

ENVIRONMENTAL ASSESSMENT

OPENING of HUNTING

for

Buffalo Lake National Wildlife Refuge

Randall County  
Texas

DRAFT

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Umbarger, Texas

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# BUFFALO LAKE NATIONAL WILDLIFE REFUGE

## ENVIRONMENTAL ASSESSMENT

### **I. Purpose and Need for Action**

The purpose of this action is to permit hunting on the Buffalo Lake National Wildlife Refuge (NWR), Randall County, Texas. Hunting in the context of this environmental assessment is defined as **Big Game Hunting**. In order to meet specific Refuge and other biological orders U. S. Fish and Wildlife Service (Service) directives, the following purposes were established for Buffalo Lake NWR:

The Buffalo Lake NWR Purposes are:

“... for use as an inviolate sanctuary,...for any other management purposes, ...for migratory birds.” Migratory Bird Conservation Act (16 U.S.C. 712d).

“...for use and administration under applicable laws as a refuge for migratory birds and other wildlife...” Secretarial order 2843, dated November 17, 1959.

The Refuge Recreation Act (16 U.S.C. 460-1) states that each refuge is:

“...suitable for fish and wildlife oriented recreational development, the protection of natural resources, and the conservation of endangered and threatened species.”

The Refuge System mission 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” (National Wildlife Refuge System Improvement Act of 1997, Public law 105-57).

As a management objective, hunting provides the public with an opportunity to utilize a renewable resource. Hunting is compatible with Refuge purpose and mission of the system and is in the public’s interest on Buffalo Lake NWR as described under the National Wildlife Refuge System Improvement Act of 1997.

### **II. Alternatives**

This action will allow the public to hunt on Buffalo Lake NWR according to established regulations. Three Alternatives were considered for Big Game hunting on the Refuge. They included:

A. No Action

B. Limited Hunting (during State seasons)

C. Open Hunting (during State seasons)

Criteria for evaluation of alternatives include:

1. Compatibility with Refuge purposes
2. Inviting public comment in planning process
3. Refuge cost

**A. No Action Alternative**

Under Alternative A, big game hunting would continue to be closed on Buffalo Lake NWR. Big game hunting has never been allowed on the refuge. This alternative would basically follow the “status quo” of current management. As seen in the hunting plan, the mule deer population would rise and fall dependent on habitat conditions. This natural cycle would likely to continue through time, until populations reached a maximum level at which time a large die off could occur from disease or starvation. Then populations would once again balance.

Not allowing big game hunting would result in the loss of a recreational opportunity that is compatible with Refuge purposes. Implementation of this Alternative would generally not be in compliance with the Improvement Act of 1997 in regards to compatible public recreation. There would be no additional cost to the Refuge under this alternative.

**B. Limited Hunting (during State seasons)**

Alternative B will allow limited participation of youth hunting at Buffalo Lake NWR using restricted methods such as: assigning youth hunters through lottery draws; allowing only certain species to be hunted; limiting to certain firearms; allowing hunting on limited days; and/or limiting tracts or time periods of Big Game hunting. This hunting program is designed to contribute to, or be compatible with, Refuge objectives. It will provide a recreational experience to the general public and the opportunity to utilize a renewable resource. It could also maintain some wildlife populations at managed levels. The seasons, species, and bag limits will be within the framework of the Texas Parks and Wildlife Department’s (TPWD) regular state seasons and further regulated by Refuge regulations according to Fish and Wildlife Service policy. Refuge management goals and objectives may require occasional modifications to the hunting program as harvest data, public use pressure, and Refuge programs, are developed. As currently proposed, it is estimated that Refuge costs would be a \$10,000 initially and about \$6,000 per year thereafter, for Big Game hunting, program implementation, facility maintenance, and compliance checks under Alternative B. Under this Alternative, we will rely on Texas Parks and Wildlife for law enforcement and the local special agent located in Lubbock.

For *Refuge-Specific Regulations*, reference Section E.

### **C. Open Hunting (during State seasons)**

Alternative C will allow virtually unrestricted deer hunting to all participants who show up at Buffalo Lake NWR during the entire State regulated season. Additionally, the entire Refuge would be open to deer hunting. The seasons, species, and bag limits will be within the framework of the TPWD's regular state seasons and further regulated by Refuge regulations according to Service policy. Refuge management goals and objectives may require occasional modifications to the hunting program as harvest data, public use pressure, and Refuge programs, are developed. As currently proposed, it is estimated that Refuge costs would be about \$32,000 per year, for Big Game hunting for law enforcement from other neighboring Refuges in New Mexico and Oklahoma, program implementation, facility maintenance, and compliance checks under Alternative C. The State regulated season for mule deer both general and archery season lasts more than 40 days. Substantial overtime would be necessary or the hiring of temporary staff would be needed. Staff will randomly check hunters in or out over the various units that are open for the season. Due to the nature of the frequently flooded and rutted dirt roads and parking areas, constant maintenance would be necessary to minimize erosion and vehicle safety.

Under this alternative, it is likely that deer harvest rates will be high during the first hunting season. Thereafter, doe/buck ratios will become highly skewed toward doe deer, which depending on the ratio, may affect the proceeding year's fawn population. If open hunting continues the quality of the hunt will diminish. It is likely that hunting pressure under this alternative will also diminish the quality of the hunting experience and pose a safety concern, both of which is contrary to Service Policy. (8 RM 5.1, 5.2)

*For Refuge-Specific Regulations, reference Section E.*

### **III. Description of the Affected Environment**

Buffalo Lake National Wildlife Refuge was originally purchased under provisions of the Bankhead-Jones Farm Tenant Act in 1937 by the Soil Conservation Service. First known as the Tierra Blanca Water Conservation Project, the area was acquired to provide flood control and recreation. Shortly after completion of the earthen Umbarger Dam, the area was turned over to the U.S. Forest Service and renamed the Buffalo Lake Conservation Area. The project was transferred from the U.S. Forest Service to the U.S. Fish and Wildlife Service (Service) on November 6, 1958 by Executive Order #10787. Buffalo Lake National Wildlife Refuge was established on November 17, 1959 under Secretarial Order #2843, using the Migratory Bird Conservation Act as the authority.

Tierra Blanca Creek and other natural springs fed Buffalo Lake until the 1970's when irrigation and urban water pumping depleted the aquifers to the point that perennial surface water no longer existed. This draining of the aquifer was compounded by climatic drought which lowered lake levels even further. Given these conditions the surface flows of Tierra Blanca Creek eventually ceased and Buffalo Lake dried up.

However, in 1978 a record flood within the Tierra Blanca Creek drainage filled Buffalo Lake to capacity. Shortly after filling, Umbarger Dam was condemned resulting in the release of all water within Buffalo Lake. Fourteen years later in 1992, Umbarger Dam was replaced with a modern flood control structure able to withstand the torrential flooding that may occur within the area. Current water quality suffers from upstream confined cattle feeder operations runoff. During a flood in 2004, water quality resulted in fecal coli form numbers too numerous to count (>6000/L). Given this potential health hazard Buffalo Lake is no longer open to water activities such as swimming, boating, or fishing. Therefore, public use at this time is limited to wildlife viewing and camping.

The Refuge Improvement Act states that each refuge will be managed to fulfill refuge purpose(s) as well as to help fulfill the System mission. We will accomplish these purpose(s) and our mission by ensuring that the biological integrity, diversity, and environmental health of each refuge are maintained and, where appropriate, restored. Refuge purposes are the main drivers for the management of a refuge and need to be kept at the forefront of all planning efforts and management decisions.

#### *Landscape with Historic and Current Perspectives*

In evaluating the wildlife and habitat management of the refuge, it is crucial to examine the historic biological conditions of the refuge and the surrounding landscape. This information provides a frame of reference for what the area can support in terms of wildlife and habitat, and to help determine the best role of the refuge in the context of the surrounding lands.

The refuge is located in the southern portion of High Plains. This is a native short and mixed grass prairie that once encompassed more than 350,000 square miles in 10 states, and stretched along the eastern slope of the Rocky Mountains from Canada to southwestern Texas. The refuge

is in a portion of the High Plains called the Llano Estacado, a large non-mountainous geological region at the southern end of the High Plains. This area covers about 20 million acres and is characterized by a flat, featureless, relatively high plateau that was virtually devoid of trees prior to substantial development by man. Huge herds of bison and pronghorns roamed the plains, and prairie dogs numbered in the millions. This prairie was adapted to grazing and periodic fire, and developed under climatic conditions characterized by a small amount of effective precipitation.

By the late 1800's, large portions of the original High Plains prairie were converted to agriculture. By the early 1900's, much of the original shortgrass prairie had been converted to farm lands which increased with the onset of deep well irrigation. Today, Buffalo Lake National Wildlife Refuge is located in Randall County which consists of 906,000 acres of land. As of 2002, 56 percent of the County was reported as farmland or a total of 512,309 acres (USDA 2002). In 2000, 10 percent of the county was reported in the Conservation Reserve Program with a total reported acreage of 91,629 (USDA 2000). Buffalo Lake accounts for only 0.8 percent of the county. The remainder of Randall County remains managed for livestock grazing with a small portion being considered urban or suburban. Therefore, this shift in land use over the last 100 years has caused the extirpation several wildlife species such as the bison, gray wolf, grizzly bear, pronghorn and elk.

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#### **IV. Environmental Consequences**

This next section addresses the environmental impacts of the no action, limited hunting, and open hunting alternatives as it relates to physical resources, biological resources, recreational resources, socioeconomic resources, Improvement Act of 1997, and cultural resources.

##### **A. No Action - Alternative A**

Under this Alternative, big game hunting would continue to be closed on Buffalo Lake NWR.

###### **a) Physical Resources**

Physical resource impacts currently occurring within the Refuge are due to limited non-point source pollution such as air borne particles from nearby grain elevators; runoff from roads and farms; runoff from confined cattle operations (feed lots) and over bank flooding from the Terria Blanca Creek. This alternative would not result in any new physical resource impacts.

###### **b) Biological Resources**

Being closed to big game hunting would minimize most adverse biological effects to flora and fauna. It is possible that temporary over-population of deer resulting in habitat destruction could occur without hunting.

###### **c) Recreational Resources**

This alternative would not provide the public with an opportunity to utilize a renewable resource although hunting is compatible with Refuge objectives.

###### **d) Socioeconomic Resources**

Small businesses in the area would not benefit from hunters buying supplies, food or gas.

###### **e) Improvement Act of 1997**

Section 5(a)(3) of the Act states:

"(B) Compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System, directly related to the mission of the System and the purposes of many refuges and which generally fosters refuge management and through which the American public can develop an appreciation for fish and wildlife;

(C) compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management; and

(D) when the Secretary determines that a proposed wildlife-dependent recreational use is compatible within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable and appropriate."

###### **f) Cultural Resources**

Cultural resources in the area would not be affected.

## **B. Limited Hunting - Alternative B (Preferred Alternative)**

Under Alternative B, hunting will be open on the Buffalo Lake NWR, with restrictions noted below and under Section E, Refuge Specific Regulations.

### a) Physical Resources

Physical resource impacts noted in Alternative A would continue under this alternative. Alternative B will likely not increase deterioration of the limited Refuge dirt road system and increase potential pollution from vehicular sources in the form of fumes and oil or radiator leaks because of the limited number of hunters. In addition to a more complete list of Refuge Specific Regulations listed under Section E, some of the restricted management practices that will be used to minimize impacts include: 1) control the number of hunters (thus fewer cars); 2) limit the length of the hunt season; 3) limit the tracts where hunting could potentially occur, especially on roads/tracts that are constantly flooded during hunt season; 4) not allow the use of all terrain vehicles; and 5) not allow the use of horses or pack animals.

### b) Biological Resources

Likely little or no new biological impacts will occur during hunting activities to flora and fauna under this alternative due to the limited number of hunters. Ways to minimize possible adverse effects such as noise, trampling, and visual disturbances include many Refuge Specific Regulations listed under Section E such as: 1) controlling the number of hunters (thus fewer cars); 2) limiting the length of the hunt season; 3) limiting the tracts where hunting could potentially occur, especially on roads/tracts that are constantly flooded during hunt season; 4) not allow the use of all terrain vehicles or horses/pack animals; and 5) hunting during daylight hours only. Additionally, increased presence by Refuge staff and law enforcement personnel should help minimize biological impacts to the area through education.

### c) Recreational Resources

Hunting in Texas is what many people consider as a way of life. Alternative B will provide a limited opportunity for a wildlife-dependent recreational use of a renewable resource. Controlling the number of hunters, tracts, and hunt days, would allow for a sustained quality deer hunt.

### d) Socioeconomic Resources

Small businesses in the area could benefit from some hunters renting hotels, buying supplies, food or gas under this alternative. However, the benefits may be minimal.

e) Improvement Act of 1997

Section 5(a)(3) of the Act states:

"(B) Compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System, directly related to the mission of the System and the purposes of many refuges and which generally fosters refuge management and through which the American public can develop an appreciation for fish and wildlife;

(C) compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management; and

(D) when the Secretary determines that a proposed wildlife-dependent recreational use is compatible within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable and appropriate."

f) Cultural Resources

Known cultural resources in the area should not be impacted.

**C. Open Hunting - Alternative C**

Under this Alternative, hunting would be open on all tracts of the Buffalo Lake NWR, during the entire State season, seven days a week, with few refuge restrictions and unlimited number of hunters.

a) Physical Resources

Physical resource impacts noted in Alternative A would continue under this alternative. Alternative C will markedly increase deterioration of the limited Refuge dirt road system and increase potential pollution from vehicular sources in the form of fumes and oil or radiator leaks from unlimited hunter usage. Refuge Specific Regulations listed under Section E would be limited under this Alternative.

b) Biological Resources

Significant adverse biological impacts would occur during hunting activities to flora and fauna under this Alternative. Although some ways to minimize major adverse effects would be included under the Refuge Specific Regulations listed in Section E, most other restrictions addressing the number of hunters, length of hunt season, and limits on which tracts that were open would be eliminated under this alternative. Increased presence by Refuge staff and law enforcement personnel may not be sufficient to minimize biological impacts to the area.

c) Recreational Resources

Hunting in Texas is what many people consider as a way of life. Alternative C would provide an opportunity for a wildlife-dependent recreational use of a renewable resource. Without some limitation of hunters, length of season, and which tracts are opened, degradation of such a sustained hunt would occur. Being only half an hour away from Amarillo and more than 125,000

people have the potential to make this alternative very attractive to many hunters.

d) Socioeconomic Resources

Small businesses in the area could benefit from some hunters renting hotels, buying supplies, food or gas under this alternative.

e) Improvement Act of 1997

Section 5(a)(3) of the Act states:

"(B) Compatible wildlife-dependent recreation is a legitimate and appropriate general public use of the System, directly related to the mission of the System and the purposes of many refuges and which generally fosters refuge management and through which the American public can develop an appreciation for fish and wildlife;

(C) compatible wildlife-dependent recreational uses are the priority general public uses of the System and shall receive priority consideration in refuge planning and management; and

(D) when the Secretary determines that a proposed wildlife-dependent recreational use is compatible within a refuge, that activity should be facilitated, subject to such restrictions or regulations as may be necessary, reasonable and appropriate."

f) Cultural Resources

There is at least one cultural resource located on a Refuge tract. Under Alternative C, it would be open to hunting, thus could be adversely affected.

**V. Consultation and Coordination With Others**

**VI. Summary**

**Summary of Impacts by Alternative**

<b>Impact Topics</b>	<b>Alternative A No Action</b>	<b>Alternative B Limited Hunting <i>PREFERRED ALTERNATIVE</i></b>	<b>Alternative C Open Hunting</b>
<b>Physical Resources</b>	No new impacts.	Some adverse impacts likely, but can be minimized with maintenance and enforcement.	Significant adverse impacts likely, with limited controls for prevention available.
<b>Biological Resources</b>	No effect.	Some adverse effects likely, but can be controlled with refuge specific regulations and enforcement.	Significant adverse impacts could occur due to unlimited hunting and reduced refuge specific regulations.
<b>Recreational Resources</b>	Would not allow a compatible, recreational use.	Would allow a compatible, although limited, recreational use.	Allows greater number of hunters and hunting opportunity, but could reduce quality aspects of hunt.
<b>Socioeconomic Resources</b>	No benefit to area economy.	Modest benefit to area economy.	Greatest benefit to area economy.
<b>Improvement Act of 1997</b>	Partially met	Met	Partially met
<b>Cultural Resources</b>	N/A	N/A	Could affect at least one known cultural site.

Based on the review of the three alternatives, *opening the Refuge to Limited Hunting, Alternative B, was chosen as the Preferred Alternative.* This alternative was selected because the Service believes it offers the best type of public hunt with minimal impact on physical and biological resources, while meeting the Congressionally mandated Improvement Act of 1997.