CHAPTER 1—Introduction

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The Bowdoin National Wildlife Refuge Complex is in north-central Montana within the Prairie Pothole Region.

The U.S. Fish and Wildlife Service (Service) has developed this final comprehensive conservation plan (CCP) to provide a foundation for the management and use of the Bowdoin National Wildlife Refuge Complex (refuge complex) in Montana for at least the next 15 years.

This chapter provides an introduction to the CCP with descriptions of the steps in the CCP planning process; the involvement of the Service, the State of Montana, the tribes, the public, and others; and other plans that may be affected or supported by the future management of the refuge complex.

The remainder of the document contains the information the Service used and the results of the Service's analysis that are the foundation of this final plan:

- Chapter 2 describes the refuge complex and planning issues.
- Chapter 3 describes the physical, biological, and social environments of the refuge complex.
- Chapter 4 describes objectives and strategies for all aspects of management of the refuge complex.
- The remaining document contains a glossary of terms, several appendixes, and a bibliography that support the information provided in the plan.

The Service manages the 84,724-acre refuge complex that is located in the mixed-grass prairie region of north-central Montana (Kuchler 1964) within an area known as the Prairie Pothole Region (figure 1).

The refuge complex oversees management of 14 units and numerous easements (refuge, flowage, wetland, and grassland) located in Blaine, Phillips, and Valley Counties and in the eastern half of Hill County. These counties are bordered by Canada to the north and the Missouri River to the south. The refuge complex's units and easements are part of the National Wildlife Refuge System (Refuge System):

- Five national wildlife refuges: Bowdoin National Wildlife Refuge and four unstaffed satellite refuges—Black Coulee, Creedman Coulee, Hewitt Lake, and Lake Thibadeau.
- Nine waterfowl production areas within the four-county Bowdoin Wetland Management District (district). These areas, along with conservation easements, protect approximately 67,712 acres of wetland and grassland (figure 2). The protection of habitat in the district continues to grow with the acquisition of additional easements annually.

Figure 1. Map of refuges in Bowdoin National Wildlife Refuge Complex within the Prairie Pothole Region of North America.

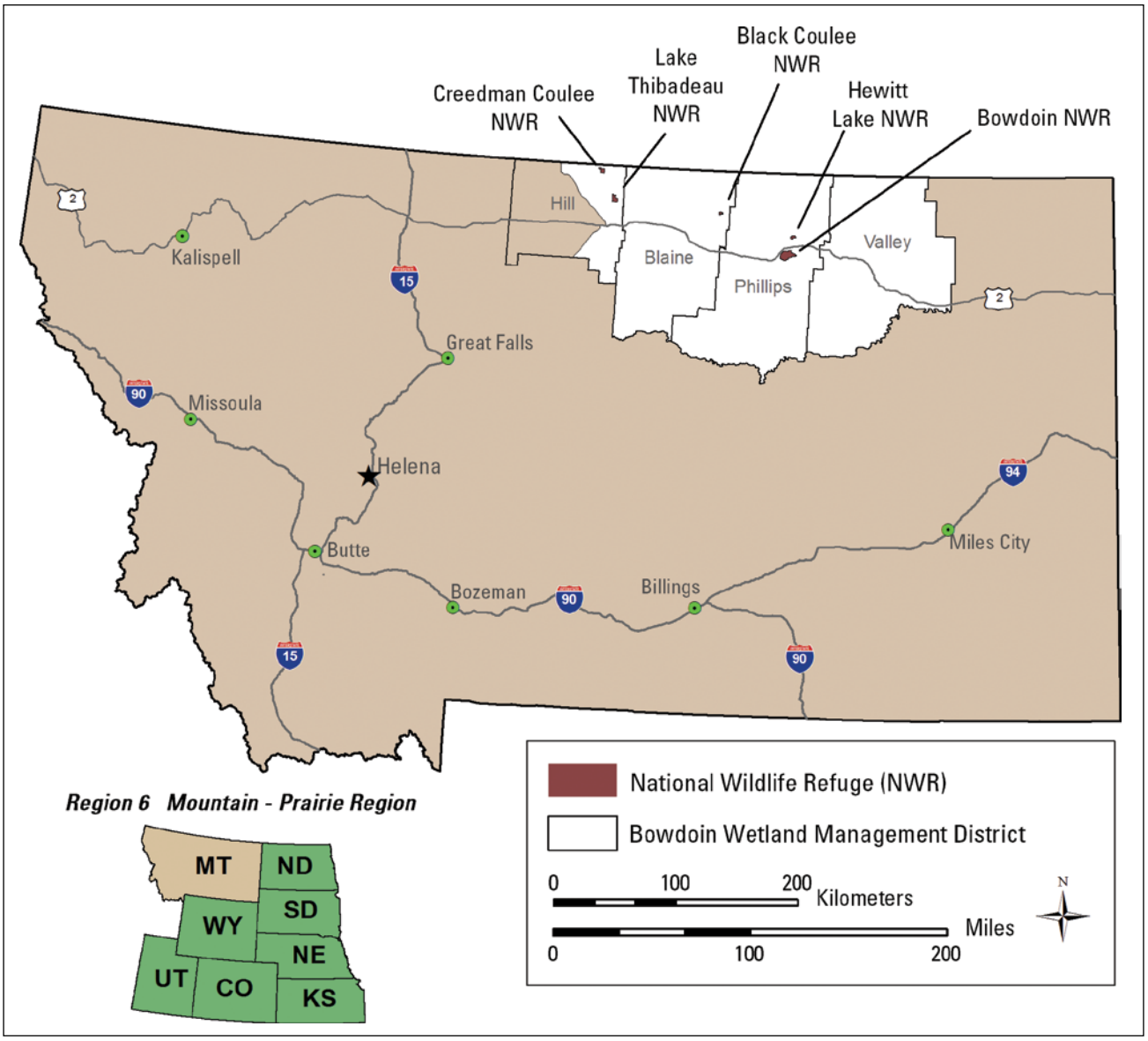

Figure 2. Vicinity map of the five refuges and one wetland management district in the Bowdoin National Wildlife Refuge Complex, Montana.

1.1 The Comprehensive Conservation Plan

The CCP specifies the goals and objectives necessary to achieve the vision and purposes of the Bowdoin National Wildlife Refuge Complex.

Final Decision

The Regional Director of the Mountain–Prairie Region of the Service selected the following alternatives from the draft CCP and environmental assessment (EA) as the preferred alternatives for the final CCP for the Bowdoin Refuge Complex:

- *Alternative B*—overall refuge complex management, including visitor services programs
- *Salinity Alternative 4*—underground injection and flushing by Beaver Creek (addresses the saline water and blowing salts issue)
- *Lake Thibadeau Refuge Alternative 2*—divest Lake Thibadeau National Wildlife Refuge

Appendix A documents the Regional Director's decision in the environmental action statement and the finding of no significant action. The preferred alternatives have been combined to compose this final CCP, with specific objectives for all aspects of the Bowdoin Refuge Complex contained in "Chapter 4–Management Direction."

Appendix B contains the final compatibility determinations for public uses in the refuge complex. The section 7 biological evaluation (appendix C) documents the effects of CCP actions on threatened and endangered species: a determination of no effect or may affect but not adversely, depending on the species. Appendix D contains the Region 6 divestiture model, which the Service used to evaluate Lake Thibadeau Refuge.

The CCP is a broad umbrella plan that provides general concepts and specific wildlife, habitat, visitor services, and partnership objectives over the next 15 years. Implementation begins with publication of the final CCP. The Service will carry out the plan with help from partner agencies, organizations, and the public. As the plan is implemented, stepdown management plans will be developed to provide greater detail to managers and employees for carrying out specific actions and strategies authorized by the CCP. Table 15 in chapter 4 lists the stepdown plans needed for the refuge complex.

The CCP details program planning levels that are sometimes substantially above current budget allocations and, thus, are primarily for Service strategic planning purposes. The CCP does not constitute a commitment for staff increases, operation and maintenance increases, or funding for future land acquisition.

Plan Development

The CCP was developed in compliance with the National Wildlife Refuge System Improvement Act (Improvement Act) and Service policy. The actions described in the CCP meet the requirements of the Council on Environmental Quality regulations that implement the National Environmental Policy Act of 1969 (NEPA).

Staff from several Montana State agencies provided critical support in developing the CCP. The Service's involvement of the public was another important aspect of planning and part of compliance with NEPA. In addition to the initial scoping with the public, there was a public review of the draft CCP and EA before the final CCP was completed.

The planning process is described in detail in section 1.8, and the public involvement portion is in appendix E.

Plan Amendment and Revision

The Service will annually review the final CCP to determine the need for amendment. An amendment would occur if significant information became available, such as a change in ecological conditions. The Service will evaluate the plan every 5 years and revise it after 15 years, as necessary.

1.2 Purpose and Need for the Plan

The purpose of this final CCP is to identify the role that the Bowdoin National Wildlife Refuge Complex plays in support of the mission of the National Wildlife Refuge System and to provide long-term guidance for managing programs and activities. The CCP is needed to help the Service achieve the following:

- Communication with the public and other partners in efforts to carry out the mission of the Refuge System
- A clear statement of direction for managing the refuge complex
- Providing neighbors, visitors, and government officials with an understanding of the Service's management actions on and around the refuge complex
- Management actions by the Service that are consistent with the mandates of the Improvement Act (National Wildlife Refuge System Improvement Act of 1997)
- Management of the refuge complex that is consistent with Federal, State, and county plans, as appropriate.
- A basis for development of budget requests for the refuge complex's operation, maintenance, and capital improvement needs

Sustaining the Nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of governments, businesses, and private citizens.

1.3 North American Model of Wildlife Conservation

Wildlife conservation in North America evolved to take on a form unique to the world. In recent years, it has come to be known as the North American Model of Wildlife Conservation (Geist et al. 2001). The wildlife conservation movement arose out of the conflict between market hunters and sport hunters in the

mid- to late 19th century. Market hunting increased in response to the growth in urban population fueled by the Industrial Revolution. Between 1820 and 1860, the percentage of Americans who lived in cities increased from 5 percent to 20 percent; this four-fold increase is the greatest proportional increase in urban population that ever occurred in America (Reiss 1995). The demand for meat and hides—along with feathers for the millinery trade—led to exploitation of game animals by market hunters. Along with the increase in the urban population came a new breed of hunter—one who hunted for the chase and the challenge it provided. These sport hunters valued game animals more when they were alive, as opposed to market hunters who placed value on dead animals they could bring to market. The growing legion of sport hunters started a national movement that resulted in Federal and State governments taking responsibility for regulating the take of wildlife.

The keystone concept of the North American Model of Wildlife Conservation and the bedrock that allowed the Government to exercise control is the Public Trust Doctrine (Geist and Organ 2004). Originating in an 1842 U.S. Supreme Court decision in the *Martin* v. *Waddell* case, its origins derive from Greek and Roman law and the Magna Carta. Simply stated, wildlife belongs to no one; it is held in trust for all by the Government.

The seven pillars of the North American Model of Wildlife Conservation follow:

- Wildlife as a public trust resource
- Elimination of markets for game
- Allocation of wildlife by law
- Wildlife only killed for a legitimate purpose
- Wildlife considered an international resource
- Science as the proper tool to discharge wildlife policy
- Democracy of hunting

These pillars have stood the test of time and have seen significant changes in approaches to wildlife conservation for more than 100 years. The original conservation movement championed by Theodore Roosevelt, George Bird Grinnell, and others placed emphasis on stemming the decline, and programs restricting take and protecting lands were put in place. During the 1920s, conservationists realized that more was needed, and a committee comprised of Aldo Leopold, A. Willis Robertson, and other leading conservationists of the time authored the 1930 American Game Policy. This policy called for a restoration program for habitats and populations based on scientific research with stable, equitable funding to achieve this. Within a decade, landmark legislation fulfilled many of the needs identified including the Duck Stamp Act to fund land acquisition for national wildlife refuges. In addition, the Pittman–Robertson Wildlife Restoration Act shifted excise taxes imposed on firearms and ammunition to fund wildlife restoration through cooperation between the Service and State fish and wildlife agencies. For States to use this money, they were required to pass laws that prevented diversion of hunting license revenues to any purpose other than administration of the State fish and wildlife agency.

In recent decades, the importance of overall wildlife diversity has gained more emphasis in wildlife management. All wildlife have benefited from the North American Model of Wildlife Conservation pillars, not just game animals. The National Wildlife Refuge System has evolved along with the North American Model of Wildlife Conservation—it today provides refuge for virtually all species found in America, recreation for all Americans, and science-based management of international wildlife resources held in trust for all. The importance of this system to American society can best be appreciated if we were to contemplate its loss. Wildlife connects us to the heritage of this country and our ancestors who built our society. It connects us as well to the natural world of which we are a part, but from which we have become so disconnected. To lose this connection is to lose the basis of our humanity.

1.4 The U.S. Fish and Wildlife Service and the Refuge System

The U.S. Fish and Wildlife Service is the principal Federal agency responsible for fish, wildlife, and plant conservation. The Refuge System is one of the Service's major programs.

U.S. Fish and Wildlife Service

In the late 19th and early 20th centuries, America's fish and wildlife resources were declining at an alarming rate, largely due to unrestricted market hunting. Concerned citizens, scientists, and hunting and angling groups joined together and generated the political will for the first significant conservation measures taken by the Federal Government. These actions included the establishment of the Bureau of Fisheries in the 1870s and, in 1900, passage of the first Federal wildlife law—the Lacey Act—which prohibited interstate transportation of wildlife taken in violation of State laws. Beginning in 1903, President Theodore Roosevelt created more than 50 wildlife refuges across the Nation.

Over the next three decades, the United States ratified the Migratory Bird Treaty with Great Britain, and Congress passed laws to protect migratory birds, establish new refuges, and create a funding source for refuge land acquisition. In 1940, the U. S. Fish and Wildlife Service was created within the Department of the Interior, and existing Federal wildlife functions including law enforcement, fish management, animal damage control, and wildlife refuge management were combined into a single organization for the first time.

Today, the Service enforces Federal wildlife laws, manages migratory bird populations, restores nationally significant fisheries, conserves and restores vital wildlife habitat, protects and recovers endangered species, and helps other governments with conservation efforts. In addition, the Service administers a Federal aid program that distributes hundreds of millions of dollars to States for fish and wildlife restoration, boating access, hunter education, and related programs across the United States.

The mission of the U.S. Fish and Wildlife Service, working with others, is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.

Service Activities in Montana

Service activities in Montana (2009) contribute to the State's economy, ecosystems, and education programs. The following list highlights the Service's presence and activities:

- Employed 220 people in Montana
- 446 volunteers donated more than 21,780 hours to Service projects on refuge and district lands
- Managed two national fish hatcheries, one fish and wildlife management assistance office, six coordination areas, one fish health center, four ecological services offices, and one fish technology center
- Managed 23 national wildlife refuges encompassing 1,217,617 acres (1.29 percent of the State)
- Managed five wetland management districts
  - Managed 48,026 acres of fee-title waterfowl production areas
  - Managed 146,816 acres under leases or easements
- Hosted more than 690,173 annual visitors to Service-managed lands
  - 96,866 hunting visits
  - 80,370 fishing visits
  - 506,632 wildlife observation, photography, and interpretation visits
  - 6,305 students participated in environmental education programs
- Provided $9.6 million to Montana Fish, Wildlife & Parks for sport fish restoration and $17.4 million for wildlife restoration and hunter education
- Since 1988, the Service's Partners for Fish and Wildlife Program has helped private landowners (1) restore more than 31,759 wetland acres; 360,826 upland acres; and 1,263 miles of river habitat; and (2) install 45 structures to open 502 river miles for fish passage.
- Paid Montana counties $394,799 under the Refuge Revenue Sharing Act (money used for schools and roads)

Arrowhead
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National Wildlife Refuge System

In 1903, President Theodore Roosevelt designated the 5.5-acre Pelican Island in Florida as the Nation's first wildlife refuge for the protection of native nesting birds. This was the first time the Federal Government set aside land for wildlife. This small but significant designation was the beginning of the National Wildlife Refuge System.

One hundred years later, the Refuge System has become the largest collection of lands in the world specifically managed for wildlife, encompassing more than 150 million acres within 556 refuges and more than 3,000 waterfowl production areas that provide breeding and nesting habitat for migratory birds and other wildlife. Today, there is at least one refuge in every State including Puerto Rico and the U.S. Virgin Islands.

The Improvement Act established a clear mission for the Refuge System.

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

The Improvement Act states that each national wildlife refuge (meaning every unit of the Refuge System, which includes wetland management districts) shall be managed to do the following:

- Fulfill the mission of the Refuge System
- Fulfill the individual purposes of each refuge and district
- Consider the needs of fish and wildlife first
- Fulfill the requirement of developing a CCP for each unit of the Refuge System and fully involve the public in preparation of these plans
- Maintain the biological integrity, diversity, and environmental health of the Refuge System
- Recognize that wildlife-dependent recreational activities including hunting, fishing, wildlife observation, photography, environmental education, and interpretation are legitimate and priority public uses
- Retain the authority of refuge managers to determine compatible public uses

In addition to the mission for the Refuge System, the wildlife and habitat vision for each unit of the Refuge System maintains the following principles:

- Wildlife comes first.
- Ecosystems, biodiversity, and wilderness are vital concepts in refuge and district management.
- Habitats must be healthy.
- Growth of refuges and districts must be strategic.
- The Refuge System serves as a model for habitat management with broad participation from others.

Following passage of the Improvement Act, the Service immediately began to carry out the direction of the new legislation including preparation of CCPs for all national wildlife refuges and wetland management districts. Consistent with the Improvement Act, the Service prepares CCPs in conjunction with public involvement. Each refuge and each district is required to complete its CCP within the 15-year schedule (by 2012).

People and the Refuge System

The Nation's fish and wildlife heritage contributes to the quality of American lives and is an integral part of the country's greatness. Wildlife and wild places have always given people special opportunities to have fun, relax, and appreciate the natural world.

Whether through birdwatching, fishing, hunting, photography, or other wildlife pursuits, wildlife recreation contributes millions of dollars to local economies. In particular, money generated from the taxing of sporting arms and ammunition and of fishing equipment that is authorized by the Pittman–Robertson and Dingell–Johnson Acts, respectively, has generated tens of millions of dollars. Distributed by the Service, this money has been used by States to increase wildlife and fish populations, expand habitat, and train hunters across the Nation. Approximately 35 million people visited the Refuge System in 2006, mostly to observe wildlife in their natural habitats (Caudill and Henderson 2005). Visitors are most often accommodated through nature trails, auto tours, interpretive programs, and hunting and fishing opportunities. Significant economic benefits are being generated to the local communities that surround refuges and wetland management districts. Economists report that Refuge System visitors contribute more than $1.7 billion annually to local economies.

1.5 National and Regional Mandates

Refuge System units are managed to achieve the mission and goals of the Refuge System along with the designated purpose of the refuges and districts (as described in establishing legislation, Executive orders, or other establishing documents). The key concepts and guidance for the Refuge System are in the National Wildlife Refuge System Administration Act of 1966, Title 50 of the Code of Federal Regulations (CFR), The "Fish and Wildlife Service Manual," and the Improvement Act.

The Improvement Act amends the Refuge System Administration Act by providing (1) a unifying

mission for the Refuge System, (2) a new process for determining compatible public uses on refuges and districts, and (3) a requirement that each refuge and district be managed under a CCP. The Improvement Act states that wildlife conservation is the priority of Refuge System lands and that the Secretary of the Interior will ensure that the biological integrity, diversity, and environmental health of refuge lands are maintained. Each refuge and district must be managed to fulfill the Refuge System's mission and the specific purposes for which the unit was established. The Improvement Act requires the Service to monitor the status and trends of fish, wildlife, and plants in each national wildlife refuge and wetland management district.

A detailed description of these and other laws and Executive orders that may affect the CCP or the Service's implementation of the CCP is in "Appendix F–Key Legislation and Policy." Service policies for planning and day-to-day management of refuges and districts are in the "Refuge System Manual" and the "Fish and Wildlife Service Manual."

1.6 Contributions to National and Regional Plans

Bowdoin National Wildlife Refuge Complex contributes to the conservation efforts outlined in the various State and national plans described here.

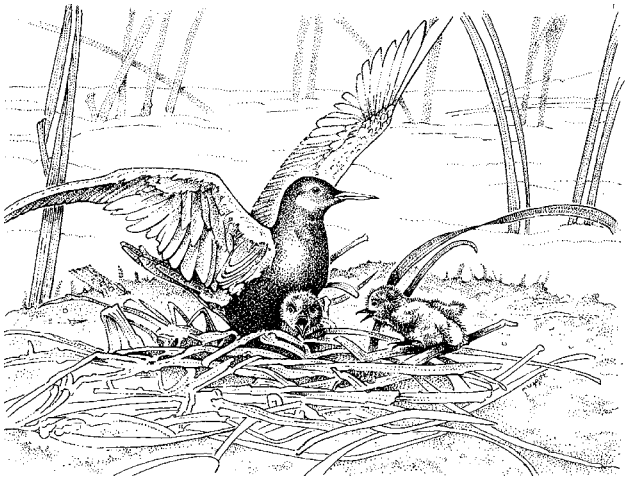
Fulfilling the Promise

A 1999 report, Fulfilling the Promise, The National Wildlife Refuge System (USFWS 1999b), is the culmination of a yearlong process by teams of Service employees to evaluate the Refuge System nationwide. This report was the focus of the first national Refuge System conference (in 1998)—attended by refuge managers, other Service employees, and representatives from leading conservation organizations.

The report contains 42 recommendations packaged with three vision statements for wildlife and habitat, people, and leadership. This CCP deals with all three of these major topics. The planning team looked to the recommendations in the document for guidance during CCP planning.

Partners in Flight

The Partners in Flight program began in 1990 with the recognition of declining population levels of many migratory bird species. The challenge is to manage human population growth while maintaining functional natural ecosystems in the face of human population growth. To meet this challenge, Partners in Flight worked to identify priorities for land bird species and habitat types. Partners in Flight activity has resulted in 52 bird conservation plans covering the continental United States.



Black Tern

The primary goal of Partners in Flight is to provide for the long-term health of bird life of this continent. The first priority is to prevent the rarest species from going extinct. The second priority is to prevent uncommon species from descending into threatened status. The third priority is to keep common birds common.

Montana Partners in Flight considered 141 species for priority status. It identified 14 high-priority species in need of immediate conservation action (priority 1), 43 moderate-priority species with lesser threats but in need of better monitoring and conservation consideration (priority 2), and 51 species of local interest whose habitat needs may play a role in the design and selection of conservation strategies (priority 3). The highest priority species are common loon, trumpeter swan, harlequin duck, greater sage-grouse, piping plover, mountain plover, interior least tern, flammulated owl, burrowing owl, black-backed woodpecker, olive-sided flycatcher, brown creeper, Sprague's pipit, and Baird's sparrow (Casey 2000).

The highest priority habitats in Montana are mixed grassland, sagebrush steppe, dry forest (ponderosa pine and Douglas-fir), riparian deciduous forest, and prairie pothole wetlands. The primary objectives in each priority habitat are to restore ecological processes necessary to provide suitable habitat for priority (target) species, identify and protect those remaining blocks of habitats that have undergone drastic declines, and develop management prescriptions that can be applied at all geographic scales. The Partners in Flight plan identified 58 of these areas.

Northern Shortgrass Prairie Physiographic Region

The conservation unit chosen by Partners in Flight for planning purposes has been the physiographic area. These areas, which are not limited by state borders, are based on the Breeding Bird Survey system, which was the first planning effort to reflect actual bird distributions.

There are 58 physiographic areas defined by similar physical geographic features that are wholly or partially contained within the contiguous United States, and several others are wholly or partially in Alaska. The Bowdoin National Wildlife Refuge Complex lies within physiographic area unit 39, known as the northern shortgrass prairie. It is a huge physiographic area, extending from northeastern Wyoming over all of eastern Montana and into southern Alberta. The area within the refuge complex is more of a mixed-grass prairie, which does include native shortgrasses. This physiographic region includes all of the area in Montana officially designated as the Prairie Pothole Region, one of the highest priority habitats identified in the Montana's bird conservation plan (Casey 2000). The region also contains some of the last remnants of native grasslands including those found on the refuge complex. Although a plan has not yet been completed for this physiographic region, the Partners in Flight plan for Montana identifies this area as critical habitat to some of the priority 1 bird species, most of which reside on or visit the refuge complex, including piping plover, burrowing owl, Sprague's pipit, Baird's sparrow, and greater sage-grouse. There are also numerous priority 2 species that nest on and use the refuge complex including chestnut-collared longspur, long-billed curlew, marbled godwit, white-faced ibis, black tern, and Franklin's gull. The actions in this plan focus on continuing and expanding efforts to support these and other imperiled bird species.

North American Waterbird Conservation Plan

The North American Waterbird Conservation Plan provides a contiguous framework for conserving and managing colonial-nesting waterbirds including 209 species of seabirds, coastal waterbirds (gulls, terns, and pelicans), wading birds (herons and ibises), and marsh birds (certain grebes and bitterns). The overall goal of the plan is to ensure that the following are sustained or restored throughout the waterbirds' ranges in North America: (1) the distribution, diversity, and abundance of waterbird populations; (2) waterbird habitats (breeding, migratory, and nonbreeding); and (3) important sites for waterbirds. The geographic scope of the plan covers 28 countries, from Canada to Panama, as well as islands and near-shore areas of the Atlantic and Pacific oceans, the Gulf of Mexico, and the Caribbean Sea. This waterbird partnership includes Federal, State, and provincial wildlife agencies, individuals, and nonprofit conservation organizations. The plan also calls for establishment of "practical units for planning" for terrestrial habitats. Bowdoin National Wildlife Refuge Complex is located within the Northern Prairie and Parklands Region.

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International Border contrast in 1994—Blaine County, Montana, United States (left); Saskatchewan, Canada (right).

The challenge for the Northern Prairie and Parklands Regional Plan is operating in a landscape significantly affected by agriculture, oil, gas, and other human development activities that factor immensely in the region's conservation issues. Wetland loss and deterioration tops the list, which is further influenced by the region's natural cycles of drought and inundation. The widespread and uncertain ramifications of global warming will affect the regional plan's strategies to combat wetland loss and properly manage associated upland habitats for the benefit of waterbirds and other bird species (Kushlan et al. 2002).

North American Waterfowl Management Plan

Written in 1986, the North American Waterfowl Management Plan envisioned a 15-year effort to achieve landscape conditions that could sustain waterfowl populations. Specific plan objectives are to increase and restore duck populations to the average levels of the 1970s—62 million breeding ducks and a fall flight of 100 million birds (U.S. Fish and Wildlife Service and Canadian Wildlife Service 1986).

The plan is innovative because of its international partnerships and implementation at the regional level. Its success depends on the strength of the joint ventures, which involve Federal, State, provincial, tribal, and local governments; businesses; conservation organizations; and individual citizens.

Joint ventures develop implementation plans that focus on areas of concern identified in the plan. Bowdoin National Wildlife Refuge Complex lies within the Prairie Pothole Joint Venture. It encompasses prairie wetlands from Montana, North Dakota, and South Dakota into Minnesota and Iowa. These prairie wetlands support more than 300 species of migratory birds, many of which are found within the refuge complex and are the primary breeding areas for the continent's waterfowl. The most important activity of this joint venture is the protection, restoration, and enhancement of prairie wetlands and grasslands on private and public lands (USFWS 2008b).

Northern Plains/Prairie Potholes Regional Shorebird Conservation Plan

The Northern Plains/Prairie Pothole Region encompasses two bird conservation regions—the Prairie Potholes and the Badlands and Prairies—and all or parts of seven States (eastern Montana, northeastern Wyoming, North Dakota, South Dakota, western Minnesota, north-central Iowa, and northeastern Nebraska). The landscape is characterized by rolling hills of prairie grasses, millions of depressional wetlands ranging in size from shallow temporary or seasonal wetlands to deeper semipermanent wetlands, and agricultural land.

Thirteen species of shorebirds breed within the Northern Plains/Prairie Pothole Region and require a landscape of grassland and wetland habitats for nesting and brood rearing. One of the major migration routes for Western Hemisphere shorebirds, especially that of long-distance migrants, traverses this area. Because long-distance migrations are energetically expensive, the availability of abundant habitat and food resources at migration stopovers within this region is critical. Shorebirds use a wide range of habitat types within the region including dry grasslands, sand and gravel beaches, natural freshwater and alkaline wetlands, lake margins, and shallowly flooded agricultural fields. During migration, the unvegetated shallow waters and moist mudflats of freshwater or alkaline wetlands are especially important. Due to the dynamic nature of wetlands in this region, many shorebirds are opportunistic and dispersed across the changing landscape (Helmers 1992).

Three major shorebird issues have been identified for the Northern Plains/Prairie Pothole Region:

1. Conservation of threatened and endangered species, declining species, and species of special concern

2. Habitat loss including fragmentation and degradation

3. The need for additional information to evaluate potential threats—such as contaminants, predation, and invasion of exotic plants—to migrating and breeding shorebirds

Bowdoin National Wildlife Refuge Complex has been identified as part of the Western Hemisphere Shorebird Reserve Network. Enrollment in this network requires that a site meet biological criteria and that site stakeholders agree to participate (Helmers 1992).

Montana Piping Plover Management Plan

Federal agencies are mandated by the Endangered Species Act of 1973 to conserve federally listed threatened and endangered species under section 7(a)(1) of the act. In response to Federal listing of the Great Plains population of the piping plover as a

Mike Morel / USFWS

Piping Plover

Gary Kramer / USFWS

Greater Sage-Grouse

threatened species in 1985, the Montana Piping Plover Recovery Committee was formed. Beginning in 1986, members of several Federal and State agencies along with volunteers made an effort to monitor all historical and potential piping plover habitat within the State. The Montana Piping Plover Management Plan evolved from these efforts and was most recently updated in 2006.

The Service, along with the other agencies involved, consulted to determine the status of the population and habitat as well as the potential for increase. The committee set a goal within the management plan to "manage for and maintain approximately 60 breeding pairs of piping plovers, on a running 10-year average, distributed in appropriate habitats in Montana" (Atkinson and Dood 2006).

Bowdoin National Wildlife Refuge is an integral part of this joint effort because of its historical use by piping plovers. A portion of the refuge was designated as critical habitat for the species in 2002.

Management Plan and Conservation Strategies for Sage-Grouse in Montana

Loss of sagebrush grasslands in some western States has approached or exceeded 50 percent. Such habitat loss in Montana, in terms of quality or quantity, may not have been as high as in other States although significant enough (at least in part of the State) to influence greater sage-grouse numbers and population trends. Growing concern about the status of sagebrush on western rangelands and declines in sage-grouse numbers have led to petitioning the Service to protect populations in some western States under provisions of the Endangered Species Act. After a thorough analysis of the best available scientific information, the Service has concluded that the greater sage-grouse warrants protection under the Endangered Species Act. However, the Service has determined that proposing the species for protection is precluded by the need to take action on other species facing immediate and severe extinction threats. As a result, the greater sage-grouse has been placed on the list of species that are candidates for Endangered Species Act protection. The Service will review the status of the species annually, as it does with all candidate species, and will propose the species for protection when funding and workload priorities for other listing actions allow.

The "Management Plan and Conservation Strategies for Sage Grouse in Montana" is the product of the Montana Sage Grouse Working Group. Participants in the group include representatives of Federal and State agencies, tribal representatives, and private organizations, along with several individuals from the public, all of whom have a stake in the issue. The overall goal of the plan is to "provide for the long-term conservation and enhancement of the sagebrush steppe/mixed-grass prairie complex within Montana in a manner that supports sage grouse and a healthy diversity and abundance of wildlife species and human uses" (MSGWG 2005). The plan establishes a process to achieve sage-grouse management

objectives and provides a framework to guide local management efforts.

The greater sage-grouse is a documented local breeder on the Bowdoin National Wildlife Refuge Complex and is a target species for upland management.

State Comprehensive Fish and Wildlife Conservation Strategy

Montana's Comprehensive Fish and Wildlife Conservation Strategy (Montana Fish, Wildlife & Parks 2005) is for all vertebrate species known to exist in Montana including both game and nongame species, as well as some invertebrate species such as freshwater mussels and crayfish.

Although game species are included in Montana's conservation strategy, the priority is species and their related habitats "in greatest conservation need." This means focus areas, community types, and species that are significantly degraded or declining, federally listed, or where important distribution and occurrence information used to assess the status of individuals and groups of species are lacking. The conservation strategy uses five ecotypes to describe the broad areas of Montana's landscape that have similar characteristics. Bowdoin National Wildlife Refuge Complex is in the plains grassland and plains forest ecotype. Montana's high eastern plains, which are part of America's Great Plains, are generally found on high, rolling land and on some scattered hills and in wide river valleys.

Within each of the ecotypes, tier 1 geographic focus areas (greatest need of conservation) were identified for all terrestrial and aquatic areas of the State. Bowdoin National Wildlife Refuge Complex is located within the Montana glaciated plains focus area, which is dominated by level to rolling till plains covered by sagebrush grasslands and short, mixed-grass prairie and croplands. This area consists of plains, terraces, fans, and floodplains that formed in glacial till, gravel deposits, and alluvium over clay shale, sandstone, and siltstone. Land use is predominantly livestock grazing and dryland farming. The tier 1 priority (target) species for this area are the northern leopard frog, snapping turtle, spiny softshell, western hog-nosed snake, milksnake, common loon, bald eagle, greater sage-grouse, yellow rail, whooping crane, piping plover, mountain plover, long-billed curlew, interior least tern, black tern, burrowing owl, spotted bat, Townsend's big-eared bat, black-tailed prairie dog, black-footed ferret, and American bison.

The Montana Comprehensive Fish and Wildlife Conservation Strategy (Montana Fish, Wildlife & Parks 2005) outlines five conservation concerns and strategies for the Montana glaciated plains focus area. The key concerns are:

- Conversion of native prairie to small grain production
- Petroleum exploration and development impacts
- Invasive or exotic plant species
- Disruption of natural fire disturbance processes and hydrologic regimes
- Range management or forest management practices
- Loss of natural wetlands

1.7 Strategic Habitat Conservation

In the face of escalating challenges such as land use conversion, invasive species, water scarcity, and refuge complex issues that have been amplified by accelerating climate change, the Service has evolved from its ecosystem approach of thinking about conservation to developing a broader vision.

A cooperative effort by the Service and U.S. Geological Survey culminated in a report by the National Ecological Assessment Team (U.S. Geological Survey 2006). The report outlines a unifying adaptive resource management approach for conservation at a landscape scale, the entire range of a target species or suite, or guild, of species. This is strategic habitat conservation: a way of thinking and doing business—by incorporating biological goals for target species populations—by making strategic decisions about the work needed—and by constantly reassessing.

Since 2006, the Service has taken significant steps to turn this vision into reality and has defined a framework of 21 geographic areas. Experts from the Service and U.S. Geological Survey developed this framework through an aggregation of bird conservation regions. The Bowdoin National Wildlife Refuge Complex lands and waters lie in Geographic Area 13–Plains and Prairie Potholes (figure 3). Key issues in this geographic area are conservation of paddlefish, pallid sturgeon, waterfowl, shorebirds, grassland birds, and black-footed ferret.

The Service is using the framework as the basis to locate the first generation of landscape conservation cooperatives. These cooperatives are conservation-science partnerships between the Service and other Federal agencies, States, tribes, nongovernmental

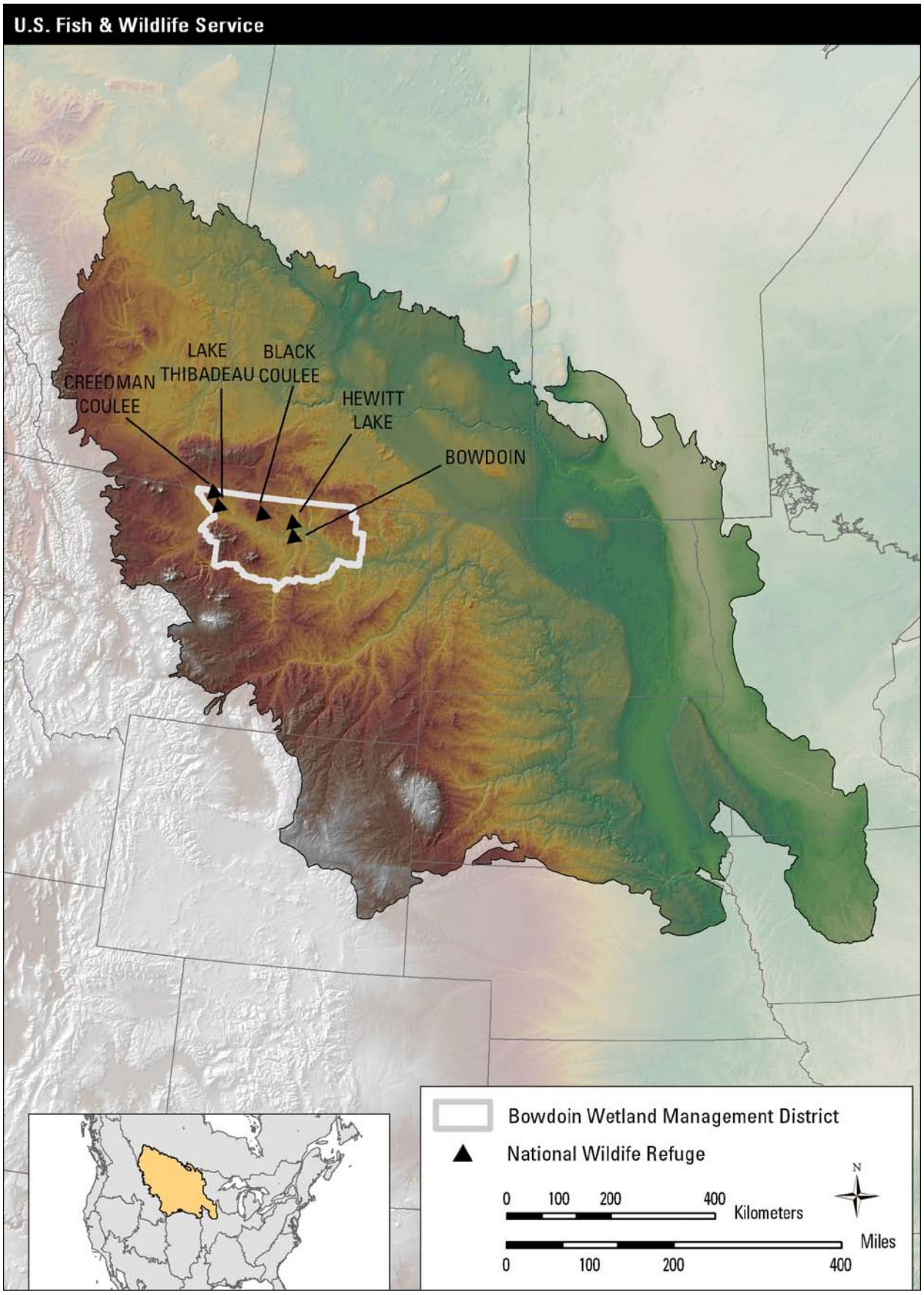

Figure 3. Map of the five refuges and one wetland management district in Bowdoin National Wildlife Refuge Complex within Geographic Area 13–Plains and Prairie Potholes.

organizations, universities, and others. Designed as fundamental units for planning and science, the cooperatives have the capacity to help the Service carry out the elements of strategic habitat conservation—biological planning, conservation design and delivery, and monitoring and research. Coordinated planning and scientific information will strengthen the Service's strategic response to accelerating climate change.

Climate Change

The Service expects that accelerating climate change will affect the Nation's fish, wildlife, and plant resources in profound ways. While many species will continue to thrive, some may decline and in some instances go extinct. Others will survive in the wild only through direct and continuous intervention by managers. In 2010, the Service drafted a strategic plan to address climate change for the next 50 years titled, "Rising to the Challenge—Strategic Plan for Responding to Accelerating Climate Change" (USFWS 2010). The strategic plan employs three key strategies: adaptation, mitigation, and engagement. In addition, the plan acknowledges that no single organization or agency can address climate change without allying itself with others in partnership across the Nation and around the world (USFWS 2010). This plan is an integral part of the Department of the Interior's strategy for addressing climate change as expressed in Secretarial Order 3289 (September 14, 2009).

The Service will use the following guiding principles from the strategic plan (USFWS 2010) in responding to climate change:

- *Priority Setting*—Continually evaluate priorities and approaches, make difficult choices, take calculated risks, and adapt to climate change.
- *Partnership*—Commit to a new spirit of coordination, collaboration, and interdependence with others.
- *Best Science*—Reflect scientific excellence, professionalism, and integrity in all the Service's work.
- *Landscape Conservation*—Emphasize the conservation of habitats within sustainable landscapes, applying the Service's strategic habitat conservation framework.
- *Technical Capacity*—Assemble and use state-of-the-art technical capacity to meet the climate change challenge.
- *Global Approach*—Be a leader in national and international efforts to meet the climate change challenge.

1.8 Planning Process

This final CCP was prepared in compliance with the Improvement Act, NEPA, and part 602 (National Wildlife Refuge System Planning) of the "Fish and Wildlife Service Manual." Additional requirements and guidance are in the Refuge System's planning policy, issued in 2000. This policy established requirements and guidance for refuge and district plans (including CCPs and stepdown management plans) to ensure that planning efforts follow the Improvement Act. The planning policy identified several steps of the CCP and environmental analysis process (figure 4).

The Service began the pre-planning process in October 2006 with the establishment of a planning team comprised primarily of Service staff from Bowdoin Refuge and staff from Montana Department of Natural Resources and Conservation, Montana Department of Environmental Quality, and Montana Fish, Wildlife & Parks. Additional contributors included other Service divisions, U.S. Geological Survey, Montana State University, Natural Resource Conservation Service, and several other Federal and State agencies (refer to "Appendix G–Preparers, Consultation, and Coordination").

The planning team coordinated several opportunities for public involvement throughout the planning process as summarized below under "Public Coordination" and detailed in appendix E. The planning team reviewed a wide range of public comments and management needs for the refuge complex. This guided the team's development of a draft CCP and EA, which analyzed a set of alternatives for each of the following management aspects: (1) the management of the overall resources and uses at the refuge complex; (2) the salinity and blowing salts issue; and (3) the proposed divestiture of Lake Thibadeau National Wildlife Refuge.

Following public review of the "Draft Comprehensive Conservation Plan and Environmental Assessment–Bowdoin National Wildlife Refuge Complex," the Service analyzed the comments received. After the Regional Director's decision on which alternative to implement for each management aspect (refer to previous section 1.1), the planning team prepared the final CCP.

Table 1 lists the specific steps in the planning process for the preparation of this final CCP.

Figure 4. Process steps for comprehensive conservation planning and associated environmental analysis.

Table 1. Summary of the CCP planning process for Bowdoin National Wildlife Refuge Complex, Montana.

Date	*Event*	*Outcome or purpose*
October 25–26, 2006	Kickoff meeting	Service staff discussed the CCP overview, reviewed the refuge complex purposes, discussed the initial planning team list, developed the first draft of the internal issues and the qualities list, started the mailing list, discussed the planning schedule, and discussed the biological data needs.
February 15, 2007	Work plan	Service staff prepared the planning work plan.
March 6, 2007 April 26, 2007	Biological review planning meeting	The planning team developed an agenda and objectives for the biological review workshops.
April 29, 2007	Vision and goals workshop	The planning team developed draft vision and goal statements for the refuge complex.
May 7, 2007	Planning update	The first planning update was sent to people and organizations on the mailing list. The update described the planning process and announced the upcoming public scoping meeting.
May 15, 2007	Notice of intent	The notice of intent to prepare a CCP was published in the Federal Register (volume 72, number 93, page 27325–27).
May 22–23, 2007	Water resources workshop	A panel of biologists and researchers gathered to discuss and propose options for managing the Bowdoin Refuge's wetland resources and addressing the salinity issue. A salinity team was established.
May 22, 2007	Public scoping meeting	The public had an opportunity to learn about the CCP process and provide comments.

Table 1. Summary of the CCP planning process for Bowdoin National Wildlife Refuge Complex, Montana.

Date	*Event*	*Outcome or purpose*
June 4, 2007	Visitor services review	Staff from the Service's Division of Education and Visitor Services evaluated the refuge complex's visitor services programs and facilities.
June 14, 2007	End of public scoping period	Public scoping comments that would be considered had to be received or postmarked by this date.
June 17, 2007	Chamber of Commerce presentation	Service staff gave a presentation to the Malta Chamber of Commerce, describing the CCP process and answering questions.
July 10, 2007	Salinity team meeting	The salinity team reviewed water resources at the Bowdoin Refuge and evaluated nine modeling scenarios to address the salinity issue.
August 20, 2007	Salinity team meeting	The salinity team evaluated the revised modeling scenarios and narrowed the options down to four including no action.
October 3, 2007	Pre-planning for objectives and strategies workshop	The planning team met with Rick Schroeder (U.S. Geological Survey) and staff to discuss developing alternatives and the supporting objectives and strategies for the proposed action.
October 16–17, 2007	Uplands biological workshop	A panel of biologists and researchers gathered to discuss and propose options for future management of upland habitats in the refuge complex.
October 24–25, 2007	Alternatives workshop	The planning team developed and evaluated three alternatives for refuge complex management, excluding the salinity and blowing salts issue.
November 20, 2007	Followup to alternatives workshop	The planning team reviewed the alternatives table and discussed environmental consequences.
December 4, 2007	Followup to alternatives workshop	The planning team finalized the draft alternatives and environmental consequences table.
January 21–23, 2008	Objectives and strategies workshop	The planning team began writing objectives and strategies for the proposed action alternative.
February 4, 2008	Salinity team meeting	The salinity team discussed other options for addressing the salinity issue and prepared for a salinity workshop.
February 28, 2008	Salinity team meeting	The salinity team finalized plans for the salinity workshop.
March 12, 2008	Salinity team meeting	The salinity team discussed the salinity workshop agenda, meeting objectives, and needed presentations.
April 22–23, 2008	Salinity issue workshop	A panel of hydrologists, managers, and biologists evaluated the products of the salinity team and discussed alternatives. A proposal to hire a contractor to conduct further analysis was presented and accepted.
May 1, 2008	Start of draft plan preparation	The planning team began writing portions of the draft CCP and EA.
July 2008	Start of URS contract	The Denver-based contractor, URS, began analysis of four alternatives proposed for addressing the salinity and blowing salts issue.
March 2, 2009	URS draft report review	Field and regional office staff met with URS to discuss their report and findings and found that additional data collection and analysis by State and Service staff was needed.
July 16, 2009	URS final report and Milk River alternative review	State and Federal agencies discussed the final URS report and the alternative to pump water to the Milk River. A public meeting to present these findings was planned.
October 22, 2009	Public meeting	The Service invited the public to hear a presentation on the alternatives that have been developed and analyzed to address the salinity and blowing salts issue.
November 2009	Draft plan preparation	The planning team continued preparation of the chapters and maps for the draft CCP and EA.

Table 1. Summary of the CCP planning process for Bowdoin National Wildlife Refuge Complex, Montana.

Date	*Event*	*Outcome or purpose*
April 14–15, 2010	Salinity chapter	The salinity team finalized the chapter summarizing alternatives to address the salinity and blowing salts issue on Bowdoin National Wildlife Refuge.
April–October 2010	Draft plan preparation	The planning team finished preparation of the draft CCP and EA for internal review, incorporating the results of the salinity and blowing salts analysis.
November–December 2010	Draft plan internal review	The planning team and other Service staff reviewed the draft CCP and EA and provided comments to help clarify the analyses and provide consistency.
January–May 2011	Draft plan preparation	The planning team finalized the draft CCP and EA for distribution to the public for review.
June 22, 2011	Notice of availability Draft plan public review Planning update	The notice of availability of the draft CCP and EA was published in the Federal Register (volume 76, number 120, page 36571–73). The draft CCP and EA was made available on the project Web page, and hard copies were distributed per requests. The public was provided 34 days to review and comment on the draft CCP and EA. A planning update was sent to the mailing list; the update summarized the draft plan and announced upcoming public meetings.
June 29, 2011	Public meeting in Malta, Montana	The public had an opportunity to learn about and provide comments on the draft CCP and EA.
July 25, 2011	End of public review period	Public comments that would be considered had to be received or postmarked by this date.
August 2–3, 2011	Public comments review	The planning team reviews the public comments and determines needed changes for the final CCP.
August 30, 2011	Decision on preferred alternatives	The Regional Director selected preferred alternatives for the three management aspects and signed the finding of no significant impact.
September 2011–April 2012	Final plan preparation	The planning team finished revising and editing the final CCP for printing and distribution.

Coordination with the Public

The Service prepared for public involvement by compiling a project mailing list of more than 170 names during pre-planning. The mailing list includes private citizens; local, regional, and State government representatives and legislators; other Federal agencies; and interested organizations.

The Service coordinated the following efforts to provide information and request ideas and comments from the public:

- *Web site:* The CCP Web page displayed background information on the refuge complex, the CCP development schedule, public meeting information, planning contacts, and electronic versions of planning updates, the draft plan, and other planning documents.

- *Three planning updates:* These fact sheets were sent to everyone on the project mailing list. Information was provided on the history of the refuge complex, the CCP process, the salinity issue, and alternatives in the draft CCP and EA. The updates had invitations to public meetings and included comment forms.

- *Three public meetings:* The Service presented information about the planning process; the resources and issues, in particular, the salinity and blowing salts issue; and the draft CCP and EA. Attendees were encouraged to offer comments and ask questions.

- *Public review of the draft CCP and EA:* The public had 34 days to review and provide comments about the draft plan for the refuge complex.

The Service recorded all comments given at the public meetings. In addition to oral comments, the planning team received written comments via email, comment forms, and letters. Planning team members, individually and as a team, reviewed all comments. Some modi-

fications, including clarifications, were made to this final document based on the public review. Appendix E has more detail about the Service's involvement of the public, including responses to substantive public comments on the draft CCP and EA.

State Coordination

At the start of the planning process, the Regional Director (of the Service's Mountain–Prairie Region, Region 6) sent a letter to Montana Fish, Wildlife & Parks, inviting them to participate in the planning process. Numerous State biologists and hydrologists have since served on the planning team or been involved in the planning process including biological reviews of the refuge complex's management program. At the start of the process, the offices of Montana's United States congressional delegation (then-Senator John Tester, Senator Max Baucus, and Representative Dennis Rehburg) were sent letters notifying them of the planning process and inviting them to comment on the plan. Seven other Montana State senators and representatives and Governor Brian Schweitzer were sent similar letters.

The State was particularly concerned about the saline water and blowing salts issue on Bowdoin National Wildlife Refuge. A hydrologist from the Montana Reserved Water Rights Compact Commission, who asked the refuge to address this water quality issue, worked with Service staff to develop models for predicting the effectiveness of actions to resolve this issue. The salinity team also had representatives from the Montana Department of Environmental Quality and Department of Natural Resources and Conservation. The State participated in both the internal and public review of the draft plan. Numerous changes were made to the final CCP based on their comments. Overall the State has been supportive of the planning process to date.

Tribal Coordination

Early in the planning process, the Service's Mountain–Prairie Regional Director sent a letter to tribes identified as possibly having a cultural and historical connection to the area in which the Bowdoin National Wildlife Refuge Complex is located. Those contacted were the Fort Peck Assiniboine and Sioux, the Fort Belknap Assiniboine and Gros Ventre, Crow, Chippewa Cree, and Blackfeet tribal councils. The tribal councils did not submit responses to the letter from the Regional Director.

During the release of the draft CCP and EA for public review, the Service made additional contacts with the affected tribes. There was some interest in assisting with future efforts to identify cultural sites throughout the refuge complex.