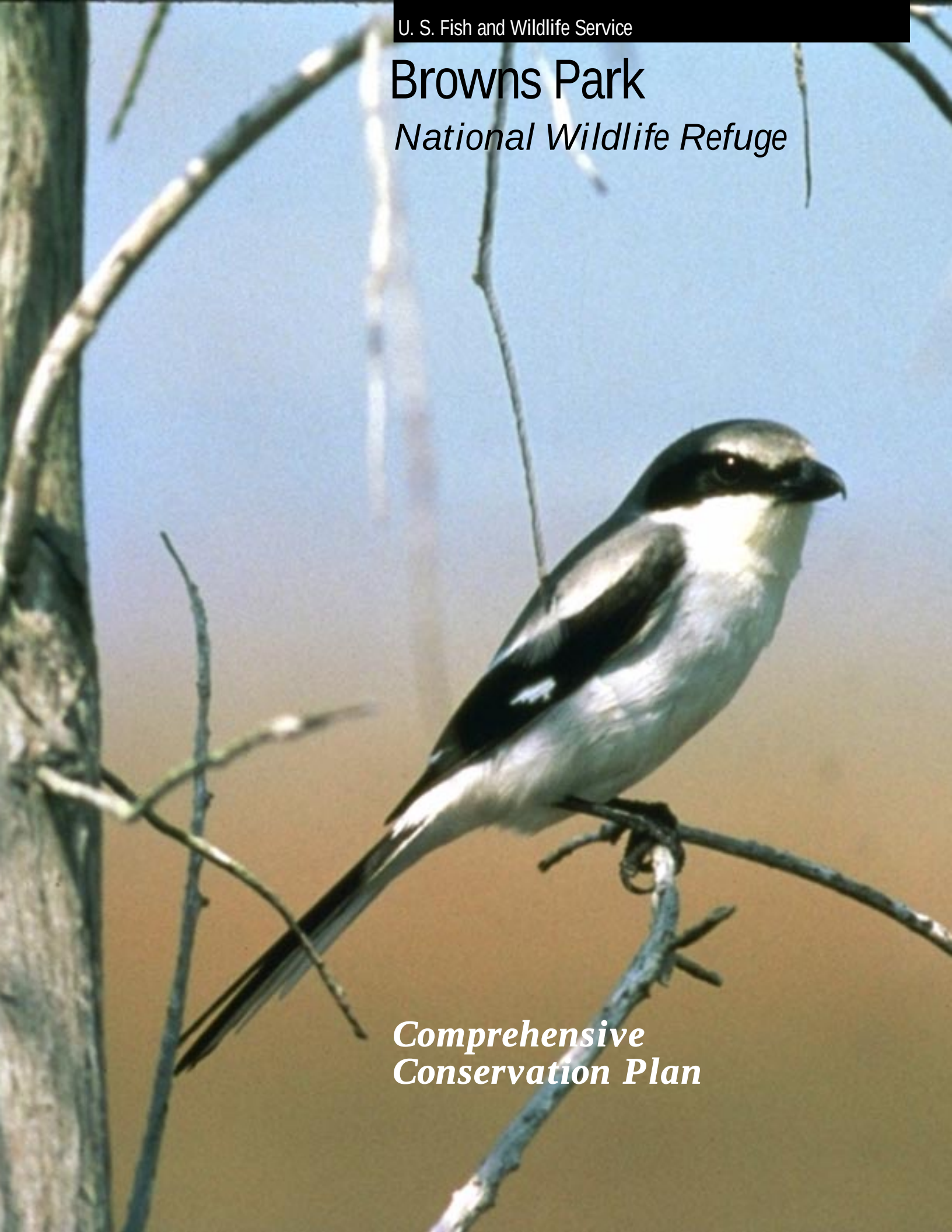
U. S. Fish and Wildlife Service

Browns Park

National Wildlife Refuge



Comprehensive Conservation Plan

Browns Park
National Wildlife Refuge

Comprehensive Conservation Plan

September 1999

Prepared by
U.S. Fish and Wildlife Service
Browns Park NWR
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Date: 9/22/99

Browns Park National Wildlife Refuge
Comprehensive Conservation Plan Approval
U.S. Fish and Wildlife Service, Region 6

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Introduction and Background

Background

Browns Park National Wildlife Refuge (NWR) has been a part of the National Wildlife Refuge System (System) and the U.S. Fish and Wildlife Service (Service) since 1963. Located in northwest Colorado along the Green River as it flows through the remote valley known as Browns Park (or Browns Hole), the 13,455-acre Refuge was formally established by Public Land Order 4973, December 11, 1970 (see Map 1). Under the Migratory Bird Conservation Act and the Refuge Recreation Act, the purposes of Browns Park NWR are to provide sanctuary for migratory birds, to provide for suitable fish and wildlife dependent recreation, protection of natural resources, and conservation of endangered and threatened species.

The Refuge possesses three key wildlife values: its wetlands provide important migration and breeding habitat for waterfowl and waterbirds, riparian habitat provides important migration and breeding habitat for songbirds, and Refuge uplands provide critical winter habitat for large mammals such as mule deer, elk, and pronghorn. Browns Park NWR also provides unique and important values for people. Wildlife, solitude, scenery, and cultural history combine to make the Refuge a national treasure (see Map 2).

Purpose and Need for Plan

The U.S. Fish and Wildlife Service is the principal Federal agency with responsibility for conserving, protecting, and enhancing fish and wildlife and their habitats. The Service manages a diverse network of more than 500 National Wildlife Refuges, a System which encompasses more than 92 million acres of public land and water which provides habitat for more than 5,000 species of birds, mammals, fish, and insects.

Past management of the Refuge has varied greatly. Although past managers used the best information available to them at the time, oftentimes their efforts were short-term, disjointed, and counterproductive. As a result, many management issues went unaddressed. It is now apparent that the need exists for a long-term comprehensive plan that considers the true purpose and values of the Refuge, these unaddressed issues, and all aspects of Refuge management.

Comprehensive Conservation Plans (CCP) were mandated by the National Wildlife Refuge System Improvement Act of 1997 (Act) . The Act requires that all lands and waters of the National Wildlife Refuge System be managed in accordance with an approved Plan that guides management decisions, sets forth strategies for achieving Refuge purposes, and contributes to the System mission.

Benefits of the Plan are several: better long-term continuity in Refuge management, better understanding of Refuge management actions for Refuge staff members and visitors, a clear description of future development and funding needs, and the assurance that Refuge management will fulfill the mission of the System and the specific purposes for which the Refuge was established.

Planning Process

The Browns Park National Wildlife Refuge Comprehensive Conservation Plan is guided by the established purposes of the Refuge, the goals of the National Wildlife Refuge System, U.S. Fish and Wildlife Service compatibility standards, and other Service policies, plans, and laws directly related to Refuge management. This Plan establishes the goals, objectives, management guidelines and strategies, and monitoring and evaluation strategies for the Refuge.

The Plan will be used to prepare step-down management plans, revise existing plans, and performance standards and budgets which describe specific actions to be taken by the Refuge over the next 15 years. Given that new information and guidance frequently arise, the Plan will be updated as necessary. The effects of major management actions will be documented to provide information to future managers as to the effects of actions taken.

A questionnaire was distributed to Refuge neighbors and some of the known Refuge users in an effort to get comments and ideas. The questionnaire was also distributed at two open houses, one held in Craig, Colorado and the other at Refuge headquarters. Although the turnout was light at the open houses, responses to the questionnaires were received from a number of individuals. The Refuge is quite remote and surrounded by public land, so it has few close neighbors. Most interested individuals are not from the local area and have been difficult to identify and contact.

National Wildlife Refuge System Mission

National wildlife refuges are all about wildlife. 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.”

Planning Issues and Opportunities

Issues to be addressed in the Plan were identified by the public, the Refuge staff, and other Service employees. A formal effort was made to obtain input from Refuge neighbors and Refuge visitors, though this can be difficult in such a remote location. The range of issues are as diverse as the individuals providing them; however, several common themes emerged. Issues fall into broad categories of Wildlife, Habitat, and People and are discussed below.

Wildlife

Refuge wildlife species are far ranging and impacted by activities that occur beyond the Refuge boundary. The opportunity exists for Refuge staff to engage in wildlife conservation in the surrounding ecosystem and to better protect and manage the Refuge through expansion.

Habitat

Opportunities exist to better focus Refuge habitat management efforts on the needs of special status species and other wildlife for which the Refuge provides essential habitat.

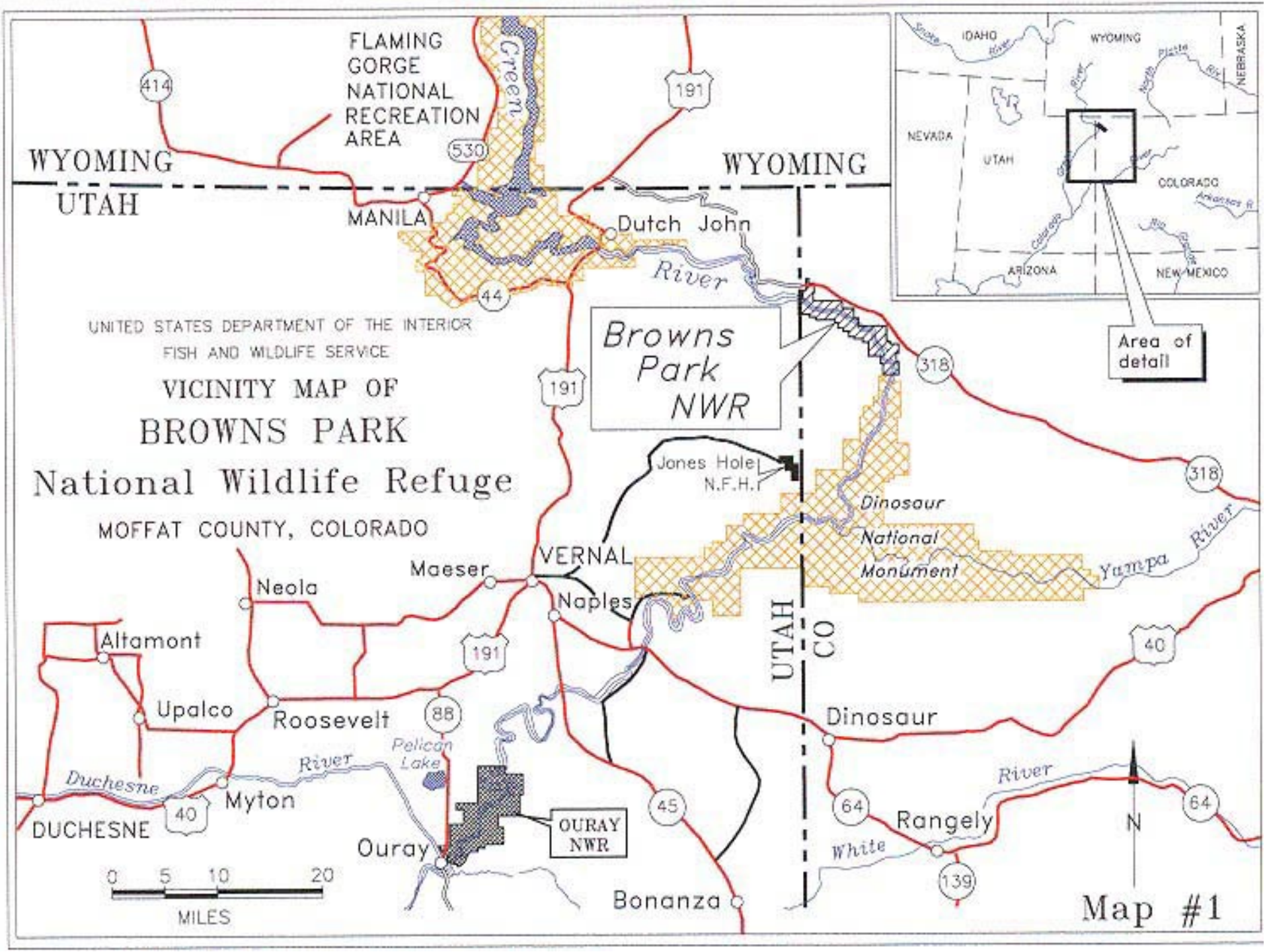
The Nelson and Warren wetland units are plagued by an overabundant canopy coverage of emergent vegetation that makes them less useful for many species of waterfowl, shorebirds, and other waterbirds. The opportunity exists to change the water management regime in these units to better control coverage of emergent vegetation and diversify and increase foods for migratory birds.

The Horseshoe and Grimes wetland units provide very little habitat as compared to the costs of operating them. The units have never held water well, and the cost of continuously pumping to maintain them is high. The area is infested with nonnative plants. The opportunity exists to restore these units to seasonal wet meadow or upland habitats. Water rights currently used to maintain these units must be evaluated for transfer to other uses.

Riparian habitat is declining along the Green River on the Refuge due to the operation of Flaming Gorge Dam and the continuing invasion of nonnative plants. The opportunity exists to restore this habitat.

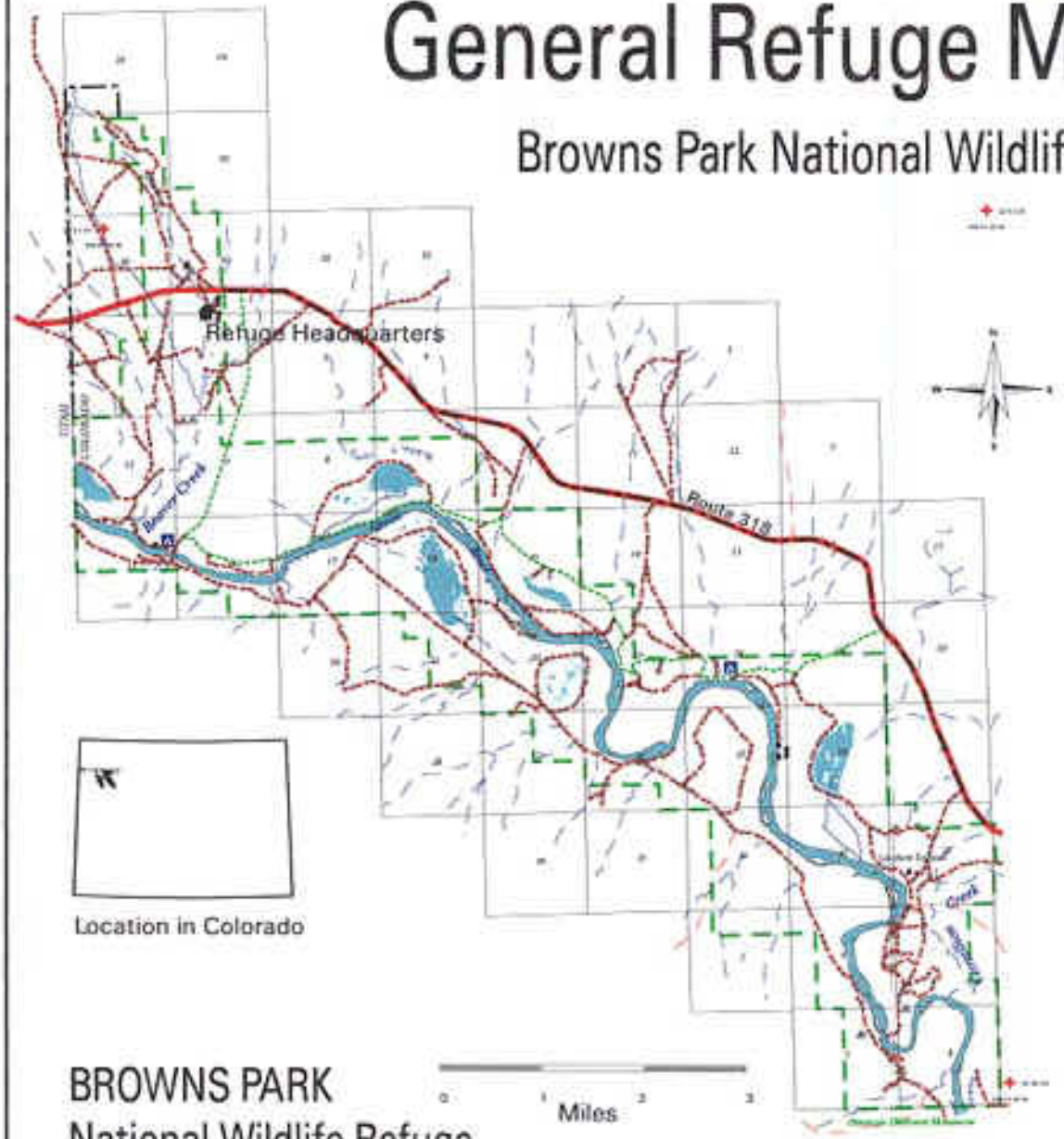
People

Facilities to meet the minimum needs of Refuge visitors are lacking or outdated. Orientation kiosks are not placed at the entrance points of the Refuge, and many first-time visitors get lost. Many of these needs are not currently addressed because of lack of funds and staff time. Opportunities to inform visitors and raise their appreciation for wildlife are being missed. Photography and other wildlife dependent recreation is currently limited. Some facilities on the Refuge do not meet the Federal standards of accessibility for people with disabilities. The opportunity exists to more fully develop public use on the Refuge.


FLAMING GORGE NATIONAL RECREATION AREA
Green River
414
191
530
WYOMING
UTAH
WYOMING
MANILA
Dutch John
River
44
UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
VICINITY MAP OF
BROWNS PARK
National Wildlife Refuge
MOFFAT COUNTY, COLORADO
Browns Park NWR
191
318
Jones Hole N.F.H.
Dinosaur National Monument
Yampa River
318
VERNAL
Maeser
Neola
Naples
UTAH
CO
Altamont
191
40
Upalco
Roosevelt
88
Dinosaur
Pelican Lake
River
Duchesne
Myton
DUCHESNE
40
45
OURAY NWR
Ouray
64
Rangely
River
64
White
139
Bonanza
0 5 10 20
MILES
N
Map #1
IDAHO
WYOMING
NEBRASKA
NEVADA
UTAH
COLORADO
ARIZONA
NEW MEXICO
Area of detail

General Refuge Map of

Browns Park National Wildlife Refuge



Location in Colorado

LEGEND

- Refuge Boundary
- Drainages
- Irrigation Ditch
- Paved Roads
- Trails
- BLM Boundary
- Dirt Roads
- Auto Tour Route
- Cliffline
- Open Water
- Campground
- Building, In Use
- Building, Abandoned

BROWNS PARK
National Wildlife Refuge
U.S. Fish & Wildlife Service, Dept. of Interior

Map #2

Refuge and Resource Description
Geographic/Ecosystem/Flyway Setting

Biogeographers have divided North America into provinces; natural regions that share similar climate, soils, topography, and vegetation. The Refuge lies within the Middle Rocky Mountains province; however, it is also adjacent to the Wyoming Basin province and the Colorado Plateau province. The Refuge includes a mixture of habitats from all three provinces and consequently provides habitat for 300 terrestrial wildlife species (222 birds, 68 mammals, 11 reptiles, and 4 amphibians - listed in Appendix A).

In 1994, refuges were directed to become involved with wildlife conservation in the ecosystem that surrounds them. Part of the rationale was that wildlife on field stations are affected by influences way beyond the station's boundary. The U.S. Fish and Wildlife Service is organized into watershed-based ecosystems, and Browns Park lies in the Upper Colorado River Ecosystem. Seedskadee National Wildlife Refuge in Wyoming and Ouray National Wildlife Refuge in Utah are two other National Wildlife Refuges included in this ecosystem. The three Refuges share many similarities. All are located along the Green River and have significant amounts of wetland and riparian habitat.

The Upper Colorado River Ecosystem incorporates the watersheds, headwaters, tributaries (including the Green River), and mainstem of the Colorado River in Wyoming, Utah, and Colorado. The aquatic systems in this region are vital not only for native wildlife but also for millions of people in seven arid southwestern states. Once naturally diverse, many of these systems have been fragmented and degraded as a result of water development projects, land-use practices, and introduction of nonnative animals and plants. In 1994, an interagency planning team met to develop broad goals and objectives for the Upper Colorado River Ecosystem. Resource issues identified for the Ecosystem are closely related to resource issues and concerns raised by the staff of Browns Park NWR. Goals developed by the ecosystem planning team are summarized below.

- Goal: Restore and maintain an aquatic system capable of supporting the diversity of native aquatic communities to achieve recovery of listed and candidate species and prevent the need for future listings.
- Goal: Reverse the current trend (riparian and wetland loss/degradation); restore, maintain, and enhance the species composition, the extent and spacial distribution of wetland/riparian habitats.
- Goal: Promote terrestrial biological diversity and ecosystem stability through sound land management practices thereby avoiding fragmentation, degradation, and loss of terrestrial habitats.

The Refuge is located west of the continental divide and considered part of the Pacific Flyway. It is also included in the Intermountain West Joint Venture region of the North American Waterfowl Management Plan developed to restore waterfowl populations in North America.

Other regional wildlife resource planning efforts that may affect management of the Refuge have been conducted by the Service, other Federal agencies, States, and conservation interest groups. Such initiatives also include cooperative management plans for Pacific Flyway migratory bird species. Species for which plans exist include the Rocky Mountain population of Canada geese, western Canadian arctic snow geese, Pacific Flyway Ross' goose, Rocky Mountain population of greater sandhill crane, Rocky Mountain population of trumpeter swan, western population of tundra swan, and Western Management Unit of mourning dove.

Refuge Habitats and Wildlife

Climate, soils, and topography ultimately determine vegetation communities. Vegetation communities are habitats for wildlife. Many wildlife species show strong preferences for certain habitat types. They have evolved along with their habitats and, as a result, are highly dependent on them. Much of the biological information in this section is from unpublished data collected on the Refuge over its 36 year history.

The habitats on the Refuge can be separated into five broad types: wetlands, riparian, grassland, semidesert shrubland, and pinyon-juniper. Rock/cliff can be considered a habitat sub-type, as it occurs within the five broad habitats, and many species make use of it. These five broad habitats and the one sub-type are discussed below as they exist on the Refuge. Wildlife species that use the Refuge and are dependent on these habitat types for breeding are also discussed.

Refuge habitats are actively managed to benefit certain wildlife species. Managers have a variety of "tools" available to improve or alter habitats as needed. The tools most commonly used on Browns Park include water level manipulation with dikes, levees, water control structures and pumps, prescribed fire, and grazing.

Water Manipulations:

In wetlands, water levels are closely controlled to provide optimum growing conditions for important forage plants used by migratory waterbirds. The Butch Cassidy, Log Lake, and Flynn wetland units are usually managed to maintain deep permanent water required by migrating diving ducks and other breeding waterfowl. The Spitzie, Warren, Hoy, and Nelson units are either flooded or allowed to remain dry during the growing season on a rotating basis to encourage the growth of highly nutritious moist soil plants. During spring or fall migration, these wetland units are shallowly flooded to make these plants and their associated insects available to migrating waterfowl and shorebirds. When the units become dominated by emergent vegetation (cattail and bulrush) they are allowed to dry up completely for controlled burning. Once burned, an agricultural disc is dragged through the unit to break up, expose, and kill the rhizomes of emergent plants to retard their spread.

Fire:

Fire is a tool used for a variety of reasons. Most commonly it is used to set vegetation back to an earlier successional stage and diversify the structure of habitats. In grasslands, it is used to remove residual vegetation and dead litter, increase the vigor of grass plants, and to control the encroachment of brushy species. On the Refuge, it is frequently used to prepare a site for a subsequent treatment. In areas infested with nonnative plants, it is used to remove residual vegetation that would interfere with herbicide application. Where tamarisk grows to a large size in continuous stands, herbicides are largely ineffective. Fire is used to kill the above-ground portion of the plants. When the plants resprout, they are sprayed; the herbicide is then transported more effectively to the rootball where it can kill the entire plant.

The Refuge must comply with Colorado State air quality regulations and obtains particulate emissions source permits prior to all prescribed burns. While fire is very efficient in terms of cost per acre, its use in sensitive areas (riparian areas and around Refuge facilities) can be risky and demands careful planning.

Grazing:

Historically, grazing was applied widely as a management tool before it was determined to be incompatible with the needs of ground nesting birds, especially ducks. Winter-long grazing in riverbottom areas removes residual vegetation that ground nesting birds need to hide nests from predators. While this particular use and timing of grazing was deemed incompatible, it does not preclude using grazing to control vegetation in other habitats. For a grazing program to be beneficial to the Refuge, it would have to meet a number of conditions: it would have to be confined primarily to uplands, grazing treatments in riverbottom areas would require a highly cooperative and responsive permittee to hire a full-time herder, grass plants would need to be monitored to ensure that less than 50 percent of the above ground portion of the plants were being consumed, administration of the program must not take staff time away from high priority habitat projects in wetland and riparian areas, the permittee must ensure that the grazing program is conducted as directed by Refuge staff, and no additional fences will need to be erected that will impede wildlife movements.

Wetlands

Approximately 1,245 acres of wetland habitat exists on the Refuge. This includes both deep-water and shallow marshes and wet meadows. Hardstem bulrush (*Scirpus acutus*) and cattail (*Typha latifolia*) are the dominant plant species. This habitat exists in seven active marsh units throughout the length of the Refuge adjacent to the Green River (see Map 3). From upstream to downstream, the names of the active marsh units are: Butch Cassidy, Hog Lake, Flynn, Spitzie, Warren, Nelson, and Hoy.

Refuge species that depend on this habitat for breeding include pied-billed grebe, American bittern, gadwall, American wigeon, blue-winged teal, cinnamon teal, northern shoveler, northern pintail, green-winged teal, canvasback, redhead, ring-necked duck, ruddy duck, Virginia rail, sora, American coot, marsh wren, red-winged blackbird, yellow-headed blackbird, tiger salamander, Woodhouse's toad, northern leopard frog, mink, and muskrat.

The American bittern, northern harrier, and white-faced ibis are listed as species of management concern. Wetlands on the Refuge provide important breeding habitat for bitterns and harriers. Ibis do not currently nest on the Refuge; however, approximately 300 utilize Refuge wetland habitats during spring and fall migration. Bitterns nest in large areas of emergent vegetation, especially hardstem bulrush. Harriers prefer large areas of dense, high grass, usually adjacent to wetlands.

A great number of migratory waterbirds rely on wetland habitat on the Refuge for foraging and resting during spring and fall migration. Browns Park contains the only significant wetland habitat for miles around. Peak use can total approximately 20,000 waterbirds in April-May and again in October.

The Butch Cassidy wetland unit is fed by water diversions from Beaver Creek, a perennial stream crossing the Refuge. Additional diversions from the creek irrigate grasslands and create wet meadow habitat. The six remaining wetland units are flooded with water pumped from the Green River. The Refuge staff diverts approximately 12,000 acre-feet of water annually from all sources. The Service's Draft Biological Opinion on the operation of Flaming Gorge Dam reviewed the Refuge's water depletion from the River when analyzing the effects on four endangered Colorado fish species, and found this depletion to be consistent with its recommendations. Current water rights (Appendix B) are ample for the wetland management outlined in the CCP.

The Nelson and Warren wetland units have a history of problems with overabundant emergent vegetation. Up to 90 percent of these units are covered with hardstem bulrush. Very little open water exists making these units less valuable for waterfowl and shorebirds.

The Horseshoe and Grimes wetland units were retired in 1996 due to their inability to hold water, the continuing spread of nonnative plants, and the high costs of pumping water, maintaining equipment, and applying herbicides. Historically, the units' value to wildlife was low. Retirement of these wetland units will also reduce the Refuge's annual water withdrawals from the Green River, benefitting endangered fishes of the Colorado River system downstream.

Riparian

This habitat includes the narrow ribbon of trees along the creeks and rivers on the Refuge. Approximately 1,112 acres of riparian habitat exists on the Refuge. The dominant plant species are Fremont's cottonwood (*Populus fremontii*), narrow-leaved cottonwood (*Populus angustifolia*), river birch (*Betula fontinalis*), buffaloberry (*Shepherdia argentea*), three-leaved sumac (*Rhus aromatica*), boxelder (*Acer negundo*), and sandbar willow (*Salix exigua*). On the Refuge, this habitat exists along Beaver Creek, Vermillion Creek, and the Green River (see Map 4).

Riparian habitat along the Green River has been declining since the construction of Flaming Gorge Dam upstream. Riparian plants evolved with a dynamic river hydrologic regime. Spring flooding and the deposition of fine textured soil was especially important to cottonwood. The dam has eliminated spring flooding, sifted out the fine textured soils, and stabilized the water regime allowing nonnative plants to thrive and spread. Perennial pepperweed (*Lepidium latifolium*), saltcedar (*Tamarix ramosissima*), Russian knapweed (*Centaurea repens*), and leafy spurge (*Euphorbia esula*) have been the most troublesome nonnative plants. Pepperweed occupies 54 acres in pure stands but is scattered over approximately 1,000 acres where it is mixed in with other species. Likewise, saltcedar occupies 12 acres in pure stands but is scattered over approximately 100 acres. Russian knapweed occurs in scattered clumps on approximately 100 acres. Leafy spurge occurs as widely scattered individual plants (fewer than 100 plants total) over approximately 10 acres.

Refuge species that depend on this habitat for breeding include great blue heron, Barrow's goldeneye, common merganser, spotted sandpiper, yellow-billed cuckoo, western screech-owl, willow flycatcher, Eastern kingbird, house wren, yellow warbler, Bullock's oriole, moose, beaver, and river otter.

Riparian forest provides habitat for the greatest number of migratory bird species on the Refuge. Countless numbers and species of birds rely on the riparian forest of the Green River to migrate to and from their breeding areas to the north. Refuge bird inventory work indicates that this habitat is especially important to migrating warbling vireo, orange-crowned warbler, yellow warbler, northern waterthrush, MacGillivray's warbler, Wilson's warbler, yellow-breasted chat and other species. Birds use this habitat for foraging, roosting, and cover during migration. Forest breeding birds that winter in Central and South America are not capable of migrating through the arid semidesert shrubland of Utah, Colorado, and Wyoming. Instead, they rely on the north-south riparian forest corridor of the Colorado and Green Rivers to get them to breeding areas at higher latitudes and elevations.

Grassland

Approximately 1,906 acres of grassland habitat exists on the Refuge. Dominant plant species in this habitat include alkali sacaton (*Sporobolus airoides*), inland saltgrass (*Distichlis spicata*), western wheatgrass (*Pascopyrum smithii*), and Great Basin wildrye (*Elymus cinereus*). Grasslands are found primarily along Beaver Creek, the Green River, and Ryegrass Draw (see Map 5).

Refuge species that depend on this habitat for breeding include savannah sparrow and montane vole. Refuge grasslands provide winter range for approximately 400 elk during normal winters; harsh winters may bring as many as 1,200. Mule deer also forage in grassland and other areas during winter.

Uplands-Semidesert Shrubland

Approximately 7,930 acres of semidesert shrubland exists on the Refuge. The dominant plant species are big sagebrush (*Artemesia tridentata*), black sagebrush (*Artemesia nova*), greasewood (*Sarcobatus vermiculatus*), rabbitbrush (*Chrysothamnus spp.*), spiny hopsage (*Grayia spinosa*), shadscale (*Atriplex confertifolia*), winterfat (*Kraschenninnikovia lanata*), Indian ricegrass (*Oryzopsis hymenoides*), needle-and-thread (*Stipa comata*), sand dropseed (*Sporobolus cryptandrus*), and cheatgrass (*Bromus tectorum*). This habitat covers much of the uplands throughout the Refuge.

Refuge species that rely on this habitat for breeding include sage grouse, burrowing owl, short-eared owl, loggerhead shrike, sage thrasher, Brewer's sparrow, sage sparrow, Ord's kangaroo rat, and sagebrush vole.

Loggerhead shrike and Brewer's sparrow are listed as species of management concern. Semidesert shrublands on the Refuge provide important breeding habitat for both species. Loggerhead shrike have very specific habitat requirements. They prefer nesting in isolated clumps of greasewood or other shrubs in close proximity to powerlines for perching, barbed wire fences for food caches, and unvegetated areas for foraging. Brewer's sparrow prefers nesting in arid shrubs such as greasewood or sagebrush of moderate height (2 to 5 feet) and high to moderate density.

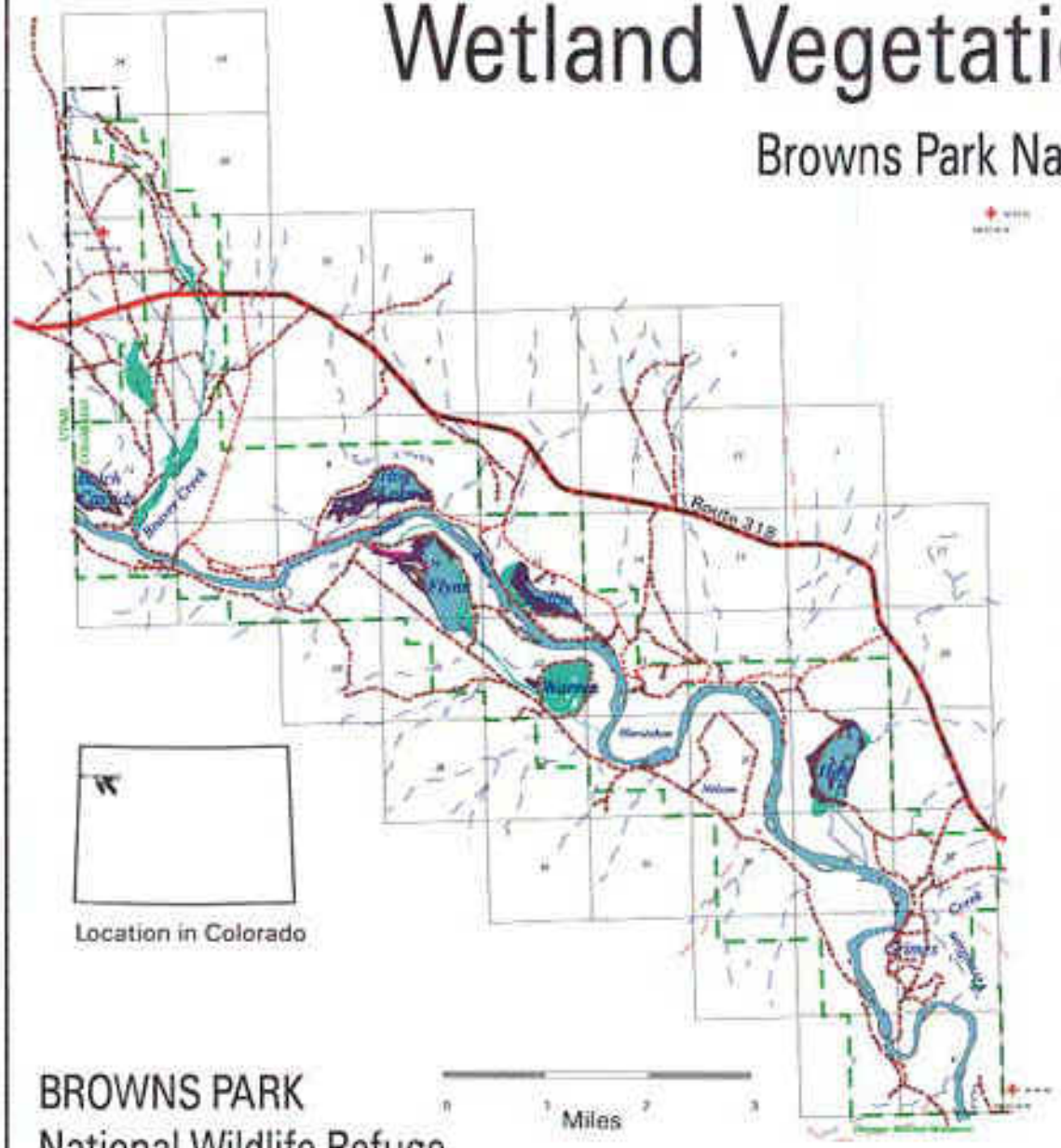
Loggerhead Shrike

Sage grouse are declining throughout their range in western states. Two leks have been located on the Refuge, and it is likely several others exist.

The Refuge provides winter range for mule deer and, to a lesser extent, pronghorn. Approximately 1,000 mule deer winter on the Refuge each year. Pronghorn usually number less than 50.

Wetland Vegetation Communities

Browns Park National Wildlife Refuge



LEGEND

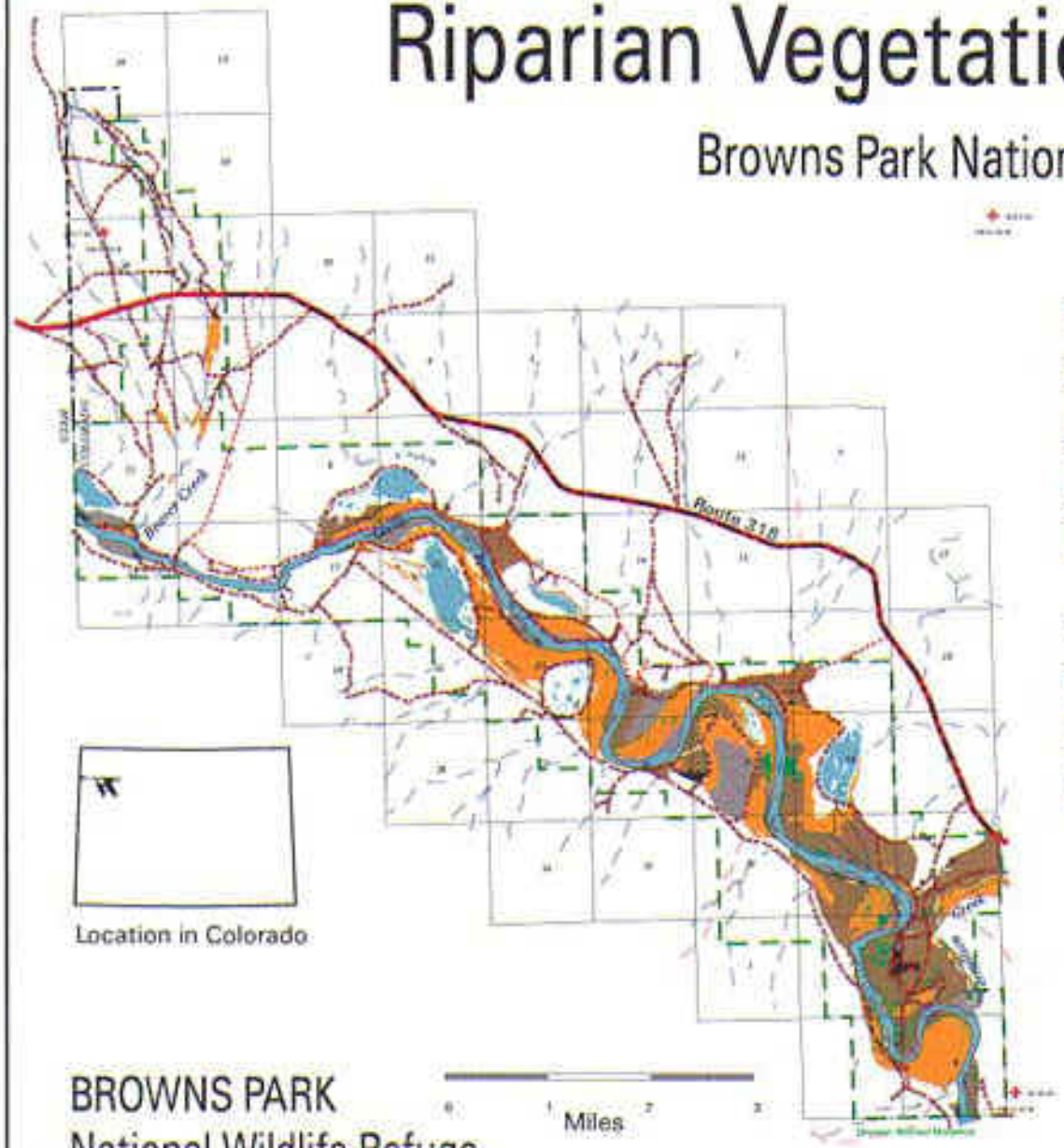
- Refuge Boundary
- Drainages
- Irrigation Ditch
- Paved Roads
- Trails
- BLM Boundary
- Dirt Roads
- Cliffline
- Open Water
- Cattail Dominant
- Bulrush Dominant
- Phragmites Dominant
- Unidentified Wetland

BROWNS PARK
National Wildlife Refuge
U.S. Fish & Wildlife Service, Dept. of Interior

Map #3

Riparian Vegetation Communities

Browns Park National Wildlife Refuge



LEGEND

- Open Water
- Willow
- Cottonwood
- Salt Cedar
- Greasewood-Rabbitbrush-Sagebrush Mix
- Pepperweed
- Grassland
- Unidentified Vegetation
- Sandbar
- Refuge Boundary
- Drainages
- Irrigation Ditch
- Paved Roads
- Trails
- BLM Boundary
- Dirt Roads
- Cliffline

Location in Colorado

0 1 2 3 Miles

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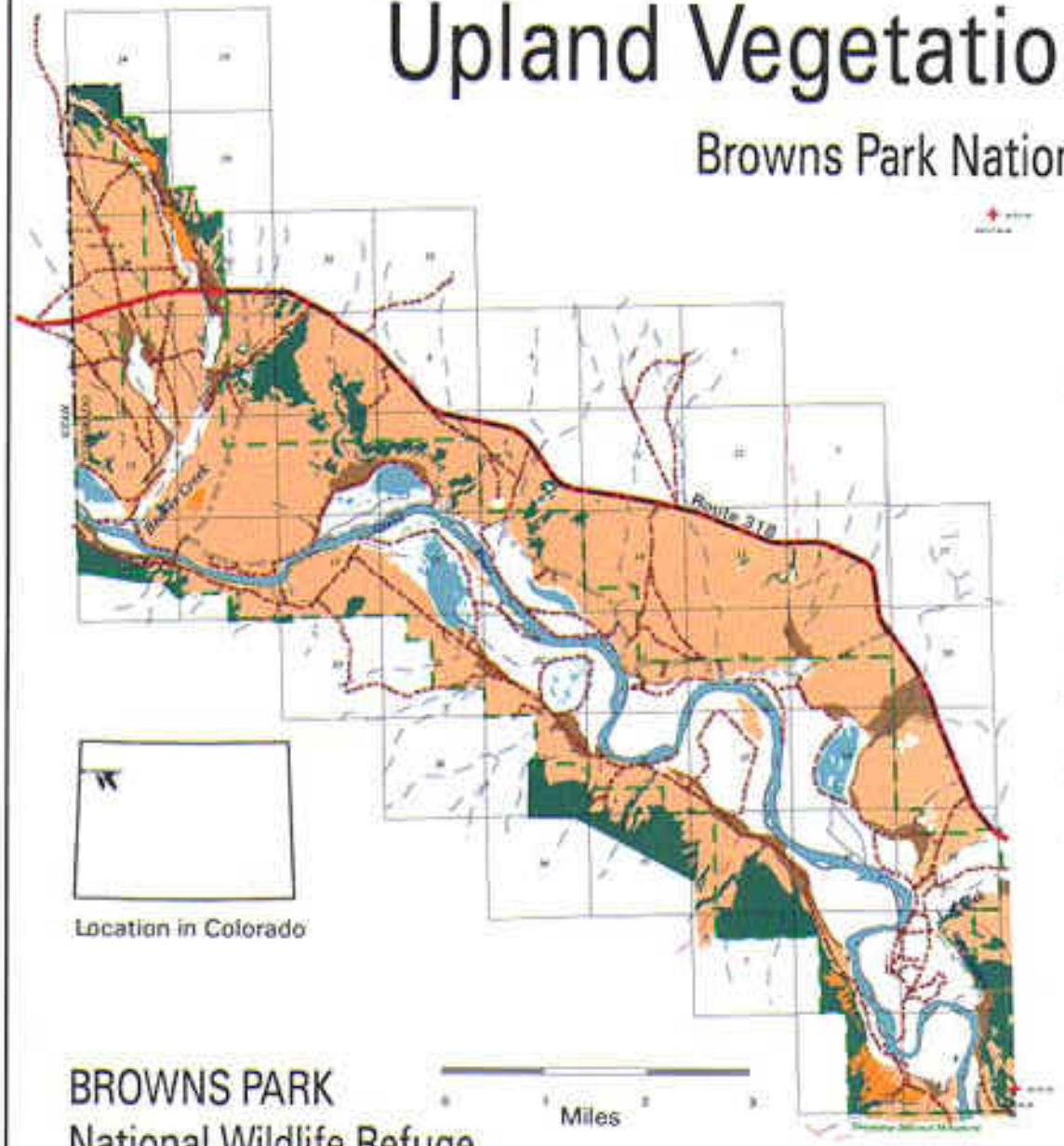
Map #4

Upland Vegetation Communities

Browns Park National Wildlife Refuge



LEGEND

- Refuge Boundary
- Drainages
- Irrigation Ditch
- Paved Roads
- Trails
- BLM Boundary
- Dirt Roads
- Cliffline
- Open Water
- Pinyon-Juniper
- Upland Shrub
- Grassland
- Greasewood-Rabbitbrush-Sagebrush Mix

Location in Colorado

Miles

BROWNS PARK
National Wildlife Refuge
U.S. Fish & Wildlife Service, Dept. of Interior

Map #5

Uplands-Pinyon-Juniper

Approximately 1,083 acres of pinyon-juniper habitat exists on the Refuge. As the name implies, the dominant plant species are Colorado pinyon pine (*Pinus edulis*) and Utah juniper (*Sabina osteosperma*). Pinyon-juniper is found in homogeneous stands along the southern border and in scattered clumps throughout the Refuge.

Refuge species that rely on this habitat for breeding include gray flycatcher, pinyon jay, juniper titmouse, black-throated gray warbler, and pinyon mouse.

Active management of this habitat has not occurred in the past nor is any planned for the future.

Uplands-Rock/Cliff

Although a great deal of this sub-habitat exists on the Refuge, it is mostly interspersed with pinyon-juniper woodland making the acreage difficult to determine. On the Refuge, this habitat is found along the Green River above Hog Lake and along the southern border.

Refuge species that rely on this sub-habitat for breeding include turkey vulture, golden eagle, peregrine falcon, prairie falcon, white-throated swift, common raven, rock wren, canyon wren, California myotis, western small-footed myotis, long-eared myotis, little brown myotis, fringed myotis, long-legged myotis, western pipistrelle, big brown bat, spotted bat, Townsend's big-eared bat, pallid bat, cliff chipmunk, spotted skunk, and tree lizard.

Special Status Species

For the purposes of this Plan, a special status species is one that is designated as an Endangered or Threatened Species or Species of Management Concern under the Endangered Species Act of 1973 (as amended) and/or State protective acts. Twenty-two special status wildlife species use the Refuge. However, it provides important habitat for only eight; American bittern, white-faced ibis, bald eagle, northern harrier, peregrine falcon, loggerhead shrike, Brewer's sparrow, and river otter. The northern harrier, loggerhead shrike, and Brewer's sparrow are the most abundant special status species on the Refuge.

The federally endangered Colorado pike minnow inhabits the Green River. The Refuge does not have control of the habitat of the pike minnow as the State of Colorado has jurisdiction over the River below the high water line. Pike minnow are infrequently caught by Refuge anglers and are observed from riverbanks on the Refuge. Service biologists working on the recovery of the pike minnow do not believe that the fish are breeding in this reach of the River. They feel the operation of Flaming Gorge Dam has lowered the water temperature of the Green River to the extent that it is too cold for pike minnow spawning. For this reason, the reach of the Green River passing through the Refuge is not designated as critical habitat for the species.

The river otter is a State-listed Endangered Species. Otters reintroduced to the Green River below Flaming Gorge Dam have colonized the Refuge and are frequently sighted in the River and in Refuge marshes each year. Young of the year have also been sighted, indicating that breeding is occurring on or adjacent to the Refuge.

Bald eagles, listed as a Threatened Species, are found in riparian habitat on the Refuge during the winter. These birds use the large trees for perch sites where they hunt for fish in the River. Approximately 30 eagles spend the winter on the Refuge each year. The peregrine falcon (recently removed from the Federal list of endangered and threatened species) is frequently observed hunting for waterbirds over Refuge marshes during the spring, summer, and fall. Nesting occurs adjacent to the Refuge in Lodore Canyon within Dinosaur National Monument.

The Ute ladies-tresses orchid (*Spiranthes diluvialis*) is a federally listed Threatened Species. It has been documented along the Green River in Browns Park and recently found within the floodplain of the Green River on the Refuge. Table 1 lists Special Status Species occurring on the Refuge.

Table 1. Special Status Species of Browns Park NWR

Species	Status	Abundance	Primary Habitat Use
Peregrine Falcon	ENDA	Unco Migr Unco Summ	Marsh
Ute Ladies-tresses	ENDA	Rare	Riparian
Bald Eagle	THRE	Comm Wint Rare Summ	Riparian
White-faced Ibis	SPMC	FaCo Migr Rare Summ	Marsh
Trumpeter Swan	SPMC	Rare Wint	Marsh
Northern Goshawk	SPMC	Rare Migr	Riparian
Ferruginous Hawk	SPMC	Rare Migr	SD Shrubland
Mountain Plover	SPMC	Rare Migr	SD Shrubland
Black Tern	SPMC	Unco Migr	Marsh
Burrowing Owl	SPMC	Rare Migr Rare Summ	SD Shrubland
Common Loon	SPMC	Rare Migr	Marsh
American Bittern	SPMC	Unco Migr Unco Summ	Marsh
Northern Harrier	SPMC	Comm Migr FaCo Summ	Grassland
Long-billed Curlew	SPMC	Rare Migr Rare Summ	Grassland
Yellow-billed Cuckoo	SPMC	Rare Migr Rare Summ	Riparian
Short-eared Owl	SPMC	Unco Migr Unco Summ	SD Shrubland
Olive-sided Flycatcher	SPMC	Unco Migr	Riparian
Gray Flycatcher	SPMC	FaCo Migr FaCo Summ	PJ Woodland
Bewick's Wren	SPMC	FaCo Migr FaCo Summ	PJ Woodland
Loggerhead Shrike	SPMC	Comm Migr Comm Summ	SD Shrubland
Virginia's Warbler	SPMC	FaCo Migr Unco Summ	Riparian
Brewer's Sparrow	SPMC	Comm Migr Comm Summ	SD Shrubland
River Otter	ENDA*	Unco Resi	Marsh

KEY:

Status
ENDA = Endangered; * = State-listed
SPMC = Species of Management Concern
THRE = Threatened

Abundance
Abun = Abundant
Comm = Common
FaCo = Fairly Common
Unco = Uncommon
Rare = Rare

Season
Resi = Resident (Year-round)
Migr = Migrant (Spring and/or Fall)
Wint = Winter
Summ = Summer

Public Use

Browns Park NWR is located in the remote northwest corner of Colorado, 95 miles from the nearest town of Craig, Colorado. The Refuge offers a number of wildlife-dependent recreation opportunities for people in a setting that combines abundant wildlife, beautiful scenery, solitude, and rich old-west history. This unique mixture can be found nowhere else in the System and makes the Refuge one of its hidden treasures. Access and location limit visitation to about 10,000 visits each year. Plans underway to pave the primary access route from Utah into Browns Park will likely increase visitation.

Wildlife-dependent recreational activities occurring on the Refuge primarily include the six priority public uses defined in the Refuge System Improvement Act: hunting, fishing, wildlife observation, photography, environmental education, and interpretation.

Hunting is allowed on the Refuge for mule deer, elk, cottontail rabbit, ducks, geese, coots, and mourning doves. The Refuge lies within State of Colorado limited quota quality hunting units for deer and elk making this a world class hunting area for those species. Waterfowl hunting is allowed on the Butch Cassidy and Hog Lake wetland units and throughout the Green River corridor. A waterfowl hunting blind for persons with disabilities is available on Hog Lake.

Fishing on the Refuge is primarily for cold-water species as the operation of Flaming Gorge Dam has lowered the temperature of the Green River in this area. Brown trout are relatively common in deep portions of the River where the structure and good current exists. Fishing is allowed along Beaver Creek for brook trout and native Colorado River cutthroat trout. Some questions arise as to whether these two fish populations still exist. A fishing pier for persons with disabilities is available on the Green River near Hog Lake.

Wildlife observation occurs throughout the Refuge and at all seasons of the year. Two campgrounds are currently available to facilitate wildlife watching at dawn and dusk in this remote area. Minimal development of one of the campgrounds is needed to define campsites and parking, replacement of a pit toilet, and to provide safe fire rings. Visitor use does not justify development or operation of both campgrounds. The Refuge will form a small working group to review both sites and discuss potential closure of one and development of the other. The working group will use criteria such as safe accommodation of vehicles and horse trailers, water availability, tree canopy and shade, need for and costs of maintenance, etc., to determine which site might be closed. A 10-mile wildlife drive passes through the Refuge on the north side of the River. An overlook has been built off of the wildlife drive above the Spitzie wetland unit. A birdwatching foot trail has been developed along Beaver Creek near Refuge Headquarters. Development of bird, mammal, amphibian, and reptile checklists will facilitate wildlife observation.

Photography is allowed throughout the Refuge, but no special facilities exist. A boardwalk and photo blind could be placed on the Spitzie wetland unit to enhance this use.

Opportunities for environmental education are somewhat limited due to the Refuge's remote location. Special events preplanned with schools have been successful. The Refuge currently holds International Migratory Bird Day and National Wildlife Refuge Week events each year.

Interpretation opportunities are numerous on the Refuge, but they remain undeveloped to date. Interpretation is currently limited to kiosk signs at Headquarters and on the wildlife drive. A brochure describing the area's cultural history, interpretive signs for the birdwatching trail and wildlife drive, and exhibits for the visitor contact area of Headquarters would enhance the Refuge's efforts to explain the Service mission and purposes for which the Refuge was established.

Refuge Cultural Resources

The Browns Park area is rich in cultural resources. The earliest visible cultural sites belong to the Fremont Indian culture that occupied Browns Park from approximately 300AD. Granaries, or storage buildings that held corn, remain today. This same culture left petroglyphs, rock carvings of strange peoples and animals, on rock slabs on and near the Refuge. Sometime after the Fremonts disappeared, a portion of the Shoshone or Snake Tribe arrived and began spending winters in the relatively mild climate of Browns Park. Tepee rings and other less dramatic evidence remain on the Refuge. During the Shoshone occupation, Euro-American trappers and traders entered the Valley. Three of these traders built a fort they christened Fort Davy Crockett. Sometime after the fur trade dissolved, cattle ranchers entered the Valley and began grazing the surrounding area. Not long after, outlaws, including such notables as Butch Cassidy and the Wild Bunch, set up in the Valley because it offered shelter from the law and for their rustled livestock.

Three National Historic Sites exist on the Refuge. The Lodore School is a schoolhouse that was erected in 1911. The Refuge permits the Browns Hole Homemakers Club to maintain and use the School for community events. The Two Bar Ranch is a late 19th century ranch that was winter headquarters for Ora Haley, a powerful rancher during that time. Fort Davy Crockett is the third Site on the Refuge. A possible fort site was excavated on the Refuge in 1984. While there is little doubt that the Fort existed on the Refuge, the results of the excavation did not conclusively prove the location.

Cultural resources on the Refuge are managed according to a myriad of Federal Acts (Appendix C). The Service's regional archaeologist and the Colorado State Historic Preservation Office are consulted before any ground disturbing activities are undertaken on the Refuge. Cultural resource sites are not currently limiting Refuge management.

Refuge Land Acquisition

The executive boundary established by Congress encompasses 13,455 acres. Approximately 2,000 acres of inholdings remain to be acquired. Approximately 1,310 acres are leased from the State of Colorado, and 200 acres are owned by Vermillion Land and Livestock. Approximately 490 acres are owned by the State of Colorado. Part of the State's tracts are managed by the Colorado Division of Wildlife as a State Wildlife Area. The other parts of the State's tracts are leased by the Service using migratory bird management funds. Acquisition of these remaining lands is a high priority.

The Refuge is surrounded by public land administered by the BLM. The area is managed for multiple uses, potentially including oil and gas development, mining, and off-road vehicle use. A large, active natural gas field exists just outside of Browns Park within Clay Basin, Utah. The potential exists for such development on BLM lands around the Refuge. Currently no leases for oil or gas development or mining exists. BLM rates the area's potential as low-intermediate to high-intermediate. A secondary threat to the Refuge is continued gravel mining. These activities pose threats to the vegetation, soils, Green River water quality, and resident and migratory wildlife. The construction of a gravel pit just outside the current boundary demonstrates that the Refuge may be vulnerable to development that impacts wildlife and the quality of wildlife-dependent recreational experiences for Refuge visitors.

A related issue involves hunting, camping, and off-road vehicle use. Regulations over such uses differ markedly between surrounding BLM land and the Refuge. Even though Refuge land is fenced and posted every quarter mile along the boundary, confusion still prevails. People enter the Refuge thinking they are still on BLM administered land and often violate Refuge regulations.

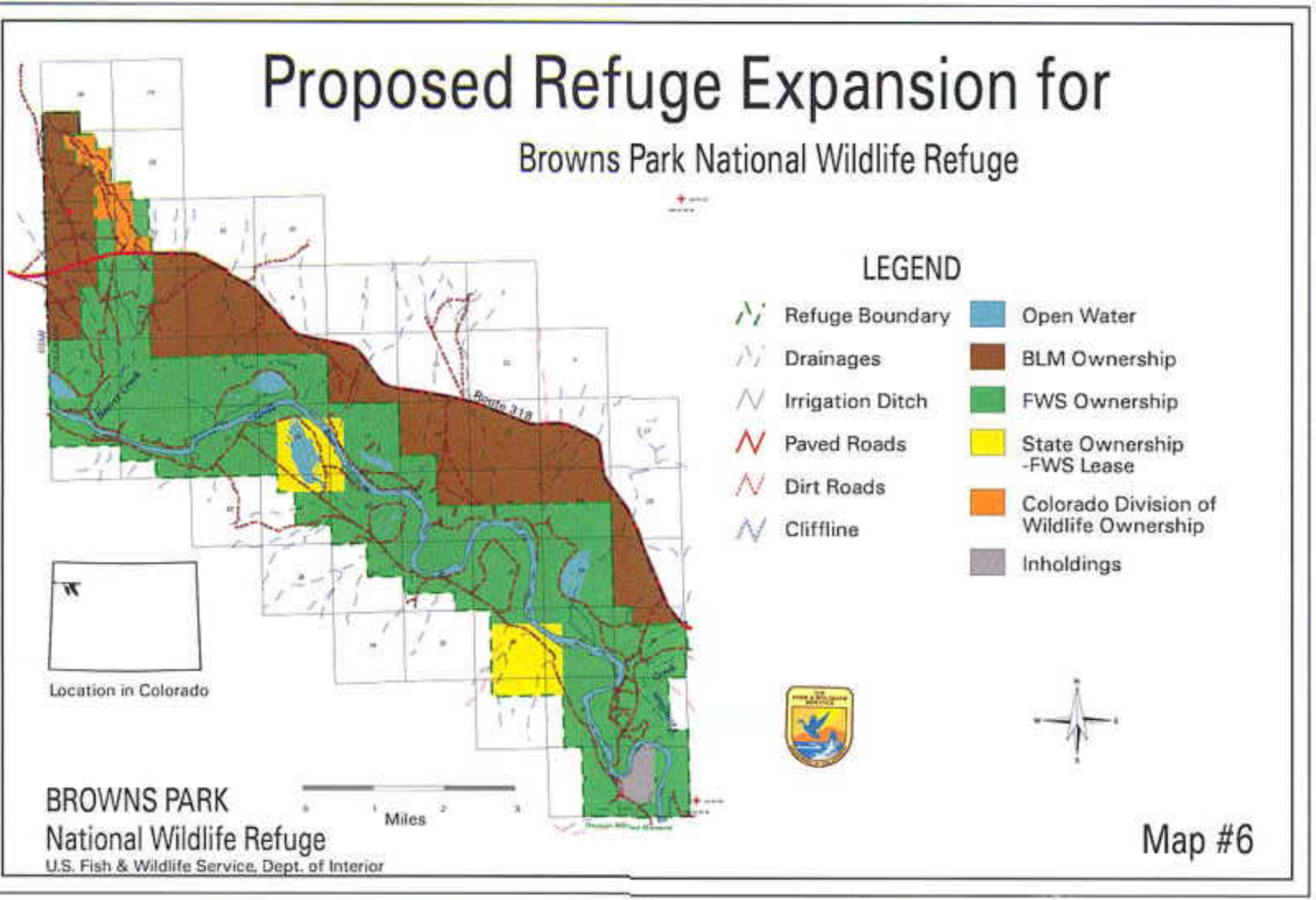
The Refuge has initiated a land transfer of BLM tracts between the current boundary and Highway 318 (approximately 6,002 acres) that would allow for improved management and identification of lands protected for wildlife and reduce confusion over permitted uses. A Preliminary Project Proposal has been approved by the Service (see Map 6). Fee title ownership by the Service would be pursued through a Public Land Order and land transfer from BLM. Since winter grazing of livestock is critical to the BLM permittee who currently leases the lands in this area, a grazing lease would be considered by the Service through a Special Use Permit. Moffat County leases a gravel pit in the transfer area and uses it to maintain local roads; including roads on the Refuge. If this area is acquired by the Refuge, a Special Use Permit would be considered to allow the County continued use of the pit. The land acquisition process will comply with NEPA regulations and will provide further opportunities for public comment and review of proposals.

Refuge Fire Management

Vegetation on and near the Refuge is very prone to wildfire. The surrounding area has the highest incidence of wildfire in the contiguous United States. For this reason, the Refuge is a cooperator in an interagency fire suppression agreement that covers northwestern Colorado. A similar agreement with adjacent areas in Utah is expected in the future. Two to three temporary firefighters are hired each summer to staff wildland fire engines based on the Refuge. Housing these firefighters has been a problem. Housing is not available on or off the Refuge. A bunkhouse is badly needed to meet fire suppression obligations.

Refuge Water Rights

A description of the Refuge's current water rights is included in Appendix C.


Proposed Refuge Expansion for
Browns Park National Wildlife Refuge
LEGEND
Refuge Boundary
Drainages
Irrigation Ditch
Paved Roads
Dirt Roads
Cliffline
Open Water
BLM Ownership
FWS Ownership
State Ownership -FWS Lease
Colorado Division of Wildlife Ownership
Inholdings
Route 318
Location in Colorado
Miles
BROWNS PARK
National Wildlife Refuge
U.S. Fish & Wildlife Service, Dept. of Interior
Map #6

Refuge Goals, Objectives, and Strategies

Refuge Establishment and Purpose

This section contains the heart of strategies that will define the management direction for the Refuge for the next 15 years (1999-2014). This direction is based on the Refuge System mission, the National Wildlife Refuge System Improvement Act of 1997, the purposes for which the Refuge was established, goals defined for the Upper Colorado River Ecosystem, as well as agency policies and directives. Under the Migratory Bird Conservation Act, the Refuge's purpose is " . . . for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." Under the Refuge Recreation Act, the Refuge's purpose is, "suitable for: 1) incidental fish and wildlife-dependent recreational development, 2) the protection of natural resources, and 3) the conservation of endangered species or threatened species. . . ." The goals that follow are based primarily on the management issues discussed earlier and fall into three categories: wildlife, habitats, and people. These strategies may be refined or amended as specific tasks are completed or new research and information come to light.

Refuge Mission

The Refuge mission is based on the Refuge's purposes and the National Wildlife Refuge System mission which are briefly discussed in the Introduction/Background.

Refuge Mission: Conserve, manage, and restore a diversity of wildlife and a diversity of habitats important to migratory birds and other species, while providing compatible wildlife-dependent recreation.

The essence of the Refuge's mission is that the emphasis will be on wildlife, habitats, and people (wildlife-dependent recreation).

Refuge Goals

The following goals are derived from the Refuge mission and information found in previous sections of this Plan. The fulfillment of these objectives and strategies will depend on available funding and staff levels.

Wildlife

- Conserve wildlife within the Refuge and the surrounding ecosystem.

Habitat

- Manage Refuge wetlands to meet the migratory and/or breeding requirements of American bittern, northern harrier, white-faced ibis, waterfowl, shore birds, and other waterbirds.
- Manage Refuge riparian habitat to meet the migra tory and/or breeding requirements of birds dependent on the Green River corridor.
- Manage Refuge grasslands to meet the breeding requirements of migratory birds and the wintering requirements of mule deer and elk.
- Manage Refuge semidesert shrublands to meet the breeding requirements of loggerhead shrike, Brewer's sparrow, other migratory birds, and sage grouse and the wintering requirements of mule deer, pronghorn, and elk.
- Manage Refuge pinyon-juniper habitat to meet the breeding requirements of migratory birds.

People

- Provide opportunities for wildlife dependent recreation that are compatible with the Refuge's purposes for the benefit of all people.

Refuge Objectives and Strategies

An objective is one way to accomplish a specific goal. Objectives describe who, what, when, where, and why. The who in all cases is the Refuge. The when follows each objective. Strategies listed under each objective describe how it will be accomplished. Goals, objectives, and strategies for this Plan follow.

Wildlife

The Refuge staff does very little to directly manage populations of resident wildlife on the Refuge. This is the province of the Colorado Division of Wildlife that primarily manages game species through hunting and trapping. Refuge problems with too many or too few game animals are resolved through consultation with the Division. Refuge wildlife management is more passive, habitat oriented, and focused on protections from harmful activities. The Refuge does have the authority to close or restrict hunting, trapping, fishing, or public access to specific areas within the boundary. Because wildlife (especially migratory birds) are so wide ranging, conservation becomes challenging and requires coordination with many agencies, organizations, and individuals.

Other areas managed for wildlife or natural resources in the Browns Park locale include the Browns Park State Waterfowl Area, Dinosaur National Monument, and the Craig and Vernal Districts of the Bureau of Land Management. Currently, Refuge staff cooperates with their activities. The Refuge Manager represents the Service on the Northwest Colorado Coordinated Resource Management steering committee as well. This committee is made up of natural resource managers and users to seek consensus solutions to natural resource use conflicts in the area.

Goal: Conserve wildlife within the Refuge and the surrounding ecosystem.

Objective: The Refuge staff will support wildlife conservation programs within the Green River Basin in Colorado to provide for the greater habitat needs of Refuge wildlife and to benefit wildlife in the surrounding ecosystem. Year 1-15

Strategies:

- Represent the Service and the Refuge on the Northwestern Colorado Coordinated Resource Management steering committee.
- Continue to provide technical expertise to agencies, organizations, and individuals for the benefit of wildlife conservation within the Green River Basin in Colorado.

Objective: Reduce threats to Refuge wildlife from conflicting land uses that could occur adjacent to the Refuge boundary. Year 1-5

Strategy:

- Acquire from 6,000 to 12,000 acres of adjacent BLM administered land through interagency land transfer.
- In cooperation with the BLM land-use planning process, propose habitat protections to be included in the Little Snake Resource Management Plan reflecting Refuge concerns over potential land uses adjacent to the Refuge.

Habitat

Browns Park NWR provides habitat for 300 species of wildlife. Habitat management that favors some species will not favor others. Priorities need to be set to insure optimum habitat for the most important species. The Refuge was established under the Migratory Bird Treaty Act and the Refuge Recreation Act as discussed in the Refuge Establishment and Purpose section. These Acts list migratory birds and endangered and threatened species as high priorities. Habitat needs of the three federally listed species known to occur on the Refuge (peregrine falcon, bald eagle, and Ute's ladies-tresses) can be met with little active management. The Refuge provides habitat for over 200 species of migratory birds. Among the migratory birds, several were identified earlier as Special Status species. Besides migratory birds, the Refuge provides important habitat for resident wildlife species such as mule deer, elk, pronghorn, and sage grouse (nonmigratory bird). Habitat management on the Refuge will focus on providing habitat for migratory birds (including Special Status species), and resident wildlife that the Refuge is important to.

Good habitat is the key to wildlife conservation. Habitat management is the most important activity on the Refuge. Separate goals have been developed for each habitat type identified in the Resource Description Section of this Plan. These goals and objectives call for increased research and habitat monitoring activities and will require a full-time Wildlife Biologist and a part-time Biological Technician to apply, monitor, and analyze habitat treatments.

Wetlands

Goal: Manage Refuge wetlands to meet the migratory and/or breeding requirements of American bittern, northern harrier, white-faced ibis, waterfowl, shorebirds, and other water birds.

Objective: The Refuge staff will manage for contiguous blocks of tall emergent vegetation no smaller than five acres on the Butch Cassidy, Hog Lake, and Flynn wetland units to meet the breeding requirements of American bittern. Years 1-15

Strategies:

- Protect contiguous blocks of hardstem bulrush during periodic emergent plant control in these units. Limit drawdown to only one of these three units during the breeding season.
- Conduct annual spring call surveys of bittern to monitor response to management. Such management will also benefit sora and Virginia rail. Portions of these wetlands will be managed for waterfowl and other waterbirds.

Objective: The Refuge staff will manage for contiguous blocks of wet meadow habitat no smaller than five acres in the Ryegrass and Beaver Creek areas, and the Butch Cassidy, Hog Lake, Flynn, Spitzie, Warren, Nelson, and Hoy wetland units to meet the breeding requirements of northern harrier. Years 1-15

Strategy:

- In the spring, flood wet meadows in Ryegrass and Beaver Creek, and allow water to seep out of the seven wetland units to maintain the tall grass necessary for harrier nesting and foraging. Leave small hummocks within thick, tall grass dry for nest sites. This will also provide forage areas for white-faced ibis, waterfowl, and some shorebirds.

Objective: The Refuge staff will manage for large areas of open, shallow water not exceeding a mean depth of four inches during spring and/or fall migration in the Nelson, Warren, and Hoy wetland units to meet the migratory requirements of white-faced ibis, dabbling waterfowl, shorebirds, and other waterbirds. Years 1-15

Strategies:

- Manage Nelson and Warren wetland units as seasonal wetlands using moist soil management techniques. Time annual soil exposure to coincide with the start of the growing season for hardstem bulrush (approximately June 1).
- Periodically drawdown, burn, and disc these wetland basins to maintain an emergent canopy coverage of less than 30 percent.
- Establish transects to measure encroachment of bulrush and growth of forage vegetation.
- This water regime should control emergent vegetation in Warren and Nelson wetland units. Water management determines in a large part what foods are available for migrating waterbirds, and the depth, duration, and timing of the wet period are all important. Periodic drawdowns accelerate decomposition and are important for nutrient cycling. Flooding a marsh after it has been drawn-down for a growing season makes a large amount of invertebrate and plant food available to birds. Flooding a marsh seasonally, such that it is only wet during a short period in the spring and fall, can influence the type and coverage of wetland plants found there. Hardstem bulrush requires persistent water to increase its coverage. Discing marsh soils to a depth that removes the bulrush rhizomes is sometimes necessary to control bulrush encroachment.

Riparian

Goal: Manage Refuge riparian habitat to meet the migratory and breeding requirements of birds dependent on the Green River corridor and to maintain populations of Ute ladies-tresses orchid.

Objective: The Refuge staff will treat, restore, and protect a minimum of 100 acres of riparian habitat per year for the benefit of migratory birds. Year 1-15

Strategies:
- P Participate in Service negotiations with Bureau of Reclamation for restoration of pre-dam river conditions on the Green River below Flaming Gorge Dam.
- P Support research on riparian habitats on the Refuge.
- P Collect, propagate, out-plant, and protect native genotypes of dominant riparian tree, shrub, and grass species (including Fremont's cottonwood, silver buffaloberry, inland saltgrass, alkali sacaton, Great Basin wildrye, western wheatgrass, Indian ricegrass).
- P Treat areas infested with nonnative plants using the most efficient integrated pest management techniques (such as chemical, mechanical, and biological controls). Monitor habitat responses to these treatments using vegetation transects and mapping.
- P Protect cottonwood trees used by bald eagles as hunting perches from fire and beaver damage, especially those adjacent to the River.
- P Hire a full-time Wildlife Biologist to apply, monitor, and analyze habitat management treatments.

Objective: The Refuge will restore riparian habitat in the Horseshoe and Grimes wetland units to improve wildlife habitat. Year 3-5

Strategies:
- P Remove water control structures and level dikes.
- P Remove tamarisk trees.
- P Drill native grass seed and out-plant native shrub and tree species.
- P Control pest plants that establish on disturbed soils.
- P Reevaluate water rights currently used to support these units.

Objective: Maintain populations of Ute ladies-tresses occurring on Refuge lands.

Strategy:
- P Monitor existing colonies of Ute ladies-tresses orchid on the Refuge. Identify essential habitat and protect from disturbance.

Grasslands

Goal: Manage Refuge grasslands to meet the breeding requirements of migratory birds and the wintering requirements of mule deer and elk.

Objective: The Refuge staff will provide a diversity of grassland habitats in the Beaver Creek and Ryegrass areas and along the Green River to meet the breeding requirements of grassland obligate species such as savannah sparrow and provide winter forage for mule deer and elk. Year 1-15

Strategies:
- P Use fire to keep grasslands vigorous. Interseed native grass species in smooth brome dominated areas.
- P Treat areas infested with nonnative plants using the most efficient integrated pest management techniques (such as chemical, mechanical or biological control).
- P Monitor habitat responses to treatments using vegetation transects and mapping.
- P Hire a part-time Biological Technician to monitor habitat treatments.

Semidesert Shrublands

Goal: Manage Refuge semidesert shrublands to meet the breeding requirements of loggerhead shrike, Brewer's sparrow, other migratory birds, and sage grouse, and the wintering requirements of mule deer, pronghorn, and elk.

Objective: The Refuge staff will provide breeding habitat for loggerhead shrike including isolated clumps of mature greasewood (nesting cover) in close proximity to powerlines (perching), barbed wire fencing (food caching), and bare ground areas including roadways (foraging) with emphasis on those sites currently used by nesting shrikes. Year 1-15

Strategies:

- Cooperate with State and County governments to protect habitat in rights-of-way meeting the criteria described above. This management primarily involves lands outside the Refuge boundary.
- Conduct annual nest monitoring of appropriate sites on and adjacent to the Refuge.

Objective: The Refuge staff will manage for contiguous blocks of semidesert shrubland of no less than five acres, composed of shrubs from 3 feet to 5 feet tall, to meet the breeding requirements of Brewer's sparrow with emphasis on areas currently used by nesting sparrows. Year 1-15

Strategies:

- Survey for Brewer's sparrow during June in appropriate habitat to determine areas with the greatest density of singing males.
- Protect these areas from management actions that would reduce shrub structure needed for nesting (i.e., fire).

Objective: In areas not being managed for loggerhead shrike or Brewer's sparrow, the Refuge staff will provide a diversity of semidesert shrubland micro-habitats to meet the breeding requirements of sage grouse, sage sparrow, sage thrasher, and to provide winter habitat for mule deer and pronghorn. Year 1-15

Strategies:

- Open up areas dominated by greasewood that have Great Basin wildrye in close proximity with controlled burning. Protect stands of Wyoming big sagebrush from fire.
- In known sage grouse breeding areas, keep lek sites free of woody vegetation. Although they are not a migratory bird, sage grouse are declining throughout their range and are worthy of special emphasis. Sage sparrow and sage thrasher are also dependent on mature sagebrush stands. Mule deer and pronghorn are managed by the Colorado Division of Wildlife (CDOW) ; however, the Refuge provides critical winter range for them.
- Survey the Browns Park area for sage grouse leks annually.
- Monitor treatment sites for vegetative and wildlife response.

Pinyon-Juniper Woodlands

Goal: Maintain Refuge pinyon-juniper woodlands to provide habitat for breeding Neotropical migratory birds, resident perching birds, and raptors.

Objective: The Refuge staff will protect the limited amount of pinyon-juniper habitat within the boundary from disturbance. Year 1-15

Strategy:

- Suppress wildfires burning in or threatening this habitat when suppression actions would not be unduly hazardous.

People

Managing public use on national wildlife refuges involves delicate balance. At what point does wildlife-dependent recreation compromise the very resources the Refuge was designed to protect? It is hard to say. In most cases, the best strategy is to provide recreation opportunities, monitor the resulting impacts to wildlife where possible, and to err on the side of wildlife protection. Allowing people to recreate on the Refuge benefits wildlife indirectly. Visitors will learn about the needs of wildlife they come to see and will appreciate and support the mission and goals of Browns Park NWR and the Service. A full-time Outdoor Recreation Planner or Refuge Operations Specialist will be needed to plan, implement, and evaluate the public use program proposed in the CCP.

Goal: Provide opportunities for wildlife dependent recreation that are compatible with Refuge purposes for the benefit of all people.

Objective: The Refuge staff will provide quality hunting and fishing opportunities that will not adversely affect local or regional populations of game species. Year 1-15

Strategies:

- Allow limited hunting of mule deer, elk, cottontail rabbit, and mourning dove. Vehicle access will be minimized to improve hunt quality and avoid disturbance to wildlife.
- Allow waterfowl and coot hunting on no more than two marshes and the Green River corridor during any one season.
- Allow fishing along Beaver Creek and the Green River corridor. Refuge wetlands and Vermillion Creek do not support populations of sport fish.

Objective: The Refuge staff will provide quality, accessible opportunities for wildlife observation, photography, environmental education, and interpretation for the benefit of all people. Year 1-15

Strategies:

- Maintain an overlook above Spitzie marsh.
- Maintain a birdwatcher's trail along Beaver Creek.
- Fully develop one campground to facilitate wildlife observation during dawn and dusk in this remote area. Completion date: 2001
- Develop a bird checklist. Completion date: 2001
- Develop a mammal, reptile, and amphibian checklist. Completion date: 2001
- Develop and place kiosks at the eastern and western ends of the Refuge along Colorado Highway 318. Completion date: 2002
- Develop a fully accessible boardwalk and photo blind on Spitzie marsh. Completion date: 2003
- Develop a brochure that interprets the cultural history of Browns Park. Completion date: 2003
- Develop interpretive signs and displays for the birdwatcher's trail, wildlife drive, and visitor contact area of Refuge Headquarters. Completion date: 2002
- Upgrade basic visitor facilities to accommodate persons with disabilities or provide comparable experiences for disabled visitors. Completion date: 1999-2013
- Conduct International Migratory Bird Day and National Wildlife Refuge Week events on the Refuge annually.
- Hire a full-time Outdoor Recreation Planner or Refuge Operations Specialist to plan, implement, and evaluate the public use program as proposed.

Plan Implementation

This section briefly outlines what will be required in additional funding and personnel to implement this Plan.

Funding and Personnel Requirements

These are the estimated costs to implement the major elements of the CCP. See Appendix G for descriptions.

Project	Projected Cost
Construct bunkhouse to support temporaries and acquire management information	$210,000
Finish development of one campground	$ 95,000
Develop interpretive signs, exhibits and brochures	$ 75,000
Develop wildlife checklists and construct two kiosks	$ 65,000
Reduce pest plants	$ 55,000
Restore Horseshoe and Grimes Units	$ 90,000
Complete accessibility modifications and developments	$ 50,000
Hire biologist to apply habitat treatments and monitor (see personnel needed below)	$323,000
Hire Outdoor Recreation Planner to develop opportunities for wildlife-dependent recreation (see personnel needed below)	$313,000
Hire seasonal Biological Technician to manage pest plants (see personnel needed below)	$100,000
Construct outlets for the Flynn and Hog Lake Units	$ 65,000
Construct boardwalk and observation blind in Spitzie Unit	$ 80,000

Permanent Personnel Needed to Implement the Plan

Funding for two additional permanent employees and one seasonal employee is needed to implement this Plan.

Current Personnel	Personnel Needed
Refuge Manager, GS-12	Refuge Manager, GS-12
Refuge Operations Specialist, GS-09	Refuge Operations Specialist, GS-11
Engineering Equipment Operator, WG-10	Engineering Equipment Operator, WG-10
Maintenance Worker, WG-8	Maintenance Worker, WG-8
Administrative Support Assistant, GS-5	Administrative Support Assistant, GS-6
Position nonexistent	Wildlife Biologist, GS-9
Position nonexistent	Outdoor Recreation Planner/Refuge Operations Specialist, GS-9
Position nonexistent	Biological Technician, Career Seasonal, GS-7

Step-Down Management Plans

In addition to administrative plans required by national policies and guidance, step-down plans that will need to be developed include:

- Wildlife Conservation Plan (Completion Date: 2002) This will further describe site-specific actions necessary to manage or protect wildlife within the Refuge and the surrounding ecosystem.
- Habitat Management Plan (Completion Date: 2000) The Habitat Management Plan will address long-term management of the broad habitat types found on the Refuge. It will include methods to monitor the health and effectiveness of treatments on habitats. Individual sections featuring each broad habitat type on the Refuge (marsh, riparian, grassland, semidesert shrubland, pinyon-juniper) will be included in the Plan. This is a departure from previous stand-alone plans. The marsh habitat management section will replace the current Water Management Plan. The Wildlife Inventory Plan and the Fire Management Plan will also be incorporated into this Plan.
- Public Use Plan (Completion Date: 2001) This will address the long-term development of public use facilities and the management of public use on the Refuge. The Hunting Plan, which addresses the specifics of hunting on the Refuge including species, locations, and special regulations, will now be a section of this Plan.

Additional step-down plans that will need modification or amendment as a result of this CCP include Fire Management, Grassland Management, Hunting, Water Management, Wildlife Inventory, and Land Management. The Refuge had previously developed a Master Plan that will be superseded and replaced by the CCP.

Partnership Opportunities

Potential partners that could assist the Refuge with implementation of the Plan are as follows:

Grand Valley Audubon Society: The Society may be interested in "adopting" the Refuge by volunteering to help with the workload associated with the Plan. Adopt-A-Refuge is a National Audubon initiative.

Colorado Division of Wildlife: The Refuge staff will work with the Division to manage the populations of game species on the Refuge.

Moffat County: The Refuge staff will coordinate nonnative plant control with Moffat County Weed and Pest.

Craig Area Chamber of Commerce: The Refuge staff will cooperate with the Chamber to dispense information to hunters and other Refuge visitors.

Dinosaur National Monument: The Refuge will share staff, equipment, and professional expertise with the Monument.

Bureau of Land Management: The Refuge will share staff, equipment, and professional expertise with the John Jarvie National Historic Site and the Little Snake Resource Area.

Craig Interagency Dispatch Center: The Refuge staff will cooperate with Craig Dispatch for wildfire suppression within the ecosystem.

Northwest Colorado Coordinated Resource Management: The Refuge staff will maintain involvement for the betterment of natural resource conservation within the surrounding ecosystem.

Dinosaur Nature Association: The Refuge staff will seek support from this existing cooperating association.

Browns Park State Waterfowl Refuge: The Refuge staff will cooperate with the State for wildlife conservation in Browns Park.

Browns Hole Homemakers Club: The Refuge will permit the Browns Hole Homemakers Club to manage and maintain the Lodore School National Historic Site.

Browns Park Sportsmen's Club: The Refuge staff will request the assistance of the Sportsmen's Club for selected wildlife projects.

Vermillion Ranch Limited Partnership: Grazing permittee on adjacent BLM lands and potential future Refuge permittee.

Monitoring and Evaluation

Accomplishment of objectives in the CCP will be monitored annually by the Refuge Manager's supervisor. The Refuge Manager's annual performance evaluation will be tied to the accomplishment of objectives that are scheduled for that performance year. An Annual Work Plan will be submitted to his/her supervisor in the first quarter of each fiscal year. The Work Plan will outline projects scheduled for completion in that year including those detailed in the CCP. The staff will assess progress on strategies, revise and critique ongoing projects, and share observations and biological data through regular meetings with the Refuge Manager. Specific strategies include biological monitoring to evaluate the outcome or effects of the action.

It is reasonable to believe that substantial changes could occur within the next 15 years. The objectives of the Plan will be examined a minimum of every five years to determine if they are still valid and to allow the addition or deletion of objectives or strategies.

Appendix A
Wildlife Species of Browns Park NWR
Birds

Loons

Common Loon	*Gavia immer*

Grebes

Pied-billed Grebe	*Podilymbus podiceps*
Horned Grebe	*Podiceps auritus*
Eared Grebe	*Podiceps nigricollis*
Western Grebe	*Aechmophorus occidentalis*
Clark's Grebe	*Aechmophorus clarkii*

Pelicans

American White Pelican	*Pelecanus erythrorhynchos*

Cormorant

Double-crested Cormorant	*Phalacrocorax auritus*

Bitterns, Herons

American Bittern	*Botaurus lentiginosus*
Great Blue Heron	*Ardea herodias*
Snowy Egret	*Egretta thula*
Cattle Egret	*Bubulcus ibis*
Green Heron	*Butorides virescens*
Black-crowned Night-Heron	*Nycticorax nycticorax*

Ibis, Stork

White-faced Ibis	*Plegadis chihi*

Vultures

Turkey Vulture	*Cathartes aura*

Geese

Snow Goose	*Chen caerulescens*
Canada Goose	*Branta canadensis*

Swans

Trumpeter Swan	*Cygnus buccinator*
Tundra Swan	*Cygnus columbianus*

Ducks

Wood Duck	*Aix sponsa*
Gadwall	*Anas strepera*
American Wigeon	*Anas americana*
Mallard	*Anas platyrhynchos*
Blue-winged Teal	*Anas discors*
Cinnamon Teal	*Anas cyanoptera*
Northern Shoveler	*Anas clypeata*
Northern Pintail	*Anas acuta*
Green-winged Teal	*Anas crecca*
Canvasback	*Aythya valisineria*
Redhead	*Aythya americana*
Ring-necked Duck	*Aythya collaris*
Lesser Scaup	*Aythya affinis*
Bufflehead	*Bucephala albeola*
Common Goldeneye	*Bucephala clangula*
Barrow's Goldeneye	*Bucephala islandica*
Hooded Merganser	*Lophodytes cucullatus*
Common Merganser	*Mergus merganser*
Red-breasted Merganser	*Mergus serrator*
Ruddy Duck	*Oxyura jamaicensis*

Hawks, Kites, Eagles

Osprey	*Pandion haliaetus*
Bald Eagle	*Haliaeetus leucocephalus*
Northern Harrier	*Circus cyaneus*
Sharp-shinned Hawk	*Accipiter striatus*
Cooper's Hawk	*Accipiter cooperii*
Northern Goshawk	*Accipiter gentilis*
Swainson's Hawk	*Buteo swainsoni*
Red-tailed Hawk	*Buteo jamaicensis*
Ferruginous Hawk	*Buteo regalis*
Rough-legged Hawk	*Buteo lagopus*
Golden Eagle	*Aquila chrysaetos*

Falcons

American Kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine Falcon	*Falco peregrinus*
Prairie Falcon	*Falco mexicanus*

Gallinaceous Birds

Chukar	(Introduced)	*Alectoris chukar*
Sage Grouse		*Centrocercus urophasianus*

Rails, Gallinules

Virginia Rail	*Rallus limicola*
Sora	*Porzana carolina*
American Coot	*Fulica americana*

Cranes

Sandhill Crane	*Grus canadensis*

Plovers

Black-bellied Plover	*Pluvialis squatarola*
Semipalmated Plover	*Charadrius semipalmatus*
Killdeer	*Charadrius vociferus*
Mountain Plover	*Charadrius montanus*

Stilt, Avocet

Black-necked Stilt	*Himantopus mexicanus*
American Avocet	*Recurvirostra americana*

Sandpipers

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

Phalaropes

Wilson's Phalarope	*Phalaropus tricolor*
Red-necked Phalarope	*Phalaropus lobatus*

Gulls

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

Terns

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

Pigeons, Doves, Parakeet

Rock Dove	(Introduced)	*Columba livia*
Mourning Dove		*Zenaida macroura*

Cuckoos

Yellow-billed Cuckoo	*Coccyzus americanus*

Owls

Barn Owl	*Tyto alba*
Western Screech-Owl	*Otis kennicottii*
Great Horned Owl	*Bubo virginianus*
Burrowing Owl	*Athene cunicularia*
Long-eared Owl	*Asio otus*
Short-eared Owl	*Asio flammeus*
Northern Saw-whet Owl	*Aegolius acadicus*

Goatsuckers

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

Swifts

White-throated Swift	*Aeronautes saxatalis*

Hummingbirds

Black-chinned Hummingbird	*Archilochus alexandri*
Calliope Hummingbird	*Stellula calliope*
Broad-tailed Hummingbird	*Selasphorus platycercus*
Rufous Hummingbird	*Selasphorus rufus*

Kingfisher

Belted Kingfisher	*Ceryle alcyon*

Woodpeckers

Lewis' Woodpecker	*Melanerpes lewis*
Red-naped Sapsucker	*Sphyrapicus nuchalis*
Downy Woodpecker	*Picoides pubescens*
Hairy Woodpecker	*Picoides villosus*
Northern Flicker	*Colaptes auratus*

Flycatchers

Olive-sided Flycatcher	*Contopus cooperi*
Western Wood-Pewee	*Contopus sordidulus*
Willow Flycatcher	*Empidonax traillii*
Least Flycatcher	*Empidonax minimus*
Hammond's Flycatcher	*Empidonax hammondii*
Gray Flycatcher	*Empidonax wrightii*
Dusky Flycatcher	*Empidonax oberholseri*
Cordilleran Flycatcher	*Empidonax occidentalis*
Say's Phoebe	*Sayornis saya*
Ash-throated Flycatcher	*Myiarchus cinerascens*
Western Kingbird	*Tyrannus verticalis*
Eastern Kingbird	*Tyrannus tyrannus*

Shrikes

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

Vireo

Gray Vireo	*Vireo vicinior*
Blue-headed Vireo	*Vireo solitarius*
Warbling Vireo	*Vireo gilvus*

Jays, Magpies, Crows, Ravens

Western Scrub-Jay	*Aphelocoma californica*
Pinyon Jay	*Gymnorhinus cyanocephalus*
Clark's Nutcracker	*Nucifraga columbiana*
Black-billed Magpie	*Pica pica*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*

Lark

Horned Lark	*Eremophila alpestris*

Swallows

Tree Swallow	*Tachycineta bicolor*
Violet-green Swallow	*Tachycineta thalassina*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Bank Swallow	*Riparia riparia*
Cliff Swallow	*Petrochelidon pyrrhonota*
Barn Swallow	*Hirundo rustica*

Chickadees, Titmice, Verdin, Bushtit

Black-capped Chickadee	*Poecile atricapillus*
Mountain Chickadee	*Poecile gambeli*
Juniper Titmouse	*Baeolophus griseus*
Bushtit	*Psaltriparus minimus*

Nuthatches

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

Creeper

Brown Creeper	*Certhia americana*

Wrens, Dipper

Rock Wren	*Salpinctes obsoletus*
Canyon Wren	*Catherpes mexicanus*
Bewick's Wren	*Thryomanes bewickii*
House Wren	*Troglodytes aedon*
Marsh Wren	*Cistothorus palustris*
American Dipper	*Cinclus mexicanus*

Kinglets

Golden-crowned Kinglet	*Regulus satrapa*
Ruby-crowned Kinglet	*Regulus calendula*

Gnatcatchers

Blue-gray Gnatcatcher	*Polioptila caerulea*

Thrushes, Bluebirds

Western Bluebird	*Sialia mexicana*
Mountain Bluebird	*Sialia currucoides*
Townsend's Solitaire	*Myadestes townsendi*
Swainson's Thrush	*Catharus ustulatus*
Hermit Thrush	*Catharus guttatus*
American Robin	*Turdus migratorius*

Thrashers

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

Starling

European Starling	*Sturnus vulgaris*

Pipits

American (Water) Pipit	*Anthus rubescens*

Waxwings

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

Warblers

Orange-crowned Warbler	*Vermivora celata*
Virginia's Warbler	*Vermivora virginiae*
Yellow Warbler	*Dendroica petechia*
Yellow-rumped Warbler	*Dendroica coronata*
Black-throated Gray Warbler	*Dendroica nigrescens*
Townsend's Warbler	*Dendroica townsendi*
American Redstart	*Setophaga ruticilla*
Northern Waterthrush	*Seiurus noveboracensis*
MacGillivray's Warbler	*Oporornis tolmiei*
Common Yellowthroat	*Geothlypis trichas*
Wilson's Warbler	*Wilsonia pusilla*
Yellow-breasted Chat	*Icteria virens*

Tanagers

Western Tanager	*Piranga ludoviciana*

Towhee, Sparrows

Green-tailed Towhee	*Pipilo chlorurus*
Spotted Towhee	*Pipilo maculatus*
American Tree Sparrow	*Spizella arborea*
Chipping Sparrow	*Spizella passerina*
Brewer's Sparrow	*Spizella breweri*
Vesper Sparrow	*Pooecetes gramineus*
Lark Sparrow	*Chondestes grammacus*
Black-throated Sparrow	*Amphispiza bilineata*
Sage Sparrow	*Amphispiza belli*
Lark Bunting	*Calamospiza melanocorys*
Savannah Sparrow	*Passerculus sandwichensis*
Song Sparrow	*Melospiza melodia*
Lincoln's Sparrow	*Melospiza lincolnii*
White-throated Sparrow	*Zonotrichia albicollis*
Harris' Sparrow	*Zonotrichia querula*
White-crowned Sparrow	*Zonotrichia leucophrys*
Dark-eyed Junco	*Junco hyemalis*
Lapland Longspur	*Calcarius lapponicus*

Grosbeaks, Buntings

Black-headed Grosbeak	*Pheucticus melanocephalus*
Blue Grosbeak	*Guiraca caerulea*
Lazuli Bunting	*Passerina amoena*

Blackbirds, Orioles

Red-winged Blackbird	*Agelaius phoeniceus*
Western Meadowlark	*Surnella neglecta*
Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*
Brewer's Blackbird	*Euphagus cyanocephalus*
Common Grackle	*Quiscalus quiscula*
Brown-headed Cowbird	*Molothrus ater*
Baltimore Oriole	*Icterus galbula*
Bullock's Oriole	*Icterus bullockii*
Scott's Oriole	*Icterus parisorum*

Finches

Brown-capped Rosy-Finch	*Leucosticte australis*
Cassin's Finch	*Carpodacus cassinii*
House Finch	*Carpodacus mexicanus*
Red Crossbill	*Loxia curvirostra*
Common Redpoll	*Carduelis flammea*
Pine Siskin	*Carduelis pinus*
Lesser Goldfinch	*Carduelis psaltria*
American Goldfinch	*Carduelis tristis*
Evening Grosbeak	*Coccothraustes vespertinus*

Mammals

Merriam's Shrew	*Sorex merriami*
Montane Shrew	*Sorex monticolus*
California Myotis	*Myotis californicus*
Western Small-footed Myotis	*Myotis ciliolabrum*
Long-eared Myotis	*Myotis evotis*
Little brown Myotis	*Myotis lucifugus*
Fringed Myotis	*Myotis thysanodes*
Long-legged Myotis	*Myotis volans*
Yuma Myotis	*Myotis yumanensis*
Hoary Bat	*Lasiurus cinereus*
Silver-haired Bat	*Lasionycteris noctivagans*
Western Pipistrelle	*Pipistrellus hesperus*
Big Brown Bat	*Eptesicus fuscus*
Spotted Bat	*Euderma maculatum*
Townsend's Big-eared Bat	*Plecotus townsendii*
Pallid Bat	*Antrozous pallidus*
Desert Cottontail	*Sylvilagus audubonii*
Mountain Cottontail	*Sylvilagus nuttalii*
Black-tailed Jackrabbit	*Lepus californicus*
White-tailed Jackrabbit	*Lepus townsendii*
Cliff Chipmunk	*Tamias dorsalis*
Least Chipmunk	*Tamias minimus*
Hopi Chipmunk	*Tamias rufus*
Yellow-bellied Marmot	*Marmota flaviventris*
Wyoming Ground Squirrel	*Spermophilus elegans*
Golden-mantled Ground Squirrel	*Spermophilus lateralis*
Thirteen-lined Ground Squirrel	*Spermophilus tridecemlineatus*
White-tailed Prairie Dog	*Cynomys leucurus*
Northern Pocket Gopher	*Thomomys talpoides*
Olive-backed Pocket Mouse	*Perognathus fasciatus*
Great basin Pocket Mouse	*Perognathus parvus*
Ord's Kangaroo Rat	*Dipodimys ordii*
American Beaver	*Castor canadensis*
Western Harvest Mouse	*Reithrodontomys megalotis*
Canyon Mouse	*Peromyscus critinus*
Deer Mouse	*Peromyscus maniculatis*
Pinyon Mouse	*Peromyscus truei*
Northern Grasshopper Mouse	*Onychomys leucogaster*
Bushy-tailed Woodrat	*Neotoma cinerea*
Long-tailed Vole	*Microtus longicaudus*
Montane Vole	*Microtus montanus*
Sagebrush Vole	*Lemmiscus curtatus*
Common Muskrat	*Ondatra zibethicus*
Common Porcupine	*Erithizon dorsatum*
Coyote	*Canis latrans*
Gray Wolf	*Canus lupus*
Red Fox	*Vulpes vulpes*
Gray Fox	*Urocyon cinereoargenteus*
Black Bear	*Ursus americanus*
Grizzly Bear	*Ursus arctos*
Ringtail	*Bassariscus astutus*
Raccoon	*Procyon lotor*
Long-tailed Weasel	*Mustela frenata*
Black-footed Ferret	*Mustela nigripes*
Mink	*Mustela vison*
American Badger	*Taxidea taxus*
Western Spotted Skunk	*Spilogale gracilus*
Striped Skunk	*Mephitis mephitus*
Northern River Otter	*Lutra canadensis*
Mountain Lion	*Felis concolor*
Bobcat	*Lynx rufus*
American Elk	*Cervus elaphus*
Mule Deer	*Odocoileus hemionus*
White-tailed Deer	*Odocoileus virginianus*
Moose	*Alces alces*
Pronghorn	*Antilocapra americana*
Bison	*Bison bison*
Bighorn Sheep	*Ovis canadensis*

Reptiles

Short-horned Lizard	*Phrynosoma douglassii*
Sagebrush Lizard	*Sceloporous graciosus*
Eastern Fence Lizard	*Sceloporous undulatus*
Tree Lizard	*Urosaurus ornatus*
Side-blotched Lizard	*Uta stansburiana*
Western Whiptail	*Cnemidophorus tigris*
Racer	*Coluber constrictor*
Striped Whipsnake	*Masticophis taeniatus*
Great Basin Gopher Snake	*Pituophis melanoleucus*
Western Terrestrial Garter Snake	*Thamnophis elegans*
Western Rattlesnake	*Crotalus viridis*

Amphibians

Tiger Salamander	*Ambystoma tigrinum*
Great Basin Spadefoot	*Scaphiopus intermontanus*
Woodhouse's Toad	*Bufo woodhousii*
Northern Leopard Frog	*Rana pipiens*

Appendix B
Water Rights

Colorado water law recognizes the doctrine of prior appropriation based on first-in-time, first-in-right. The special water courts issues decrees, establish conditions and limitation on use and resolve disputes. A Conditional water right covers use until such time as proof of beneficial use has been submitted and the right is decreed as Absolute.

The State Engineer administers surface and groundwater diversions, through division superintendents, under court decrees.

Water rights may be sold; however, any change in use, point of diversion, season-of-use, or quantity requires court approval and a new decree, which must satisfy all objectors who may be injured by the change. Changes are generally limited to the historic consumptive use, not the total amount diverted.

The Browns Park NWR holds numerous Absolute water rights on ditches from Beaver Creek, Carma Spring, the Green River and Vermillion Creek as listed below.

The Service also entered into a Memorandum of Understanding dated May 24, 1990, with the Colorado Division of Wildlife (CDOW) in which CDOW is guaranteed use of 12 cfs of the decreed Beaver Creek ditches as noted below by an asterisk (*). The intent of the MOU was to guarantee a minimum flow in Beaver Creek by alternating water diversions between the two agencies.

Ditch	Rate cfs	
Beaver Creek		
Apple	3.0	*
Beaver	2.0	
Beaver Enl. #	15.0	
Dejournette #1	1.0	
Dejournette #1 Enl.	3.0	
Goodman	5.0	*
Jarvie	2.0	
Jarvie Enl. #1	13.0	
McKnight #1	5.0	
McKnight #2	3.0	
Pie	3.0	
Thomas Doudle #1	1.66	*
Thomas Doudle #1 Enl.	4.34	*
Thomas Doudle #2	3.0	*
Walker	3.0	
Carma Spring		
Carma	.25	*
Vermillion Creek		
Lodore	20.00	

Ditch	Rate cfs
Green River	
Allen	2.6
Allen Enl. #1	3.4
Carr	5.0
Flynn Bottom	12.0
Flynn Bottom	8.0
Grimes	15.0
Hog Lake	9.0
Horseshoe	9.0
Horseshoe Enl. #1	1.0
Hoy	10.0
L. Watson	12.0
Leonard	7.66
Nelson	9.0
Nelson Enl. #1	1.0
Spitzie	9.0
Spitzie Enl. #1	3.0
Warren	9.0
Warren Enl. #1	1.0

Appendix C
Key Legal and Policy Guidance

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

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

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

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

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

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

Refuge Recreation Act (1962): Allows the use of refuges for recreation when such uses are compatible with the refuge's primary purposes and when sufficient funds are available to manage the uses.

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

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

National Historic Preservation Act (1966) as amended: Establishes as policy that the Federal Government is to provide leadership in the preservation of the nation's prehistoric and historic resources.

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

National Environmental Policy Act (1969): Requires the disclosure of the environmental impacts of any major Federal action significantly affecting the quality of the human environment.

Endangered Species Act (1973): Requires all Federal agencies to carry out programs for the conservation of endangered and threatened species.

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

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

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

Executive Order 11988 (1977): Each Federal agency shall provide leadership and take action to reduce the risk of flood loss and minimize the impact of floods on human safety, and preserve the natural and beneficial values served by the floodplains.

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

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

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

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

Native American Graves Protection and Repatriation Act (1990): Requires Federal agencies and museums to inventory, determine ownership of, and repatriate cultural items under their control or possession.

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

Executive Order 12996 Management and General Public Use of the National Wildlife Refuge System (1996): Defines the mission, purpose, and priority public uses of the National Wildlife Refuge System. It also presents four principles to guide management of the System.

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

Appendix D
Environmental Assessment
Table of Contents

I. Purpose and Need for Action

The purpose of this Environmental Assessment is to publicly disclose the possible environmental consequences that implementation of the Browns Park CCP could have on the quality of the physical, biological, and human environment, as required by the National Environmental Policy Act of 1969. Refer to the Introduction/Background section of the CCP for a description of need for a plan. Preparation of Comprehensive Conservation Plans is authorized under the National Wildlife Refuge System Administration Act of 1966 as amended.

II. Description of Alternatives

Alternative 1 - No Action

Under the "No Action" alternative, the Service would continue current Refuge management and not implement the Browns Park CCP.

- The current level of operational funding and staffing would continue.
- Refuge visitor facilities would receive minor repairs or improvements. No major projects would be proposed. Recreational opportunities would not be expanded.
- The condition of Refuge wildlife habitats would not change significantly. No new habitat restoration plans or activities would be initiated.
- Refuge cultural resource sites would continue to receive their current level of protection.

Alternative 2 - Implement the Browns Park CCP (Preferred)

Under this alternative, the Service would implement the CCP and establish the Refuge's direction pursuant to the goals, objectives, and strategies contained in the CCP.

- Restoration of riparian plant communities, control of nonnative plants, improved wetland and upland management, restoration of unproductive wetlands, and development of habitat monitoring methods will result in increased habitat quality and diversity for Refuge wildlife.
- Improvement of visitor use facilities and information will increase public use opportunities on the Refuge.
- Development of interpretive displays and brochures will result in better understanding and appreciation of the Refuge and its importance.
- Increasing Refuge participation in regional management organizations will result in improved support and coordinated protection for wildlife and its habitat within the Green River ecosystem.

Implementation of the Plan within the next 15 years will require additional agency funding for specific objectives, two additional permanent employees, as well as partnerships with other Federal land management agencies, State and local government, private conservation and historical groups, and local landowners. Refer to the Refuge Goals, Objectives, and Strategies sections of the CCP for a detailed description of the proposed actions.

III. Affected Environment

The affected environment is described in the Resource/ Refuge Description sections of the CCP.

IV. Environmental Consequences

This chapter evaluates the two alternatives on the basis of consequences or impacts to the environment. Alternative 1, "No Action," is the status quo alternative where current conditions and trends of management, public use, and land use and ownership are projected into the foreseeable future. Alternative 2, the preferred alternative, implements the CCP. Analysis of Alternative 2 focuses on anticipated environmental change in comparison to conditions remaining under Alternative 1.

A. Impacts to the Biological Environment

P Alternative 1 would result in no substantial changes in wildlife populations, habitat quality, or biodiversity as it is described in the CCP. The Refuge would continue its current level of habitat management activity. No new habitat restoration projects would be carried out. Habitat quality and the wildlife populations dependent on these habitats would probably decline slowly as a result of continuing infestation of nonnative plants, and continuing decline in riparian cottonwood regeneration. As Refuge habitats continue to degrade, plant diversity and production will continue to decline, adversely affecting the area's wildlife. Wildlife inventory and habitat monitoring research will not be accomplished with current Refuge staffing.

The Refuge will continue its involvement on the Northwestern Colorado Coordinated Resource Management committees and continue to provide technical support for agencies, organizations, and individuals to benefit the wildlife of the Green River Basin.

P Alternative 2 would result in increased habitat quality in marsh, riparian, and upland habitats throughout the Refuge. As a result, the wildlife species dependent on these habitats will increase or stabilize. Implementing wildlife inventories will allow evaluation of wildlife responses to habitat manipulations.

Controlling emergent vegetation coverage in the Warren and Nelson units, either by burning or managing water levels, will result in an increase of useable marsh habitat for waterbirds. Optimum emergent plant coverage for these marshes should be 50 percent. Currently, the marsh is from 70 to 90 percent covered by vegetation.

Retiring the Horseshoe and Grimes units may appear to decrease available wetland habitat, but as these units were never productive for marsh dependent wildlife, it will not have a significant long-term effect. The cost of pumping water and repairs and maintenance is high, and the areas could serve more efficiently as upland habitats. The largest infestations of nonnative plants on the Refuge occur in these units. Their eradication will benefit a broader range of wildlife over a larger area.

Designing a prescription for high spring river flows for the Green River in cooperation with the Bureau of Reclamation will restore cottonwood groves and other riparian plant communities along the River. Migratory birds will benefit especially, as this will help maintain the habitat corridors upon which they depend as they pass through the area in the spring and fall.

Development of the Habitat Monitoring Plan and use of the resulting program of prescribed fire will maintain a diverse mosaic of grassland and brushland habitats for wintering ungulates, ground nesting birds, and other resident wildlife.

Acquiring the remaining land tracts within the currently approved Refuge boundary will bring wildlife habitats on these tracts under management control of Refuge staff. Habitat restoration and enhancement will then be possible as described in the CCP. An increase in high quality habitat for wildlife will result.

B. Impacts to the Physical Environment

P Alternative 1 will have no measurable affect on the soils and air quality of the region. Water quality in Refuge wetlands and riparian areas may degrade slowly as the decline of riparian plant communities expose aquatic organisms to high summer temperatures and possible bank erosion. Overabundant emergent vegetation in Refuge marshes may degrade water quality.

Refuge cultural resources would continue to receive protection under this alternative. Cultural resources are managed according to several Federal Acts and through an agreement with the Browns Hole Homemakers Club. No ground disturbing activities are carried out without consulting the Colorado State Historic Preservation Office. Currently, no plans are in place that will impact historical sites on the Refuge.

P Alternative 2 will result in improved water quality in riparian habitats through restoration of sheltering native willow and cottonwood communities. More efficient control of emergent marsh vegetation will improve water quality resulting in higher quality feeding habitats for marsh dependent birds. With habitat restoration objectives proposed in the CCP, erosion of upland soils will slowly decrease as native upland plant communities are reestablished.

Cultural resource sites will continue to be protected under the CCP. No specific proposals are in place that will affect these sites on the Refuge, although with new partnerships developed as a result of the CCP, identification and restoration of sites would be possible. The Lodore School National Historic Site will continue to be available for use by the Browns Hole Homemakers Club.

C. Impacts to the Human Environment

P Alternative 1 would allow minor improvements to the existing recreational use program to continue. It would result in no significant changes in use of the Refuge but would not specifically improve education, interpretation, hunting or fishing opportunities for Refuge visitors. The primary road access route from Utah into Browns Park is to be paved in the near future, and the Refuge can expect an increase in visitation and demand for opportunities and facilities. This Alternative does not address the resulting need for improved or expanded recreational facilities.

P Alternative 2 would result in improvements to basic visitor facilities, including interpretive signing, construction of information kiosks, and development of leaflets that clearly describe recreational opportunities, provide wildlife species checklists, give historical information, and explain regulations.

This alternative will also result in major site improvements to at least one campground. Currently, the Crook Campground area spreads out over a large area with no site designations or fire protection for cottonwood groves or the Refuge subheadquarters.

Interpretive displays and signs will be developed to enhance visitors' understanding of the Refuge and its management practices. Improved education of visitors will lead to long-term protection of the Refuge, the wildlife that depends upon its presence, and preserve the cultural and historical sites present in Browns Park.

Implementing the CCP will enable the Refuge to pursue partnerships with the Dinosaur Nature Association resulting in increased support for the wildlife recreation program on the Refuge.

Appendix E
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Appendix F
List of Preparers

This Plan was written by Michael J. Bryant, Refuge Manager and Allison Banks. Map products were generated by Jaymee Fojtik. Drafts were reviewed and edited by Wayne King, Carol Taylor, Larry Shanks, Barbara Shupe, and Allison Banks.

Appendix G
Project Description Worksheets

Unfunded Operating Needs - Listed by Station Rank

Browns Park NWR

Orgcode: 65550 Type: NWR State(s): CO District: NE, KS, CO, UT

1 MONITORING & STUDIES: Studies & Investigations

MEASURES: 10 studies will be conducted: 5% of effort will be off-refuge

Much of the wildlife and habitat management, studies, and research on the Refuge is conducted by temporary Range Technicians, volunteer Wildlife Biology Interns, and university researchers. This fieldwork provides much of the critical information necessary for sound wildlife and habitat management on the Refuge. Refuge Range Technicians are also responsible for fire suppression in the local area (one of the most active wildfire areas in the country), and are critical to the Refuge's use of prescribed fire to benefit wildlife. The Refuge is located 90 miles from town, so housing must be provided for these 6 to 12 people. The current situation is dire. Technicians, Interns, and researchers are occupying old travel trailers, a mobile home scheduled for demolition, and camping out. This project would fund the construction of a bunkhouse/dormitory and ensure that this important fieldwork continues.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	200		
Services/Supplies		5	
Miscellaneous Costs		5	
TOTAL Operations Cost	200	10	210

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTEs Needed		$0

EMPHASIS: 0% Critical health & safety - deferred maintenance; 0% Critical health & Safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
	10	20	20	20			10	10		10	100

PLANNING LINKS: Station CCP approved 10/97 +

Project supports the Refuge's Comprehensive Conservation Plan.

Project #: 99005 RANK - STATION: 1 DISTRICT: 999 REGION: 999 NATIONAL: 999

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

2 10: wildlife surveys will be conducted

MEASURES: 5000 new visitors will be served; 10,000 existing visitors will be served; 100% will support the top 6 priority public uses

The remote location of the Refuge makes it difficult for people to pursue wildlife dependent recreation without a campground. Although the Refuge currently has two designated camping areas, more development of one and closure of the other is necessary to minimize issues of fire protection, habitat damage, and maintenance workload. This project would allow site planning and development of the Crook campground including: campsite designation, tables, fire rings, pit toilets, parking areas, and vehicle barriers. Facilities would be accessible to persons with disabilities. Work would be contracted.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	50		
Services/Supplies	40		
Miscellaneous Costs		5	
TOTAL Operations Cost.	90	5	95

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTEs Needed		$0

EMPHASIS: 0% Critical health & safety - deferred maintenance; 0% Critical health & Safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
										100	100

PLANNING LINKS: Station Goal/Objective; Station CCP approved 10/97+

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 97002 RANK - STATION: 2 DISTRICT: 045 REGION: 157 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

3 10: wildlife surveys will be conducted

MEASURES: 5,000 new visitors will be served; 10,000 existing visitors will be served

The Refuge possesses numerous opportunities for interpretation of nationally significant natural and cultural history, yet these opportunities have been ignored due to funding limitations. Interpretation is needed to help visitors understand the values the Refuge was established to protect. This project would provide this important interpretation by developing: interpretive signs for the wildlife drive and birder's foot trail, interpretive exhibits for the visitor contact area in Refuge headquarters, and a cultural resources brochure.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost			
Services/Supplies			
Miscellaneous Costs	70	5	
TOTAL Operations Cost	70	5	75

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTEs Needed		$0

EMPHASIS: 0% Critical health & safety; 0% Critical resource protection; 50% Critical mission; 50% Other important needs.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
								100			100

PLANNING LINKS: Station Goal/Objective; Station CCP approved 10/97+

Project supports objective in the Refuge's Comprehensive Conservation Plan.

Project #: 97003 RANK - STATION: 3 DISTRICT: 061 REGION: 153 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

4 10: wildlife surveys will be conducted

MEASURES: 5000 new visitors will be served; 10000 existing visitors will be served; 100 % will support the top 6 priority public uses

The Refuge provides remarkable opportunities for wildlife observation in a setting of beauty and solitude. Unfortunately, funding has been inadequate to provide wildlife checklists and kiosks for orientation. This project would provide the funding, to develop and print a bird checklist, and a mammal, reptile and amphibian checklist, and to construct and install two orientation kiosks. This project would facilitate wildlife observation on the Refuge. Work would be contracted.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	50		
Services/Supplies			
Miscellaneous Costs	10	5	
TOTAL Operations Cost	60	5	65

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTEs Needed		$0

EMPHASIS: 0% Critical health & safety - deferred maintenance; 0% Critical health & Safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
										100	100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 99001 RANK - STATION: 4 DISTRICT: 060 REGION: 152 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

5 150: new acres will be managed

MEASURES: 2000 acres will be treated; 2000 acres infested by target species; 2000 acres will be treated chemically; 50 acres will be treated mechanically; 10 acres will be treated biologically

Riverbottom habitat on the Refuge is important to numerous species and numbers of migratory birds for migration and breeding. Pest plants have invaded many riverbottom sites on the Refuge, and are supplanting native plant species that are important to migratory birds. This project would fund the treatment and control of these plants at the scale necessary to reduce their coverage. Approximately 1000 acres would be treated annually for approximately 5 years. Such efforts should reduce the pest plant threat on the Refuge to a maintenance level that the Refuge staff is capable of handling.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost			
Services/Supplies	5	40	
Miscellaneous Costs	5	5	
TOTAL Operations Cost	10	45	55

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTEs Needed		$0

EMPHASIS: 0% Critical health & safety; 100% Critical resource protection; 0% Critical mission; 0% Other important needs.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
		30	40	30							100

PLANNING LINKS: FWS Ecosystem Goal/Plan; Station Goal/Objective; Station CCP approved 10/97+

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 97006 RANK - STATION: 5 DISTRICT: 014 REGION: 083 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

6 15000: new acres will be managed

MEASURES: 300 Refuge acres will be restored.

Wetland units were created in the Horseshoe and Grimes areas of the Refuge. Although great efforts were made to get these units to function, ultimately neither unit held water to the degree necessary to be beneficial to wildlife, and instead these areas became infested with pest plants. This project would restore the previous topography and native grass and shrubs in the Grimes and Horseshoe marsh units. Old dikes, powerpoles, delivery ditches and pump stations would be removed. Native grass and shrubs would be reestablished.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost			
Services/Supplies	70	10	
Miscellaneous Costs		10	
TOTAL Operations Cost.	70	20	90

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed		$0

EMPHASIS: 0% Critical health & safety; 0% Critical resource protection; 0% Critical mission; 100% Other important needs.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
		10	10	60			10			10	100

PLANNING LINKS: Station Goal/Objective; Station CCP approved 10/97+

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 97005 RANK - STATION: 6 DISTRICT: 999 REGION: 999 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

7 10: wildlife surveys will be conducted

MEASURES: 50 new visitors will be served; 25 existing visitors will be served; 100 % will support the top 6 priority public uses.

Federal law requires that the Refuge be fully accessible to persons with disabilities. Progress has been made, but work remains to make the Refuge fully accessible. New facilities must also be accessible. This project would provide the funding necessary to complete accessibility modifications and developments on the Refuge. Work would be contracted.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	20		
Services/Supplies	10	5	
Miscellaneous Costs	10	5	
TOTAL Operations Cost	40	10	50

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed		$0

EMPHASIS: 0% Critical health & safety- deferred maintenance; 0% Critical health & safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
								50		50	100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective; Legal Mandate

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 99003 RANK - STATION: 7 DISTRICT: 999 REGION: 999 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

8 1: Surveys & Census

MEASURES: 10 wildlife surveys will be conducted; 10 habitat surveys will be conducted; 10% of survey will be off-refuge

Refuge habitats are unusually diverse and support over 300 species of wildlife. The Refuge is especially important as a migration corridor for Neotropical migratory birds. Current Refuge funding and staff does not allow the application of habitat management treatments and monitoring necessary to provide optimum habitat for wildlife. This project would provide the funding necessary to hire and provide the infrastructure (residence, vehicle, equipment) for a Refuge biologist. A residence would be constructed in year one. An experienced biologist would be recruited in year two.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs		58	
Equipment Costs	40		
Facility Cost	175		
Services/Supplies		10	
Miscellaneous Costs	30	10	
TOTAL Operations Cost.	245	78	323

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists	1.0	$58
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed	1.0	$58

EMPHASIS: 0% Critical health & safety- deferred maintenance; 0% Critical health & safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
	10	20	20	20			10	10		10	100

PLANNING LINKS: Station Goal/Objective; Station CCP approved 10/97+; FWS Ecosystem Goal/Plan

Project supports goals, objectives, and strategies in the Refuge's Comprehensive Conservation Plan.

Project #: 97007 RANK - STATION: 8 DISTRICT: 999 REGION: 999 NATIONAL: 999

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

9 PUBLIC EDUCATION & RECREATION: Provide Visitor Services

MEASURES: 5000 new visitors will be served; 10000 existing visitors will be served; 100% will support the top 6 priority uses

Due to its remote and beautiful setting, the Refuge has the potential to provide significant opportunities for wildlife observation, fishing, hunting, interpretation, environmental education, and photography. These opportunities have been largely ignored to date due to funding limitations. This project would provide the funding to hire and provide the infrastructure (residence, vehicle, computer) for either a Refuge Operations Specialist or Outdoor Recreation Planner, to fully develop wildlife dependent recreation on the Refuge.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs		48	
Equipment Costs	40		
Facility Cost	175		
Services/Supplies		10	
Miscellaneous Costs	30	10	
TOTAL Operations Cost	245	68	313

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists	1.0	$48
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed	1.0	$48

EMPHASIS: 0% Critical health & safety- deferred maintenance; 0% Critical health & safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
	10	10	10	10			10	20		30	100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective

Project supports a goal in the Refuge's Comprehensive Conservation Plan.

Project #: 00001 RANK - STATION: 9 DISTRICT: 999 REGION: 999 NATIONAL: 999

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

10 HABITAT MANAGEMENT: Pest Plant Control

MEASURES: 2000 acres will be treated; 2000 acres infested by target species; 2000 acres will be treated chemically; 50 acres will be treated mechanically; 10 acres will be treated biologically.

The Refuge is infested with several species of nonnative plants that are displacing native plants and degrading habitat critical to migratory birds. These species must be identified on the ground, mapped, treated, monitored and retreated in subsequent years. This project would provide the funding to hire and provide infrastructure (vehicle, fuel, travel, training) for a career seasonal Biological Technician or Range Technician, and provide the labor needed to reduce nonnative plants on the Refuge to a more manageable size and density.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs		20	
Equipment Costs	40		
Facility Cost			
Services/Supplies		10	
Miscellaneous Costs	20	10	
TOTAL Operations Cost	60	40	100

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists	0.5	$20
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed	0.5	$20

EMPHASIS: 0% Critical health & safety; 0% Critical resource protection; 0% Critical mission; 100% Other important needs.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
	10	10	10	40			10	10		10	100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective

Project supports a goal in Refuge's Comprehensive Conservation Plan.

Project #: 00002 RANK - STATION: 10 DISTRICT: 999 REGION: 999 NATIONAL: 999

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

11 150: new acres will be managed

MEASURES: 400 existing acres will be managed better

The Flynn and Hog Lake wetland units provide excellent migratory and breeding habitat for waterfowl and other waterbirds. Unfortunately their potential for management is limited due to the lack of an outlet water control structure. Outlets on these two wetland units would provide more precise management of water levels in these wetlands. This project would provide the funding to construct a water control structure outlet and outlet ditch for each wetland.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	60		
Services/Supplies			
Miscellaneous Costs		5	
TOTAL Operations Cost	60	5	65

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed		$0

EMPHASIS: 0% Critical health & safety- deferred maintenance; 0% Critical health & safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
	10	70	10				10				100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective

Project supports a goal in the Refuge's Comprehensive Conservation Plan.

Project #: 99004 RANK - STATION: 11 DISTRICT: 999 REGION: 999 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

12 10: wildlife surveys will be conducted

MEASURES: 5000 new visitors will be served; 10000 existing visitors will be served; 100% will support the top 6 priority public uses.

The Refuge has great potential for wildlife photography, yet the facilities to allow people to get close to wildlife are lacking. This project would provide the funding to construct a boardwalk and wooden photography/wildlife observation blind on the edge of the Spitzie wetland on the Refuge. Work would be contracted.

ADDITIONAL FUNDS NEEDED ($000):	One-Time	Recurring Base	First Year Need
Construction Costs			
Operations: Personnel Costs			
Equipment Costs			
Facility Cost	75		
Services/Supplies			
Miscellaneous Costs		5	
TOTAL Operations Cost	75	5	80

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's	Cost ($000)
Managers		$0
Biologists		$0
Resource Specialists		$0
Education/Recreation Staff		$0
Law Enforcement		$0
Clerical/Administrative		$0
Maintenance/Equipment Operation		$0
TOTAL FTE's Needed		$0

EMPHASIS: 0% Critical health & safety- deferred maintenance; 0% Critical health & safety - capital improvement; 0% Critical resource protection - deferred maintenance; 0% Critical resource protection - capital improvement; 0% Critical mission - deferred maintenance; 0% Compliance & other deferred maintenance; 100% Other capital improvements.

OUTCOMES*:	ES	WF	OMB	HEC	IAF	SDA	RW	PED	FAR	PRC	TOT
										100	100

PLANNING LINKS: Station CCP approved 10/97+; Station Goal/Objective; FWS Ecosystem Goal/Plan

Project supports an objective in the Refuge's Comprehensive Conservation Plan.

Project #: 99002 RANK - STATION: 12 DISTRICT: 999 REGION: 999 NATIONAL:

*OUTCOMES:

ES - Endangered & threatened species
WF - Waterfowl
OMB - Other migratory birds
HEC - Healthy ecosystems
IAF - Interjurisdictional & anadromous fish
SDA - Special designation areas
RW - Resident wildlife
FAR - Fish/aquatic resources
PED - Public education
PRC - Public recreation

STATION FUNDING NEED TOTALS ($000):		One-Time	Recurring Base	First Year Need
Construction Costs				
Operations:	Personnel Costs		$126	
	Equipment Costs	$120		
	Facility Cost	$805		
	Services/Supplies	$125	$90	
	Miscellaneous Costs	$175	$80	
TOTAL Operations Cost		$1225	$296	$1521

ADDITIONAL PERMANENT STAFF NEEDED:	FTE's
Managers	
Biologists	1.5
Resource Specialists	1.0
Education/Recreation Staff	
Law Enforcement	
Clerical/Administrative	
Maintenance/Equipment Operation	
TOTAL FTE's Needed	2.5

Appendix H
Compatibility Determination

Prior to preparation of this CCP, numerous environmental assessments and compatibility determinations had been completed on all Refuge uses and activities. No new uses are proposed in the CCP. Policy governing compatibility determinations is currently under revision, and when the new policy is final, all previous determinations will be reviewed for compliance.

Appendix I
Intra-Section 7 Consultation
Biological Evaluation Form

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

Originating Person: Allison Banks, Refuge Planner
Telephone Number: 303-236-8145, ext. 626
Date: 8/12/99

I. Region: 6

II. Service Activity (Program):

Division of Realty, Branch of Land Acquisition and Refuge Planning

III. Pertinent Species and Habitat:

A. Listed species and/or critical habitat within the action area:
(please see attachments)

B. Proposed species and/or critical habitat within the action area:

None

C. Candidate species within the action area:

None

D. Include species/habitat occurrence on a map.
(please see map attachments)

IV. Geographic area or station name and action:

Browns Park National Wildlife Refuge Comprehensive Conservation Plan

V. Location (please see map attachments)

A. Ecoregion Number and Name:

Upper Colorado River Ecosystem, Number 17,
Middle Rocky Mountains province

B. County and State:

Moffat County, Colorado

C. Section, township, range or latitude/longitude:

Townships 9N, 10N, 11N, Range 102W, 103W, 104W

D. Distance (miles) and direction to nearest town:

90 miles northwest of Craig, CO

E. Species/habitat occurrence:

The Refuge provides important habitat for three federally listed species including the bald eagle, peregrine falcon, and Ute ladies' tresses. The Colorado pikeminnow, razorback sucker, bonytail chub, and humpback chub occur downstream from the Refuge in the Green and Colorado Rivers. Of these fish species, only the pikeminnow has been recorded in the vicinity of the Refuge. Peregrine falcons are frequently observed hunting waterbirds over Refuge marshes in spring, summer, and fall. Nesting occurs adjacent to the Refuge in Lodore Canyon within Dinosaur National Monument. Bald eagles are observed roosting in mature cottonwoods and hunting over riparian and riverine habitats during the winter. Approximately 30 eagles spend the winter on the Refuge each year. The Ute ladies' tresses has been documented along the Green River, and a few individual plants were recently found in floodplain habitat on the Refuge.

VI. Description of proposed action:

The action is to implement the Browns Park National Wildlife Refuge Comprehensive Conservation Plan over the next 15 years. Briefly, the CCP will result in more active restoration of wetland, riparian, and grassland habitats, more effective nonnative plant control, and increased data gathering and monitoring of habitat conditions. Visitor use facilities will be upgraded and expanded along with recreational opportunities on the Refuge. Development of more interpretive materials will increase the public's awareness and appreciation of the importance of Browns Park and the management of wildlife resources. For detailed descriptions of proposed actions, please refer to the attached pages 22-28 from the draft CCP.

VII. Determination of effects:

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

No detrimental effects from implementing the CCP are anticipated. Riparian and wetland habitat enhancements and restorations will benefit the bald eagle and peregrine falcon by ensuring a diverse prey base for hunting birds. Riparian restoration will also provide mature roost trees along the Green River for the future. New monitoring and essential habitat identification will benefit the recently discovered Ute ladies'tresses by avoiding alteration or loss of habitat, determination of population size and health. Retiring the Horseshoe and Grimes wetland units will not adversely effect these species as the units did not attract and hold wetland birds or produce sustainable wetland habitats.

The Refuge does withdraw water annually from the Green River, and this may affect the Colorado pikeminnow, humpback chub, bonytail chub, and the razorback sucker. However, the Service analyzed the Refuge's water depletion as part of the Draft Biological Opinion issued on operation of Flaming Gorge Dam and found it to be consistent with its recommendations. The Refuge lies upstream from the area designated as critical habitat for the pikeminnow.

B. Explanation of actions to be implemented to reduce adverse effects:

None anticipated.

VIII. Effect determination and response requested:

A. Listed species/designated critical habitat:

Determination	Response Requested
no effect/no adverse modification	
bald eagle	✓ Concurrence
peregrine falcon	✓ Concurrence
Ute ladies'tresses	✓ Concurrence
Colorado pikeminnow	✓ Concurrence
humpback chub	✓ Concurrence
bonytail chub	✓ Concurrence
razorback sucker	✓ Concurrence
may affect, but is not likely to adversely affect species/adversely modify critical habitat	
bald eagle	X Concurrence
peregrine falcon	X Concurrence
Ute ladies'tresses	X Concurrence
Colorado pikeminnow	X Concurrence
humpback chub	X Concurrence
bonytail chub	X Concurrence
razorback sucker	X Concurrence
may affect, and is likely to adversely affect species/adversely modify critical habitat	

bald eagle
peregrine falcon
Ute ladies' tresses
Colorado pikeminnow

humpback chub
bonytail chub
razorback sucker

_____ Formal Consultation

B. Proposed species/proposed critical habitat:

None

C. Candidate species:

None

Signature Chief, Land Mgt. & Ref. Planning 9/17/99 Date
(Title/office of supervisor at Originating station)

IX. Reviewing ESO Evaluation:

A. Concurrence ✓ Nonconcurrence _____

B. Formal consultation required _____

C. Conference required _____
D. Informal conference required _____

E. Remarks:

8.31.99

Signature Date
(Title/office of reviewing Official)

Asst. Field Supervisor
Utah Field Office

Appendix J
Mailing List of Agencies and Individuals

Federal Officials

- US Senator Wayne Allard
  Shane Henry, Area Rep, Grand Junction, CO
  Andy Colosimo, Legislative Assistant, Washington, DC
- US Senator Ben Nighthorse Campbell
  George Rossman, Senate Aide, Grand Junction, CO
- US Representative Scott McInnis
  Donald Hower, Office Manager, Grand Junction, CO

Federal Agencies

- USDI/Bureau of Land Management, Little Snake Resource Area, Craig, CO
- USDI/Bureau of Land Management, Vernal District, Vernal, UT
- USDI/Bureau of Reclamation, Salt Lake City, UT
- USDA/Natural Resources Conservation Service, Craig, CO
- USDA/Forest Service, Ashley National Forest, Flaming Gorge Ranger District, Vernal, UT
- USDA/Forest Service, Routt National Forest, Bears Ears Ranger District, Steamboat Springs, CO
- USDI/National Park Service, Dinosaur National Monument, Dinosaur, CO
- USDI/Fish and Wildlife Service, Denver, CO; Albuquerque, NM; Portland, OR; Anchorage, AK; Fort Snelling, MN; Atlanta, GA; Hadley, MA; Washington, DC
- USGS/Biological Resources Division, Doug Anderson, Fort Collins, CO
- US EPA, Denver, CO

State Officials

- Governor Bill Owens, Denver, CO
- Senator Dave E. Wattenberg, Walden, CO
- Representative Russell Lloyd George, Rifle, CO

State Agencies

- Colorado Division of Wildlife, District Wildlife Manager, Maybell, CO
- Colorado Division of Wildlife, Area Manager, Meeker, CO
- Colorado Division of Wildlife, Director, Denver, CO
- State Historical Preservation Office of Colorado, Denver, CO

City/County/Local Governments

- Mayor, City of Craig, CO
- City Council, City of Craig, CO
- Moffat County Commissioner, Joe Janosec, Craig, CO
- Moffat County Commissioner, T. Wright Dickinson, Craig, CO
- Moffat County Commissioner, Marianna Raftopoulos, Craig, CO

Libraries

- Craig Library, Craig, CO

Organizations

- Cooperative Alliance for Refuge Enhancement (CARE), Washington, DC
- National Wildlife Refuge Association, Denver, CO
- Craig Area Chamber of Commerce, Craig, CO
- The Wildlife Society, Colorado Chapter, Denver, CO
- Colorado Wildlife Federation, Denver, CO
- Ducks Unlimited, Craig, CO
- Browns Park Sportsmens Club
- Browns Hole Homemakers Club
- Society for Conservation Biology, Colorado Plateau Chapter, Grand Junction, CO
- Audubon Society, Gretchen Muller, Washington, DC
- Wilderness Society, Washington, DC
- Colorado Environmental Coalition, Grand Junction, CO
- The Nature Conservancy, Carpenter Ranch, Hayden, CO
- Northwest Colorado Coordinated Resource Management, Reed Kelley, Meeker, CO
- Defenders of Wildlife, Washington, DC

Newspapers

- The Craig Daily Press, Craig, CO
- The Rock Springs Rocket-Miner, Rock Springs, WY
- The Vernal Express, Vernal, UT
- The Steamboat Pilot, Steamboat Springs, CO

Universities/Colleges

- Colorado State University, Department of Fishery and Wildlife Biology, Ken Wilson, Fort Collins, CO
- Colorado State University, Department of Earth Resources, David Cooper, Fort Collins, CO
- Western Wyoming College, Rock Springs, WY
- Northwest Colorado Community College, Rangely, CO
- Northwestern University, Evanston, IL
- Utah State University, Rich Etchberger, Vernal, UT
- University of Wyoming, Department of Zoology, Laramie, WY

Individuals

Barnum, Bruce
Benton, Petronella
Blevins, Fred and Joy
Blevins, Richard
Comstock, Chris
Crane, Allen
Dickinson, T. Wright
Folk, Neil
Getman, Mike
Giannotti, Lynda
Karges, Robert
Kostinec, Terry
Langer, Greg
Luke, Forrest
McKinney, Brad
Meinke, James
Raftopoulos, John and Marianna
Simpson, Bob and Dorothy
Smith, Cliff and Lenora
Walker, Wanda

Appendix K
Finding of No Significant Impact and Decision Notice

Finding of No Significant Impact and Decision Notice

Browns Park National Wildlife Refuge

Final Comprehensive Conservation Plan and Environmental Assessment

Two management alternatives for Browns Park National Wildlife Refuge were presented and evaluated as to their effectiveness in achieving Refuge purposes and their impact on the human environment. A "No Action" alternative (maintain the status quo) and an "Action" alternative (implement the Browns Park CCP) were assessed in the Environmental Assessment. Based on this analysis and comments received, I have selected the preferred alternative (implement the Browns Park CCP) to be enacted on the Refuge.

The preferred alternative was selected because it best meets the purposes of the Refuge to manage for migratory birds, provide public access for wildlife dependent recreation, and provide environmental education opportunities related to fish and wildlife resources.

I find that the proposed action will not have a significant impact on the human environment in accordance with Section 102 of the National Environmental Policy Act and in accordance with the Service's Administrative Manual {30 AMs.9B (2)(d)} and concluded that an environmental impact statement is not necessary.

My rationale for this finding follows:

- The preferred alternative will not adversely impact endangered or threatened species or their habitats.
- The preferred alternative will not adversely affect or cause the loss or destruction of any archaeological or paleontological resources.
- The preferred alternative will have no adverse impact on wetlands or floodplains.
- The preferred alternative will have a positive effect on public use and recreation, habitat and wildlife management, water management, and environmental education and interpretation through facilities improvements, biological data gathering and analysis, restoration of wetland and riparian habitats, and effective program evaluation.
- The preferred alternative will have no negative impact on wildlife or wildlife habitat.
- There will be no impact on minority and low-income populations of communities.

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

Date

UNITED STATES FISH AND WILDLIFE SERVICE
Region 6
ENVIRONMENTAL ACTION MEMORANDUM

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that implementing the Browns Park NWR CCP will not have a significant environmental effect, based on the Browns Park NWR Environmental Assessment and Finding of No Significant Impact, and is therefore authorized to be implemented.

Deputy
Regional Director
Region 6
Denver, Colorado

9/22/99
Date

Ken McDermond
Programmatic Assistant Regional Director
Refuges and Wildlife

9/22/99
Date

Joe Webster
Geographic Assistant Regional Director
Southern Ecosystems

9/20/99
Date

Larry Shanks
Associate Manager
Southern GARD

9/20/99
Date

Mike Bryant
Refuge Manager
Browns Park NWR

9/15/99
Date

Appendix L
Summary of Public Involvement

In compliance with the National Environmental Policy Act and the Service's comprehensive conservation planning process, the Service initiated the public scoping of issues for the CCP and environmental assessment to address. Issues, concerns, and opportunities were identified at two open houses at the Refuge and in Craig, Colorado, in June, 1996. Questionnaires were distributed at the open houses and mailed to Refuge neighbors, visitors, and other interested individuals. About 10 responses were received. The Draft CCP was released for public review in March, 1999. Approximately 250 copies were made available to agencies, local representatives, at the Craig public library, neighboring landowners, interest groups and individuals. The Draft was also available on the Internet via the Service's homepage. A 30-day public comment period was provided. On May 1, 1999, an open house was held at Refuge headquarters to invite comment on the alternatives and issues discussed in the CCP. All public comments received were considered in this final plan. Below is a summary of public comments received on the Draft CCP.

Responses to Public Comments

We received 10 individual written comments on the Draft CCP. Below is a summary of comments and our responses.

Land Use Restrictions
Three commentors stated that restrictions on land uses on BLM tracts adjacent to the Refuge cannot be imposed by the Refuge and would need to be negotiated with the BLM and affected permittees.

Response: The Refuge is not imposing restrictions to allowable land uses on BLM lands adjacent to the Refuge. The Refuge will make its concerns over such uses known to the BLM and cooperate in future revisions or amendments to the Little Snake Resource Management Plan. Decisions on what land uses will be allowed on these tracts will be made by the BLM.

Land Acquisition
Two commentors were opposed to potential expansion to include 6,002 acres of BLM administered tracts adjacent to the current boundary and Highway 318. They were also concerned about retention of use permits (operation of a gravel pit for local road maintenance and winter livestock calving/grazing) they currently maintain for those areas.

Response: We have clarified the perceived threats to Refuge wildlife from public uses on surrounding BLM lands, clarified the proposed land acquisition procedure, and added the statement that land uses currently allowed would be renegotiated with these permittees if and when the proposed land transfer takes place. Such uses could be administered through Refuge Special Use Permits. The land acquisition process will provide public review and comment on the proposed land exchange, and interested parties will be notified of comment opportunities.

Predator Management
One commentor felt the Refuge should conduct a predator management program in cooperation with Moffat County, landowners, and local agencies to increase sage grouse and deer populations.

Response: The Refuge feels that providing quality habitat will do more to sustain healthy populations of sage grouse and deer over the long-term than actively controlling predators. Control programs can be very labor intensive, expensive, and not always successful due to new individuals constantly moving in to replace predators removed from a specific area. If habitat that adequately provides for nesting, roosting, protection for deer fawns, and foraging is present, these populations can tolerate some predation pressure.

Cultural Resources
One commentor felt that the ranching culture and lifestyle is part of the history of Browns Park, and that the Refuge has a role in preserving this cultural activity. It was suggested that grazing be continued on Refuge lands to preserve this tradition and to manage habitats.

Response: The primary purpose of the Refuge is to provide quality habitat for migratory and resident wildlife. All other uses of Refuge lands are secondary to this purpose and must be determined to be compatible with the purposes for which Browns Park was established. Grazing is one of several tools available to the Refuge staff to manipulate habitats for wildlife and will be considered where and when specific habitat needs require it.

Air Quality
One commentor remarked that there was no discussion on how the Refuge will protect air quality in the region.

Response: The only current or proposed Refuge activity that may impact air quality is controlled burning for habitat management. The Refuge complies with State air quality regulations and obtains permits prior to all controlled burns. The statement has been added to the CCP that clarifies this requirement.

Upper Colorado River Ecosystem Goal #2
Three commentors expressed confusion over the wording of this goal that reads: "Reverse the current trend; restore, maintain, and enhance the species composition, a real extent and spacial distribution of wetland/riparian habitats" and whether this trend has been documented and measured.

Response: This has been clarified to read: "Reverse the current trend of (degradation and loss of healthy riparian and wetland habitats); restore, maintain, and enhance the species composition, the extent and spacial distribution of wetland/riparian habitats." The degradation and loss of these habitats on both public and private land has been documented extensively throughout the western states for many years. In arid areas, these relatively wet habitats are critical for the majority of wildlife species during at least part of their life cycle. This is a major concern for the Refuge as well as other national wildlife refuges, state wildlife management areas, and natural areas throughout the Ecosystem.

Habitat Restoration and Improvement
One commentor felt that the prime goal of Refuge management should be habitat protection and the restoration of riparian and wetland communities, and that prescribed burning and reseeding of cottonwood, control of nonnative plants, and restoration of natural flows on the Green River should be used to this end.

Response: Thank you for your comment. The CCP calls for these techniques to enhance wildlife habitat.

Public Use Facilities
One commentor and regular Refuge visitor was concerned about the potential closing of one of two campgrounds. He also voiced concern that concentrating the camping use to one site will detract from the experience and primitive aspect of Browns Park.

Response: The Refuge staff feels that because of maintenance cost and staff availability, one campground may need to be closed. However, before this decision is made, the staff will form a small working group of concerned visitors to consider the alternatives to closing either existing site, possibility of maintaining both, how to avoid impacts to one with increased use, and other issues such as safety, protection of surrounding habitat, quality of experiences, and accessibility requirements.

Funding and Step-Down Plans
One commentor was concerned that the Plan will not be carried out if the required increases in staff and funding do not develop. There did not seem to be a prioritized list of actions that would be accomplished first. He also wanted an explanation of the process to develop identified step-down management plans.

Response: The Refuge will follow the goals and objectives laid out in the CCP with the funding and personnel that is available. Activities and programs not identified in the CCP will not be carried out. The National Wildlife Refuge System Improvement Act of 1997 requires that all funded Refuge activities be identified in the CCP, and this will aid in allocation of funds from Congress. Project priorities are assigned by the RONS budgeting system, excerpts of which are included in the plan appendices. RONS is updated each fiscal year. Step-down plans are basically more detailed descriptions of actions proposed by the CCP and are usually prepared by the Refuge staff. If needed, the staff will request assistance from other experts and agencies, but there is not usually public involvement in plan development. If a step-down plan becomes controversial or may result in a significant impact to the environment or the local community, drafts of that Plan will be made available for public comment.

Lack of Scientific Documentation
One commentor felt that the Plan did not identify the scientific basis used to develop the objectives and strategies described. He commented that CCPs must be grounded in good science to make them credible and effective. He also felt the evaluation and monitoring discussion was not adequate.

Response: Most of the information used to develop the objectives and strategies has been gathered on the Refuge during its 33 year history. Observations as to what type and condition of habitat is used by species of management concern have been gathered during regular surveys and research on the station. The comment is well taken, and the staff has been identifying and collecting references to assist in implementation of the CCP. The discussion on evaluation and monitoring has been expanded to clarify how progress toward identified goals will be measured.

Wetland Goals not Achievable

One commentor felt that the wetland and riparian goals are not achievable as described, mostly because the Green River has been so drastically altered by Flaming Gorge Dam. He felt that the CCP does not change the management direction of Browns Park and will continue past mistakes. He also commented that no water diversions should continue from Beaver Creek, preserving the riparian habitat along the creek, rather than try to create riparian habitat on sites not capable of supporting it.

Response: The Refuge realizes that the hydrology of the Green River is quite different than it was before Flaming Gorge Dam, and that true restoration of those conditions is not achievable. However, ongoing study of riparian restoration techniques shows some promise in enhancing what habitat is still present, the control of nonnative plants is not only desirable but required by law, and that some wetlands can be maintained in better condition than in the past. The Refuge does not intend to create riparian habitat where it did not originally exist, rather to encourage and restore it where conditions are favorable. Wetland units created in the past that never functioned well are being retired and restored to their original condition. We have an agreement with the Colorado Division of Wildlife to allow their lessee some water diversion from Beaver Creek. Riparian habitat along the creek exists even with reduced creek flows and appears stable.

Browns Park National Wildlife Refuge
1318 Highway 318
Maybell, CO 81640
970/365 3613
r6rw_brp@fws.gov

U. S. Fish and Wildlife Service
http://www.fws.gov

For Refuge Information
1 800/344 WILD

September 1999