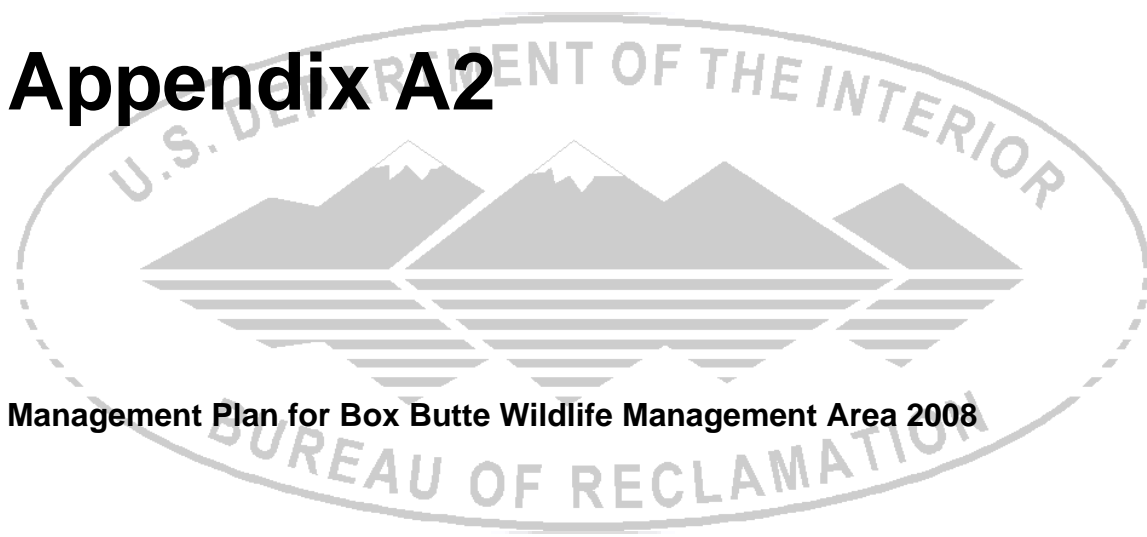


Appendix A2



Management Plan for Box Butte Wildlife Management Area 2008

MANAGEMENT PLAN



BOX BUTTE WILDLIFE MANAGEMENT AREA

June 2008

INTRODUCTION

Box Butte Wildlife Management Area (WMA) is located at Box Butte Reservoir in Dawes County, Nebraska, approximately 10 miles north of Hemingford (Figure 1). Box Butte Reservoir was constructed on the Niobrara River during the 1940s by the U.S. Bureau of Reclamation (BOR) for irrigation (Mirage Flats Project), flood control and recreation. Elevation is approximately 4,000 feet.

The reservoir is approximately 1,600 acres at full pool with approximately 14 miles of shoreline. The Nebraska Game and Parks Commission (NGPC) leases much of the land area around the reservoir from BOR as a WMA. At full pool, the WMA land area is approximately 355 acres, and as summer drawdown for irrigation occurs, land area obviously increases. NGPC also leases and manages the northeast corner of the reservoir as a State Recreation Area for developed recreation.

This management plan applies only to the WMA and focuses on terrestrial resources and management. Management of aquatic resources and recreational fisheries in the reservoir are addressed in a separate plan available from the Alliance NGPC office.

Management direction in this WMA plan is stepped down from broader scale strategic plans (NGPC 2004, Schneider et al. 2005) developed by NGPC and other cooperators and partners. The management direction in this plan may be amended, modified, deleted or expanded in the future as a result of new information, changing management priorities or public input.

SITE DESCRIPTION

Climate

Located in the northern Great Plains, this WMA has a continental climate with cold winters, hot summers and relatively low humidity. January is the coldest month with an average daily temperature of 24° (F), while July is the hottest month with an average temperature of 74° (F). Annual precipitation averages 17 inches.

Soils

Soils common on the drier sites in the WMA vary from very fine sands and loamy fine sands to silt loams. Coarse sands are more common on those sites that are periodically flooded.

Water

Water sources for wildlife include the reservoir, Niobrara River, and sections of old riverbed on the western end of the WMA that still hold water for all or most of the year. There are no additional developed water sources on the WMA.

BOX BUTTE WILDLIFE MANAGEMENT AREA

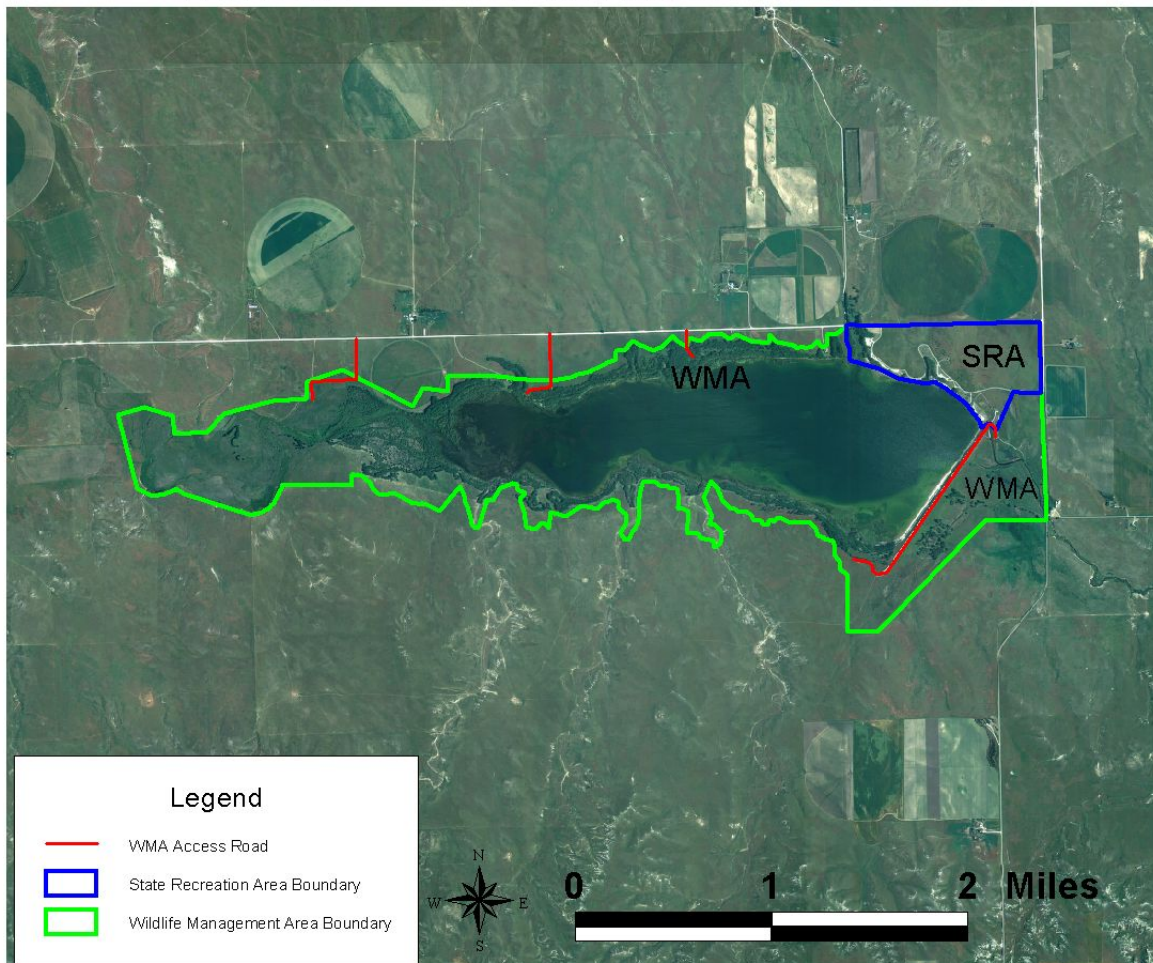


Figure 1. Aerial image map of Box Butte Wildlife Management Area, Dawes County, Nebraska. This area is located approximately 10 miles north of Hemingford, Nebraska.

Vegetation

Cottonwood forests dominate the reservoir shoreline on the WMA. Much of the forest understory around the reservoir on the WMA is flooded during summer before irrigation drawdown and, as a result, is moderately infested with Canada thistle and houndstongue. Cocklebur, sour dock, wild licorice, mustard, milkweed and willow are some of the other more common species that occupy the wetter portions of the forest understory. Large beds of smartweed are common and extend from the edge of the cottonwood forests into the mud flats and shallows of the reservoir. Smooth brome is abundant on the drier upper portions of the forest understory. Red cedar and Russian olive invasion in the forest understory is also becoming more evident. Dead and down woody debris is relatively abundant throughout much of the forest understory.

Dense willow shrub communities cover much of the upper end of the reservoir on the WMA. Most of these areas are flooded during full pool.

Upland grasslands occur along the outer edges of the WMA beyond the cottonwood forests and reservoir. Some of the dominant grasses in these areas include prairie sandreed, needle-and-thread, sand bluestem, little bluestem, western wheatgrass and blue grama. Smooth brome continues to invade and expand into the native grasslands.

Wet and subirrigated meadows occur along the Niobrara River above (west) the reservoir and below the dam on the WMA. Wetland sedges dominate many of these sites, and smooth brome invasion is also problematic in some of these sites.

Wildlife

The reservoir provides important habitat for waterfowl, shorebirds and other waterbirds during fall and spring migration. Some of the more common ducks include mallard, gadwall, northern pintail, American widgeon, blue-winged teal, redhead, ring-necked ducks, northern shoveler, lesser scaup, common goldeneye and bufflehead. Wood ducks are occasionally observed in the upper reaches of the reservoir. Common mergansers are occasionally observed on the reservoir. Canada geese and an occasional flock of snow geese also use the reservoir during migration. Other species of waterbirds and shorebirds commonly observed include American coot, double-crested cormorant, western grebe, eared grebe, great blue heron, ring-billed gull and killdeer. Marsh habitat along the Niobrara River on the upper end of the reservoir provides habitat for rails, common snipe and other marsh birds. Because of irrigation drawdown and significant amounts of boating and other recreational activity on the reservoir, breeding and nesting opportunities for waterfowl, shorebirds and other waterbirds are limited.

Bald eagles are occasionally observed as they follow the large flocks of migrating ducks and geese. Red-tailed hawks, northern harrier, American kestrels and great-horned owls are some of the more common raptors observed around the reservoir and on the WMA. Osprey are occasionally reported at the reservoir.

The cottonwood forests on the WMA abound with birdlife, especially during the summer and in locations where there's a significant shrub component in the understory. Several species of flycatchers, vireos and warblers are commonly seen or heard in the tree overstory while other species like the spotted towhee, brown thrasher and yellow-breasted chat are commonly seen or heard in the shrub communities. Woodpeckers are relatively abundant because of the abundance of snags in the cottonwood forests.

Grassland areas on the WMA provide habitat for a small population of ring-necked pheasant and an occasional sharp-tailed grouse. Mourning dove also nest on the grasslands in the WMA. Many other species of grassland nesting birds like the western meadowlark, horned lark and grasshopper sparrow are also found in the grassland areas of the WMA.

Currently, over 200 white-tailed deer are found on the WMA and adjoining private lands. A few mule deer also make periodic use of the WMA, and occasionally, pronghorn are observed in the grassland habitats on the western side of the WMA. Other species of mammals commonly seen on the WMA include coyote, badger, raccoon, eastern cottontail, fox squirrel, thirteen-lined ground squirrel and striped skunk.

The northern leopard frog is a common amphibian seen and heard in wetland habitats on the WMA. Bullsake, eastern yellow-bellied racer and the western plains garter snake

are the most common species of snakes. Prairie rattler is also found on the WMA. The common snapping turtle, ornate box turtle, and western painted turtle also occur on the WMA.

Threatened, Endangered and Other At-Risk Species

The bald eagle has been de-listed as a federally threatened species. However, both the bald eagle and golden eagle are still protected under the Bald and Golden Eagle Protection Act.

Ute lady's-tresses orchid occurs along the Niobrara River in Sioux County, but there are no records of this federally threatened species on or near this WMA.

Although whooping cranes have been observed in Dawes and Box Butte Counties in the northern panhandle of Nebraska, there are no confirmed sightings of this federally endangered species on or near this WMA.

Terrestrial at-risk species (Tier 1, Schneider et al. 2005) that may be seen on or near this WMA include burrowing owl, ferruginous hawk, long-billed curlew and Bell's vireo (possible). Although potentially suitable habitat occurs on this WMA for swift fox, there are no known swift fox populations currently on or near the WMA. Although river otter have been confirmed along the Niobrara River downstream in Sheridan and Cherry Counties, there have been no confirmed otter sightings on or near this WMA.

Recreation

The WMA provides popular access to the reservoir for ice and open water fishing. Hunting for white-tailed deer, wild turkey, cottontails and fox squirrels in the cottonwood forests on the WMA is popular. Duck and goose hunters also access the reservoir through the WMA. The Niobrara River, both below and above the reservoir, also attracts duck hunters. Hunters also pursue ring-necked pheasant and mourning dove on the WMA. Less popular species like snipe and rail also occur on the WMA but receive little hunting interest. Bird-watching opportunities abound on the WMA with over 200 species being documented on the WMA and reservoir.

Infrastructure

Three improved roads (graveled) provide access to the northern and western portions of the WMA. Walk-in access to the southern portion of the WMA is available from the southern end of the dam road. Access to the WMA below the dam is available from northern and southern ends of the dam road and a paved county road.

There's approximately 12 miles of boundary fences, mostly standard barbed wire construction. There's approximately 2 miles of interior fence, mostly right-of-way fences along the three access roads on the northern part of the WMA. There are several unimproved parking areas and two gravelled parking areas on the WMA.

MANAGEMENT PRIORITIES

The natural ecological disturbances that helped shape the local native plant communities and habitats have been highly altered over the last 130 years and more. These natural forces were primarily grazing by native ungulates and other wildlife and fire. Water resources have also been highly altered primarily through impoundment, diversion, and pumping. Added to this list is the introduction and expansion of exotic and invasive plants that further alters natural environments and biological communities. It is largely these change agents that we can modify and manage to produce desirable changes and results on the ground to enhance wildlife habitat, wildlife populations and wildlife-related recreation on the WMA.

The WMA and reservoir are located within a biologically unique landscape (BUL) referred to as the Upper Niobrara River BUL in the Nebraska Natural Legacy Plan (Schneider et al. 2005). Protecting at-risk plant and animal species and conserving biodiversity in this BUL are identified as priorities in the Legacy Plan, and this emphasis is carried forward into this WMA plan.

NGPC staffing and budget limitations require that management activities be strategically focused on the highest management priorities (targets). The management priorities for the next 5 to 10 years for this WMA are listed below, in no special order.

Biodiversity Conservation

Threatened, endangered and other at-risk species

Control and reduction of exotic and invasive plant species

Grassland management

Wildlife Management

Meadow management for deer and other wildlife

Early successional management for ring-necked pheasant and other wildlife

Recreation

Signing

Litter clean-up

Reducing vandalism

Outdoor Education

Better informing others about opportunities for outdoor education on the WMA

Inventory and Monitoring

Partnerships to help conduct biological inventories and research to fill information gaps

Noxious weed and invasive plant species monitoring

WMA Administration

Yearlong motorized access on the southern side of the WMA for administrative purposes

Maintenance of Infrastructure

Boundary fences

Removal of unnecessary interior fences

WMA access roads and parking areas

For most of these priorities, identifying and engaging partnerships with other government agencies, landowners, educational institutions, businesses, conservation groups and others is highly desirable and would result in enhanced and expanded wildlife conservation and outdoor recreation on the WMA. Partnerships are a high priority for NGPC.

MANAGEMENT OBJECTIVES AND STRATEGIES

The following objectives and strategies address the management priorities identified above for this WMA.

Biodiversity Conservation Objective - *Control noxious weed populations, including Canada thistle and houndstongue, at or below current levels.*

Strategy

- ❖ To the extent possible, use integrated pest management techniques to control noxious weeds. This includes chemical, mechanical (haying) and biological (goats, insects, grassland restoration seedings) control methods.

Biodiversity Conservation Objective - *Monitor the ecological threat of exotic and invasive plant species on the WMA and implement control as warranted. This includes but is not limited to red cedar and Russian olive trees*

Strategy

- ❖ As needed, use cutting and chemical treatment of stumps to control or reduce Russian olive in the understory of the cottonwood forests on the WMA.
- ❖ As needed, use prescribed burning and/or cutting to control or reduce the amount of red cedar in the understory of the cottonwood forests on the WMA.

Biodiversity Conservation Objective - *Enhance the productivity, vigor and diversity of at least 20 acres of native grasslands on the WMA over the next 5 to 10 years.*

Strategy

- ❖ Use prescribed burning to enhance the diversity of native grasslands.
- ❖ Apply periodic livestock grazing as needed to enhance the diversity of native grasslands. Use livestock grazing no more than once every 3 years or longer during drought on any area. Favor high intensity and short duration livestock grazing practices and the use of temporary electric fencing.

Wildlife Management Objective - *Enhance at least 15 acres of smooth brome dominated meadows along the Niobrara River for foraging by deer and other wildlife over the next 5 to 10 years.*

Strategy

- ❖ Converting and successfully reseeding smooth brome dominated meadows (subirrigated) to native grassland species is expensive and difficult. An alternative is to enhance some of the existing smooth brome sites by interseeding alfalfa and other legumes and maintaining the legumes in the brome meadows over time through periodic haying or livestock grazing. This strategy is being very successfully applied on private land along the Niobrara River several miles west of the WMA. Successful implementation of this strategy may also help alleviate some of the deer damage on adjoining private lands during winter.
- ❖ As needed, modify boundary fences to facilitate safer and easier big game movement (see Appendix). Any new fence construction should also follow these specifications to facilitate big game movement and reduce risk of entanglement.

- ❖ Use prescribed fire or periodic intensive livestock grazing on selected grassland sites to refresh grasslands and enhance the palatability of forage for deer and other wildlife.

Wildlife Management Objective - *Implement early successional management practices on at least 10 acres of smooth brome grasslands to enhance habitat for ring-necked pheasant and other wildlife over the next 5 to 10 years.*

Strategy

- ❖ Use light discing or other agricultural practices to enhance plant diversity for ring-necked pheasants, pheasant broods and other wildlife.

Recreation Objective - *Enhance recreational opportunities on the WMA through adequate signing and maintaining a pleasant and well-managed appearance to the WMA.*

Strategy

- ❖ Replace boundary signs when conducting annual fence maintenance
- ❖ Replace signs in parking areas as needed
- ❖ Pick-up litter at least once monthly.
- ❖ Coordinate closely with NGPC conservation officers and Dawes County sheriff to reduce vandalism and littering on the WMA.

Outdoor Education Objective - *Encourage increased use of the WMA for outdoor education.*

Strategy

- ❖ Prepare a display that can be used at local events to better inform the public, especially teachers and students, about the availability of this WMA and others for outdoor education and environmental studies.

Inventory and Monitoring Objective - *Identify and implement cost-effective partnerships for inventory and monitoring programs.*

Strategy

- ❖ Identify critical information gaps and biological inventory needs and work with Chadron State College and others to engage skilled individuals and organizations.

- ❖ Cooperative with the Dawes County weed superintendent in monitoring noxious weeds on the WMA and adjoining lands along the Niobrara River.

WMA Administration Objective - *If economically feasible, develop motorized access for administrative purposes to the southern side of the reservoir and WMA.*

Strategy

- ❖ Install one or more culverts at those drainages on the south side of the reservoir that are flooded during full pool.
- ❖ Attempt to secure administrative access from adjoining landowners on the southern side of the reservoir through agreements or other incentives.

Infrastructure Maintenance Objective - *By 2012, modify fences, boundary and interior, as needed to a standard that effectively controls livestock while facilitating big game movement.*

Strategy

- ❖ To the extent possible and in consultation with adjoining landowners, apply the fencing guidelines and specifications presented in the Appendix for big game movement. Existing fences that do not meet the guidelines can be modified when conducting annual fence maintenance. New fences should be constructed to the fencing guidelines specified in the Appendix.

Infrastructure Maintenance Objective - *Grade each WMA access road and parking area at least once in May or June and again in the fall.*

Strategy

- ❖ Coordinate with the county road superintendent to determine if a cooperative agreement can be reached for the county to periodically grade the WMA access roads on the north side of the reservoir.

Infrastructure Maintenance Objective - *Maintain a pleasant and well-managed appearance to WMA access roads and parking areas.*

Strategy

- ❖ Pick-up litter at least once monthly or as needed.

- ❖ Convert most signing on the WMA access roads and parking areas to a single and uniform sign board.
- ❖ Coordinate closely with NGPC conservation officers and Dawes County sheriff to reduce vandalism and littering on the WMA.

Obviously, many of the objectives and strategies presented above overlap and are interrelated.

Implementation schedules and budget requests for individual projects and activities to implement specific strategies on this WMA are prepared and submitted annually by the NGPC area and district managers. Successful implementation of strategies in this plan will depend on availability of funding and personnel.

REFERENCES

Nebraska Game and Parks Commission. 2004. Focusing on the Future, a Plan for Nebraska's Fish, Wildlife and Parkland Resources 2004-2010. Nebraska Game and Parks Commission, Lincoln. 170pp.

Schneider, R., M. Humpert, K. Stoner and G. Steinauer. 2005. The Nebraska Natural Legacy Project, a Comprehensive Wildlife Conservation Strategy. Nebraska Game and Parks Commission, Lincoln. 245pp.

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Approved By: *Todd Nordeen*, District Manager

APPENDIX

FENCE GUIDELINES TO FACILITATE BIG GAME MOVEMENT

Fence Design and Wire Spacing from Ground (bw = barbed wire, st = smooth twisted wire, se = smooth electric wire)

Boundary and Right of Way Fence

4-Wire Fence = 16" st, 23" bw, 30" bw, 40-42" bw

No Woven Wire

Interior Management Fence

Temporary 2-Wire Electric Fence = 20" se (ground wire), 30" bw or se (electrified)

Temporary 3-Wire Electric Fence = 22" se (electrified), 32" se (ground wire), 40-42" bw
or se (electrified)

3-Wire Fence = 18" st, 30" bw, 40-42" bw

No Woven Wire

These guidelines are modified from the following reference and are designed to hold cattle while allowing safer and easier movement of big game. If needed, consult the reference below for additional guidelines on fencing domestic sheep while facilitating big game movement.

Karhu, R. 2004. Fencing guidelines for wildlife. Habitat Extension Bulletin No. 53, Wyoming Game and Fish Department, Cheyenne. 12pp.