

Chapter 2



Chapter 2 – Fish and Wildlife Management and Administration

Managing Agency Policy

Under the U.S. Fish and Wildlife Coordination Act, 48 Stat. 401, as amended; 16 U.S.C. 661 et seq., the Secretary of the Interior and the Director of the Nebraska Game and Parks Commission have determined that certain lands and waters at Box Butte Reservoir are to be administered by the Commission for management of fish and wildlife resources. Box Butte Reservoir lands to be administered by the Commission encompass 660 acres when the reservoir is at the top of conservation pool. The land area can increase by nearly 500 acres due to severe reservoir draw-downs.

The Fish and Wildlife Coordination Act states that, cooperative programs for developing, protecting, rearing and stocking all species of wildlife, resources thereof, and their habitat; controlling losses from disease or other causes; minimizing damages from overabundant species; providing public shooting and fishing areas will be pursued. Wildlife resource management includes management programs on project wildlife lands and waters to benefit birds, fish, mammals and all other classes of wild animals and all types of aquatic and land vegetation upon which fish and wildlife are dependant. Resource management programs and activities are conducted by Commission personnel from the Wildlife and Fisheries Divisions. (see Appendix A1 for the lease agreement and amendments).

Resource Management

Wildlife

Animal Species Overview

The following is excerpted from the Nebraska Game and Parks Commission's Nebraska's Natural Legacy Project. This narrative provides an overview of the animal diversity found in the Box Butte Reservoir region. The Natural Legacy Project is a blueprint for conserving wildlife and their habitats.

More than 300 species of resident and migratory birds have been recorded in the shortgrass prairie ecoregion. Common shortgrass prairie species include McCown's and Chestnut-collared longspurs, Brewer's sparrow, horned lark, burrowing owl and the state threatened mountain plover. Species commonly found in the mixedgrass prairie community include western meadowlark, grasshopper sparrow, and lark bunting. The pine ridge region includes many forest species such as Lewis' woodpecker, pygmy nuthatch, ovenbird, and

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mountain bluebird. The region's wetlands support many species of waterfowl including Canada goose, mallard, and northern pintail, and shorebirds such as western sandpiper, and greater yellowlegs.

A variety of mammals are known to occur in the ecoregion. Ungulates include both white-tailed and mule deer, elk, pronghorn, and bighorn sheep. Coyotes and bobcats are the most common large predator but in recent years mountain lions have also been recorded in the panhandle. The ecoregion serves as one of the remaining strongholds for the diminutive swift fox, a state endangered species. Prairie dogs are locally abundant and the federally endangered black-footed ferret was once present in the ecoregion. Other mammals include the river otter, black-tailed jackrabbit, badger, plains pocket gopher, and grasshopper mouse.

The aquatic habitats of Nebraska's Panhandle support numerous species of fish. The region's lakes and reservoirs have been stocked with gamefish such as walleye, largemouth bass, white bass and bluegill. River-associated species include channel catfish, river carpsucker, the state-threatened finescale dace, state-endangered blacknose shiner, shovelnose sturgeon, western silvery minnow, plains minnow, suckermouth minnow, flathead chub, blacknose dace, plains topminnow, and Iowa, Johnny, and orange-throat darters. Brown trout and rainbow trout have been stocked in cold water streams in the ecoregion.

Many species of amphibians and reptiles are known to occur in the shortgrass prairie ecoregion. Amphibians include western striped chorus frog and Woodhouse's toad. Reptiles include bullsnake, prairie rattlesnake, lesser earless lizard, short horned lizard, ornate box turtle, and painted turtle.

Existing Wildlife Habitat

The cover types at Box Butte Reservoir can be identified as sandhills prairie, grassland, floodplain forest, woodland, water, and marsh. A map of the habitat cover types found at Box Butte Reservoir is included in Chapter 1, on page 8a.

Wildlife Water Sources

The water surface elevation at Box Butte Reservoir drops annually due to irrigation releases and evaporation. This fluctuation reduces the volume of surface water available for wildlife use. As a result of water level fluctuations, most aquatic plants are prevented from becoming established. As previously flooded soils become exposed along the shoreline ideal growing conditions exist for phreatophyte growth especially cottonwoods and willow species. Noxious weeds also thrive in this moist soil environment, including Canada thistle and houndstongue. (see Figure 3 below)

**BOX BUTTE
YEAR 2007 E.O.M. LAKE LEVELS**

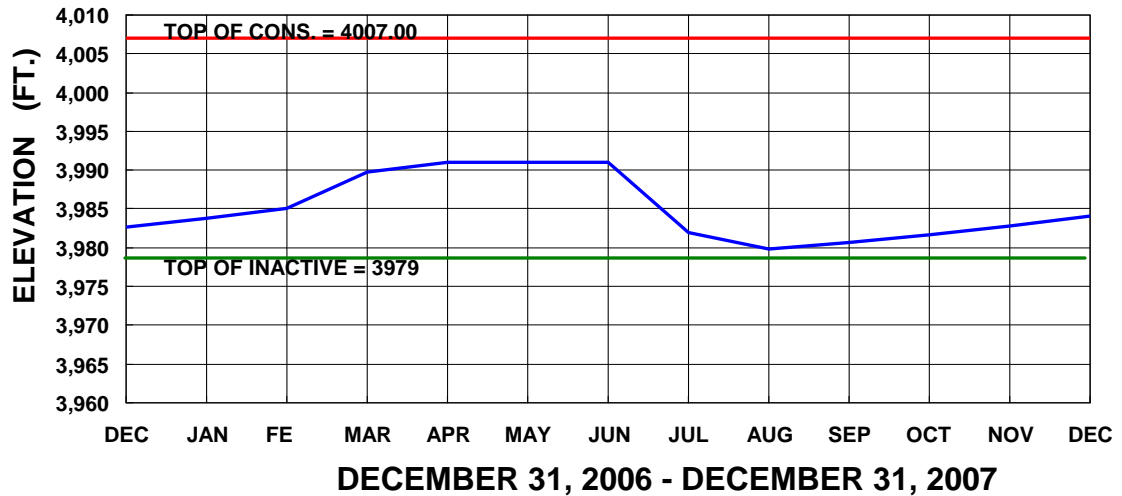


Figure 3 – Box Butte Reservoir 2007 E.O.M. Reservoir Level

Management Objectives

Under the terms of the lease agreement, the Commission is responsible for the conservation and management of all wildlife resources and habitat developments on 660 acres of land at the top of conservation (TOC) pool at Box Butte Reservoir. (Appendix A1)

The Commission’s management goal for the Box Butte Wildlife Area is: “Provide outdoor recreational and educational opportunities while protecting, enhancing, and sustaining diverse wildlife, fish and plant resources.” (Box Butte Wildlife Area Management Plan 2008)(Appendix A2)

Habitat Development Planning

Box Butte wildlife area management plans are completed by the Commission every ten years. The current plan is for 2008 – 2018. This management plan includes techniques and practices described below.

Wildlife Management Practices

Prescribed grazing Due to the isolated location and the limited acreage of the wildlife lands, the Commission has determined optimum management of the grasslands is through the use of prescribed grazing. The prescribed grazing management program can be an effective habitat management tool when used properly. High intensity, short term grazing will reduce plant density, eliminate the dead litter layer, improve plant vigor, enhance plant succession, improve desired plant species, decrease undesirable plant species, and incorporate seed into soil through cattle hoof action. Prescribed grazing will be limited to the

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spring months of April and May.

Prescribed burning Prescribed burning is a proven habitat management tool. Similar to grazing, burning reduces plant density, eliminates the dead litter layer, improves plant vigor, enhances plant succession, improves desired plant species, and decreases undesirable plant species. Burning is more economical and may be more effective than grazing; however the Commission has not performed burns in the past at Box Butte due to the small area, close proximity to private lands, and drought conditions.

Noxious weed control

Nebraska state law requires that all designated noxious weeds be controlled. Presently, moderate to heavy infestations of Canada thistle and houndstongue can be found on the Wildlife Area. These noxious weeds inhabit riparian areas and are at times difficult to control due to the location and difficulty in getting equipment into these areas. Current vegetative management includes chemical, mechanical, and grazing control methods.

In 2006 the Commission entered into a 3 year interagency weed control agreement to utilize domestic goats at Box Butte Reservoir for noxious weed control. The north shore was utilized as a demonstration area for use of the goats for noxious weed control; primarily Canada thistle and houndstongue. The goats are methodically moved along the reservoir shoreline and timbered areas utilizing small electric fence paddocks. The goats are used biennially, in the spring and again in the same area in the fall. The program has been very successful in the reduction of noxious weeds, particularly in areas where mechanical access is difficult. Use of goats in the future will depend on availability of funds as the goat control program is more expensive than utilizing chemicals. For specifics of the goat grazing program refer to the Box Butte Wildlife Area Management Plan 2008 (Appendix A2) (see Figure 4).

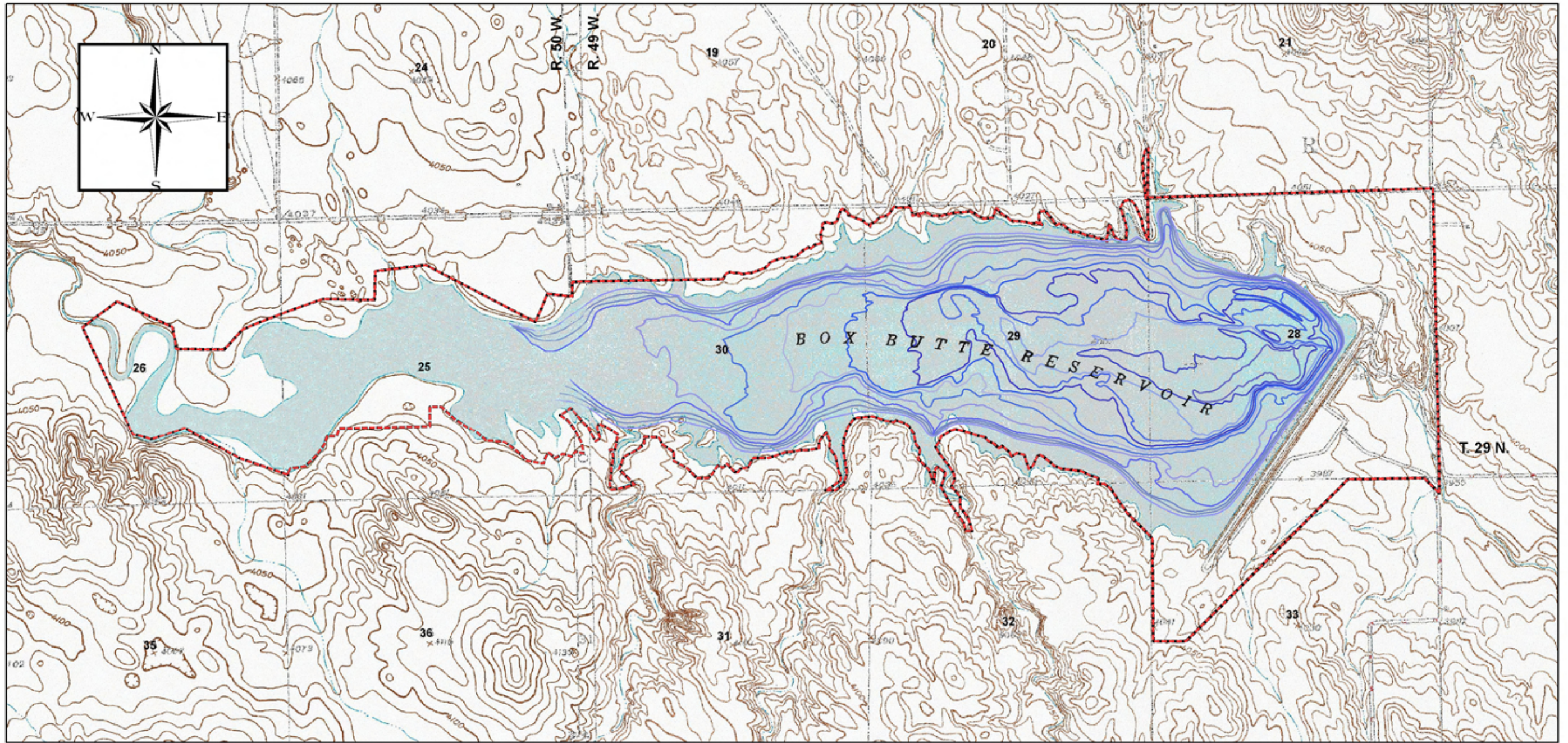
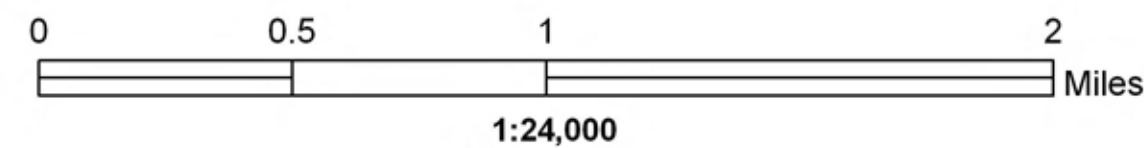


Photo Date: 4/10/2002



Legend

----- Box Butte Boundary



**BOX BUTTE RESERVOIR
TOPOGRAPHY**



Figure 4 – Goat Grazing Demonstration Project

Water Level Fluctuations

Box Butte Reservoir annually experiences fluctuating water elevations. Historically May and June are the highest reservoir elevations, while September and October are the lowest reservoir elevations following irrigation releases. Box Butte reservoir has not reached TOC elevation (4007.0) since 1949. The reservoir has only reached elevation 4000 three times in the last ten years; 1999, 2000, and 2001. During these last ten years Box Butte Reservoir experiences on average 8-15 feet in elevation change over the course of the year. In 1985 Box Butte Reservoir approached its historic low level at elevation 3,969.60 feet with a surface area of only 141 acres. In 2000 the reservoir reached elevation 4,002.1 feet with a surface area of 1,364 acres. The historical inflows and yearly precipitation are plotted in Figures 5 and 6 below.

**BOX BUTTE DAM
ANNUAL HISTORICAL INFLOW**

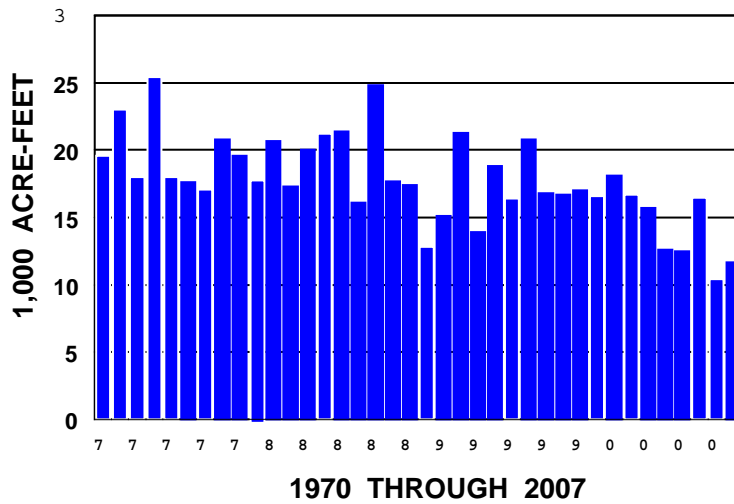


Figure 5 –Box Butte Yearly Historical Inflow

**BOX BUTTE
PRECIPITATION**

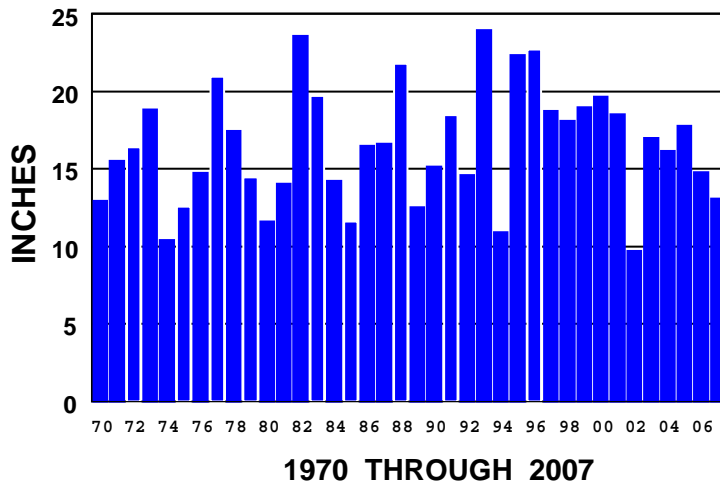


Figure 6 – Box Butte Yearly Precipitation

Fisheries

Box Butte Reservoir is capable of supporting an outstanding fishery dependent on water levels and water level fluctuations. The reservoir annually experiences an 8 to 15 foot drawdown due to irrigation releases. As previously mentioned, Box

Butte reservoir has not reached TOC pool elevation (4007.0) since 1949. The reservoir has only reached elevation 4000.0 three times the last ten years; 1999, 2000, and 2001. These low reservoir elevations, and dramatic water level fluctuation have a major impact on the reservoirs surface area; concentrating fish, while increasing the flushing effect of fish lost thru the outlet works. However, the reservoir is still considered the highest quality fishing reservoir in the District, averaging nearly 60 master angler awards per year. (Nebraska Game and Parks Commission, 1998) The reservoir supports harvestable populations of Northern Pike, Walleye, Yellow Perch, Channel Catfish, Rock Bass, Bluegill, and Largemouth Bass.

In March, 1990 the Mirage Flats Irrigation District (District), the Nebraska Game and Parks Commission, and Reclamation entered into an agreement to establish a minimum pool elevation at Box Butte Reservoir of 3978.0 ft. to support and maintain a viable fishery resource in Box Butte Reservoir. This agreement was modified in March, 2000 to add an additional 1 ft. to the minimum pool elevation of 3979.0 ft. This agreement is in effect through 2020. These reservoir elevations raised the lowest allowable operating elevation from the previous historical level of 3976.5 ft. It is clearly understood that the primary purpose of Box Butte Reservoir is the delivery of water from the storage space for irrigation purposes and that the reservoir level will fluctuate widely above the 3979.0 ft. minimum elevation. This agreement is critical for the health of the reservoir fishery and recreational resource. There is no agreement for a minimum reservoir release to the river for fish and wildlife purposes. For detailed fishery information and data See the Commissions Revised Lake Management Plan in Appendix 3.

**BOX BUTTE RESERVOIR
END OF MONTH ELEVATION**

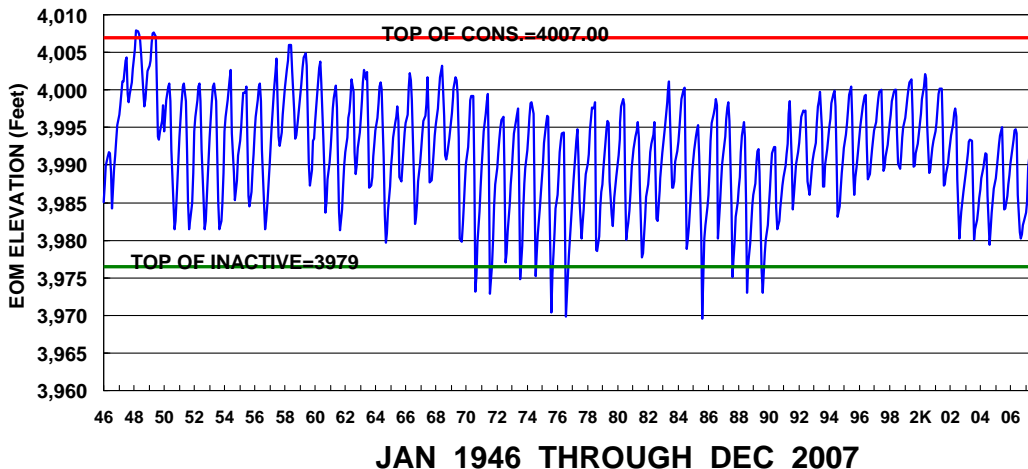


Figure 7 – Box Butte EOM Elevation

BOX BUTTE 10 YEAR RESERVOIR LEVELS

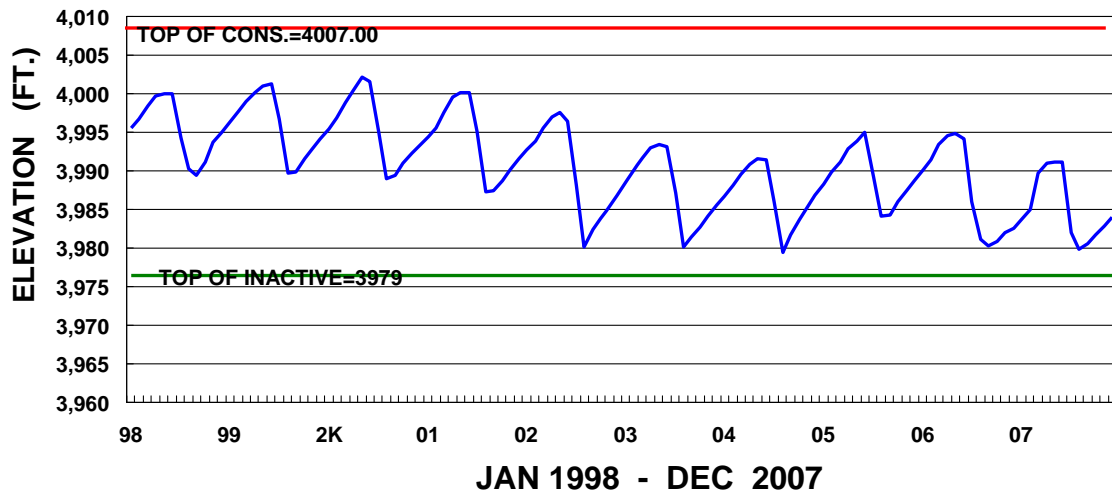


Figure 8 – Box Butte 10 yr. Water Levels

Threatened and Endangered Species

The current list of Federally-listed and proposed threatened or endangered species, and candidate species that reside in, migrate through, or otherwise may be affected by operations in the Mirage Flats project is documented in a U.S. Fish and Wildlife Service (FWS) memorandum to Reclamation dated July 9, 2007; including Box Butte Reservoir are listed in table 3. The State listed species are listed in table 4. No candidate species, proposed species, species of concern, or critical habitat have been identified in the Mirage Flats Project area.

Habitat Use and Status of Species

Table 4 - Federally-Listed and Proposed Threatened or Endangered Species, Candidate Species

Species	Current Status
Threatened or Endangered Species	
Black-footed ferret (<i>Mustela nigripes</i>)	Endangered
Blowout Penstemon (<i>Penstemon haydenii</i>)	Endangered
Whooping Crane (<i>Gros americana</i>)	Endangered

Federal Listed Threatened or Endangered Species

Black-footed Ferret The endangered black-footed ferret is considered the rarest mammal in North America. These weasel-like animals are about the size of a mink ranging from 18-22 inches in length with a 4-6 inch tail and have black feet and face mask. Although the black-footed ferret is similar in appearance to the domestic ferret, they are slightly larger. The black-tail prairie dog (*Cynomys ludovicianus*) is black-footed ferret's primary prey and utilizes burrows of a prairie dog town for maintaining its livelihood. Due to the destruction of prairie dog towns throughout the native prairies of the Great Plains from human-induced activities, the decline of the black-footed ferret also followed. Today, the black-footed ferret is threatened due to primary and secondary poisoning from pesticides used to eradicate prairie dogs, disease such as plague, destruction of prairie dog towns from agricultural, industrial, commercial, and residential development, and predators. If the proposed project is to affect a prairie dog town, surveys for the black-footed ferret may be necessary.

Blowout Penstemon Blowout Penstemon is an endangered plant found in blowouts in the Nebraska Sandhills. The plant can be found in early successional blowout habitat where it has little competition for scarce water and nutrients from other plants. However, as blowout habitats mature and become stabilized, other plants will become established, and the blowout penstemon disappears. Artificial propagation and discovery of additional wild populations have shown that the species appears to be stable in Nebraska. The FWS is aware of records in Cherry, Thomas, Garden, Hooker, Grant, Sheridan, Box Butte, and Morrill counties. Stabilization of blowouts and other disturbances that result in the physical loss of these habitats can have an adverse affect on the blowout penstemon. If a proposed project area contains blowouts, the FWS recommends a survey be conducted by a qualified botanist during the time of year when the plant is blooming. Qualifications of the surveyor, method of survey, and results of the survey should be submitted to the FWS office for review and a determination whether further Section 7 consultation with the Service is necessary.

Whooping crane Whooping cranes, listed as endangered, use shallow, sparsely vegetated streams and wetlands in which to feed and roost during migration. Major river systems used by whooping cranes in Nebraska include the Platte, Loup, Republican, and Niobrara rivers. Migration periods for the whooping crane in Nebraska are from approximately March 23 through May 10 and from September 16 through November 16. Ill-timed human activities in the vicinity of important roosting and feeding habitats can disturb whooping cranes.

Candidate Species

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Candidate species are those plant and animal species for which the FWS has sufficient information on their biological status and threats to propose them as endangered or threatened under the Endangered Species Act. No candidate species are located in the Box Butte Reservoir area.

Species of Concern

Species of concern are plant and animal species that may be threatened but for which insufficient information exists to warrant listing. Species of concern enjoy no legal protection but are considered to minimize future impacts and potential listing. No species of concern are reported to occur around Box Butte Reservoir.

Table 5 - State-Listed and Threatened or Endangered Species, At Risk Species

Species	Current Status
Endangered, Threatened or At Risk Species	
Swift Fox (<i>Vulpes velox</i>)	Endangered
Northern Redbelly Dace (<i>Phoxinus eos</i>)	Threatened
Blacknose Shiner <i>Notropis heteropsis</i>)	Endangered
Finescale Dace (<i>Phoxinus neogaeus</i>)	Threatened
Buff Fleabane (<i>Erigeron ochroleucus</i>)	At Risk Species
Burrowing Owl (<i>Athene cunicularia</i>)	At Risk Species
Ferruginous Hawk (<i>Buteo regalis</i>)	At Risk Species
Golden Eagle (<i>Aquila chrysaetos</i>)	At Risk Species
Great Blue Heron (<i>Ardea Herodias</i>)	At Risk Species
Hoary Fleabane (<i>Erigeron canus</i>)	At Risk Species
Horse Cinquefoil (<i>Potentilla hippiana</i>)	At Risk Species
Long-billed Curlew (<i>Numenius americanus</i>)	At Risk Species
Mountain Cat's-eye (<i>Cryptantha cana</i>)	At Risk Species
Mountain Sucker (<i>Catostomus platyrhynchus</i>)	At Risk Species
Pearl Dace	At Risk Species

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(Margariscus margarita)	
Plains Topminnow (Fundulus sciadicus)	At Risk Species
Sego-lily (Calochortus nuttallii)	At Risk Species
Short-horned Lizard (Phrynosoma douglasi)	At Risk Species
Swainson's Hawk (Buteo swainsoni)	At Risk Species

The above listed species have been documented as occurring within 5 miles of Box Butte Reservoir as cited in a Commission memorandum to Reclamation date February 27, 2008. In addition, the area around Box Butte Reservoir is within the range of and appears to have suitable habitat for the Swift Fox and Northern Redbelly Dace.

Visitor Management

Visitor Use

Visitor use in the wildlife area consists mainly of hunting, fishing, and primitive camping. Visitors may also participate in wildlife observation and nature photography. There are three wildlife area access points on the north side of the reservoir and one on the south side of the reservoir. See Box Butte Land and Water Use map on page 33a.

Visual Resource Management

Visual resource management, according to Reclamation, is the art and science of planning and administering the use of Reclamation lands so the visual effects maintain or upgrade man's and nature's welfare through a compatible coexistence.

Visual resource management in the wildlife area should include minimizing the impact of man and his vehicles. Undesirable vehicle trails will be closed by installing barriers and/or signs.

Future development and construction activities in wildlife areas might include:

- (1) Construction of an informative kiosk with a map of the wildlife area.
- (2) Developing wildlife or fishing access areas
- (3) Improvement or maintenance of existing facilities. To maintain visual quality, the design of such facilities and the materials used must be compatible with the landscape.

Operations, Maintenance, and Capital Improvements

The Commission's staff consists of a two wildlife biologists stationed at the Ponderosa Wildlife Area. Two fisheries biologists are stationed in the Commission's District Office and is responsible for fisheries management.

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Operations and Maintenance (O&M) and development activities at Box Butte are funded through an annual O&M budget, and are supplemented by limited Federal grants. In addition, Reclamation provides limited land resource management funding when available.

Public Use, Regulations, and Enforcement

All hunting and fishing regulations are established by the FWS and the Commission. The Commission's Conservation Officer is responsible for enforcing all game, boating, water regulations, and local laws. Game violations and acts of vandalism on recreational and wildlife lands are investigated by the Conservation Officer. The Dawes County Sheriff out of Chadron, NE has the jurisdiction and authority to investigate all cases of personal injury or property damage.

Off-Road Vehicle Use

Reclamation lands are closed to Off-Road Vehicle (ORV) use, except for areas or trails specifically opened to use of ORV in accordance with Code of Federal Regulations (CFR) Section 420.21. There is currently no ORV use area designated at Box Butte Reservoir.

Special Uses

Special uses include off-road vehicle (ORV), equestrian, group use, collecting, and climbing. According to State and Federal regulations, these special use areas are confined to designated areas, roads and trails.

Collecting flora and fauna specimens is prohibited by State and Federal laws unless a valid scientific collector permit is obtained from the Commission. Also, archeological and cultural resource collecting is prohibited by State and Federal laws. For additional policy concerning the collection of archeological and cultural resources, see the Cultural Resources section of Chapter 1.

Safety and First Aid

All Commission vehicles are equipped with first aid kits. Conservation officers are trained in first aid procedures. No visitor safety awareness campaign is presently being implemented.