National Park Service
U.S. Department of the Interior

Niobrara National Scenic River
Nebraska

Niobrara National Scenic River • Nebraska

Draft General Management Plan/Environmental Impact Statement



Niobrara National Scenic River

Brown, Cherry, Keya Paha and Rock Counties, Nebraska

Draft General Management Plan
Environmental Impact Statement

This *Draft Niobrara National Scenic River General Management Plan and Environmental Impact Statement* is responsive to two federal courts ordering the National Park Service to prepare a general management plan and environmental impact statement that complies with the Wild and Scenic Rivers Act and National Environmental Policy Act, and to prepare boundaries that will protect and enhance the outstandingly remarkable values of the Niobrara National Scenic River. Accordingly, this draft plan presents three boundary alternatives and three alternatives for managing the Scenic River. It also analyzes the environmental consequences of implementing any of the alternatives.

Alternatives for managing the Scenic River include a no action option (Alternative A), describing a continuation of existing conditions with no National Park Service action and developed as a baseline for comparison with two action alternatives; a preferred alternative (Alternative B), developing a vision for cooperative management of the Scenic River wherein the National Park Service would provide stewardship through an array of federal, state, and local partnerships to achieve management outcomes inherent in the operation of a unit of the National Park System on a landscape that would remain largely privately owned; and Alternative C, developing a vision of independent National Park Service management on a landscape that would, in time, be federally owned within the limits permitted by the Wild and Scenic Rivers Act.

The boundary alternatives in this plan were developed separate from the management alternatives, and any boundary could be matched with any management alternative. The interim boundary set by the Wild and Scenic Rivers Act (Boundary Alternative 1 in the plan) is an inflexible one-quarter-mile from the ordinary high water mark on each side of the river and includes 24,320 acres of land. Boundary Alternative 2 favors the protection of the Niobrara's scenic and paleontological resources, while incorporating but not always favoring its inherent recreational, geologic, and fish and wildlife values. Boundary Alternative 2 includes 22,472 acres. The preferred boundary (Boundary Alternative 3) was drawn to protect as equitably as possible the Scenic River's outstandingly remarkable scenic, recreational, geologic, fish and wildlife, and paleontological values, and includes 23,074 acres.

For additional information or to comment on this plan, contact the park superintendent at:

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U.S. Department of the Interior
National Park Service

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Contents

The Niobrara: A National Treasure *1*

Purpose of and Need for the Plan *3*
- Legislative Background *3*
- Purpose of the Plan *3*
- The Niobrara Lawsuits *3*
- The Planning Process *4*
- Summary of Public Involvement and Issues Identified *7*
  - Landownership Issues *8*
  - Resource Protection Issues *8*
  - Fishing, Hunting, and Trapping Issues *8*
  - Visitor Protection Issues *8*
  - Terminology Issue *8*
  - Management Alternative Issues *8*
- Consultation with Other Agencies and Issues Identified *8*
  - Visitor Information, Education, Interpretation Issues *9*
  - Facility/Infrastructure Issues *9*
  - Recreational Use Issues *9*
  - Resource Management Issues *9*
  - Boundary Issues *9*
- Related Plans and Directives *9*
- A Note on Terminology *11*

Foundations of the Plan *15*
- Purposes of Scenic River Designation *15*
- Significance of Area Features *15*
- Desired Future Conditions *16*
  - Landscape Preservation *16*
  - Visitor Management *16*
  - Resource Management *16*
- Carrying Capacity *17*
  - The VERP Process *17*
  - Indicators and Standards *17*
  - Monitoring *17*
  - The VERP Framework *18*

Niobrara National Scenic River Boundary *19*
- Introduction *19*
- Resource Assessment Process *19*
- Discussion of Outstandingly Remarkable Values *20*
  1. Scenic Value *20*
  2. Recreational Value *22*
  3. Geologic Value *27*
  4. Fish and Wildlife Value *33*
  5. Historic Value *34*
  6. Cultural Value *35*
  7. Other Similar Values (Paleontology) *35*
- Boundary Alternatives *36*
- Boundary Alternative 1 *36*

Boundary Alternative 2 *36*
Boundary Alternative 3 (Preferred Alternative) *41*

Management Alternatives *55*
Introduction *55*
Existing Authorities, Laws, and Programs *55*
Water Resource Authorities *55*
County and Niobrara Council Zoning Authorities *56*
Federal Land Acquisition Authority and Limits *57*
Jurisdiction and Law Enforcement *57*
Fort Niobrara National Wildlife Refuge *58*
Threatened and Endangered Species *58*
State and Federal Conservation Programs on Private Land *58*

Management Alternative A: (No Action Alternative) *59*
Management Concept *59*
Niobrara Council *59*
Staffing / Funding / Cost *59*
Land Protection / Acquisition *60*
Resource Management *60*
Visitor Information and Interpretation *60*
Law Enforcement and Emergency Services *60*
Visitor Use and Outfitter Management *60*
Public Facilities / Maintenance *61*

Management Alternative B: National Park Service Manages With Assistance from Partners (Preferred Alternative) *63*
Management Concept *63*
Staffing / Funding / Costs *63*
Land Protection / Acquisition / Cost *64*
Resource Management *65*
Fire Management *65*
Forest Management *66*
Prairieland Management *66*
Fossil Resource Protection *66*
Cornell Dam *66*
Non-proliferation of River Crossings *66*
Wireless Telecommunications Facilities *67*
Visitor Information and Interpretation *67*
Law Enforcement and Emergency Services *67*
Visitor Use and Outfitter Management *67*
Public Facilities *68*
Research and Education Center *69*
Development Costs *69*
Maintenance *69*
Roads *69*

Management Alternative C: National Park Service Manages Independently *71*
Management Concept *71*
Staffing / Funding / Cost *71*
Land Protection / Acquisition / Cost *71*
Resource Management *72*
Fire Management *72*
Forest Management *72*
Prairieland Management *73*
Fossil Resource Protection *73*
Cornell Dam *73*
Non-proliferation of River Crossings *73*
Wireless Telecommunication Facilities *73*
Visitor Information and Interpretation *73*
Law Enforcement and Emergency Services *74*
Visitor Use and Outfitter Management *74*
Public Facilities *75*
Research and Education Center *75*
Development Costs *76*
Maintenance *76*
Roads *76*

Environmentally Preferable Alternative *77*

Affected Environment *85*
Scope *85*
Location and Access *85*
Natural Environment *85*
Weather *85*
Air Quality *85*
Topography *85*
Water Resources *85*
Floodplains and Wetlands *86*
Water Quality *86*
Soils *88*
Geology *88*
Paleontology *89*
Mineral Resources *90*
Vegetation *90*
Fish *92*
Mammals *92*
Birds *93*
Invertebrates *94*
Reptiles *94*
Threatened and Endangered Species *94*
Cultural Environment *95*
American Indian Use *95*
Exploration *95*
Military History *96*

Settlement *96*
Bridges *96*
Cornell Dam *97*
Cultural Landscapes *97*
Recreational Resources *97*
Socioeconomic Environment *97*
Visitor Use *97*
Demographics *100*
Employment *100*
Landownership *100*
Federal Land *100*
State and Local Government Land *101*
Private Land *101*
Land Use *101*
Land Protection Status *101*
Public Land *101*
Private Nonprofit Land *101*

Environmental Consequences of the Alternatives *103*
Impact Topics *103*
Selection Criteria *103*
Impact Analysis *103*
Cumulative Impacts *104*
Methodology for Analyzing Impacts *104*
Cultural Resources *104*
Paleontological Resources *104*
Natural Resources *104*
Air Quality *104*
Water Quality *105*
Floodplains and Wetlands *105*
Soils *106*
Vegetation *106*
Wildlife *106*
Threatened or Endangered Species *107*
Scenic Resources *108*
Visitor Information, Education, and Experience *108*
Local Economy *109*
Local Government *109*

Impacts of Management Alternative A:
Continue Existing Conditions (No Service Action Alternative) *111*
Cultural Resources *111*
Paleontological Resources *111*
Natural Resources *112*
Air Quality *112*
Water Quality and Aquatic Species *112*
Floodplains and Wetlands *113*
Soil and Vegetation *113*
Wildlife *114*
Threatened or Endangered Species *114*

Scenic Resources *115*
Visitor Information, Education, and Experience *115*
Local Economy *116*
Landownership *117*
Local Governments *118*

Impacts of Management Alternative B: National Park Service Manages with Assistance from Partners (Preferred Alternative) *119*
Cultural Resources *119*
Paleontological Resources *120*
Natural Resources *121*
Air Quality *121*
Water Quality and Aquatic Species *121*
Floodplains and Wetlands *122*
Soil and Vegetation *123*
Wildlife *123*
Threatened or Endangered Species *124*
Scenic Resources *124*
Visitor Information, Education, and Experience *124*
Local Economy *126*
Landownership *126*
Local Governments *127*

Impacts of Management Alternative C: National Park Service Manages Independently *129*
Cultural Resources *129*
Paleontological Resources *129*
Natural Resources *130*
Air Quality *130*
Water Quality and Aquatic Species *131*
Floodplains and Wetlands *132*
Soil and Vegetation *132*
Wildlife *133*
Threatened and Endangered Species *133*
Scenic Resources *134*
Visitor Information, Education, and Experience *134*
Local Economy *135*
Landownership *136*
Local Governments *136*

Other Required Impact Topics *139*
Unavoidable Adverse Impacts *139*
Irreversible and Irretrievable Commitments of Resources *139*
Cultural Resources *139*
Paleontological Resources *139*
Air Quality *139*
Water Quality and Aquatic Species *139*
Floodplains and Wetlands *139*
Soil *139*
Vegetation *140*
Wildlife *140*
Threatened or Endangered Species *140*

Scenic Resources *140*
Visitor Information, Education, and Experience *140*
Local Economy *140*
Landownership *140*
Local Governments *140*
Relationship of Short-term Uses of the Environment and Long-term Productivity *140*
Impairment *141*

Environmental Consequences of the Boundary Alternatives *143*
Exclusions *143*
Cultural Resources *143*
Paleontological Resources *143*
Natural Resources *144*
Water Quality and Aquatic Species *144*
Floodplains and Wetlands *144*
Soil and Vegetation *144*
Wildlife *144*
Threatened or Endangered Species *144*
Scenic Resources *145*
Landownership *145*
Cumulative Impacts *145*
Conclusion *145*
Environmentally Preferable Boundary Alternative *146*

Consultation and Coordination *157*
Niobrara Scenic River Advisory Commission *157*
Niobrara Council *157*
Agencies and Organizations *157*

Appendices *159*
A. Niobrara Legislation (Public Law 102-50) *159*
B. Selected Legislation *161*
C. Nebraska Natural Heritage Program Niobrara Region Sensitive Species *163*
D. Land Protection Cost Considerations *167*
E. Recommended Development Standards *169*
F. Screening Examples *171*
G. Niobrara Council Legislation *1173*
H. Cost Comparison of Alternatives *177*

Glossary *179*

Bibliography *181*

Preparers and Contributors *185*

Maps

Map 1- Region map *5*
Map 2- Existing Conditions *13*
Map 3- Scenic ORV (West Half of River) *23*
Map 4- Scenic ORV (East Half of River) *25*
Map 5- Recreational ORV (West Half of River) *29*
Map 6- Recreational ORV (East Half of River) *31*
Map 7- Paleontological ORV (West Half of River) *37*
Map 8- Paleontological ORV (East Half of River) *39*
Map 9- Boundary Alternative 1 (West Half of River) *43*
Map 10- Boundary Alternative 1 (East Half of River) *45*
Map 11- Boundary Alternative 2 (West Half of River) *47*
Map 12- Boundary Alternative 2 (East Half of River) *49*
Map 13- Boundary Alternative 3 (West Half of River) *51*
Map 14- Boundary Alternative 3 (East Half of River) *53*

Tables

Table 1: Management Alternatives *78*
Table 2: Comparison of Impacts *147*

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The Niobrara: A National Treasure



Once traversed by trade routes of the Sioux and Pawnee, and land of the Ponca and Brule Sioux, the central Niobrara River seems to flow back in geological time, a time when huge ice sheets advanced and retreated during the Pleistocene changing the land and climate for millennia. As the ice melted northward, the earth again was warm and prairie spread once more across the plains. Wrote Mari Sandoz in *Love Song to the Plains:* "Half of this region was the old Nebraska Territory that lay like a golden hackberry leaf in the sun, a giant curling tilted leaf. The veins of it were the long streams rising out near the mountains and flowing eastward to the Big Muddy, the wild Missouri." One of these veins was the Niobrara, its name meaning "spreading waters" from the Omaha and Ponca whose ancestors left their stone tools and pottery in the river valley some 7,500 years ago.

Flowing from west to east, a "mountain stream in a prairie state," the Niobrara represents a time machine running in reverse. Its banks harbor unique and grand plant communities: paper birch, ponderosa pine, hybrid aspen that are remnants of their ancient ancestors of the Pleistocene Epoch when boreal forest and northern tundra scratched for survival along the glacial margins. These plants once kept company with musk oxen, wolves, and even the woolly mammoth.

Largely undisturbed, the Niobrara corridor is often taken for granted. It stretches through sparsely populated ranch lands, its waters are not diverted for agriculture, and it supports no large municipal well fields, while even the sacred sandhill cranes fly by in search of the shallows of the central Platte. Yet, one need not be a biologist to recognize that this pristine river canyon has extraordinary aesthetic, archaeological, and biological value. The number of diverse plant communities interacting here is overwhelming, including sandhills mixed-grass prairie from the south, tallgrass prairie from the east on the river bottoms, mixed-grass prairie on clayey soils to the north, and the rich associations of woody plants separated by their responses to environmental factors, such as soil moisture, exposure, fire, and wind.

This special stretch of the Niobrara represents a unique biological and cultural crossroads. The northwestern-most extension of temperate deciduous forest follows the south canyon walls and slopes, while the north bluff supports a western ponderosa pine forest at the eastern limit of its range. Exploring the south slope of the river canyon more closely, one can encounter stands of paper birch supported by cool, moist spring seeps. In Nebraska, paper birches are known only in Cherry and Brown counties and have been isolated from extant paper birch populations in the Black Hills for thousands of years.

The most elusive tree species in the Niobrara Valley is a hybrid aspen, which is confined to two different canyons and is apparently on the decline. It is a product of quaking aspen, a western species, and big-toothed aspen from the northeast. Big-toothed aspen is a Great Lakes species with the closest populations of this tree found some 210 miles east of the Niobrara. Earlier in time, the Niobrara provided the opportunity for the ranges of the two aspen species to overlap resulting in hybridization and isolation. Evolutionary biologists are quick to cite examples, such as Australia, the Galapagos Islands, or even the unglaciated driftless area of southwest Wisconsin, where isolation and time have played a key role in the development of new species. However, the question still remains: why have these plants survived only in this valley? Clues are everywhere, but mysteries still remain. Maintaining this pristine river will be a key to discoveries of the future.

Encounters among eastern and western species of birds and mammals also occur along the central Niobrara Valley. For example, indigo and lazuli buntings, yellow-shafted and red-shafted flickers, and Baltimore and Bullock's orioles are known to hybridize in the valley. In fact, 160 plant and animal species are found at the edge of their distributional ranges here. In the central Niobrara region, the number of rare or environmentally sensitive species, as determined by the Nebraska Natural Heritage Program, is truly phenomenal. No less than ninety-five plants, twenty-seven birds, eleven fish, six mammals, two reptiles, and six invertebrates are on this list. The valley constitutes a modern refugium where plants and animals can escape some of the harsh environmental extremes that dominate the surrounding central Plains.

Management of this scenic river valley is essential to its biological integrity. In recent years, the popularity of the area has dramatically increased. Canoeing, camping, hunting, and fishing are significant local economies, but can contribute to habitat degradation. Another consequence of settlement is fire suppression that has impacted ponderosa pine communities. These ponderosa pine forests that inhabit the dry canyons and the north bluff of the Niobrara are adapted to the arid rocky soils and warm summer winds of the region. Fire scars on pines that date back to the 1600s indicate that ground fires occurred here every three to five years on the average. The original forest understory is typically a savanna consisting of native perennial grasses and occasional shrubs. However, the lack of fire has resulted in increased populations of eastern red cedar that can crowd and choke other native species. As a result, when these kinds of invasions go unchecked, the original pine forests are altered affecting both plant and animal communities.

The archaeological, biological, and recreational significance of the Niobrara Valley is unmatched elsewhere in the Great Plains. Its significance lies in its beauty, easily recognizable by citizen as well as scientist. Whether one studies the details of how and why this ecosystem operates, or simply stands back in awe of this place, the Niobrara is truly a Wild and Scenic River. To better educate our citizens ecologically and to develop a true environmental ethic, the river is the best of all classrooms. In the words of Aldo Leopold, "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise." The Niobrara is "right" because it is the quintessential example of what is meant by a National Scenic River. It helps to define what ***is*** Nebraska, but it is indeed a national treasure whose significance runs far beyond the state's borders.

Purpose of and Need for the Plan

Legislative Background

Public Law 102-50, the Niobrara Scenic River Designation Act of 1991, amended section 3(a) of the Wild and Scenic Rivers Act of 1968 to designate portions of the Niobrara River in north central Nebraska as a unit of the national Wild and Scenic Rivers System.

The purpose of the Wild and Scenic Rivers Act is to protect selected American rivers and their immediate environments for the benefit and enjoyment of present and future generations. Congress declared this national policy of preserving selected rivers in their free-flowing condition as a complement to dams and other diversions that were built on many American rivers. To qualify for this protection, the Wild and Scenic Rivers Act requires that rivers be free-flowing, relatively undeveloped, and possess one or more "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values."

The 1991 Niobrara Act initially designated a forty-mile segment of the Niobrara from Borman Bridge near Valentine, Nebraska, to Chimney Creek, north of Ainsworth, and a thirty-mile segment from Rock Creek, near the Meadville Bridge, to Nebraska Highway 137, north of Newport, Nebraska. The six-mile gap between Chimney and Rock creeks was initially designated as a study segment. The Act provided that this study segment would be included in the Niobrara National Scenic River if, after the passage of five years, funds were not authorized and appropriated by Congress for a water resources project there. Congress did not authorize or appropriate funding for such a project and on May 24, 1996, the six-mile segment was included in the Niobrara National Scenic River, thereby making it a seventy-six-mile-long unit.

The 1991 Niobrara Act stated that the Scenic River would be administered by the secretary of the interior. It specifically directed that the segment of designated river located within the Fort Niobrara National Wildlife Refuge would continue to be managed by the secretary through the director of the U. S. Fish and Wildlife Service. General planning for the unit and operation of the designated reach beyond the refuge was delegated by the secretary to the director of the National Park Service. Accordingly, the designated river has become a unit of the national park system.

The Wild and Scenic Rivers Act directs the administering agency to prepare a management plan and establish final boundaries for protection of the river's outstandingly remarkable values. The act requires the managing agency (agencies in this specific instance) to emphasize the protection of scenic, historic, archaeological, and scientific features. It states that recreational use may be permitted so long as those resource values are not jeopardized. Under the act, a boundary of one-quarter-mile from the ordinary high water mark on both sides of the river is imposed until a final boundary is established.

Purpose of the Plan

As required by law and agency policy, general management plans are developed for all units of the national park system to direct basic management concepts and establish a role for the unit within regional and national contexts. This plan complies with legislative and policy requirements. Boundaries and management organization were not determined for the Niobrara National Scenic River by legislation but alternatives for each are commended in this plan. Issues and concerns voiced by landowners, businesses, recreational users, local governments, and state and federal agencies have been considered, analyzed, and incorporated.

The Niobrara Lawsuits

On December 20, 1996, following five years of involved planning and public participation, the National Park Service signed a record of decision completing a *Niobrara National Scenic River General Management Plan and Final Environmental Impact Statement* for the designated seventy-six-mile-long Niobrara reach. This final plan described the management and boundary alternatives that had been considered, the mitigation measures adopted to avoid or minimize environmental harm, and the reasoning behind the decisions reached.

The preferred alternative called for the formation of a local management council that would receive technical and financial assistance and would work in partnership with the National Park Service to manage the river. The four affected county commissions, Brown, Cherry, Keya Paha, and Rock, formed the Niobrara Council in the spring of 1997 under the Nebraska Inter-local Cooperation Act. The Council and National Park Service then entered into a cooperative agreement in August 1997 as envisioned in the general management plan.

In March 1998 the National Parks and Conservation Association* and American Canoe Association filed a lawsuit against the National Park Service for "allowing the Niobrara National Scenic River to be managed by a local council consisting of local landowners, business owners, and politicians," at the evident exclusion of the National Park Service. On June 15, 1999, a federal court judge ruled in Washington, D.C., that the National Park Service had, indeed, unlawfully delegated its management responsibility on the Niobrara. The judge demanded that the agency fulfill its statutory obligation. The Service was ordered to prepare a new general management plan and environmental impact statement. Rather than prolonging the litigation through appeal, the Service accepted the judge's order.

In a separate lengthy litigation, an Omaha businessman challenged the manner in which the National Park Service had determined a boundary for the Scenic River. In a ruling from the Eighth Circuit Court of Appeals on April 10, 2000, the court ordered the Service to redraw the Scenic River boundary. That remedial effort, too, is undertaken in this plan.

The Planning Process

The National Park Service management planning process is guided by several federal requirements, including the National Environmental Policy Act of 1969. That Act requires that a full range of alternatives be considered (including a "no action" option for baseline analysis), that public opinion be considered during the process, and that alternatives be analyzed for their impacts. Council on Environmental Quality regulations also require full consideration of other acts such as the Endangered Species Act, Clean Water Act, Clean Air Act, National Historic Preservation Act, Executive Order 11988 "Floodplain Management," Executive Order 11990 "Protection of Wetlands," and Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations."

As this plan is a court-ordered revision of the 1996 *Niobrara National Scenic River General Management Plan/Final Environmental Impact Statement*, the National Park Service evolved a strategy for assessment and incorporation of new data, producing new boundary alternatives and a revised range of management alternatives, and addressing issues arising since completion of the earlier plan. An ad hoc planning team in the National Park Service's O'Neill office directed this effort, with assistance from National Park Service staff in Washington, D.C., Omaha and Lincoln, Nebraska, Denver, Colorado, and Madison, Wisconsin. The ad hoc team was additionally supported by representatives from the University of Nebraska at Kearney, U. S. Fish and Wildlife Service, Nebraska Game and Parks Commission, Middle and Lower Niobrara natural resources districts, Niobrara Council, and The Nature Conservancy.

A federal advisory commission with a ten-year lifespan was authorized by the 1991 Niobrara Act. Members were appointed by the secretary of the interior to represent landowners, canoe outfitters, environmental groups, the natural resources districts, counties, and governor's office. During its lifespan, the advisory commission provided resource information and community contacts and reviewed planning documents, including as recently as May 10, 2001.

The public will be given opportunities to comment on this draft general management plan and environmental impact statement. Public comments will be analyzed and the document revised as necessary to produce a final plan and environmental impact statement. After a second review, the National Park Service will select a management option for the unit and announce its decision in a formal record of decision. Notices of the availability of draft and final general management plans/environmental impact statements and announcement of the record of decision will appear in the *Federal Register* and local media outlets.

*This organization subsequently changed its name to National Parks Conservation Association. Both names are used in this document, correct in context.



Map 1
REGION
NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656/80001 - September 2001

Summary of Public Involvement and Issues Identified

The foundation for this 2005 draft general management plan/environmental impact statement was well laid in the public information, scoping, planning meetings, and consultations held across Nebraska from 1991 into 1996 during initial planning for the Niobrara National Scenic River. These meetings identified issues and concerns important to the citizens of the Scenic River area and the entire region. Newsletters appearing annually in 1992, 1993, and 1994 summarized these issues and subsequently reported on the activities and findings of Scenic River planning and advisory teams as they explored the unit's legislative mandates and purposes and determined its desired future conditions. These matters are detailed in the 1996 *Niobrara National Scenic River General Management Plan/Environmental Impact Statement* and are referenced here because public comments voiced in the court-ordered replanning beginning in 2000 in many ways echoed or are grounded in the diverse sentiments first heard a decade earlier. As well, the National Park Service carefully consulted with the Yankton Sioux Tribe, Ponca Tribe of Nebraska, and Santee Sioux Tribe during general planning for the Niobrara National Scenic River and Missouri National Recreational River. In replanning, the National Park Service chose to wholly embrace these earlier efforts relating to determinations on legislative mandates, purposes, scoping issues, and desired future conditions.

Notices of intent to prepare an environmental impact statement for a revised *Niobrara National Scenic River General Management Plan/Environmental Impact Statement* appeared in the *Federal Register* on February 28, 2000, and May 22, 2000. The former notice limited the planning scope to a court-ordered revision of the management alternatives section of the plan and indicated a general intent to update other sections, exclusive of boundary analysis and decisions in the 1996 plan that this court did not invalidate. The second notice qualified the first by stating that the National Park Service would examine the boundary section as well. This resulted from a decision rendered by the Eighth Circuit Court of Appeals on April 10, 2000, in a separate lawsuit that overturned a lower court's ruling on the boundary the Service had established.

In August 2000 the National Park Service commenced general distribution of some 2,000 newsletters titled "River Planning: The Second Time Around!" Intended to serve as a vehicle for additional scoping, copies were mailed using a variety of lists and also in response to a widely reproduced news release distributed on August 28, 2000. Other copies were distributed at formal and informal meetings held throughout the winter and spring of 2000-2001.

Park staff addressed nine different audiences between December 2000 and April 2001, including Sierra Club-organized open houses in Omaha and Chadron, Nebraska; the Lower Niobrara Natural Resources District in Butte, Nebraska; the Friends of the Niobrara in Lincoln; at Nebraska Wesleyan University in Lincoln; and the annual Nebraska Audubon crane conference in Kearney. As well, scoping issues and planning updates became standard agenda fare at monthly Niobrara Council meetings in Ainsworth from December 2000 through April 2001. These meetings were all open to the public.

The pace of scoping and writing changed markedly in May 2001 when O'Neill staff commenced distributing at meetings and by mail pre-draft components of the new plan, particularly sections detailing the Niobrara's outstandingly remarkable values and boundary alternatives, and new management alternatives. In May through September 2001, formal presentations were made to Nebraska congressional staff and several state senators in Lincoln, the Nebraska Game and Parks Commission in Lincoln, Niobrara River Outfitters Association in Sparks, Niobrara Scenic River Advisory Commission in Valentine, Niobrara Council in Ainsworth, Rock County Commission in Bassett, The Nature Conservancy in Johnstown, Middle Niobrara Natural Resources District in Valentine, Nebraska Wildlife Federation in Valentine and Lincoln, the National Parks Conservation Association in Washington, D.C., and U. S. Fish and Wildlife Service in Valentine. The desired futures and management and boundary alternatives were conveyed to the Rosebud Sioux Tribe in Mission, South Dakota, in November 2001. Comments received at these various scoping meetings were duly evaluated and resulted in additions and improvements to the document.

The presentations to the public of boundary determinations — actual lines on maps — occurred separately from the boundary analysis and management alternative previews detailed above. Beginning in March and continuing through August 2002, park staff made formal presentations on the character of the river's resources, identified locations of respective resources inside the designated seventy-six-mile reach, and outlined alterna-

tive strategies for protecting those outstandingly remarkable values. Audiences included Nebraska congressional staff and several state senators in Lincoln; Niobrara Council, formally at their March and April meetings and informally throughout the summer; Keya Paha, Cherry, Rock, and Brown county commissions; Niobrara River Outfitters Association; Middle and Lower Niobrara Natural Resources districts, The Nature Conservancy; and face-to-face in O'Neill, Valentine, and on the river with a number of local landowners. The Keya Paha and Cherry County commissions welcomed the occasional use of road rights-of-way to define the boundary and in those instances preferred the inclusion rather than exclusion of the particular road in the boundary. Comments received at these preview meetings led to several instances of redoubled groundtruthing to ensure the veracity of pertinent information.

The following planning issues were identified in public meetings or in response to the August 2000 newsletter:

Landownership Issues

Landowners expressed concerns about effects on property values, federal control of their activities, and their ability to sell. Impacts to county tax bases, increasing property taxes, loss of local control, changing neighboring uses, federal land acquisition by condemnation, and restrictions on development were also concerns. Recreational use has resulted in some trespass, littering, unauthorized fires, and concerns about liability.

Resource Protection Issues

Protection of high quality scenic and natural resources are concerns, particularly in the western third of the Scenic River where development of distinctive recreational properties and homesites occurred in the 1990s. Many respondents demanded that the development of the valley be curtailed, perhaps through the use of conservation easements.

Concerns were expressed over the free-flowing condition of the river and with water quality, water rights, livestock watering, erosion, stream degradation along tributaries, and bank stabilization.

In 2001 National Park Service planners challenged the issue of the retention of Cornell Dam and respondents were nearly equally divided as to retention or removal, with about one-third still undecided.

Several respondents expressed concerns with the National Park Service's personal watercraft ban on waters of the National Park System, an issue of contemporary concern on the nearby Missouri National Recreational River.

Fishing, Hunting, and Trapping Issues

Concerns were expressed over National Park Service's policies regarding continued fishing, hunting, and trapping, and whether canoers and tubers are impairing the fishery.

Visitor Protection Issues

Rowdiness and public intoxication on the river were voiced as concerns, as were apparent inconsistencies between National Park Service and U. S. Fish and Wildlife Service visitor use regulations. Some respondents urged that the Niobrara become an alcohol free river.

Terminology Issue

A number of respondents expressed a concern with the National Park Service labeling the Niobrara National Scenic River a "park" in the planning newsletter. Words like park and unit are synonymous terms used throughout this general management plan. National Park Service terminology in this regard is discussed in **A Note on Terminology**, on page 11.

Management Alternative Issues

Several respondents expressed unhappiness with the National Park Service's partnering efforts with the Niobrara Council, but many more favored renewing that partnership. One respondent expressed concern that the National Parks and Conservation Association lawsuit might be used as a cover allowing the National Park Service to adopt a more independent management course.

Consultation With Other Agencies and Issues Identified

Land managing agencies with parallel or specific interests in the Niobrara National Scenic River were purposefully engaged during the course of scoping, infor-

mation development, and plan review and the following issues and concerns were voiced:

Visitor Information, Education, Interpretation Issues

No cohesive effort is made to orient the public generally to Scenic River services, opportunities, and responsibilities, and no concerted effort is made to develop greater public understanding and appreciation of the unit's stellar natural and cultural resources. Some users do not understand that the riverbanks are mostly private property.

Facility/Infrastructure Issues

The adequacy and condition of public and private parking, roads, restrooms, camping, and river access was questioned, as was compliance with pollution and sanitary requirements, handicapped accessibility law, safety codes, and emergency and fire response capabilities. The need for a central education and orientation facility was raised.

Recreational Use Issues

Matters of crowding, inappropriate public behavior, trespass, and resource degradation were questioned, as were specific issues related to wilderness values at the Fort Niobrara National Wildlife Refuge, including quality of visitor experience and impacts to wildlife.

Outfitter management, including numbers of rental craft, visitor service standards, and associated riverbank development and degradation was questioned, as was dispersal options associated with public access development. Associated ancillary recreational development was also discussed.

Resource Management Issues

The U. S. Fish and Wildlife Service expressed concerns over perceived conflicts between traditional river users and values such as solitude and wildlife and habitat protection in the Fort Niobrara Wilderness.

The Middle Niobrara and Lower Niobrara Natural Resources districts particularly challenged the National Park Service's preliminary assessment of the viability of Cornell Dam, and both groups resolved for its preservation.

Resource impacts associated with private and public sector development were questioned, as were strategies for proactive resources management on the largely privately owned Scenic River landscape.

Boundary Issues

The Nebraska Game and Parks Commission questioned the National Park Service's preliminary assessment that "wildlife" did not constitute an outstandingly remarkable value, and offered a rationale for its inclusion. The U. S. Fish and Wildlife Service concurred with the Commission's assessment and also spoke for consideration of fish and wildlife as an outstandingly remarkable value.

Related Plans and Directives

The Niobrara Scenic River Designation Act of 1991 directed the National Park Service to study the potential of creating a Niobrara-Buffalo Prairie National Park near Valentine utilizing traditional National Park Service enabling authorities quite different from those of the Wild and Scenic Rivers Act. This feasibility study was undertaken concurrently with the early 1990s planning for the Scenic River and proved challenging, especially because of the subtleties of National Park Service nomenclature and differences in enabling authorities. The Niobrara Buffalo-Prairie National Park study identified many significant natural, cultural, and recreational resources throughout the study area that were worthy of increased protection. When completed and transmitted to Congress in July 1995, however, the National Park Service took no stand on the Niobrara Buffalo-Prairie National Park pending the outcome of the Scenic River boundary establishment and an evaluation of the probability and effectiveness of utilizing county zoning as a land protection strategy. The National Park Service has not subsequently urged Congress to revisit the authorization of a "National Park" and Congress has not taken any follow-up action.

The National Park Service completed a *Niobrara National Scenic River General Management Plan/Environmental Impact Statement* in December 1996, adopting with advice from the Niobrara Scenic River Advisory Commission Alternative B, "Local Council Management with Federal Funding." As noted above, however, the National Parks and Conservation

Association and others successfully challenged the 1996 plan in a Washington, D.C., federal court contending that the National Park Service had exceeded its authority in transferring management responsibility to a local agency. The Service was ordered to prepare another general management plan/environmental impact statement for the unit that complies with the National Park Service Organic Act, Wild and Scenic Rivers Act, and National Environmental Policy Act. Where possible non contested components in the 1996 plan served as section drafts for the new plan, and core underpinnings such as analyses of legislative intent and the detailed, all-encompassing scoping results in the earlier document were retained, updated, and incorporated into the revised plan.

The boundary determination in the 1996 plan was contested in a federal district court separately by a Niobrara River landowner. The district court upheld the National Park Service. That decision was appealed and in April 2000 the Eighth Circuit Court of Appeals concurred with the plaintiff that the National Park Service had not selected lands for protection within the study area on the basis of "outstandingly remarkable values," reversing and remanding the case to the federal district court with instructions that the "Park Service should select boundaries that seek to protect and enhance the outstandingly remarkable values of the Niobrara Scenic River area." That order is complied with fully in this plan.

The Nebraska Game and Parks Commission developed a *Smith Falls State Park Management Plan* in March 1993 to guide the development and management of that vital public access and recreation area midway on the heavily used canoeable reach of the Scenic River. The Commission consults regularly with the National Park Service on Smith Falls development, and relevant planning and design elements are reflected in this general management plan.

The Nebraska Game and Parks Commission also developed the Fred Thomas Wildlife Management Area on Nebraska Highway 7, north of Bassett. Again the Commission consulted with the National Park Service on this acquisition and development, and the agencies collaborated on a wayside exhibit at a river overlook within the area.

The State of Nebraska completed a statewide comprehensive recreational trail plan in 1994. This plan identified different potential trails and byways in the Scenic River area, including a reach of the river useable as a canoe trail, the creation of a hiking and biking trail connection from the Cowboy Trail paralleling US Highway 20 with the Fort Niobrara canoe access, and the designation and marking of county roads and paved state highways in the area and along the Niobrara River. Several of these concepts are endorsed in this plan.

Brown, Cherry, Keya Paha, and Rock counties have enacted countywide zoning regulations that regulate land use and development along the Niobrara River. The respective county zoning codes each incorporated development standards proffered in the 1996 *Niobrara National Scenic River General Management Plan*.

The U. S. Fish and Wildlife Service adopted a *Fort Niobrara National Wildlife Refuge Comprehensive Conservation Plan* in September 1999, addressing a range of habitat, wildlife, recreation, and ecosystem management issues throughout the refuge and Scenic River corridor. The plan particularly commends the preparation of "step-down" plans such as for visitor use management on the river. Already the U. S. Fish and Wildlife Service and National Park Service are discussing a visitor use plan to be undertaken collaboratively to address visitor use management on the entire canoeable river and elsewhere. Several other concepts in the comprehensive conservation plan are endorsed in this plan.

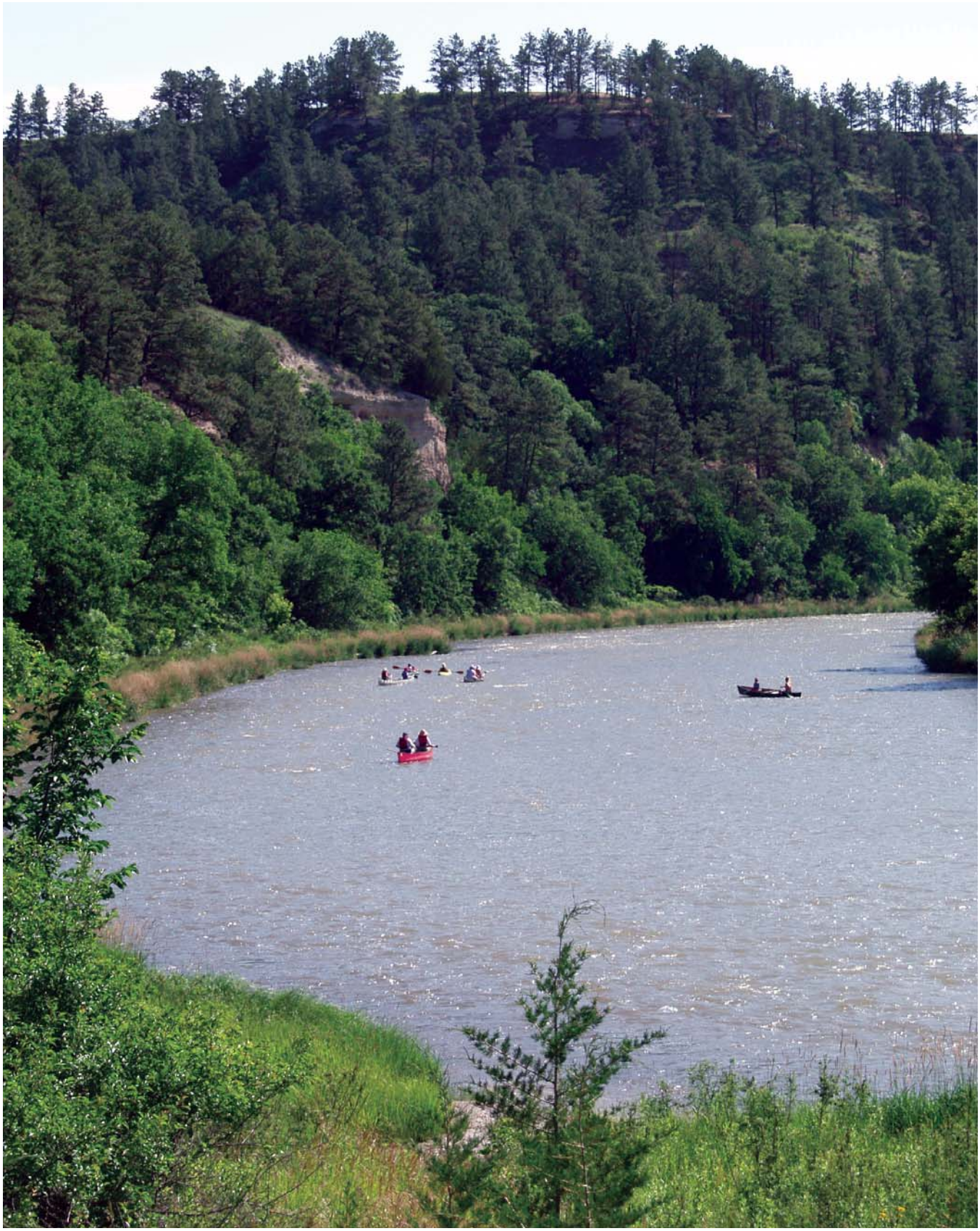
The U. S. Fish and Wildlife Service is also developing a Fort Niobrara-Valentine National Wildlife Refuges Comprehensive Facility and Public Use Master Plan that will, among other matters, commend and justify a new education center for Fort Niobrara that might well be constructed and operated jointly with the National Park Service. That prospect, too, is endorsed in this plan.

A Note on Terminology

The National Park Service operates units having many different names and with many different legislative authorities. Whether a "National Monument" like Scotts Bluff National Monument or Homestead National Monument of America, "National Historic Site" like Golden Spike National Historic Site or Fort Union Trading Post National Historic Site, "National Park" like Yellowstone National Park or Wind Cave National Park, or "Wild and Scenic River" like Niobrara National Scenic River or Missouri National Recreational River, all 388 such units are components of the National Park System and are all "parks" or "national parks." But the conventional nomenclature of this national system of parks differentiates "National Park" from "national park," the former referring exclusively to a specific type of unit with particular legislative authorities and land protection strategies, and the latter referring generally to this unique collective American park system. Moreover, words like "unit," "park," and "area" are used interchangeably in the National Park Service's lexicon, and in this document. Confusion across the Niobrara region over terminology and ultimate management strategies arose in the early 1990s when the National Park Service undertook simultaneously general management planning for the Niobrara National Scenic River and a preauthorization study for a Niobrara-Buffalo Prairie National Park (see **Related Plans and Directives**, above). The differences are many. A Scenic River is a "national park" but not a "National Park," and readers are cautioned to remember the distinctions.



An October float rewards canoeists with fall colors, and clear blue skies.



Fort Niobrara National Wildlife Refuge at Cornell Bridge.

Sparks
Valentine
Norden
Springview
Meadville
Wood Lake
Johnstown
Ainsworth
Long Pine
Bassett
Newport
Keya Paha County
Cherry County
Brown County
Rock County
Valentine State Fish Hatchery
Fort Niobrara National Wildlife Refuge
Borman Bridge and Wildlife Management Area
Smith Falls State Park
Niobrara Valley Preserve
Sparks Overlook
Cub Creek Recreation Area
Niobrara Valley Preserve
Bobcat Wildlife Management Area
Keller Park State Recreation Area
Thomas Creek Wildlife Management Area
Fred Thomas Overlook
Fred Thomas Wildlife Management Area
A1
A2
A3
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
83
20
12
183
7
137

Legend

- Local Communities
- Overlooks

Public Access Sites
- A1 - Fort Niobrara
- A2 - Smith Falls
- A3 - Brewer Bridge

Bridges
- B1 - Highway 20 Bridge
- B2 - Borman Bridge
- B3 - Cornell Bridge
- B4 - Buffalo Bridge
- B5 - Berry Bridge
- B6 - Allen Bridge
- B7 - Smith Falls State Park Foot Bridge
- B8 - Brewer Bridge
- B9 - County Line Bridge
- B10 - Norden Bridge
- B11 - Meadville Bridge
- B12 - Highway 183 Bridge
- B13 - Highway 7 Bridge
- B14 - Carns Bridge
- B15 - Highway 137 Bridge

Protected Areas
- Fort Niobrara National Wildlife Refuge
- Other State and Federal Areas
- Niobrara Valley Preserve

- Paved Highways
- Secondary Roads
- River Channel
- County Boundaries

5 0 5 Miles

N W E S

Map 2
Existing Conditions
NIOBRARA NATIONAL SCENIC RIVER
United States Department of the Interior - National Park Service
University of Nebraska-Kearney /MWAC - 656-80001 - September 2003

Foundations of the Plan

Purposes of Scenic River Designation

The basic purposes of the Niobrara National Scenic River designation were identified in the 1996 *General Management Plan/Final Environmental Impact Statement* and are reaffirmed here. These purposes reflect extensive planning team analysis of the 1991 Niobrara Act and legislative history, public comments received in scoping, and advisory commission recommendations.

- Preserve the river in a free-flowing condition (existence of low-head dams at the time of designation does not preclude a river from being included in the national Wild and Scenic Rivers System).
- Preserve the significant scenic, geological, biological, historic, and prehistoric resources of the Niobrara River valley in concert with local custom and culture.
- Provide for only that resource-based recreational use that is compatible with protection of the significant resources.

Legislative direction was identified early in the process creating the 1996 General Management Plan and is reaffirmed here. This was derived from specific laws and congressional testimony that led to the 1991 Niobrara Act designating the Scenic River and includes the following mandates:

- Consult with all interested individuals and organizations to foster and develop intergovernmental cooperation in developing boundaries, formulating a management plan, and managing the Scenic River.
- Limit government acquisition of land, contingent on effective local resource protection.
- Respect the rights of landowners and recognize the significance of ranching in the Niobrara Valley.
- Allow hunting, fishing, and trapping on private property to continue under state regulations.
- Continued management of the portion of the river within the Fort Niobrara National Wildlife Refuge by the U. S. Fish and Wildlife Service.

Significance of Area Features

Area features were analyzed and listed for consideration during the course of creating the 1996 *Niobrara National Scenic River General Management Plan/Environmental Impact Statement* and are reaffirmed here. These diverse attributes make the Scenic River important and unique, and some contribute to the outstandingly remarkable values discussed later in this document.

- The Niobrara River is an outstanding example of a largely free-flowing Great Plains river.
- The Niobrara Valley contains a large concentration of scenic river cliffs and waterfalls that are rare on the Great Plains.
- The high bluffs along the river provide scenic vistas of the Niobrara River valley and its many ecosystems. Distant views of the sandhills prairie to the south are unusual in the Great Plains states. The river valley itself provides scenic views.
- The braided lower river provides important nesting habitat for the endangered interior least tern and threatened piping plover. The river also provides important migratory habitat for endangered whooping cranes, threatened bald eagles, and the recently delisted peregrine falcon.
- The Niobrara Valley supports exceptional biological diversity within its narrow confines, where elements of the following ecosystems exist in the same area or very close to each other: northern (boreal) forest, ponderosa pine forest and savanna, eastern deciduous forest, tallgrass prairie, mixed-grass prairie, and sandhills prairie. Approximately 160 species of plants and animals found in the Niobrara Valley are at the edge of their range. The number of plant species at or beyond their normal geographic range, the wide variety of plants, and the number of distinctly different plant ecosystems found close together is very unusual. Some plant and animal species are state or federally listed as rare, threatened, endangered, or candidate species.
- The Niobrara River valley is an excellent example of a rural cultural landscape that contains ranches, limited development, and scenic vistas. Ranches are an important and integral part of the historic landscape and can be themselves of intrinsic value. The existence of farms and ranches contributes greatly to the maintenance and preservation of the valley.
- The area contains scientifically important deposits of mid-Tertiary and Pleistocene fossils. These are important to our knowledge of past life forms.

- Fort Niobrara played an important role as a frontier army post, and then as an early national wildlife refuge preserving bison, elk, and native birds.
- The sandhills near the river act as both a filter and reservoir of high quality water to sustain spring seeps, unusual plants, aquatic lifeforms, river flow, and scenic waterfalls.
- The western portion of the designated Niobrara River offers high quality and relatively safe river recreation for people of differing skill levels.
- The river valley provides a high quality setting for a wide variety of resource-based recreation.

The above list was used to make the following short list of the most significant features the plan is meant to protect over the long term by different methods discussed under several management alternatives. With the exception of specific fossil beds and waterfalls, these features are widely distributed throughout the valley:

- The free-flowing Niobrara River.
- The rural agricultural landscape of ranches and limited development.
- Unusually diverse natural ecosystems with many plant and animal species found at the edge of their range or beyond their usual range.
- Deposits of scientifically important fossils of mid-Tertiary and Pleistocene geological periods.
- A scenic landscape with views of waterfalls, cliffs, forests, and open spaces with few developments.

Desired Future Conditions

The Niobrara National Scenic River vision statement is the sum of the desired future conditions for the park. These were developed by the original planning team, modified after public comments during the initial planning process, and are reaffirmed here. These broad descriptions were developed in three separate categories: landscape preservation, visitor management, and resource management.

Landscape Preservation

- The mosaic of natural and cultural landscapes, including agricultural customs and culture, will be maintained in the valley. The intent is to maintain the nature and intensity of uses of the landscape that existed at the time of designation.
- Riparian landowners will continue to have access to water. There will be minimal impact on riverbanks and water quality.
- New development will have minimal impact on the largely natural and undeveloped conditions of the Niobrara River valley.
- Roads and bridges will complement acceptable levels of use and not detract from the pastoral nature of the landscape.
- The management of the Scenic River will enhance and not detract from county economics.

Visitor Management

- Visitors will respect the privacy and property rights of residents.
- Hunting, fishing, and trapping on private and state land will be permitted consistent with state laws. Trapping is prohibited on federally owned parklands. Fort Niobrara National Wildlife Refuge regulations are unaffected by the Scenic River designation.
- Visitors will see few developments and have the opportunity to enjoy and appreciate the resources.
- Recreational development will be consistent with acceptable levels of public use and will provide for public health and safety as well as resource protection.
- Camping opportunities will range from primitive to moderately developed. These camping developments will minimally impact visitors' visual experiences.
- Opportunities will exist for canoeists and other visitors to experience relative solitude.
- Visitors will have a canoeing experience free from user conflicts and without overcrowding.
- Motorized water travel will be prohibited except for emergency or approved administrative use.
- Noise experienced by visitors will be typical for the surrounding natural and cultural environment, and will not be a nuisance to the majority of users.
- Interpretive programming will address the natural and cultural resource values of the Scenic River, along with visitor courtesies and safety concerns.

Resource Management

- Significant historic sites, archeological sites, ethnographic resources, and cultural landscapes will be preserved.

- Natural processes and geologic features such as bluffs, waterfalls, and streambanks will retain their inherent natural qualities.
- Water quality and historic in-stream flows will be maintained to support wildlife, fisheries, agriculture, and the recreational values associated with the river.
- Wildlife, recreation, and agricultural interests will work cooperatively to ensure an adequate future supply of water.
- The wildlife resources and habitat of the Niobrara River valley will be managed and some missing species will be restored where culturally and biologically feasible.
- The National Park Service will work with partners to ensure the continued good air quality of the valley.
- The biological diversity of the Niobrara River valley, including its six major ecosystems, will be preserved and enhanced.
- The significant fossil resources inside the Scenic River boundaries will be preserved and made available for scientific research. Opportunities for interpretation will be made available.

Carrying Capacity

General management plans are required to identify and implement visitor carrying capacities for all areas of a park. The National Park Service defines visitor carrying capacity as the type and level of visitor use that can be accommodated while sustaining desired park resource conditions and visitor experiences consistent with the purposes of the park. At the general management plan level of decision-making, management prescriptions establish carrying capacities in terms of the desired resource conditions and visitor opportunities in both frontcountry and backcountry management zones.

The National Park Service now uses general management plans to set goals for desired resource conditions and visitor experiences in parks. The plan is needed to make major decisions related to the kinds and levels of visitor uses and support facilities, park carrying capacity, appropriate private uses and public access, and the appropriate level of focus on cultural resources. These decision points involve numerous park, visitor, and community values. While this general management plan does not address the Visitor Experience and Resource Protection (VERP) in detail, Niobrara National Scenic River is committed to developing indicators and standards for assessing carrying capacity and a monitoring plan in a separate planning effort commencing in fall 2005. The National Park Service will prepare a river management plan that will determine prescriptive management zones and the carrying capacity for those zones, and will provide ample opportunity for public involvement. On the following page is a chart that shows the progress made to date in determining carrying capacities and the schedule for the future.

The VERP Process

In 1992, the National Park Service began developing the Visitor Experience and Resource Protection (VERP) framework to address visitor management and user capacity issues within the National Park System. In the VERP framework, user capacity is defined as: "The type and level of visitor use that can be accommodated while sustaining the desired resource and social conditions that complement the purposes of the park units and their management objectives." Carrying capacity is not strictly interpreted as an absolute number, but as a range within which acceptable limits of change may occur. VERP addresses user capacity by prescribing desired conditions for both the quality of resources and the visitor experience. Based on the desired conditions, VERP will identify the types and levels of visitor use that are appropriate, with particular focus on the protection of the Niobrara's outstandingly remarkable values.

Indicators and Standards

In the VERP model, measures of success are quantified through a series of indicators and standards. An indicator presents a subject to be measured (e.g., water quality, campsite condition, social trails) and is monitored periodically to detect change. A standard establishes the threshold for the indicator (e.g., there would be no more than X number of social trails in a given area). When the standard is reached or exceeded, management action can be taken, if monitoring indicates that conditions are changing to an undesirable level.

Monitoring

Monitoring is a key element in the VERP framework. It is vital to have reliable data on resource conditions and visitor use so that the park staff can determine if discrepancies are occurring between desired and existing

conditions. Resource and visitor data need to be collected at regular intervals to show if standards are being exceeded.

In some cases, monitoring plans and schedules have been in place for years (e.g., water quality readings). For areas that do not have monitoring programs in place, plans will be developed beginning fall 2005 and implementation will begin in spring 2006. Detailed monitoring plans will ensure that data are properly collected and to minimize the potential for misinterpretations and other errors. These technical plans will describe how, where, and when each indicator will be monitored.

The VERP Framework

Nine steps, or elements, are integral to the development of the VERP framework. While the scope of the elements, the order in which they are undertaken, and the specific methods used to complete the elements may vary in different situations, all of the elements are necessary to implement a VERP program. Although the elements may appear to follow a linear process, it is important to remember that the VERP framework is iterative, with feedback and "feed-forward" occurring throughout the elements.

VERP Framework

Step	Description	Status of VERP process at Niobrara National Scenic River
1	Assemble an Interdisciplinary Project Team	Completed as part of development of the GMP
2	Develop a Public Involvement Strategy	Completed as part of development of the GMP
3	Develop Statements of Park Purpose, Significance, and Primary Interpretive Themes; Identify Planning Constraints	Completed as part of development of the GMP
4	Analyze Park Resources and Existing Visitor Use	Completed as part of development of the GMP
5	Describe a Potential Range of Visitor Experiences and Resource Conditions (potential prescriptive zones)	Underway
6	Allocate the Potential Zones to Specific Locations in the Park (prescriptive management zoning)	Begins fall 2005 as part of river management plan process
7	Select Indicators and Specify Standards for Each Zone; Develop a Monitoring Plan	Begins fall 2005 as part of river management plan process
8	Monitor Resource and Social Indicators	Begins spring 2006 for newly developed standards and indicators
9	Management Action	To be undertaken as needed in response to monitoring

Niobrara National Scenic River Boundary

Introduction

In the original Wild and Scenic Rivers Act of 1968 Congress declared it the policy of the nation to protect and preserve selected American rivers and their immediate environments for the benefit and enjoyment of present and future generations. The Act made free-flowing rivers and their contextual environments nationally significant. In doing so Congress specifically identified seven resource types it considered worthy of protection on these riverscapes. These were labeled "**outstandingly remarkable values,**" namely **scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values.** The nature of six of the seven values is self-evident. In application since 1968, the seventh category, the so-called "other similar values," has come to include hydrology, paleontology, and botany resources, among others. Section 3(b) of the original Act limits the potential acreage in any given Wild and Scenic River unit to an average of not more than 320 acres of land per mile measured from the ordinary high water mark on both sides of the river.

The Niobrara Scenic River Designation Act of 1991 amended the Wild and Scenic Rivers Act by designating seventy-six miles of the Niobrara River between the Borman Bridge southeast of Valentine to the Nebraska Highway 137 bridge north of Newport. Consistent with limitations set forth in the original Act, the protected acreage in the new unit could not exceed 24,320 acres, which was the simple calculation of 320 acres of land per mile multiplied by the seventy-six-mile length of the designated reach.

In the 1991 Niobrara Act, Congress did not specifically identify for the Niobrara any of the seven core outstandingly remarkable values that ought to be protected though it labeled the unit a Scenic River, implying a watershed still largely primitive with shorelines largely undeveloped. Nebraska's congressional delegation did speak eloquently in preauthorization testimony of the Niobrara as a "biological crossroads," a "canoeists' and outdoor persons' paradise," and of its "unique historical, paleontological and archaeological significance." In its silence in the legislation, however, Congress placed the responsibility of determining the Niobrara's outstandingly remarkable values on the assigned managing agencies.

This section documents and assesses the Niobrara's river-related values based on existing scientific data and informed professional judgment. This boundary analysis process commenced anew in the summer of 2000 employing methodology commended by the Interagency Wild and Scenic Rivers Coordinating Council.

Resource Assessment Process

The purpose of this resource assessment is to document those river-related values or features that are truly "outstandingly remarkable" and those that, while not outstandingly remarkable, are meritorious and contribute substantially to the river's setting or to the function of the river ecosystem or cultural context. To qualify as an outstandingly remarkable value, the river-related resource must be a unique, rare, or exemplary feature in a regional or national context. The region of comparison for the Niobrara River is generally considered to be the central Great Plains.

Specific criteria for the individual outstandingly remarkable values are described in the opening paragraph for each of the values. The criteria used in this Niobrara River assessment are given in a December 1999 technical report titled "The Wild & Scenic River Study Process" prepared by the Interagency Wild and Scenic Rivers Coordinating Council. The seven criteria are followed by a discussion of the respective resources existing within the Niobrara River valley, and a finding and rationale for a determination of significance. The description summarizes information on the existing condition of the respective resources drawn largely from the Affected Environment section of this plan. As applicable, the description may also address any possible threats to resource values. This resource assessment also identifies the specific location of individual values if they do not occur throughout the seventy-six-mile reach.

1. Scenic Value

Outstandingly Remarkable Criteria

The landscape elements of landform, vegetation, water, color, and related factors result in notable or exemplary visual features and/or attractions. When analyzing scenic values, additional factors such as seasonal variations in vegetation, scale of cultural modifications, and the length of time negative intrusions (such as power lines) are viewed may be considered. Scenery and visual attractions may be highly diverse over the majority of the river or river segment.

Discussion

The designated seventy-six-mile Niobrara River reach is particularly renowned for its aesthetically pleasing landscape and diversity of plant groups and ecosystems, a condition of diversity widely held as comprising the scenic wonder of the Niobrara. Congress spoke to this notion directly and repeatedly in preauthorization testimony. The Niobrara is noted in scientific literature for the many plants that exist in the valley at or beyond their normal geographic limits. Plant species of eastern, western, and northern forest ecosystems and three Great Plains prairie ecosystems meet and intermingle in the designated reach. Some 160 plants in the river valley are at the edge of their natural range.

As examples, ponderosa pine forest and savanna, a Rocky Mountain vegetative standard, occurs at its eastern limit in the Niobrara Valley. Eastern deciduous forest mixing bur oak, American elm, black walnut, green ash, basswood, and hackberry, among other species, has extended up the valley, while northern or boreal forest featuring paper birch, hybrid aspen, ferns, and several species of club mosses is found on cool, moist, north-facing slopes. These plants apparently have survived as relicts of the Pleistocene ice age, when they were more widely distributed across the Great Plains.

Three types of grassland plant communities are also found in the area. The Niobrara provides a botanical transition between the tallgrass prairie of the more humid east and the dryer shortgrass prairie to the west. Sandhills mixed-grass prairie covers the upland country south of the river, where plant species adapted to unique sandy conditions. Along the river and to the north, on clayey soils, mixed-grass prairie is found without the specialized sandhills plants. Also along the river, small remnant patches of tallgrass prairie can be found on moist river bottoms.

The Niobrara River is a stable flowing stream fed mostly by groundwater discharge from the adjacent sandhills. The area is within the northern extent of the Ogallala or High Plains aquifer. The entrenchment of the Niobrara River drains local groundwater into cold springs, which flow constantly and favor northern vegetation types. Waterfalls form where spring-fed creeks pour over harder rock layers. Smith Falls, the highest waterfall in Nebraska, and Fort Falls, are among the most notable of approximately two-hundred waterfalls found to exist within the unit.

Changes to vegetation occurring after homesteading include the introduction of nonnative grasses and weeds. The forested areas have grown denser, largely due to fire suppression and the reduction of timber cutting. Fire suppression has resulted in the spread of eastern red cedar, a native plant that was formerly held in check by prairie fires that once occurred as frequently as every three to five years.

Modern developments are uncommon in the area. This is not a landscape encumbered with power lines and vestiges of modern America. Aged iron bridges and scattered ranches, instead, dot the unit and shape a cultural landscape many generations old. Recreational developments in the form of seasonal and permanent homesites, canoe accesses, and campgrounds exist, particularly in the western third of the unit, but they generally blend with the natural environment rather than disrupt it.

The unique and inherently sound, largely untransformed vegetative condition of the Niobrara Valley, where six continental ecosystems prosper and mix, is a broadly occurring condition existing from rim top and beyond to rim top and beyond, from Borman Bridge to Nebraska Highway 137, and encompassing more than 150,000 acres. **See maps 3 and 4.**

Finding

This seventy-six-mile reach of the Niobrara River retains a timeless natural character with a splendid and nationally recognized mixing of distinct ecosystems, some at their farthest continental range. Waterfalls add an addi-

tional, exhilarating dimension and combine to make the scenery highly diverse. This unique natural condition contributes directly to other values, particularly Geology and Fish and Wildlife discussed below. Despite pressures to expand recreational offerings and develop seasonal and permanent homesteads, the valley remains largely undeveloped. Roads are few and powerlines and smokestacks do not mar the vistas. The scenic quality of the Niobrara River is found to be an outstandingly remarkable value.



A clear, spring branch canyon stream cascades over bedrock in the western portion of the Scenic River.

2. Recreational Value

Outstandingly Remarkable Criteria

Recreational opportunities are, or have the potential to be, popular enough to attract visitors from throughout or beyond the region of comparison or are unique or rare within the region. Visitors are willing to travel long distances to use the river resources for recreational purposes. River-related opportunities could include, but are not limited to, sightseeing, wildlife observation, camping, photography, hiking, fishing, hunting and boating.

Discussion

Drawn by opportunities to explore and enjoy the untrammeled scenery of a Great Plains river and valley, people enjoy a surprising array of recreational activities within the Niobrara corridor from the Borman Bridge to Nebraska Highway 137. While sightseeing, photography, hunting, and fishing are popular activities, canoeing, kayaking, and tubing the Niobrara are easily the most heralded and fashionable forms of recreation luring thousands of regional and national visitors to the unit annually. While the river is widely marketed by state and local tourism officials, the Niobrara has also garnered extraordinary national attention. In January 1988, for instance, *Backpacker* magazine proclaimed the Niobrara as one of America's "10 best paddling rivers." In April 2000 *National Geographic Adventure* magazine labeled the Niobrara as one of America's 100 best outdoor adventures. About 12,785 commercially outfitted floaters launched at Fort Niobrara in 2003, along with another 1,208 independents. While counts are not yet generated at other access sites, heavy summer dispersed put-in also occurs at Berry Bridge, Smith Falls State Park, and Brewer Bridge.

Camping is also a popular activity in the unit, both at Smith Falls State Park, Meadville , and at private campgrounds along the canoeable reach. Some 72,400 visitors were recorded at the state park in 2002, drawn by the scenery, opportunities to explore and photograph the spectacular falls, float the river, and camp on its banks. More than 18,750 campers used the park in 2002. Aside from Meadville, camping across the Scenic River is closely linked to canoe or tube use and associated commercial outfitting.

Sightseeing by personal automobile is growing in popularity on the Niobrara, grounded in opportunities to view the diverse wildlife and cultural resources of the Fort Niobrara National Wildlife Refuge, the lofty falls at Smith Falls State Park (where before a bridge was installed in 1994 viewers either waded the river or arrived by canoe), and explore the valley's seasonal diversity from a network of primary and secondary roads. Two popular valley overlooks, the so-called Sparks overlook, a simple shoulder turnout on the north rim several miles south of Sparks, and the well developed Fred Thomas Wildlife Management Area overlook on Nebraska Highway 7 north of Bassett, offer equally dramatic views of the valley and adjacent sandhills to the south.

Developed trails at the Fort Niobrara Refuge and Smith Falls State Park augment sightseeing by vehicle, allowing for quiet explorations of the riverfront, waterfalls, and south valley rim.

Hunting has an enduring appeal in the Niobrara Valley, featuring an array of traditional opportunities, trophy hunting, and the emergence of small commercial hunting lodges, cabins, and bed and breakfasts in the valley itself and in the surrounding gateway communities.

The varied recreational activities of the Niobrara are widely scattered throughout the unit, with boating use largely occurring in the western third of the designated reach, sightseeing spotted throughout the unit but generally associated with existing roads, and hunting and fishing widespread and typically dependent upon permitted access to private land. **See maps 5 and 6.**

Finding

Lured by dramatic, untrammeled scenery and friendly water, canoeing and tubing the Niobrara River are stellar activities with enthusiastic and loyal followings. With the addition of camping and sightseeing at places like Smith Falls State Park and the Fred Thomas Wildlife Management Area complementing long-available opportunities at the Fort Niobrara Refuge, recreational use of the Niobrara National Scenic River is a growth industry drawing regional and national audiences. The recreational attributes of the Niobrara Valley are found to comprise an outstandingly remarkable value.

3. Geologic Value

Outstandingly Remarkable Criteria

The river, or the area within the river corridor, contains one or more examples of a geological feature, process, or phenomenon that is unique or rare within the region of comparison. The feature(s) may be in an unusually active stage of development, represent a "textbook" example, and/or represent a unique or rare combination of geologic features (erosional, volcanic, glacial, or other geologic structures).

Discussion

From its origins in the Hartville Uplift in eastern Wyoming, the Niobrara River meanders an easterly, leisurely course across northern Nebraska, traversing a corner of the Sandhills in Cherry County until reaching the vicinity of Valentine where, for the next forty miles, the river runs a constrained bedrock channel of the Rosebud and Valentine formations. The Niobrara in this location is the only Nebraska river flowing directly over its bedrock substrate, this occurrence giving rise to the popular canoeable reach of the river with its characteristic increased river velocity, frequent stretches of rapids and riffles, and surge flows. In the proximity of the Norden Bridge, the riverbed again widens and the water slows, dropping its sand load to form a continuously changing, braided streambed.

The valley's south-facing slopes particularly expose the Miocene-age Valentine Formation and the less visible Ash Hollow Formation lying directly above it. Few springs emerge from either of these formations, owing to their loamy and silty nature. On the opposite, north-facing slopes, water originating in the Ogallala aquifer underlying the Sandhills finds its way along the top of the relatively impervious Rosebud Formation to emergences in side canyons and valleys known locally as "springbranch canyons." This water flows to the river from permanent, cool springs and large and small waterfalls.

The Niobrara's waterfalls appear in a wondrous array, from the near seventy-foot-tall Smith Falls and sixty-foot-tall Fort Falls to the delicate Stairstep Falls featured nationally in a "Postcard from Nebraska" video report airing July 23, 1995, on the CBS Sunday Morning television show. Some falls tumble deep in the springbranch canyons and others cascade directly into the river. More than two hundred waterfalls are recorded in the designated reach.

The geology of the Niobrara Valley is an intrinsic value occurring from rim top to rim top, and fully from the Borman Bridge to Nebraska Highway 137. As with the scenic quality discussed above, the geological value encompasses more than 150,000 acres in the Niobrara Valley.

Finding

The dynamic and evolved geology of the Niobrara Valley is a delicate mix of well-watered, shady, and cool north-facing gradients; wider, sun-drenched south facing slopes; the diversity of a riverbed flowing variously over rock and sand substrate; and the tumble of water over hard rock. In their abundance and unexpected variety, the waterfalls of the Niobrara alone are unique to both Nebraska and the Great Plains. This multifaceted geology, in turn, supports the incredibly diverse and rich biota discussed above as the inherent quality in the Scenic Outstandingly Remarkable Value, and the diversity of the river's fish and wildlife and remarkable paleontology detailed in respective outstandingly remarkable value discussions below. Because of individual uniquenesses and inextricable links to the river's flora, fauna, and paleontology, the Niobrara's geology is found to be an outstandingly remarkable value.



Fort Falls.



The Niobrara River Valley is home to both free-roaming and enclosed elk herds.

4. Fish And Wildlife Value

Outstandingly Remarkable Criteria

Fish values may be judged on the relative merits of either fish populations, habitat, or a combination of these river-related conditions. As relates to populations, the river is nationally or regionally an important producer of resident and/or anadromous fish species. Of particular significance is the presence of wild stocks and/or federal or state listed (or candidate) threatened, endangered or sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable." As relates to habitat, the river provides exceptionally high quality habitat for fish species indigenous to the region of comparison. Of particular significance is habitat for wild stocks and/or federal or state listed (or candidate) threatened, endangered or sensitive species. Diversity of habitats is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."

Wildlife values may be judged on the relative merits of either terrestrial or aquatic wildlife populations or habitat or a combination of these conditions. As relates to populations, the river, or area within the river corridor, contains nationally or regionally important populations of indigenous wildlife species. Of particular significance are species considered to be unique, and/or populations of federal or state listed (or candidate) threatened, endangered, or sensitive species. Diversity of species is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable." As relates to habitat, the river, or area within the river corridor, provides exceptionally high quality habitat for wildlife of national or regional significance, and/or may provide unique habitat or a critical link in habitat conditions for federal or state listed (or candidate) threatened, endangered, or sensitive species. Contiguous habitat conditions are such that the biological needs of the species are met. Diversity of habitats is an important consideration and could, in itself, lead to a determination of "outstandingly remarkable."

Discussion

The Niobrara River drainage contains the largest number of fish species occurring in Nebraska. Fish species specifically recorded in the Scenic River reach include the plains topminnow, red shiner, sand shiner, creek chub, white sucker, and Iowa darter. The Scenic River also contains several species representing glacial relict populations, including the pearl dace and blacknose shiner. The latter species are almost entirely limited in Nebraska to the cool, clear side streams of the Scenic River.

Cold-water fish are present in several Scenic River tributaries, including brook trout and rainbow trout. Some sport fishing occurs, but this reach of the Niobrara is not generally regarded as a unique fishing river. Warm-water species such as channel catfish and panfish species including bluegill and green sunfish also inhabit the Niobrara and provide some angling opportunity.

An amazing array of Great Plains mammals exist in the Niobrara Valley. White-tailed deer, mule deer, free-ranging moose, beaver, mink, coyote, rabbits, squirrels, skunks, foxes, and other mammals thrive along the river. Larger animals like bison and elk occur in fenced enclosures, though free-ranging elk are sighted as well. Occasionally mountain lions are seen in the forested hills of the river valley. Documented sightings of river otter, a state threatened species, have been recorded along the designated portion of the Niobrara but its current population is unknown.

The Scenic River is distinctive in that it supports three mammal species that are uniquely associated with the Niobrara. Bailey's eastern woodrat, a southern species that possibly moved north during a warm, wet period, is now found as an isolated population in the central Niobrara Valley. The olive-backed pocket mouse is also found in the valley, this western species noted at the eastern limits of its range. The southern bog lemming, a rare mammal of northeastern origin, occurs within the Niobrara Valley at its interface with the Sandhills.

Bats are documented in the Niobrara Valley and represent an important component of the mammal community. Keen's bat and the Brazilian free-tailed bat have only been found in the central Niobrara Valley. Keen's bat is associated with moist, eastern-type habitats, while the Brazilian free-tailed bat ordinarily has an affinity for southern, neo-tropical habitats.

A diverse array of birds also inhabit the Niobrara Valley. Five western bird species reach their eastern limits in the valley, while six northern oriented species reach their southern limits in the valley. The central reach of the Niobrara Valley is ecologically significant because it serves as an east-west avian corridor and important meeting ground, especially for forest-dependent species. Hybridization of eastern and western associated species, such as indigo and lazuli buntings, yellow-shafted and red-shafted flickers, and Baltimore and Bullock's orioles are vivid testaments to the biological uniqueness of the Scenic River. Bald eagles are especially common in win-

ter months, but are also seen in lesser numbers throughout the year.

The Niobrara Valley is seasonal home to several threatened and endangered bird species. The interior least tern and piping plover nest on sandbars east of Norden Bridge. In September 2002, the U.S. Fish and Wildlife Service designated the river east of Norden Bridge as critical habitat for piping plovers. The river also provides important resting and forage habitat for several migrating birds, including whooping cranes.

The Niobrara Valley is home to several wildlife species that do not receive much attention but indeed are significant to the overall biodiversity and integrity of the river and its ecosystems. Some ninety-two species of butterflies have been recorded in the valley and sixteen species reach the edge of their range there. Hybridization of three species, the Red-spotted purple, Weidemeyeri's admiral, and Eastern viceroy are noted as evolutionary and genetically significant and provide excellent opportunities for research.

Reptiles also occupy a special niche within the Niobrara Valley. The ringneck snake occurs in deciduous forest oriented areas of the valley and reaches its western limits there while the eastern hognose snake also occurs in the valley and is otherwise only marginally distributed across the Sandhills.

Finding

The importance of native habitat in the seventy-six-mile-long Niobrara National Scenic River is a value closely associated with the diverse and rich biota referenced above that comprises a core quality in the Scenic Outstandingly Remarkable Value. By themselves any of the valley's animals can seem insignificant. But when examined within the context of traditional ranges and the unique diversity and intermingling of ecosystems, the profusion of habitats and animal species become an outstanding example of Great Plains biological diversity. The Scenic River is doubly unique in that it serves as an ecological crossroads for several species of fish, birds, mammals, reptiles, and invertebrates, and a major area for hybridization and evolution. As well, portions of the Scenic River are important as potential critical habitat for several threatened or endangered species. Accordingly, fish and wildlife and corresponding habitats are found to be an outstandingly remarkable value found from rim-top to rim-top and throughout the seventy-six-mile length of the Scenic River.

5. Historic Value

Outstandingly Remarkable Criteria

The river, or area within the river corridor, contains a site(s) or feature(s) associated with a significant event, an important person, or a cultural activity of the past that was rare or one-of-a-kind in the region. Many such sites are listed in the National Register of Historic Places. A historic site(s) and/or feature(s) is 50 years old or older in most cases.

Discussion

This segment of the Niobrara Valley has witnessed human occupancy from the time of Paleo-Indians some 7,500 to 11,500 years before the present, to the era of cattle ranching, a cultural legacy arriving in the 1880s and persisting in modern time. Archaeological sites associated with Indian occupation are recorded in the valley, but none are listed in the National Register. White explorers traversed the river in the 1850s but left no traces. The United States Army established Fort Niobrara in 1879, largely to ensure peaceful Indian relations at the nearby Rosebud Sioux Reservation. One army structure survives and the fort site is listed in the National Register of Historic Places. The arrival of the Fremont, Elkhorn, and Missouri Valley Railroad in 1883 opened northcentral Nebraska to cattle ranching and homesteading, and several saw and flourmills were operating along the Niobrara River by the mid-1880s. Residents of Valentine, a community founded concurrently with Fort Niobrara, built the Cornell Dam in 1915-16 as a source of water and electricity. The dam ceased functioning in the fall of 1984 though it survives presently. Serving homesteaders, eight iron truss bridges spanned the Niobrara in the first quarter of the twentieth century. Four are listed in the National Register.

Finding

The historic uses of the Niobrara River corridor for seasonal camping, as the site of a military post overseeing an Indian agency, and associated with community development or homesteading are typical of river settings in

the region. While several sites and structures are listed in the National Register of Historic Places, none are unusual within the region of comparison. History, therefore, is not considered an outstandingly remarkable value for the Niobrara National Scenic River.

6. Cultural Value

Outstandingly Remarkable Criteria

The river, or area within the river corridor, contains a site(s) where there is evidence of significant historic, archaeological, ethnographic, or design values. The site may have unique natural and built features and the dynamics inherent in natural processes and continued human and animal occupation.

Discussion

Though used by Indians as a seasonal camping and hunting landscape for millennia, the Niobrara Valley is not known to possess sites of unique cultural significance as is commonly associated with places like Bear Butte and Spirit Mound, South Dakota, Devils Tower, Wyoming, or the pipestone quarries in Minnesota. Such design values as may have been associated with the United States Army's development and garrisoning of Fort Niobrara were long ago compromised with abandonment and post-abandonment destruction of that site. Activities associated with cattle ranching, however, do comprise a traditional cultural value and landscape that are now more than a century old and still evincing the distinctive melding of a human endeavor on a diverse and delicate landscape. Testimony before Congress as the unit was being established applauded this characteristic Niobrara legacy, noting how this tradition of stewardship contributed to the outstanding natural integrity of the valley.

Finding

The saga of cattle ranching in the Niobrara Valley is a legacy worthy of careful study, both for its perpetuation of a renowned Western cultural institution and because it so directly preserved the natural character of the landscape. While deserving of specific study and memorialization, however, the cattlemen's legacy on the Niobrara has many parallels on other riverscapes within the region. In fact, careful land stewardship generally associated with cattle ranching is a renowned tradition in Nebraska and across the Great Plains and not so much a localized attribute. As such, the cultural resources of the Niobrara are not found to be an outstandingly remarkable value when compared with other rivers in the region.

7. Other Similar Values (Paleontology)

Outstandingly Remarkable Criteria

While no specific national evaluation guidelines have been developed for the "other similar values" category, assessments of additional river-related values consistent with the foregoing guidance may be developed — including, but not limited to, hydrology, paleontology, and botany resources.

Discussion

Congressional testimony preceding the establishment of the Niobrara National Scenic River repeatedly lauded the paleontology of the valley as nationally exceptional. One Nebraska congressman boldly quoted University of Nebraska paleontologist Michael Voorhies, who labeled the Niobrara "the best bone hunter's river in the world." Indeed, the designated reach is extraordinarily rich in documented fossil sites and has been studied by the nation's scientific community for nearly 125 years. Of 164 catalogued sites in the study area, fifteen were rated as internationally significant, thirty-seven as nationally significant, and 106 as regionally significant. Some eighty species of extinct vertebrates were first identified in the project area, including fifty-six mammals, thirteen reptiles, eight amphibians, two birds, and one fish.

Type localities are where a previously unknown species was first discovered. The project area contains twenty-six type localities. Diversity of species found at a site is scientifically noteworthy. No less than 146 vertebrate species were found at one site, a locale renowned as the best of its type in North America. Another site has produced eighty-nine mammal species (more than any other single fossil quarry in the world). Yet another site produced eighty-four microvertebrate species, and a late Pleistocene faunal site along the river yielded the only known remains of several species of northern forest mammals on the Great Plains. Of these sites, some twenty have been recommended for inclusion in the National Register of Historic Places, that assessment

noting that the sites in the area contribute to our understanding of prehistory of vertebrate life on the North American Great Plains. **See maps 7 and 8.**

Finding

The designated reach of the Niobrara River is internationally renowned for the multiplicity of known species and type localities associated with the study of mammal evolution in North America. These paleontological resources have been studied by scientists for more than 125 years, and vigorous research continues. The paleontological resources of the Niobrara Valley are found to be an outstandingly remarkable value.

Boundary Alternatives

The Niobrara Scenic River Designation Act of 1991 amending the Wild and Scenic Rivers Act of 1968 obligated the National Park Service to develop a boundary to facilitate protection of the Niobrara National Scenic River and associated outstandingly remarkable values. The Niobrara's outstandingly remarkable values are determined to include **Scenic, Recreational, Geologic, Fish and Wildlife,** and **Paleontological.** The three boundary alternatives detailed below are not linked to specific management alternatives. Any boundary alternative could be chosen independent of any management alternative selected. The National Park Service does not intend to post or fence the Scenic River boundary. The National Park Service may do surveying only if needed to resolve a matter of concern or dispute.

A boundary acts to highlight the most exemplary river corridor resources, defined as its outstandingly remarkable values. Unlike a boundary for a reservoir or highway construction project, this Scenic River boundary does not define land to be purchased. The Wild and Scenic Rivers Act encourages landscape protection by means other than federal purchase, although federal purchase of land is authorized. The Act also encourages the managing federal agency to cooperate with state and local governments, organizations, and individuals to plan, protect, and manage river resources. Assistance could be provided for protection of river-related resources inside or outside the boundary. Agreements to do so may include financial assistance. Cooperative planning and agreements with local governments and private landowners can take place either inside or outside of the boundaries.

The National Park Service cooperated with several state and federal agencies and institutions to gather information and analyze the river's resources. This database was used to develop the preceding outstandingly remarkable value maps for scenic, recreational, and paleontological resources and three different boundary alternatives that seek to protect and enhance the values which caused the Niobrara to be included in the Wild and Scenic Rivers System.

Boundary Alternative 1

Boundary Alternative 1 encompasses **one-quarter mile** (0.25) of land from the ordinary high water mark on each side of the Niobrara River for the seventy-six-mile length of the designated reach from Borman Bridge to the Nebraska Highway 137 highway bridge north of Newport. This boundary includes portions of the congressionally designated wilderness within the Fort Niobrara National Wildlife Refuge.

This quarter-mile interim boundary is the same as the so-called "study boundary" prescribed in Section 4(d) of the Wild and Scenic Rivers Act. The total land area for this boundary alternative is 24,320 acres, the sum a calculation derived directly from the Act. This alternative is not preferred because, although it protects many of the Niobrara's outstandingly remarkable values, it is not tailored to provide maximum protection to the most outstandingly remarkable values, and it does not take into consideration practical lines of demarcation such as roads and property lines. It is not considered to meet the full intent of the Wild and Scenic Rivers Act. **See maps 9 and 10.**

Boundary Alternative 2

This boundary alternative favors protection of the Niobrara's outstandingly remarkable **Scenic** and **Paleontological** values, owing to their heralded national and international recognition, while incorporating but not always favoring its Recreational, Geologic, and Fish and Wildlife values and staying within the legislated

acreage limits prescribed in the Wild and Scenic Rivers Act. The wilderness area within the Fort Niobrara National Wildlife Refuge is protected by an Act of Congress and this boundary follows the ordinary high water mark through this 5.5-mile portion of the refuge. The presence of other protected lands was also considered and where they exist a minimum setback of two hundred feet above the ordinary high water mark was typically applied. Exceptions abound, the leased land of Smith Falls State Park being the most notable. Due to the complexity of the intertwined biological resources comprising the Scenic value and the widely dispersed locations of important paleontological sites, the boundary is substantially wider between the Allen and Norden bridges. In one instance the boundary extends nearly 2.75 miles from the river, and it extends nearly three miles up Fairfield Creek. The total land area associated with this alternative is 22,472 acres. This alternative meets congressional intent for Wild and Scenic River protection. **See maps 11 and 12.**

Boundary Alternative 3 (Preferred Alternative)

The preferred boundary for the Niobrara National Scenic River was drawn to protect as equitably as possible the river's outstandingly remarkable **Scenic, Recreational, Geologic, Fish and Wildlife,** and **Paleontological** values, while staying within the legislated acreage limits prescribed in the Wild and Scenic Rivers Act. The protected values include unusual or excellent examples of the river's distinctive plant ecosystems, instances of integrated ecosystems, nearly all of the river's waterfalls including its signature falls, and associated geological features; riverine landscapes visible from the streambed, key roads, and overlooks, all in the context of recreational enjoyment; critical habitats associated with fish and wildlife resources including that prescribed by the U. S. Fish and Wildlife Service for certain threatened and endangered species; and an array of global, national, and regional class fossil sites. Several documented National Register historic properties and a number of other historic sites in the seventy-six-mile reach are also included in the preferred boundary alternative.

As the Fort Niobrara Wilderness is already protected by an Act of Congress, the boundary follows the ordinary high water mark through this portion of the Fort Niobrara Refuge. The presence of other protected lands was also considered and where they exist a minimum setback of two hundred feet above the ordinary high water mark, measured horizontally, was typically applied. Exceptions abound, the leased land of Smith Falls State Park being the most notable. Due to the complexity of the intertwined biological resources comprising the Scenic, Geologic, and Fish and Wildlife values, the boundary is generally wider between the refuge and Norden Bridge, but to protect distinctive biological resources and viewsheds downriver it expands noticeably again at the paved Highway 183, 7, and 137 crossings. Aside from the wilderness passage, the boundary does not measure less than two hundred feet above the ordinary high water mark of the river elsewhere, and in some areas it extends nearly one mile from the river. It extends about 2.5 miles up Fairfield Creek, site of key paleontological resources. Although the Niobrara's outstandingly remarkable values encompass more than 150,000 acres in the designated reach, the total land area associated with this boundary, 23,074 acres, is within congressionally prescribed limits. This alternative meets congressional intent for Wild and Scenic River protection. **See maps 13 and 14.**



Canoeists enjoy one of the Niobrara's numerous waterfalls that plunge directly into the river.

Management Alternatives

Introduction

Section 10(a) of the Wild and Scenic Rivers Act directs that each component of the national system be administered in a manner that protects and enhances the values which caused the segment to be included in that system, without limiting other uses that do not substantially interfere with public use and enjoyment of those values. In such administration primary emphasis is given to protecting the component's esthetic, scenic, historic, archaeological, and scientific features, numerous attributes known collectively as Outstandingly Remarkable Values. Specific management plans for such components establish varying degrees of intensity for landscape and resource protection and development, based on the special qualities of the area.

Guidelines adopted in 1982 by the departments of the interior and agriculture give added planning and management direction. Land uses and developments on private land in the river area that existed when the segment was designated would continue, provided they were consistent with the purposes of the Wild and Scenic Rivers Act. Public use would be regulated and distributed where necessary to protect and enhance resource values. The managing agency or agencies could provide basic accommodations to absorb user impacts on the resource. Major public use facilities would, where feasible, be located outside the river area. Agricultural and forestry practices would be similar in nature and intensity to those present in the area at the time of designation. As well, patterns of land use and ownership would be maintained, provided they remained consistent with the purposes of the Wild and Scenic Rivers Act.

As prescribed by the National Environmental Policy Act, a federal agency's environmental impact statement must include a "continue existing conditions" (in this case, no National Park Service action) and multiple action alternatives for managing the land and associated uses in the project area. The action alternatives must each address planning issues and concerns, comply with identified legislative mandates, and lead to the desired future conditions.

The management alternatives in this plan discuss land along a river that is mostly privately owned. Congressional debate preceding the 1991 Niobrara Scenic River Designation Act and early discussions in the planning process directed the focus away from large-scale federal land purchases and toward maintaining private ownership and encouraged landscape protection through partnerships with local governments and landowners.

The alternatives for managing the Niobrara National Scenic River presented here evolved from protracted planning between 1991 and 1996, a brief experience at a partnering venture between 1997 and 1999 involving the National Park Service and newly created Niobrara Council, a 1999 court order that terminated that venture by invalidating the general management plan/environmental impact statement upon which the partnership was based, and input received from planning partners participating in the court-ordered replanning effort of 2000 through 2005.

Existing Authorities, Laws, and Programs

This section describes existing authorities, laws, and programs that could and in many instances must be used in Niobrara National Scenic River management.

Water Resource Authorities

Section 7(a) of the Wild and Scenic Rivers Act declares that

> *…no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration.*

This authority affects the seventy-six-mile Niobrara National Scenic River and also applies to actions above and below the designated segment and on tributaries if the action would invade the designated segment or otherwise have an adverse effect on the designated segment. For example, the National Park Service's Section 7(a) evaluations weigh heavily in the U. S. Army Corps of Engineers's granting of Section 404 permits for water resources projects occurring on the Scenic River.

Section 404 of the Clean Water Act requires permits for discharge of fill into streams, lakes, and wetlands. The Corps of Engineers issues the permits to individuals and government agencies for construction projects. With appropriate environmental analysis and redress, landowners and agencies with Section 404 permits could continue to construct such things as check dams and other erosion control structures on tributaries **outside** the boundary. Natural materials incorporating bioengineering methods are preferred for erosion control.

Action **inside** a Wild and Scenic River boundary that in any way impairs the free-flowing condition of the river or section of a river is expressly prohibited by Section 1(b) of the Wild and Scenic Rivers Act, which reads in part

> *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.*

Section 16(b) of the Act provides further definition:

> *"Free-flowing", as applied to any river or section of a river, means existing or flowing in a natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway.*

As described in the Wild and Scenic Rivers Act in Sections 13(b) to 13(d), the Act does not change state and federal water law but does require that flows needed to protect river values be maintained. The designated segment is well watered at this time. Unless future diversions by owners with valid water rights alter this situation, there would be no need for the National Park Service to seek enforcement of its water rights. To date, the state has not sought to adjudicate water rights pursuant to the McCarran Amendment, 43 U. S. Code Section 666(a). Therefore, it is not known whether there were unappropriated waters at the time of designation. If not, and future legitimate rights were exercised to the point of adversely affecting outstandingly remarkable values, the Federal government would have to consider purchasing water rights. The National Park Service will determine needed in-stream flows for the Niobrara National Scenic River as soon as practical.

The Environmental Protection Agency via the Clean Water Act delegates water quality management to states. Federal oversight is provided by the Environmental Protection Agency. The Nebraska Department of Environmental Quality establishes and administers surface water quality standards and stream classifications under Title 117 (Nebraska DEQ 1991), standards for new septic systems under Title 124 (Nebraska DEQ 1987), and regulations pertaining to feedlots and animal waste control under Title 130 (Nebraska DEQ 1989). Under Nebraska law the water column is under state jurisdiction. The Niobrara River is rated a Class A river in which the existing water quality shall be maintained and protected. Department of Environmental Quality permits for new septic disposal systems, including septic tanks and underground absorption beds, require that they be located at least fifty feet from Class A streams, be under review for a distance of two hundred feet from Class A streams, be at least four feet above the seasonal high water elevation of ground water, and be installed on slopes not exceeding a twelve percent grade.

County and Niobrara Council Zoning Authorities

Real estate development can greatly influence the scenic, social, and environmental values along the river. Land use zoning by counties is intended to guide new development to protect health, safety, and welfare in the long term. Brown, Cherry, Keya Paha, and Rock counties have zoning ordinances for new use and development of private property. County zoning ordinances must be countywide under Nebraska law. The zoned counties developed codes that are consistent with the purposes of the Wild and Scenic Rivers Act by generally adopting land protection recommendations made by the National Park Service in its 1996 *Niobrara National Scenic River General Management Plan/Environmental Impact Statement*. The 1996 development commendations are reaffirmed in this plan. **See Appendix E.**

In 2000 the State of Nebraska passed LB1234 that reorganized the Niobrara Council, bestowed it with state authority to assist the National Park Service in all aspects of Scenic River management, and, most important, charged it with reviewing and approving or rejecting existing, new, or proposed zoning regulations and variances on lands within the Scenic River boundary. The Council reorganized in July 2000 under this state authority and has been exercising its responsibilities ever since. **See Appendix G** for a copy of this statute.

The federal government does not have zoning authority over privately owned lands, unlike counties, municipal governments, and other political subdivisions of the state.

Federal Land Acquisition Authority and Limits

The Niobrara Scenic River Designation Act of 1991 and the Wild and Scenic Rivers Act provide authority for but do not require government acquisition of land. The federal government may control land use along the Scenic River by acquisition of land or easements. Under Wild and Scenic Rivers Act authority, acquired land must be inside an approved boundary or be part of a tract partially inside the boundary. Acquisition could include accepting a donation of land, purchase of all interests in land (full fee title purchase), purchase of an easement, or condemnation of fee title or an easement. For any purchase, appraisers determine market value based on comparable land sales.

An easement is a purchase of certain rights or a partial interest in a property. It results in a restriction on the deed that is binding on future owners. Changes in the easement can only be made by the agreement of the original parties or their successors in title. Use easements could permit some activities such as hiking or picnicking. Scenic or conservation easements could restrict activities such as construction. Valuations are determined by current land appraisals performed with and without the easement provisions and the difference between the values is paid to the landowner.

Acquisition of land by the federal government is limited by the Wild and Scenic Rivers Act. A managing agency cannot acquire fee interest in land exceeding an average of one hundred acres per river mile. Forced sale by condemnation could occur for fee title or easement. Condemnation could not be used for fee title purchase if total public ownership exceeds fifty percent of the acreage within the boundary. An agency can condemn scenic or use easements or in order to clear title.

Sections 4(a) and 4(b) of the Niobrara Scenic River Designation Act of 1991 further restrict the use of condemnation on the Niobrara unless it can be demonstrated that state or local governments are not adequately protecting the values for which the river was designated, whether through statute, regulation, or ordinance. Otherwise, purchase of land in fee title by use of condemnation could not exceed two percent of total acreage within the boundary. Total purchase of land (fee title or easement) by condemnation could not exceed five percent of the total acreage within the boundary.

Jurisdiction and Law Enforcement

The Niobrara Scenic River Designation Act of 1991 established federal jurisdiction on the surface waters of the Niobrara from the commencement of the unit at Borman Bridge to its terminus at Nebraska Highway 137, and over such federal lands existing presently or may subsequently be acquired. The 1991 Niobrara Act provided that that portion of the river located within the Fort Niobrara National Wildlife Refuge would continue to be managed by the U. S. Fish and Wildlife Service, while the National Park Service was assigned management over the remainder of the unit. Accordingly, primary law enforcement on the federal jurisdiction will necessarily be managed by the U. S. Fish and Wildlife Service and National Park Service, respectively.

Federal law enforcement agents have minimal jurisdiction over private land and other non-federal property. Accordingly, primary law enforcement on such lands will continue to be provided by county sheriff's departments under all alternatives. Search and rescue and wildfire suppression responsibilities will typically continue under county jurisdiction.

The U. S. Fish and Wildlife Service has concurrent jurisdiction with the State of Nebraska on the Fort Niobrara National Wildlife Refuge. Some Fish and Wildlife law enforcement officers are also deputized state wildlife conservation officers under cooperative agreement with the state.

Nebraska Game and Parks Commission law enforcement jurisdiction is unchanged by the 1991 Niobrara Act and wildlife conservation officers will continue enforcing state wildlife and boating regulations throughout the Scenic River unit, and state park regulations at Smith Falls State Park.

Under Section 13(a) of the Wild and Scenic Rivers Act, state jurisdiction over fishing, hunting, and trapping on private land will continue. Fishing and hunting will continue on all lands in the boundary except at Fort Niobrara National Wildlife Refuge and Smith Falls State Park, unless the National Park Service determines that it

should designate zones or establish periods when fishing or hunting is not allowed, whether for resource preservation, public safety, administration, or public use and enjoyment of the designated river segment, and the Service would seek concurrence and enforcement through the state. Trapping is prohibited on federally owned land under National Park Service management unless authorized by specific statute, which in this case it is not.

National Park Service regulations prohibit the use of airboats and personal water craft on waters under the Service's jurisdiction except for emergency or specially permitted administrative uses. Other applicable boating regulations are set forth in Part 3 of Title 36 of the Code of Federal Regulations.

Fort Niobrara National Wildlife Refuge

The 1991 Niobrara Act provides that the 9.2-mile segment of river flowing through the Fort Niobrara National Wildlife Refuge will continue to be managed by the U. S. Fish and Wildlife Service. Coordination of Scenic River management will be achieved through approval of the general management plan and a subsequent interagency agreement.

Public Law 94-557 passed by Congress on October 19, 1976, established the 4,635-acre Fort Niobrara Wilderness Area within the existing boundaries of the Fort Niobrara National Wildlife Refuge. The wilderness is managed consistent with general provisions of the Wilderness Act of 1964, acknowledging and perpetuating a landscape untrammeled by man. The Niobrara National Scenic River passes some 5.5 miles of this wilderness which presence affords protection of resources counted among the outstandingly remarkable values of the Scenic River.

Threatened and Endangered Species

The U. S. Fish and Wildlife Service via the Endangered Species Act oversees protection and recovery of plant and animal species federally listed as threatened or endangered, or are candidates for listing. Several protected species are found in the area. All actions by federal agencies, including the National Park Service, are reviewed in consultation with the Fish and Wildlife Service for compliance with the Endangered Species Act, and the Fish and Wildlife Service has authority to monitor endangered and threatened species and to enforce the Act's prohibitions against harming such species. By agreement, the National Park Service also manages to protect state listed species.

State and Federal Conservation Programs on Private Land

Programs providing technical assistance and cost-share assistance to private landowners would be continued by various federal, state, and local agencies for purposes of water, soil, and wildlife conservation, in conformance, however, with Wild and Scenic Rivers Act Section 7(a) provisions discussed above. County governments and natural resources districts have the authority to accept voluntary conservation easements given by landowners.

Management Alternative A
No-Action Alternative

Management Concept

The National Environmental Policy Act requires the consideration of a "no action" alternative along with action alternatives for, in this instance, the management of a unit of the National Park System. The no action alternative is developed, analyzed, and used as a baseline for comparing the effects of the action alternatives. Under Alternative A it is assumed that many local, state, and federal government programs, agencies, and authorities would continue to function within the Scenic River area, and change over time, but with no systematic coordination or oversight. It would also be assumed that the National Park Service would be limited in its ability to meet legal or policy requirements in the park.

In the no-action alternative, the river area would continue to evolve without a coordinated, comprehensive effort by a congressionally delegated managing agency and would generally continue current trends of landscape oversight, visitor use, and development. The Niobrara River would retain its legislated status as a unit of the National Wild and Scenic River System as specified in the Niobrara Scenic River Designation Act of 1991. National Park Service administration would be minimal, at best, and consist mostly of loose coordination with state and federal agencies and review of federal permits to maintain the river in its free-flowing condition in compliance with the Wild and Scenic Rivers Act.

Local interests, chiefly landowners, outfitters, natural resources districts, and county governments, would continue to provide services such as public information, law enforcement, river access, road maintenance, outfitting, and camping.

Landowners would continue using their land as they saw fit, subject only to other state and federal regulations and programs. Protection of the scenery and natural features would depend almost exclusively on existing or developing programs, including county zoning, voluntary landowner covenants, and other private land protection strategies. The Niobrara Council, utilizing authorities for land protection accorded it by the State of Nebraska, would continue to review local zoning actions.

Land ownership would follow existing patterns with limited or no public purchase of land or easements.

Niobrara Council

The original Niobrara Council was established in 1997 as an outgrowth of the preferred management alternative in the 1996 *Niobrara National Scenic River General Management Plan/Environmental Impact Statement*. As envisioned, this then fifteen- member consortium representative of local county governments and landowners, natural resources districts, river industries, and state and federal governments was tasked by the National Park Service with many Scenic River operational responsibilities, including land protection, resources management, and infrastructure management. A federal court ruling in a lawsuit brought against the National Park Service in 1997 invalidated the 1996 general management plan and required that the Service sever its ties with the original Council, ruling that the Service had exceeded its authority in delegating management responsibilities to another agency. Although the National Park Service disagrees with this characterization, it respects the court and is following its ruling. Meanwhile, a state law passed in 2000 by the Nebraska Unicameral formally reconstituted the Niobrara Council as a sixteen-member state body with specific charges of reviewing, approving, or rejecting zoning regulations and variances affecting Scenic River land, and assisting in other aspects of the management of the unit.

Under the No-action Alternative, the Niobrara Council would engage in an array of self-directed land protection and resource management initiatives, but would not receive National Park Service funding. Instead, it would depend on state and county support and grantsmanship.

Staffing / Funding / Cost

The National Park Service would retain an employee dedicated to Niobrara River matters at its Niobrara/Missouri headquarters in O'Neill. This individual would chiefly review actions emanating from other federal agencies such as the U. S. Fish and Wildlife Service, U. S. Army Corps of Engineers, and Bureau of Reclamation in lieu of similar agency-to-agency review

at the National Park Service's Midwest Regional Office in Omaha.

The annual operating cost for limited government-to-government liaison on the Niobrara National Scenic River would be approximately $100,000.

See Appendix H for a cost comparison of alternatives A, B, and C.

Land Protection / Acquisition

General patterns of private and public ownership and management would continue. Protection of the landscape and natural features would depend on the owner and existing or developing programs, including county zoning, voluntary deed restrictions, and private land conservation programs. County zoning established in Brown, Cherry, Keya Paha, and Rock counties provides reasonable landscape protection consistent with values and standards developed in the invalidated 1996 *Niobrara National Scenic River General Management Plan/Environmental Impact* Statement. Utilizing authorities given it by the State of Nebraska, the Niobrara Council would continue to review local zoning decisions making consistent with the tenets of the defunct 1996 management plan and general precepts of the Wild and Scenic Rivers Act, but would be dependent upon non-federal funding to support its oversight activities.

The National Park Service would not purchase land or easements, nor would it support financially any local entity even if that entity were willing or able to engage in land protection activities.

Resource Management

Private and public land would be managed for various objectives under county, state, and federal environmental regulations. Various conservation programs would continue to provide technical and financial assistance in resource conservation. The National Park Service would draft a resource stewardship plan, likely by contract, and may provide minimal financial support for implementation. Fire management would continue to be the obligation of the state. Rural fire departments would be responsible for wildland fire suppression.

Visitor Information and Interpretation

River information services would be provided by outfitters, chambers of commerce, local tourism committees, the Nebraska Game and Parks Commission, and U. S. Fish and Wildlife Service. While the Commission and Fish and Wildlife Service stress in their literature the importance of the locale's natural resources, local efforts typically feature "getting there" and "using it" concepts rather than developing resource understandings in a national context integral with river and landscape preservation. The National Park Service would not develop a long-range interpretive vision for the park or support financially any efforts along those lines.

Law Enforcement and Emergency Services

Those agencies and governments with law enforcement jurisdiction within the Niobrara National Scenic River would provide law enforcement, search and rescue, and fire control within their individual jurisdictions or as may be permitted by cross-jurisdictional agreements. To the extent of its capabilities, the National Park Service would seek to implement limited visitor and resource protection efforts pursuant to its jurisdiction, likely with minimal financial support.

Visitor Use and Outfitter Management

Recreational uses and services consisting mainly of canoeing and inner tubing on the western third of the designated river, plus camping and sightseeing would continue. Hunting would continue on private property. The U. S. Fish and Wildlife Service would continue to manage river use and outfitters within its jurisdiction on the Fort Niobrara National Wildlife Refuge. Outfitters would still be required to obtain restricted annual special use permits issued by the U.S. Fish and Wildlife Service in an effort to address resource and recreational impacts on the Refuge.

Public Facilities / Maintenance

River access would continue to be provided at publicly owned sites at Fort Niobrara National Wildlife Refuge, Smith Falls State Park, and the Middle Niobrara Natural Resources District's Brewer Bridge launch. Privately owned commercial access sites also exist between the Berry and Norden bridges, and at the Meadville bridge. These sites could continue and new sites could be developed based on the desires of private landowners and county zoning regulations. Camping would be provided at Smith Falls and at privately owned commercial campgrounds along the river east of Berry Bridge and at Meadville. Public sanitary facilities on the canoeable reach would be limited to Fort Niobrara, Smith Falls, and the Brewer Bridge site. County and state roads would continue to provide recreational access to the river valley but financial support for routine maintenance and desired upgrades would be limited to local and state sources.



A solo canoeist enjoys a Class II drop at Fritz's Island.

Management Alternative B
National Park Service Manages With Assistance From Partners (Preferred Alternative)

Management Concept

This alternative acknowledges several realities confronting the National Park Service in the twenty-first century. First, Congress continues to create units of the National Park System that in many instances include significant tracts of privately owned land within their boundaries. Second, there are many privately owned lands in America that retain their inherent outstanding natural or cultural value. Third, the American legal system provides certain rights to owners of private lands that protect an individual's rights of property. Lastly, it is possible to build varied partnerships that successfully serve national interests like preserving and managing an American treasure as remarkable as the Niobrara National Scenic River, while still respecting private land ownership within the Scenic River's boundaries.

This alternative recognizes the considerable success enjoyed by the National Park Service in forging productive working relationships with federal, state, and private partners to manage the Scenic River's diverse resources and challenges. It recognizes as well that a high percentage of the land within the boundary of the Niobrara National Scenic River is privately owned and likely to remain so in the foreseeable future. And it fully acknowledges a federal court order directing the National Park Service to retain its statutorily mandated authority over Scenic River management.

In this preferred alternative, the National Park Service would provide numerous services and retain management control over such core functions as natural and cultural resources management and law enforcement. The National Park Service would also take a lead role in areas where it is a recognized leader, such as interpretation. Finally, the National Park Service would act as the lead agency, technical advisor, and facilitator in other functional areas where partnerships might more logically achieve National Park Service-standards of performance such as resource protection on private lands. This alternative also recognizes that if selected partnering efforts were not achieving desired objectives, the National Park Service would seek a better partnership or manage the task directly. In any event, under this alternative the National Park Service would retain ultimate authority for protecting resources as assigned by Congress through the Wild and Scenic Rivers designation.

Staffing / Funding / Costs

The National Park Service would maintain a field presence in Valentine and its headquarters office in O'Neill (which is also headquarters for the National Park Service's management of the Missouri National Recreational River).

The Valentine field office in 2005 would be composed of a mix of permanent resource management specialists and visitor and resource protection rangers under the charge of a chief ranger. A seasonal staff of biological technicians and visitor and resource protection specialists would support the permanent staff. Annual costs for this resource management and visitor protection field staff in 2005 would be approximately $250,000, including personnel, equipment, rent, supplies, and transportation.

The O'Neill headquarters office in 2005 includes a superintendent, administrative officer, administrative assistant, resource management specialists, and a hydrologist. Four of these employees divide their time equally between the Niobrara and Missouri units and provide technical support to field staffs and partners. One of the resource management specialists is dedicated to the Niobrara. The Niobrara-affiliated headquarters staff in 2005 cost approximately $245,000.

This alternative envisions the creation of a Valentine-based field staff of interpretive rangers consisting of two permanent full-time employees and several seasonal employees. They would provide educational and interpretive services for the river in the interim before construction of a cooperative National Park Service-U. S. Fish and Wildlife Service-Nebraska Game and Parks Commission research and education center at or near the west end of the Scenic River. This interim interpretive staff is estimated to cost $250,000 annually, including personnel, equipment, supplies, and transportation.

Costs for staffing the envisioned cooperative visitor education center will be detailed when that project is further developed.

This alternative envisions cooperative management costs of $400,000 annually, subject to appropriation, for such functions performed through cooperators like the Niobrara Council, Nebraska Game and Parks Commission, and local counties, as land protection, zoning oversight, resource management, law enforcement and emergency services, and public facility management and maintenance. This is an increase of $250,000 over existing funding for partnering activities.

See **Appendix H** for a cost comparison of alternatives A, B, and C.

Land Protection / Acquisition / Cost

The National Park Service would encourage continued private ownership of agricultural lands within the Scenic River boundary as a practical method of ecosystem, scenic, and cultural preservation, believing that woodlands, prairie, ranches, farms, hay land, and cultivated land comprise, in part, the natural and cultural legacy of the Niobrara Valley. The conversion of ranch and farmland for non-agricultural purposes would be discouraged.

Recreational uses occur on both public and private lands within the boundary, and include canoeing, kayaking, tubing, camping, hunting, fishing, sightseeing, and lodging. Some services associated with this use are essential to accommodate the public's use and enjoyment of the river and limited improvements are envisioned, but the conversion of ranchland for recreational purposes would be discouraged.

As the preferred means of land protection within the boundary of the Niobrara National Scenic River, the National Park Service would encourage and support the full use of zoning in the four counties through which the designated Niobrara River segment flows.

Believing in the utility and logic of local land use control of private lands within the federal boundary, the National Park Service would encourage that Niobrara Council be accorded pro forma notification by the counties of all zoning variance requests originating within the Scenic River boundary; that the Council actively measure each request for consistency with the respective county code and parallel land protection recommendations in this plan; and that the Council actively participate in the public discourse leading to a decision on the request.

The National Park Service would also seek pro forma notification of variance applications affecting lands within the Scenic River boundary, independently measure each request for consistency with respective codes and this plan, and work closely with the Council and/or counties during the course of application review and approval.

As an additional land and resource protection measure, the National Park Service would encourage the Niobrara Council to exercise fully the zoning oversight authority accorded it by the State of Nebraska in 2000. A state bill passed by the Unicameral that year endowed the Council with binding override authority on decisions made by respective county zoning boards affecting the Niobrara National Scenic River. The exercise of that authority allows the Council to review and approve or reject a local zoning decision if, in collective opinion, the first decision had the potential to derogate a Scenic River resource defined in this plan.

Certain small, discontinuous tracts of federal land exist within the project area. Where such tracts no longer serve original purposes and are deemed surplus by their holding agencies, the National Park Service would seek their direct transfer for protection and management as Scenic River lands. Of such tracts existing outside of but within the proximity of the eventual boundary, the Service would ask retaining agencies that they be held in suspension as potential trading stock ultimately benefiting the Scenic River.

As an additional preferred resource protection measure, the National Park Service would actively promote the utilization of conservation or scenic easements acquired from willing sellers. An array of entities including federal, state, or local governments or qualifying land trusts could act as the acquisition agent but the National Park Service would specifically seek to empower the Niobrara Council with this land protection objective. To facilitate such a program, the Service would specifically seek an appropriation from Congress to endow the Council's capability of commencing and managing a conservation easement program, and would join the Council in prioritizing acquisition prospects. The

Service would ensure that all easements purchased with federal funds would provide for suitable enforcement of their terms and reversion to a comparable public entity or the Service itself if the Council or other easement holder was no longer able to own or manage the tract.

The acquisition of easements is preferable to fee title acquisition, but the National Park Service could also engage in fee title acquisition from willing sellers if preferable to the seller. The Service could also promote fee title acquisition by state and local governments or qualifying land trusts if preferable to the seller, but would encourage that a conservation easement prohibiting future development be attached to the title and the property thereafter resold for grazing purposes. The principal objective of any fee title acquisition from willing sellers would be the retention of lands in their natural state or the allowance of lands to revert to their natural state.

Where there exists a clear and direct threat to the river or river-related resources within the boundary, federal acquisition could be used to protect the land. The use of this authority would occur only after other alternatives such as zoning or easement acquisition by any public or non-profit agency failed to protect Scenic River resources. If acquisition were used to protect Scenic River resources, a conservation easement would be preferred over fee title.

Initial land acquisition costs allowing for the purchase of conservation easements and river access sites in fee (**discussed below**) is estimated at $5.5 million and is potentially renewable.

Resource Management

The impressive untrammeled condition of the designated segment of the Niobrara River is a distinct tribute to thoughtful resource stewardship by generations of private landowners in the valley. It would be the National Park Service's highest objective to work cooperatively with private landowners to maintain the inherent natural and ranching integrity of the valley and to preclude undesirable changes that could affect its array of outstandingly remarkable values.

Foremost, the National Park Service acknowledges that agency-led resource management activities on private lands should only occur with the owner's consent and that it has limited options otherwise.

Upon completion of this general management plan/environmental impact statement, the National Park Service would complete a Niobrara National Scenic River Resource Stewardship Plan. The resource stewardship plan would more particularly develop action agendas that achieve desired future conditions for the park's natural and cultural resources, establish standards for managing the unit's resources consistent with the policies of the National Park System, and prioritize a broad array of inventorying, monitoring, and resource management actions to be undertaken by the Service in cooperation with public and private partners. A fully developed resource stewardship plan is essential to gaining specialized federal funding for selected management initiatives and undertakings.

In large measure, a Scenic River resource stewardship plan would also provide general technical guidance to partners sharing common ideals and goals. Partners, in turn, could prove critical to implementing management actions on private lands and could more readily access an array of additional funding from local and state sources not conventionally available to the National Park Service.

The Service would seek to formally engage several resource management partners aiming to capitalize on various technical strengths, funding capabilities, and, in the case of the Niobrara Council or local natural resources districts, the capability of promoting resource management actions on private lands. While availing itself of all opportunities to work with diverse partners, the Service would strive for results consistent with the stewardship vision derived from the Scenic River's resource stewardship plan and Service-wide standards for resource management in the National Park System, and would retain final review and approval authority over all actions implementing federal management of Scenic River resources.

Fire Management

The National Park Service would create a comprehensive fire management plan for the Scenic River. Maintaining the natural landscape both visually and ecologically would be prioritized. Cooperative agreements would be sought with state and federal agencies and willing landowners to protect structures and other

resources and perpetuate the scenic viewshed and exemplary biological diversity found in the Niobrara Valley. Procedures including conscientious forest management practices (timber cutting and thinning), hazard fuel reduction, prescribed fire, and suppression of wildland fire would be features of the program. Land restoration projects involving fire on private land would be sought.

The National Park Service would maintain a resource management and ranger staff with collateral fire duties and would rely primarily on regional expertise and leadership in matters of planning and funding. A small engine or slip-on unit with a four to six person wildland fire cache would be maintained at the Valentine Ranger Station. Annual funding (as available) would be sought for rural fire assistance, supplies and training needs, and supporting hazard fuel reduction, restoration projects, and prescribed fire uses. To respond to wildland fires the Service would be involved in local mutual aid agreements as a supportive partner on private and public lands.

Forest Management

The National Park Service would seek to maintain and enhance forest resources within the Scenic River by promoting timber management practices that ensure improved forest health, reduces fire risk, and preserves desired ecosystem composition and biotic diversity. Green certification of wooded properties and harvesting done in consultation with a state forester would be encouraged as would the use of fire and hazard fuel reduction as management tools for fuel reduction, seed bed preparation, and timber stand and wildlife habitat improvement. Grazing would also be considered for use as a management tool. These initiatives could be implemented through technical assistance and cost-share programs sponsored by cooperators.

Prairieland Management

The National Park Service would also seek to maintain and enhance the diverse prairie resources within the Scenic River by endorsing best management practices that promote prairie health through, among other means, the utilization of appropriate grazing regimes, the uses of prescribed fire, and the eradication of invasive species like red cedar by mechanical means or burning. These initiatives could be implemented through technical assistance and cost-share programs sponsored by cooperators.

Fossil Resource Protection

The National Park Service would seek to protect the Scenic River's fossil resources by educating cooperators and landowners on the significance of these resources. This educational effort could be effected through on-site visits or at annual or periodic information meetings. Additionally, the Service would seek to implement a voluntary monitoring protocol aimed at ensuring the integrity of these sites.

Cornell Dam

The very essence of the Wild and Scenic Rivers Act is protection of free-flowing rivers. It is therefore imperative to examine whether retention of the non-functional, aging Cornell Dam is consistent with protection of one of the Great Plains' most unique watercourses. The Wild and Scenic Rivers Act provides no guidance regarding retention or removal of existing dams. In this management alternative, the National Park Service would request that the U. S. Fish and Wildlife Service conduct a joint evaluation of the appropriateness of retaining Cornell Dam and of the impacts and mitigation associated with retention and removal. As necessary, a second study evaluating the historical significance of the dam would be completed.

Non-proliferation of River Crossings

Being a linear resource, there is often interest in building new crossings of a river. Crossings come in three forms: bridges, overhead wires for communications and electrical energy, and under-river crossings for communications, electrical energy, and material such as fuel or natural gas. The Service would seek to reduce the number and size of Niobrara River crossings by encouraging safe, compatible, multiple uses of existing corridors and structures. All proposed changes to river crossings or corridors would require site-specific environmental evaluations and approval from applicable local, state, and federal agencies. The impacts of each proposal would be analyzed and documented before the managing agencies permitted any changes in crossings or corridors.

Wireless Telecommunication Facilities

In 1999 the National Park Service adopted specific procedures for permitting wireless telecommunication facility sites in units of the National Park System. These Service-wide procedures are unique to this specific issue and are in addition to other requirements and procedures for permitting rights-of-way and other special park uses. These procedures are additionally tempered by the character of the Scenic River's private landscape. While wireless telecommunication facility sites may be permitted within park boundaries, the Service will work with providers and regulators to explore and analyze alternatives and protect the values and purposes for which the park was established.

Visitor Information and Interpretation

The Service would prepare a long-range interpretive plan for the Niobrara National Scenic River to determine the array of personal and non-personal interpretive programming appropriate for this unique unit. The long-range interpretive plan examines different media applications for carrying interpretive, safety, and conservation messages to the visiting public. As well, such a plan develops strategies for partnering opportunities to achieve those goals on the Scenic River. Thereafter, as logical and applicable, the Service would commence and/or facilitate programming with the U. S. Fish and Wildlife Service, Nebraska Game and Parks Commission, and other land managing partners that ensures the public's safe and enjoyable use of resources, provides opportunities to learn about the distinctive natural and cultural features of the area, and safeguards the private landscape.

The National Park Service would work with the Niobrara Council, recreation service providers, and other partners to coordinate previsit orientation materials and information. It would continue to endorse and support the Council's "River Code of Ethics" initiative. And it would seek to standardize and enhance state and local tourism promotional materials and the manner in which they present, discuss, and market the Niobrara National Scenic River.

The Service would continue to support the Niobrara Council's "Niobrara Class" initiative at Valentine Rural High School and elsewhere. It would also support other Scenic River educational initiatives driven by the Council, The Nature Conservancy at its Niobrara Valley Preserve, the community of Ainsworth desiring a Sandhills interpretive center, and other outreach initiatives, offering technical support that develops or expands the understanding and appreciation of the significant natural and cultural resources of the Scenic River.

Law Enforcement and Emergency Services

The National Park Service would manage a law enforcement program on lands and waters under its jurisdiction and would seek cooperative agreements with other federal, state, and local agencies and departments to facilitate and standardize responses in other jurisdictions. The Service would seek to develop response capabilities in the full array of law enforcement, emergency, and fire situations to uniformly respond to increased public use and varying environmental conditions.

The National Park Service would seek concurrent jurisdiction with the State of Nebraska for the enforcement of laws on lands and waters under federal jurisdiction, and would investigate deputization of its rangers as state wildlife conservation and/or sheriff's officers.

The National Park Service would initiate law enforcement and emergency service meetings with all federal, state, and local agencies and departments having jurisdiction in the Niobrara National Scenic River. These meetings would serve to orient agency and department members new to the locale and provide an opportunity to discuss law enforcement and emergency service programs and initiatives.

Visitor Use and Outfitter Management

Recreational opportunities along the Niobrara River have traditionally focused on hunting, fishing, canoeing, kayaking, tubing, swimming, enjoyment of scenic vistas, hiking, camping, and wildlife observation. Since the designation of the river as a component of the Wild and Scenic Rivers System in 1991, the number of people canoeing and tubing the river appears to be steadily

increasing. Outfitters and U. S. Fish and Wildlife personnel have collected visitor use data and made limited conclusions on visitor use since 1993.

Increased river use has led river managers to express concerns about possible disturbances to wildlife, impacts to vegetation, and the quality of experiences for river users. The compatibility of increased public use with the intents of the Wilderness Act has itself raised issues on the Fort Niobrara Refuge. The various commercial outfitters offering canoe and tube rental services on the Niobrara River operate in part on the Fort Niobrara National Wildlife Refuge. Recently outfitters were required to obtain restricted annual special use permits issued by the U. S. Fish and Wildlife Service in an effort to address resource and recreational impacts on the Refuge. The numbers of permitees and total canoe and tube inventory allowed to operate on the Refuge is under continuing review.

The National Park Service funded a detailed visitor survey by the University of Minnesota's Cooperative Park Studies Program in 1993 during initial general management planning for the Scenic River. The Service renewed that university contract in 2001 to replicate and build upon the 1993 study in an effort to gather necessary information to make reasoned management decisions regarding visitor use. Results and conclusions in the *2001 Niobrara National Scenic River Visitor Study* are reflected often in this plan.

Outfitter operations on the Fort Niobrara Refuge also influence use levels and trip patterns along the entire canoeable reach of the Niobrara National Scenic River. The National Park Service would measure and monitor visitor impacts to natural and cultural resources and seek to preserve appropriate visitor experiences on the river while working to prevent degradation of those resources. If resources are negatively impacted or the visitor experience seriously degraded, the Service would take management actions within the limits of its jurisdiction and in concert with partners to avoid, restore, or mitigate recreation-caused impacts.

Managing agencies are also required as part of their long-term planning to address the issue of resource protection in relation to visitor capacity. For further explanation of this concept, please refer to the discussion of Carrying Capacity addressed under "Foundations of the Plan" found at the beginning of this document.

Public Facilities

To better accommodate the visitor use and management goals discussed at the beginning of this document (see "Foundations of the Plan"), the National Park Service would seek to develop additional public access sites on the river, particularly in the proximity of Berry Bridge immediately downstream from the Fort Niobrara Refuge and in the proximity of Rocky Ford. Specific locations could be detailed in the river use management plan or a separate development concept plan. Actual development of new access sites could be undertaken by the Service or any public partner with National Park Service technical and financial support. To minimize the proliferation of recreational sites on the river, development of new access sites would occur only when it can be demonstrated that such action netted the closure of nearby traditional use sites. Access sites would be purchased from willing sellers only.

The National Park Service would seek cooperators like the Niobrara Council and Middle Niobrara Natural Resources District to develop or improve permanent restroom facilities at critical locations on the canoeable river, in part replacing seasonal portable toilets the Service has funded in recent years. The availability of permanent toilets at appropriate distances on the canoeable river would significantly reduce human waste problems and lessen trespass on private lands.

The National Park Service would engage the Nebraska Game and Parks Commission and U. S. Fish and Wildlife Service to explore the potential of connecting the Commission's Cowboy Trail, a hiking and biking Rails-to-Trails initiative across northern Nebraska, with the Fort Niobrara access. This five or six mile side trail could introduce a discrete new, typically non-canoeing audience to the Scenic River's unique natural and cultural resources and also the distinct wildlife and cultural resources of the Fort Niobrara National Wildlife Refuge.

Research and Education Center

The National Park Service, U. S. Fish and Wildlife Service, Nebraska Game and Parks Commission, and others would explore a jointly developed and managed Niobrara River Research and Education Center located somewhere on the Fort Niobrara Refuge in the proximity of the Fort Niobrara access, in the vicinity of the Borman Bridge, or the vicinity of the US 20 crossing of

the Niobrara River. Such a center would orient the visiting public to the nationally significant natural and cultural resources of the Scenic River and Refuge, safe uses of the river, and obligations due private landowners that own the majority of the downstream resource. The center could also provide offices for partners like the Niobrara Council. Specific sites and design plans would be prescribed in a development concept plan undertaken jointly by the partners.

Development Costs

Preliminary cost estimates for the construction envisioned in this alternative are based on federal construction costs in the Midwest Region of the National Park System and not on specific site information or facility design. Called Class C estimates, these conceptual costs are based on square foot costs of similar construction or identifiable unit costs of similar construction elements. Variables such as job location, material suppliers, labor availability and wage rates, season of construction, geographical areas, and difficulty of terrain all figure in the estimate. Actual costs could also depend on participation of local partnering agencies and could be greater or lesser less than shown.

A typical river access site is assumed to provide gravel surface parking for fifty cars, have a one-tenth-mile gravel two-lane access road, vault toilet, four picnic tables, wheel stop delineations, a bulletin board, traffic signs, and an interpretive sign. The cost in 2004 is estimated at $175,000 per site, or $350,000 for two sites. Land costs are additional, and acquisition would be from willing sellers only.

A typical vault toilet was estimated in 2004 to cost $27,500 per unit. Since 1999 the National Park Service and Niobrara Council have placed eight to ten portable toilets at scattered river locations that each held promise for permanent toilets. Some were public locations and others were private. At private sites, land costs are additional, with the National Park Service typically requiring fee simple acquisition before expending appropriated funding on a project of its making. Land or easement acquisition for access or toilet sites, if necessary, would be from willing sellers only.

A typical research and education center built on existing federal property is assumed to provide substantial exhibit space, cooperating association sales space, public restrooms, offices for interpretive, association, and management personnel, library, multi-purpose room, and auditorium. Site development assumes a paved parking area with curb and gutter for some forty-five to sixty cars and three buses, sidewalks, landscaping, exterior lighting, and entrance and traffic signs. Current Class C estimates for National Park Service environmental education centers are $250 per square foot. Costs for site development, utility delivery, and exhibits are additional. At minimum, the U. S. Fish and Wildlife Service and Nebraska Game and Parks Commission are envisioned as equal partners. Others such as the Niobrara Council are possible and desirable. Cost estimates in 2004 ranged from $4.75 million to $6.75 million for a one-entity Niobrara River Research and Education Center. Once the spatial requirement of partners was determined, center costs would increase proportionately.

Maintenance

Existing public bridges, river access sites, and facilities would be maintained by current management entities. If public use of existing facilities continues to grow and the need for improvements, regularized service, and other direct visitor-related maintenance expands with this growth, the National Park Service would seek to partner with the Niobrara Council, counties, or natural resources districts to administer an array of grants, subsidies, and contracts for improved or more timely provided maintenance services beyond those already rendered by current management entities.

Accepting the adequacy of existing river bridges and utility crossings, the National Park Service would work to minimize the proliferation of additional passages by encouraging the uses of existing rights-of-way. The Service would advocate the elimination of existing crossings when opportunity allows.

Roads

Recreational impacts to existing roads within and leading to the Scenic River are substantial and markedly greater than impacts attributable to local residential or farm to market uses alone. While existing public roads

would be maintained by current management entities, the National Park Service would be willing to provide technical assistance to local governments if they chose to seek grants or subsidies from the Federal Highway Administration or other sources to upgrade conditions and standardized maintenance of the some sixty miles of gravel roads leading to or within the unit. The Service would be especially supportive when it can be demonstrated that surface treatments of roads or other engineering improvements alleviate the erosion of sediment into the river, or when public safety is affected.

Management Alternative C
National Park Service Manages Independently

Management Concept

In this alternative, the National Park Service would develop a more traditional national park operating system grounded in the broad utilization of federal land management and regulatory authorities exercised on maximized federal fee title land ownership to the extent permitted by the Wild and Scenic Rivers Act. Over time operation of the Niobrara National Scenic River would resemble the more familiar national park system units across the nation, relying in large measure on congressional funding and a federal workforce. The Service could develop some cooperative agreements for services more logically provided by other entities such as federal or state agencies, or natural resources districts. Within this alternative the Service would place a greater reliance on fee simple land acquisition as a land protection tool and precursor to independent resources management and public service on what would be a continually growing federal landbase. A full spectrum of interim and long-term land protection measures would also be utilized.

Staffing / Funding / Cost

The National Park Service would expand its field presence in Valentine and maintain its headquarters office in O'Neill. The Valentine field office would likely be composed of a mix of professional resource managers, interpretive rangers, maintenance employees, and one or more administrative assistants, all under the charge of a chief ranger. A seasonal staff of biological technicians, visitor and resource protection specialists, interpreters, and laborers would support the permanent staff. Annual costs for this field staff in 2005 terms would be approximately $1,186,000, including personnel, equipment, rent, supplies, and transportation.

Additionally, as the land base, facilities, and recreational use increased, another district office could be established somewhere on the eastern portion of the river. Costs associated with this staffing expansion would be detailed when that need is further defined.

The O'Neill headquarters office in 2005 comprised a superintendent, administrative officer, administrative assistant, two resource management specialists, and a hydrologist. Four of these employees divide their time equally between the Niobrara and Missouri units and provide technical support to field staffs and partners. One of the resource management specialists is dedicated to the Niobrara. The Niobrara headquarters staff in 2005 cost approximately $245,000.

See **Appendix H** for a cost comparison of alternatives A, B, and C.

Land Protection / Acquisition / Cost

The National Park Service would aggressively promote conservation or scenic easements acquired from willing sellers as the preferred landscape and resource protection measure. An array of public entities including federal, state, or local governments or qualifying land trusts could act as the acquisition agent. To facilitate such a program, the Service would specifically seek an appropriation from Congress to enable it to commence and manage the initiative. The Service itself would enforce the terms of the easements it purchased, and it would offer that enforcement capability to other public easement holders. It would also seek easement reversion to the United States if other public easement holders no longer wished to own or manage the easement.

Acquiring easements is preferable to fee title acquisition, but the National Park Service would also develop a strategy for and actively promote fee title acquisition from willing sellers to the extent permitted by the Wild and Scenic Rivers Act and 1991 Niobrara Scenic River Designation Act. The Service would also promote fee title acquisition by state and local governments or qualifying land trusts if preferable to the seller. The principal objective of acquiring fee title from willing sellers would be to retain lands in their natural state or allow lands to revert to their natural state.

Where there existed a clear and direct threat to the river or river-related resources within the boundary, federal acquisition would be used to protect the landscape. The use of this authority would occur only after other alternatives such as zoning or easement acquisition by any public or non-profit agency failed to protect Scenic River resources.

Recreational uses occur on both public and private lands within the boundary, and include canoeing, kayaking, tubing, camping, hunting, fishing, sightseeing, and lodging. Some services are essential to accommodate the public's use and enjoyment of the river and limited improvements are envisioned, but conversion of the landscape for recreational purposes would be discouraged.

The National Park Service would support the full use of zoning in the four counties through which the designated Niobrara River segment flows, and would encourage the Niobrara Council to exercise its zoning oversight authority accorded by the State of Nebraska in 2000. At the same time, the Service would seek pro forma notification by the counties of all zoning variance requests originating within the Scenic River boundary, independently measure each request for consistency with the respective county code and parallel land and resource protection recommendations in this plan, and actively participate in the public discourse leading to a decision on the request.

Certain small, discontinuous tracts of federal land exist within the project area. Where such tracts no longer serve original purposes and are deemed surplus by their holding agencies, the National Park Service would seek their direct transfer for protection and management as Scenic River lands. Of such tracts existing outside of but within the proximity of the eventual boundary, the Service would ask retaining agencies that they be held in suspension as potential trading stock ultimately benefiting the Scenic River.

Land acquisition costs allowing for the purchase of conservation easements, river access sites in fee, and other fee holdings to the maximum extent permitted by the Wild and Scenic Rivers Act and 1991 Niobrara Act amendment are estimated at $20 million.

Resource Management

Upon completion of this general management plan/environmental impact statement, the National Park Service would complete a Niobrara National Scenic River Resource Stewardship Plan. This resource plan would more particularly develop a program that would achieve desired future conditions for park resources, establish standards for managing those resources, and prioritize inventorying, monitoring, and resource management actions to be assumed by the Service with lesser dependence on public and private partners. A fully developed resource stewardship plan is essential to gaining specialized federal funding for selected management initiatives and undertakings. The Service's ability to independently implement resources management programming would grow as federal ownership expanded across the Scenic River.

Fire Management

The National Park Service would create a comprehensive fire management plan for the Scenic River. The maximum purchase of fee-title lands would be sought to accelerate opportunities to maintain and restore critical natural habitats. Cooperative agreements would be sought with state and federal agencies and willing landowners to protect structures and other resources and to perpetuate the scenic viewshed and exemplary biological diversity found in the valley. Actions including conscientious forest management practices (timber cutting and thinning), hazard fuel reduction, prescribed fire, and suppression of wildland fire would be employed.

The National Park Service would have additional staff assigned with primary fire duties including a Fire Management Officer. Several engines and water tenders with a ten to twelve-person wildland fire cache would be maintained at the Valentine Ranger Station or other district offices. Annual funding would be sought for rural fire assistance, supplies, and training needs, and to support hazard fuel reduction, restoration projects, and prescribed fire uses. The Service would be involved in local mutual aid agreements to respond to wildland fires as a lead agency on federal lands, and as a partner on private and other agency lands.

Forest Management

The National Park Service would seek to maintain and enhance forest resources on private lands within the Scenic River by promoting timber management practices that ensure improved forest health, reduce fire risk, and preserve desired ecosystem composition and biotic diversity. Green certification of wooded properties and harvesting done in consultation with a state forester would be encouraged, as would the use of fire and hazard fuel reduction as management tools for fuel reduction, seed bed preparation, and timber stand and

wildlife habitat improvement. Grazing would also be considered for use as a management tool. These initiatives could be implemented through technical assistance and cost sharing programs provided by cooperators. Federal lands within the Scenic River boundary would be managed with prescribed fire and other sound resource principles used to maintain and restore native ecosystems.

Prairieland Management

The National Park Service would also seek to maintain and enhance the diverse prairie resources within the Scenic River by endorsing best management practices that promote prairie health through, among other means, the utilization of appropriate grazing regimes, the uses of prescribed fire, and the eradication of invasive species like red cedar by mechanical means or burning. These initiatives could be implemented through technical assistance and cost-share programs sponsored by cooperators. Federal fee lands and easements would incorporate the reintroduction of native grazers and fire as primary tools for the restoration and maintenance of those ecosystems.

Fossil Resource Protection

The National Park Service would seek to protect the Scenic River's fossil resources by educating cooperators and landowners on the significance of these resources. Additionally, the Service would seek to implement a mandatory monitoring protocol aimed at ensuring the integrity of these sites. Sites of national or global significance could be purchased in fee-title or easement and developed into interpretive sites, encouraging scientific investigation and public interpretation and education.

Cornell Dam

The very essence of the Wild and Scenic Rivers Act is protection of free-flowing rivers. It is therefore imperative to examine whether retention of the non-functional, aging Cornell Dam is consistent with protection of one of the Great Plains' most unique watercourses. The Wild and Scenic Rivers Act provides no guidance regarding retention or removal of existing dams but, anticipating an answer in this instance, in this alternative the National Park Service would actively advocate the removal of Cornell Dam by underwriting the necessary environmental, historical, and safety evaluations of the dam and engaging in a senior level negotiation with the U. S. Fish and Wildlife Service to remove this unnatural and non-functional river impediment.

Non-proliferation of River Crossings

There is often interest in new crossings of linear resources like rivers. Crossings come in three forms: bridges, overhead wires for communications and electrical energy, and under-river crossings for communications, electrical energy, and material such as fuel or natural gas. The Service would seek to reduce the number and size of Niobrara River crossings by encouraging safe, compatible, multiple uses of existing corridors and structures. All proposed changes to river crossings or corridors would require site-specific environmental evaluations and approval from applicable local, state, and federal agencies. The impacts of each proposal would be analyzed and documented before the managing agencies permitted any changes in crossings or corridors.

Wireless Telecommunication Facilities

In 1999 the National Park Service adopted specific procedures for permitting wireless telecommunication facility sites in units of the National Park System. These Service-wide procedures are unique to this specific issue, and supplement other requirements and procedures for permitting rights-of-way and other special park uses. The character of the Scenic River's private landscape additionally tempers these procedures. While wireless telecommunication facility sites may be permitted within park boundaries, the Service will work with providers and regulators to explore and analyze alternatives and protect the values and purposes for which the park was established.

Visitor Information and Interpretation

The Service would prepare a long-range interpretive plan for the Niobrara National Scenic River to determine the array of personal and non-personal interpretive programming appropriate for this unique unit. The long-range interpretive plan examines different media applications for carrying interpretive, safety, and conservation messages to the visiting public. As well, such a plan develops strategies for partnering opportunities to achieve those goals on the Scenic River, particularly with other land managing agencies such as the U. S. Fish and

Wildlife Service and Nebraska Game and Parks Commission.

The Service would recruit an initial field staff of interpretive rangers to provide educational and interpretive services envisioned in the long-range interpretive plan, this in the interim before construction of a cooperative National Park Service-U. S. Fish and Wildlife Service-Nebraska Game and Parks Commission research and education center serving multiple interests in the Scenic River area. This initial interpretive programming would particularly focus on public safety and enjoyable uses of the resource, provide opportunities for the public to learn about the distinctive natural and cultural features of the area, and aim at safeguarding the private landscape. Expanded interpretive staffing for the cooperative visitor education center would be detailed when that project is further defined.

The Service's interpretive staff would work with recreation service providers and other partners to coordinate previsit orientation materials and information. It would continue to endorse and support the Niobrara Council's "River Code of Ethics" initiative. And it would seek to standardize and enhance state and local tourism promotional materials and the manner in which they present, discuss, and market the Niobrara National Scenic River.

The Service would continue to support the Niobrara Council's "Niobrara Class" initiative at Valentine Rural High School and elsewhere. It would also support Scenic River educational initiatives driven by The Nature Conservancy at its Niobrara Valley Preserve, the community of Ainsworth desiring a Sandhills interpretive center, and other outreach initiatives, offering technical support that develops or expands the understanding and appreciation of the significant natural and cultural resources of the Scenic River.

Law Enforcement and Emergency Services

The National Park Service would manage a law enforcement program on lands and waters under its jurisdiction and would seek cooperative agreements with other federal, state, and local agencies and departments to facilitate and standardize responses in other jurisdictions. The Service would seek to develop response capabilities in the full array of law enforcement, emergency, and fire to uniformly respond to increased public use and varying environmental conditions. The National Park Service law enforcement program would grow as federal land ownership expanded across the Scenic River landscape. This could entail the addition of another district ranger station staffed with protection rangers in the eastern portion of the Scenic River to protect natural and cultural resources on federal lands, manage increased visitor use, and provide visitor services in that sector.

The National Park Service would seek concurrent jurisdiction with the State of Nebraska for the enforcement of laws on lands and waters under federal jurisdiction, and would seek deputization of its rangers as state wildlife conservation and sheriff's officers.

The National Park Service would initiate annual law enforcement and emergency service meetings with all federal, state, and local agencies and departments having jurisdiction in the Niobrara National Scenic River. These forums would serve to orient agency and department members new to the locale and provide an opportunity to discuss law enforcement and emergency service programs and initiatives.

Visitor Use and Outfitter Management

Recreational opportunities along the Niobrara River have traditionally focused on hunting, fishing, canoeing, kayaking, tubing, wading, swimming, enjoyment of scenic vistas, hiking, camping, and wildlife observation. Since the designation of the river as a component of the Wild and Scenic Rivers System in 1991, the number of people canoeing, kayaking, and tubing the river appears to be steadily increasing. Outfitters and U. S. Fish and Wildlife personnel have collected visitor use data and made limited conclusions on visitor use since 1993.

Increased river use has led river managers to express concerns about possible disturbances to fish and wildlife, impacts to vegetation and streambank stability, and the quality of experiences for river users. The compatibility of increased public use with the intents of the Wilderness Act has itself raised issues on the Fort Niobrara Refuge where commercial outfitters offering canoe and tube rental services operate. Recently outfitters were required to obtain restricted annual special use permits issued by the U. S. Fish and Wildlife Service in an effort to address resource and recreational impacts on the Refuge. The numbers of permitees and total

canoe and tube inventory allowed to operate on the Refuge is under continuing review.

The National Park Service funded a detailed visitor survey by the University of Minnesota's Cooperative Park Studies Program in 1993 during initial general management planning for the Scenic River. The Service renewed that university contract in 2001 to replicate and build upon the 1993 study in an effort to gather necessary information to make reasonable management decisions regarding visitor use. Results and conclusions in the *2001 Niobrara National Scenic River Visitor Study* are reflected in this plan.

Outfitter operations on the Fort Niobrara Refuge also influence use levels and trip patterns along the entire canoeable reach of the Niobrara National Scenic River. The National Park Service would measure and monitor visitor impacts to natural and cultural resources and seek to preserve appropriate visitor experiences on the river while working to prevent degradation of those resources. If resources are unacceptably impacted or the visitor experience seriously degraded, the Service would take management actions to the extent of its jurisdiction and in concert with partners to avoid, restore, or mitigate recreation-caused impacts.

Managing agencies are also required as part of long-term planning to address the issue of resource protection in relation to visitor capacity. For further explanation of this concept, please refer to the discussion of Carrying Capacity addressed under "Foundations of the Plan" found at the beginning of this document. (pp. 17-18).

Public Facilities

To better accommodate the visitor use and management goals suggested above, the National Park Service would seek to develop additional public access sites on the river, particularly in the proximity of Berry Bridge immediately downstream from the Fort Niobrara Refuge and in the proximity of Rocky Ford. Specific locations could be detailed in the river use management plan or a separate development concept plan. The Service would undertake development of new access sites with in-house technical and financial support. So as to minimize the proliferation of recreational sites on the river, development of new access sites would occur only when it can be demonstrated that such action netted the closure of nearby traditional use.

The National Park Service would seek to develop or improve permanent restroom facilities at critical locations along the canoeable river, in part replacing seasonal portable toilets the Service has funded in recent years. The availability of permanent toilets at appropriate distances on the canoeable river would demonstrably reduce human waste problems and lessen trespass on private lands.

The National Park Service would engage the Nebraska Game and Parks Commission and U. S. Fish and Wildlife Service to explore the potential of connecting the Commission's Cowboy Trail, a hiking and biking Rails-to-Trails initiative across northern Nebraska, with the Fort Niobrara access. This five or six mile side trail could introduce a discrete new, typically non-canoeing audience to the Scenic River's unique natural and cultural resources and also those wildlife and cultural resources of the Fort Niobrara National Wildlife Refuge.

An additional district ranger station could be developed on the eastern portion of the river that could include public restrooms, offices, and interpretive space focusing on the unique natural resources of the river corridor. Campgrounds could be added on federal lands if private campgrounds are closed or campsites are significantly reduced in number.

Research and Education Center

The National Park Service, U. S. Fish and Wildlife Service, and Nebraska Game and Parks Commission would explore a jointly developed and managed Niobrara River Research and Education Center located somewhere in the proximity of the Fort Niobrara access, the vicinity of the Borman Bridge, or the vicinity of the US 20 crossing of the Niobrara River. Such a center would orient the visiting public to the nationally significant natural and cultural resources of the Scenic River and Refuge, safe uses of the river, and obligations due private landowners that own a significant percentage of the downstream resource. Specific sites and design plans would be prescribed in a development concept plan undertaken jointly by the federal agencies.

Preliminary cost estimates for the construction envisioned in this alternative are based on federal construction costs in the Midwest Region of the National Park

System and not on specific site information or facility design. Called Class C estimates, these conceptual costs are based on square foot costs of similar construction or identifiable unit costs of similar construction elements. Variables such as job location, material suppliers, labor availability and wage rates, season of construction, geographical areas, and difficulty of terrain all figure in the estimate. Actual costs would also depend on participation of local partnering agencies and could be less than shown.

Development Costs

A typical river access site is assumed to provide gravel surface parking for fifty cars, have a one-tenth-mile gravel two-lane access road, vault toilet, four picnic tables, wheel stop delineations, a bulletin board, traffic signs, and an interpretive sign. The cost in 2004 was estimated at $175,000 per site, or $350,000 for two sites. Land acquisition costs are additional.

A typical vault toilet is estimated in 2004 to cost $27,500 per unit. Beginning in 1999 the National Park Service and Niobrara Council have placed eight to ten portable toilets at scattered river locations that each held promise for permanent toilets. Some were public locations and others were private. Land costs are additional, with the National Park Service typically requiring fee simple acquisition before expending appropriated funding.

A typical research and education center built on existing federal property is assumed to provide substantial exhibit space, cooperating association sales space, public restrooms, offices for interpretive, association, and management personnel, library, multi-purpose room, and auditorium. Site development assumes a paved parking area with curb and gutter for some forty-five to sixty cars and three busses, sidewalks, landscaping, exterior lighting, and entrance and traffic signs. Current Class C estimates for National Park Service environmental education centers are $250 per square foot. Costs for site development, utility delivery, and exhibits are additional. At minimum, the U. S. Fish and Wildlife Service and Nebraska Game and Parks Commission are envisioned as equal partners. Others such as the Niobrara Council are possible and desirable. Cost estimates in 2003 ranged from $4.75 million to $6.75 million for a one entity Niobrara River Research and Education Center. Once the spatial requirement of partners was determined, center costs would increase proportionately.

Maintenance

Unless ownership changed hands, existing public bridges, river access sites, and facilities would be maintained by current management entities. If public use of current facilities continues to grow and the need for improvements, regularized service, and other direct visitor-related maintenance expands with this growth, the National Park Service would seek to partner with individual service providers and utilize an array of grants, subsidies, and contracts for improved or more timely provided maintenance services beyond those already rendered by current management entities.

National Park Service purchase and development of the river access sites, campgrounds, roads and parking lots, picnic areas, interpretive centers, or toilet facilities would necessitate Service maintenance of those facilities by federal employees.

Accepting the adequacy of existing river bridges and utility crossings, the National Park Service would work to minimize the proliferation of additional passages by encouraging the uses of existing rights-of-way. The Service would advocate the elimination of existing crossings when opportunity allows.

Roads

Recreational impacts to existing roads within and leading to the Scenic River are substantial and markedly greater than impacts attributable to local residential or farm-to-market uses alone. While existing public roads would be maintained by current management entities, the National Park Service would be willing to provide technical assistance to local governments if they chose to seek grants or subsidies from the Federal Highway Administration or other sources to upgrade conditions and standardized maintenance of the some sixty miles of gravel roads leading to or within the unit. The Service would be especially supportive when it can be demonstrated that surface treatments of roads or other engineering improvements alleviate the erosion of sediment into the river, or when public safety is affected.

Environmentally Preferred Alternative

The environmentally preferable alternative is defined as "the alternative or alternatives that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Ordinarily this means the alternative that causes least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources."

The last clause within this guidance is particularly relevant in identifying the environmentally preferable alternative for the Niobrara National Scenic River. Public Law 90-542 establishing the Wild and Scenic Rivers System, and Public Law 102-50 amending the first Act by adding a seventy-six-mile reach of the Niobrara to the system, applied to a section of the Niobrara River the national policy of preserving selected rivers and their immediate environments for the benefit of present and future generations. The Wild and Scenic Rivers Act particularly identified seven resource types labeled "outstandingly remarkable values" that Congress prescribed as worthy of protection on those riverscapes. The boundary analysis in this general management plan found that five of those seven resource types exist in a nationally significant state on the Niobrara.

In consideration of the purposes of the Wild and Scenic Rivers Act and the Niobrara Scenic River Designation Act of 1991, the National Park Service has identified Preferred Alternative B as the environmentally preferable alternative. The preferred alternative achieves desired future conditions by employing a careful strategy of direct agency action mixed with an array of partnering activities, particularly with the state empowered Niobrara Council, to effect resource protection on what is and likely always will be a predominantly privately owned land base. Without the cooperation of landowners, the National Park Service alone has limited management prerogative, but the Service's options and opportunities are significantly enhanced by its partnering prospects.

Alternative A was created as a baseline for the comparison of other management options. This alternative imagines continuous change over time on the Niobrara River, and without any systematic coordination and oversight across multiple jurisdictions and interests. The Niobrara Council would exercise its responsibilities in the river corridor. The U. S. Fish and Wildlife Service and Nebraska Game and Parks Commission would demonstrate thoughtful stewardship on its lands, but generally the protection of the river and its resources and values would depend on the limits of self-interest.

The underlying premise of Alternative C, a growing federal land base upon which the National Park Service would exercise autonomous action, could surely function in the long run but face disastrous consequences in the near term from the political and functional upheavals of aggressive federal land acquisition that might easily imperil the very river resources Congress sought to protect. Whether Congress would fund major federal land acquisition ought to be questioned, as well. The preferred alternative, therefore, provides opportunities for immediate effectual resource protection and the prospects of continuing, orderly resource and visitor management.



Late summer afternoon east of Sunny Brook Camp.

Table 1: Management Alternatives

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Management Concept		
• The park would retain its status as a national scenic river. • The river area would continue to evolve without a coordinated comprehensive management plan. • NPS administration would be minimal with loose coordination with state and federal agencies and some permit review oversight.	• The park would retain its status as a national scenic river. • NPS would manage the park partly autonomously and partly through a coordinated partnership among private, local, county, state, and federal entities. • If partnering proved unsuccessful, NPS would seek alternate partners or directly manage the task. • NPS would retain final review and approval authority over all activities implementing federal management of the park, while actively seeking consensus with partners in determining management actions.	• The park would retain its status as a national scenic river. • The park would be managed using federal land management and regulatory authorities exercised to maximize federal fee title land ownership to the extent permitted by the Wild and Scenic Rivers Act. • Over time, the park would rely on congressional funding and federal staffing for operations. • NPS would develop cooperative agreements for services logically provided by other entities. • Through time, NPS would become solely responsible for park management and services, although in the interim, an array of protection measures would be used.
Resource Management		
• Private and public land would be managed for various objectives under county, state, and federal environmental regulations. • Private conservation programs would provide some technical and financial resource management assistance. • State would continue to provide fire protection. • NPS would not manage a prescribed fire regime in the park.	• NPS would act as lead, technical advisor, and facilitator directly or through partnerships where appropriate. • Agency-led resource management actions on private property would require landowner consent. • NPS would develop a resource stewardship plan, which would define desired future conditions for natural and cultural resources in the park. • NPS would develop a resource stewardship plan that would also provide guidance to private landowners. • NPS would draft a comprehensive fire management plan. • NPS would seek cooperative agreements with state and federal agencies and willing land- owners to coordinate fire management. • NPS would maintain a ranger and resource management staff with collateral fire duties and would rely on regional expertise and fire planning leadership. • NPS would use best management practices to manage forest lands and prairie land within the park. • NPS would maintain a small engine/slip-on unit with 4 to 6 person fire cache at the Valentine ranger station. • NPS would seek annual funding to manage the comprehensive fire management plan. • Forest management initiatives could	• NPS would develop a resource stewardship plan, which would define desired future conditions for natural and cultural resources in the park. • NPS's ability to independently implement resource management programming would grow as federal landownership expanded. • NPS would draft a comprehensive fire management plan. • NPS would aggressively seek opportunities to purchase fee-title lands to accelerate opportunities to maintain and restore critical natural habitats. • NPS would use best management practices to manage forests and prairie land within the park. • NPS would maintain several 6 to 10-person fire caches at the Valentine ranger station or other subdistricts. • NPS would seek annual funding to manage the comprehensive fire management plan. • NPS would encourage fossil resource protection by educating partners and private landowners. • NPS would seek to implement a mandatory fossil monitoring program. • NPS could purchase fee-title or easements for fossil sites with national or global significance, develop the sites, and encourage scientific investigation and public interpretation and education.

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Resource Management continues		
	be implemented through technical and cost-share programs among partners. • NPS would encourage fossil resource protection by educating partners and private landowners. • NPS would seek to implement a voluntary fossil monitoring program. • NPS would request FWS to conduct a joint evaluation of the appropriateness of retaining Cornell Dam. • NPS would seek to reduce the number and size of river crossings by encouraging safe, compatible, multiple uses of existing corridors and structures. • NPS would work with wireless communications providers and regulators to find communication sites outside the park. • NPS would take the lead in interpre-	• NPS would actively advocate removing Cornell Dam by underwriting the necessary environmental and safety evaluations and engaging senior-level negotiations with FWS to remove the river impediment. • NPS would seek to reduce the number and size of river crossings by encouraging safe, compatible, multiple uses of existing corridors and structures. • All changes to river crossings would require an EA or EIS. • NPS would work with wireless communications providers and regulators to find communication sites outside the park.
Visitor Information and Interpretation		
• Information services would be provided by outfitters, chambers of commerce, and local tourism entities, as well as by other state and federal agencies. • Most local efforts would focus on "getting to" and "using" the river, not resource protection/ appreciation. • There would be no long-range NPS interpretive vision.	tation. • NPS would develop a long-range interpretive plan for the park. • A joint NPS-FWS research and visitor center would be constructed somewhere in the western end of the park. • An interpretive staff would provide interim educational and interpretive services while cooperative visitor center is being constructed. • NPS would partner and coordinate with FWS, NE Game and Parks Commission, and other land-managing agencies to ensure appropriate visitor use and enjoyment of the river. • NPS would partner with the Niobrara Council, recreation service providers, and others to coordinate pre-visit orientation materials. • NPS would support the Council's "River Code of Ethics" initiative. • NPS would continue to support the Niobrara Council's "Niobrara Class" high school initiative and education initiatives sponsored by The Nature Conservancy and others.	• NPS would implement a long-range interpretive plan for the park. • A joint NPS-FWS research and visitor center would be constructed somewhere in the western end of the park. • NPS would recruit interpretive staff that would provide interim educational and interpretive services while the cooperative visitor center is being constructed. • NPS would partner and coordinate with FWS, NE Game and Parks Commission, and other land-managing agencies to ensure appropriate visitor use and enjoyment of the river. • The interpretation program would focus on public safety, enjoyable uses of resources, and distinctive natural and cultural resources in the park. • NPS would detail expanded interpretive staffing needs for the cooperative center when the project is further defined. • NPS would work with recreation service providers and others to coordinate pre-visit orientation materials. • NPS would support the Niobrara Council's "River Code of Ethics" initiative. • NPS would continue to support the Council's "Niobrara Class" high school initiative and education initiatives sponsored by The Nature Conservancy and others.

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Visitor Use and Outfitter Management		
• Canoeing, inner tubing, camping, and sightseeing on the western third of designated river would continue. • Hunting would continue on private property. • FWS would manage river use and outfitters within its jurisdiction.	• Recreational uses would occur on public and private lands, and would include canoeing, kayaking, tubing, camping, hunting, fishing, sightseeing, and lodging.	• Recreational uses would occur on public and private lands, and would include canoeing, kayaking, tubing, camping, hunting, fishing, sightseeing, and lodging.
Land Protection / Acquisition		
• Local interests would continue providing local services/protection. • Niobrara Council would continue reviewing county zoning. • Private land conservation programs would continue. • Land ownership would follow existing patterns. • NPS would acquire no easement or fee parcels.	• NPS would continue efforts towards private ownership of agricultural lands. • NPS would actively promote conservation or scenic easements from willing sellers. • Converting ranch land for recreational purposes would be discouraged. • NPS would encourage and support the use of county zoning as a means of land protection. • NPS would encourage the Niobrara Council to exercise its full zoning oversight authority accorded by the state. • NPS would encourage that the Council be afforded *pro forma* notification of all county variance requests pertaining to the park. • NPS would encourage the Council to advocate consistency among county codes and parallel land protection recommendations of this plan. • NPS would encourage the Council to actively participate in public discourse involving variance requests and decisions. • NPS would seek *pro forma* notification of variance requests for properties within the park and would work closely with the Council and counties during the application review and approval process. • NPS would request that discontiguous tracts of federal land within the park be transferred to the NPS. • NPS would seek Congressional appropriations that would permit the Council to develop and manage	• NPS would aggressively promote conservation or scenic easements acquired from willing sellers as the preferred landscape and resource protection measure. • NPS would discourage converting landscapes for recreational purposes. • NPS would encourage and support the use of county zoning as a means of land protection. • NPS would encourage the Niobrara Council to exercise its full zoning oversight authority accorded by the state. • NPS would seek *pro forma* notification of variance requests for properties within the park and would work closely with the Council/ counties during the application review and approval process. • NPS would request that discontiguous tracts of federal land within the park be transferred to the NPS. • NPS would request Congressional funding to initiate and manage the easement acquisition program. • Federal, state, or local government or qualifying land trust could act as the easement acquisition agent. • NPS would ensure the terms of all easements purchased with federal funds would be enforced and reverted to NPS ownership if the public easement holder no longer wished to own or manage the easement. • Although easements are preferred, NPS would also actively promote fee title acquisition from willing sellers in conformance with the Wild and

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Land Protection / Acquisition continues		
	a conservation easement program and would work with the Council to prioritize acquisitions. • NPS would ensure the terms of all easements purchased with federal funds would be enforced and that any reversions would be managed by a comparable public entity or NPS. • NPS could also use fee title land acquisition, although easements would be preferred. • NPS would promote fee title acquisitions by state and local governments or qualifying land trusts and would encourage easements prohibiting future development or resale of property as grazing land only. • Federal condemnation of land would be possible when a clear and direct threat to resources exists. • Project initial costs for conservation easements would be $5.5 million.	Scenic Rivers Act and 1991 Niobrara River Designation Act. • NPS would also promote fee title acquisition by state and local government or qualifying land trusts if preferable to the seller. • Federal condemnation of land would be possible when a clear and direct threat to resources exists, with a condemnation easement preferred over a fee title acquisition. • Condemnation would be the least preferred land protection method. • Condemnation could also be used to secure public access to the scenic river or scenic river resources. • Land and easement costs would be approximately $20 million.
Public Facilities / Maintenance		
• River access would be provided at existing publicly owned sites. • Private access sites would continue to operate at Berry, Norden, and Meadville bridges. • New private access sites could be developed. • Camping would be provided at Smith Falls and at private campgrounds. • Public sanitation on canoeable reach would be limited. • County/state roads would continue to provide access, but with limited local and state maintenance resources.	• NPS would seek to develop additional public access sites along the river. • Development of new sites could be undertaken by the NPS or any public partner with NPS technical and financial support. • New sites would be developed when it could be demonstrated that other private sites could be eliminated or replaced. • NPS would purchase new access sites only from willing sellers. • NPS would work with the Niobrara Council and Middle Niobrara NRD to develop and improve restroom facilities at critical locations on the canoeable river. • NPS would seek opportunities for interconnecting hiking and biking trails managed by other federal and state agencies. • NPS, NGPC, and FWS would explore and manage a joint research and education center that would orient and educate visitors and perhaps provide office space for the Niobrara Council. • Current management entities would continue to maintain existing bridges, river access sites, and facilities. • If these facilities required major improvements NPS would administer	• NPS would seek to develop additional public access sites along the river. • NPS would develop new access sites using in-house technical and financial support. • New sites would be developed when it could be demonstrated that other private sites could be eliminated or replaced. • NPS would purchase new access sites only from willing sellers. • NPS would develop and improve restroom facilities at critical locations on the canoeable river. • NPS would seek opportunities for interconnecting hiking and biking trails managed by other federal and state agencies. • NPS could add an additional ranger station in the eastern portion of the park. • NPS could add campgrounds on federal lands if private campgrounds were closed or campsites were significantly reduced in number. • NPS, NGPC, and FWS would explore and manage a joint research and education center that would orient and educate visitors on the park's nationally significant natural and cultural resources, safe uses of the river, and obligations due private landowners.

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Public Facilities / Maintenance continues		
	necessary grants, subsidies, and contracts needed for improvements. • NPS would support standardized maintenance of 60+ miles of gravel roads providing access to the park, especially when it could be demonstrated that improved road treatments would reduce erosion or that public safety would be affected.	• Unless ownership changes, current management entities would continue to maintain existing bridges, river access sites, and facilities. • If these facilities required major improvements, NPS would administer the grants, subsidies, and contracts needed for improvements. • NPS would maintain any purchased access sites, campgrounds, roads and parking lots, picnic areas, interpretive centers, or toilet facilities. • NPS would support standardized maintenance of 60+ miles of gravel roads providing access to the park, especially when it could be demonstrated that improved road treatments would reduce erosion or that public safety would be affected.
Law Enforcement and Emergency Services		
• Local interests would continue providing local law enforcement, search and rescue, and fire protection services.	• NPS would manage law enforcement on lands and water under its jurisdiction. • NPS would seek cooperative agreements with other federal, state, and local agencies to provide law enforcement in other jurisdictions. • NPS would develop comprehensive response capabilities. • NPS would seek concurrent jurisdiction with the State of Nebraska on lands and waters under federal jurisdiction and would seek to deputize its rangers as state wildlife conservation and sheriff's officers. • NPS would begin an annual law enforcement and emergency service meeting with all federal, state, and local agencies with jurisdiction along the scenic river.	• NPS would manage law enforcement on lands and water under its jurisdiction. • NPS would seek cooperative agreements with other federal, state, and local agencies to provide law enforcement in other jurisdictions. • NPS would develop comprehensive response capabilities. • NPS would seek concurrent jurisdiction with the State of Nebraska on lands and waters under federal jurisdiction and would seek to deputize its rangers as state wildlife conservation and sheriff's officers. • NPS would initiate an annual law enforcement and emergency service meeting with all federal, state, and local agencies with jurisdiction along the scenic river. • Independent NPS law enforcement programming would grow as federal land ownership expanded. • NPS could add another district ranger station in the eastern portion of the park.
Staffing / Funding / Cost		
• The O'Neill office would continue to dedicate one staff member for the park. • A staff member would review actions of other state and federal agencies.	• NPS would maintain a field presence in Valentine and its O'Neill offices. • The Valentine office would have a mix of permanent resource management specialists, visitor and resource protection rangers, and interpretive rangers under a chief ranger.	• The Valentine office would have a mix of professional resource managers, interpretive rangers, maintenance employees, and one or more administrative assistants, under a chief ranger. • Seasonal employees would be

Management Alternative A (Continue Existing Conditions / No Action)	Management Alternative B (NPS Manages with Partners / Preferred Alternative)	Management Alternative C (NPS Manages Independently)
Staffing / Funding / Cost continues		
	• Seasonal employees would be added during high-use seasons. • The O'Neill office would have a superintendent, administrative officer, administrative assistant, hydrologist, and resource management specialists. • Three O'Neill staff members would divide their time between the Niobrara and Missouri units to support field staff and partners. • One resource management specialist would be dedicated to the Niobrara unit.	added during high-use seasons. • As more fee title land and services were added to the park, another district office could be established in the eastern portion of the river. • The O'Neill office would have a superintendent, administrative officer, administrative assistant, hydrologist, and resource management specialists. • Three O'Neill staff members would continue to divide their time between the Niobrara and Missouri units to support field staff and partners. • One resource management specialist would be dedicated to the Niobrara unit.

Affected Environment

Scope

The following descriptions cover the designated Niobrara National Scenic River, its immediate riparian area, as well as the unit's regional context, in order to provide background information on the regional setting, the park's natural and cultural resources, and the gateway communities.

Location and Access

The Niobrara National Scenic River is located in north central Nebraska in Brown, Cherry, Keya Paha, and Rock counties. The respective county seats are Ainsworth, Valentine, Springview, and Bassett. Access to the area is by east-west paved highways 12 to its north and 20 to its south; north-south paved highways 183, 7, and 137; and by several unpaved county roads. County-maintained gravel roads and bridges cross the river in seven locations and provide access to valley ranches and Smith Falls State Park.

The nearest airports with scheduled passenger service are in Pierre, South Dakota (123 miles north of Valentine) and in North Platte, Nebraska (136 miles south of Valentine).

National Park Service headquarters for the unit is located in O'Neill, Nebraska, 111 miles east of Valentine. The Service also operates a ranger station in Valentine.

Natural Environment

Weather

Weather is continental with wide extremes in temperature caused by movement of air masses from the far north or the Gulf of Mexico. Average annual precipitation varies from seventeen to twenty-two inches. Winters are dry, windy, and cold with subzero lows. Snow covers the ground for an average of thirty-six days each winter. Summers are hot, and humid air from the south brings thunderstorms. Eighty percent of annual moisture falls between April and September. Severe weather is not uncommon and can include tornadoes, hailstorms, heavy rains, and blizzards.

Air Quality

Air quality is generally good and meets all state and federal standards. The park is a class II air quality area under the Clean Air Act. No obvious point sources of pollution exist in the area. The nearest monitoring station is at Badlands National Park, South Dakota, some ninety-five miles from Valentine.

Topography

The Niobrara River flows across north central Nebraska at the northern edge of the Nebraska Sandhills. The Sandhills cover some nineteen thousand square miles between the Platte and Niobrara rivers. East of Valentine, the Niobrara River has cut a valley more than three hundred feet deep and between one-half and two miles wide. Valley side slopes are generally steeper on the south bank with some cliffs and waterfalls. Terraces and moderate slopes are more common north of the river. These are cut by steep sided canyons of tributary streams that originate on a broad plain defining the north edge of the valley. The valley floor widens noticeably as the river flows east of County Line Bridge and becomes wider still east of Meadville. Elevations range from 1,800 to 2,600 feet above sea level.

Water Resources

The Niobrara River flows east some 535 miles from its headwaters in Wyoming across almost the entire length of Nebraska to its confluence with the Missouri River at the town of Niobrara. In the western portion of the Scenic River, between the Fort Niobrara National Wildlife Refuge launch site to a few miles west of Norden Bridge, the river is confined to a single channel with few islands. East of Norden Bridge, the valley widens and the river spreads and braids into multiple meandering channels with numerous sandbars. The river is laden with sand and silt and flows swiftly at up to six miles per hour.

River flow depends on ground water discharge rather than on rain runoff or snow melt. The Sandhills store water and annual precipitation exceeds transpiration

loss through vegetation. This area is within the northern extent of the Ogallala or High Plains aquifer. The entrenchment of the Niobrara River along the Sandhills drains local groundwater into cold springs, which flow constantly and favor more northern vegetation types. Waterfalls form where spring creeks pour over harder rock layers. Smith Falls, the highest waterfall in the state, and Fort Falls, located on the Fort Niobrara National Wildlife Refuge, are among the most notable of the two-hundred plus waterfalls recorded in the unit.

Water flowing from springs into the river makes for a fairly stable flow throughout the year, averaging about 775 cubic feet per second. However, floods of ten thousand cubic feet per second have been recorded at stream gauging stations located in the designated river reach.

Within the Fort Niobrara National Wildlife Refuge, Cornell Dam has impeded transport of sediment down the Niobrara River. The dam now fosters extensive sandbar development. The dam does not impede water levels. Rather, the river overflows its top, making it a "run of the river" dam. The dam has altered the river's channel morphology and natural ecosystem functioning for several miles upstream. The impacts of these alterations on biota have not been examined. Whooping cranes, a federally listed endangered species, have been rarely seen resting on the sandbars, though not since 1993. The dam itself is an impassible obstacle for fish and other aquatic species trying to migrate upstream.

Long Pine Creek is a Niobrara River tributary entering northwest of Bassett. Long Pine Creek is listed on the Nationwide Rivers Inventory, a register of American rivers maintained since 1980 as potential inclusions to the Wild and Scenic Rivers System. A Presidential directive and subsequent instructions issued by the Council on Environmental Quality, and codified in agency manuals, requires that federal agencies, as part of normal planning and environmental review processes, take care to avoid or mitigate adverse effects on rivers identified in the inventory. The thirty-eight-mile Long Pine Creek is listed because of its fisheries value.

Floodplains and Wetlands

Floods along the Niobrara mainstem occur mainly as a result of winter ice jams, which form erratically and spill water onto the floodplain inundating roads and fields along the river. Spring and summer floods are rare on the mainstem river. Flash flooding and mud deposits have occurred along tributary creeks on the north bank due to summer thunderstorms. No floodplain survey or mapping has been performed.

Wetlands along the river are generally limited to the immediate bank vegetation on the upper single channel portion and to backwater channels in the lower, more braided portion of the river. Occasional flat floodplain areas just above the river support meadow vegetation dependent on a high water table. Tributaries and seeps support riparian wetland vegetation.

Water Quality

Ground and surface water quality is good. The Nebraska Department of Environmental Quality rated the Niobrara a Class A unimpaired water, in which water quality must be maintained and protected. The Niobrara's surface water quality is monitored monthly during the winter off-season, and weekly during the summer season.

In 2000 the U. S. Geological Survey, under contract to the National Park Service, sampled Niobrara water at five sites between Borman and Norden bridges from mid-June to late-September to determine if this heavily used canoeable reach was being impacted seasonally with fecal bacteria and, if so, whether the contamination was from human or animal sources. Each individual sample consisted of a composite of water collected from ten intervals across a river transect at the sample location. Parallel testing for wastewater tracer compounds commonly associated with human waste also occurred. Although fecal coliform bacteria counts and concentrations of wastewater tracers in the Niobrara were relatively low, their presence, combined with the presence of male-specific coliphage in the river, confirms that water contamination has occurred. While the presence of wastewater tracers indicates the source of some of the contamination is human waste, additional sampling is needed to confirm if human waste is also the source of the bacteria and coliphage detected, and to determine the location of the source areas.

Some ranchers depend on free access to the river or tributaries to water their cattle. There are no major livestock feedlots along the mainstem of the river but they do exist on tributaries emptying into the mainstem. Local ranching is not dependent on chemical fertilizers



A park ranger samples a spring branch tributary for water quality indicators.

improved the water quality discharged into Niobrara River tributaries.

Downcutting by tributary streams is widespread in the region although no significant problem sites have been identified along or near the river. Downcutting results in soil loss, siltation downstream, and lowering of the water table. Some landowners and managers are implementing erosion controls, such as check dam construction and bankside vegetation restoration. State and federal conservation programs provide technical and financial cost share assistance to landowners, but a condition of federal involvement requires an evaluation of effects on the Scenic River in accordance with Section 7(a) of the Wild and Scenic Rivers Act. Projects such as dam construction that would eliminate free-flowing conditions inside the Scenic River boundary are prohibited.

Soils

The upland dunes south of the Niobrara River are mostly sand with low fertility and little or no organic content. Along the Niobrara River bottoms, soils range from sandy to silty loam. North of the river, soils have more clay content.

About 640 acres along the river are irrigated cropland and meet the Natural Resources Conservation Service definition of prime farmland. All prime farmland soil types along the river must be irrigated in order to meet the prime farmland criteria and comply with the Farmland Protection Act.

Geology

The Great Plains are a remnant of a large alluvial plain that extended eastward from the Rocky Mountains. Repeated cycles of erosion and deposition occurred, including both marine and stream transport and deposition of sediments. Volcanic activity to the west also deposited layers of ash over much of the area. These layers were overlaid by eolian (wind blown) sand. The Sandhills of Nebraska are the most extensive of these plains dune areas, covering approximately nineteen thousand square miles.

The Niobrara River drains more than twelve thousand square miles and cuts through four rock formations. Atop is the Ash Hollow formation, a grayish sandstone cap-rock some five to ten million years old, best seen on



Open stands of ponderosa pine, prairie and Ash-Hollow cap rock, Fort Niobrara Wilderness.

hills north of the river. Underlying this is the Valentine formation. This deposit forms steep cliffs along both sides of the river and is composed of poorly cemented light-colored sandstone some ten to twelve million years old. The Valentine formation showcases an abundance of fossils, including ancient mammalian species such as beaver, horses, rhinoceros, and mastodons.

Next lies the Rosebud formation. This more resistant pinkish tan siltstone some twenty-five million years old accounts for many of the river's rapids between the Brewer and Norden bridges in the popular canoeing reach. The Rosebud also provides the erosion-resistant layer over which tributary or springbranch streams flow, and may tumble many feet to the valley floor. Further downstream near Meadville the Niobrara also cuts through the black shale of the Pierre formation, a rock structure older than sixty-five million years.

An extraordinarily large deposit of underground water, called the Ogallala Aquifer, formed over eons of time from precipitation that saturated underground sand and rock layers. In some areas of the Sandhills water at or near the surface creates lakes, wetlands, or lush meadows. In the Niobrara Valley the river has cut into the plains as much as three hundred feet, allowing water from the aquifer to seep out of valley walls into the river. Observant canoers on the Niobrara in the winter and

spring notice an unusual geologic phenomenon of the river described as a pulsating or surge flow. Here periodic surges, or bores, move along the water surface, eventually forming a cresting or surf-like breaking wave before receding again. At times these unique waves can reach heights of several feet. The waves are best observed during higher water levels when large amounts of sediments are suspended and transported within the stream. This sediment load, a steep gradient, shallow waters, and a fast current are necessary elements for surge flows to occur.

Paleontology

From Agate Fossil Beds near the headwaters of the Niobrara River to Ashfall Fossil Beds near the river's junction with the Missouri, North America's most complete record of the twenty million-year history of grassland animals has been exposed along the Niobrara, often referred to as the "Bone Hunter's River." For almost a century and a half bone hunters have searched the sandstone walls of the Niobrara and its tributaries for remains of ancient mammals.

The central Niobrara Valley in Brown, Cherry, Keya Paha, and Rock counties, in which the Niobrara National Scenic River is located, has been known for more than 145 years as a major source of fossils and stratigraphic data bearing on the history of North American later Cenozoic mammals. Fossil mammal deposits found along the Niobrara River dating from the Miocene and Pliocene epochs figured prominently in scientific studies of mammal evolution in North America. One particular site found within the Scenic River, containing no less than 146 species of vertebrates, is the most diverse single-site of Miocene fauna known in North America. The existence of rich deposits of mammalian fossils in the Niobrara River valley became evident in 1857 when Ferdinand V. Hayden, a member of the Warren Expedition, collected fossils described later by Joseph Leidy. Leidy's 1869 monograph, describing twenty-eight new species of extinct vertebrates, is one of the founding documents of vertebrate paleontology in North America.

More than 160 mapped paleontological sites are present within the designated seventy-six-mile Niobrara watershed. The Scenic River is exceptionally rich in documented fossil sites, averaging some ten times the number of sites per unit area when compared to the State of Nebraska as a whole. Fifteen sites in the Scenic River study area are deemed of "global" (international) significance, thirty-seven are judged to be of national significance, and 106 of regional significance. Eighty species of extinct vertebrates were first discovered in the Scenic River area: fifty-six mammals, eight amphibians, thirteen reptiles, two birds, and one fish. Collections of fossils from the Scenic River area are housed in some of the nation's premier research institutions, including New York's American Museum of Natural History, Chicago's Field Museum of Natural History, and the Smithsonian's Museum of Natural History in Washington, D.C. By far the largest Niobrara collections are located at the University of Nebraska State Museum in Lincoln and the Frick Laboratory at the American Museum of Natural History.

Vertebrate paleontologists consider the Niobrara Valley important not merely because of the great abundance of museum-quality specimens collected there but because the fossils occur in a series of tectonically-undeformed, superimposed strata spanning a significant measure of Miocene time. Those within the Scenic River reach provide especially complete coverage for the interval between approximately fourteen million and nine million years before the present. Because of the relatively precise time controls (both biostratigraphic and radiometric) available on Miocene fossils from this relatively small area, the latter serve the scientific community as benchmarks in stratigraphic, evolutionary, and paleontological studies.

Paleontologists first discovered prehistoric bones eroding from the sandstone banks of the Niobrara and its tributaries in 1857 and have continued to explore the river's fossil riches since then. Professor Othniel C. Marsh of Yale University led his first expedition to the Niobrara in 1871. Known to Red Cloud and his Sioux followers as the "Bone Chief," Marsh later gained fame as a dinosaur expert. From that time to the present, several famous paleontologists followed Marsh. In the twentieth century E. H. Barbour of the University of Nebraska and Morris Skinner of the American Museum of Natural History explored the sandstone canyons along the length of the Niobrara, collecting and studying its fossil treasures. More recent research continues under the careful stewardship of Michael R. Voorhies of the University of Nebraska State Museum.

Mineral Resources

Mining activities have been limited to small sand and gravel pits scattered along the Niobrara River. No commercial pit operations are underway in the area. No hardrock mining or coal mining has occurred. Three oil or gas test wells were drilled and capped several miles north of the Niobrara River and one was drilled and capped south of the river, but no production resulted.



Mature paper birch, Jim McAllister Nature Trail, Smith Falls State Park.

Vegetation

The Niobrara River valley has unusually diverse plant groups and ecosystems. The area is noted in scientific literature for the many plants that exist here at or beyond their normal geographic limits. Plants of eastern, western, and northern forest ecosystems and three Great Plains prairie ecosystems converge here. Approximately 160 plant species are at the edge of their natural range in the river valley.

Several factors cause this unusual biological diversity. The river valley provides an unbroken east/west riparian corridor connecting the dryer western landscape with the more humid midwestern prairie and eastern deciduous forest. Plants typical of each condition intermingle in the transition zone. The river valley also provides a variety of habitats due to differing slope, moisture, and soil conditions. Also, as climate conditions changed over geologic time, plants typical of past colder conditions survived due to the cool, wet, north facing branch canyons.

Ponderosa pine forest is at its eastern limit in the river valley. Eastern deciduous forest has extended up the valley and includes bur oak (*Quercus macrocarpa*), American elm (*Ulmus americana*), black walnut (*Juglans nigra*), green ash (*Fraxinus pennsylvanica*), basswood (*Tilia americana*), and hackberry (*Celtis occidentalis*). Broadleaf shrubs and vines include sumac (*Rhus spp.*), western snowberry (*Symphoricarpos occidentalis*), gooseberry (*Ribes spp.*), wild plum (*Prunus americana*), and wild grape (*Vitis spp.*). Northern (or boreal) forest is found on cool, moist, north facing slopes and includes paper birch (*Betula papyrifera*), hybrid aspen species — quaking aspen x bigtooth aspen (*Populus tremuloides x P. grandidentata*), ferns, and several species of club mosses. These plants apparently have survived as relicts of the Pleistocene ice age, when they were more widely distributed on the Great Plains.

Several types of grassland plant communities are also found in the region. The area provides a botanical transition between the tallgrass prairie of more humid areas to the east and the dryer shortgrass prairie to the west. Sandhills mixed-grass prairie covers the upland country south of the river, with plant species adapted to the sandy conditions. Typical plants on sandy and dry sites along the river and to the south are sand bluestem grass (*Andropogon hallii*), little bluestem (*Schizachyrium scoparium*), needle and thread grass (*Stipa comata*), junegrass (*Koeleria macrantha*), prairie sandreed (*Calamovilfa longifolia*), sand dropseed (*Sporobolus cryptandrus*), blue (*Bouteloua gracilis*) and hairy gramma grass (*B. hirsuta*), switch grass (*Panicum virgatum*), Louisiana sagewort (*Artemisia ludoviciana*), sand milkweed (*Aaclepias arenaria*), lead plant (*Amorpha canescens*), scaly blazing star (*Liatris squarrosa*), purple prairie clover (*Petalostemon purpureum*), prairie spiderwort (*Tradescantia occidentalis*), yucca (*Yucca glauca*), poison ivy (*Toxicodendron rydbergii*), sumac, and wild rose (*Rosa woodsii*).



The river widens and islands are more common between Rocky Ford and Norden Bridge.

Small remnant patches of tallgrass prairie can be found on moist river bottoms. Species include big bluestem (*A. gerardii*), switchgrass, Indian grass (*Sorghastrum nutans*), sedges (*Carex spp.*), heath aster (*Aster ericoides*), annual sunflower (*Helianthus annuus*), and prairie coneflower (*Ratibida columnifera*).

Along the river and to the north, on clayey soils, mixed grass prairie is found without the specialized Sandhills plants. Species include western wheatgrass (*Pascopyrum smithii*), little bluestem, needle and thread grass, blue and hairy gramma, purple lovegrass (*Eragrostis spectabilis*), junegrass, common yarrow (*Achillea millefolium*), evening primrose (*Oethera spp.*), prickly poppy (*Argemone polyanthemos*), prickly pear (*Opuntia spp.*), and buckbrush. Smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) have been introduced into these areas.

The sandbar-marsh plant community is found along the broader, eastern portion of the Niobrara River. The marshes have a wide variety of aquatic plants and animals. Barren sandbars not colonized by plants provide nesting sites for the endangered interior least tern and threatened piping plover.

Changes to vegetation that took place after homesteading include introduction of nonnative grasses (primarily north of the river on clay soils) and nonnative weeds. River valley forested area and density has generally increased compared to landscapes in historic photographs, apparently due to fire suppression and the reduction of early timber cutting. Fire suppression has resulted in increased thicket-like stands of eastern red cedar, a native plant that was formerly held in check by prairie fires. The forest cover is denser and grassland is succeeding to woodland. Some landowners are cutting eastern red cedar, ponderosa pine, and some hardwoods

for building materials, commercial sale, or thinning purposes.

Leafy spurge (*Euphorbia esula*), purple loosestrife (*Lythrum salicaria*), Canada thistle (*Cirsium arvense*), and spotted knapweed (*Centaurea maculosa*) colonies are scattered along the river and are designated as noxious weeds by the State of Nebraska. County weed boards, landowners, and the National Park Service's Northern Great Plains Exotic Plant Management Team provide varying levels of control and GIS mapping assistance.

Fish

The Niobrara River drainage contains the largest number of fish species occurring in Nebraska. Fish species specifically recorded in the Scenic River reach include the plains topminnow (*Fundulus sciadicus*), red shiner (*Notropis lutrensis*), sand shiner (*Notropis stramineus*), creek chub (*Semotilus atromaculatus*), white sucker (*Catostomus commersoni*), and Iowa darter (*Etheostoma exile*). The Scenic River also contains several species representing glacial relict populations, including the pearl dace (*Margariscus margarita*) and blacknose shiner (*Notropis heterolepis*). The latter species are almost entirely limited in Nebraska to the cool, clear side streams of the Niobrara River.

Blacknose shiners and pearl dace are currently state listed threatened species and status changes have been proposed for both species by the Nebraska Game and Parks Commission. Blacknose shiners are extremely rare in Nebraska and the last known occurrence of this species was in the Niobrara drainage. Recent studies on pearl dace populations within the designated reach and its tributaries found them to be more widely distributed and abundant in the Sandhills region than originally thought. In addition, the Niobrara River and its tributaries also provide important potential habitat for other sensitive species including finescale dace (*Phoxinus neogaeus*) and northern redbelly dace (*Phoxinus eos*).

Cold-water fish species such as rainbow trout (*Onchorhynchus mykiss*) and brown trout (*Salmo trutta*) are present in several Scenic River tributaries. Brown trout are stocked in Plum Creek, and rainbow trout are stocked in Long Pine Creek on an annual basis. Though not native to Nebraska, both populations are stocked and maintained by the Nebraska Game and Parks Commission. The seventy-six mile Scenic River is not generally regarded as a fishing river, yet fly-fishing is a popular activity in many spring-fed streams in the area. The National Park Service does not foresee limiting or changing stocking densities for cold-water species and will allow it to continue under each management alternative.

Warm-water species such as channel catfish (*Ictaluras punctatus*), bluegill (*Lepomis macrochirus*), and green sunfish (*Lepomis cyanellus*) also inhabit the Niobrara River and provide other angling opportunities. Largemouth bass (*Micropterus salmoides*) are stocked in the Mill Pond in Valentine, but are only occasionally caught in the Scenic River below the mouth of Minnechaduza Creek.

Mammals

An amazingly diverse and largely traditional array of Great Plains mammals are recorded in the Niobrara Valley. Most thrive unmanaged, though larger animals like bison (*Bison bison*) and elk (*Cervus canadensis*) occur in fenced enclosures, with free-roaming elk sighted as well. Federally endangered species like the black-footed ferret (*Mustela nigripes*) once inhabited the area, but have since been extirpated from the region.

River otter (*Lutra canadensis*), a state threatened species, is native to the Niobrara. A reintroduction program was conducted by Nebraska Game and Parks Commission biologists from 1986 to 1992, with a release site near the Sheridan-Cherry County line in northwestern Nebraska. Since then river otter sightings have occurred throughout the Niobrara Valley, including several observations in the seventy-six-mile Scenic River reach.

The Scenic River is distinctive in that it supports three mammal species that are uniquely associated with the Niobrara River. Bailey's eastern woodrat (*Neotoma floridana*), a southern species that may have moved north during a warm, wet period, is now found as an isolated population in the central Niobrara Valley. The olive-backed pocket mouse (*Perognathus fasciatus*), a western species, is also found along the valley and is noted at the eastern limits of its range. The southern bog lemming (*Synaptomys cooperi*), a rare mammal of northeastern origin, occurs within the Niobrara Valley at its interface with the Sandhills.

Bats are documented in the Niobrara Valley and represent an important component of the mammal communi



Cow bison resting on the Fort Niobrara National Wildlife Refuge auto tour route.

ty. Keen's bat (*Myotis keenii*) and the Brazilian free-tailed bat (*Tadarida brasiliensis*) have only been found in the central Niobrara Valley. Keen's bat is associated with moist, eastern-type habitats, while the Brazilian free-tailed bat ordinarily has an affinity for southern, neo-tropical habitats.

Other mammals commonly observed in or near the river corridor include white-tailed deer (*Odocoileus virginianus*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), fox squirrel (*Sciurus niger*), eastern cottontail (*Sylilagus floridanus*), mink (*Mustela vison*), and beaver (*Castor canadensis*).

Birds

A diverse array of avian life inhabits the Niobrara Valley. Five western species reach their eastern limits in the valley, while six northern oriented species reach their southern limits in the valley. The central reach of the Niobrara Valley is ecologically significant because it serves as an east-west avian corridor and important meeting ground, especially for forest-dependent species. Hybridization of eastern and western associated species, such as indigo (*Passerina cyanea*) and lazuli buntings (*Passerina amoena*), yellow-shafted (*Colaptes auratus auratus*) and red-shafted flickers (*Colaptes auratus cafer*), and Baltimore (*Icterus galbula galbula*) and Bullock's orioles (*Icterus galbula bullockii*) are vivid testament of the biological uniqueness of the Scenic River. Formerly endangered Peregrine falcons (*Falco peregrinus*) migrate through Nebraska in late April and early May and in September and October. Falcons prey on waterfowl and are found around marshes, cropland, and grassland. Few sightings have been documented in the Niobrara Valley although Kansas State University studied this matter for the U. S. Fish and Wildlife Service.

The Niobrara Valley is home to several state and federal threatened or endangered bird species. Whooping cranes (*Grus americana*) migrate the valley seasonally and the interior least tern (*Sterna antillarum*) and piping plover (*Charadrius melodus*) nest on sandbars east of the

canoeable reach. Bald eagles (*Haliaeetus leucocephalus*) are especially common in winter months, but are also seen in lesser numbers throughout the year.

Game birds such as wild turkey (*Meleagris gallopavo*), pheasant (*Phasianus colchicus*), and sharp-tailed grouse (*Tympanuchus phasianellus*), in addition to several waterfowl species including wood ducks (*Aix sponsa*) and Canada geese (*Branta canadensis*) provide excellent hunting opportunities within the Niobrara corridor.

Invertebrates

Some ninety-two species of butterflies have been recorded in the Niobrara Valley and sixteen species reach the edge of their range there. Hybridization of three species, Red-spotted purple (*Basilarchia arthemis astyanax*), Weidemeyeri's admiral (*Basilarchia weidemeyeri*), and Eastern viceroy (*Basilarchia archippus*) are noted as evolutionary and genetically significant.

Reptiles

Reptiles occupy a special niche within the Niobrara Valley. The ringneck snake (*Diadophus punctatus*) occurs in deciduous forest oriented areas of the valley and reaches its western limits there, while the eastern hognose snake (*Heterodon platyrhinos*) also occurs in the valley and is otherwise only marginally distributed across the Sandhills. Others commonly found in the area include prairie rattlesnakes (*Crotalus viridis*), bull snakes (*Pituphis cantenifer*), and red-sided garter snakes (*Thamnophis sirtalis*). Turtles are frequently seen while canoeing the Scenic River. Several species commonly observed include snapping (*Chelydra serpentina*), painted (*Chrysemys picta*), and spiny softshell (*Trionyx spiniferus*).

Threatened and Endangered Species

The Scenic River is home to several plant and animal species that are listed for federal protection under the Endangered Species Act of 1973, as amended.

Federally protected plants are known elsewhere in the four counties adjacent to the Niobrara National Scenic River but not along this portion of river valley. The endangered blowout penstemon (*Penstemon haydenii*) grows on bare sand dunes in the Nebraska Sandhills, and the threatened western prairie fringed orchid (*Platanthera praeclara*) grows in wet meadows between sandhills.

Federally protected animals recorded in the area include the endangered whooping crane (*Grus americana*), interior least tern (*Sterna antillarum*), and American burying beetle (*Nicrophorus americanus*); and threatened species including piping plover (*Charadrius melodus*) and bald eagle (*Haliaeetus leucocephalus*). The endangered black-footed ferret (*Mustela nigripes*) once inhabited the area, but has since been extirpated.



The federally threatened Piping Plover can be found nesting on sandbars east of Norden Bridge.

Whooping canes migrate through the area each spring and fall. Eight sightings have been recorded over the past forty years on the Niobrara River between Valentine and the Carns Bridge, with the most recent observations occurring in April 2004. Shallow, sparsely vegetated segments of streams are used for roosting, and wetlands and cropland are used for feeding. No nesting has been documented.

Interior least terns and piping plovers nest during the summer on barren exposed river sandbars east of the Meadville Bridge. In 2002, the U. S. Fish and Wildlife Service established critical habitat for piping plovers, including the Niobrara National Scenic River reach from the Norden Bridge east to the Highway 137 bridge north of Newport.

The American burying beetle is found to the south on the Valentine National Wildlife Refuge and in northeastern Keya Paha County, but has not been documented along the river.

Bald eagles typically migrate through the valley during spring and fall and some eagles spend the winter months, from late October to early April, along the Niobrara River. Bald eagles are also seen in the summer but no nests have been officially confirmed. Winter population numbers depend on the severity of the season; more birds can be found along the Niobrara River during mild winters. An average of fifty birds have been counted during mid-January aerial surveys of the valley from west of Valentine to the confluence of the Niobrara and Missouri Rivers. Winter populations vary from year to year and no definite population trend is evident. Evidence of human-caused death of bald eagles has been documented in the general area. Lab analyses by the U. S. Fish and Wildlife Service indicates deaths by shooting, power line electrocution, and pesticide poisoning. Fewer carcasses have been found in recent years.

Black footed ferrets are not presently found in the area, which is within their historic range. Prairie dog colonies, necessary to the survival of black footed ferrets, exist on adjacent land.

Candidate species are plant and animal species whose survival is in question and are being studied for possible inclusion under the Endangered Species Act. Some of these species are also protected by Nebraska state law and listed as threatened or endangered. Additional plant and animal species are listed by the state as sensitive or rare in Nebraska (see Appendix B for a list of Nebraska sensitive species). The following candidate species may be found at or near the Scenic River.

Regal fritillary butterfly *Speyeria idalia*
Belfragi's chlorochroan bug *Chlorochroa belfragi*
Ferruginous hawk *Buteo regalis*
Loggerhead shrike *Lanius ludovicianus*
Western burrowing owl *Athena cunicularia hypugea*
Black tern *Chlidonias niger*
Swift fox *Vulpes velox*
Plains spotted skunk *Spilogale putorius interrupta*
Blanding's turtle *Emydoidea blandingii*
Yellow mud turtle *Kinosternon flavescens*
Black-tailed prairie dog *Cynomys ludovicanus*

Cultural Environment

The region's geography in this transition zone between the moist east and dry west has determined the nature of human use from prehistoric times to the present. Every successful occupant of this region has eventually adapted to the unique demands of the Great Plains environment.

American Indian Use

Prehistoric use of the area consisted of nomadic hunting and gathering camps in the Niobrara River valley and surrounding Sandhills. Archeological remains date back through several cultures to the Paleo-Indian period of 7,500-11,500 years before the present and include scattered projectile points, other stone tools, animal bone fragments, charcoal, pieces of pottery, and chipping debris. No archeological sites in the designated seventy-six mile long Niobrara Valley are listed on the National Register but several concentrations of sites were recommended as eligible for listing. The majority of recorded sites have not yet been evaluated. Available natural resources in the area apparently were not as suitable for villages and farms as those found farther east at the confluence of the Niobrara and Missouri rivers where village sites are more common.

Many Indian people, including the Lakota, Ponca, and Pawnee shared the Niobrara River valley. In addition to hunting and gathering, the valley offered the only sources of stone in the region that was suitable for the manufacture of tools.

Exploration

Early explorations discouraged development of the region. James Mackay explored the Sandhills region in 1795 and 1796. Mackay's map was published in 1802. A notation on it reads, "Grand Desert of moving sand where are neither wood, nor soil, nor stone, nor water, nor animals, except some little tortoises of various colors."

In 1857, First Lieutenant Gouverneur Warren of the U. S. Army Corps of Topographic Engineers traveled near the Niobrara in search of a railroad route west. The rugged side canyons of the Niobrara River made wagon travel difficult, and he paralleled the valley at some distance. He subsequently commended the Platte River railroad route to Fort Laramie even though it was forty

miles longer than the Niobrara route. The Niobrara's rugged terrain proved to be an obstacle to transportation and settlement, and it did not become an accessible human transportation corridor as did other Nebraska rivers.

After the Civil War, mining camps in Montana and the Black Hills of South Dakota spawned markets for freighted goods. Several wagon trails crossed the Niobrara River. Other historic routes, including the Gordon Road of 1876-1877 from Sioux City, Iowa, to the Black Hills, paralleled the river. But the Niobrara River and its valley generally remained a barrier to travel rather than a travel corridor.

Military History

By terms of the 1851 Fort Laramie Treaty, the Sandhills and Niobrara River flowing through them were accorded to the Sioux and Pawnee. In 1857 the Pawnees ceded fourteen million acres, including the central Niobrara River area, to the federal government for $200,000 in annuities.

Following the Great Sioux War of 1876-1877, the government confined Nebraska's and Dakota's Indians to established reservations across the region and in the Indian Territory. By 1878, the Sioux tribes were restricted to segments of the Great Sioux Reservation in Dakota Territory (now western South Dakota). Fort Niobrara was established in 1879 to monitor Brule Sioux activity at the nearby Rosebud Agency, later called the Rosebud Reservation. Cattle were trailed from Texas for distribution to the Sioux, and the fort served as a market for locally furnished goods and services. No major battles or events occurred, although soldiers were dispatched to several threats. For a number of years, African American troops of the Ninth Cavalry were stationed at the fort, which was closed finally in 1906. One army constructed hayshed (now used as a warehouse) remains and the fort site is listed in the National Register of Historic Places. In 1912, the original military reservation was reduced by fifty-four sections to 19,131 acres and converted to the Fort Niobrara National Wildlife Refuge.

Settlement

By 1883, the Fremont, Elkhorn, and Missouri Valley Railroad reached the vicinity of Fort Niobrara and towns developed along the way. In addition to providing law enforcement and protection, the fort was a ready market for local farm produce and labor, which encouraged homesteading. Several saw and flour mills were operating along the Niobrara River by the mid-1880s.

Homesteading and farming grew during the 1880s, but were challenged by drought and recession in the 1890s. The 1904 Kinkaid Act increased homestead tracts from 160 to 640 acres in the western two-thirds of the state. This further encouraged settlement, although the Sandhills area was nearly the last region of the Great Plains to be homesteaded. Population in the area increased and peaked during World War I with elevated commodity prices, but has steadily declined to the present day. More recently people have renewed their interest in the rural lifestyle, whether in retirement or in pursuit of a self-employed or home-based livelihood.

Properties along the river vary from the 60,550 acre Niobrara Valley Preserve and other large ranches, to family-owned ranches of several thousand acres, to small truck farms. Small residential lots of several acres or less also abound. A scattering of older houses and barns in the valley are considered regionally significant. Many of the older structures are unused and unmaintained and in various stages of deterioration.

Bridges

Several prefabricated iron truss bridges over the Niobrara River still serve county road systems. Borman (1916), Berry (1920 21), Bell or Allen (1903), and Brewer (1899) bridges were listed separately in 1992 in the National Register of Historic Places under criterion C for significance at the state level and as part of a multiple property listing "Highway Bridges of Nebraska, 1879-1942." These bridges are examples of rigid or pin-con



Aerial view of Berry Bridge east of Valentine, Nebraska.

nected Pratt through truss design. The Borman and Berry bridges are still used for through traffic and the Brewer and Allen bridges are used for local ranch traffic. Other bridges of similar age and design, but not listed in the national register, are Norden, County Line (privately owned), and Meadville. The multi-span concrete Carns state aid bridge built in 1912 is also National Register listed. In 1996, a 1910 iron truss bridge moved from Verdigre Creek, Nebraska, was restored and reassembled across the Niobrara River at Smith Falls State Park for pedestrian access to Smith Falls. This bridge was also listed in the National Register of Historic Places though it is a probable candidate for delisting owing to its contextual change.

Cornell Dam

The Cornell Dam was built in 1915-16 on the Niobrara River near Valentine as part of the Niobrara River Power Project. Charles Cornell, one of the organizers of Cherry County and a founder of the town of Valentine, aspired to establish a Nebraska-Dakota Railroad and needed the power project to furnish electricity to the proposed route between Valentine and Spencer, Nebraska. The plant began furnishing power in 1917 but the rail line was never constructed. Instead, the power was used to pump water for the town of Valentine. The plant ceased operating in 1984. The Nebraska Public Power District, the dam's owner at the time, quitclaimed the property to the United States government in 1986 due to its location within the boundaries of the Fort Niobrara National Wildlife Refuge.

Cultural Landscapes

The river valley has supported ranching and farming since the 1880s. Although roads, buildings, and fences are well scattered, current land management practices affect the landscape. The valley's large ranches typify this broad pattern of use. Some rowcropping occurs along the river but current ranching and conservation practices maintain a landscape with the same general appearances as in the earliest days of Euramerican settlement. The valley's woodlands are more extensive than in presettlement times, largely due to prairie fire suppression, but this, too, is a measure of human impact on the land.

Recreational Resources

The Niobrara River valley offers an array of recreational resources distinctive to the Great Plains. The canoeing, tubing, and kayaking reach from Cornell Dam to the vicinity of Norden Bridge offers a nationally renowned, two-day water experience enjoyed by thousands annually. Canoeing occurs east of Norden as well, but is more dependent on seasonal high water. Float trips are heightened by opportunistic wildlife viewing, the valley's distinctive botanical diversity, its array of waterfalls and dramatic cliffs, and the occasional historic truss bridges and dispersed old farm and ranch buildings.

Several gravel roads paralleling the river provide sightseeing opportunities, including through the Fort Niobrara National Wildlife Refuge and from Brewer Bridge to Norden Bridge. Paved highways cross the Niobrara River north of Ainsworth, Bassett, and Newport and offer interesting views of a pristine river, open fields and woodlands, valley slopes, and ranches. Extant overlooks south of Sparks and north of Bassett provide exceptional viewing opportunities of the river and valley. The Sparks Overlook also provides dramatic long distance viewing of the Sandhills south of the river.

Photography, camping, fishing, hunting, and hiking are other widely enjoyed activities enhanced by well-developed public and private facilities scattered throughout the seventy-six mile Niobrara reach and at all of its gateway communities. The historic Meadville hamlet north of Ainsworth showcases a restored and operating 1888 general store, a Fourth of July celebration, and a popular, mid-winter icy river romp.

Wintertime recreational opportunities abound including hunting, sightseeing, and bald eagle watching. Though concentrated in summer, canoeing occurs every month of the year.

Socioeconomic Environment

Visitor Use

The diverse recreational use of the Niobrara National Scenic River is widely scattered across the seventy-six-mile-long unit but its nationally touted canoeing is generally concentrated along the thirty-mile river segment



Tubers enjoy the Scenic River between Smith Falls and Brewer Bridge on a busy Saturday.

between the Fort Niobrara National Wildlife Refuge and the Norden Bridge. Easily the most heavily used public launch is the Fort Niobrara access at the refuge's entrance. Other popular public access sites include Smith Falls State Park, managed by the Nebraska Game and Parks Commission, and the Brewer Bridge landing managed by the Middle Niobrara Natural Resources District. Commercial operators also stage from privately owned sites at Berry Bridge and down river between the Brewer and Norden bridges.

In 1993 canoe and tube use of the river was estimated at approximately thirty thousand annually, with an additional approximate five thousand nonwater-oriented visitors in the river valley. The National Park Service derived this figure with assistance from the University of Nebraska Bureau of Business Research. Use in 1995 was estimated to have increased by approximately ten percent and evidence offered below suggests that public use continues to grow. In 2001 the National Park Service contracted with the University of Minnesota's Cooperative Park Studies Program to survey and report public use and formulate a protocol for collecting and reporting monthly and annual use of the unit thereafter. This study was completed in 2003 and the protocol is now being implemented.

In 1993 approximately twenty-four thousand individual floaters began their river trip on the Fort Niobrara Refuge. In 1994 approximately twenty-five thousand floaters commenced there. With the implementation on the refuge of special conditions set forth in the 1999 comprehensive conservation plan aimed at dispersing river use, protecting refuge resource values, and particularly enhancing a visitor's experience in the Fort Niobrara Wilderness, floating use at Fort Niobrara dropped to approximately fourteen thousand in 2002. At the same time, National Park Service, outfitter, and Nebraska Game and Parks Commission personnel offer anecdotal reports of substantially increased river usage downstream from the refuge, use in part reflected in statistics collected at Smith Falls State Park. The state park reported 26,200 visitors in 1993, 31,800 in 1994, and 76,300 in 2000. In 2002 Smith Falls reported 72,400 visitors. Doubtless, some of these river users are included in the Fort Niobrara count, a detail among many addressed by the University of Minnesota visitor use study for the National Park Service in 2001-2002.



Egelhoff's Rapids.



Rocky Ford Rapids.

River use typically occurs from late May until early September. Use from October through April is light but canoeing occurs throughout the winter season, weather permitting. Winter use in the canoeable reach is abetted by the river's steady flow and quick current, which inhibit freezing. About eighty percent of river use occurs on Saturdays, about ten percent on Sundays, with the remaining ten percent spread across the weekdays.

A common use pattern is to arrive in Valentine on Friday, float all day Saturday, and depart on Sunday. Some users also enjoy a short float before departing on Sunday.

On peak Saturdays, it is not unusual to see one hundred to two hundred canoes and tubes on the river at almost any location from Fort Niobrara to Brewer Bridge. People coming to the Niobrara expressly for a solitary experience have learned to avoid summer weekends and opt, instead, for a mid-week float or a visit in the shoulder seasons where, in both instances, it remains entirely possible to enjoy the river environment with an atmosphere of solitude.

Use on peak Saturdays is now essentially controlled by the availability of rental canoes and tubes. Increases could still result if outfitters added to their canoe and tube inventory, if new outfitters commenced business, or if more users brought their own canoes and tubes. The U. S. Fish and Wildlife Service issues special use permits for outfitters launching on the Fort Niobrara Refuge, and no new permits have been issued since 1999 pending completion of detailed river management plans, one part focusing on the refuge alone and a second part to be written cooperatively with the National Park Service addressing the remainder of the canoeable river.

Currently, thirteen commercial outfitters based in Valentine or at several river locations rent canoes, kayaks, and innertubes. In 2001 slightly more than ninety-three percent of floaters rented equipment or hired the services of outfitters.

The survey of river floaters conducted in 2001 by the University of Minnesota for the National Park Service included questions about group size and composition, place of origin, purpose of trip, degree of satisfaction, and general management needs. The average group size floating the river in 2001 was nine people. Weekend groups tended to be larger than ten. Most people began their float at the Fort Niobrara National Wildlife Refuge and may float the lower or eastern portion of the canoeable reach on a second day. Sixty-six percent of the floaters were from Nebraska (down from seventy-five percent in 1993), and of those nearly sixty percent were from Omaha and Lincoln. Another nearly eleven percent of river floaters were from South Dakota, nine percent from Iowa, and four percent from Colorado. Reasons given for floating the river included opportunities to enjoy the natural scenery, escape the usual demands of life, and enjoy a family activity. River floaters were generally greatly satisfied with their experiences. About forty-two percent of the floaters indicated that this was their first experience on the Niobrara.

The Fort Niobrara National Wildlife Refuge features a visitor center at refuge headquarters seven-tenths of a mile east of the Fort Niobrara launch site. Information on the river and refuge is typically available on weekdays throughout the year, along with displays on fort history, wildlife, and plant ecology. The refuge also provides opportunities for wildlife viewing from an internal road network and hiking on self-guided nature trails, including in the wilderness area. Refuge attendance was 130,000 in 2000. About 5.5 miles of the river below the Fort Niobrara launch passes through the federally designated Fort Niobrara Wilderness.

Smith Falls State Park provides river access, camping, picnicking, trails to Smith Falls and the south valley rim, and informal environmental interpretation.

Private camping is currently available at ten commercial sites between Fort Niobrara and the Norden Bridge and at a small private park at the Meadville Bridge north of Ainsworth.

The Nature Conservancy's Niobrara Valley Preserve accommodates school groups and the organization's membership for nature study and ecological research.

The chambers of commerce in Valentine and Ainsworth and the National Park Service's Niobrara/Missouri Headquarters Office in O'Neill provide general visitor information. Formal interpretation remains meager, with small displays at the Fort Niobrara Refuge, Smith Falls State Park, and the Fred Thomas Wildlife Management Area overlooking the river north of Bassett. The National Park Service has placed identification signs at certain river landmarks and hazards. The National Park Service provides and distributes an interim informational brochure for the Scenic River, one destined soon to be replaced by a formal park brochure produced by the Service's Harpers Ferry Interpretive Design Center in 2005. River outfitters have also developed and distributed a variety of maps and brochures.

Hunting for deer, turkey, grouse, and quail is popular, as is fishing for catfish in the Niobrara River and trout in larger tributary creeks. Some landowners charge fees, lease property, or provide guiding services for hunting on private land. Some trapping occurs for recreation, commercial fur harvest, and nuisance animal control.

Demographics

The 2000 census recorded 12,400 people in the four counties along the Scenic River. This was down some nine percent from 1990 and reflects Nebraska's diminishing rural and growing urban population. Valentine (2,800), Ainsworth (1,850), Springview (250), and Bassett (750) are county seats. Nebraska's population is eighty-seven percent white, 5.5 percent Hispanic, four percent black, and less than one percent American Indian. Median ages range from thirty-six years in Cherry County to thirty-nine years in Keya Paha County. High school graduation rates average seventy-six percent. Seventy-seven percent of the people in the area were born in Nebraska.

Employment

Farming and ranching provide the greatest employment, accounting for thirty-three percent of jobs in the four-county area. The percentage of nonagricultural jobs increased by ten percent between 1975 and 1990. Between 1975 and 1990 total employment decreased three percent in the region versus a twenty-five percent increase statewide. Keya Paha County recorded the greatest decrease at eleven percent. Government employment declined three percent between 1975 and 1990, but government transfer payments (retirement, medical, welfare) increased fifty-seven percent on a per capita basis adjusted for inflation. Tourism is growing but represents only about six percent of the local economy. Valentine is the hub of services for river recreation.

Landownership

Federal Land

Nine miles of the Niobrara National Scenic River are within the 19,122-acre Fort Niobrara National Wildlife Refuge. The U. S. Fish and Wildlife Service also manages a 221-acre conservation easement in Keya Paha County near the river that features a wetland and grassland buffer. The Bureau of Reclamation owns some 186 acres in the project area in a number of small and widely scattered parcels. The Bureau of Land Management owns a 57.5-acre tract near the Borman Bridge. The Bureau of Reclamation tracts are eligible for immediate transfer to the National Park Service for management as Scenic River lands. The Bureau of Land Management

tract, though located immediately upstream of the Scenic River boundary, is a site alternative for a prospective visitor education center serving the greater Niobrara and Sandhills region.

State and Local Government Land

Two tracts of state-owned school trust land adjacent to the river are leased for grazing and hunting. The Nebraska Game and Parks Commission has a well established presence on the Niobrara, owning 160 acres and some two miles of south bank river frontage at the Borman Bridge Wildlife Management Area, the 218-acre Fred Thomas Wildlife Management Area north of Bassett with one-half mile of south bank river frontage, and leasing the 264-acre Smith Falls State Park with a collective 2.5 miles of river frontage. A two-acre tract at Brewer Bridge is managed for recreation by the Middle Niobrara Natural Resources District.

Private Land

Most of the land between Borman Bridge and Nebraska Highway 137 within one-quarter mile of the river (about eighty-five percent) is privately owned by individuals, family ranches, and The Nature Conservancy. The remainder is managed by the U. S. Fish and Wildlife Service and Nebraska Game and Parks Commission.

The 60,550-acre Niobrara Valley Preserve, owned and managed by The Nature Conservancy, includes approximately 25 miles of riverfront on the south bank of the Niobrara and 4.4 miles of frontage on the north bank in Cherry, Brown, and Keya Paha counties. The Preserve is managed for resource preservation, education, and ecological research.

Land Use

Ranching and farming have accounted for the primary land use of the Niobrara and comprise cornerstones of the local economy since settlement in the 1880s. Irrigated cropland exists in a few bench areas near the river and on flat uplands away from the river. Upland prairie is used for pasture, and hay is cut near the river.

Until recently, most residential use along the river was associated with ranching although the introduction of scattered recreational cabins and mobile homes were occasionally noted through most of the 1990s. Late in the decade, however, recreational homestead development surged, particularly south of Sparks where a substantial tract of timbered land was subdivided and now features sizeable seasonal homesteads. Development is also occurring in the Meadville hamlet and at the mouth of Long Pine Creek, a traditional cabin area on a heralded trout stream.

Developments associated with the recreational industry have also surged in the late 1990s with the construction of two substantial private landings and concession facilities targeting floaters, added to four private concession-type facilities of longer standing.

Land Protection Status

The Existing Conditions map (**Map 2**) shows the locations of land owned by public and private nonprofit entities.

Public Land

Public lands along the seventy-six-mile Niobrara National Scenic River detailed above are managed under the long-term goals and mandates of the respective managing agencies and are subject to all federal and state environmental protection laws. Undeveloped public land would probably remain undeveloped in accordance with agency goals and mandates. Public land, whether federal or state owned or leased, comprises some 10.25 miles of north bank riverfront and some 12.3 miles of south bank riverfront.

Private Nonprofit Land

The Niobrara Valley Preserve, owned and managed by The Nature Conservancy and detailed above, has as its long-term management goal the protection of native natural resources, including rare plants and habitat. Under Conservancy ownership the land is protected from subdivision and resource degradation. The Conservancy protects 29.4 miles of river frontage.



Early morning fog rises off the Niobrara river near Valentine, Nebraska.

Environmental Consequences of the Alternatives

Impact Topics

Selection Criteria

This section identifies the resources and values (impact topics) that were considered in the planning process and describes the criteria used to establish the relevance of each impact topic to long-term planning for the project area. The impact topics were used to focus the planning process and the assessment of potential consequences of the alternatives. The following criteria were used to determine the impact topics for the Niobrara National Scenic River:

- *Resources cited in the establishing legislation for the Niobrara National Scenic River.* The establishing legislation for the unit is reproduced in Appendix A.

- *Resources critical to maintaining the significance and character of the Niobrara National Scenic River.* The sections on "Significance of Area Features" and "Discussion of Outstandingly Remarkable Values" describe the defining features of the Niobrara River that were used to define the resources critical to maintaining its significance and character.

- *Resources recognized as important by laws or regulations.* Many of the important congressional acts and executive orders that guide the management of all National Park Service units, including the Niobrara National Scenic River, are listed in Appendix B.

- *Values of concern to the public that were mentioned during scoping for this plan.* The National Park Service conducted an extensive public information and scoping program to acquire input from the public and from other agencies. This helped the Service develop alternatives and identify resources and values that are of high interest in the Niobrara National Scenic River locale.

Impact Analysis

While the issues topics discussed below describe the relationship between the alternative ways of achieving goals, impacts predict the magnitude of that relationship. The National Environmental Policy Act and Director's Order 12 require a full exploration of the issues to determine the true magnitude of the impacts on the affected environment.

For each impact topic, the analysis includes a brief description of the affected environment and an evaluation of effects. The impact analysis involved the following steps:

- Identify the area that could be affected.
- Compare the area of potential effect with the resources that are present.
- Identify the intensity, context, duration, and type of effect, both as a result of this action and from a cumulative effects perspective. Identify whether effects would be beneficial or adverse.
- Identify mitigation measures that may be employed to offset or minimize potential adverse impacts.

Impacts are defined in terms of context, intensity, duration, and type. Evaluation of alternatives takes into account whether the impacts would be negligible, minor (barely detectable), moderate (clearly detectable), or major (a substantial alteration of current conditions). Duration of impacts is evaluated based on the short- or long-term nature of alternative-associated changes to existing conditions. Type of impact refers to the beneficial or adverse consequences of implementing a given alternative. More exact interpretations of intensity, duration, and type of impact are given for each impact topic examined. Definitions of intensity levels vary by impact topic, but, for all impact topics, the following definitions for type of impact were applied:

Beneficial — a positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse — a change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

Direct — an effect that is caused by an action and occurs in the same time and place.

Indirect — an effect that is caused by an action, but occurs later in time or is farther removed in distance, and is still reasonably foreseeable.

Cumulative Impacts

The regulations that implement the National Environmental Policy Act require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time." (40 CFR 1508.7)

Methodology for Analyzing Impacts

Each impact topic relative to these criteria is briefly described below. The planning team selected the impact topics for analysis based on the potential effect of the alternatives on those resources. The "Environmental Consequences" section contains a more detailed description of each impact topic and the effects on those resources of each of the three proposed management alternatives and three boundary alternatives.

Cultural Resources

Negligible	The impact is at the lowest level of detection — barely measurable, with no perceptible (visible to the unaided human eye) consequences, either adverse or beneficial, to cultural resources.
Minor	The impact is perceptible and measurable and is confined to a small area or a single contributing element of a cultural resource.
Moderate	The impact is sufficient to cause a perceptible change in the character-defining features of a resource and generally involves a single or small group of contributing elements of a cultural resource.
Major	The impact results in substantial and highly-noticeable change in character-defining features of a resource and involves a large group of contributing elements and/or an individually significant cultural resource.

Paleontological Resources

Negligible	The impact is barely perceptible and not measurable, and is confined to a small area or a single contributing element of a paleontological resource.
Minor	The impact is perceptible and measurable and is confined to a small area or a single contributing element of a paleontological resource.
Moderate	The impact is sufficient to cause a perceptible change in the character-defining features of a resource and generally involves a single or small group of contributing elements of a paleontological resource.
Major	The impact results in substantial and highly-noticeable change in character-defining features of a resource and involves a large group of contributing elements and/or an individually-significant paleontological resource.

Natural Resources

Resources falling under this impact topic include air, water, floodplains and wetlands, soil and vegetation, fish and wildlife, threatened and endangered species, and scenic resources.

Air Quality

Negligible	No changes would occur, or changes in air quality would be below or at the level of detection, and, if detected, would have effects that would be considered slight and short term. Changes to visibility (e.g., visible smoke, plumes, or haze) would be imperceptible to the unaided human eye.
Minor	Changes in air quality would be measurable, although the changes would be

	small, short term, and the effects would be localized. No air quality mitigation measures would be necessary. Changes to visibility would be perceptible, and of short duration.
Moderate	Changes in air quality would be measurable, and would have consequences, although the effects would be relatively local. Air quality mitigation measures would be necessary and the measures would likely be successful. Visibility would be noticeably reduced over the long term.
Major	Changes in air quality would be measurable, would have substantial consequences, and would be noticed regionally. Air quality mitigation measures would be necessary and the success of the measures could not be guaranteed. Visibility would be severely limited for long periods.
Duration	short-term: recovers in less than seven days; long-term: takes more than seven days to recover.

Water Quality

Negligible	Chemical, physical, or biological effects would not be detectable, or if detected (*i.e.*, trace), would be considered slight, local (site-specific), and short term.
Minor	Chemical, physical, or biological impacts would be detectable and short term, but the effects would be localized. No mitigation measures associated with water quality would be necessary.
Moderate	Chemical, physical, or biological effects would be detectable, but would likely be short term, and relatively local, although there could be a regional effect. Mitigation measures associated with water quality would be necessary and the measures would likely succeed.
Major	Chemical, physical, or biological effects would be detectable, would have substantial consequences, and would be noticed on a regional scale. Mitigation measures associated with water quality would be necessary and the measures would not be guaranteed.
Duration	short-term: following treatment, recovery would take less than one year; long-term: following treatment, recovery would take longer than one year.

Floodplains and Wetlands

Negligible	An action that would cause no change in an existing wetland area and its hydrologic function, or the ability of a floodplain to convey flood waters.
Minor	An action that would cause no change in an existing wetland or floodplain area and function. Changes in floodplains would be measurable, although the changes would be small, would likely be short term, and the effects would be localized. No mitigation measures associated with water quality or hydrology would be necessary.
Moderate	An action that would change an existing wetland area or floodplain function, but the impact could be mitigated by the creation of artificial wetlands, modification of proposed facilities in floodplains, and creation of backwater habitats. Changes in floodplains would be measurable and long term, but would tend to be local, although there would be potential for effects on a regional scale, depending on the extent of the effect on the watershed. Mitigation measures associated with water quality or hydrology would be likely and the measures would likely succeed.
Major	An action that would have drastic consequences for an existing wetland area or floodplain function. Mitigation

measures would be necessary and their success would not be guaranteed.

Duration — short term: following treatment, recovery would take less than one year;
long term: following treatment, recovery would take longer than one year.

Soils

Negligible — Soils would not be affected or the effects to soils would be below or at the lower levels of detection. Any effects to soil productivity or fertility would be slight and no long-term effects to soils would occur.

Minor — The effects to soils would be detectable. Effects to soil productivity or fertility would be small, as would the area affected. If mitigation were needed to offset adverse effects, it would be relatively simple to implement and would likely be successful.

Moderate — The effect on soil productivity or fertility would be readily apparent, likely long term, and result in a change to the soil character over a relatively wide area. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.

Major — The effect on soil productivity or fertility would be readily apparent, long term, and substantially change the soil character over a large area within and outside of the park. Mitigation measures to offset adverse effects would be necessary, extensive, and their success could not be guaranteed.

Duration — short term: recovers in less than three years;
long term: takes more than three years to recover.

Vegetation

Negligible — No native vegetation would be affected, or some individual native plants could be affected as a result of the alternative, but there would be no effect on native species populations as a whole. The effects would be short term, on a small scale, and no species of special concern would be affected.

Minor — The alternative would affect some individual native plants and would also affect a relatively minor portion of the species' population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, would be required and would be likely successful.

Moderate — The alternative would affect some individual native plants and would also affect a sizeable segment of the species' population in the long term and over a relatively large area. Mitigation to offset adverse effects could be extensive, but would likely be successful. Some species of special concern could also be affected.

Major — The alternative would have a considerable long-term effect on native plant populations, including species of special concern, and affect a relatively large area inside and outside of the park. Mitigation measures to offset adverse effects would be required, extensive, and the success of the mitigation measures would not be guaranteed.

Duration — short term: recovers in less than three growing seasons;
long term: takes more than three growing seasons to recover.

Wildlife

Negligible — There would be no observable or measurable impacts to native fish and wildlife species, their habitats, or the natural processes sustaining them. Impacts would be of short duration and well within the range of natural variability.

Minor	Impacts would be detectable, but they would not be expected to be outside the natural range of variability and would not be expected to have any long-term effects on native species, their habitats, or the natural processes sustaining them. Population numbers, population structure, genetic variability, and other demographic factors for species may have small, short-term changes, but long-term characteristics remain stable and viable. Occasional responses to disturbance by some individuals could be expected, but without interference to feeding, reproduction, or other factors affecting population levels. Key ecosystem processes may have short-term disruptions that would be within natural variation. Sufficient habitat would remain functional to maintain viability of all species.
Moderate	Breeding species of concern are present; species are present during particularly vulnerable life stages, such as migration or juvenile states; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit. Impacts on native fish and wildlife species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability for short periods of time. Species abundance, population structure, genetic variability, and other demographic factors may have short-term changes, but would be expected to rebound to pre-impact numbers and to remain stable and viable in the long term. Frequent responses to disturbance by some individuals could be expected, with some negative impacts to feeding, reproduction, or other factors affecting population levels. Key ecosystem processes may have short-term disruptions that would be outside natural variation, but would soon return to natural conditions. Sufficient habitat would remain functional to maintain viability of all native fish and wildlife species. Some impacts might occur during critical periods of reproduction or key habitat for sensitive species.
Major	Impacts on native fish and wildlife species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability for long periods of time or to be permanent. Species abundance, population structure, genetic variability, and other demographic factors might cause declines, with long-term population numbers significantly depressed. Frequent responses to disturbance by some individuals would be expected, with negative impacts to feeding, reproduction, or other factors resulting in a long-term decrease in population levels. Key ecosystem processes might be disrupted in the long term, or permanently. Habitat loss would likely affect the viability of several native species.
Duration	short term: recovers in less than one year; long term: takes more than one year to recover.

Threatened or Endangered Species

Negligible	No federally listed species are present, or the alternative would affect an individual of a listed species or its critical habitat, but the change would be so small that it would not be of any measurable or perceptible consequence to the protected individual, its population, or its habitat.
Minor	Nonbreeding animals of concern are present, but only in low numbers. Habitat is not critical for survival; other habitat is available nearby. Occasional flight responses by animals are expected, but without interference with feed-

	ing, reproduction, or other activities necessary for survival.
Moderate	Breeding listed species are present; listed species are present during particularly vulnerable life stages such as migration or juvenile stages; mortality or interference with activities necessary for survival expected on an occasional basis, but not expected to threaten the continued existence of the listed species in the park.
Major	Breeding listed species are present in relatively high numbers, and/or listed species are present during particularly vulnerable life stages. Habitat that would be affected by watercraft use or other actions has a history of use by listed species during critical periods and is somewhat limited. Mortality or other effects are expected on a regular basis and could threaten continued survival of the listed species in the park. A taking under Section 7 of the Endangered Species Act could occur.
Duration	short term: recovers in less than one year; long term: takes more than one year to recover.

Scenic Resources

Negligible	An action that would introduce only the perception of some additional movement by cars or by people on bicycles or walking. The change to the viewshed would be so small or localized that it would have no measurable or perceptible consequence to the visitor experience of the viewshed.
Minor	An action that would introduce perceptible man-made additions to the viewshed. These actions would include structures that affect a relatively small portion of the viewshed, either the foreground, middleground, or background, and have barely perceptible visual consequences to the visitor experience of the viewshed.
Moderate	An action that would introduce perceptible man-made additions to the viewshed. These actions would include facilities, parking, and other man-made structures that would affect a moderate portion of the viewshed. This might include the foreground and middleground, or the foreground and background. These actions would not completely alter the viewshed, but would be a visual addition to the existing conditions.
Major	An action that would introduce multiple and drastic man-made additions that affect the entire viewshed as experienced by the visitor. These actions would include major facilities and parking, plus other man-made structures that would completely alter the foreground, middleground, and background of the existing viewshed.
Duration	short term: effects last less than a year; long term: effects last more than one year.

Visitor Information, Education, and Experience

Negligible	Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. Any effects would be short term. The visitor would not likely be aware of the effects associated with the alternative.
Minor	Changes in visitor use and/or experience would be detectable, although the changes would be slight and likely short term. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
Moderate	Changes in visitor use and/or experience would be readily apparent and could have a long-term effect on access, use, and availability of various aspects of the visitor experience.
Major	Changes in visitor use and/or experience would be readily apparent and

	could permanently alter access, use, and availability of various aspects of the visitor experience.
Duration	short term: occurs only during the action (e.g., construction); long term: occurs after the action has been completed.

Local Economy

Negligible	No effects would occur or the effects to economic conditions would be below or at the level of detection. The effect would be slight and no long-term effects to economic conditions would occur.
Minor	The effects on economic conditions would be detectable, although short term. Any effects would be small, and if mitigation were needed to offset potential adverse effects, it would be simple and successful.
Moderate	The effects on economic conditions would be readily apparent and likely long term. Any effects would result in changes to economic conditions on a local scale. If mitigation were needed to offset potential adverse effects, it could be extensive, but would likely be successful.
Major	The effects on economic conditions would be readily apparent, long term, and would cause substantial changes to economic conditions in the region. Mitigation measures to offset potential adverse effects would be extensive, and their success could not be guaranteed.
Duration	short term: effects last one year or less; long term: effects last longer than one year.

Local Government

Negligible	The impact would have no discernible effect on the operations or roles of local government.
Minor	The impact would not have an appreciable effect on the operations or roles of local government.
Moderate	The impact could have an appreciable effect on the operations or roles of local government.
Major	The impact would have a substantial, highly noticeable influence on the operations or roles of local government.
Duration	short term: effects last one year or less; long term: effects last longer than one year.



Brilliant fall colors are displayed by a tall aspen at Smith Falls State Park.

Impacts of Management Alternative A: Continue Existing Conditions (No Action Alternative)

Cultural Resources

Cultural resources located on private land, but within the National Park Service boundary would be afforded protection through federal preservation laws such as the National Historic Preservation Act and other federal mandates, regulations, and policies. However, under this alternative, staffing and funding levels would be limited to adequately enforce these laws or to monitor cultural resource conditions.

The ranching cultural landscapes in and around the park define much of the region's physical surroundings and reflect traditional, regional land use. Zoning at the county level could help preserve these traditional landscapes. However, under this alternative, the National Park Service would have limited capability to influence county zoning.

Cumulative Impacts: Negative impacts on cultural resources from other past, present, and reasonably foreseeable future actions would continue under this alternative. The protection and management of cultural resources would be uncoordinated and inadequately funded/staffed. Over time, this would increase the possibility of cultural resources being adversely impacted by development, theft, and/or natural processes. Impacts on these nonrenewable resources could range from minor to major depending on the scope and duration of the impact and the significance of the resource.

Private land development would continue under county zoning, but zoning could be changed or repealed. Unmet costs of zoning enforcement could minimize its effectiveness, potentially resulting in incremental adverse impacts on scenic qualities and cultural resources. New development and construction projects on private lands would not be subject to regulations requiring archeological studies of sites prior to ground disturbance, but would depend upon voluntary compliance. Impacts could be mitigated through sensitive development, but permanent landscape impacts could be cumulative over the long term.

In addition, weathering, erosion, ice, and other natural processes through time potentially could damage National Register properties such as the historic bridges. The wear and tear of traffic use on these structures could also have long-term adverse effects. Under this alternative, the park would have limited funding, staff, and jurisdictional authority to deal effectively with these long-term consequences.

Conclusion: Under Alternative A, significant and potentially significant cultural resources would be at risk of sustaining moderate to major, irreversible adverse impacts in the near and long term. Landowners who might wish to preserve potentially significant historic structures would not have access to the technical expertise or funding needed for structural preservation. Counties would continue to maintain several National Register bridges as part of county roads systems. Alteration or replacement could alter the historic integrity of these resources. In summary, Alternative A does not afford the park with the human or financial resources or means to adequately protect significant or potentially significant resources, which could impair cultural resources in the park.

Paleontological Resources

Under Alternative A, the National Park Service would lack the administrative authority and resources needed to protect significant paleontological resources located on private lands. The ability to coordinate the actions of other agencies would be limited, and the National Park Service would have a negligible influence on actions taken by other land-managing agencies and private landowners.

Under this alternative, staffing and funding levels would be limited to adequately enforce these laws and policies and to monitor site conditions. Furthermore, the alternative's staffing and funding levels would limit the park's ability to protect important resources through the development of a paleontological resource component of a resource stewardship plan and other management plans.

Paleontological resources could be more vulnerable to theft, vandalism, or erosion. Some landowners might appreciate a resource, but might not have the means or skills needed to protect or preserve it, or might be unaware of federal, state, and private programs designed

to provide preservation assistance. In addition, the Service would have limited ability to influence construction and development activities on private property.

Zoning at the county level could be used to assist in preserving traditional landscapes, and thereby limiting disturbance of paleontological resources dotting the park. However, under this alternative, the National Park Service would have limited ability to influence county zoning, which could result in moderate to major adverse impacts on paleontological resources.

Cumulative Impacts: Negative impacts from other past, present, and reasonably foreseeable future actions would continue under this alternative. Damage from natural weathering and theft would remain a concern under Alternative A. Private land development would continue under county zoning, but zoning could be changed or repealed. Unmet costs of zoning enforcement could reduce its effectiveness, resulting in incremental, but significant, impacts to paleontological resources.

Conclusion: Under Alternative A, park funding and staffing levels, as well as the reduced influence of this land management agency, would greatly limit the park's ability to protect or manage paleontological resources. Landowners who might wish to preserve these resources would have difficulty accessing technical expertise or funding needed to preserve them. Through time, some significant paleontological resources could sustain moderate to major adverse impacts. Alternative A does not provide the resources or means to adequately protect significant or potentially significant paleontological resources.

Natural Resources

Air Quality

An indirect effect of implementing this alternative would be an increased potential for higher particulate matter emissions from uncontrolled wildland fires as fuel loads and understory biomass accumulated in areas not managed by or for fire. The increased emissions from wildland fires would constitute a periodic, short-term, negligible impact.

If the number of visitors increased, there would not be a management structure in place to reduce dust and particulate matter raised by automobile travel on unimproved roads.

Cumulative Impacts: Impacts on air quality from other past, present, and reasonably foreseeable future actions — vehicle emissions, use of dirt and gravel roads, wood burning for home heating, prescribed fires, and wildland fires — would continue. The levels of emissions from these sources could change slightly in the foreseeable future, but any change would be negligible and would not measurably change air quality. The implementation of Alternative A in combination with past, present, and foreseeable future action would result in periodic, short-term, minor adverse impacts on air quality.

Conclusion: Air quality at Niobrara National Scenic River could deteriorate at a local level, but remain good under Alternative A. The only noticeable impact on air quality from Alternative A would be that air quality and visibility would be locally impacted by prescribed fire or construction projects. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Water Quality and Aquatic Species

Because of heavy recreational use on some reaches of the Niobrara River, coupled with livestock grazing and feedlots located on tributaries, the potential exists for contamination of the river with nutrients, and e.coli and fecal coliform bacteria from human and animal waste, as well as from pesticides and sediment loading. Combined sanitary and storm sewer overflow, or concentrated feedlot runoff, may also have an impact on the water quality of streams. Under the No-Action Alternative, there could be direct impact from poorly-planned construction, increased severity of flooding from elevated runoff levels, downstream chemical or sewage contamination, or restricted floodways.

Under this alternative, there would be minimal federal staff, resulting in reduced water quality monitoring by the park. The Nebraska Department of Environmental Quality currently monitors fecal coliform and e. coli concentrations on the Niobrara River once every five

years. Adverse impacts to water quality (e.g., increased turbidity, increased e.coli and fecal coliform levels) could go undetected due to an infrequent monitoring program.

Under Alternative A, Cornell Dam would remain under the management of the U. S. Fish and Wildlife Service. As the dam's owner, the U. S. Fish and Wildlife Service is responsible for regular safety inspections and maintenance. According to the Association of State Dam Officials, the average life span of a dam is fifty years. Cornell Dam was eighty-five years old in 2001. The dam's location at the head of a popular recreation area significantly increases the consequences of dam failure on human health and safety. Dam failure could also have short-term catastrophic environmental impacts both upstream and downstream.

Cumulative Impacts: If no action is taken to change current grazing practices or to control the heavy recreational use of the river, the sources of negative impacts on water quality and aquatic species outside and within the Scenic River could increase. In the event that Cornell Dam failed, water quality would be negatively impacted for a substantial period of time as a result of increased or potentially contaminated sediment load. In the long term, however, the impacts would probably be minimal, as the situation settled down, and could actually be beneficial, by returning the river to a more natural hydrograph.

Conclusion: Water quality and aquatic habitat at Niobrara National Scenic River could deteriorate under the no-action alternative. There would be perceptible impacts on water quality and aquatic species as a result of poor grazing practices and recreational overuse of the river. There would be, however, no irreversible adverse impacts on a resource whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Floodplains and Wetlands

Along the river, people have used rock, concrete blocks, treated wood posts, and other stream flow barriers in attempts to keep ice from accumulating around bridges. Rip-rap and concrete used for bank stabilization also tend to constrict stream flows. This constriction or channelization causes the river flow to scour downward into the river bed and deepen the channel. These environmentally damaging techniques could continue under the No-Action Alternative.

Wetlands would continue to be impacted by grazing along stream banks. There are beneficial effects from current state and federal stream bank and wetland vegetation restoration projects that would be expected to continue. Zoning ordinances require a two hundred-foot setback from the high water mark for new construction. Under this alternative, however, the National Park Service would lack the ability to influence other counties to adopt such ordinances. Unmanaged growth and development within and adjacent to the Scenic River could damage and threaten wetlands further.

Cumulative Impacts: No cumulative impacts on floodplains and wetlands would be expected under Alternative A.

Conclusion: The natural and beneficial values of floodplain areas would continue to be compromised by continued heavy use. Rip-rap used to protect bridge foundations and riverbanks would continue to constrict and channelize the river, deepening the riverbed. This could have long-term negative impacts on river habitats. Infrequent, periodic flooding could have short-term impacts on aquatic and wetlands resources. Some of these impacts would be mitigated by restoration projects. However, the potential for major, long-term impacts on wetlands and floodplains would remain.

Soil and Vegetation

Soil and vegetation conditions are generally good along the Scenic River. Most landowners have implemented and maintained good stewardship practices on the land, which is predominantly privately-owned.

Alternative A would not result in any soil or vegetation disturbance except that caused by ongoing maintenance such as road grading and revegetation, foot traffic, and riverside grazing. Foot traffic would continue to compact soils, decrease permeability, alter soil moisture, and diminish water storage capacity, thereby increasing erosion. Prolonged trampling would decrease vegetation and increase overland runoff during precipitation events. Most livestock grazing occurs on private land. Ranches are typically large and have been owned by the same families for many years, resulting in sustainable ranching practices. Occasional pastures along the river

show obvious signs of over-grazing with fewer grass species and more coarse broadleaf species present. Trees have been cut on a selective basis with little knowledge of long-term soil and vegetation impacts. Some potential impacts have been prevented by landowners consulting with a state forester regarding harvest and stand management plans. However, not all private landowners do this.

Negative impacts to soil and vegetation could result from construction of new buildings, access roads, and recreational facilities unless previously impacted sites are selected. Construction of houses, access roads, and recreational facilities would likely continue over time on a low density, site-by-site basis. Impacts could be mitigated by following proper design techniques and site selection procedures, which would avoid areas with rare or sensitive plants or steep slopes and highly erodible soils. County zoning would influence site selection and construction impacts.

Other impacts can include reduction of native plants that are sensitive to grazing, introduction of non-native plants, and increased spread of weeds. Lack of fire has resulted in an increase of red cedar and reduction of meadows. Private landowner action, and a few state and federal conservation programs have resulted in restoration of some impacted sites and reduction of potential impacts on soil and vegetation.

Cumulative Impacts: Agriculture and ranching have reduced some native plants and led to the alteration and erosion of soils. Under Alternative A, these impacts would be expected to continue. The implementation of Alternative A in combination with past, present, and foreseeable future action would result in periodic, short-term, minor, adverse impacts on soil and vegetation.

Conclusion: Under the no action alternative, impacts on soil and vegetation would continue, and erosion would continue to increase. Consultation with experts would remain voluntary, and timber management and grazing practices would be employed sporadically, resulting in continued adverse impacts to the resource. The proliferation of red cedar would continue because of the lack of a systematic prescribed management plan. Implementing Alternative A would result in minor, long-term, adverse impacts on soil and vegetation, due mainly to development and agricultural practices. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Wildlife

Wildlife habitat and populations are generally in good condition along the river. Under Alternative A, wildlife habitat would continue to be fragmented by roads, trails, facilities, residential homes, and building construction. Wildlife behavior and movement would continue to be altered by residents and visitors. Recreational use on the river displaces some birds and mammals during times of heavy use. Most common birds and mammals adapt to human use, and species using optimum habitat are not significantly affected. Some studies have been performed in the area, particularly of birds and butterflies. A recent research project conducted on the Fort Niobrara National Wildlife Refuge by Kansas State University from 2000-2002 found that at recreation levels of 15,000-18,000 people, there were no clear effects of recreational disturbance on songbirds breeding on the Refuge. However, there was a documented negative behavioral effect of recreation on waterbirds using the Niobrara River within the Fort Niobrara National Wildlife Refuge.

Cumulative Impacts: Agricultural practices, such as grazing, development, and recreational use have displaced wildlife and caused the loss of wildlife habitat. Development of private or state lands for residential or other uses would further fragment wildlife habitat and disrupt wildlife behavior and movement. Implementation of Alternative A in combination with past, present, and foreseeable future action would result in periodic, short-term, minor adverse impacts on wildlife.

Conclusion: Overall, alteration of wildlife habitat and interruption of wildlife movement resulting from implementing Alternative A would have a long-term minor adverse impact. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Threatened or Endangered Species

Implementing Alternative A would have no effect on the federally-protected blowout penstemon, western fringed prairie orchid, or American burying beetle because populations of these species are not found within the Scenic

River boundary. There is no anticipated effect on migrating whooping cranes, and useable habitat would not be expected to change. There would be no effect on bald eagles from recreational river use because they are infrequently observed during the recreational season. There is sufficient evidence documenting piping plovers using sandbars along the Scenic River for nesting habitat that the U. S. Fish and Wildlife Service has designated a portion of the river extending from Norden Bridge to the Nebraska Highway 137 bridge as critical habitat. There is minimal effect from recreational river use on interior least terns and piping plovers nesting along the river during the summer, because their habitat preferences are in areas not heavily used for boating recreation. Effects from ranch uses on individual birds or habitat is minimal.

Under this alternative, the U. S. Fish and Wildlife Service and the Nebraska Game and Parks Commission would be largely responsible for protecting threatened and endangered species. The National Park Service would have minimal involvement in protecting and surveying threatened and endangered species.

Cumulative Impacts: The potential effects on federally-protected species from enactment of Alternative A are not known. The minimal National Park Service staff could have a moderate impact on the protection of nesting birds along the Scenic River. The implementation of Alternative A in combination with past, present, and foreseeable future action would result in long-term, minor, adverse impacts on threatened and endangered species.

Conclusion: There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Scenic Resources

Under Alternative A, scenic resources of the valley would continue to be impacted by building construction and signage. Design and site choices made by developers would continue to be contingent upon county zoning regulations and decisions of planning commissions, and land protection oversight rendered by the Niobrara Council consistent with its enabling legislation from the State of Nebraska. Inasmuch as the Council is largely federally funded, however, with no active National Park Service involvement their financial underpinnings would be seriously curtailed. Insensitive development could change the general appearance of the area over time, resulting in a significant long-term reduction in visual quality.

Cumulative Impacts: Private development would be expected to continue without further restrictions under Alternative A. Without National Park Service involvement, there would not be funds available to provide additional oversight of land protection through zoning or an easement program.

Conclusion: There would be minor to moderate, long-term adverse impacts on scenic resources under Alternative A. The National Park Service would be restricted in its ability to influence county zoning or enforcement. These factors could cause adverse impacts to the Scenic River's visual quality, a value requiring conservation.

Visitor Information, Education, and Experience

Under the No-Action Alternative, the National Park Service would have limited resources necessary to meet National Park Service standards for interpretive programming, and key visitor services (e.g., publications, exhibits, interpretive programs) would be lacking. Accordingly, this alternative would implement the Wild and Scenic Rivers Act, but at a level less than what Congress directed and intended. Moreover, the long-term protection of the river and adjacent lands, and the provision of good quality visitor experiences, would be marginal. The park would have insufficient funding and staffing to develop a long-term interpretive vision and visitor use plan, and opportunities to collaborate with partners would be limited. On-going education outreach programs could continue as staff and funds permitted, but there would be little prospect of expanding and building upon these programs.

Private outfitters and local chambers of commerce would continue to be the main sources of park information. The information distributed by these sources would be mainly logistical in nature ("how to get to the park" and "what activities are available"). There would continue to be limited available information on the natu-

ral and cultural resources of the river. Services provided by external outfitters would continue to be uncoordinated and the park would have limited ability to influence how these entities operated. Visitors would leave the area with little knowledge of what makes the landscape and park resources special, a situation that limits the quality of the visitor experience.

Under the No-Action Alternative, the park would have no visitor/research center that could serve as an orientation point. Interpretive and other park staff would not have limited on-site office space and there would be no formal setting for interpretive programs, exhibits, or visitor information. Additionally, the trends of seasonal overcrowding would continue, and probably worsen as river float traffic increases. Visitors to the Scenic River and Fort Niobrara National Wildlife Refuge would continue to compete for limited parking and launch facilities. Congestion along certain segments of the river and at the limited number of launch sites — already a management concern for the Fort Niobrara National Wildlife Refuge on the wilderness portion of the river — would increase. Under Alternative A, there would be no new toilet facilities. The current facilities along the river and in private campgrounds would continue to be inadequate in number, especially between Fort Niobrara National Wildlife Refuge and Norden Bridge. In addition, the low maintenance outhouses with pits or portable toilets found in private campgrounds pose contamination and health concerns if not adequately maintained. In addition, these facilities — and the campgrounds themselves — generally do not comply with accessibility requirements of the Americans with Disabilities Act.

The increasing trend of tubing, often associated with rowdy behavior and alcohol consumption, would increase the number of visitor use conflicts with visitors seeking solitude on the river. With the limited staff under this alternative, the park would conduct minimal law enforcement patrols and responses to incidents such as drunkenness, disorderly behavior, trespassing, unauthorized fires, littering, and vandalism. County, state, and other federal law enforcement agencies would still provide these services on a jurisdiction driven basis, but they probably would remain underfunded and unable to meet the demands of growing visitation.

Fishing, hunting, and trapping would continue to be permitted and managed by the state and counties.

Hiking/biking trails would not be built under Alternative A. The opportunity would be missed to use trails to benefit and enhance the overall visitor experience, reduce negative impacts on resources, provide variety of and access to recreational activities, and help disperse visitors evenly throughout the park.

Collectively, these inactions would negatively impact and degrade the visitor experience.

Cumulative Impacts: Through time, the trends of seasonal overcrowding, visitor use conflicts, visitation related resource damage, trespassing, littering, and vandalism most likely would persist and worsen as visitation increases. These trends would limit the range and quality of recreational activities. In the absence of a viable interpretive program, most visitors would not have the opportunity to learn about, and appreciate, the unique and fragile resources of the Scenic River. These adverse impacts would significantly degrade the overall visitor experience.

Conclusion: Under Alternative A, the park would not be able to effectively interpret park resources or foster public appreciation and stewardship of them, nor effectively manage visitation. Launch sites and some segments of the river would be increasingly overcrowded, and facilities such as toilets would remain inadequate. The park would not have the ability to respond to vandalism, hunting and fishing violations, and other incidents and would continue to rely on external law enforcement agencies. Collectively and cumulatively, these trends would result in major adverse impacts on the park's visitor experience.

Local Economy

General factors that could directly affect the local economy include visitor numbers and spending. Under Alternative A, future spending would directly correlate with visitor use, which is expected to increase at a moderate rate as the urban population and economy grow. Promotion and marketing could expand tourism in the area.

Under Alternative A, current uses and trends would continue with respect to outfitters. Outfitters currently operate under permits issued by the U. S. Fish and Wildlife Service for operation on the Fort Niobrara

National Wildlife Refuge. No refuge permits for new outfitters will be issued until the U. S. Fish and Wildlife Service completes a river management plan; this situation benefits current outfitters by preventing new competition. Regulations in regard to insurance, safety, and liability are minimal, and would remain so under Alternative A.

Many outfitters who own land along the river exclude other outfitters, limiting access sites available to those outfitters. Outfitters with land along the river would continue operating campgrounds, camp stores, and food service as business dictates. Business in general would be conducted with little attention paid to state and federal regulations regarding sanitation, disability access, signage, and health and safety codes. Outfitter businesses are small and locally owned, with limited investment capital, making it difficult to improve facilities in a revenue-producing season of only ten to twelve weeks.

Cumulative Impacts: An increase in the number of visitors would bring increased revenues to local businesses. Under Alternative A, greater numbers of visitors utilizing the services of outfitters could overburden the campgrounds and food services. At the same time, there would be a reduction in the already minimal enforcement of health and safety regulations.

Conclusion: Under Alternative A, the park's impact on local economies would remain basically the same. As visitation increases, local outfitters and support service providers would experience increases in incomes. If, however, increased, unmanaged visitation led to a decline in the visitor experience, the trend of increased incomes could stall or even reverse, which would negatively impact local economies. Under this alternative, no new outfitter permits would be issued until the U. S. Fish and Wildlife Service completes its river management plan. This would limit competition and could influence the quality or increase the cost of services provided. Over the long term, this situation could lead to moderate adverse impacts on the local economy.

Landownership

Under Alternative A, there would be no direct National Park Service action affecting landowners, such as easement purchase, technical assistance, or cost-share assistance. The current pattern of limited public purchase of land or easements would continue. It is assumed that zoning and local land protection practices would continue as they do currently in Brown, Cherry, Keya Paha, and Rock counties. Zoning could have the general effect of preserving the predominantly agricultural use and lifestyle of the valley by controlling future development. Some landowners would benefit from increased protection from development while others would resent increased regulation of their use of land. Restrictions on subdivision of large properties into smaller lots might preclude maximum profits; prices of smaller developable properties could increase. Recreational use along the river would continue without coordinated management between public agencies and private interests. Public land boundaries are unmarked and little effort has been made to educate visitors about the rights of private landowners. Protection of scenery and natural features will continue to depend on existing and developing programs.

Cumulative Impacts: Under Alternative A, there would not be any central organization funded or staffed to coordinate services among different agencies or to directly respond to development needs. The Niobrara Council, land-managing agencies, and individuals would probably act on a site-by-site or case-by-case basis with little coordination for consistency along the river. Funding for services provided by public agencies would compete with other priorities of those agencies.

Private land development would continue under county zoning, but zoning could be changed or repealed. Unmet costs of zoning enforcement could reduce its effectiveness, resulting in incremental, but significant, impacts on scenic quality, and on natural and cultural resources. New development and construction projects would not be subject to regulations requiring archeological studies of the site prior to groundbreaking, but would depend upon voluntary compliance. Impacts could be mitigated through sensitive development, but permanent adverse landscape impacts could add up over the long term.

No federal funds would be available from Congress through the National Park Service to purchase easements to protect land from development or other adverse uses. There would be continued impact on landowners from trespass by river users, who often do not understand or care that most of the land is privately owned and not open to recreational use.

Conclusion: Alternative A would have a negligible long-term impact on landownership.

Local Governments

Under Alternative A, the cost of county road maintenance would continue to increase as a result of additional recreational traffic on gravel roads. Costly emergency services such as law enforcement, search and rescue, fire control, and ambulance service would continue to be provided by county governments. Revenue from recreational spending received by the counties from the state would probably be minor compared to expenses.

New residential or recreational development in the river valley would increase county government costs for basic services, and would generate new property taxes from development. It is unknown whether this would result in a net gain or cost to county government. County governments would bear all expenses related to zoning, including advisory fees charged by consultants, continued administrative costs for county staff, and any legal actions. Zoning could stabilize county service costs over the long term.

Cumulative Impacts: Local governments would bear most, if not all, of the costs of infrastructure repairs and upkeep as a result of increased recreational traffic, as well as costs of emergency services.

Conclusion: Unmanaged development under Alternative A could increase infrastructure costs for local county and municipal governments. These costs could relate to services such as road maintenance, emergency services, county extension services, and county ordinance enforcement. Sales taxes and other revenue relating to increased recreational use and new property taxes from increased development would offset these increased expenses. However, whether local governments would experience a net gain or loss is unknown. If a net loss occurred, local governments would experience a minor to moderate, adverse impact to their revenue streams.

Impacts of Management Alternative B: National Park Service Manages with Assistance from Partners (Preferred Alternative)

Cultural Resources

Cultural resources on private and public land would be afforded protection through federal preservation laws such as the National Historic Preservation Act and other federal mandates, regulations, and policies. Under this alternative, staffing and funding levels would be sufficient to adequately enforce these laws and to monitor cultural resource conditions.

The staffing and funding levels under Alternative B would enhance the park's ability to work with partners to develop a volunteer monitoring program for cultural resources; to formally evaluate resources identified as being potentially eligible for listing in the National Register; and to respond to inadvertent or unexpected discoveries of cultural resources or damage to significant resources resulting from theft, vandalism, or natural processes (e.g., erosion).

The proposed staffing levels would provide flexibility for the park to:

- provide technical assistance for protecting significant cultural resources on private land;
- assist landowners to preserve sites and structures through external Service funding programs, tax incentives, and/or partnerships with preservation entities to protect, preserve, or stabilize significant resources; and/or
- develop Service partnerships or agreements with cultural resources preservation groups and other interested parties to leverage funds and resources.

National Park Service staff would develop a resource stewardship plan containing a cultural resource component. The Service would also develop resource standards and indicators that would signal when cultural resources were sustaining an unacceptable level of negative impact, as well as management prescriptions that would define how cultural resources would be managed.

The ranching landscapes in and around the park define much of the region's physical character and reflect traditional, regional land use. Under this alternative, the park would work closely with the Niobrara Council and the counties to develop and enforce consistent zoning ordinances that should protect significant and potentially significant cultural landscape resources.

The construction of a new research/education center, river access sites, restrooms, and hiking/biking trails could also result in adverse impacts on significant or potentially significant cultural resources. However, the Service and partnering land management agencies would ensure that federal and state cultural resource compliance procedures were met and would work with counties, landowners, and other partners to do the same, in order to mitigate adverse impacts on significant resources.

Cumulative Impacts: Over the long term, the coordinated partnership and strong National Park Service leadership with oversight authority over actions would result in open communication, cooperation, and increased opportunities to match and leverage funding and staffing resources among the partners. Some significant resources (historic bridges) could sustain moderate to major, unavoidable and irreversible adverse impacts due to wear and deterioration or natural processes. However, the park and its partners would be able to respond to and mitigate these impacts.

Conclusion: Under Alternative B, significant cultural resources reflecting past lifestyles would be protected through the Service's developed leadership role and oversight authority over federal actions. The Service would wield considerable influence by working closely with the Niobrara Council and counties to develop consistent zoning ordinances that would reduce or slow the conversion of agricultural lands to residential or commercial properties, thus preserving the cultural landscapes characterizing the region. The Service would also work closely with counties to maintain historic bridges listed in the National Register and would administer any funds needed to support maintenance activities.

Bridge replacement or construction of new park facilities, including the proposed joint-agency education center, potentially could unavoidably and irreversibly impact significant cultural resources. However, most of the adverse impacts could be mitigated. In summary, Alternative B provides sufficient funding/staffing, jurisdictional authority, and leadership to ensure that significant cultural resources remain unimpaired.

Paleontological Resources

Under Alternative B, the National Park Service would have the administrative authority, leadership, and resources to help protect significant paleontological resources. The proposed coordinated partnership would ensure a consistent and comprehensive approach to protecting and managing these resources. Equally important, the Service would have final review and approval authority over all activities implementing federal actions. This authority would allow the Service to directly shape how paleontological resources are managed in the park. Through its strong leadership role, the National Park Service would have increased opportunities to provide technical advice regarding these resources and to function as liaisons between park partners and outside paleontological resource professionals. The proposed staffing levels would provide flexibility for the park to:

- develop a volunteer resource-monitoring plan for resources on public and private land;
- educate visitors and landowners about the value of resources;
- develop Service partnerships or agreements with paleontological resource preservation groups and other interested parties to leverage funds and resources; and
- respond to unexpected discoveries of paleontological resources or damage to significant resources resulting from theft, vandalism, development, and/or natural processes (e.g., erosion).

Paleontological resources on federal lands would be afforded protection through federal preservation laws such as the Antiquities Act and other federal preservation mandates and regulations. Under this alternative, staffing and funding levels would allow the park staff to enforce these laws and monitor resource conditions.

Funding under Alternative B would also increase the park's ability to purchase easements from willing sellers in order to extend federal protection to a number of resources. In addition, through its strong leadership role and partnering, the park could encourage federal, state, local, and land trust entities to acquire conservation/scenic easements in order to extend protection to sensitive resources. Furthermore, Alternative B calls for discontiguous tracts of existing federal land within the park to be transferred to the National Park Service for management. All of these mechanisms could produce beneficial impacts on paleontological resources.

Under Alternative B, National Park Service staff would develop a resource stewardship plan with a paleontological component. With partners, the Service would also develop resource standards and indicators that would signal when these resources were sustaining an unacceptable level of negative impacts, as well as develop management prescriptions that would define how fossil resources would be managed. The combination of standards, indicators, and management prescriptions would allow the Service and its partners to effectively manage these resources, which would have a moderate to major beneficial impact on significant paleontological resources.

In construction of a new research/education center, river access sites, restrooms, and hiking/biking trails, the Service and its partnering land-managing agencies would ensure that federal and/or state resource compliance procedures were met, and would work with counties, landowners, and other partners to do the same. These actions would ensure that adverse impacts on significant resources would be avoided or mitigated.

Cumulative Impacts: Over the long term, the coordinated partnerships and strong National Park Service leadership with oversight authority over federal actions would result in open communication, cooperation, and opportunities to match and leverage funding and staffing resources among the partners. This would provide protection for significant paleontological resources through integrated law enforcement, education and interpretation programs, and coordinated maintenance and development. These actions could reduce the risk of adverse impacts on sensitive paleontological resources. Some significant paleontological resources could sustain moderate to major unavoidable and irreversible adverse impacts as a result of construction and/or natural processes. The park, however, would be able to respond to and mitigate these impacts through maintenance or formal documentation.

Conclusion: Under Alternative B, significant fossil resources would be better protected through the National Park Service's expanded leadership role and oversight authority over federal actions. The Service would wield considerable influence by working closely with the Niobrara Council and counties to develop consistent zoning ordinances that would reduce or slow the conversion of agricultural lands to residential or commercial properties. Alternative B provides sufficient funding/staffing, jurisdictional authority, leadership, and

flexibility to ensure that important paleontological resources remain unimpaired.

Natural Resources

Air Quality

Alternative B would involve use of prescribed fire as part of landscape restoration and management. Prescribed burns would increase smoke production and reduce visibility, but they would be initiated under conditions conducive to good smoke dispersal so that the extent and duration of these impacts would be limited. Weather forecasts, smoke management forecasts, atmospheric stability, fuel loadings, fuel moisture, and local and upper level winds would all be evaluated to minimize the effects of smoke from any prescribed fire. Use of prescribed fire would result in periodic, short-term, minor adverse impacts on air quality.

Other impacts on air quality would be localized. Short-term dust results from traffic on gravel roads during dry weather. Dust from increased traffic would cause minor inconvenience to travelers on the roads and to people living nearby. Dust would increase over time if traffic increased on gravel roads, but the overall impacts would be minor. The increase in staffing would augment the response to unplanned/uncontrolled wildland fires, reducing the impact of short-term particulate matter emissions and reduced visibility.

Cumulative Impacts: Impacts on air quality from other past, present, and reasonably foreseeable future actions-vehicle emissions, use of dirt and gravel roads, wood burning for home heating, prescribed fires, and wildland fires-would continue. The levels of emissions from these sources could change slightly in the foreseeable future, but any change would likely be negligible and not measurably change air quality. The implementation of Alternative B in combination with past, present, and foreseeable future action would result in periodic, short-term, minor, adverse impacts on air quality.

Conclusion: Air quality at Niobrara National Scenic River could deteriorate periodically at a local level, but generally remain good. The only noticeable impact on air quality from Alternative B would be that air quality and visibility would be locally and temporarily impacted by prescribed fire or construction projects. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Water Quality and Aquatic Species

Because of heavy recreational use of some reaches of the Niobrara River, coupled with the presence of wildlife and livestock grazing, the potential exists for river contamination with nutrients and fecal coliform and e. coli bacteria from human and animal waste, as well as from pesticides and sediment loading. Combined sanitary and storm sewer overflow, or concentrated feedlot runoff, could have an impact on stream water quality. Under Alternative B, the National Park Service would develop and implement a resource stewardship plan under which controls on recreational use and additional or improved restrooms would reduce impacts on water quality.

The Nebraska Department of Environmental Quality currently monitors fecal coliform and e. coli bacteria on the Niobrara River once every five years. Under Alternative B, the National Park Service would monitor the waters under its control year-round for fecal coliform and e. coli bacteria. Alternative B would provide additional protection of water resources from pollution or bank erosion through zoning enforcement, streambank restoration projects, and offering technical advice to developers. Construction of river access sites could result in short-term erosion and sedimentation; however, this could be minimized by incorporating appropriate design and mitigation measures along riverbanks (e.g., sediment/silt screens and restoring vegetation).

Under Alternative B, the National Park Service and its management partners would conduct studies of the potential ramifications of removing Cornell Dam, an abandoned hydroelectric structure serving no continuing purpose. As the dam's owner, the U. S. Fish and Wildlife Service is responsible for regular safety inspections and maintenance. According to the Association of State Dam Officials, the average life span of a dam is fifty years. Cornell Dam was eighty-five years old in 2001. Today the dam is stable, but future stability cannot be assured. The dam's location at the head of a popular recreation area significantly increases the consequences of dam failure on human health and safety. Dam failure could also have catastrophic environmental impacts both upstream and downstream.

Dams frequently have both negative and positive ecological impacts. For example, loss of habitat for one species may be balanced by an increase in habitat for others. Complete or partial dam removal is one component of river enhancement. However, while dam removal is generally considered beneficial to riverine systems, significant research is required to verify this before any action can be taken. The untimed release of deconstruction debris and decades' worth of accumulated and potentially contaminated sediment can have deleterious downstream effects on both biological and physical resources. Sudden exposure of the basin bottom may also have negative impacts that must be anticipated and mitigated. While water impoundment behind Cornell Dam has improved habitat conditions for purple loosestrife, a Nebraska noxious weed, the vast mud flat that would be exposed by draining the basin could allow the weed to expand exponentially.

Cumulative Impacts: Impacts on water quality and aquatic species from other past, present, and reasonably foreseeable future actions such as livestock grazing, heavy recreational use along the river, pesticide use, sediment loading, and concentrated feedlot runoff, in conjunction with the impacts of Alternative B described above, could result in moderate, adverse, long-term impacts on water quality. Employing best management practices (e.g., sediment/silt screens, vegetation buffer strips) could protect riverbanks from excessive impacts, which would likely reduce undue siltation and fecal coliform and e. coli bacteria counts. On the other hand, best management practices might not be effective on sediment loading since its sources may be outside the Scenic River's reaches, and fluctuating sediments are inherently natural in prairie stream ecosystems.

With respect to Cornell Dam, there are three possible scenarios, as discussed above: no action; catastrophic failure, a one-time event with immediate, but short-term, repercussions; or planned/controlled removal. In the event that the Cornell Dam failed, water quality would be negatively impacted for a short period of time as a result of increased and potentially contaminated sediment load and fecal coliform and e. coli bacteria flushing concurrent with that release. In the long term, however, the impacts would probably be minimal, as things settled down, and could actually be beneficial, by returning the river to a more natural hydrograph. Consequently, no cumulative impacts on water quality or aquatic species would be expected under Alternative B as a result of the removal of Cornell Dam.

Conclusion: Water quality and aquatic habitat of the Niobrara National Scenic River would improve with implementation of Alternative B, and any effects on aquatic habitat from proposed developments and park operations would result in a short-term, negligible, adverse impact. In the long term, best management practices would protect riverbanks from excessive impacts, water quality would not be impaired, and a natural hydrograph and natural flow patterns would be restored. Properly managed removal of Cornell Dam could restore the natural turbidity of the river and associated food sources, as well as allow for free upstream migration of fish. An agency-driven dam removal action would seek to mitigate deleterious downstream effects before, during, and after the action. Controlled removal would allow restoration to occur simultaneously, preventing sudden and vast exposures of impoundment and river bottoms. Consequently, there would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Floodplains and Wetlands

There would be no direct adverse impact on floodplains or wetlands from Alternative B. Construction of public river access sites would not reduce floodway capacity, divert floodwaters, or result in measurable water contamination. Federal construction regulations and National Park Service policy require site surveys and avoidance of wetlands as part of the facility design process. Additionally, funding could be increased for cost-share incentives that foster best management practices to mitigate and help control further habitat degradation on private agricultural land. This would encourage increased restoration of wetlands and stream bank vegetation utilizing environmentally sound techniques. Ecologically sound measures to alleviate ice buildup around bridges could be employed by river managers.

Cumulative Impacts: No cumulative adverse impacts on floodplains and wetlands would be expected under Alternative B.

Conclusion: The development and implementation of a river management plan and best management practices called for in this alternative would benefit floodplain and wetlands resources. The ability to cost-share and leverage funds and resources among partners would permit more and better-coordinated restoration proj-

ects. Environmentally sound methods for preventing ice build up would reduce stream channelization and prevent the use of "hard" bank stabilization measures (e.g., rock, rip-rap). Collectively, these factors would result in major, long-term beneficial impacts on wetlands and floodplains.

Soil and Vegetation

Under Alternative B, soil and vegetation impacts would result from construction of the proposed cooperative research and education center, other new buildings, access roads, and recreational facilities, unless previously-impacted sites are selected. Some soil and vegetation would be disturbed by construction of public river access sites. Construction of the center would subject about five acres of soil to short-term disturbance. Erosion on construction sites could be accelerated at least temporarily, until drainage structures were fully operational and vegetation had recovered. To mitigate adverse impacts, construction activity would be restricted to the minimum area required for building or rehabilitating, and topsoil would be retained and replaced where possible to conserve the available organic matter. Soil and vegetation on each site would be graded and covered with gravel or paved for road and parking lot construction. No through roads are proposed. The adverse impacts on soils from increased erosion would be minor and short term.

A net increase in paved surfaces in this alternative is not anticipated. In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted would pour out onto adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas could result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural composition of vegetation.

In addition to conserving and replacing topsoil from disturbed areas to minimize the loss of organic material, the National Park Service would reseed these areas with native species to speed the rate of recovery and to minimize encroachment of invasive species. Altered vegetative composition could create slight changes in soil chemistry. The adverse impacts on soil erosion, soil nutrient transport, and vegetative composition from an increase in hardened surfaces would be minor and long term.

Management in Alternative B could increase conservation technical assistance and cost-share financial assistance. Maintaining vegetation would depend on maintaining agricultural uses and avoiding conversion of agricultural land to small residential or commercial properties. Various land protection methods (excluding acquisition), including county zoning, voluntary landowner agreements, and conservancies would be pursued to maintain agricultural uses. In addition, acquisition of conservation easements on private land by the National Park Service or cooperating agencies could be used to maintain ranches if other methods are ineffective.

Lack of fire has resulted in a proliferation of eastern red cedar and ladder fuels, and a corresponding reduction of meadows. Prescribed burning and programs to help control exotic plants would positively impact native plants.

Cumulative Impacts: Approximately five acres of native vegetation could be lost during construction and rehabilitation projects under Alternative B. Such projects could also increase runoff and soil compaction, alter soil regimes and vegetation, and cause the loss of plants in some areas.

Conclusion: A small part of the natural soil profile would be lost on five to ten acres. With proper mitigation, little soil would be eroded where construction and rehabilitation would be carried out. Relative abundance of invasive species could be increased by clearing some native vegetation during construction. Alternative B would provide support to private landowners through technical assistance and economic incentives to manage their holdings using best management practices.

Overall, implementation of the preferred alternative would result in minor long-term adverse impacts on soil and vegetation. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Wildlife

Wildlife habitat and populations are generally in good condition along the river. Under Alternative B, the managing partners could limit recreational use on the river during critical times in the life cycles of species that might be significantly affected by human use. A recent

research project conducted on the Fort Niobrara National Wildlife Refuge by Kansas State University from 2000-2002 found that at recreation levels of 15,000-18,000 people, there were no clear effects of recreational disturbance on songbirds breeding on the Refuge. However, there was a documented negative behavioral effect of recreation on waterbirds using the Niobrara River within the Fort Niobrara National Wildlife Refuge.

Cumulative Impacts: Wildlife habitat and populations would benefit from the implementation of a wildlife management plan and best management practices.

Conclusion: Implementing Alternative B would result in long-term, moderate, beneficial impact, due mainly to implementation of wildlife management programs. Partnerships would allow the park and partners to implement management actions more effectively through shared resources and leveraged funds. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Threatened or Endangered Species

Under Alternative B, protection of state-listed sensitive species, and state- and federally protected threatened and endangered species and their habitats must be considered in all management actions. The National Park Service would be involved in annual spring/early summer inventory and monitoring of least tern and piping plover nesting sites, which could result in improved long-term habitat protection and better information about migratory bird populations and their habitat. Management of the river would discourage recreational use of tern and plover nesting habitat during critical nesting periods. Also, inventory and monitoring of terrestrial, aquatic, and plant species would most likely result in habitat protection and restoration.

Cumulative Impacts: Threatened and endangered species would be expected to benefit from implementation of Alternative B because of the increased inventory and monitoring activities of the Service, and implementation of protective actions in the resource stewardship plan.

Conclusion: Resource stewardship and other management plans would afford protection to threatened and endangered species. Partnerships called for under this alternative would allow the Scenic River and its partners to leverage staff and funds. This would afford more opportunities and flexibility to carry out inventories, monitoring, protection of threatened and endangered species and their designated critical habitats, or restore or enhance any other associated habitats. These factors could result in moderate to major beneficial impacts to these species.

Scenic Resources

Building construction and proliferating signage are adversely impacting the scenic resources of the Niobrara National Scenic River. Technical design assistance could be offered to private developers to mitigate the negative effects of construction and signage. Cooperation among various management entities could provide additional landscape preservation through conservation easements, landowner agreements, and land trusts.

Cumulative Impacts: Implementation of Alternative B would be expected to have a minor, long-term positive impact on the scenic resources of the Niobrara River.

Conclusion: The National Park Service could provide its partners with technical assistance to limit development and reduce signage impacts. Partners could protect scenic resources through easements, cooperative and other agreements, and land trusts. These actions would reduce impacts to scenic resources that are required to be conserved by the unit's enabling legislation.

Visitor Information, Education, and Experience

In the preferred alternative, the park would collaborate with its partners to provide a wide array of visitor services and education and interpretive opportunities. The National Park Service would manage core functions such as interpretation and public safety.

Under this alternative, the interpretive staff and Scenic River partners would develop a long-range interpretive vision and expand the interpretation and outreach education programs. These programs would educate the public about the types of resources found in the park, their value and significance, and current threats to these resources. Through partnerships, the park could work with other land management entities to share and lever-

age interpretive/educational resources and coordinate visitor use services. Coordinated interpretation and visitor services potentially could directly and indirectly benefit cultural and paleontological resources, threatened and endangered species, and other park values.

Rather than rely on private outfitters and local chambers of commerce to provide the main source of park information, the park and its partners would promote recreational opportunities, resource protection, the appreciation of park values, and visitor safety through:

- interpretive and educational outreach programs;
- brochures and maps depicting natural features and park values;
- exhibits and interpretive/informational signs;
- public contacts (interpretive and law enforcement patrols);
- a park Web site; and
- the cooperative research and education center.

Outfitters and local chambers of commerce would continue to play an important role in providing logistical information. However, under this alternative, the National Park Service and its partners would coordinate this information and ensure its accuracy by working closely with its concessionaires and with external outfitters and local chambers. By producing a wide range of informational materials in a variety of media, a large spectrum of local and regional visitors could receive comprehensive information about the park. These actions could indirectly benefit park resources by promoting resource awareness, which potentially could reduce the threat of impacts on resources. The enhanced visitor experience gained through these coordinated efforts could result in longer and/or more frequent visits to the park, which in turn could directly benefit local service economies (e.g., restaurants and motels) in surrounding gateway communities.

Construction of the visitor education center proposed under this alternative would provide a central location for visitors to receive an orientation to the park, learn more about the river and its resource values through exhibits and park brochures, and attend interpretive programs.

Fishing and hunting would continue unless the Service and its partners determined that it should develop management regulations. Trapping would be prohibited on the small number of acres of National Park Service land. These actions could limit the range of recreational activities, but overall would not directly negatively impact the visitors experience.

Under Alternative B, the Service would seek to develop or improve permanent restroom facilities along the river. The addition of new public river access sites with maintained toilet facilities, which meet Americans with Disabilities Act requirements, would improve visitor satisfaction and reduce trespass on private land. It also would encourage visitor distribution over more of the canoeable river and could reduce Saturday float congestion originating at the Fort Niobrara launch site.

Building other facilities such as parking areas and hiking/biking trails would benefit and enhance the overall visitor experience, provide access to a variety of recreational activities, and help disperse visitors evenly throughout the park.

Collectively, these actions could directly and indirectly benefit the park's visitor experience. Given the emphasis of partnering under this alternative, there would be numerous opportunities to match funds and leverage resources among the park and its partners, which could give the park more resources and flexibility to develop and implement an effective interpretive vision and visitor use plan.

Cumulative Impacts: Through time, this alternative would result in quality visitor facilities, management of visitor crowding, comprehensive education and information, coordinated management of commercial services, and minimized visitor conflicts. In addition, this alternative would provide a wider range of visitors with increased opportunities to learn about park resources and values, and their significance. This would increase the likelihood of visitors and park neighbors becoming better resource stewards. In turn, this potentially would lead to fewer negative impacts on park resources and values.

Conclusion: Alternative B would provide a greater variety of activities and visitor experiences than currently exists. Funding and staffing levels under this alternative would permit the park to:

- develop active interpretive and educational outreach programs;
- draft river management plan that would reduce visitor use conflicts;

- provide and maintain facilities needed for high-quality recreation; and
- create opportunities to leverage funds and resources among the park and its partners.

These actions would help maintain visitor satisfaction and ensure that the visitor experience at the park would remain unimpaired. There would be moderate to major long-term beneficial impacts.

Local Economy

Future visitor use would be influenced by the same factors as in Alternative A — visitor numbers and spending. A river use management plan developed collaboratively by the park, other public agencies, outfitters, and other stakeholders could coordinate river use and distribute visitors over a larger portion of the river. The plan could limit river use on weekends to reduce overcrowding. The park, working closely with outfitters and area chambers of commerce and local businesses could promote increased weekday river use. The collaborative relationships stressed in this alternative could facilitate implementing river use changes and make those transitions less contentious. Collectively, these actions could expand overall visitation and encourage longer visits and/or more frequent revisits, which would provide additional revenue to local economies.

New river access sites would benefit many outfitters by providing additional launch and retrieval sites, and increased trip flexibility. However, the addition of public access sites could negatively impact some riverfront landowners and outfitters who charge for use of their access sites.

Increased park staff and cooperative agreements with other federal and local agencies would allow the park to better enforce sanitation, disability access, and health and safety codes among outfitters. This could have an adverse financial impact on small, locally owned outfitters because of the expense of improving facilities for a revenue-producing season of only ten to twelve weeks. Some of these costs could be offset through cost-share assistance for resource protection and/or visitor use improvements. Additionally, river management partners could provide no-cost technical advice to outfitters with regard to facility design, location, and operation.

Cumulative Impacts: The park could work with outfitters and other stakeholders to expand and shift the times of river use to reduce overcrowding and increase visitor numbers and spending. This could encourage longer and more frequent visits, and increase revenues for local economies through time. Because of the partnerships and collaborative efforts stressed in this alternative, implementing changes that would result in local economic gains could be achieved more quickly and with less political or social stress.

Conclusion: Through collaboration and partnerships, the park would have more opportunities to influence river use changes that could result in an increase in managed visitation. Overall there would be long-term, moderate, beneficial impacts on local businesses. There would be no irreversible adverse impacts on local economies.

Landownership

Under Alternative B, there could be direct public action affecting landowners, such as easement purchase, technical assistance, or cost-share assistance. There could be direct public purchase of easements, primarily through the Niobrara Council, with appropriated funding.

The river managers would work with county officials to manage zoning that would help to preserve the predominant agricultural use and lifestyle of the valley by limiting future development. Some landowners would benefit from increased protection from development, while others would resent increased regulation of their use of land. Restrictions on the subdivision of large properties into smaller lots might preclude maximum profits; prices of smaller developable properties could increase, leading to an increase in property taxes.

Efforts would be made to educate visitors about the rights of private landowners. Most visitors do not realize that much of the land inside the Scenic River boundary is privately owned and not open to recreational use. As a result of public education and interpretation activities conducted by the river managers, there could be reduced impacts on landowners from trespass by river users.

Cumulative Impacts: Alternative B would produce a central entity that provides consistent management or over-

sight along the river and across various jurisdictions. Impacts on significant resources of the river from private land development would be reduced by county zoning regulations. Agricultural and natural landscapes would have better protection through improved design and management of development. Landowners could be affected by new restrictions in county zoning regulations, but they would also be protected from impacts from neighboring developments.

Conclusion: Implementing Alternative B would have a moderate, long-term, beneficial impact on landownership. Coordinating with local zoning officials and purchasing land in fee title and easements through partnerships would help protect scenic landscapes and resources from development, which would be a long-term benefit. There would be no irreversible adverse impacts.

Local Governments

The cost of county road maintenance would probably increase as a result of recreational traffic generated by increased visitation under Alternative B. Partnerships and collaborative federal, state, and local management of the river stressed in this alternative would allow these increased costs to be spread out among several entities. This would minimize negative impacts to local governments' infrastructure expenses.

The amount of private property to be purchased in fee title could be twenty-five acres, spread out between several counties. These purchases would have minimal impacts to local government tax bases. Lands protected through easements would continue to be taxed at an agricultural-use rate. Easements would slow development and cap increases in property tax that local governments might have gained under other scenarios. However, managed growth would also cap infrastructure expenses local governments could encounter with unmanaged growth.

The increase in quality of visitor experience assumed under this alternative would probably lead to longer visitor stays and/or increased visits to the Scenic River. Extended or increased stays would give visitors more opportunities to spend money in local communities, which would increase local governments' sales tax revenues.
Partnerships and collaborative approach to management encouraged under this alternative would increase local government involvement in the unit's management. This could foster a sense of citizen-based resource stewardship both within and around the park. Increased coordination among land managing agencies and local governments would also encourage local government buy in and support of management decisions and policies.

Cumulative Impacts: Visitation would probably increase in counties bordering the unit. However, increased costs for road maintenance, emergency services, and other infrastructure needs would be spread among the land managing agencies. This could be accomplished through cooperative agreements, leveraged funding, and personnel sharing.

Conclusion: There would be no long-term, adverse impacts to local government economies due to increased visitation because related costs would be spread among several partnering entities. Longer and more frequent visits (due to an enhanced visitor experience) would increase sales taxes, which could have a moderate to major beneficial impact on local government revenues. A close working relationship among land managers and local governments would foster resource stewardship and increased cooperation, benefiting both local governments and unit managers.

Impacts of Management Alternative C: National Park Service Manages Independently

Cultural Resources

As lands came under National Park Service fee title or easement ownership, cultural resources would be subject to federal preservation mandates and regulations. Staffing and funding levels under this alternative should be sufficient to allow the park staff to enforce these laws and monitor site conditions.

National Park Service staff would develop a resource stewardship plan that would include a cultural resource component. The Service would also develop resource standards and indicators to signal when cultural resources were sustaining an unacceptable level of negative impacts, and to prescribe how to manage cultural resources.

The proposed staffing levels would provide flexibility for the park to:

- provide technical assistance for protecting significant cultural resources on private land;
- assist landowners to preserve sites and structures through external Service funding programs, tax incentives, and/or partnerships with preservation entities to protect, preserve, or stabilize significant resources; and/or
- develop Service partnerships or agreements with cultural resources preservation groups and other interested parties to leverage funds and resources.

The ranching landscapes in and around the park define much of the region's physical character and reflect traditional, regional land use. As a major land manager, the Service would have influence over activities occurring outside the Scenic River's boundaries that would impact sensitive cultural resources, but would not have direct control over those activities.

Construction of a new research/education center, river access sites, restrooms, and hiking/biking trails could result in adverse impacts on significant cultural resources. However, the Service would ensure federal cultural resource compliance procedures were met. These actions would ensure that any adverse impacts on significant resources would be mitigated through avoidance or formal documentation. However, funding for these actions might need to be diverted from other management areas.

Alternative C also calls for removing Cornell Dam. If the decision were made to remove the dam, it would need to be evaluated for National Register significance to ensure that a National Register eligible site would not be adversely impacted.

Cumulative Impacts: Over the long term, acquiring more lands in fee title as well as conservation/scenic easements would extend federal preservation protection to a number of significant or potentially significant cultural resources. The extension of federal protection potentially would directly and indirectly reduce the risk of minor to major, adverse impacts on sensitive cultural resources.

Conclusion: Under Alternative C, significant cultural resources reflecting past lifeways would be protected through the enforcement of federal preservation mandates and regulations as the park acquired more lands in fee title or easements. The proposed staffing and funding levels would allow the park to ensure cultural resource compliance would be attained prior to ground-disturbing projects and would permit development of cultural resource components of various management plans.

In addition, the park could work closely with the Niobrara Council and counties to develop consistent zoning ordinances that would reduce or slow the conversion of agricultural lands to residential or commercial properties, which potentially could conserve the scenic cultural landscapes characterizing the region.

Under Alternative C, bridge replacement, removal of Cornell Dam, and construction of new park facilities could impact significant cultural resources. However, most of the potential adverse impacts could be mitigated through avoidance or formal documentation, leaving cultural resources unimpaired.

Paleontological Resources

On any lands coming under National Park Service management through conservation or scenic easements or

fee title, paleontological resources would be subject to federal preservation mandates, regulations, and policies. Staffing and funding levels under this alternative should be sufficient to allow park staff to enforce these laws, monitor site conditions, and develop a volunteer site-monitoring plan for paleontological resources on private lands. Proposed staffing levels would provide flexibility for the park to:

- develop a volunteer resource monitoring plan for resources on public and private land;
- educate visitors and landowners about resource values;
- develop Service partnerships or agreements with paleontological resources preservation groups and other interested parties to leverage funds and resources; and
- respond to unexpected discoveries of paleontological resources or damage to significant resources resulting from theft, vandalism, or natural processes (e.g., erosion).

Under Alternative C, National Park Service staff would develop a resource stewardship plan that would include a paleontological resource component. The Service would also develop resource standards and indicators that would signal when paleontological resources were sustaining an unacceptable level of negative impacts. The Service would also develop management guidelines that would define how these resources would be managed, resulting in beneficial impacts on important paleontological resources.

The construction of a new research and education center, river access sites, restrooms, and hiking/biking trails could result in moderate to major unavoidable and irreversible adverse impacts on paleontological resources. However, the Service would ensure federal resource compliance procedures were met. These actions would ensure that any adverse impacts on significant resources would be mitigated.

Cumulative Impacts: Over the long term, acquiring more lands in fee title as well as conservation/scenic easements would extend federal preservation protection to a number of fossil sites. Provided that the proposed funding and staffing proved to be sufficient, the extension of federal protection could minimize the risk of adverse impacts on sensitive paleontological resources. Some significant paleontological resources could sustain moderate to major unavoidable and irreversible adverse impacts due to construction and/or natural processes. However, the park would be able to respond to and mitigate these impacts through maintenance or formal documentation.

Conclusion: Under Alternative C, important paleontological resources would be protected through the enforcement of federal preservation mandates and regulations as the park acquired more lands in fee title or easements. The proposed staffing and funding levels would also allow the park to ensure resource compliance would be attained prior to ground-disturbing projects and would permit the development of paleontological resource components in various management plans. The park also would work closely with the Niobrara Council and counties to develop consistent zoning ordinances that would minimize or slow the conversion of agricultural lands to residential or commercial properties, thus conserving traditional landscapes potentially containing paleontological resources. Collectively, these actions would benefit paleontological resources and minimize the risk of impairment.

Natural Resources

Air Quality

Alternative C would involve use of prescribed fire as part of landscape restoration efforts. This would increase smoke production and reduce visibility, but the extent and duration of these impacts would be limited. Prescribed burns would increase smoke production and reduce visibility, but they would be initiated under conditions conducive to good smoke dispersal so that the extent and duration of these impacts would be limited. Weather forecasts, smoke management forecasts, atmospheric stability, fuel loadings, fuel moisture, and local and upper level winds would all be evaluated to minimize the effects of smoke from any prescribed fire. Use of prescribed fire would result in a short-term, minor, adverse impact on air quality.

Other impacts on air quality would be localized, such as short-term dust resulting from traffic on unimproved and gravel roads during dry weather. Dust from increased traffic would cause minor inconvenience to travelers on the roads and to people living nearby. Dust could increase over time if traffic increased on gravel roads, but the overall impacts would be minor.

Increases in staffing would augment the response to unplanned/uncontrolled wildland fires, reducing the impact of short-term particulate matter emissions and reduced visibility.

Cumulative Impacts: Impacts on air quality from vehicle emissions, use of gravel roads, wood burning for home heating, prescribed fires, and wildfires would continue under this alternative. Emission levels from these sources could change slightly in the near future, but any change would be short-term and would not measurably change air quality. The foreseeable future action that would most likely impact air quality at the Scenic River would be increased traffic on gravel roads.

Conclusion: No direct impacts would be expected from implementing Alternative C, and air quality at Niobrara National Scenic River would remain good. Implementation of Alternative C in combination with past, present, and foreseeable future action would result in periodic, short-term, minor, adverse impacts on air quality. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Water Quality and Aquatic Species

Because of heavy recreational use of some reaches of the Niobrara, coupled with the presence of wildlife in the refuge and livestock grazing in the river and on tributaries, the potential exists for river contamination. Nutrients, fecal coliform and e. coli bacteria from human and animal waste, pesticides, and sediment loading are potential contamination sources. Combined sanitary and storm sewer overflow, or concentrated feedlot runoff could impact stream water quality. The National Park Service would monitor the waters under its control throughout the year and would alert users of the river in a timely manner should there be elevated counts. Under Alternative C, management actions to control recreational use and provide more restrooms could be implemented in order to reduce impacts on water quality. This alternative would provide protection of water resources from pollution or bank erosion through zoning enforcement, promoting best management practices, and offering technical assistance to developers.

Construction of river access sites could result in minor short-term erosion and sedimentation; however, this could be minimized by appropriate design and mitigation measures along riverbanks (e.g., sediment/silt screens).

Alternative C advocates the removal of Cornell Dam, an abandoned hydroelectric structure serving no continuing purpose. As the dam's owner, the U. S. Fish and Wildlife Service is responsible for regular safety inspections and maintenance. According to the Association of State Dam Officials, the average life span of a dam is fifty years. Cornell Dam was eighty-five years old in 2001. Today the dam is stable, but future stability cannot be assured. The dam's location at the head of a popular recreation area significantly increases risks and consequences of dam failure on human health and safety. Dam failure could also have catastrophic environmental impacts both upstream and downstream. Before such an action would be taken, the National Park Service and the U. S. Fish and Wildlife Service would conduct studies of the potential ramifications of removing the dam.

Dams frequently have both negative and positive ecological impacts. For example, habitat loss for one species may be balanced by an increase in habitat for others. Complete or partial dam removal is one component of river enhancement projects. However, while dam removal is generally considered beneficial to riverine systems, significant research is required to verify this before any action can be taken. Releasing deconstruction debris and decades' worth of accumulated and potentially contaminated sediment can have serious deleterious downstream effects on both biological and physical resources. Sudden exposure of the impoundment bottom may also have negative impacts that must be anticipated and mitigated. While water impoundment behind Cornell Dam has improved habitat conditions for purple loosestrife, a Nebraska noxious weed, the vast mud flat that would be exposed by draining the area could allow the weed to expand exponentially.

Cumulative Impacts: The sources of impacts on water quality and aquatic species outside and within the Scenic River would remain at or near existing levels over the long term. With respect to Cornell Dam, there are three possible scenarios: no action; catastrophic failure, a one-time event with immediate short-term, repercussions; or planned/controlled removal. In the event that the Cornell Dam failed, water quality would be negatively impacted for a period of time as a result of increased sediment load and fecal coliform and e. coli bacteria flushing concurrent with that release. In the long term, however, the impacts would probably be minimal, as

things settled down, and could actually be beneficial, by returning the river to a more natural hydrograph. Consequently, no cumulative impacts on water quality or aquatic species would be expected under Alternative C.

Conclusion: Water quality and aquatic habitat on the Niobrara National Scenic River would improve with implementation of Alternative C, and any effects on aquatic habitat from proposed developments and park operations would result in a short-term, negligible, adverse impact. In the long term, best management practices would protect riverbanks from excessive impacts, water quality would not be impaired, and a natural hydrograph and flow patterns would be restored. Properly managed removal of Cornell Dam could restore the natural turbidity of the river and attendant food sources, as well as allow for free upstream migration of fish. An agency driven dam removal action would seek to mitigate deleterious downstream effects before and during the action. Controlled removal would allow restoration to occur simultaneously, preventing sudden and vast exposures of river bottoms. Consequently, there would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Floodplains and Wetlands

There would be no direct impact on floodplains or wetlands from Alternative C. Construction of public river access sites would not reduce floodway capacity, divert floodwaters, or result in measurable water contamination. Federal construction regulations and National Park Service policy require site surveys and avoidance of wetlands as part of the facility design process. Additional funding and staffing would allow the Service to implement and coordinate best management practices to mitigate and help control further habitat degradation on Service lands and to encourage such practices on private lands. In addition, funding could be increased for cost-share incentives that encourage best management practices to mitigate and help control further habitat degradation on private agricultural land. Ecologically sound measures to alleviate the problem of ice buildup around bridges would be employed by the river managers. Under Alternative C, the National Park Service eventually would own the land within its boundaries to the fullest extent possible and would not permit new construction on lands it controlled.

Cumulative Impacts: Through time, wetlands and floodplains would benefit from National Park Service implementation of best management practices. As more land and easements were acquired, the benefits would be extended to more floodplains and wetland resources.

Conclusion: Development and implementation of a river management plan and best management practices called for in this alternative would benefit floodplain and wetlands resources. Increased funding and staff would permit the Service to carry out more restoration projects. Environmentally sound methods for preventing ice build-up would reduce stream channelization. Collectively, these factors would result in moderate-to-major, long-term beneficial impacts on wetlands and floodplains.

Soil and Vegetation

Under Alternative C, soil and vegetation impacts would result from construction of the research and education center, other new buildings, access roads, public river access sites, and recreational facilities unless previously impacted sites are selected. Some soil and vegetation would be disturbed by construction of public river access sites. Construction of the center would subject about five acres of soil to short-term disturbance. Erosion on construction sites would be accelerated, at least temporarily, until drainage structures were fully operational and vegetation had recovered. To mitigate adverse impacts, construction activity would be restricted to the minimum area required for building or rehabilitating, and topsoil would be retained and replaced where possible to conserve the available organic matter. Soil and vegetation on each site would be graded and covered with gravel for road and parking lot construction. No through roads are proposed. Adverse impacts on soils from increased erosion would be minor and short-term.

A net increase in paved surfaces in this alternative is not anticipated. In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted would pour out onto adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural vegetation composition.

In addition to conserving and replacing topsoil from disturbed areas to minimize the loss of organic material, the Service would ensure the reseeding of these areas with native species to speed the rate of recovery and to minimize the encroachment of invasive species. Altered vegetation composition could create slight changes in soil chemistry. Adverse impacts on soil erosion, soil nutrient transport, and vegetative composition from an increase in hardened surfaces would be minor and long term.

Management could increase conservation technical assistance and cost-share financial assistance. Maintaining vegetation would depend on maintaining agricultural uses and avoiding conversion of agricultural land to small residential or commercial properties. Various land protection methods (excluding acquisition), including county zoning and voluntary landowner agreements and conservancies, would be pursued to maintain agricultural uses. In addition, acquisition of conservation easements on private land by the National Park Service or local agencies could be used to maintain ranches, if other methods are not effective.

Lack of fire has resulted in a proliferation of red cedar and ladder fuels, and a corresponding reduction of meadows. Introduction of prescribed burning and programs to help control noxious plants would positively impact native plants.

Cumulative Impacts: Approximately five acres of herbaceous vegetation in the proximity of the prospective visitor center could be lost during construction and rehabilitation projects under Alternative C. Such projects could also increase runoff and soil compaction, and could alter soil regimes and vegetation communities, as well as cause the loss of plants in some areas.

Conclusion: A small part of the natural soil profile would be lost on five acres. Despite efforts to mitigate soil erosion, some soil probably would be eroded on areas where construction and rehabilitation are carried out. Relative abundance of invasive species could be increased by clearing some vegetation during construction. Adverse impacts on vegetation and soil could be alleviated by the National Park Service offering support to private landowners through technical assistance and economic incentives to manage their holdings using best management practices.

Overall, implementation of the preferred alternative would result in minor short-term adverse impacts on soil and vegetation, but, in the long term, effects would be beneficial, particularly on lands managed by the National Park Service. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Wildlife

Wildlife habitat and populations are generally in good condition along the river. Under Alternative C, the National Park Service could limit recreational use on the river during critical times in the life cycles of species that might be significantly affected by human use. A research project conducted on the Fort Niobrara National Wildlife Refuge by Kansas State University from 2000-2002 found that at recreation levels of 15,000-18,000 people, there were no clear effects of recreational disturbance on songbirds breeding on the Refuge. However, there was a documented negative behavioral effect of recreation on waterbirds using the Niobrara River within the Fort Niobrara National Wildlife Refuge.

Cumulative Impacts: Wildlife habitat and populations would benefit from implementing a wildlife management plan and best management practices, provided staffing and funding levels remain adequate.

Conclusion: Implementing Alternative C would result in long-term, moderate, beneficial impact, due mainly to implementing wildlife management programs. Adequate staff and funding would allow the National Park Service to effectively implement programs and best management practices. More wildlife resources would receive protection as more land and easements were added to the unit. Collectively, these factors could result in long-term, moderate, beneficial impacts to wildlife habitat and populations.

Threatened or Endangered Species

Under Alternative C, protection of state-listed sensitive species, and state- and federally protected threatened and endangered species and their habitats would be considered in all management actions. The National Park Service would be involved in annual spring/early summer inventory and monitoring of least tern and piping plover nesting sites, which could result in improved long-term habitat protection and better information about migratory bird populations and their habitat.

River management plans would be designed to discourage recreational use of tern and plover nesting habitat during critical nesting periods. Inventory and monitoring of terrestrial, aquatic, and plant species would most likely result in habitat protection and restoration.

Cumulative Impacts: Threatened and endangered species would be expected to benefit from implementation of Alternative C because of the increased inventorying and monitoring activities of the Service, and implementation of protective actions in the resource stewardship plan.

Conclusion: Resource stewardship and other management plans would afford protection to threatened and endangered species and their designated critical habitats. This would afford more opportunities to carry out inventories, monitor, and protect threatened and endangered species, and restore and enhance any other associated habitats. As the unit acquired more lands and easements, more threatened and endangered species would receive protection. These factors could result in moderate-to-major beneficial impacts to these species.

Alternative C would have a long-term, moderate, beneficial impact on threatened and endangered species. Accordingly, there would be no impairment of resources or values associated with those species. There would be no irreversible adverse impacts on a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation of the Niobrara National Scenic River.

Scenic Resources

Building construction and proliferating signage are adversely impacting the scenic resources of the Niobrara National Scenic River. Under Alternative C, technical design assistance could be offered to private developers to mitigate the negative effects of construction and signage. Cooperation among various management entities could provide additional landscape preservation through land acquisition, scenic and conservation easements, landowner agreements, and land trusts.

Cumulative Impacts: Landscape preservation efforts and construction that is sensitive to the scenic resources of the Niobrara River would help to offset negative effects of continued construction and development along the river.

Conclusion: The National Park Service could provide private landowners and developers in and adjacent to the unit with technical assistance to limit development and reduce signage impacts. As the Scenic River acquired more land and easements, it would have more capability to ensure that development did not negatively impact scenic resources. These actions would have long-term, major beneficial impacts that would leave scenic resources unimpaired.

Visitor Information, Education, and Experience

Because the Scenic River would soon resemble a traditional unit of the national park system under Alternative C, federal funding (subject to congressional appropriation) would provide for needed public facilities and services. The result would be quality visitor facilities, crowd management, comprehensive education and information, coordinated management of commercial services, and minimized visitor use conflicts.

Under Alternative C, the park would have an interpretive staff that would develop a long-range interpretive vision and an active interpretation and education program. The interpretive program would educate the public about the types of resources found in the park, their value and significance, and current threats to these resources. Such information potentially could directly and indirectly benefit cultural and paleontological resources, threatened and endangered species, and other park values.

Rather than rely on private outfitters and local chambers of commerce to be the main source of park information, the Service's interpretive program would promote resource protection, the appreciation of park values, and visitor safety through:

- interpretive and educational outreach programs;
- brochures and maps depicting natural features and other park values,
- exhibits and interpretive/informational signs;
- public contacts (interpretive and law enforcement patrols);
- a park Web site; and
- the joint agency research and education center.

Outfitters and local chambers of commerce would continue to play an important role in providing logistical

information. However, under this alternative, the Service would coordinate this information and ensure its accuracy by working closely with internal concessionaires and external outfitters and local chambers. By producing a wide range of informational materials in a variety of media, a large spectrum of local and regional visitors could receive comprehensive information about the park. These actions could indirectly benefit park resources by promoting resource awareness, which potentially could reduce the threat of minor to major, irreversible, adverse impacts on resources.

Fishing and hunting would continue on National Park Service lands unless the agency determined that it should develop management prescriptions to designate zones or establish times when hunting is not allowed. Trapping would be prohibited on Service-owned lands. These actions could limit the range of recreational activities, but overall would not directly negatively impact the visitor's experience.

The construction of the visitor education center proposed under this alternative would provide a central location for visitors to receive an orientation to the park, learn more about the park and its resources and values through exhibits and park brochures, and attend interpretive programs. The facility would also provide office space for park interpreters, which would equip them to continue or expand ongoing educational outreach programs and to develop and manage a parkwide interpretive program.

Under Alternative C, the addition of new public river access sites with maintained toilet facilities, which meet Americans with Disabilities Act requirements, would improve visitor satisfaction and reduce trespass on private land. Limited new public access between Berry and Norden bridges would encourage distributing use over more of the canoeable river, and could reduce Saturday float congestion originating at the Fort Niobrara launch site.

Building other facilities such as parking areas and hiking/biking trails would benefit and enhance the overall visitor experience, potentially reduce negative impacts on resources, provide variety of and access to recreational activities, and help disperse visitors evenly throughout the park.

Collectively, these actions would directly and indirectly benefit the park's visitor experience. The magnitude of these beneficial impacts (e.g., moderate to major) would depend on the level of park funding and park management priorities.

Cumulative Impacts: Through time, this alternative would result in quality visitor facilities, visitor management, comprehensive education and information, coordinated management of commercial services, and minimize visitor conflicts. In addition, this alternative would provide increased opportunities to learn about park resources and values and their significance. This would increase the likelihood of visitors and park neighbors becoming good resource stewards. In turn, this potentially would lead to fewer negative impacts on park resources and values.

Conclusion: Alternative C would provide a greater variety of activities and visitor experiences than currently exists. Funding and staffing levels under this alternative would permit the park to develop active interpretive and public outreach programs; draft a visitor use plan that would manage use and minimize conflicts; and provide and maintain facilities needed for high quality recreation. These actions would help maintain visitor satisfaction and ensure that the visitor experience at the park remained unimpaired.

Local Economy

Future visitor use would be influenced by the same factors as in Alternatives A and B — visitor numbers and spending. The park could develop its own river use management plan that would coordinate river use within the park's boundaries and distribute visitors over a larger portion of the river. The plan could limit river use on weekends to reduce over- crowding. The park, through law enforcement and its interpretive program, could promote increased weekday river use. These actions could expand overall visitation and encourage longer visits or more frequent revisits, which would provide additional revenue to local economies. However, the park's more limited partnership building capabilities under this alternative could make implementing river use changes more challenging and potentially contentious.

New river access sites would benefit many outfitters by providing additional launch and retrieval sites, and increased trip flexibility. However, the addition of pub-

lic access sites could negatively impact some riverfront landowners and outfitters who charge for use of their access sites.

Increased park staff and cooperative agreements with other federal and local agencies would allow the park to better enforce sanitation, disability access, and health and safety codes among permitees operating within the park. This could have an adverse financial impact on small, locally owned outfitters because of the expense of improving facilities for a revenue-producing season of only ten to twelve weeks. Some of these costs could be offset through cost share assistance for resource protection and/or visitor use improvements. Additionally, the park could provide no-cost technical advice to outfitters with regard to facility design, location, and operation. However, the park's ability to enforce codes, cost-share, and provide technical assistance would depend on staffing and funding.

Cumulative Impacts: The park could implement management policies that would expand and shift the times of river use to reduce overcrowding and increase visitor numbers and spending. This could encourage longer and more frequent visits, and increase revenues for local economies through time. However, with the more limited partnership capabilities under the alternative, it might be politically more difficult and take longer to realize the beneficial impacts to local economies.

Conclusion: Under Alternative C, the park would rely on management policies and policy enforcement to implement river use changes that could result in managed increased visitation. Overall there would be long-term, moderate, beneficial impacts on local businesses. There would be no irreversible adverse impacts on local economies.

Landownership

Under Alternative C, there would be direct National Park Service purchase of land in fee simple or easement, through appropriated funding, to the fullest extent of authority in the Wild and Scenic Rivers Act.

Public land boundaries could be marked, and efforts would be made to educate visitors about private landowner rights in order to reduce impacts on landowners from trespass by river users, who often do not understand that much of the land is still privately owned and not open to recreational use.

Cumulative Impacts: Alternative C would produce a central entity that provides consistent management or oversight on an increasing federal land base along the river and across various jurisdictions. Impacts on significant river resources due to private land development would be reduced by federal ownership and county zoning regulations. Landowners could be affected by new restrictions in county zoning regulations, but they would also be protected from impacts from neighboring developments.

Conclusion: Implementing Alternative C would have a moderate, long-term, beneficial impact on landownership. Coordinating with local zoning officials and purchasing land in fee title and easements with federal funds would help protect scenic landscapes and resources from development, which would be a long-term benefit. There would be no irreversible adverse impacts.

Local Governments

The cost of county road maintenance would probably increase due to recreational traffic generated by increased visitation. The counties would continue to maintain roads and bear the added maintenance expenses. However, as more lands were acquired, the National Park Service would increasingly take on these expenses. This would minimize negative impacts to local governments' infrastructure expenses.

The amount of private property to be purchased in fee title would increase through time. These purchases would remove property from local government tax bases. However, the federal government would annually reimburse counties for the loss of these revenues to the extent of annual appropriations. Lands protected through easements would continue to be taxed at an agricultural use rate. The land purchases and easements would slow development and cap increases in property tax that local governments would have gained under other scenarios. This could lead to minor to moderate impacts on local government revenue streams.

The increased staffing and funding under this alternative could improve the visitor experience, which in turn

could lead to longer visitor stays or increased visits to the Scenic River. Extended or increased stays would give visitors more opportunities to spend money in local communities. This could have moderate to major beneficial impacts on local governments' sales tax revenues. However, if the proposed staffing and funding proved insufficient, the visitor experience might suffer and gains in sales tax revenues could be limited.

The increased staffing also would allow park staff more latitude to interact and strengthen working relationships with local governments. This could foster a sense of citizen based resource stewardship both within and around the Scenic River. Strengthened working relationships among land managing agencies and local governments could also encourage local government buy in and support of management decisions and policies.

Cumulative Impacts: Visitation would probably increase in counties bordering the unit. Federal reimbursement of lost property taxes stemming from land acquisitions would offset this somewhat. Land and easement purchases would limit unmanaged development. It would also limit increases in property and sales taxes relating to development, which could result in minor to moderate negative impacts on local government revenues.

Conclusion: Increased staffing and funding could lead to a better visitor experience, which in turn, could translate into longer or more frequent visits and increases in sales taxes. Federal property tax reimbursements and continued taxing of easements would offset losses in local government property tax revenues. Decreases in property taxes by acquisition of land in fee title or in easements would limit development and revenues derived from property and sales taxes. Collectively, these factors would result in minor-to-moderate, reversible impacts on local government economies.

Other Required Impact Topics

Unavoidable Adverse Impacts

Unavoidable adverse impacts are moderate and major intensity adverse impacts resulting from implementing an alternative that cannot be fully mitigated or avoided. Under all of the alternatives, there would be potential for some unavoidable adverse impacts to natural and cultural resources as a result of construction and increases in use levels. These impacts could include, in localized areas, losses of soil and vegetation, loss of archeological or paleontological resources, and loss of habitat. The potential for unavoidable adverse impacts would be highest in Alternative A as a result of the decrease in management from its current level, and lowest in Alternative C because, as sole manager, the National Park Service would be able to implement both short- and long-range resource protection programs on its own increasing landholdings.

As a result of construction in alternatives B or C, the visitor experience would be affected by noise from construction activities, visual intrusions from ground and vegetation disturbance, the presence of large construction vehicles, and general disruption of circulation and activities. These effects, although short term, could be moderate to major, depending on the number of visitors affected. These impacts would be particularly severe for visitors who might have only one opportunity to visit the Scenic River and whose experiences were degraded by construction activities.

Irreversible and Irretrievable Commitments of Resources

This section identifies any resources that would be lost either temporarily or permanently as a result of implementing any of the alternatives.

Cultural Resources

Any removal of historic structures and contributing elements of the cultural landscape, and/or disturbance of archeological sites that might occur in management alternatives B or C, would have an irreversible impact. However, prior to the removal or disturbance of these resources on federal land, documentation and data recovery would be completed, thereby maintaining the historical record and limiting the impact to the loss of the physical structure and historic associations.

Paleontological Resources

Any removal or disturbance of paleontological sites that might occur in management alternatives B or C would have an irreversible impact. Prior to removal or disturbance of these resources on federal land, however, documentation and data recovery would be completed, thus maintaining the paleontological record.

Air Quality

No actions would be taken as a result of any of the management alternatives that would result in irreversible or irretrievable impacts to air quality.

Water Quality and Aquatic Species

Construction activities could cause a loss of sensitive vegetation and loss of in-stream habitat types (e.g., pools, riffles, and runs), which, in turn, could affect the number and types of aquatic invertebrates and fish species at the construction site. However, it would be possible to rehabilitate impacted vegetation and habitat types and restore them to their preconstruction state at some point in the future. There would also be the potential for leakage of oil, gasoline, antifreeze, and other chemicals from construction equipment. If chemicals leached into the river or groundwater supply, water quality would suffer. All of these impacts, however, would most likely be confined to the construction area, in which case the fish and invertebrate communities would be expected to fully recover.

Floodplains and Wetlands

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to floodplains and wetlands.

Soil

With the development of new facilities within the river corridor as a result of implementing management alternatives B or C, there would be an irreversible commit-

ment of materials, such as concrete, asphalt, wood, and metal used in construction. There also would be an irretrievable commitment of soils for the duration of the alternative. Construction activities would result in soil disturbance, which could include loss of sensitive vegetation, soil compaction resulting in decreased soil porosity, alteration of the streambank slope, and bank reshaping from the use of heavy equipment. It would, however, be possible to rehabilitate the impacted soil types and return them to their preconstruction state at some future point.

Vegetation

Some vegetation would be adversely affected under management alternatives B and C as a result of construction of new facilities. This would be an irretrievable commitment of vegetation for the duration of the alternative. However, it would be possible to rehabilitate impacted vegetation types and restore them to their preconstruction state at some point in the future.

Wildlife

It is likely that some wildlife habitat would be adversely affected as a result of construction envisioned under management alternatives B and C. Removal and degradation of habitat could affect the availability of food, cover, and reproductive sites for wildlife, and result in associated indirect human impacts from the use of the development. This represents an irretrievable commitment of these resources for at least the duration of the alternatives. It would, however, be possible to restore impacted habitats to some semblance of their preconstruction state in the future.

Threatened or Endangered Species

If construction and development under management alternatives B or C were to occupy habitat and cause local human disturbance, there could be irreversible impacts on threatened or endangered species. It would be possible to reverse those impacts in the future if some semblance of the natural habitat were restored. However, none of the construction or development activities contemplated in either management alternative would affect the overall sustainability of any of these species.

Scenic Resources

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to scenic resources.

Visitor Information, Education, and Experience

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to visitor information, education, and experience.

Local Economy

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to the local economy.

Landownership

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to landownership.

Local Governments

No actions would be taken in any of the management alternatives that would result in irreversible or irretrievable impacts to local governments.

Relationship of Short-Term Uses of the Environment and Long-Term Productivity

Under any of the alternatives, the park, to a greater or lesser extent, depending on the alternative, would be managed to maintain ecological processes and native and biological communities, and to provide for outdoor recreational activities consistent with the preservation of natural and cultural resources. Any actions the National Park Service takes in the park would be intended to ensure that uses do not adversely affect the productivity of biotic communities. Alternative C would afford the greatest flexibility of resource management, while resource management options under Alternative A would be limited.

Under all alternatives, there would be the potential for a reduction in long-term biological productivity in localized areas because human activities associated with

development and ongoing visitor use could prevent wildlife populations from reaching their full potential in size and population density. However, by minimizing future development and through aggressive protection of natural and cultural resource values, National Park Service management (alternatives B or C) would likely lead to long-term productivity of the environment.

The long-term adverse effect on the natural environment would be minor in terms of habitat or resource loss, but there would be a major beneficial effect on the visitor experience for years into the future.

Impairment

The park's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation for the Niobrara National Scenic River, (2) key to the natural or cultural integrity of the park or to opportunities for visitor enjoyment, or (3) identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

Environmental Consequences of the Boundary Alternative

Exclusions

Regardless of the boundary alternative selected, impacts to the following resources will be determined by the management alternative selected: air quality, visitor information, education or experience, local economy, and local governments. Potential impacts to other topics that would be affected by the boundary alternatives are discussed below.

Cultural Resources

Cultural resources pose certain protection and management challenges. Many of these resources are on privately owned land within the boundaries of the Niobrara National Scenic River. Archeological sites and artifacts on private land have no federal legal protection, and only limited protection under Nebraska state law. In addition, sites can be unknowingly impacted by construction; developers can choose to conduct inventories of sites prior to construction, but they rarely do so. Any development on private lands funded by the National Park Service or other federal agency would, however, be considered a federal undertaking under Section 106 of the National Historic Preservation Act of 1966, and would require compliance activities such as inventory or mitigation. Archeological materials removed from a site by amateur collectors lose much of their scientific value. The future of historic bridges depends in part on the natural forces of the river, such as erosion around abutments, or structural damage from ice jams, as well as on the availability of maintenance funding. Historic building preservation depends on the interest and resources of private owners. The ranching landscape changes as agricultural technology evolves and aging structures are replaced or removed. Property conversion from agricultural use to recreational or residential use occurs where land is not protected from development. Archeological sites, materials, or historic structures located within the Scenic River boundary would receive protection to the extent that the National Park Service has authority, jurisdiction, and landowner permission.

Boundary Alternative 1 is the quarter-mile interim boundary prescribed in Section 4(d) of the Wild and Scenic Rivers Act. From establishment of the Scenic River in 1991 until initial management planning was completed in 1996, this interim boundary has served to protect the Niobrara's resources. (This boundary became effective again when the boundary selected in 1996 was voided by the appellate court decision in 2000.) During the resource analysis associated with the current boundary study, attention was focused primarily on documented National Register-listed historic properties in the Niobrara Valley, including the Fort Niobrara site and several extant truss-design bridges. The quarter-mile boundary captures more of the Fort Niobrara historic site than either Alternatives 2 or 3. The Fort Niobrara historic site lies entirely within the Fort Niobrara National Wildlife Refuge boundary where federal protection is provided by the U. S. Fish and Wildlife Service. Conversely, Boundary Alternative 1 affords significantly less protection to the historic Meadville community. Boundary Alternative 2 is drawn to expressly protect outstandingly remarkable scenic and paleontological values and Boundary 3 is drawn to protect each identified outstandingly remarkable value as equitably as possible. Boundaries 2 and 3 protect less of the Fort Niobrara site than Alternative 1, but significantly more of the Meadville community. Each alternative protects the valley's historic bridges from Borman in the west to Carns in the east.

Paleontological Resources

Protection of fossils on private lands within the Scenic River boundary depends upon cooperation between landowners, paleontologists from educational and other institutions, and the National Park Service. Private developers are not required by law to conduct paleontological inventories of sites prior to construction, and rarely do so. Fossils are periodically uncovered by erosion and can be destroyed by exposure to the elements. Fossils lose much of their scientific value if removed from surrounding geologic strata by amateur collectors. Locations of fossil sites and materials within the Scenic River boundary would receive protection to the extent that the National Park Service has authority, jurisdiction, and landowner permission.

Boundary Alternative 1 is the quarter-mile interim boundary prescribed in Section 4(d) of the Wild and

Scenic Rivers Act. Although the boundary protects some paleontological resources, it does not necessarily protect the most significant of those resources, nor does it protect by inclusion any paleontological site other than arbitrarily. Of the 164 documented sites of regional, national, and global significance in the study area, sixteen lay inside of the Alternative 1 Boundary. Boundary Alternative 3 is drawn to protect each of the Niobrara's identified outstandingly remarkable values, including paleontology, as equitably as possible. Of the documented sites in the study area, forty-one lay inside of Boundary 3. Boundary Alternative 2 was drawn expressly to protect the Niobrara's outstandingly remarkable scenic and paleontological values, and it protects more fossil sites than either of the other alternatives. Fifty-eight documented sites lay within Alternative 2. Each alternative affords protection to the one site in the seventy-six mile Niobrara Valley segment that has been rated as globally or internationally significant.

Natural Resources

Water quality and aquatic species

Boundary alternatives 1, 2, and 3 include the same riverfront resources along the main stem of the Niobrara River. Alternative 3 contains the largest amount of tributary area while Alternative 1 includes the least amount of tributary area. Water quality protection and erosion prevention can be done by incorporating best management practices in the riparian zone regardless of boundary location. A boundary containing more water resources, however, could facilitate increased resource protection opportunities. Acquisition of conservation easements inside the boundary would provide an additional level of protection from development impacts.

Floodplains and wetlands

Floodplain and wetland protection by zoning, best management practices, or technical assistance to future developers could occur regardless of boundary location. Resources included within the boundary would be protected by federal law and National Park Service policy. Additional protection from development impacts could be achieved through conservation easements. Alternative 3 includes the greatest amount of floodplain and wetlands.

Soil and vegetation

Protection of valley land resources by means other than purchase (e.g., county zoning, best management practices, technical assistance) could function independent of any Scenic River boundary. Conservation easements could provide additional protection from construction impacts if other resource protection methods were ineffective. Federal acquisition of property must be within, or substantially within, an approved boundary. Areas within the boundary would receive greater protection from adverse use or development due to increased management attention, technical assistance, application of best management practices, and the acquisition of conservation easements.

Boundary Alternative 1, the quarter-mile default boundary, confers no special consideration of vegetation, geology, or other natural resources, and includes 24,320 acres. Boundary Alternative 2 was drawn to favor vegetative cover and paleontological resources and captures 22,474 acres, most inherently natural. Boundary Alternative 3 encompasses 23,074 acres. The intent of Boundary Alternative 3 is the protection of distinct vegetation types and biotic intersections equitably with the Niobrara's other inherent outstandingly remarkable values.

Wildlife

Alternatives 1 and 3 include more acreage, thereby providing an indirect benefit of protecting habitat. Alternative 3 affords more protection to the diverse ecosystems and their "edge" habitats than either alternative 1 or 2.

Threatened or Endangered Species

No direct effects on federal or state-protected species would result from different boundary configurations. Alternatives 1 and 3 include more acreage, thereby providing an indirect benefit of protecting bald eagle foraging habitat. Alternative 3 affords more deliberate protection to the diverse continental ecosystems and their "edge" habitats than alternatives 1 and 2, a factor of merit for threatened and endangered species.

Additionally, all boundary alternatives include U. S. Fish and Wildlife Service designated critical habitat for piping plovers to the fullest extent determined by that agency.

Scenic Resources

County zoning and the zoning oversight authority of the Niobrara Council afford substantially greater protection to the landscape within the boundary than outside. Additional protection from development within the boundary could be enhanced through acquisition of conservation easements from willing sellers.

Boundary Alternative 1 protects scenic resources falling within its arbitrary measure but does not encompass the majority or most significant of those resources. Boundary Alternative 2 was drawn, in part, to favor the Niobrara's outstandingly remarkable scenic value. Boundary Alternative 3, aiming to protect the river's scenic qualities, geology, and riverine landscapes visible from the streambed and several overlooks, offers the greatest protection of the river's scenic and related resources.

Landownership

Landownership was a consideration in two instances as Boundary alternatives 2 and 3 were configured. In both cases, the existence of Congressionally designated wilderness inside the Fort Niobrara National Wildlife Refuge, and state land, particularly the largely leased Smith Falls State Park, was acknowledged, though with different consequences. Owing to the exacting nature of federal wilderness protection, Boundary alternatives 2 and 3 followed the ordinary high water mark through the wilderness. This was the only instance where a so-called bank-to-bank boundary was employed on the Scenic River, and only because there already existed an extremely high degree of federal land protection. At the state-owned Borman Bridge and Fred Thomas Wildlife Management areas, a two-hundred-foot boundary was configured acknowledging the existing public land status of the sites. In the case of Smith Falls State Park, since the waterfall is widely regarded as one of the signature landmarks of the Scenic River, the park encompasses significant bioregimes, and the land is largely leased, Boundary alternatives 2 and 3 intentionally enveloped the entire park to maximize protection and partnering responsibilities and opportunities. In no other instance was landownership considered in determining boundary alternatives.

Cumulative Impacts

There could be moderate, long-term adverse impacts to the historic, cultural, and paleontological resources of the Niobrara National Scenic River under all boundary alternatives. The National Park Service's ability to protect cultural and natural resources is substantially limited by authority, jurisdiction, and landowner permission. The study and monitoring of resources increases the park's and public's understanding of them, and enhances the ability to respond in a timely manner to resources that require restoration, stabilization, or other treatment resulting from vandalism, erosion, or other impacts. The extent to which the Niobrara's diverse outstandingly remarkable values are identified and equitably captured by the boundary increases the opportunity for, and likelihood of, preservation.

Some natural resources, such as sensitive vegetation, threatened and endangered species, and wetlands may be adversely impacted in alternatives that afford less protection of habitat and resources in general than other alternatives. Because Boundary Alternative 3 is drawn to protect each identified outstandingly remarkable value as equitably as possible, it affords more protection to natural resources in general than either Boundary alternatives 1 or 2.

Conclusion

Boundary Alternative 1 offers protection to those outstandingly remarkable values that fall within its quarter-mile interim measure. It does not necessarily protect the most important or significant cultural, historic, or paleontological sites, nor does it attempt to protect integrated ecosystems and natural resources. As a result, many of the features that contribute to the multi-dimensional resource base existing on the river are outside of the influence of the National Park Service and its partners.

Boundary Alternative 2 protects outstandingly remarkable scenic and fossil values while incorporating, but not necessarily favoring, recreational, geological, and fish and wildlife values. Several landscapes visible from the river and key roads do not fall within this boundary alternative. As a result, some of the features that contribute to the outstanding recreational experiences possible on the river are outside of the influence of the National Park Service and its partners.

Boundary Alternative 3 was designed to provide equitable protection to each of the Niobrara's identified scenic, recreational, geologic, fish and wildlife, and paleontological outstandingly remarkable values. It protects nationally significant cultural resources including portions of the Fort Niobrara historic site and all of the river's bridges. The alternative also protects the principal remains of the historic Meadville townsite. It does not protect as many fossil sites as Alternative 2, but it provides greater protection to scenic and recreational resources than the other alternatives.

Environmentally Preferrable Boundary Alternative

The environmentally preferable alternative is defined as "the alternative or alternatives that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources."

The last clause within this guidance is particularly relevant in identifying the environmentally preferable boundary alternative for the Niobrara National Scenic River. Public Law 90-542 establishing the Wild and Scenic Rivers System, and Public Law 102-50 amending the first Act by adding a seventy-six-mile reach of the Niobrara to the system, applied a national policy of preserving selected rivers and their immediate environments for the benefit of present and future generations to a section of the Niobrara. The Wild and Scenic Rivers Act particularly identified seven resource types labeled "outstandingly remarkable values" that Congress prescribed as worthy of protection on those landscapes. The present boundary analysis found that five of those seven resource types exist to an "outstandingly remarkable" degree on the Niobrara, some present from rim-top to rim-top throughout the designated reach.

In consideration of the purposes of the Wild and Scenic Rivers Act and the Niobrara National Scenic River designation, the National Park Service has identified the Preferred Alternative, Boundary 3, as the environmentally preferable alternative. Boundary Alternative 3 provides for holistic protection of the river's outstandingly remarkable scenic, recreational, geologic, fish and wildlife, and paleontological resources, affords protection to nationally significant cultural resources, and stays within the acreage limits set by the Wild and Scenic Rivers Act.

Table 2: Comparison of Impacts

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Cultural Resources					
• Significant cultural resources (sites, structures and bridges) could be damaged through construction. • The park would have limited staff and funds to adequately inventory and monitor cultural resources. • Under Alternative A, some cultural resources could potentially sustain moderate to major, adverse impacts in the long-term.	• The park would have jurisdictional authority to enforce resource protection mandates within the park and use its strong leadership role to work with residents and local governments to protect resources outside park boundaries. • Through partnerships and collaboration there would be opportunities to leverage human and fiscal resources to protect cultural resources through inventories, monitoring, maintenance, avoidance, mitigation, and long-term management plans. • These actions would result in long-term beneficial impacts.	• The park would be able to protect resources in the park through inventories, monitoring, maintenance, avoidance, mitigation, and long-term management plans, provided staffing and funding is adequate. • Protection would increase as more land was acquired in fee title or managed through easements. NPS technical experts would be able to assist landowners to protect resources beyond park boundaries through education and outreach. • These actions would result in beneficial impacts.	• Affords significantly less protection to the historic Meadville community. • Protects the river's bridges from Borman in the west to Carns in the east.	• Protects less of the Fort Niobrara site than Alternative 1, but significantly more of the Meadville community. • Drawn to expressly protect outstandingly remarkable scenic and paleontological values.	• Protects less of the Fort Niobrara site than Alternative 1, but significantly more of the Meadville community. • Drawn to protect each identified outstandingly remarkable value as equitably as possible.
Paleontological Resources					
• Significant paleontological resources (e.g., fossils, geologic strata) could be damaged through construction. • The park would have lim-	• The park would have authority to enforce resource protection mandates within the unit and use its strong leadership role to work with resi-	• The park would be able to protect resources in the unit through inventories, monitoring, avoidance, mitigation, and long-term management	• Contains sixteen documented sites of regional, national, and global significance. • Protects the one site rated globally or interna-	• Contains fifty-eight documented sites of regional, national, and global significance. • Protects the one site rated globally or interna-	• Contains forty-one documented sites of regional, national, and global significance. • Protects the one site rated globally or interna-

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Paleontological Resources continued					
ited staff and funds to adequately inventory and monitor paleontological resources. • Under Alternative A, some paleontological resources could potentially sustain moderate to major, adverse impacts in the long-term.	dents and local governments to protect resources outside park boundaries. • Through partnerships and collaboration there would be opportunities to leverage human and fiscal resources to protect paleontological resources through inventories, monitoring, avoidance, mitigation, and long-term management plans. • These actions would result in beneficial impacts in the long-term.	plans, provided staffing and funding is adequate. • Protection would increase as land was acquired in fee title or managed through easements. NPS technical experts would be able to provide education and outreach to landowners. • These actions would result in long-term beneficial impacts.	tionally significant in reasonable proximity to the project area.	tionally significant in reasonable proximity to the project area.	tionally significant in reasonable proximity to the project area.
Air Quality					
• Air quality and visibility would be locally impacted by prescribed burns, construction projects, and increased traffic on unimproved roads. • There would be short-term, minor adverse impacts on air quality.	• Air quality and visibility would be locally impacted by prescribed burns, construction projects, and increased traffic on unimproved roads. • There would be short-term, minor adverse impacts on air quality.	• Air quality and visibility would be locally impacted by prescribed burns, construction projects, and increased traffic on unimproved roads. • There would be short-term, minor adverse impacts on air quality.	N/A	N/A	N/A

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Water Quality					
• Water quality and aquatic habitats could deteriorate as a result of unmanaged grazing practices and river overuse. • Limited annual water-quality monitoring practices could place river users at risk of exposure to long-term elevated levels of fecal coliform bacteria. • Failure of Cornell Dam could increase sediment loading and elevate coliform bacteria levels in the short-term. • Failure of the dam could return the river to a more natural regime, which would benefit aquatic resources and resource values. • There could be long-term moderate adverse impacts under this alternative.	• Development and implementation of a resource stewardship plan and best management practices would provide long-term benefits to aquatic resources. • Construction of new bathroom and river access sites could increase siltation and turbidity in the short-term. However, these impacts could be minimized through good design and streambank restoration projects. • Research would be conducted to determine whether/how Cornell Dam should be removed to maximize benefits to aquatic resources. • Under this alternative, there could be moderate, long-term adverse impacts.	• Development and implementation of a resource stewardship plan and best management practices would provide long-term benefits to aquatic resources. • Construction of new bathroom and river access sites could increase siltation and turbitity in the short-term. These impacts could be minimized through good design and streambank restoration projects. • Properly managed removal of Cornell Dam could restore natural river sediment transport and reestablish natural fish migrations. • Under this alternative, there could be long-term, moderate adverse impacts.	• The tributary area would be longer than Alternative 2, but smaller than Alternative 3.	• Contains the smallest amount of tributary area.	• Contains the largest amount of tributary area.

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Floodplains / Wetlands					
• Floodplain areas would be compromised by heavy use. • Rip-rap used to protect riverbanks would continue to constrict and channelize the river, which could have long-term impacts on floodplain habitats. • Infrequent, periodic flooding could have short-term impacts on aquatic and wetland resources. • Floodplain and wetland restoration projects would mitigate some of these impacts. • The potential for major, long-term impacts on wetlands and floodplains would remain.	• A resource stewardship plan and best management practices would benefit floodplain and wetland resources. • Cost-sharing and leveraging resources among partners would permit coordinated restoration projects. • Environmentally sound methods for alleviating ice build-up would reduce stream channelization. • Collectively, these factors would result in major, long-term beneficial impacts on wetlands and floodplains.	• A resource stewardship plan and best management practices would benefit floodplain and wetland resources. • Increased funding and staff would permit NPS to carry out more restoration projects. • Environmentally sound methods for alleviating ice build-up would reduce stream channelization. • Collectively, these factors would result in moderate-to-major, long-term beneficial impacts on wetlands and floodplains.	• Alternative 1 includes a larger amount of floodplain and wetland areas than Alternatives 2 or 3.	• Alternative 2 includes a smaller amount of floodplain and wetland areas than Alternative 3.	• Alternative 3 includes the greatest amount of floodplain and wetland areas.
Soil and Vegetation					
• Impacts on soil and vegetation would continue, and erosion would increase. • Consultation with experts would remain voluntary. • Eastern red cedar would	• Construction of a research and education center, and public access sites would result in soil compaction, erosion, and the proliferation of some invasive vegetative species.	• Construction of a research and education center, and public access sites would result in soil compaction, erosion, and the proliferation of some invasive vegetative species.	• Alternative captures 24,320 acres.	• Favors vegetative cover; captures 22,474 acres.	• Protects distinct vegetation types and biotic intersections; encompasses 23,074 acres.

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Soil and Vegetation continued					
proliferate in the absence of a prescribed burn program. • Unmanaged development and agricultural practices could result in minor, long-term adverse impacts on soils and vegetation.	• Partnering managers would provide technical support for best management practices, and would offer incentives to private landowners. • Overall, there would be minor, long-term adverse impacts to soils.	• NPS would implement best management practices to minimize erosion and soil compaction. • Overall, there would be minor, long-term adverse impacts to soils.			
Wildlife					
• Private development within and next to the river could fragment wildlife habitat. • Heavy recreational river use could displace birds and animals. • Current uses and management of the river would result in long-term, minor adverse impacts to wildlife.	• Partnerships would allow the park and partners to implement management actions effectively through shared resources and leveraged funds. • Implementing wildlife management programs and best management practices would result in long-term, moderate, beneficial impacts to wildlife habitats and populations.	• Implementing wildlife management programs would result in long-term moderate, beneficial impacts. • Adequate staff and funding would allow NPS to effectively implement programs and practices. • Wildlife resources would receive protection as land and easements were added to the Scenic River. • These factors could result in long-term moderate, beneficial impacts.	N/A	N/A	N/A

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Threatened or Endangered Species					
• Due to limited staff the park could not effectively inventory, monitor, protect, or restore threatened and endangered species habitat. • Some species' ranges could be further reduced, and extirpated species would remain extirpated. • There could be potential long-term, moderate-to-major adverse impacts to threatened and endangered species.	• Resource stewardship plans would afford protection to threatened and endangered species. • There would be sufficient staff and funds to conduct inventories, monitoring, protection of threatened and endangered species, and restoration and enhancement of habitats. • This would result in moderate-to-major beneficial impacts to these species.	• Resource stewardship plans would afford protection to threatened and endangered species. • There would be sufficient staff and funds to conduct inventories, monitoring, protection of threatened and endangered species, and restoration and enhancement of habitats. • With acquisition of lands and easements, more threatened and endangered species would receive protection. • These factors could result in moderate-to-major beneficial impacts to these species.	• Includes more acreage, thereby providing an indirect benefit of protecting bald eagle and whooping crane foraging habitat. • Includes designated critical habitat for piping plovers to the fullest extent sought by the U. S. Fish and Wildlife Service.	• Protects more diverse continental ecosystems and their "edge" habitats than Alternatives 1 and 3. • Includes designated critical habitat for piping plovers to the fullest extent sought by the U. S. Fish and Wildlife Service.	• Includes more acreage than Alternative 2, thereby providing an indirect benefit of protecting bald eagle foraging habitat. • Includes designated critical habitat for piping plovers to the fullest extent sought by the U. S. Fish and Wildlife Service.
Scenic Resources					
• Unmanaged development and signage in and adjacent to the Scenic River could result in minor-to-moderate, long-term adverse impact to scenic resources. • These factors could cause adverse impacts.	• NPS could provide its partners with technical assistance to reduce impacts of development and signage. • Partners could protect scenic resources through easements, cooperative agreements, and land trusts.	• NPS could provide technical assistance to reduce development and signage impacts. • These actions would have long-term, minor-to-moderate beneficial impacts.	• Does not encompass the majority or most significant scenic resources.	• Drawn to favor the outstandingly remarkable scenic value.	• Aiming to protect the river's scenic qualities, geology, and riverine landscapes visible from the streambed and several overlooks, offers the greatest systemic protection of the river's scenic and related resources.

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Scenic Resources continued					
	• These actions would have long-term, minor-to-moderate beneficial impacts.				
Visitor Information, Education, and Experience					
• The park would be limited in effectively interpreting park resources and visitation. • Launch sites and some segments of the river would be overcrowded, and toilet facilities would remain inadequate. • The park would have minimal responses to vandalism, hunting and fishing violations, and other incidents. • The park would rely on external law enforcement agencies for visitor safety. • There would be no central facility for visitor orientation. • Collectively these trends would result in major adverse impacts on the park's visitor experience, ultimately leaving it impaired.	• Funding and staffing levels under this alternative would permit the park to pro-actively develop interpretive and public outreach programs; draft a visitor use plan that would manage visitor use and minimize visitor use conflicts; and provide and maintain facilities needed for a high-quality recreation experience. • The park and its partners would have opportunities to leverage funds and resources. • These actions would have moderate to major beneficial impacts on visitor experience.	• Funding and staffing levels under this alternative would permit the park to develop active interpretive and public outreach programs; draft a visitor use plan that would manage visitor use and minimize visitor use conflicts; and provide and maintain facilities needed for a high-quality recreation experience. • These actions would have moderate to major beneficial impacts.	N/A	N/A	N/A

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Local Economy					
• The park's impact on the local economy would remain the same. • Increased visitation could provide increased revenues, but unmanaged overcrowding could reverse this trend. • Through time, this could lead to moderate adverse impacts to local economy.	• The park could work with stakeholders to manage river use to reduce overcrowding and increase visitation and spending. • Enforcement of disability, safety, and health codes, could negatively impact outfitters' incomes in the short term. • Overall, there would be long term, moderate, beneficial impacts on the local economy.	• Enforcement of park management policies related to river use could result in an increase in managed visitation. • Overall, there would be long term, moderate, beneficial impacts on the local economy.	N/A	N/A	N/A
Landownership					
• Alternative A would have a negligible long-term impact on landownership.	• Coordinating with local zoning officials and purchasing land in fee title and easements would help protect scenic landscapes and resources. • Alternative B would have a moderate, long-term, beneficial impact on landownership.	• Coordinating with local zoning officials and purchasing land in fee title and easements with federal funds would help protect scenic landscapes. • Alternative C would have a moderate, long-term, beneficial impact on landownership.	N/A	N/A	N/A

Management Alternative A	Management Alternative B	Management Alternative C	Boundary Alternative 1	Boundary Alternative 2	Boundary Alternative 3
Local Governments					
• Unmanaged development under Alternative A could increase infrastructure costs for local county and municipal governments. • Increased recreational use could result in revenues that would offset these increased expenses. • If increased expenses exceeded revenue gains, local governments would experience a minor to moderate, reversible adverse impact.	• Costs related to increased visitation would be spread among several partnering entities. • Longer and more frequent visits would increase sales taxes. • A close working relationship among land managers and local governments would foster resource stewardship and increased cooperation. • Overall, implementation of Alternative B would have a moderate to major beneficial impact on local governments.	• Increased staffing and funding could lead to a better visitor experience, longer/more frequent visits, and increases in sales taxes. • Federal property tax reimbursements and taxing of easements would offset losses in local government property tax revenues. • Decreases in property taxes by acquisition of land in fee title or in easements would limit development and revenues derived from property and sales taxes. • Overall, implementation of Alternative B would have a moderate to major beneficial impact on local governments.	N/A	N/A	N/A

Consultation and Coordination

During the course of planning in 2000-2005, the following agencies, organizations, and individuals were engaged. Each received copies of the draft plan.

Niobrara Scenic River Advisory Commission

Ann Appelt, Ainsworth, Nebraska.
Brad Arrowsmith, Bassett, Nebraska.
Lou Christiansen, Norfolk, Nebraska. (deceased)
Richard Egelhoff, Valentine, Nebraska.
Robert Hilske, Chairman, formerly of Valentine, Nebraska.
Doug Kuhre, Johnstown, Nebraska.
Winifred Parker, Springview, Nebraska.
Tom Pesek, Lincoln, Nebraska.
Wesley Sandall, Bassett, Nebraska.
Vince Shay, Omaha, Nebraska.
Carl Simmons, Valentine, Nebraska.
Dayle Williamson, Lincoln, Nebraska.

Niobrara Council

Jason Appelt, Ainsworth, Nebraska.
Monte Frauen, Valentine, Nebraska.
Twyla Graham, Valentine, Nebraska.
Betty Hall, Bassett, Nebraska.
Paul Hedren, O'Neill, Nebraska.
Tom Higgins, Newport, Nebraska.
Royce Huber, Valentine, Nebraska.
Lance Kuck, Bassett, Nebraska.
Bill Mulligan, Valentine, Nebraska.
Roland Paddock, Ainsworth, Nebraska.
John Ravenscroft, Chairman, Nenzel, Nebraska.
Dave Sands, Lincoln, Nebraska.
Pete Sawle, Springview, Nebraska.
Jim Schoenberg, Bassett, Nebraska.
Carl Simmons, Valentine, Nebraska.
Larry Voecks, Crawford, Nebraska.

Warren Arganbright, Counsel, Valentine, Nebraska.
Kalli Kieborz, Executive Director, Valentine, Nebraska.

Lloyd Alderman, former member, Bassett, Nebraska.
Brad Arrowsmith, former chairman, Bassett, Nebraska.
Gene Gregg, former member, Ainsworth, Nebraska. (deceased)
Jim Harlan, former member, Bassett, Nebraska.
Betty Hermsmeyer, former member, Ainsworth, Nebraska.
Nola Moosman, former member, Valentine, Nebraska.
Dwight Sawle, former member, Springview, Nebraska.
Betty Palmer, former member, Springview, Nebraska.
Rodney Verhoeff, former executive director, Lincoln, Nebraska.
Harlin Welch, former member, Ainsworth, Nebraska.
Jim Van Winkle, former chairman, Wood Lake, Nebraska.

Agencies and Organizations

Brown County Commission
Cherry County Commission
Friends of the Niobrara
Keya Paha County Commission
Lower Niobrara Natural Resources District
Middle Niobrara Natural Resources District
National Parks Conservation Association
The Nature Conservancy
Nebraska Audubon Society
Nebraska Game and Parks Commission
Nebraska State Historical Society
Nebraska State Museum
Nebraska Wildlife Federation
Niobrara River Outfitters, Inc.
Ponca Tribe of Nebraska
Rock County Commission
Rosebud Sioux Tribe
Santee Sioux Tribe
Sierra Club Nebraska Chapter
U. S. Fish and Wildlife Service
Yankton Sioux Tribe

Public Law 102-50
102d Congress

An Act

May 24, 1991
[S. 248]

To amend the Wild and Scenic Rivers Act to designate certain segments of the Niobrara River in Nebraska and a segment of the Missouri River in Nebraska and South Dakota as components of the wild and scenic rivers system, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

Niobrara Scenic River Designation Act of 1991.
Natural resources.
16 USC 1271 note.

SECTION 1. SHORT TITLE.

This Act may be cited as the "Niobrara Scenic River Designation Act of 1991".

SEC. 2. DESIGNATION OF THE RIVER.

Section 3(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1274(a)) is amended by adding at the end thereof the following:

"( ) NIOBRARA, NEBRASKA.—(A) The 40-mile segment from Borman Bridge southeast of Valentine downstream to its confluence with Chimney Creek and the 30-mile segment from the river's confluence with Rock Creek downstream to the State Highway 137 bridge, both segments to be classified as scenic and administered by the Secretary of the Interior. That portion of the 40-mile segment designated by this subparagraph located within the Fort Niobrara National Wildlife Refuge shall continue to be managed by the Secretary through the Director of the United States Fish and Wildlife Service.

"(B) The 25-mile segment from the western boundary of Knox County to its confluence with the Missouri River, including that segment of the Verdigre Creek from the north municipal boundary of Verdigre, Nebraska, to its confluence with the Niobrara, to be administered by the Secretary of the Interior as a recreational river.

"After consultation with State and local governments and the interested public, the Secretary shall take such action as is required under subsection (b) of this section.

"( ) MISSOURI RIVER, NEBRASKA AND SOUTH DAKOTA.—The 39-mile segment from the headwaters of Lewis and Clark Lake to the Ft. Randall Dam, to be administered by the Secretary of the Interior as a recreational river.".

SEC. 3. STUDY OF 6-MILE SEGMENT.

(a) STUDY.—Section 5(a) of the Wild and Scenic Rivers Act (16 U.S.C. 1276(a)) is amended by adding the following at the end:

"( ) NIOBRARA, NEBRASKA.—The 6-mile segment of the river from its confluence with Chimney Creek to its confluence with Rock Creek.".

16 USC 1274 note.

(b) WATER RESOURCES PROJECT.—If, within 5 years after the date of enactment of this Act, funds are not authorized and appropriated for the construction of a water resources project on the 6-mile segment of the Niobrara River from its confluence with Chimney Creek to its confluence with Rock Creek, at the expiration of such 5-year period the 6-mile segment shall be designated as a component of the National Wild and Scenic Rivers System by operation of law, to be administered by the Secretary of the Interior in accordance with sections 4 and 5 of this Act and the applicable provisions of the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287). The Secretary of the Interior shall publish notification to that effect in the Federal Register.

Federal Register, publication.

SEC. 4. LIMITATIONS ON CERTAIN ACQUISITION.

16 USC 1274 note.

(a) LIMITATIONS.—In the case of the 40-mile and 30-mile segments of the Niobrara River described in the amendment to the Wild and Scenic Rivers Act made by section 2 of this Act, the Secretary of the Interior shall not, without the consent of the owner, acquire for purposes of such segment land or interests in land in more than 5 percent of the area within the boundaries of such segments, and the Secretary shall not acquire, without the consent of the owner, fee ownership of more than 2 percent of such area. The limitations on land acquisition contained in this subsection shall be in addition to, and not in lieu of, the limitations on acquisition contained in section 6 of the Wild and Scenic Rivers Act.

(b) FINDING; EXCEPTION.—The 5 percent limitation and the 2 percent limitation contained in subsection (a) of this section shall not apply if the Secretary of the Interior finds, after notice and opportunity for public comment, that State or local governments are not, through statute, regulation, ordinance, or otherwise, adequately protecting the values for which the segment concerned is designated as a component of the national wild and scenic rivers system.

SEC. 5. NIOBRARA SCENIC RIVER ADVISORY COMMISSION.

16 USC 1274 note.

(a) ESTABLISHMENT.—There is hereby established the Niobrara Scenic River Advisory Commission (hereinafter in this Act referred to as the "Commission"). The Commission shall advise the Secretary of the Interior (hereinafter referred to as the "Secretary") on matters pertaining to the development of a management plan, and the management and operation of the 40-mile and 30-mile segments of the Niobrara River designated by section 2 of this Act which lie outside the boundary of the Fort Niobrara National Wildlife Refuge and that segment of the Niobrara River from its confluence with Chimney Creek to its confluence with Rock Creek.

(b) MEMBERSHIP.—The Commission shall consist of 11 members appointed by the Secretary—

(1) 3 of whom shall be owners of farm or ranch property within the upper portion of the designated river corridor between the Borman Bridge and the Meadville;

(2) 3 of whom shall be owners of farm or ranch property within the lower portion of the designated river corridor between the Meadville Bridge and the bridge on Highway 137;

(3) 1 of whom shall be a canoe outfitter who operates within the river corridors;

(4) 1 of whom shall be chosen from a list submitted by the Governor of Nebraska;

(5) 2 of whom shall be representatives of the affected county governments or natural resources districts; and

(6) 1 of whom shall be a representative of a conservation organization who shall have knowledge and experience in river conservation.

(c) TERMS.—Members shall be appointed to the Commission for a term of 3 years. A member may serve after the expiration of his term until his successor has taken office.

(d) CHAIRPERSON; VACANCIES.—The Secretary shall designate 1 of the members of the Commission, who is a permanent resident of Brown, Cherry, Keya Paha, or Rock Counties, to serve as Chairperson. Vacancies on the Commission shall be filled in the same manner in which the original appointment was made. Members of the Commission shall serve without compensation, but the Secretary is authorized to pay expenses reasonably incurred by the Commission in carrying out its responsibilities under this Act on vouchers signed by the Chairperson.

(e) TERMINATION.—The Commission shall cease to exist 10 years from the date of enactment of this Act.

16 USC 1274 note.

SEC. 6. MISSOURI RIVER PROVISIONS.

(a) ADMINISTRATION.—The administration of the Missouri River segment designated in section 2 of this Act shall be in consultation with a recreational river advisory group to be established by the Secretary. Such group shall include in its membership representatives of the affected States and political subdivisions thereof, affected Federal agencies, organized private groups, and such individuals as the Secretary deems desirable.

(b) BRIDGES.—The designation of the Missouri River segment by the amendment made by section 2 of this Act shall not place any additional requirements on the placement of bridges other than those contained in section 303 of title 49, United States Code.

(c) EROSION CONTROL.—Within the Missouri River segment designated by the amendment made by section 2 of this Act, the Secretary shall permit the use of erosion control techniques, including the use of rocks from the area for streambank stabilization purposes, subject to such conditions as the Secretary may prescribe, in consultation with the advisory group described in subsection (a) of this section, to protect the resource values for which such river segment was designated.

16 USC 1274 note.

SEC. 7. NATIONAL RECREATION AREA STUDY.

(a) IN GENERAL.—The Secretary of the Interior, acting through the Director of the National Park Service, shall undertake and complete a study, within 18 months after the date of enactment of this section, regarding the feasibility and suitability of the designation of lands in Knox County and Boyd County, Nebraska, generally adjacent to the recreational river segments designated by the amendments made by section 2 of this Act and adjacent to the Lewis and Clark Reservoir, as a national recreation area. The Secretary may provide grants and technical assistance to the State of Nebraska, the Santee Sioux Indian Tribal Council, and the political subdivisions having jurisdiction over lands in these 2 counties to assist the Secretary in carrying out such study. The study under this section shall be prepared in consultation with the Santee Sioux Tribe, affected political subdivisions, and relevant State agencies. The study shall include as a minimum each of the following:

(1) A comprehensive evaluation of the public recreational opportunities and the flood plain management options which are available with respect to the river and creek corridors involved.

(2) An evaluation of the natural, historical, paleontological, and recreational resources and values of such corridors.

(3) Recommendations for possible land acquisition within the corridor which are deemed necessary for the purpose of resource protection, scenic protection and integrity, recreational activities, or management and administration of the corridor areas.

(4) Alternative cooperative management proposals for the administration and development of the corridor areas.

(5) An analysis of the number of visitors and types of public use within the corridor areas that can be accommodated in accordance with the full protection of its resources.

(6) An analysis of the facilities deemed necessary to accommodate and provide access for such recreational uses by visitors, including the location and estimated costs of such facilities.

(b) SUBMISSION OF REPORT.—The results of such study shall be transmitted to the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

SEC. 8. STUDY OF FEASIBILITY AND SUITABILITY OF ESTABLISHING NIOBRARA-BUFFALO PRAIRIE NATIONAL PARK.

16 USC 1a-5 note.

(a) IN GENERAL.—The Secretary of the Interior shall undertake and complete a study of the feasibility and suitability of establishing a national park in the State of Nebraska to be known as the Niobrara-Buffalo Prairie National Park within 18 months after the date of enactment of this Act.

(b) AREA TO BE STUDIED.—The areas studied under this section shall include the area generally depicted on the map entitled "Boundary Map, Proposed Niobrara-Buffalo Prairie National Park", numbered NBP-80,000, and dated March 1990. The study area shall not include any lands within the boundaries of the Fort Niobrara National Wildlife Refuge.

(c) RESOURCES.—In conducting the study under this section, the Secretary shall conduct an assessment of the natural, cultural, historic, scenic, and recreational resources of such areas studied to determine whether they are of such significance as to merit inclusion in the National Park System.

(d) STUDY REGARDING MANAGEMENT.—In conducting the study under this section, the Secretary shall study the feasibility of managing the area by various methods, in consultation with appropriate Federal agencies, the Nature Conservancy, and the Nebraska Game and Parks Commission.

(e) SUBMISSION OF REPORT.—The results of the study shall be submitted to the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

16 USC 1274 note.

There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act.

Approved May 24, 1991.

LEGISLATIVE HISTORY—S. 248:

HOUSE REPORTS: No. 102-51, Pt. 1 (Comm. on Interior and Insular Affairs).
SENATE REPORTS: No. 102-19 (Comm. on Energy and Natural Resources).
CONGRESSIONAL RECORD, Vol. 137 (1991):
Apr. 17, considered and passed Senate.
May 14, considered and passed House.
WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 27 (1991):
May 24, Presidential statement.

Appendix B: Selected Legislation

National Park Service Organic Act (16 U.S.C. 1-4).
The National Park Service Organic Act of 1916 remains after nearly nine decades the core of National Park Service authority and the definitive statement of the purposes of parks and the Service's mission: "to promote and regulate the use of the federal areas known as national parks, monuments, and reservations...by such means and measures as conform to the[ir] fundamental purpose...to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Archeological and Historic Preservation Act (16 U.S.C. 469-469c-2).
This 1960 Act requires survey, recovery, and preservation of significant scientific, prehistoric, historic, archeological, or paleontological data when such data may be destroyed due to a federal project. The Act directs federal agencies to notify the secretary of the interior whenever they find that such a project may cause loss or damage.

National Historic Preservation Act (16 U.S.C. 470-470x-6).
The purpose of this 1966 Act is to protect and preserve districts, sites and structures, and architectural, archeological, and cultural resources. Section 106 requires consultation with the State Historic Preservation Office. Section 110 requires that the National Park Service identify and nominate all eligible resources under its jurisdiction to the National Register of Historic Places.

Wild and Scenic Rivers Act (16 U.S.C. 1131-1136).
This 1968 Act established a system to protect selected rivers with outstandingly remarkable scenic, recreational, geologic, wildlife, historic, cultural, or similar values in a free-flowing condition. The Wild and Scenic Rivers System includes three river classifications—wild, scenic, and recreational—based on the level of disturbances to the given river and its surrounding habitat at the time of designation. Of the nearly 3.6 million miles of rivers in the United States, 160 rivers or river segments, totaling 11,292 miles, are protected in the system.

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4370d).
The purposes of this Act include encouraging "harmony between [humans] and [their] environment; to promote efforts which will prevent or eliminate damage to the environment…and stimulate the health and welfare of [humanity]." These purposes are accomplished by evaluating the effects of federal actions. The results of these evaluations are presented to the public, federal agencies, and public officials in document format (i.e., environmental assessments and environmental impact statements) for consideration prior to taking official action or making official decisions.

Council on Environmental Quality Regulations (40 CFR Parts 1500-1517).
These regulations implement the National Environmental Policy Act and provide guidance to federal agencies in the preparation of environmental documents identified under the Act.

National Park System General Authorities Act (16 U.S.C. 1a-1 et seq.).
This 1970 Act affirmed that all national park areas are "united through their interrelated purposes and resources into one national park system, as cumulative expressions of a single national heritage."

Clean Air Act (42 U.S.C. 7401-7671q).
The main purpose of this 1970 Act and its 1990 amendment is the protection and enhancement of the nation's air quality to promote public health and welfare. The Act establishes specific programs that provide special protection for air resources and air quality-related values associated with National Park System units. The U.S. Environmental Protection Agency has been charged with implementing the Act.

Federal Water Pollution Control Act of 1972 (33 U.S.C. 1251 et seq.).
As amended in 1977, this law came to be known as the Clean Water Act. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave the U. S. Environmental Protection Agency the authority to implement pollution control programs such as setting wastewater standards for industry. The Clean Water

Act also continued requirements to set water quality standards for all contaminants in surface waters. The Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions.

Endangered Species Act of 1973 (16 U.S.C. 1531-1544).

The purposes of the Endangered Species Act include providing "a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." According to the Endangered Species Act, "all federal departments and agencies shall seek to conserve endangered species and threatened species" and "[e]ach federal agency shall…insure that any action authorized, funded, or carried out by such agency…is not likely to jeopardize the continued existence of any endangered species or threatened species." The U. S. Fish and Wildlife Service (non-marine species) and the National Marine Fisheries Service (marine species, including anadromous fish and marine mammals) administer the Endangered Species Act. Any potential action by a federal agency that may affect endangered, threatened, or proposed species must be evaluated in consultation with either the Fish and Wildlife Service or the Marine Fisheries Service, as appropriate.

The Redwood Act of 1978 (16 U.S.C. 1a-1).

Congress supplemented and clarified the provisions of the National Park Service Organic Act through enactment of the General Authorities Act in 1970, and again through enactment of a 1978 amendment to that law (the "Redwood Amendment") contained in a bill expanding Redwood National Park. This Act stated that the provisions of the Organic Act apply to all units of the National Park System. A key phrase is that activities "shall not be exercised in derogation of the values and purposes for which these areas have been established." It is applicable unless Congress has "directly and specifically provided" otherwise.

Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm).

This Act defines archeological resources as any material remains of past human life or activities that are of archeological interest and at least one hundred years old; requires federal permits for their excavation or removal, and sets penalties for violators; provides for preservation and custody of excavated materials, records, and data; provides for confidentiality of archeological site locations; and encourages cooperation with other parties to improve protection of archeological resources. The Act was amended in 1988 to require development of plans for surveying public lands for archeological resources, and systems for reporting incidents of suspected violations.

Native American Graves Protection and Repatriation Act (25 U.S.C. 3001-3013).

This 1990 Act assigns ownership or control of American Indian human remains, funerary objects, sacred objects, and objects of cultural patrimony that are excavated or discovered on federal lands to lineal descendants or culturally-affiliated American Indian groups; establishes criminal penalties for trafficking in remains or objects obtained in violation of the Act; and provides that federal agencies and museums that receive federal funding shall inventory American Indian human remains and associated funerary objects in their possession or control, identify their cultural and geographic affiliations within five years, and prepare summaries of information about American Indian unassociated funerary objects, sacred objects, or objects of cultural patrimony. This is to provide for repatriation of such items when lineal descendants or American Indian groups request it.

Niobrara Scenic River Designation Act of 1991 (16 U.S.C. 1274a).

Public Law 102-50 amended section 3(a) of the Wild and Scenic Rivers Act of 1968 to designate portions of the Niobrara River in north central Nebraska as a unit of the national Wild and Scenic Rivers System.

Executive Order 13007, "Indian Sacred Sites," 1996.

This Executive Order instructed each executive branch agency with statutory or administrative responsibility for the management of federal lands to 1) accommodate to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, access to and ceremonial use of Indian sacred sites by Indian religious practitioners; 2) avoid adversely affecting the physical integrity of such sacred sites; and 3) where appropriate, maintain the confidentiality of such sites.

Appendix C: Nebraska Natural Heritage Program Niobrara Region Sensitive Species*

Plants			
Scientific Name	**Common Name**	**Status**	
		State	**Federal**
Alopecurus geniculatus	Water foxtail		
Amoripha nana	Fragrant indigobush		
Aralia nudicaulis	Wild sarsaparilla		
Aralia racemosa	American skikenard		
Arenaria lateriflora	Grove sandwort		
Aster brachyactis	Rayless aster		
Aster junciformis	Rush aster		
Astragalus agrestis	Field milkvetch		
Athyrium filix-femina	Subarctic lady-fern		
Atriplex nuttallii	Nuttall saltbush		
Betula papyrifera	Paper birch		
Botrychium campestre	Prairie moonwort		
Callitriche hermaphroditica	Autumnal water-starwort		
Callitriche verna	Water starwort		
Caltha palustris	Marsh marigold		
Carex buxbaumii	Brown bog sedge		
Carex diandra	Lesser panicled sedge		
Carex granularis	Meadow sedge		
Carex limosa	Mud sedge		
Carex peckii	Peck's sedge		
Carex saximontana	Rocky Mountain sedge		
Cophantha missouriensis	Missouri corycactus		
Corydalis aurea	Golden corydalis		
Cypripedium candidum	Small white lady's slipper		
Dracocephalum parviflorum	American dragonhead		
Dryopteris carthusiana	Spinulose woodfern		
Eleocharis puaciflora	Fewflower spikerush		
Erigeron divergens	Spreading fleabane		
Eriophorum gracile	Slender cotton-grass		
Eriophorum polystachyon	Narrowleaf cottonsedge		
Fritillaria atropurpurea	Leopart lily		
Glyceria borealis	Small floating manna-grass		
Gratiola neglecta	Hedge hyssop		
Habenaria hyperborea	Northern green orchid		
Habenaria viridis	Frog orchid		
Helianthemum bicknellii	Hoary frostweed		
Hieracium canadense	Canada hawkweed		
Juncus canadensis	Canada rush		
Juncus scirpoides	Scirpus-like rush		
Juniperus horizontalis	Creeping juniper		
Lechea stricta	Upright pinweed		
Lemna minuscula	Least duckweed		
Liparis loeselii	Loesel's twayblade		
Lonicera dioica var glaucescens	Limber honeysuckle		
Ludwigia polycarpa	Many-seed seedbox		
Lysimachia hybrida	Lance lea-leaf loosestrife		
Menyanthes trifoliata	Buckbean		

Plants continued			
Scientific Name	Common Name	Status	
		State	Federal
Microsteris gracilis	Slender phlox		
Mimulus alatus	Sharpwing monkey-flower		
Muhlenbergia filiformis	Pullup muhly		
Muhlenbergia flomerata	Bristly muhly		
Muhlenbergia richarsonis	Mat muhly		
Nuphar luteum	American lotus		
Nymphaea odorata	Fragrant white water lily		
Nymphaea tuberosa	White water lily		
Ophioglossum vulgatum	Adder's-tongue		
Pedicularis lanceolata	Swamp lousewort		
Penstemon haydenii	Blowout penstemon	E[2]	E
Petalostemon compactum	Compact prairie-clover		
Physocarpus opulifolius	Ninebark		
Physostegia pariflora	Purple dragonhead		
Piluaria americana	American pillwort		
Platanthera praeclara	Western prairie-fringed orchid	T[1]	T
Poa nevadensis	Nevada bluegrass		
Potamogeton alpinus	Northern pondweed		
Potamogeton friesii	Flat-stalked pondweed		
Potamogeton praelongus	Whitestem pondweed		
Potamogeton strictifolius	Narrow-leaved pondweed		
Psoralea hypogaea	Little breadroot scurf-pea		
Pterospora andromedea	Giant pinedrops		
Pyrola ellptica	Eliptical-leaf wintergreen		
Pyrola virens	Green pyrola		
Ribes ozyacanthoides	Currant spp.		
Robus pubescens	Catherinette's berry		
Sagittaria longiloba	Long-barb arrowhead		
Sagittaria rigida	Sessile-fruited arrowhead		
Scholochloa festucadea	Whitetop		
Scirpus hallii	Hall bulrush		
Silene menziesii	Menzie's silene		
Sparganium chlorocarpum	Greefruit bur-reed		
Spiranthes romanzoffiana	Hooded ladies'-tresses		
Stellaria longifolia	Long-leaved stitchwort		
Talinum calycinum	Large-flower fame-flower		
Talinum rugospermum	Prairie fame-flower		
Triadenum fraseri	Marsh St. John's-wort		
Triglochin palustre	March arrow-grass		
Triodanis perfoliata var biflora	Small venus' looking glass		
Vallisneria americana	Water-celery		
Vicia cracca	Tufted vetch		
Viola nephrophylla	Northern bog violet		
Vitis aestivalis	Summer grape		
Zizania aquatica	Indian wild rice		

Birds

Scientific Name	Common Name	Status	
		State	Federal
Accipiter cooperii	Cooper's hawk		
Accipiter striatus	Sharp-shinned hawk		
Asio flammeus	Short-eared owl		
Aythya valisineria	Canvasback		
Botaurus lentignosus	American bittern		
Buteo swainsoni	Swainson's hawk		
Calcarius ornatus	Chestnut-collared longspur		
Caprimulgus vociferus	Whip-poorwill		
Certhia americana	Brown creeper		
Charadrius melodus	Piping plover	T	T
Chlidonias niger	Black tern		
Circus cyaneus	Northern harrier		
Cygnus buccinator	Trumpeter swan		
Falco peregrinus	Peregrine falcon	E	
Gallinago gallinago	Common snipe		
Grus americana	Whooping crane	E	E
Haliaeetus leucocephalus	Bald eagle	E	E
Ixobrychus exilis	Least bittern		
Melospiza georgiana	Swamp sparrow		
Numenius americanus	Long-billed curlew	E	
Nycticorax nycticorax	Black-crowned night-heron		
Passerculus sandwichensis	Savannah sparrow		
Phalaenoptilus nuttallii	Common poorwill		
Plegadis chihi	White-faced ibis		
Sterna antillarum athalassos	Interior least tern	E	E
Sterna forsteri	Forster's tern		
Vireo flavifrons	Yellow-throated vireo		

Fish

Scientific Name	Common Name	Status	
		State	Federal
Couesius plumbeus	Lake chub		
Culaea inconstans	Brook stickleback		
Etheostoma nigrum	Johnny darter		
Fundulus sciadicus	Plains topminnow		
Luxilus cornutus	Common shiner		
Margariscus margarita	Pearl dace	T	
Notropis heterolepis	Blacknose shiner	T	
Phoxinus eos	Northern redbelly dace	T	
Phoxinus neogaeus	Finescale dace	T	
Rhinichthys atratulus	Longnose dace		

Mammals			
Scientific Name	Common Name	Status	
		State	Federal
Lutra canadensis	River otter	E	
Mustela nigripes	Black-footed ferret	E	E
Myotis septentrionalis	Northern long-eared myotis		
Neotoma floridana baileyi	Bailey's eastern woodrat		
Periognathus fasciatus	Olive-backed pocket mouse		
Spilogale putorius	Eastern spotted skunk		

Reptiles			
Scientific Name	Common Name	Status	
		State	Federal
Kinosternon flavescens	Yellow mud turtle		
Opheodrys vernalis	Smooth green snake		

Invertebrates			
Scientific Name	Common Name	Status	
		State	Federal
Bolaria bellona	Meadow fritillary		
Euphyes dion	Dion skipper		
Hesperia ottoe	Ottoe skipper		
Nicrophorus americanus	American burying beetle	E	
Poanes viator viator	Broad-winged skipper		
Satyrium edwardsii	Edward's hairstreak		
Speyeria idalia	Regal fritillary		

* All species are considered sensitive unless otherwise indicated by the status column.
[1] Threatened status
[2] Endangered status

Appendix D: Land Protection Cost Considerations

Easement and Fee Acquisitions Costs

The land acquisition costs presented here, whether for easements or fee simple title, are derived from fieldwork in June 2002 and are based chiefly on comparable sales. The information was obtained from land brokers and is considered reliable. The existence of hazardous wastes, if any, has not been considered. Land values in the immediate Niobrara River valley range from $750 to $2,000 per acre, depending on tract size, extent of river frontage, vegetative cover type, location in the valley, and the immediate availability of amenities such as live water and electricity.

The purchase of conservation easements generally have a lower initial acquisition costs than for fee title ownership. Land encumbered by an easement remains in private ownership and has a reduced impact on local property taxes.

In Alternative B, the costs associated with the purchase of conservation easements and two river access sites, in all instances from willing sellers, are estimated to be $5.5 million initially, a sum potentially renewable as protection opportunities are met and the available fund is exhausted. In all, some 17,365 acres warrant a minimum of conservation easement protection.

In Alternative C, the National Park Service would consistently pursue conservation easement and fee simple land purchases to the extent authorized by the Wild and Scenic Rivers Act and the 1991 Niobrara Act, relying generally on acquisition from willing sellers. Of the 23,074 acres in the Preferred Boundary (Alternative 3), some 22,186 acres are in private ownership outside the existing public trust. In accordance with the Wild and Scenic Rivers Act, up to 6,711 of those acres could be purchased in fee simple, with the remaining being prospects for easement purchase. The costs associated with the National Park Service's land acquisition program in this alternative could reach $20 million. To compensate for lost property tax revenue, affected counties would receive Payment in Lieu of Taxes to the extent prescribed and appropriated for that federal program.

Appendix E: Recommended Development Standards

The purpose of development standards is to provide guidelines for development that would be compatible with protecting the outstandingly remarkable values of the Niobrara National Scenic River. These standards would not apply retroactively to existing developments, but voluntary adoption would be encouraged.

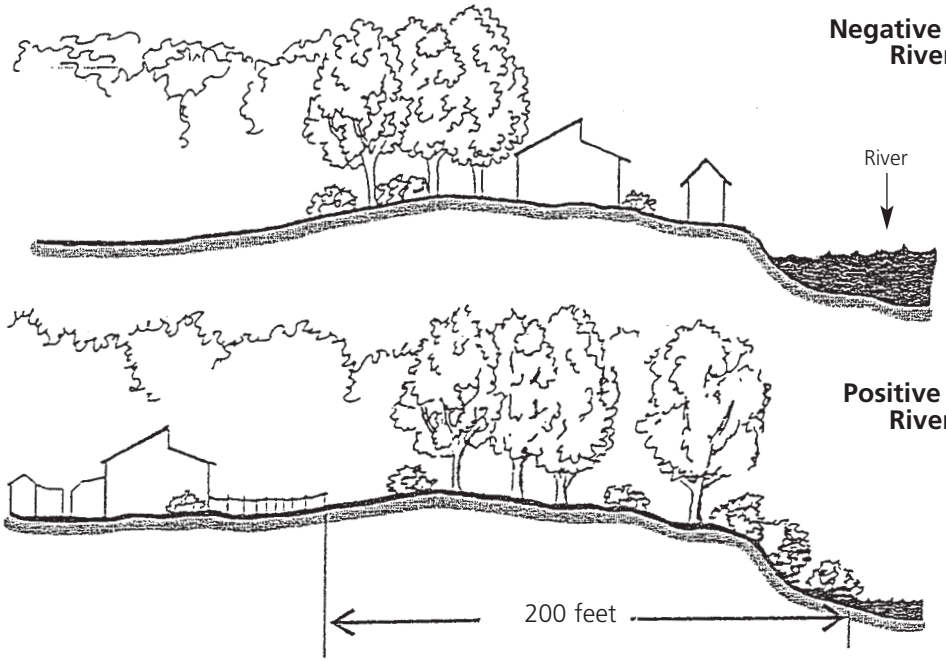
The minimum standards for new agricultural and recreational development within the Scenic River boundary include:

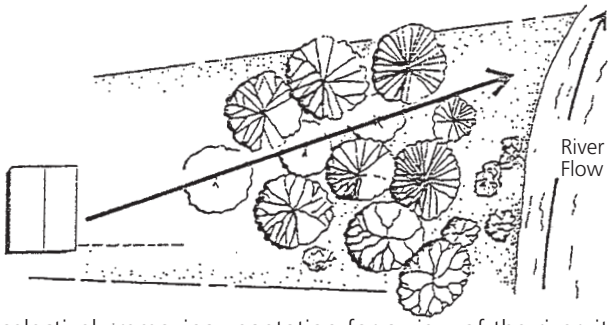
- all uses would meet building densities defined in county zoning ordinances, or where no zoning ordinances apply, an equivalent to a minimum subdivision lot size of one-quarter section (160 acres).
- structures would be set back a minimum of two hundred feet from rivers, streams, or wetlands; no structure would be taller than thirty-five feet (not applicable to agricultural structures such as barns and silos).
- no modern residential or commercial structure would be seen from an upstream, river-level vantage or prominent scenic vista, except where conditions of geography restrict lateral or downstream visibility.
- all uses would meet state and local regulations.
- county zoning ordinances would set standards for number, size, and location of signs. Off-premise business signs would not be permitted.
- existing feedlots could be expanded up to fifty percent of their animal unit capacity but only away from the river, and not closer to it. The expanded portion should be screened from public view.
- recycle material stockpiles (including vehicles, machinery, construction material) would be set back a minimum of two hundred feet from rivers, streams, and wetlands. They should be screened from public view from roads or the river with natural material screening.
- quarries and borrow pits would be acceptable for county road and ranch sand, gravel, and clay sources. They, too, should be screened from public view from roads or the river with natural material screening.
- recreational facilities located near the river would be only those necessary for water use (such as river access). All others should be located one hundred or more feet from the riverbank.
- commercial recreational uses (campgrounds, rental cabins, outfitter businesses, camp stores) would be permitted as determined by county zoning.
- natural tones would be employed for building colors.
- buildings would be screened from the river by vegetation or topography consistent with examples provided in **Appendix F**.

These new uses would not be allowed inside the boundary:

- landfills or dumps.
- industrial sites.
- commercial uses other than agricultural, home-based, or recreational support.
- feedlots.

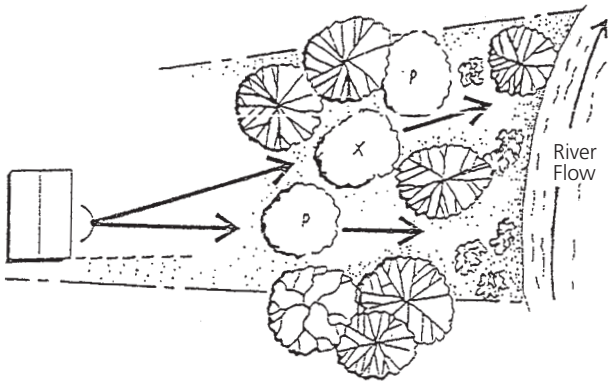
Appendix F: Screening Examples





Corridor View

When selectively removing vegetation for a view of the river, it is best to cut for a downstream view. Maintaining the upstream vegetation will help to screen structures from the river and will protect the tranquility and enjoyment of your property. The corridor within which trees and shrubs are selectively removed (X) and should not be wider than 10 to 20 feet.



Filtered View

By using a natural opening, removing a tree (X) and selectively pruning of shoreland vegetation (P) as shown, several attractive views can be had while preserving privacy and the natural edge of the river.

Appendix G: Niobrara Council Legislation

ARTICLE 20

NIOBRARA RIVER CORRIDOR

Section.
72-2001 to 72-2004. Repealed. Laws 2000, LB 1234, § 24.
72-2004.01. Act, how cited.
72-2005. Legislative findings.
72-2006. Niobrara scenic river corridor, defined.
72-2007. Niobrara Council; created; members; terms; meetings; expenses.
72-2008. Niobrara Council; powers and duties.
72-2009. Niobrara Council Fund; created; use; investment.
72-2010. Niobrara Council; zoning duties.
72-2011. Activities within corridor; limitations.
72-2012. Niobrara Council; zoning jurisdiction.

72-2001 to 72-2004. Repealed. Laws 2000, LB 1234, § 24.

72-2004.01. Act, how cited. Sections 72-2004.01 to 72-2012 shall be known and may be cited as the Niobrara Scenic River Act.

Source: Laws 2002, LB 1003, § 47.
Effective date July 20, 2002.

72-2005. Legislative findings. As a result of the recent federal court ruling in National Parks and Conservation Association v. National Park Service and in order to maintain an aspect of local control over the Niobrara scenic river corridor, the Legislature finds that there is a need to reconstitute the existing Niobrara Council with the express authority and responsibility to manage the Niobrara scenic river corridor in conjunction with the National Park Service. The purpose of the Niobrara Scenic River Act is to effectuate changes in the council necessary to ensure the continuation of the cooperative management relationship between the Niobrara Council and the National Park Service so that local participation and control over this valuable natural resource can be maintained.

Source: Laws 2000, LB 1234, § 1; Laws 2002, LB 1003, § 42.
Effective date July 20, 2002.

72-2006. Niobrara scenic river corridor, defined. For purposes of the Niobrara Scenic River Act, Niobrara scenic river corridor means the area designated as a national scenic river and a part of the national wild and scenic rivers system under 16 U.S.C. 1274(a)(117), as such section existed on May 24, 1991, and described in the 1996 Niobrara National Scenic River General Management Plan/Environmental Impact Statement.

Source: Laws 2000, LB 1234, § 2; Laws 2002, LB 1003, § 43.
Effective date July 20, 2002.

72-2007. Niobrara Council; created; members; terms; meetings; expenses. (1) The Niobrara Council is created. The council membership shall include:

(a) A representative of each of the county boards of Brown, Cherry, Keya Paha, and Rock counties chosen by the county board of the respective county;

(b) A representative of the Middle Niobrara Natural Resources District and the Lower Niobrara Natural Resources District chosen by the board of the respective district;

(c) The secretary of the Game and Parks Commission or his or her designee;

(d) A representative of the United States Fish and Wildlife Service and a representative of the National Park Service chosen by the Governor from lists of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the federal services. The appointments under this subdivision shall be nonvoting members unless and until the agencies represented by these appointees formally authorize such appointees to vote on all matters before the council;

(e) An individual from each of Brown, Cherry, Keya Paha, and Rock counties who resides in the Niobrara River drainage area and owns land in the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, from each county submitted by the county board representatives on the council;

(f) A representative from a recreational business operating within the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council;

(g) A timber industry representative operating within the Niobrara scenic river corridor chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council; and

(h) A representative of a recognized, nonprofit environmental, conservation, or wildlife organization chosen by the Governor from a list of at least three individuals, or fewer if there are not at least three qualified individuals, submitted by the county board representatives on the council.

The council members shall be selected within ninety days after July 13, 2000. The council members shall hold office for three-year terms and until a successor is appointed and qualified. The council members shall serve at the pleasure of the appointing board or the Governor.

(2) The council shall elect a chairperson, a vice-chairperson, a secretary, and a treasurer who shall jointly serve as the executive committee for the council. The council shall meet on a regular basis, preferably once a month, with a minimum of six meetings per year. Special meetings may be called by any member of the executive committee or at the request of a simple majority of the members of the council.

(3) A quorum shall be present at a meeting before any action may be taken by the council. A quorum shall be a majority of the members who are selected and serving and who vote on issues before the council. All actions of the council require a majority vote of the quorum present at any meeting, except that any vote to reject or adopt any zoning regulation or variance under section 72-2010 requires a vote of two-thirds of all the council members who are selected and serving and who vote on issues before the council. A council

member may not participate or vote on any matter on which he or she participated or voted as a member of a county board, county planning commission, or natural resources district board, and in such a case such council member shall not be counted for purposes of determining whether quorum or vote requirements have been satisfied.

(4) Members shall be reimbursed for actual and necessary expenses incurred in carrying out their duties on the council as provided in sections 81-1174 to 81-1177.

Source: Laws 2000, LB 1234, § 3; Laws 2001, LB 182, § 1.

72-2008. Niobrara Council; powers and duties. The mission of the Niobrara Council is to assist in all aspects of the management of the Niobrara scenic river corridor since portions of the Niobrara River have been designated as a national scenic river under 16 U.S.C. 1274(a)(117), as such section existed on May 24, 1991, giving consideration and respect to local and governmental input and private landowner rights, and to maintain and protect the integrity of the resources associated with the Niobrara scenic river corridor. The council shall perform management functions related to the Niobrara scenic river corridor, including, but not limited to, those authorized and delegated to it by the National Park Service. The council may promulgate its own rules and internal policies to carry out the purposes of the Niobrara Scenic River Act. The Game and Parks Commission may provide administrative support when requested by the council to carry out its duties. This support shall not exceed fifty thousand dollars in any calendar year. In the Niobrara scenic river corridor, the council may hold title to real estate in the name of the council. The council may purchase, accept gifts of, or trade real estate and may obtain conservation easements as provided in the Conservation and Preservation Easements Act. Acquisition of conservation easements outside the boundaries of the Niobrara scenic river corridor shall require the approval of the appropriate governing body as provided in section 76-2,112.

Source: Laws 2000, LB 1234, § 4; Laws 2002, LB 1003, § 44.
Effective date July 20, 2002.

Cross Reference
Conservation and Preservation Easements Act, see section 76-2,118.

72-2009. Niobrara Council Fund; created; use; investment. The Niobrara Council Fund is created. The fund shall be administered by the Niobrara Council. The council may accept any private or public funds to carry out its work and such funds shall be remitted to the State Treasurer for credit to the fund. The fund shall consist of such funds and legislative appropriations made to the council. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Source: Laws 2000, LB 1234, § 5.

Cross References
Nebraska Capital Expansion Act, see section 72-1269.
Nebraska State Funds Investment Act, see section 72-1260.

72-2010. Niobrara Council; zoning duties. The Niobrara Council shall review and approve or reject all zoning regulations, including existing regu-

lations, new regulations, proposed regulations, and variances of any type including variances for use and location, which affect land in the Niobrara scenic river corridor that is not incorporated within the boundaries of a municipality. If the council rejects a zoning regulation or variance, the governing body enacting the regulation or variance has six months to present an alternative to the council. If no alternative is proposed or if the alternative is also rejected, the council may adopt zoning regulations for such area. In counties without zoning the council may develop and enforce zoning regulations within the Niobrara scenic river corridor under the guidance of the federal Wild and Scenic Rivers Act or under the guidance of the general management plan as written by the National Park Service. The council shall follow the requirements for zoning regulations in sections 23-114 to 23-114.05 and 23-164 to 23-174.10, except that no separate planning commission is required and the council shall fulfill the duties of both the county board and the planning commission in such sections.

Source: Laws 2000, LB 1234, § 6; Laws 2002, LB 1003, § 45.
Effective date July 20, 2002.

72-2011. Activities within corridor; limitations. (1) Any state or state-assisted activity or undertaking proposed within the Niobrara scenic river corridor shall be consistent with the purpose of the scenic river designation, including the scenic river's free-flowing condition and scenic, geological, biological, agricultural, historic, and prehistoric resources.

(2) The head of any state or local agency having direct or indirect jurisdiction over a proposed state or state-assisted undertaking within the Niobrara scenic river corridor and the head of any agency having authority to license or permit any undertaking in such area shall prepare a detailed proposal and submit it to the Niobrara Council for its review.

(3) The council shall review the proposal and consult with the agency. The council has ninety days after the date that the proposal is received to make a determination of whether or not the proposed action is consistent with the purposes of this section. If the council determines that the proposal is not consistent with the purposes of this section, the council shall so notify the agency and the agency shall not proceed with the action until after a justification for the action has been submitted to the Governor and approved by the Governor in writing. The justification shall include the following elements: The anticipated current, future, and cumulative effects on the scenic and natural resources of the designated scenic river corridor; the social and economic necessity for the proposed action; all possible alternatives to the proposed action including a no-action alternative; the comparative benefits of proposed alternative actions; and the mitigation measures outlined in the proposed action.

Source: Laws 2000, LB 1234, § 7; Laws 2002, LB 1003, § 46.
Effective date July 20, 2002.

72-2012. Niobrara Council; zoning jurisdiction. The Niobrara Council shall not have zoning jurisdiction outside the boundaries of the Niobrara scenic river corridor.

Source: Laws 2000, LB 1234, § 8.

Appendix H: Cost Comparison of Alternatives

Alternative A

Recurring		
Staffing/Funding		
Liaison		$100,000
	Total	**$100,000**

Alternative B

Recurring		
Staffing/Funding		
Field Operations, Valentine		$250,000
Headquarters, O'Neill		$245,000
Interpretive Operations, Valentine		$250,000
Partnerships		$400,000
	Total	**$1,145,000**
Nonrecurring		
Land Protection		$5.5 million +
Development		
Access Sites ($175,000 per)		$350,000
Toilets ($27,500 per)		$137,500
Education Center		$4.75 m - 6.75 m*
	Total	**$10.8 m - $12.8 m**

Alternative C

Recurring		
Staffing/Funding		
Field Operations, Valentine		$1,186,000
Headquarters, O'Neill		$245,000
	Total	**$1.5 million**
Nonrecurring		
Land Protection		$20 million
Development		
Access Sites ($175,000 per)		$350,000
Toilets ($27,500 per)		$137,500
Education Center		$4.75 m - 6.75 m*
	Total	**$25.3 m - $27.3 m**

*These variable figures reflect National Park Service costs only.

Glossary

Accessibility. The provision of National Park Service programs, facilities, and services in ways that include individuals with disabilities, or makes available to those individuals the same benefits available to persons without disabilities.

Canoeable reach. The canoeable reach of the Niobrara River is generally defined as that thirty-mile segment starting at the Fort Niobrara launch at Cornell Bridge and ending a mile or two above the Norden Chute at the Norden Bridge. This distance coincides with the phenomenon of the river flowing over its bedrock substrate, where canoeing access is relatively common, and where river outfitting is well established.

Conservation easement. A conservation easement involves the purchase or donation of a property's development rights. Easement restrictions are typically permanent and run with the land, binding the original landowner and all future landowners. Easements are tailored to each particular property and the needs of each individual landowner.

Easement. An easement is a legal agreement between a landowner and an easement holder that grants a right of passage over land or a waterway, or permanently limits uses of the land in order to protect, for instance, scenic or wildlife resources or historic sites. Easements are often called by different names according to the resource they are designed to protect, such as historic preservation easements, agricultural preservation easements, scenic easements, and conservation easements.

Fee simple title. In fee simple, the landowner has title to both the land and any improvements on that land. The fee simple owner has full rights of ownership, including selling to others, leasing, giving it away, and passing it on to others after death.

Finding of No Significant Impact. This is a document that briefly presents the reasons that a federal action will not have a significant effect on the human environment. It includes the environmental assessment or a summary of the environmental assessment.

Gateway community. A town or city that borders on public lands or a public resource.

Groundwater. Water within the earth that supplies wells and springs. Specifically, water in the zone of saturation where all openings in soils and rocks are filled, the upper surface of which forms the water table.

Impact. The likely effects of an action or proposed action upon specific natural, cultural, or socioeconomic resources. Impacts may be direct, indirect, cumulative, beneficial, or adverse.

Impairment. Impairment is an impact that, in the professional judgment of the responsible manager, would harm the integrity of a park's resources and values, including the opportunities that would otherwise be present for the enjoyment of those resources or values.

Major federal action. Action with effects that may be major and which are potentially subject to federal control and responsibility. Actions include the circumstance where the responsible officials fail to act and that failure to act is reviewable by courts or administrative tribunals under applicable laws.

National Environmental Policy Act. This law, which went into effect on January 1, 1970, requires all federal agencies to disclose the environmental effects of their actions. Its essential purpose is to insure that environmental factors are given the same consideration as other factors in decision making by federal agencies. The law also established the Council on Environmental Quality to implement the law and monitor compliance with the law.

Notice of Intent. A required notice, published in the Federal Register, that a proposed action or project is being considered by a federal agency (e.g., preparation of an Environmental Impact Statement, proposed or final listing of threatened or endangered species, proposed critical habitat designations, preparation of an Environmental Assessment). The notice typically describes the proposed action and possible alternatives, describes the proposed scoping process, identifies where and when scoping meetings will be held, and contains the name and contact information for a person within the agency responsible for the proposed action.

Ordinary high water mark (on non-tidal rivers). The line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other applicable means.

Outstandingly remarkable values. A Wild and Scenic Rivers Act term for outstandingly remarkable occurrences of scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar values located in the immediate environments of selected American rivers. Features may be evaluated both individually and cumulatively. The determination of whether a feature is outstandingly remarkable is a professional judgment based on available documentation and expert evaluation.

Record of Decision. This is a formal statement of the action an agency intends to take after having completed the National Environmental Policy Act process (e.g., environmental impact statement, listing of threatened or endangered species, critical habitat designations, environmental assessments). The record of decision sets forth the rationale behind the decision and discusses the environmental consequences of the action.

Scoping. Scoping is a public process to identify significant environmental issues requiring in-depth analysis in an environmental impact statement, along with alternative actions to be considered. Scoping is the first opportunity for public involvement in the preparation of a draft environmental impact statement, a proposed listing for threatened or endangered species, critical habitat designation, draft environmental assessment, and the like.

Visitor. Any person who uses a park's resources or services, regardless of where such use occurs (e.g., hiking a park trail, canoeing its waters, enjoying an overlook, via internet access).

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Brad Arrowsmith, former Chairman, Niobrara Council,
Bassett, Nebraska.

Mike Behrens, former Woodland Manager, The Nature Conservancy,
Niobrara Valley Preserve, Johnstown, Nebraska.

Rachel Benton, Paleontologist, Badlands National Park,
Interior, South Dakota.

Charles Bicak, Professor of Biology, University of Nebraska at Kearney,
Kearney, Nebraska.

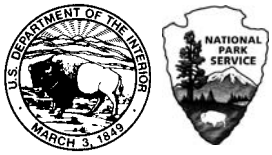
Phil Campbell, former Chief of Operations, Niobrara National Scenic River and
Missouri National Recreational River, O'Neill, Nebraska.

Michael Doherty, Park Ranger, Niobrara National Scenic River,
Valentine, Nebraska.

Jo Harkins, Administrative Assistant, Niobrara National Scenic River and Missouri
National Recreational River, O'Neill, Nebraska.

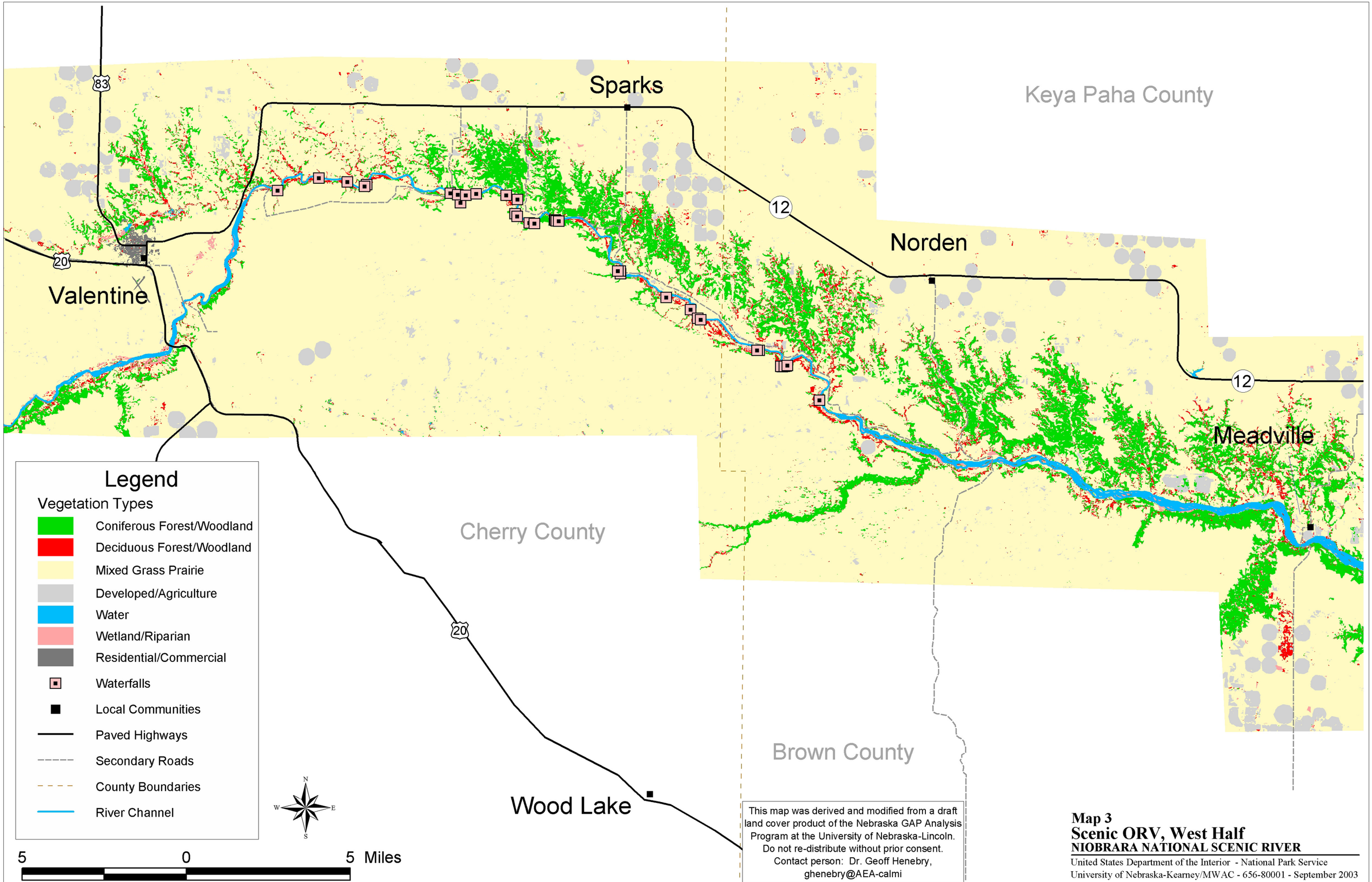
John Haubert, former Outdoor Recreation Planner, National Park Service Washington Office,
Washington, District of Columbia.

Geoffrey Henebry, Geoscientist, Center for Advanced Land Management Information Technologies, University of Nebraska at Lincoln, Lincoln, Nebraska.
Royce Huber, Project Leader, Fort Niobrara - Valentine National Wildlife Refuge Complex, Valentine, Nebraska.
Al Hutchings, Associate Regional Director, Professional Services and Legislation, National Park Service Midwest Regional Office, Omaha, Nebraska.
Lauren Johnson, former Resource Management Specialist, Niobrara National Scenic River, O'Neill, Nebraska.
John Lemmon, Superintendent, Smith Falls State Park, Sparks, Nebraska.
Mike Madell, former Regional Environmental Coordinator, National Park Service Midwest Region, Madison, Wisconsin.
Harold Nagel, Professor of Biology, University of Nebraska at Kearney, Kearney, Nebraska.
Steve Rothenberger, Professor of Biology, University of Nebraska at Kearney, Kearney, Nebraska.
Vince Santucci, Chief Ranger/Paleontologist, Fossil Butte National Monument, Kemmerer, Wyoming.
Orval Stahr, President, Stahr & Associates, Inc., Consulting Planners, York, Nebraska.
Al Steuter, Director of Science and Stewardship for Nebraska, The Nature Conservancy, Ainsworth, Nebraska.
Rodney Verhoeff, former Executive Director, Niobrara Council, Valentine, Nebraska.
Larry Voecks, Northwest Regional Manager, Nebraska Game and Parks Commission, Crawford, Nebraska.
Mike Voorhies, Paleontologist, Nebraska State Museum, University of Nebraska at Lincoln, Lincoln, Nebraska.
Sändra Washington, Chief of Planning and Compliance, National Park Service Midwest Regional Office, Omaha, Nebraska.
Jon Wilson, District Forester, Nebraska Forest Service, North Platte, Nebraska.
Laurie Wise, Administrative Officer, Niobrara National Scenic River and Missouri National Recreational River, O'Neill, Nebraska.
Darryn Witt, former Park Ranger, Niobrara National Scenic River, Valentine, Nebraska



As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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Map 3
Scenic ORV, West Half
NIOBRARA NATIONAL SCENIC RIVER
United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003

Springview

Keya Paha County

Meadville

Brown County

Rock County

Newport

Bassett

Ainsworth

Long Pine

Legend

Vegetation Types

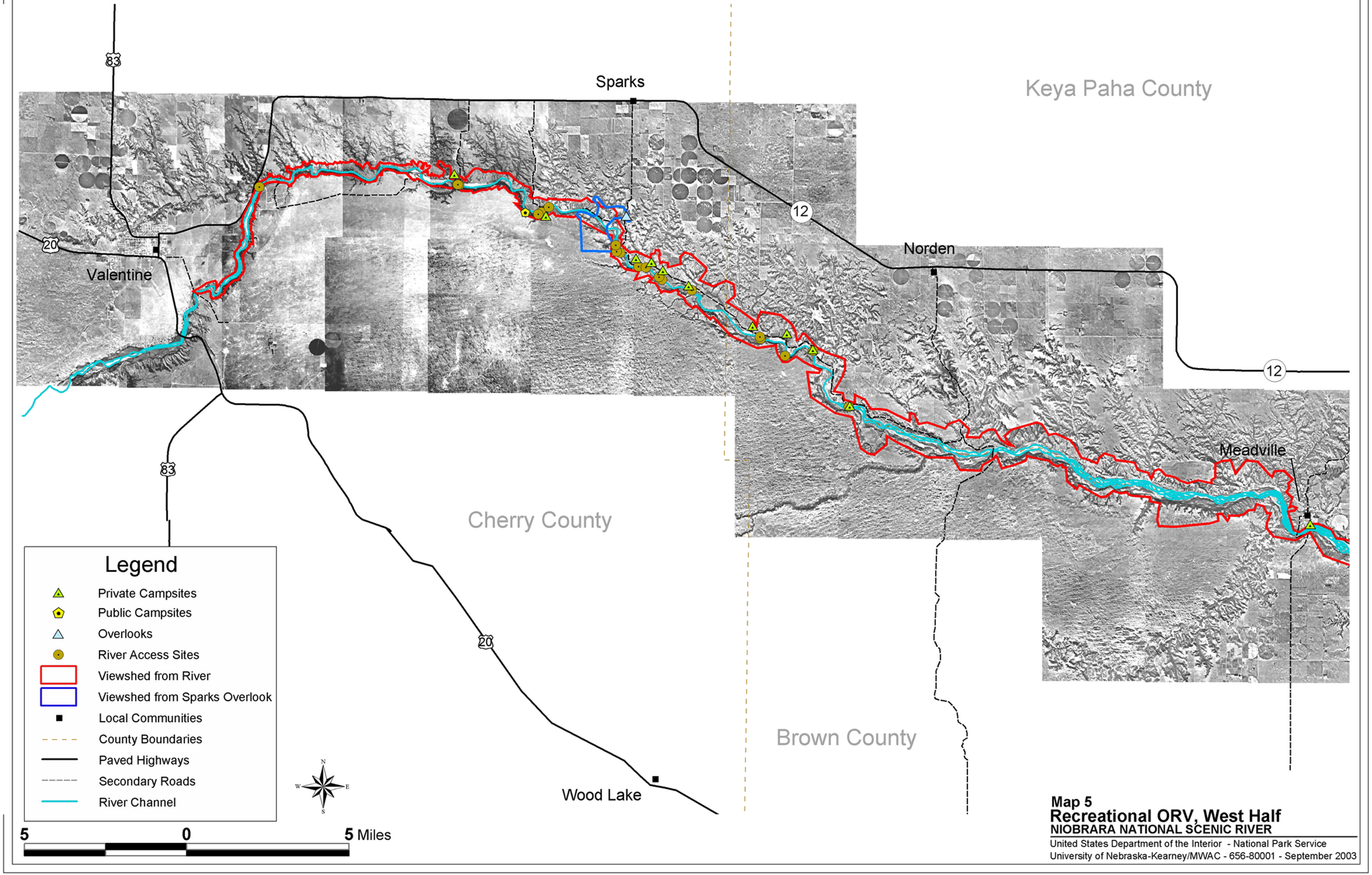
- Coniferous Forest/Woodland
- Deciduous Forest/Woodland
- Mixed Grass Prairie
- Developed/Agriculture
- Water
- Wetland/Riparian
- Residential/Commercial
- Local Communities
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

5 0 5 Miles

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Map 4
Scenic ORV, East Half
NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003



Map 5
Recreational ORV, West Half
NIOBRARA NATIONAL SCENIC RIVER
United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003

Sparks

Keya Paha County

Norden

Valentine

Meadville

Cherry County

Brown County

Wood Lake

Legend

- Paleontological Sites
- Local Communities
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

5 0 5 Miles

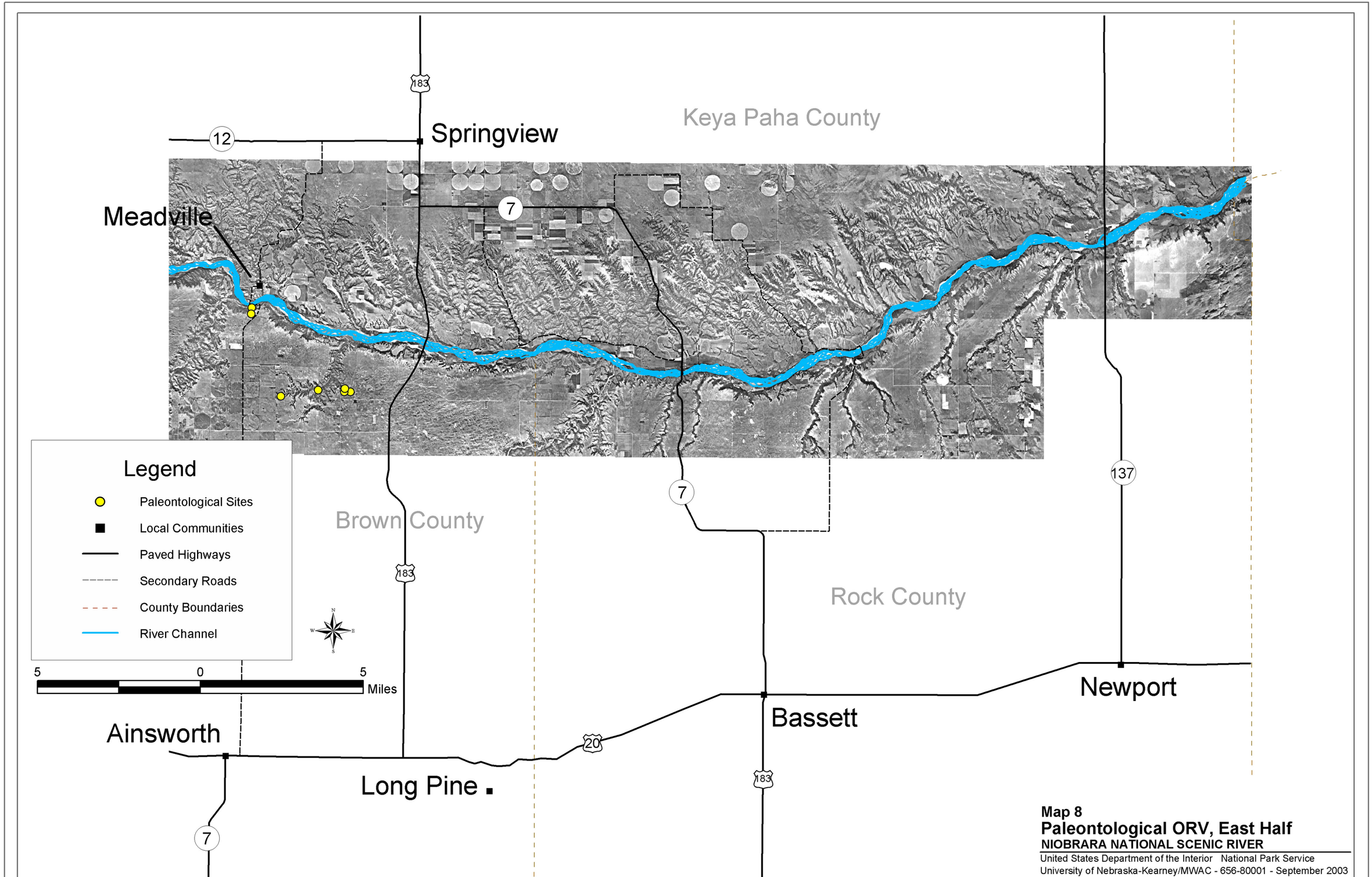
Map 7

Paleontological ORV, West Half

NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior National Park Service

University of Nebraska-Kearney/MWAC - 656-80001 - September 2003



Map 8

Paleontological ORV, East Half

NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003

Sparks

Keya Paha County

Norden

Valentine

Meadville

Cherry County

Brown County

Wood Lake

Legend

- Local Communities
- Quarter Mile Boundary
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

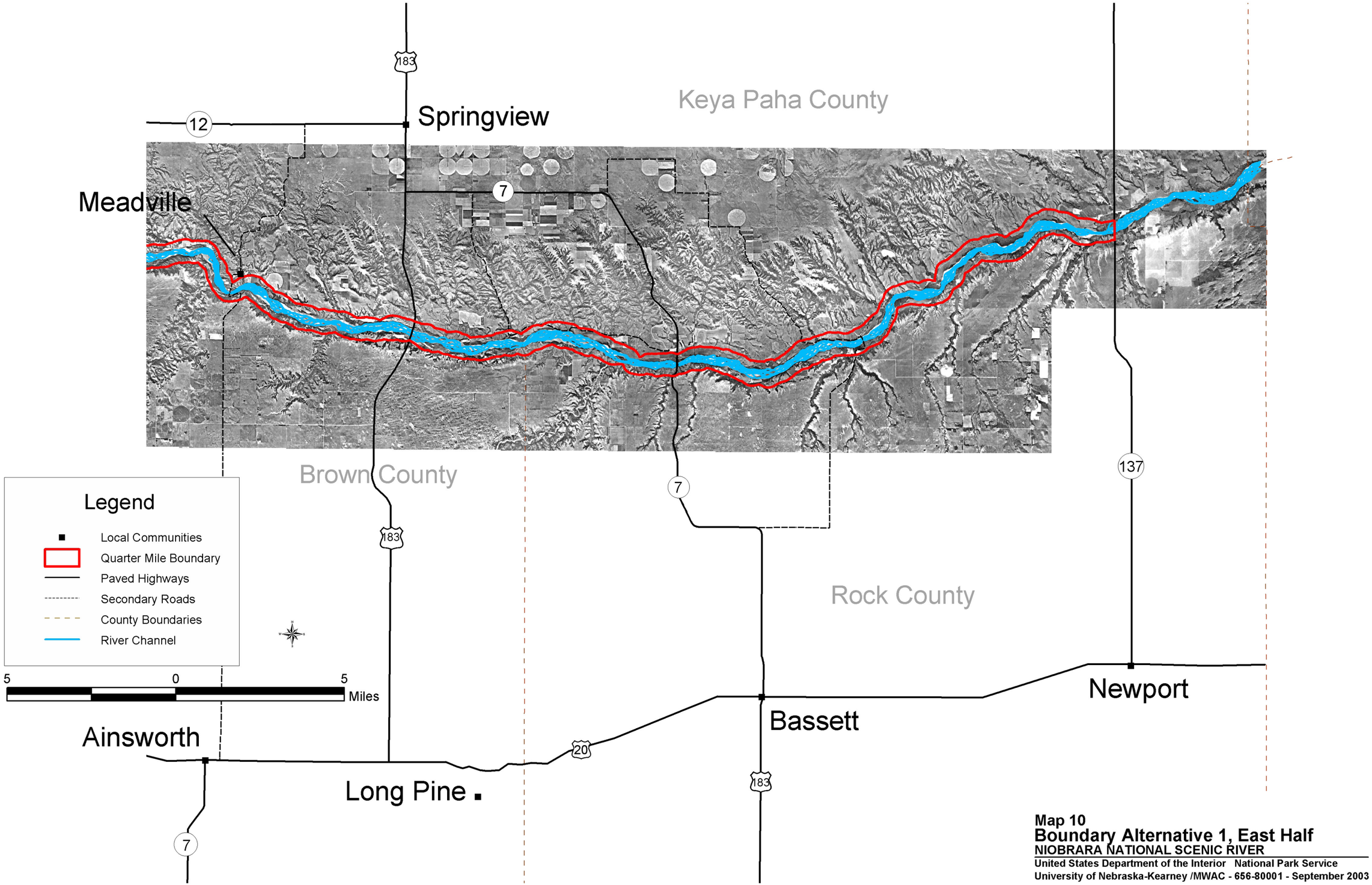
5 0 5 Miles

Map 9

Boundary Alternative 1, West Half

NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003



Map 10
Boundary Alternative 1, East Half
NIOBRARA NATIONAL SCENIC RIVER
United States Department of the Interior National Park Service
University of Nebraska-Kearney /MWAC - 656-80001 - September 2003

Sparks

Keya Paha County

Norden

Valentine

Meadville

Cherry County

Brown County

Wood Lake

Legend

- Local Communities
- Boundary Alternative 2
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

5 0 5 Miles

Map 11
Boundary Alternative 2, West Half
NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior - National Park Service
University of Nebraska-Kearney/MWAC - 656-80001 - September 2003

Keya Paha County

Springview

Meadville

Brown County

Rock County

Ainsworth

Long Pine

Bassett

Newport

12
183
7
137
20

Legend

- Local Communities
- Boundary Alternative 2
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

N
W
E
S

5 0 5 Miles

Map 12
Boundary Alternative 2, East Half
NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior National Park Service
University of Nebraska-Kearney /MWAC - 656-80001 - September 2003

Sparks

Keya Paha County

Norden

Valentine

Meadville

Cherry County

Brown County

Wood Lake

Legend

- Local Communities
- Boundary Alternative 3
- Paved Highways
- Secondary Roads
- County Boundaries
- River Channel

5 0 5 Miles

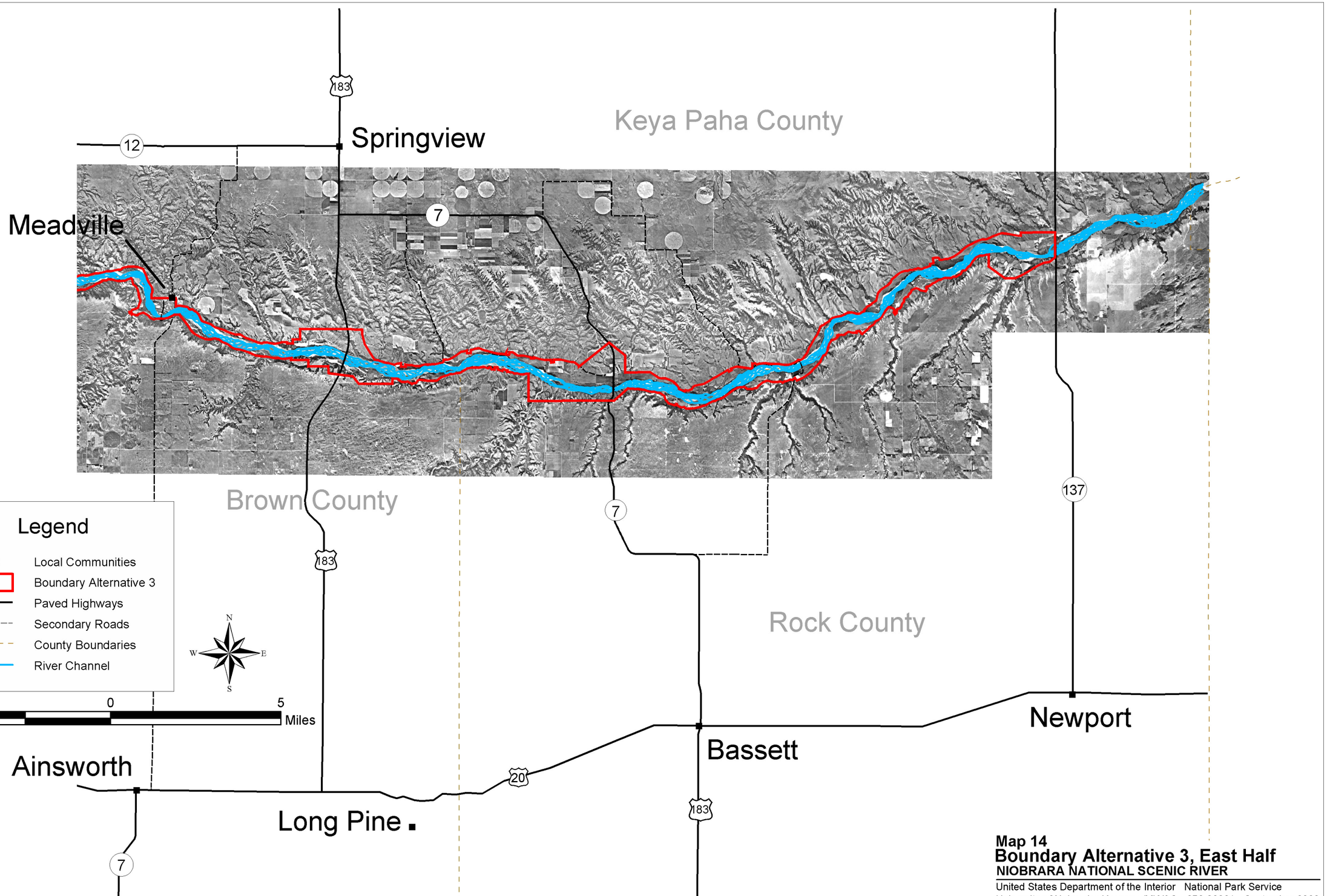
Map 13

Boundary Alternative 3, West Half

NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior - National Park Service

University of Nebraska-Kearney/MWAC - 656-80001 - September 2003



Map 14
Boundary Alternative 3, East Half
NIOBRARA NATIONAL SCENIC RIVER

United States Department of the Interior National Park Service
University of Nebraska-Kearney /MWAC - 656-80001 - September 2003