



# **Tiger Muskie Stocking in Lake Carl Etling Cimarron County, Oklahoma Environmental Assessment - Draft**



U. S. Department of the Interior  
U.S. Fish and Wildlife Service  
Wildlife and Sport Fish Restoration Program  
Albuquerque, New Mexico

January 2016

## **Environmental Assessment**

Stocking of Tiger Muskie  
Lake Carl Etling, Cimarron County, Oklahoma

January 2016  
U.S. Fish and Wildlife Service  
Wildlife and Sport Fish Restoration Program

### **Mission Statements**

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The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

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

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## **PURPOSE AND NEED FOR ACTION**

### **Introduction**

The Oklahoma Department of Wildlife Conservation (ODWC) is seeking the U.S. Fish and Wildlife Service's (Service) approval (through Federal Assistance grant) for a project intending to improve angling opportunities at Lake Carl Etling, located in northwest Oklahoma.

This Environmental Assessment (EA) is being prepared to evaluate the potential effects of the Proposed Action of stocking tiger muskie (*Esox masquinongy X E. lucius*) into Lake Carl Etling, located in Cimarron County, Oklahoma (Figure 1). This project would be funded by the U.S. Fish and Wildlife Service's Wildlife and Sport Fish Restoration (WSFR) Program.

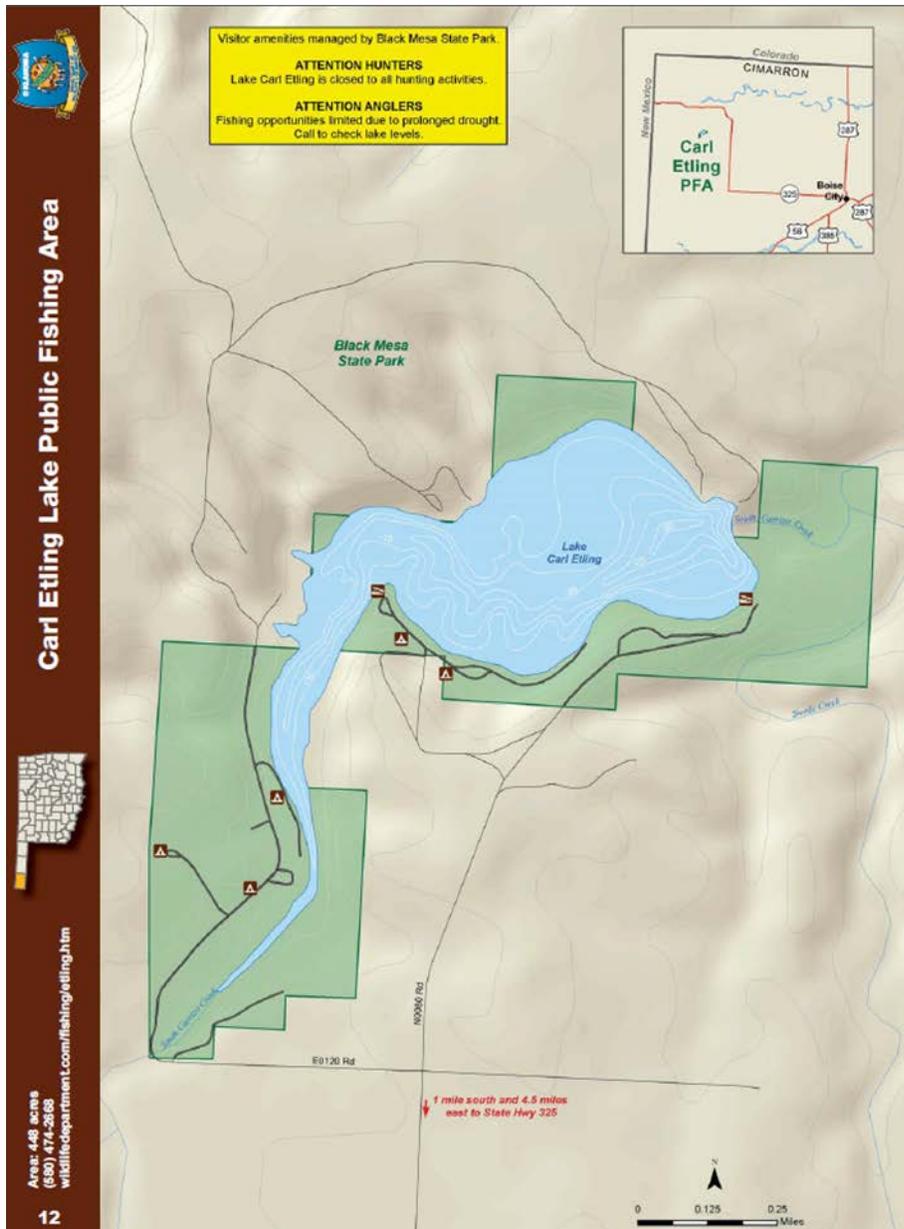
### **Purpose and Need for the Action**

Lake Carl Etling has historically provided angling for northern pike (*Esox lucius*). Northern pike were introduced in the 1960s and sustained a fishery until the 1990s when they were extirpated due to limited reproduction and reduced water levels. Recent prolonged drought conditions have caused exceedingly low water levels, which in turn have negatively impacted all sport fish populations. Rain events during summer of 2013 have caused lake levels to return to normal pool. However, this also resulted in increased densities of undesirable nongame species such as common carp (*Cyprinus carpio*), gizzard shad (*Dorosoma cepedianum*), and green sunfish (*Lepomis cyanellus*). Tiger muskies are highly piscivorous and have been stocked throughout the United States to control populations of undesirable fish species. Tiger muskies grow rapidly and quickly obtain desirable size when stocked in reservoirs with abundant forage. In addition, tiger muskies are sterile hybrids which allow managers to control recruitment and population size, and to modify stocking if it is deemed detrimental to other fisheries management objectives.

The purpose of the Proposed Action is to provide a unique trophy sport fishing opportunity in the State of Oklahoma with tiger muskie and to reduce undesirable fish abundance in Lake Carl Etling. This action is needed at this time due to the increase in undesirable fish community in the lake and the current lack of angling opportunities at the site.

### **Proposed Action**

The Proposed Action is to enhance Oklahoma angling opportunities by stocking tiger muskie (*Esox masquinongy X E. lucius*) into Lake Carl Etling in Cimarron County, Oklahoma. Lake Carl Etling is a 159-acre reservoir located near the town of Kenton in Cimarron County, Oklahoma (GPS Coordinates 36.848888, -102.867037), which is owned and managed by the ODWC. The reservoir is situated on 349 acres operated as Black Mesa State Park by the Oklahoma Department of Tourism and Recreation (Figure 1). Recreational opportunities in the area include fishing, camping, hiking, and wildlife viewing. Due to past drought conditions, the lake has lost the original sport fish community and is currently dominated by undesirable nongame fish species.



**Figure 1.** Map of Lake Carl Etling within Black Mesa State Park. Cimarron County, Oklahoma.

This Proposed Action will: 1) create a unique angling opportunity in the State of Oklahoma, 2) reduce undesirable fish populations, and 3) improve recreational angling of other sportfish species.

## **ALTERNATIVES**

### **Discussion of the Proposed Action and No Action Alternatives**

#### **Proposed Action**

The Service, under the WSFR Program, proposes to approve ODWC's project to improve Oklahoma angling opportunities by stocking tiger muskie (*Esox masquinongy X E. lucius*) into Lake Carl Etling. The Proposed Action will also help control the increase in undesirable fish species that are currently dominating the fish community. Initially, tiger muskie stocking will be three to five fish/acre annually for three years to establish the population. Once established, annual maintenance stockings of 1 fish/acre may be needed annually to meet management objectives of controlling unwanted species and providing angling opportunities. Tiger muskie will be obtained in October each year as advanced fingerling (10 inches) from the Wyoming Fish and Game Department's Speas Fish Hatchery located in Casper, Wyoming.

Access to the lake by ODWC staff will be public access. The location for stocking will be at the boat ramp located on the southwest side of the lake. All routes used for access are paved roads. No ground disturbance will occur with stocking activities.

#### **No Action Alternative**

The No Action Alternative is defined as maintaining the current conditions of Lake Carl Etling fish community and not stocking additional sport fish in the lake. Adoption of this alternative would ultimately result in a lack of recreational sport fish experiences at the lake. The probable outcome of the No Action Alternative would be continued dominance of the lake by undesirable nongame fish species, and declining use by anglers. The No Action Alternative includes no direct costs; however, loss of recreational fishing opportunities will impact local economies. Monitoring of existing conditions, with particular emphasis on Lake Carl Etling's fish community, would be conducted as part of the No Action Alternative.

## **AFFECTED ENVIRONMENT**

### **Introduction**

This section describes the environment in which the Proposed Action would be implemented. The various associated environmental resources, including physical resources such as land use, water resources, water quality, air quality, and soil; and biological resources such as vegetation, wetlands, noxious weeds, fish and wildlife resources, and threatened and endangered species (critical habitat); and socio-economic resources such as cultural resources are discussed.

### **Physical Resources**

#### **Land Use**

The project site is located at Lake Carl Etling within Black Mesa State Park in Cimarron County, Oklahoma. The lake is managed by ODWC, and the surrounding Black Mesa State Park is managed by Oklahoma Department of Tourism and Recreation. Lake Carl Etling is 159 surface acres with 5 miles of shoreline. The lake and state park are designated for recreational use and

as a nature preserve which provides opportunities for fishing camping, hiking, and wildlife viewing. Amenities on site include: campsites, grills, picnic area, playground, restrooms, and WiFi.

## Water Resources and Water Quality

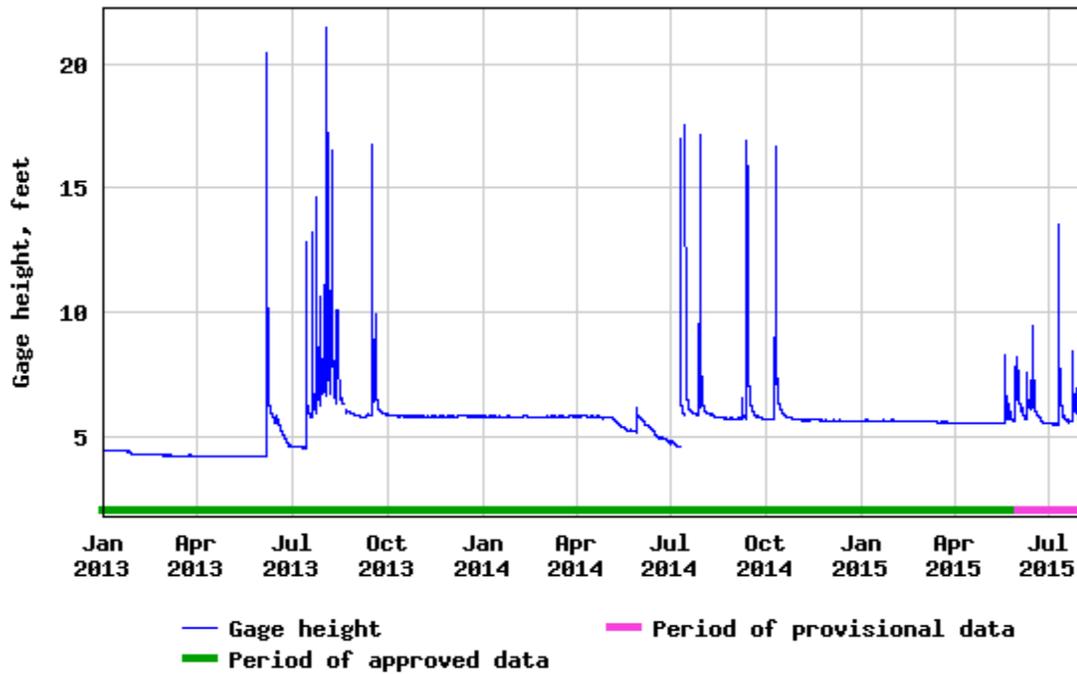
South Carrizo Creek, which connects Lake Carl Etling to the Cimarron River, is an ephemeral, intermittent stream (Figure 2). Likewise, the Cimarron River through Cimarron County is also intermittent. Current streamflow information is available nearby on the Cimarron River near Kenton, Oklahoma (Figure 3), located upstream of the South Carrizo Creek confluence with the Cimarron River. Streamflow at this gage is characterized by a high degree of variability and responds to storm events, which is typical of South Carrizo Creek as well.



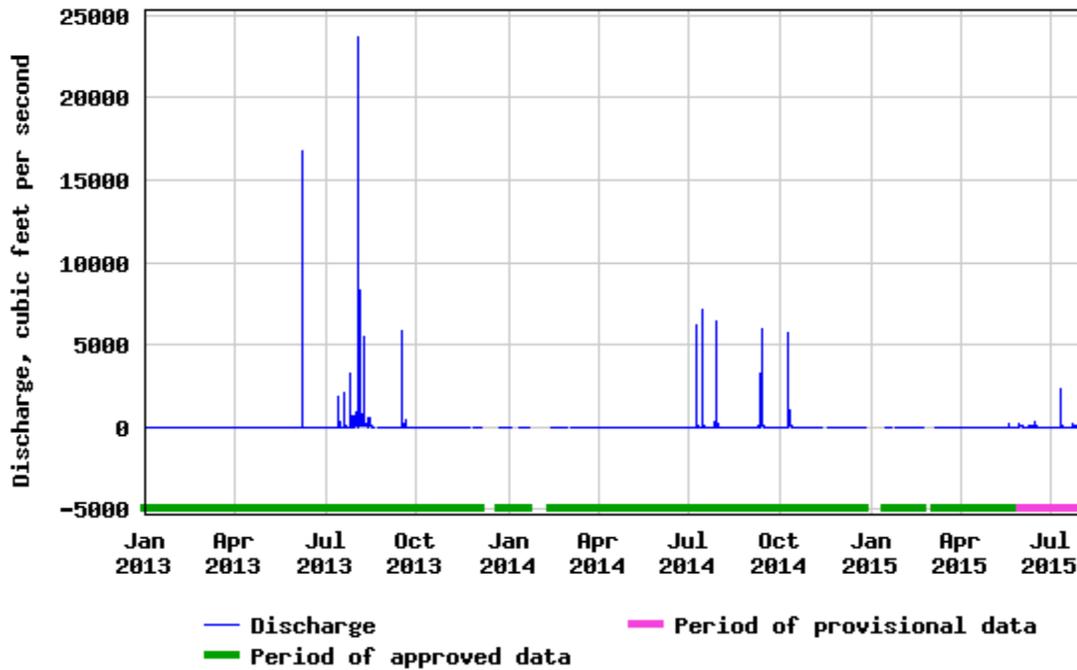
**Figure 2:** Location of Lake Carl Etling and intermittent stream drainage system, southeast of the City of Kenton, Oklahoma approximately 6 linear miles, Cimarron County, Oklahoma.



### USGS 07154500 Cimarron River near Kenton, OK



### USGS 07154500 Cimarron River near Kenton, OK



**Figure 3.** Recent streamflow data (gage height and discharge) (January 2013 to July 2015) at USGS gage 07154500 Cimarron River near Kenton, OK.

Current information on the water quality of Lake Carl Etling and the Cimarron River is available from Oklahoma Water Resources Board (OWRB). Oklahoma's Beneficial Use Monitoring Program (BUMP), established in 1998, was the state's first truly comprehensive water quality monitoring effort. Data provided by the program is essential in the state's water quality management decision-making process by helping to identify waters experiencing impairments as well as the cause of declining water quality.

The northwestern tip of Oklahoma's panhandle is encompassed by the diverse Mesa de Maya/ Black Mesa ecoregion. Many streams are spring-fed and ephemeral, and the Cimarron River is of much higher quality in this area than downstream. Although many nearby streams have good water clarity, Lake Carl Etling is fair with an average Secchi depth of 0.75 feet. Nutrient values are relatively high in the lake with total phosphorus ranging from 0.12 to 0.29 ppm and total nitrogen from 2.31 to 4.51 ppm. It is also considered hyper-eutrophic (defined as: excessive primary productivity and excessive nutrients). Conductivity is relatively high at an average of 2,000  $\mu$ S, and closely resembles the upper portion of the North Canadian River. (Oklahoma Water Resources Board 2012)

## **Biological Resources**

### **Vegetation**

The Black Mesa and Carl Etling area supports 23 species of plants ranging from short grass prairie plants such as bluestem-grama grasses to tree fauna such as mixed juniper/shrub oak communities. Majority of the shoreline at Lake Carl Etling is encompassed with rocky outcropping slopes that supports mainly yucca (*Yucca linnaeus*), sand sage (*Salvia eremostachya*), and cholla cactus (*Cylindropuntia imbricata*). The tree community that surrounds the lake consist of cottonwoods (*Populus deltoides*), American elm (*Ulmus americana*), and black willow (*Salix nigra*) trees. The shoreline is sparsely scattered with plants while the majority of ground cover is comprised mostly large boulders mixed with intermediate sized rock/gravel with high levels of silt on the lake bed itself.

### **Fish and Wildlife Resources**

The current fish community in Lake Carl Etling consists of largemouth bass, flathead catfish, walleye, and smallmouth bass, which are stocked. As stated previously, the lake has become dominated by undesirable species such as common carp, gizzard shad, and green sunfish.

Wildlife in the project area is typical for the Mesa de Maya/ Black Mesa region, including: golden eagles, scaled quail, black-billed magpies, pinyon jays, black bear, bobcat, mountain lion, mule deer, bighorn sheep, and antelope. The habitat surrounding Lake Carl Etling, as previously stated, is that of mixed shortgrass vegetation with intermittent shrubs and some larger trees.

### **Threatened and Endangered Species (Critical Habitat)**

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration

impacts to federally listed and proposed threatened or endangered species. There are currently four federally listed avian species found in Cimarron County and the Black Mesa State Park area (Table 1). There are no federally listed fish or aquatic insect species found in Cimarron County or Lake Carl Etling. There are no designated critical habitats in the project area

**Table 1.** Federally Listed Species Potentially in the Project Vicinity. Lake Carl Etling, Cimarron County, Oklahoma

Species	Listing Status	Critical Habitat
Interior least tern <sup>1</sup> ( <i>Sterna antillarum</i> )	Endangered	Not designated
Piping Plover ( <i>Charadrius melodus</i> )	Threatened	Designated; includes project area
Lesser prairie-chicken ( <i>Tympanuchus pallidicinctus</i> )	Threatened	Not designated
Rufa Red Knot ( <i>Calidris canutus rufa</i> )	Threatened	Not designated

<sup>1</sup>The least tern only needs to be considered in Cimarron County if any of the following conditions apply:

- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meteorological)

The Lake Carl Etling area is not considered to be an area of high concern for migrating birds such as terns, plovers, or knots due to lack of appropriate habitat at this site that these birds need while in migration routes. The shoreline, being very steep and rocky in most areas, is not conducive for these species for forage or resting. The areas surrounding the lake are not suitable for prairie chickens or their leks. The ODWC does not conduct any bird surveys on or near the project area, conversely there is no presence/absence data that is available at this time in relation to bird surveys or species account at Lake Carl Etling.

Though a site inspection to the project site was conducted by ODWC to review the habitat and spatial characteristics of the study area, no formal surveys were conducted for threatened or endangered avian species. Information was compiled by reviewing previous reports and communicating with local experts, ODWC employees, and by obtaining a list of threatened and endangered species that occur in Cimarron County and the Oklahoma Heritage Inventory List. Topics covered for these species include relevant life history information and current knowledge on the presence and utilization of the action area.

### **Piping Plover**

The piping plover (*Charadrius melodus*) (plover) is a small (approximately 6.7 to 7.1 inches long) and 1.5 to 2.2 ounces in weight (Haig 1992), migratory member of the shorebird family. It is one of six species of belted plovers in North America. During the breeding season, adults have single black bands across the forehead and breast, orange legs and bill, and pale tan upper parts and are white below. The adults lose the black bands, and their bill becomes grayish-black during the winter.

Plovers use wide, flat, open, sandy beaches with very little grass or other vegetation. Nesting territories often include small creeks or wetlands. They are migratory birds, and in the spring and summer, they breed in northern United States and Canada. There are three locations where piping plovers nest in North America: the shorelines of the Great Lakes, the shores of rivers and

lakes in the Northern Great Plains, and along the Atlantic Coast. Their nesting range has become smaller over the years, especially in the Great Lakes area. In the fall, plovers migrate south and winter along the coast of the Gulf of Mexico or other southern locations.

Many of the coastal beaches traditionally used by piping plovers for nesting have been lost to commercial, residential, and recreational developments. Through the use of dams or other water control structures, water levels of many lakes and rivers are raised and lowered at plover inland nest sites. Too much water in the spring floods the plovers' nests. Too little water over a long period of time allows grasses and other vegetation to grow on the prime nesting beaches, making these sites unsuitable for successful nesting.

The project area is not suitable for stopover or foraging areas for plovers due to the habitat parameters that are found at Lake Etling. As previously stated, the shoreline and surrounding habitats are that of course rocky substrate surrounded by shortgrass prairie.

### **Lesser prairie-chicken**

The lesser prairie chicken (*Tympanuchus pallidicinctus*) (chicken) is a species of prairie grouse that occupies a five-state range including portions of Texas, New Mexico, Oklahoma, Kansas, and Colorado. The species was listed as threatened in 2014 in response to sharp declines in their population. Once abundant across much of the five range states, historical range of native grasslands and prairies has been reduced by an estimated 84 percent.

The chicken is commonly recognized for its feathered feet and stout build. Plumage of the chicken is characterized by a cryptic pattern of alternating brown and buff-colored barring. Males display brilliant yellow-orange eyecombs and reddish-purple air sacs during courtship displays.

Lesser prairie-chicken populations need large tracts of relatively intact native grasslands and prairies to thrive. Threats to the chicken include habitat loss, modification, degradation, and fragmentation within its range. (USFWS 2015)

There are no chicken leks within a 20 mile radius of Lake Carl Etling or in Cimarron County; the closest known lek is located approximately 30 miles northwest of Carl Etling in Colorado . The species accounts for prairie chickens around the project area are very rare, and the area is not known to be conducive for prairie chicken habitat.

### **Rufa Red Knot**

The rufa red knot (*Calidris canutus rufa*) is a medium-sized shorebird about 9 to 11 inches in length. The species was listed as threatened in January 2015, after it has experienced a population drop of more than 75 percent since the 1980s. (Audubon 2015)

Each year red knots make one of the longest distance migrations known in the animal kingdom, traveling up to 19,000 miles annually. Red knots undertake long flights that may span thousands of miles without stopping.

No site specific data is available for red knots in the project area.

## **Socio-Economic**

### **Environmental Justice**

Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Population; February 11, 1994) was designed to focus the attention of federal agencies on the human health and environmental conditions of minority and low-income communities. It requires federal agencies to adopt strategies to address environmental justice concerns within the context of agency operations and proposed actions. In an accompanying memorandum, President Clinton emphasized that existing laws, such as NEPA, should provide an opportunity for federal agencies to assess the environmental hazards and socioeconomic impacts associated with any given agency action upon minority and low income communities. In April of 1995, the U.S. Environmental Protection Agency (USEPA) released a guidance document titled *Environmental Justice Strategy: Executive Order 12898*. This document defines the approaches by which the USEPA would ensure that disproportionately high environmental and/or socioeconomic effects on minority and low income communities are identified and addressed. Further, it establishes agency-wide goals for all Native Americans with regard to environmental justice issues and concerns.

The Proposed Action is located on State land, which is not a low-income or minority community.

### **Cultural Resources**

Cultural resources include archaeological sites and localities identified as having traditional religious or cultural importance also known as Traditional Cultural Properties (TCPs). The Proposed Action will not involve any ground disturbance and will not impact any cultural sites.

## **ENVIRONMENTAL CONSEQUENCES**

### **Introduction**

This section is an evaluation of the potential environmental effects of the Proposed Action and the No Action Alternative. This analysis includes likely beneficial and adverse effects on the human environment, including those that are short term or long term, direct or indirect, and cumulative. More detailed consideration is given to those resources that have a potential for environmental effects.

### **Description of Relevant Affected Issues and Resources**

The following is a description of the relevant affected issues and resources that potentially could be impacted through this project. Any impacts for each identified issue or resource, both positive and negative, are discussed below.

### **Physical Resources**

#### **Land Use**

Under the Proposed Action, land use would not change and there would be no permanent impacts. Lake Carl Etling is a recreational site within Black Mesa State Park. This project would add recreational fishing opportunities at this site and could potentially increase visitation at the lake.

Access by ODWC fisheries personnel would be at existing public areas. Fish will be stocked at the boat ramp located on the southwest side of the lake. All routes used for access are paved roads. No ground disturbance will occur with stocking activities.

Farmland is not present where the project would occur and therefore, none would be impacted by the Proposed Action.

Under the No Action Alternative, land use would also not change. However, the No Action Alternative would allow the current trends associated with the fish community to continue, ultimately resulting in potentially decreased angling opportunities and undesirable fish species in Lake Carl Etling.

#### **Water Resources and Water Quality**

The Proposed Action would not cause impacts to water quality or water resources. Any short-term disturbance related to stocking activities would be considered minor and temporary in nature.

Under the No Action Alternative, the current water quality would be unchanged and monitoring of existing conditions would be conducted as part of the No Action Alternative.

## **Biological Resources**

### **Vegetation**

No vegetation would be disturbed or removed to accomplish the Proposed Action. All access to the lake for stocking will be at existing public roads and boat ramps.

The No Action Alternative would result no change to the vegetation in the project area.

### **Fish and Wildlife Resources**

#### *Fish*

The Proposed Action would have an effect on the fish community in Lake Carl Etling. By stocking tiger muskie in the lake, it is expected that the addition of this species will control undesirable fish species (common carp, gizzard shad, and green sunfish) that currently dominate the lake. Tiger muskies are highly piscivorous and have been stocked throughout the United States to control populations of undesirable fish species. Tiger muskies grow rapidly and quickly obtain desirable size when stocked in reservoirs with abundant forage. In addition, tiger muskies are sterile hybrids which allow managers to control recruitment and population size and to modify stocking, if it is deemed detrimental to other fisheries management objectives. The Proposed Action is also expected to provide a unique trophy sport fishing opportunity in the State of Oklahoma.

To evaluate the Proposed Action, ODWC will continue the current monitoring program of the fish community in Lake Carl Etling.

Tiger muskie may escape the lake and enter South Carrizo Creek. However, as stated previously, South Carrizo Creek, which connects Lake Carl Etling to the Cimarron River, is an ephemeral, intermittent stream. Likewise, the Cimarron River through Cimarron County is also intermittent. Due to intermittent stream conditions and the environmental constraints (thermal, salinity, and ecological tolerance) on tiger muskie, the ability for these fish to survive in South Carrizo or the Cimarron River, if water were present, would be very limited in scope. There are no threatened or endangered aquatic species present in South Carrizo Creek or in Cimarron County.

The No Action Alternative would allow the fish community in the lake to continue to be dominated by undesirable fish species. This would decrease fishing opportunities at the lake and not attract additional anglers to the area.

#### *Wildlife*

Minor disturbance to terrestrial wildlife would result from the Proposed Action's stocking activities and from general presence of humans during stocking. Animals disturbed during stocking would only be displaced from the area on a temporary basis, with most likely moving short distances into areas adjacent to the stocking location.

The No Action Alternative would result in no change to conditions for terrestrial wildlife.

## Threatened and Endangered Species and Critical Habitat

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed and proposed threatened or endangered species. Of the species listed in Table 1, the piping plover and the rufa red knot have a potential to occur in the project vicinity. Potential relationships from the Proposed Action and No Action alternatives to these species are discussed below. A summary of the effect determinations for these species is presented below in Table 2.

**Table 2. Effect Determinations on Listed Species in the Project Vicinity**

Species	Effect Determination	Critical Habitat Determination
Piping plover ( <i>Charadrius melodus</i> )	No Effect	Designated; includes project area
Lesser prairie-chicken ( <i>Tympanuchus pallidicinctus</i> )	No Effect	Not designated
Rufa red knot ( <i>Calidris canutus rufa</i> )	No Effect	Not designated

Overall, these three species tend to use terrestrial habitats and are not expected to be affected by stocking of tiger muskie in Lake Carl Etling. Stocking will occur in October and will not be scheduled during peak migration periods or nesting seasons of these species. A visual survey of the Lake Carl Etling watershed will be conducted for the presence of any avian species of concern before each stocking event. If a species is noted, an alternative stocking date will be selected. There will be no effect to the surrounding habitats found within the area of Carl Etling Lake.

### Piping Plover

The general lack of habitat and poor habitat quality make it unlikely for plovers to be present in the project area. The shoreline, being very steep and rocky in most areas, is not conducive for forage or resting. Plovers prefer wide, flat, open, sandy beaches with very little grass or other vegetation. In the unlikely event that plovers would be present, stocking dates will not be scheduled during peak migration periods or nesting seasons. As stated above, a visual survey of the Lake Carl Etling watershed will be conducted for the presence of any avian species of concern before each stocking event. If a species is noted, an alternative date will be selected for stocking.

Because of the lack of suitable habitat, conducting visual surveys, and scheduling stocking dates outside of peak migration periods or nesting seasons, a determination of “no effect” on the plover and its habitat was made.

No effects to plover critical habitat will happen with the Proposed Action.

The No Action Alternative would result in continuation of the current fish species found in the lake and have no effect on plovers.

### **Lesser Prairie Chicken**

No suitable chicken habitat is present in the proposed action area. The areas surrounding the lake are not suitable for prairie chickens or their leks. There are no known chicken leks within a 20 mile radius of Lake Carl Etling or in Cimarron County; the closest known lek is located approximately 30 miles northwest of Carl Etling in Colorado. The species accounts for prairie chickens around the project area are very rare.

Due to the rarity of chickens in the area and lack of habitat, the Service has determined that there would be “no effect” on the lesser prairie chicken.

The No Action Alternative would result in no change to chicken habitat and fish community in the lake would remain the same.

### **Rufa Red Knot**

This long distance migratory species prefers sandy, shoreline habitats. No site specific data is available for red knots in the project area; however, suitable habitat is not present at the site. Red knots may migrate through the area. In the unlikely event that red knots would be present, stocking dates will not be scheduled during peak migration periods or nesting seasons. As stated above, a visual survey of the Lake Carl Etling watershed will be conducted for the presence of any avian species of concern before each stocking event. If a species is noted, an alternative date will be selected for stocking. The Service has determined that there will be “no effect” on red knots.

The No Action Alternative would result in no change to red knot habitat and fish community in the lake would remain the same.

### **Socio-Economic**

With the Proposed Action, the possible increase in angling opportunities could result in increased use of Lake Carl Etling, and associated benefits to the State, Cimarron County, and local community. Benefits would be in the form of increased recreation related spending and tax revenue.

The No Action Alternative would result in no change to current socioeconomic conditions.

### **Environmental Justice**

No minority or low-income populations have been identified that would be adversely impacted by the Proposed Action. Therefore, in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23, no further analysis is required.

### **Cultural Resources**

There would be no impacts to cultural resources under the Proposed Action; no ground disturbance would occur. ODWC personnel would use existing roads and public access for stocking activities. The Service has determined that this undertaking is not of the type of activity that has the potential to cause effects on historic properties, and has determined that the project would have no potential to affect cultural resources.

Under the No Action Alternative, there would be no change to cultural resources.

## **Irreversible and Irretrievable Commitment of Resources of the Proposed Action**

The implementation of this project would result in the commitment of resources such as fossil fuels and labor. In addition, federal funds would be expended for the implementation of the proposed project.

## **Cumulative Impacts**

Cumulative effects under NEPA are the direct and indirect effects of a proposed project's incremental effects, when they are added to other past, present, and reasonably foreseeable actions regardless of who carries out the action (40 CFR, Part 1508.7).

The Proposed Action would expand upon ongoing sport fish stocking activities at Lake Carl Etling and provide additional angling opportunities at this location. The beneficial and minor negative impacts associated with stocking activities would likely be similar to those of the Proposed Action. Tiger muskies have been previously stocked in October of 2014 and 2015 with state funds. Other species stocked in this lake include: largemouth bass, bluegill, walleye, and hybrid striped bass. Because the lake is located within an intermittent drainage, cumulative effects to other aquatic species within South Carrizo Creek and downstream would be less likely to occur.

Recreation at the lake, stocking of sport fish, and maintenance at the site could also affect resources including listed avian species.

When combined with the effects of other cumulative actions, the effects of the Proposed Action would be largely beneficial and not contribute to any negative cumulative impacts on any resource or threatened or endangered species or critical habitat.

## **ENVIRONMENTAL COMMITMENTS**

The following environmental commitments would be carried out as part of this project:

- ODWC will continue fish community monitoring at Lake Carl Etling.
- ODCW will conduct visual surveys of the project area for listed avian species. If found, an alternate stocking date will be selected.

## **Conservation Measures**

The Service and ODWC will implement the following conservation measures to further minimize any risk of adverse effects of implementing the proposed action:

- All equipment will undergo heated high-pressure power wash and inspection prior to initial operation in the project area to reduce contamination by invasive plants or aquatic species according to ODWC HACCP procedures.

## **SUMMARY**

The purpose and goals of this project are to provide unique angling opportunities to Oklahoma at Lake Carl Etling and to control undesirable fish species that are currently dominating the lake. Measures to minimize effects have been incorporated into the Proposed Action. Environmental commitments described in Section 5 would be implemented.

This EA has addressed Land Use, Water Resources, Water Quality, Vegetation,, Fish and Wildlife, Threatened and Endangered Species, Socioeconomics, Environmental Justice, and Cultural Resources. No other resources are expected to be affected. With the implementation of environmental commitments, effects are largely beneficial and only minor and/or temporary impacts have been identified. Based on the analysis in this EA, implementing the entire Proposed Action would have no potentially significant direct, indirect, or cumulative effects on the quality of the natural or human environment. In accordance with the NEPA of 1969, as amended, and based on the analysis in this EA, The Service has determined that implementing the proposed action would not result in a significant impact on the human environment and does not require preparation of an Environmental Impact Statement.

## **LIST OF PREPARERS**

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- Chas Patterson, Oklahoma Department of Wildlife Conservation