in which the Service requested information, comments, concerns, suggestions, and complaints from the public regarding the Draft CCP/EA. Because of the tremendous amount of public interest in this Plan, the Service extended the comment period for 45 more days, for a total of 105 days of public comment period. With this extension, the public comment period did not close until August 19, 1999.

The voluminous amount of comment letters and electronic mail communications were reviewed and summarized by category and subject. The summary of these comments was presented to the Service's core team and the regional directorate to help them in the preparation of the final Plan. Appropriate modifications were made to the Draft CCP/EA in accordance with scientifically based new information provided by the public during the comment period. The present Plan contains the changes made by the Service in accordance to the recommendations of the directorate and Service biologists and managers.

Public comments were received orally at meetings, scoping sessions, open house forums, via e-mail messages and in writing, both before and during the public comment period phase of the comprehensive conservation planning process. The following issues, concerns, and comments are a compilation and summary of the concerns expressed by the public.

For further information on Public Involvement and Issues, please see the Plan's section on Planning Process.

Appendix J. Mailing List

Federal Officials

- P U.S. Senator Bob Kerry
  Doug Durry, Jr. Leg. Ass't, Omaha, NE
- P U.S. Senator Charles Hagel
  Doug Lamude, Leg. Ass't., Omaha, NE
- P U.S. Representative Bill Barrett
  Mark Whitacre, Leg. Director, Grand Island, NE
  Greg Beam, Bill Barrett's Office

Federal Agencies

- P USDA/APHIS, Dr. Kathleen Akin, Lincoln, NE
- P USDA/Forest Service, Gregg Schenbeck
- P USDA/Forest Service, Don Carpenter
- P USDA/Natural Resource Conservation Service
- P US EPA, Denver, CO
- P USDI/Fish and Wildlife Service, Denver, CO; Albuquerque, NM; Portland, OR; Anchorage, AK; Fort Snelling, MN; Atlanta, GA; Hadley, MA; Washington, D.C.
- P USDI/Fish and Wildlife Service, Lacreek NWR, Martin, SD; National Bison Range, Moiese, MT; Witchita Mountains NWR, Indiahoma, OK; Crescent Lake NWR, Scottsbluff, NE; Rainwater Basin NWR, Kearney, NE; Benton Lake NWR, Black Eagle, MT; Ecological Services, Grand Island, NE
- P USDI/ NPS, Niobrara/Missouri Natl. Scenic River, Paul Hedren
- P USGS/BRD, Rick Schroeder, Fort Collins, CO
- P USGS/National Wildlife Health Center, Dr. Thomas Raffe, Bozeman, MT

State Officials

- P Governor Mike Johanns, Lincoln, NE
- P Senator Jim Jones, Lincoln, NE

State Agencies

- P Department of Agriculture, Chadron, NE
- P Middle Niobrara NRD, Robert F. Hilske
- P NE Game and Parks Commissino, Rex Amack
- P NE Game and Parks Commission, Bill Vodehnal
- P NE Game and Parks Commission, Joel Klammer
- P NE Game and Parks, Valentine Fish Hatchery
- P Smith Falls State Park, Sparks, NE
- P State Historic Preservation Officer, Lincoln, NE

City/County/Local Governments

- P Melvin Christensen, Cherry County
- P Dean Jacobs, Valentine Chamber of Commerce
- P Rick Medena, City Manager-Valentine
- P Valentine City Council
- P Brown County Commissioners
- P Keya Paha County Commissioners
- P Cherry County Commissioners
- P Valentine Niobrara Council

Libraries

- P Valentine Public Library
- P Ainsworth Public Library

Organizations

- P Audubon Society, Dave Sands
- P Audubon Society, Gretchen Muller, Washington, D.C.
- P Central Mountain and Plains Section of the Wildlife Society:
  Jeff Nichols, Ogallala, NE
  Dr. Pat Reece, Scottsbluff, NE
  Tom Rider, Lander, WY
  Dr. Terry Riley, Aberdeen, SD
- P Cherry County Pheasants Forever, Valentine, NE
- P Cooperative Alliance for Refuge Enhancement (CARE), Washington, D.C.
- P Defenders of Wildlife, Washington, D.C.
- P Fort Niobrara Natural History Association, Valentine, NE
- P Great Plains Buffalo Association
- P Intertribal Bison Cooperative, Tony Willman
- P Midcontinent Eco. Science Center, Fritz Knopf
- P National Bison Association
- P National Rifle Association, Fairfax, VA
- P National Wildlife Refuge Association, Washington, D.C.
- P National Wildlife Refuge Association, Colorado Springs, CO
- P The Nature Conservancy, Al Steuter
- P Nebraska Branch for Holistic Management
- P Nebraska Cattleman, Troy Bredenkamp
- P Nebraska Chapter of the American Fisheries Society, Lincoln, NE
- P Nebraska Chapter TWS, Carl Wolfe
- P Nebraska State Buffalo Assoc, Dave Hutchinson
- P Nebraska State Buffalo Assoc, Larry Mason
- P Nebraska Wildlife Federation, Lincoln, NE
- P Niobrara Canoe Outfitters Assoc., Roy Breuklander
- P Niobrara Council:
  Nola Moosman, Recreation Rep, Valentine, NE
  Dwight Sawle, Forestry Rep, Springview, NE
  Brad Arrowsmith, Keya Paha, Bassett, NE
  Harlin Welch, Brown County, Ainsworth, NE
  Paul L. Hedren, National Park Service, O'Neill, NE
  Tom Higgins, Newport, NE
  Warren Arganbright, Valentine, NE
  Jim Van Winkle, Cherry County Commissioner, Valentine, NE
  Bill Mulligan, Middle Niobrara NRD, Valentine, NE
  Jim Harlin, Rock County, Bassett, NE
  Betty Palmer, Keya Paha County Commissioner, Springview, NE
  Lloyd Alderman, Rock County Commissioner, Newport, NE
  Larry Voecks, Nebraska Game and Parks, Norfolk, NE
  Betty Hermsmeyer, Brown County Commissioner, Ainsworth, NE
- P Rocky Mountain Elk Foundation, Pratt, KS
- P Sandhills Task Force, Kearney, NE
- P Southern Missouri Ascertainment, Puxico, MO
- P Texas Longhorn Breeders Assoc, Tim Miller
- P Texas Longhorn Trails, Carolyn Hunter
- P Wilderness Society, Washington, D.C.
- P Wilderness Watch, Missoula, MT

Newspapers/Radio

P Ainsworth Star-Journal, Ainsworth, NE
P Associated Press, Omaha, NE
P The Chadron Record, Chadron, NE
P Grand Island Daily Independent, Grand Island, NE
P Journal-Star Printing, Lincoln, NE
P The Kearney Daily Hub, Kearney, NE
P KVSH Radio, Valentine, NE
P Lincoln Star, Lincoln, NE
P The Midland News, Valentine, NE
P Nebraska Public Radio, Lincoln, NE
P The Norfolk Daily News, Norfolk, NE
P North Platte Telegraph, North Platte, NE
P Omaha-World Herald, Omaha, NE
P The Outdoorsmen, Hartington, NE
P Rock County Leader, Bassett, NE
P Springview Herald, Springview, NE
P United Press International, Omaha, NE

Universities/Colleges

P Dr. Tom Bragg, Department of Biology, UNO
P Dr. James Derr, Dept. of Veterinary Pathobiology, Texas A&M
P Ken Higgins, SD Coop Unit, SDSU, Brookings
P Mark Morgan, KSU, Dept of Horticulture, Forestry, & Recreation, Manhattan, KS
P Dr. James Shaw, Dept. of Zoology, Oklahoma State University
P Dr. Curtis Strobeck, Dept. of Biological Sciences, University of Alberta
P Dr. James Stubbendieck, Dept. of Agronomy, University of NE
P Dr. Joe Templeton, Dept. of Veterinary Pathobiology, Texas A&M

Individuals

Adamson, Mark
Allen, Dave
Badura, Laurel
Ballard, Doug
Ballard, Richard and Jeri
Bancroft, Cal
Barnard, Dick
Barragy, T.J.
Bartling, Steve
Bennett, Dennis
Bennett, Shane
Birger, Dick
Birger, N.H.
Blome, George
Bredthauer, Marty
Breuklander, Steve
Brown, Greg
Bullock, Ronald
Burge, Mike
Burge, Russell
Carter, Wayne
Christiansen, Lou
Churchill, Dean
Cloutier, Terry
Colburn, Dean
Cole, Pat
Connor, Keith and Sally
Cook, Georgia
Cornelius, Bob
Coyle, Joseph F.
Crawford, Mary
Custard, Rick
Damrow, Roger
Davenport, John
Davis, Debbie
Davis, John
DeOrnellas, George
Ducey, Jim
Ellis, Bob
Equhoff, Richard
Fields, Robert
Fishell, Ralph
Fitch, Ken
Frick, Carl
Gallino, Orville
Gass, Bob
Geddie, John
Geib, Sandy
Geiger, Steve
Getusan, Bob
Gillespie, Jerry
Gordon, Troy
Grabher, Bob
Graff, Martin
Graham, Doug
Graham, Twyla
Graves, Leroy
Grooms, Jerry
Gudden, Andrew
Gudgel, Duane
Gunnty, Kent
Gustafson, Bob
Hanna, Jeff
Hanson, John
Hartman, Darrel
Heathershaw, Pat
Hellmund, Paul Cawood
Henry, Dale
Hickerson, Hal
Higgins, Tom
Hoehne, Paul
Hollenbeck, Rex
Hollopeter, Willard
Hunsaker, Josh
Hunter, Carolyn
Huscher, Nora
Hutchinson, Dave
Ingle, Kay
Isom, Stephen
Jackson, Bob
Jarvi, Guy
Jeffers, Dick
Johnson, Dale
Jones, Doug
Kasselder, Charles
Keenan, Mike
Kerr, Steve
Kramer, Kaye
Kuck, Lance
Kuhre, Beryl
Kutilek, William R.
Lee, Jim
Leeper, Rick
Lintz, Tom
Long, Larry
Lord, Elver
Lorenzen, Robin
Maginnis, Berdine
Maginnis, Monty
Marlott, Kenneth
Mathey, Kevin
Mason, Larry
Mattson, Dr. Neil
May, Maynard
McPeak, Janet
Mecure, Randy
Mecure, Rich
Metschke, Corey
Millard, Scott
Miller, Randy
Muller, Gretchen
Muller, Roxann
Murphy, John
Nagorski, Rod
Nelson, Leonard
Nichols, Meachelle
Nielsen, Einar
O'Kief, Mike
Olsen, Dr. Steven
Olson, Ole
Parks, Rueben
Penlerick, LeRoy
Perrett, Brian
Peters, Bill
Peterson, Chad
Peterson, Georgia
Peterson, Kent
Peterson, Sheila
Pierce, Roger
Price, Dave
Reimann, K.F.
Riley, Terry
Robart, Kevin
Robbins, Jr., Dick
Roberts, Jerome
Rogers, Ron
Rokita, Thomas J.
Rosfeld, Otto
Roth, Robin
Rupe, John
Rutten, Ben
Ryschon, Jerry
Salyer, Jim
Scheffler, Delbert
Schneider, Julie
Schroeder, Mr. & Mrs. Don
Searle, Charles
Segar, John
Sharp, Wayne
Sherwood, Greg
Simmons, Carl
Simmons, Jean
Smiley, Jay
Smith, Neil
Sokol, Dick
Soper, Don
Sovereign, Ron
Stack, Taylor & Linda
Sterry, Rich
Stoeger, Doug
Stokes, Alan
Streeter, Bob
Stroup, William
Stump, Dr. Bill
Suhr, Jenny
Tegtmeier, Jim
Terhaar, Dennis
Thortall, Vic
Tibbs, Raymond
Toman, Tom
Torgerson
Turner, Bill
Turner, Lawrence
VanDerPloegh, Marvin
Vineyard, Brian
Vosicky, George
Vyain, Dave
Walkling, Al
Waln, Bill
Walton, Judy
Wescott, Mike
Witthuhn, John
Young, Cork and Mary
Young, Loren
Young, Mike

Appendix K.
List of Preparers

This document is a compilation of efforts by several Service people. The Core Planning Team consisted of Jon Kauffeld (Regional Office Refuge Planner) who was later replaced by Bernardo Garza (Regional Office Refuge Planner), Kathy McPeak (Wildlife Biologist), Mark Lindvall (Refuge Operations Specialist), Jim Sellers (Refuge Operations Specialist), Jim Kelton (Fire Management Officer), Len McDaniel (Wildlife Biologist), and Doug Staller (Regional Public Use Specialist) and was responsible for gathering and preparing information.

Royce Huber (Refuge Manager), Wayne King (Regional Wildlife Biologist), Bob Nagel (Refuge Supervisor), Larry Shanks (Refuge Supervisor), and Carol Taylor (Regional Office Planning Supervisor) provided guidance and assisted with review and editing.

Rhoda Lewis (Regional Archaeologist), Stephanie Jones (Regional Nongame Bird Biologist), and Cheryl Willis (Water Resource Specialist) provided technical expertise. Jaymee Fojtik (GIS Coordinator) prepared the various maps.

Barb Shupe (Regional Writer/Editor) compiled the document and completed all desktop publishing aspects of the document.

Appendix L.
Intra-Service Section 7 Consultation

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Persons: Royce Huber
José Bernardo Garza

Telephone Numbers: (402) 376-3789
(303) 236-8145 x 672

Date: September 28, 1999

I. Region: 6

II. Service Activity (Program): Refuges & Wildlife, Fort Niobrara National Wildlife Refuge

III. Pertinent Species and Habitat:

A. Listed species and/or their critical habitat within the action area:

bald eagle, *Haliaeetus leucocephalus* (listed threatened)

whooping crane, *Grus americana* (listed endangered)

piping plover, *Charadrius melodus* (listed threatened)

least tern, *Sterna antillarum* (listed endangered)

American burying beetle, *Nicrophorus americanus* (listed endangered)

blowout penstemon, *Penstemon haydenii* (listed endangered)

There is no federally designated critical habitat on the action area (Fort Niobrara NWR)

B. Proposed species and/or proposed critical habitat within the action area: None

C. Candidate species within the action area:

swift fox, *Vulpes velox*

D. Include species/habitat occurrence on a map: see attachment

IV Geographic area or station name and action:

Station: Fort Niobrara National Wildlife Refuge (Sandhills region in north-central Nebraska)
Action: Issuance and Implementation of the Comprehensive Conservation Plan for Fort Niobrara NWR

V Location (map attached):

C. Ecoregion Number and Name: Fort Niobrara NWR is located within the Service's Region 6, Mountain-Prairie Region, and specifically in the Platte/Kansas Rivers Ecosystem

D. County and State: Cherry County, Nebraska

E. Section, township, and range:

Fort Niobrara NWR includes parts or all of Sections 5, 6, 7 & 8, Township 33 North, Range 26 West; Sections 1, 2, 3, 4, 11 & 12, Township 33 North, Range 26 West; Sections 7, 8, 17, 18, 19, 20, 29, 30, 31 & 32, Township 34 North, Range 26 West; and Sections 12, 13, 14, 22, 23, 24, 25, 26, 27, 33, 34, 35 & 36, Township 34 North, Range 27 West.

F. Distance & direction to nearest town: Fort Niobrara NWR is 5 miles east of Valentine, NE

G. Species/habitat occurrence:

bald eagle:	migrates through the Refuge and some roost in mature trees along the riparian corridor of the Niobrara River that runs through the Refuge; average wintering eagles go from five to seven, with a high of fifteen eagles
whooping crane:	rare visitor to the Refuge but has been documented on the shallow braided Niobrara River habitat above Cornell Dam within Refuge boundaries during spring and/or fall migrations
piping plover:	rare visitor to the Refuge but has been documented on the shallow braided Niobrara River habitat above Cornell Dam within Refuge boundaries during spring and/or fall migrations
least tern:	rare visitor to the Refuge but has been documented on the shallow braided Niobrara River habitat above Cornell Dam within Refuge boundaries during spring and/or fall migrations
American burying beetle:	the refuge is within the historical range of this listed species but no specimen of this beetle has ever been documented on lands currently occupied by the Refuge
blowout penstemon:	the refuge is within the historical range of this listed species but no specimen of this plant has ever been documented on lands currently occupied by the Refuge
swift fox:	the refuge is within the historical range of this candidate species but no specimen of this mammal has ever been documented on lands currently occupied by the Refuge

VI Description of proposed action

The proposed action is the development and implementation of a Comprehensive Conservation Plan for Fort Niobrara NWR. Implementation of this Plan comprises implementation of all actions and activities to achieve the stated goals contained in the Plan that will ultimately lead to the fulfilment of the purposes for which Congress established Fort Niobrara NWR.

VII Determination of effects:

A. Explanation of effects of the action on species and critical habitats in items III. A, B & C

bald eagle:	the proposed action will have a beneficial effect on this threatened species as the eagle's wintering habitat along the Niobrara River will be protected and the step-down management plans to be prepared by the Refuge will ensure protection from harassment from Refuge visitors
whooping crane:	this species is a rare visitor to the Refuge during migration. The Plan calls for preservation of Cornell dam, which creates the habitat conducive to this species. Thus, implementation of the Plan will have a beneficial effect on the habitats utilized by this species and, hence, on this endangered species
piping plover:	this species is a rare visitor to the Refuge during migration. The Plan calls for preservation of Cornell dam, which creates the habitat conducive to this species. Thus, implementation of the Plan will have a beneficial effect on the habitats utilized by this species and, hence, on this endangered species
least tern:	this species is a rare visitor to the Refuge during migration. The Plan calls for preservation of Cornell dam, which creates the habitat conducive to this species. Thus, implementation of the Plan will have a beneficial effect on the habitats utilized by this species and, hence, on this endangered species
American burying beetle:	while the Refuge is within the historical range of this endangered insect no specimen of this species has ever been found on the Refuge. The Plan calls for surveys to determine if the species is present at the Refuge, and if so, the Plan further calls for implementation of appropriate management strategies that would conserve beetle populations in the Refuge. Thus, implementation of this Plan will have a beneficial effect on this endangered insect species
blowout penstemon:	while the Refuge is within the historical range of this endangered plant no specimen of this species has ever been found on the Refuge. The Plan calls for surveys to determine if the Refuge contains adequate habitats for this species, and if so,

	the Plan further calls for introduction and protection of this listed species in at least two sites in the Refuge. Thus, implementation of this Plan will have a beneficial effect on this endangered plant species
swift fox:	while the Refuge is within the historical range of this candidate species no specimen of this mammal has ever been documented on lands currently occupied by the Refuge. Nevertheless, none of the actions proposed in the Plan will adversely impact the species or its habitats on the Refuge. The Refuge will participate in actions to determine the species' presence or absence should the species be listed under the Endangered Species Act

There is no federally designated critical habitat on the action area (Fort Niobrara NWR) and the Plan does not find a need to propose designating critical habitat within the Refuge

A. Explanation of actions to be implemented to reduce adverse effects: Not Applicable

VIII Effect determination and response requested: [* = optional]

A. Listed species/designated critical habitat:

Determination	Response requested
no effect/no adverse modification (species: bald eagle, whooping crane, piping plover, least tern American burying beetle, blowout penstemon)	_____ *Concurrence
may affect, but is not likely to adversely affect species/adversely modify critical habitat (species: NONE)	_____ Concurrence
may affect, and is likely to adversely affect species /adversely modify critical habitat (species: NONE)	_____ Formal Consultation

B. Proposed species/proposed critical habitat:

Determination	Response requested
no effect on proposed species/no adverse modification of proposed critical habitat (species: NONE)	_____ *Concurrence

Is likely to jeopardize proposed species/ adversely modify proposed critical habitat (species: NONE) _____ Conference

C. Candidate Species:

Determination	Response requested
no effect (species: swift fox)	✓ *Concurrence
is likely to jeopardize candidate species (species: NONE)	_____ Conference

Royce Huber, Refuge Manager,
Fort Niobrara/Valentine Refuge Complex

9/28/99
Date

IX Reviewing ESO Evaluation:

A. Concurrence ✓ Nonconcurrence _____

B. Formal Consultation required: ___

C. Conference required: ___

D. Informal conference required: ___

E. Remarks:

Steve Anschutz
Nebraska Field Supervisor, U.S. Fish & Wildlife Service

9/25/99
Date