



**US Army Corps
of Engineers®**

August 2005

FINAL

ENVIRONMENTAL ASSESSMENT

FOR THE

CANDY LAKE LAND TRANSFER PROJECT

OSAGE COUNTY, OKLAHOMA

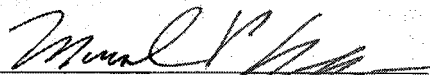


FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act of 1969, including guidelines in 33 Code of Federal Regulations, Part 230, the Tulsa District has assessed the environmental impacts of the Candy Lake Land Transfer Project which proposes to convey the Government's interest in the land acquired for the Candy Lake Project, Candy Lake, Oklahoma. The previous owners of the land, or their descendents, would be given the first option to purchase the property at Fair Market Value. Candy Lake was a multipurpose project authorized for the purpose of flood control, water supply, recreation, and fish and wildlife. Construction began in September 1976 and was about 15 percent complete when, in 1981, a U.S. Justice Department decision withdrew condemnation proceedings to acquire mineral rights from the Osage Indian Nation. In 1984 the project was placed in a deferred status. Congressional legislation was required to resume condemnation proceedings but was not passed and is not pending. Public Law 106-53, Section 563 (c) of the Water Resources Development Act of 1999, requires the property to be conveyed from Government ownership. This Environmental Assessment was prepared in accordance with U.S. Army Corps of Engineers Regulations, Part 230, Policy and Procedures for Implementing the National Environmental Policy Act. Prior to the land conveyance, consultation would be initiated with the State Historic Preservation Office and/or Tribal Historic Preservation Office to insure that appropriate mitigation measures would be implemented in compliance with all levels of Section 106 and NEPA processes. It has been determined from the enclosed Environmental Assessment that the project would have no significant adverse effects on the natural or human environment. Therefore, an environmental impact statement would not be prepared.

5 JUL 05

Date



Miroslav P. Kurka
Colonel, U.S. Army
District Engineer

Enclosure
Environmental Assessment

Final

**ENVIRONMENTAL ASSESSMENT
FOR THE
CANDY LAKE LAND TRANSFER PROJECT
OSAGE COUNTY, OKLAHOMA**

August 2005

Lead Agency: U.S. Army Corps of Engineers
Tulsa District

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EXECUTIVE SUMMARY

PROPOSED ACTION:

The Proposed Action would return 3,658 acres of fee-owned land plus 351 acres of easement interest in Osage County, Oklahoma currently owned by the Federal Government, to private ownership. The 26 parcels of fee-owned land would be offered to the original 21 landowners, or their descendants, at fair market value. If the original landowners or their descendants do not wish to purchase their original parcel(s), the land would be disposed of through the normal disposal process in accordance with PL 107-217. No parcels would be subdivided; parcels would only be sold in their original configuration and only at fair market value. However, after the parcels are sold, they can be subdivided in any legal manner.

If some or all of the parcels are not purchased by the original landowners or their descendants and enter the Federal screening process, it is probable that the remainder would be transferred to other eligible Federal agencies. If no other Federal agencies express interest, then the remaining tracts would be offered for public sale. However, the Osage Nation has expressed interest in acquiring any remaining tracts, and since the area is former tribal land, the Nation would have first option under PL 93-599.

PURPOSE AND NEED FOR THE PROPOSED ACTION:

The purpose of the Candy Lake Land Transfer Project (Project) is for the Government to divest its interest in the land originally obtained to construct a multi-purpose flood control reservoir. An agreement as to the mineral rights for the land could not be reached with the Osage Nation; therefore, the flood control reservoir was never built. Because the reservoir was never built and the project has now been de-authorized by Congress, the Government is required to dispose of the property.

Public Law 106-53, Section 563 (c) of the Water Resources Development Act of 1999, requires the property to be conveyed from Government ownership. This requirement includes conveying all right, title and interest of the United States in and to the land acquired for the Candy Lake project. Additionally, it requires that the Government must give a previous owner of the land and their descendants, the first option to purchase the land.

ALTERNATIVES TO THE
PROPOSED ACTION:

Alternatives addressed in the Environmental Assessment (EA) include the No Action Alternative, and the Proposed Action Alternative. No other alternatives meet the project's purpose and need.

ENVIRONMENTAL IMPACTS
OF THE PROPOSED
ACTION:

No direct impacts are anticipated from the conveyance of the Candy Lake lands to private ownership. Some minor indirect impacts to land use, soils, vegetation and wildlife may occur. Indirect adverse impacts to cultural resources from the loss of Government protection would be mitigated to a less-than-significant level by completing consultation with the Oklahoma State Historic Preservation Office and the Osage tribe and implementing required preservation measures before the transfer of any parcels to private ownership.

CONCLUSIONS:

Based upon the results of the EA, it has been concluded that the Proposed Action would not have a significant adverse effect on the environment.

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APPENDIX D	Cultural Resources Coordination
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APPENDIX F	Newspaper Public Notice

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SECTION 1.0
PURPOSE, NEED AND SCOPE



1.0 PURPOSE, NEED AND SCOPE

This Environmental Assessment (EA) addresses the potential impacts of the proposed transfer of Federal land to private ownership at Candy Lake near Barnsdall, Oklahoma (Figure 1-1). The land transfer is being proposed by the U.S. Army Corps of Engineers (USACE) to comply with the requirements of Public Law 106-53, Section 563 (c) of the Water Resources Development Act of 1999, requiring the property to be conveyed from Government ownership. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, USACE Planning Guidance Notebook ER 1105-2-100 and the President's Council on Environmental Quality (CEQ) Regulations for the Implementation of NEPA.

1.1 BACKGROUND AND PROJECT DESCRIPTION

The Candy Lake project was originally planned as a multi-purpose reservoir that would improve flood control on the Arkansas River. As part of the reservoir development, 26 tracts of land were acquired from 21 landowners. The land was primarily acquired through condemnation. Construction began in September 1976 and was about 15% complete when, in 1981, a U.S. Department of Justice decision withdrew condemnation proceedings to acquire mineral rights from the Osage Nation. The Candy Lake project was placed in deferred status in 1984 and the project was ultimately de-authorized in 1994. The Tulsa District made the Candy Lake lands available for leasing for agricultural and grazing purposes. Previous landowners had priority leasing rights. The Tulsa District advertised the area for lease on a yearly basis by competitive bid procedures in subsequent years. Additionally, in the late 1980s, the Tulsa District entered into a letter agreement for cooperative wildlife management with the Oklahoma Department of Wildlife Conservation (ODWC). The agency managed all of the Candy Lake project lands for wildlife following an ODWC-prepared wildlife management plan. The wildlife management plan included items such as fencing, sign posting, boundary marking and other management activities designed to prevent public trespass on adjacent private lands and illegal uses of public lands. The lands were made available for hunting, fishing and grazing. The letter agreement between the USACE and ODWC has been terminated. However, the area remained open for seasonal hunting.



Figure 1-1: Vicinity Map



Date: April 2005

All former outgrants have expired, including 44 flowage easements and the three road easements. Oil and gas activity still occur at Candy Lake. Currently, the USACE has four active consents for mineral exploration.

The Government proposes to dispose of the Candy Lake Reservoir Area according to The Water Resources Development Act of 1999, Public Law (P.L.) 106-53. Section 563(c) of this legislation directs the conveyance of the Government's interest in the land acquired for the Candy Lake Project. The USACE conveyance project would offer the option of purchasing the 26 tracts of land originally acquired to construct Candy Lake to the original 21 landowners (including corporations) and their descendants, at fair market value. The parcels would be processed for Federal screening if the original landowners are not interested in purchasing them.

1.2 LOCATION OF THE PROPOSED ACTION

The Candy Lake Reservoir area is located in southeastern Osage County, Oklahoma, approximately 45 miles north of Tulsa. The project area totals 3,658 acres and is located east of the towns of Barnsdall and Avant, Oklahoma (Figure 1-2). Candy Creek, a tributary of Bird Creek, bisects the project site.

1.3 PURPOSE AND NEED

The purpose of the Candy Lake Land Transfer Project (Project) is for the Government to divest its interest in the land originally obtained to construct a multi-purpose flood control reservoir. An agreement as to the mineral rights for the land could not be reached with the Osage Nation; therefore, the flood control reservoir was never built. Because the reservoir was never built and the project has now been de-authorized by Congress, the Government is required to dispose of the property at fair market value.

The Water Resources Development Act of 1999, P.L. 106-53, Section 563 (c), requires the property to be conveyed from Government ownership. This requirement includes conveying all right, title and interest of the United States in and to the land acquired for the Candy Lake project. Additionally, it requires that the Government must give a previous owner of the land and their descendants, the first option to purchase the land.

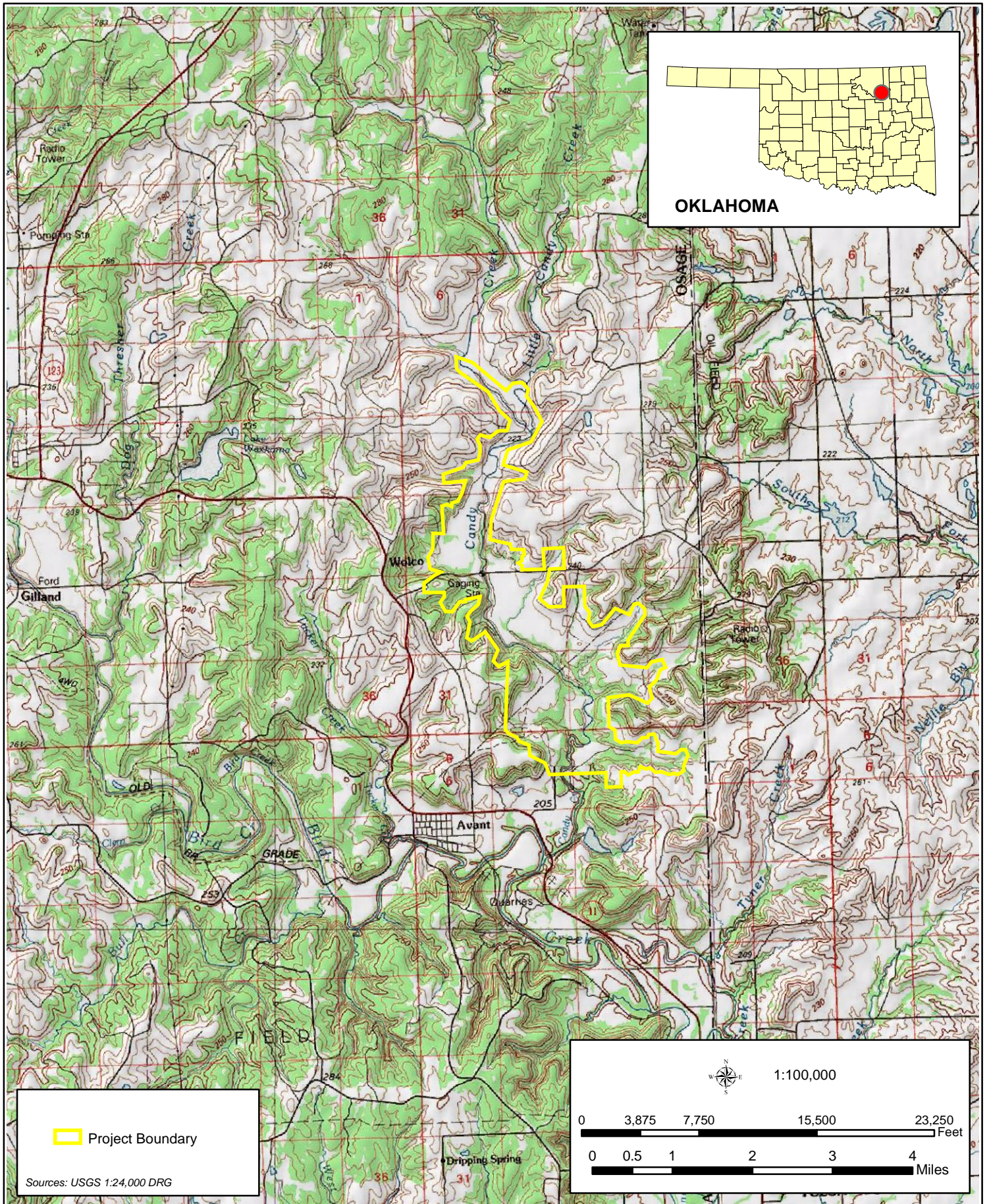


Figure 1-2: Project Location

1.4 PUBLIC SCOPING AND INVOLVEMENT

As part of the NEPA process as outlined in the CEQ regulations and ER 1105-2-100, the scoping process was initiated for this project to gather Government agency and public concerns, comments and input on the scope of the project and range of alternatives to be evaluated. Furthermore, the scoping process assists in identifying stakeholders and allows for public participation in the environmental impact analysis.

The scoping process was initiated by advertising the date and time of the scoping meeting in one local newspaper, the *Barnsdall Times*, and one regional newspaper, the *Bartlesville Examiner-Enterprise*, two weeks prior to the meeting date. Scoping letters were sent to agencies, Federal, state and local governmental officials, previous landowners and concerned citizens in advance of the scoping meeting. A scoping meeting for this project was held on September 23, 2003 at Barnsdall Elementary School in Barnsdall. This was an open house, informal meeting that allowed the general public to attend the meeting at their leisure and ask questions of any government representative that was present. A total of 28 people attended the scoping meeting and many provided written comments.

The scoping period was initiated with the scoping meeting on September 23, 2003 and continued through October 23, 2003. Thirteen comments were received during the scoping period regarding the NEPA process or the EA preparation. All responses received by the USACE during the scoping period were considered during the preparation of this EA. A copy of the newspaper notice, scoping meeting letter, meeting sign-in sheet and all responses are included in Appendix A.

1.5 ORGANIZATION OF THE EA

This EA is organized into nine different sections, including this introductory section. Section 2 presents the proposed action and alternatives. This section also provides a summary of the potential impacts that would be associated with each alternative. Section 3 discusses the existing conditions of various resources at each site and the region, as appropriate. The potential consequences of implementing the alternatives are presented in Section 4. These discussions follow the same sequential order as the resources presented in Section 3. Various environmental design measures that could be implemented to reduce or avoid adverse impacts

are presented in Section 5. Section 6 discusses the efforts that the USACE implemented to solicit input from the general public and various resource agencies.

The remainder of the EA includes references, a list of preparers, and a list of acronyms and abbreviations used throughout the document. Appendix A contains copies of correspondence that was submitted or received during the preparation of this EA. Appendix B contains information provided by the USACE Regulatory Branch concerning Section 404 permit requirements. Appendix C includes all correspondence concerning coordination with the U.S. Fish and Wildlife Service (USFWS), Appendix D contains all coordination pertaining to cultural resources, Appendix E includes the public comments on the draft EA received during the public review period, and Appendix F contains the copies of the newspaper notices.

SECTION 2.0
PROPOSED ACTION AND ALTERNATIVES

2.0 PROPOSED ACTION AND ALTERNATIVES

Two alternatives were evaluated in this EA: the proposed action alternative and the no action alternative. The proposed action is the only alternative that meets the purpose and need and no other key issues or alternatives were identified during the scoping process. The no action alternative provides a method of comparison for describing the effects of the proposed action and is required by NEPA and CEQ to be evaluated.

2.1 PROPOSED ACTION

The Proposed Action Alternative would return 3,658 acres of land in Osage County, Oklahoma, currently owned by the Federal Government, to private ownership. The 26 parcels of land originally acquired would be offered to the original 21 landowners, or their descendants, at fair market value. If the original landowners or their descendants do not wish to purchase their original parcel(s), the land would be disposed of through the normal disposal process in accordance with PL 107-217. No parcels would be subdivided; parcels would only be sold in their original configuration and only at fair market value. However, after the parcels are sold, they can be subdivided in any legal manner.

If some or all of the parcels are not purchased by the original landowners or their descendants and enter the Federal screening process, it is probable that the remainder would be transferred to other eligible Federal agencies. If no other Federal agencies express interest, then the remaining tracts would be offered for public sale. However, the Osage Nation has expressed interest in acquiring any remaining tracts, and since the area is former tribal land, the Nation would have first option under PL 93-599.

Historically the land was used for cattle grazing. Some home sites were also present within the project area. Therefore, with the implementation of the proposed action, it is assumed that private landowners would convert the land from its present use as a wildlife management area (WMA) with no grazing to mostly grazing and rural housing. It is possible that some homes would be built on the 26 parcels after they were returned to private ownership. However, it is likely that oil and gas activities would continue unchanged with the proposed action.

2.2 NO ACTION

The No Action Alternative would retain the 26 parcels of land in Federal ownership. The land would continue to be used as a WMA and be maintained by the USACE. The primary land uses would continue to be hunting and other outdoor activities. No development would occur on the site. Ongoing oil and gas activities would continue unchanged. No leases would be granted for grazing or other agricultural activities. The No Action Alternative would be in violation of Section 563 (c) of the Water Resources Development Act of 1999.

SECTION 3.0
AFFECTED ENVIRONMENT

3.0 AFFECTED ENVIRONMENT

This section of the EA describes the existing conditions of the natural and human resources that could potentially be affected by the proposed alternatives and provides a baseline for assessing environmental impacts. Where feasible, resources are described on a site-specific level (e.g., land use, wildlife habitats, etc.). No direct or indirect impacts from the land conveyance are anticipated to geological resources (mineral rights and therefore oil and gas exploration would not be affected by the land conveyance), except potential indirect impacts to soils. Therefore geological resources are not described further. However, soils for the Candy Lake project area are described below. No unique or sensitive areas are located in the vicinity of the project area therefore they would not be discussed further.

3.1 LAND USE

The project area is located in Osage County, Oklahoma, south of the city of Bartlesville in northeastern Oklahoma. Osage County is the largest county in size in the state of Oklahoma and comprises 1,476,480 acres. The dominant land uses in Osage County are ranching and oil production with some limited agriculture.

The Candy Lake project area is primarily undeveloped. The entire project area is used as a WMA. Although there are no grazing leases for the Candy Lake area, some cattle grazing was observed during field surveys in a portion of the project area, suggesting that downed fences or a lack of infrastructure allows some limited illegal grazing to occur. There are existing and historic oil and gas wells and related infrastructure throughout the project area. Gravel and dirt roads, used for public and oil and gas access, are present within the project area. The surrounding areas are primarily rural with cattle grazing being the primary local land use.

3.1.1 Zoning

The entire project area is zoned Agricultural. This zoning level does not place any building restrictions or limits on future subdivisions of land. However, any future land use changes would require approval from the Osage County Planning and Zoning Department.

3.1.2 Recreation

Recreation opportunities within the Candy Lake project area include hunting, fishing, and wildlife viewing. The Bureau of Sport Fisheries and Wildlife, in a letter dated March 31, 1970 states that wildlife habitat in the area, including some of the Bird Creek floodplain, is suitable for sustaining huntable populations of whitetail deer (*Odocoileus virginianus*), squirrels (*Sciurus* sp.), eastern cottontail (*Sylvilagus floridanus*), mourning dove (*Zenaida macroura*), and northern bobwhite (*Colinus virginianus*). As of 1986, the Bureau estimated that the combined areas of Candy Creek and the floodplain of Bird Creek provide about 1,700 annual man-days of big-game hunting. Upland game hunting in this same area amounts to about 2,000 man-days annually. Sport hunting for other wildlife, primarily foxes, and raccoons, amounts to about 400 days annually and about 400 fur-animals pelts are taken on these lands. Washington County and Osage County together produced 5,653 whitetail deer in 2002 (ODWC 2004). Waterfowl hunting is insignificant. Candy Creek is a minor fishery resource for the area because it is intermittent and has limited access. In 1970, the quality of fish habitat was reported as extremely low and of insignificant value for fishing. Poor access to the area and the lack of infrastructure limits wildlife viewing, camping and hiking opportunities.

3.2 SOILS AND PRIME FARMLAND

The majority of the project area is overlain by nearly level to steep upland soils that have a very fine sandy loam surface layer and a silty clay subsoil (United States Department of Agriculture [USDA] 1979). Common soil series found in the project area are the Apperson, Barnsdall, Bates, Carytown, Cleora, Coweta, Darnell, Dennis, Foraker, Lightning, Niotaze, Norge, Osage, Parsons, Pawhuska, Prue, Shidler, Steedman, Stephenville, Verdigris, Wolco, and Wynona (Figure 3-1). The names of three of the soil series have changed since the original soil survey was classified in 1975 to bring about more consistency between adjoining counties (Ward and McWright 2004). The Cleora series has been renamed to the current Pocasset series, Dennis to Agra, and Mason to Braham. The Verdigris, Mason, Niotaze, Shidler, and Steedman series make up 75% or 2,864 acres of the total 3,658 acres within the project area. A summary of soil types within the project area is presented in Table 3-1. More detailed descriptions are presented in the following paragraphs.

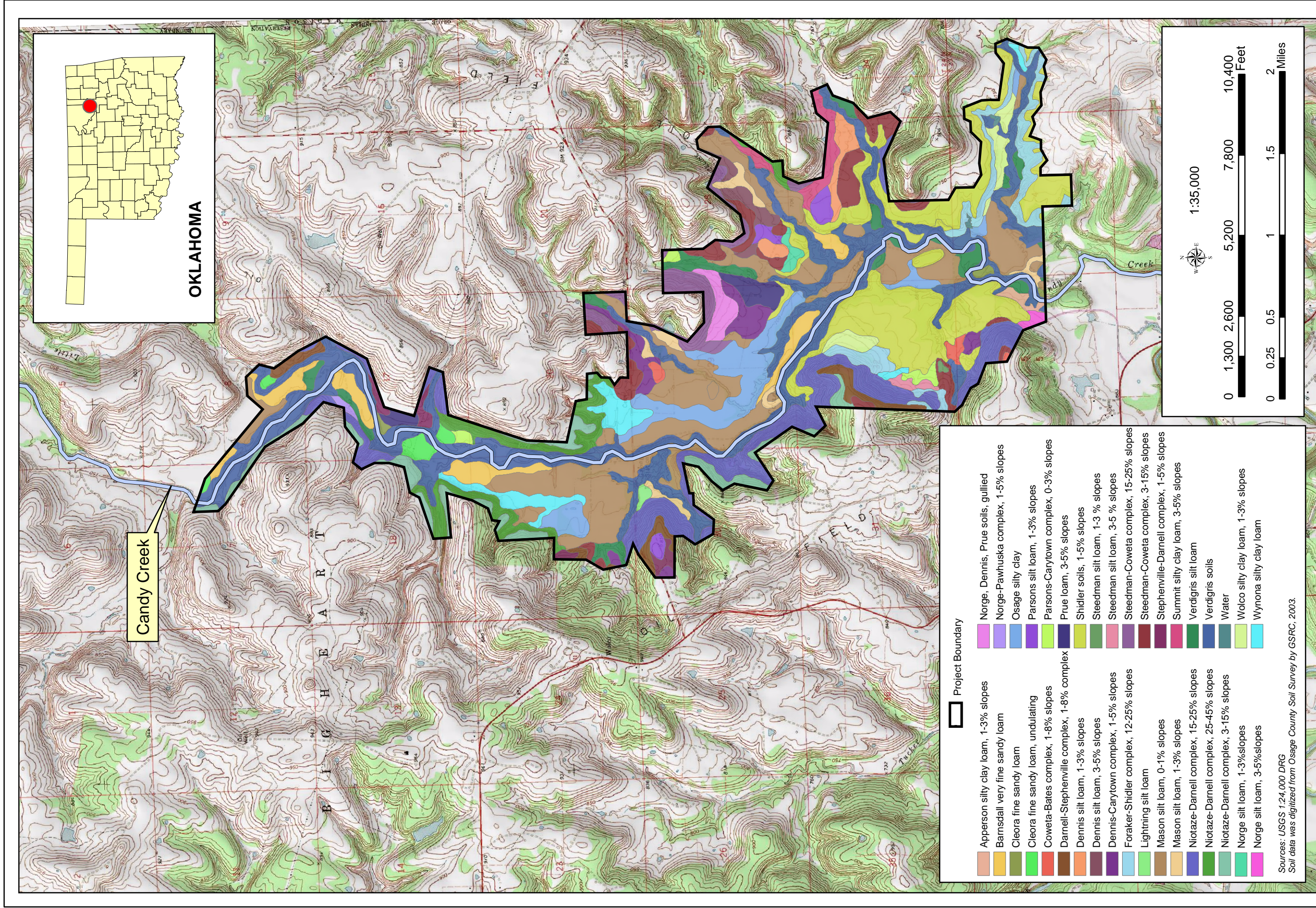


Figure 3-1: Soil Survey Classifications for the Candy Lake Project Area

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Table 3-1. Osage County, Oklahoma Soil Survey Descriptions For the Candy Lake Project Area

Soil	Percent Slope	USDA Texture
Apperson silty clay loam	1 to 3	Silty clay loam
Barnsdall very fine sandy loam	N/A	Very fine sandy loam to clay loam
Cleora fine sandy loam	N/A	Fine sandy loam to loamy fine sand
Cleora fine sandy loam, undulating	N/A	Fine sandy loam to loamy fine sand
Coweta-Bates complex	1 to 8	Loam to sandy clay loam
Darnell-Stephenville complex	1 to 8	Fine sandy loam to sandy clay loam
Dennis silt loam	1 to 3	Silt loam to silty clay loam
Dennis silt loam	3 to 5	Silt loam to silty clay loam
Dennis-Carytown complex	1 to 5	Silt loam to silty clay
Foraker-Shidler complex	12 to 25	Silty clay loam to shaly silty clay
Lightning silt loam	N/A	Silt loam to silty clay
Mason silt loam	0 to 1	Silt loam to silty clay loam
Mason silt loam	1 to 3	Silt loam to silty clay loam
Niotaze-Darnell complex	15 to 25	Fine sandy loam to silty clay
Niotaze-Darnell complex	25 to 45	Fine sandy loam to silty clay
Niotaze-Darnell complex	3 to 15	Fine sandy loam to silty clay
Norge silt loam	1 to 3	Silt loam to silty clay loam
Norge silt loam	3 to 5	Silt loam to silty clay loam
Norge, Dennis, Prue soils	gullied	Silt loam to silty clay
Norge-Pawhuska complex	1 to 5	Silt loam to silty clay loam
Osage silty clay	N/A	Silty clay
Parsons silt loam	1 to 3	Sily loam to silty clay
Parsons-Carytown complex	0 to 3	Silt loam to fine sandy loam
Prue loam	3 to 5	Loam to silty clay
Shidler soils	1 to 5	Silty clay loam
Steedman silt loam	1 to 3	Silt loam to silty clay
Steedman silt loam	3 to 5	Silt loam to silty clay
Steedman-Coweta complex	15 to 25	Silt loam to silty clay
Steedman-Coweta complex	3 to 15	Silt loam to silty clay
Stephenville-Darnell complex	1 to 5	Fine sandy loam to sandy loam
Summit silty clay loam	3 to 5	Silty clay loam to silty clay
Verdigris silt loam	N/A	Silt loam to silty clay
Verdigris soils	N/A	Silt loam to silty clay loam
Wolco silty clay loam	1 to 3	Silty clay loam to silty clay
Wynona silty clay loam	N/A	Silty clay

USDA 1979

The most common soil is the Verdigris series, which comprises 22% or 831 acres of the 3,658 acres of the project area. This soil series primarily occurs along Candy Creek, and its tributaries. This series consist of deep, nearly level through very gently sloping soils that are moderately well drained and have moderate permeability. These soils formed in loamy sediments under a cover of trees with an understory of grasses. Available water capacity is high. The Verdigris series is used mostly for tame pasture, range, or woodland. The main concerns of management are controlling flooding and maintaining fertility (USDA 1979).

The Mason series comprises 16% or 619 acres within the project area. Most of this soil series occur in the middle and southeastern portion of the project area. This series consist of deep, nearly level through very gently sloping soils that are moderately well drained and have moderately slow permeability. These soils formed in loamy sediments under a cover of trees with an understory of grasses. Available water capacity is high. The Mason series is used mostly for small grains, grain sorghum, corn, alfalfa, soybeans, tame pasture grasses, range grasses, and trees. Management is needed to maintain fertility and tilth (USDA 1979).

Approximately 14% or 530 acres within the project area consists of the Niotaze series. The Niotaze soils generally occur along the higher sloping outer edges of the project area. This series consist of moderately deep, gently sloping through steep soils that are somewhat poorly drained and have moderately slow permeability. These soils formed in material weathered from shales interbedded with thin layers of sandstone under a cover of trees with an understory of grasses. Available water capacity is medium. The Niotaze series is used mostly for range. The smoother, less stony areas are also suited for tame pastures and forests for firewood and posts. Management is needed to protect the soil from erosion and maintain fertility and tilth (USDA 1979).

The Shidler series encompasses 12% or 473 acres of the project area. All of the Shidler soils occur in the southern section of the project area. This series consist of very shallow, very gently sloping through gently sloping soils that are well drained and have moderate permeability. These soils formed in material weathered from limestone and thin layers of chert under a cover of grasses. Available water capacity is low. The Shidler series is used mostly for range. They are also suited for tame pasture grasses. The limestone contains in this series is mined for gravel, agricultural lime, and other uses. Management practices would include proper grazing and protection from fire (USDA 1979).

The Steedman series comprises 11% or 411 acres of the project area. These soils primarily occur on side slopes in the southern region alongside the Niotaze series. This series consist of moderately deep, very gently sloping through steep soils that are well drained to moderately well drained and have slow permeability. These soils formed in material weathered from shales interbedded with thin layers of sandstone under a cover of grasses. Available water capacity is medium. The Steedman series is used mostly for tame pasture and range. It is also suited for small grains and other crops. Management is needed to maintain tilth and fertility and to control erosion where this soil is used for cultivated crops (USDA 1979).

The remaining soil series (Apperson, Barnsdall, Bates, Carytown, Cleora, Coweta, Darnell, Dennis, Foraker, Lightning, Norge, Osage, Parsons, Pawhuska, Prue, Stephenville, Wolco, and Wynona) account for the other 25% or 1,027 acres of the project area. All of these soil series occur between the sloping Niotaze/Steedman series and the Verdigris series in the project area.

3.2.1 Prime and Unique Farmlands

According to 7 United States Code (U.S.C.) 4201(c)(1)(A), prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, labor, and without intolerable soil erosion. Unique farmland is defined as land, other than prime farmland, that is used for the production of specific high-value food and fiber crops, such as, citrus, nuts, olives, cranberries, fruits, and vegetables [(7 U.S.C. 4201(c)(1)(B)].

Areas with the potential to be prime farmland are present within the Candy Lake project area (Figure 3-2). In fact, 27.1% of the project area has soils considered to be prime farmland. The soils associated with the prime farmland designation include Apperson silty clay loam, 1-3% slopes, Barnsdall very fine sandy loam, 0-1% slopes, Pocasset fine sandy loam, 0-1% slopes, Pocasset fine sandy loam, 1-3% slopes, Agra silt loam 1-3% slopes, Agra silt loam, 3-5% slopes, Braman silt loam, 0-1% slopes, Norge silt loam, 1-3% slopes, and Osage silty loam, 0-1% slopes (Ward 2004, personal communication). No unique farmlands occur in the project area.

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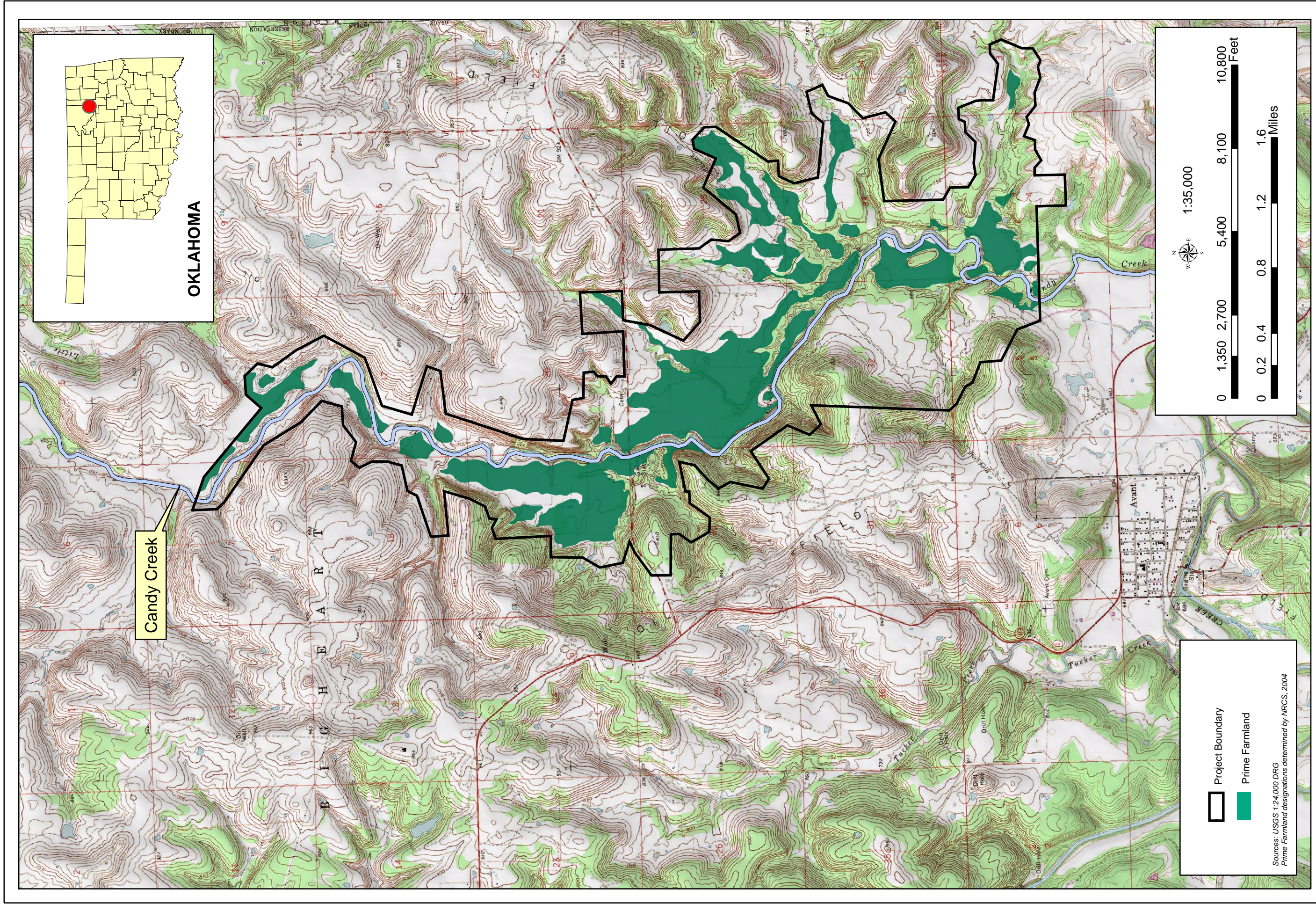


Figure 3-2: Prime Farmland for the Candy Lake Project Area

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3.3 VEGETATION

Candy Creek is located in an ecoregion known as the Cross Timbers. The Cross Timbers form an ecotone between the eastern deciduous forest and the grasslands of the southern Great Plains. This mosaic ecosystem consists of ancient post oak – blackjack forests along ridges grading into open canopied savannas, remnant prairies and glades in the bottomlands. The historic range of the Cross Timbers is believed to cover some 30,256 square miles extending from central Texas across Oklahoma and into southeastern Kansas.

3.3.1 Upland Forest

The upland forests of the area are generally dominated by either post oak (*Quercus stellata*) or blackjack oak (*Q. marilandica*) but the species composition may be quite varied. Species composition is influenced by a number of site characteristics, particularly slope, aspect and soil characteristics. Post oak reaches its greatest development on sites with moderately high levels of soil moisture and nutrients while blackjack is tolerant of the drier and more infertile sites (Johnson and Risser 1972). Other common canopy species of the uplands include black hickory (*Carya texana*), eastern red cedar (*Juniperus virginiana*), hackberry (*Celtis* spp.), Osage orange (*Maclura pomifera*), soapberry (*Sapindus drummondii*), winged elm (*Ulmus alata*), persimmon (*Diospyros virginiana*), live oak (*Q. virginiana*), and black walnut (*Juglans nigra*).

Fire and grazing, as well as the same factors that determine the composition of the overstory, also influence the composition of understory vegetation in the upland forest. Understory species of upland forest observed in the area include poison ivy (*Toxicodendron radicans*), greenbrier (*Smilax bona-nox*), smooth sumac (*Rhus glabra*), redbud (*Cercis canadensis*), winged sumac (*Rhus copallina*), goldenrod (*Solidago* spp.), sunflower (*Helianthus* spp.), tick trefoil (*Desmodium* spp.), and ragweed (*Ambrosia* spp.).

Upland forests of the region have been disturbed by grazing, fire, logging, and clearing for agriculture. The tree species, especially post oak and blackjack, are not seriously affected by fire and grazing, but the smaller vegetation may be altered considerably. Cut-over areas and abandoned fields are recolonized within a few years by post oak and blackjack, but since they are slow-growing trees it can take as long as 400 years for them to reach their maximum size (Johnson and Risser 1973).

3.3.2 Bottomland Forest

Deciduous, riparian forestland was observed along numerous intermittent and perennial streams. The floodplain forest is characterized by flat topography with high soil moisture and nutrients. Riparian forestland in the project area varied in age from less than 15 years of age to greater than 50 years of age, typically with a closed canopy, open to thick shrub layer, and scattered herbaceous and vine species. Common canopy species of the bottomlands include pecan (*Carya illinoensis*), black walnut, red mulberry (*Morus rubra*), sycamore (*Platanus occidentalis*), and American elm (*Ulmus americana*). Understory species typical of lower elevations include redbud (*Cercis canadensis*), rough-leaf dogwood (*Cornus drummondii*), Virginia creeper (*Parthenocissus quinquefolia*), and grape (*Vitis* spp.).

Much of the floodplain forest in the region has been cleared for farming and most of that remaining has been selectively logged for the more valuable timber trees such as walnut and oak. Since environmental conditions are more favorable for tree growth in the floodplain forest, a more rapid recovery might be expected than in the upland forest. Bellah and Hulbert (1974) showed that succession in the Republican River (Nebraska/Kansas) floodplain precedes at a rate such the timber attained a fairly stable composition after about 100 years.

3.3.3 Grasslands

Previously farmed, old-field communities dominated large portions of the project area at lower elevations. A dense herbaceous layer with numerous non-native herbaceous plants and scattered shrubs or colonies of shrubs typically characterized these old-field communities. Dominant herbaceous species observed include goldenrod (two species) (*Solidago* sp.), common ragweed (*Ambrosia artemisiifolia*), panic grass (*Panicum anceps*), giant ragweed (*Ambrosia trifida*), western ragweed (*Ambrosia psilostachya*), lespedeza (*Lezpedeza* sp.), Johnsongrass (*Sorghum halpense*), purple top (*Tridens flavus*), sneezeweed (*Helinium amarum*), crabgrass (*Digitaria* sp.), Bermuda grass (*Cynodon dactylon*), Mexican tea (*Chenopodium ambrosioides*), and rosin weed (*Grindella* sp.). Dominant woody species observed included pecan, hawthorn (*Crataegus* sp.), smooth sumac, winged sumac, and poison ivy.

Pastures and other areas having experienced recent grazing were also common in the study area. The flora of these areas is characterized by an herbaceous canopy of one or two species of ragweed and scattered grass species. The predominant ragweed observed was lanceleaf

ragweed (*Ambrosia bidentata*). Other ragweed species observed included western ragweed. Associate species observed included Johnson grass, purple top, and a few forage grass species.

Remnant prairies were found where soils consist of a higher proportion of heavy clay components, more numerous rocks, and limestone outcrops, cultivation was less common. These areas contained more characteristic prairie plants than previously described old-field communities and are characterized by dense herbaceous layer primarily composed of grasses and scattered clumps of woody shrubs. Dominant grass species observed include West Indian hairsedge (*Bulbostylis curassavica*), big bluestem (*Andropogon gerardii*), splitbeard bluestem (*Andropogon ternarius*), little bluestem (*Schizachyrium scoparium*), panic grass (*Panicum anceps*), and switchgrass (*Panicum virgatum*). Other grass species typical of uncultivated and non-grazed prairie include Indiangrass (*Sorghastrum nutans*), sideoats grama (*Bouteloua curtipendula*), tall dropseed (*Sporobolus asper*), and buffalo grass (*Buchloe dactyloides*). Herbaceous and forb species observed include pickley-pear cactus (*Opuntia macrorhiza*), plains yucca (*Yucca glauca*), and blazing star (*Liatris* sp.). Woody species found in undisturbed, open areas include smooth sumac and sand plum (*Prunus angustifolia*).

3.4 WILDLIFE AND AQUATIC RESOURCES

Representative species of most of the major insect orders probably inhabit the general region of north central Oklahoma in which the project area is located. About 67 amphibian and reptilian species have a range overlapping with the Candy Creek area (Conant 1958). Five species of poisonous snakes can be found in the project area, including copperhead (*Agkistrodon contortrix*), western cottonmouth (*Agkistrodon piscivorus leucostoma*), massasauga (*Sistrurus catenatus*), pigmy rattlesnake (*Sistrurus miliarius*), and timber rattlesnake (*Crotalus horridus*).

A total of 266 bird species have a range overlapping the Candy Creek area (Sutton 1967), with morning dove, northern bobwhite, greater prairie chicken (*Tympanuchus cupido*), and wild turkey (*Meleagris gallopavo*) being the important game species in the region. Waterfowl numbers in the project area are insignificant.

Approximately 48 species of mammals have a range overlapping the Candy Creek area (Burt and Grossenieder 1964). Whitetail deer are present in moderate numbers. Upland-game

species are fox squirrel (*Sciurus niger*), cottontail rabbit, and swamp rabbit (*Sylvilagus aquaticus*). Fur-animal species include mink (*Mustela vison*), raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), beaver (*Castor canadensis*), and Virginia opossum (*Didelphis virginiana*).

The aquatic habitat encountered in Candy Creek is one of an intermittent stream with permanent pool areas in the lower reaches. During periods of high flow, fishes migrating from Bird Creek influence population densities and fish species composition. The USACE (1973) reported that 16 species of fishes have been collected from Candy Creek, with the most common species being green sunfish (*Lepomis cyanellus*) and the longear sunfish (*Lepomis megalotis*). Other common species include logperch (*Percina caprodes*), stoneroller (*Campostoma anomalum*), and the bluntnose minnow (*Pimephales notatus*). The most common sport fish is the spotted bass (*Micropterus punctulatus*) with some largemouth bass (*Micropterus salmoides*) also present.

Very few fauna species were observed during the site visit in September 2003. Wildlife species observed at various locations in the project area include box turtle (*Terrapene carolina*), white-breasted nuthatch (*Sitta carolinensis*), Carolina chickadee (*Poecile carolinensis*), pileated woodpecker (*Dryocopus pileatus*), American goldfinch (*Carduelis tristis*), northern cardinal (*Cardinalis cardinalis*), red-tailed hawk (*Buteo jamaicensis*), blue jay (*Cyanocitta cristata*), whitetail deer, raccoon, beaver, and Asiatic clam (*Corbicula* sp.).

3.5 PROTECTED SPECIES AND CRITICAL HABITATS

The Endangered Species Act (ESA) [16 U.S.C. 1532 et. seq.] of 1973, as amended, was enacted to provide a program for the preservation of endangered and threatened species and to provide protection for the ecosystems upon which these species depend for their survival. All Federal agencies are required to implement protection programs for designated species and to use their authorities to further the purposes of the act. Responsibility for the identification of a threatened or endangered species and development of any potential recovery plans lies with the Secretary of the Interior and the Secretary of Commerce.

An endangered species is a species in danger of extinction throughout all or a significant portion of its range. A threatened species is a species likely to become endangered within the

foreseeable future throughout all or a significant portion of its range. Proposed species are those, which have been formally submitted to Congress for official listing as threatened or endangered. Species may be considered endangered or threatened when any of the five following criteria occurs: (1) the current/imminent destruction, modification, or curtailment of their habitat or range; (2) overuse of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) the inadequacy of existing regulatory mechanisms; and (5) other natural or human-induced factors affect continued existence.

In addition, the USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate (C) designation includes those species for which the USFWS has sufficient information on hand to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

3.5.1 Federal

According to the USFWS Southwest Region's Internet site (USFWS 2004a) a total of five Federally protected or candidate species have the potential to occur in Osage County. Two of these species are listed as endangered, two as threatened and one as a candidate species. A letter (Appendix B) was submitted by the USACE to the USFWS, which, in turn, provided a list of only two species that could potentially occur in or near the project area. The list provided by the USFWS includes one endangered species, the American burying beetle (*Nicrophorus americanus*) that was not included on the Osage County list, and the bald eagle (*Haliaeetus leucocephalus*). Information pertaining to Federally protected species is included in Table 3-2.

3.5.1.1 Bald Eagle

The bald eagle is a member of the *Accipitridae* family and is in the sea or fish eagle group. Bald eagles are large for their group with a wingspan that varies from 79 to 90 inches and a body weight of 10 to 14 pounds. Adults have a blackish-brown back and breast and can be distinguished from other eagles by the adult plumage of white head, neck, and tail. Bald eagles tend to form breeding pairs and rear young in nests typically built in large trees near rivers or coasts, often returning to the same nest each breeding season.

Table 3-2. Federally Protected Species Known or Presumed to Occur Within or Near the Candy Lake Project Site

Species	Status	Habitat Requirements	Potential Occurrence
Birds			
Interior Least Tern (<i>Sterna antillarum</i>)	E	Sparsely vegetated sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines	0
Whooping Crane (<i>Grus americana</i>)	E	Nesting in Wood Buffalo National Park in Canada; over-winters at Aransas National Wildlife Refuge on the Texas gulf coast. Traditional migratory stopover at Salt Plains National Wildlife Refuge in Oklahoma	0
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	AD, T	Coastal areas, rivers or lake shores (including man-made lakes) with tall trees	1
Piping Plover (<i>Charadrius melodus</i>)	T	Shorelines and sandy beaches around lakes and reservoirs with little to no vegetation cover	0
Invertebrates			
American Burying Beetle (<i>Nicrophorus americanus</i>)	E	Generalist, found in various types of habitat including oak-pine woodlands, open fields, oak-hickory forest, open grasslands, and edge habitat	1
Neosho Mucket (<i>Lampsilis rafinesqueana</i>)	C	Stable runs, shoals and riffles with gravelly bottoms and moderate currents. Historically found in the Verdigris River basin, however recent surveys indicate the mussel has been extirpated from the Verdigris River	0

Source: USFWS 2004

E = Endangered; T = Threatened; AD = Proposed Delisting; C = Candidate for Listing

Potential occurrence: 0= no potential; 1= potential to occur but not found during surveys

The breeding range of bald eagles extends from Alaska to central California inland to the Rocky Mountains and across Canada to the Great Lakes and the Atlantic Coast at northern latitudes. Bald eagles are also known to breed along the coast in the Gulf of Mexico from Louisiana to the southern tip of Florida and along the Atlantic coast in Florida and parts of New England.

Their wintering range extends along the Pacific coast from southern Alaska to Mexico, across the American southwest at middle latitudes, and most of the eastern U. S. Eagle numbers began to decline with the settlement of Europeans and in 1940, the Bald Eagle Act was passed. Numbers continued to decline due to hunting, habitat loss and use of DDT (a chlorinated organic insecticide) and in 1967, eagles were declared endangered in all areas south of the 40th parallel, under a law that preceded the ESA of 1973. On July 4, 1976, the USFWS officially listed the bald eagle as a national endangered species. The bald eagle has since been upgraded to threatened (1995) and is currently proposed for delisting.

Historical evidence suggests that bald eagles were common and known to nest in eastern Oklahoma through the 1800s and numbers began to decline in the early 1900s (Lish and Sherrod 1986). Between 1950 and 1986, only 13 "reproductive attempts" were reported in eastern Oklahoma, including Osage County along the Arkansas River. No nesting habitat is present at Candy Lake, but bald eagles may rarely forage in the project area.

3.5.1.2 American Burying Beetle (*Nicrophorus americanus*)

The American burying beetle is a member of the carrion guild. Carrion beetles are highly social and breed their young on vertebrate carcasses (primarily mammals and birds up to 300 grams) while providing biparental care (Wilson 1971). The American burying beetle is the largest member of its guild (up to 1.5 inches) and is shiny black with two distinctive, bright orange bands on each wing cover. It can be distinguished from other species of *Nicrophorus* by its orange pronotum, the shield-like area just behind the head.

The historic range of the American burying beetle included much of North America from the northern Great Plains to the Gulf coast and east to the Atlantic coast. During this century, it has disappeared from over 90% of its range. Existing populations are known to occur in six states: Nebraska, Rhode Island, Oklahoma, South Dakota, Kansas, and Arkansas. In 1989, the American burying beetle was listed as an endangered species by the USFWS.

It was first believed that a dependence on larger carcasses restricted American burying beetles to mature eastern deciduous woodlands with deep soils (Anderson 1982). However, recent studies have shown that it is found in both grassland and upland forest while avoiding bottomland forests (Creighton et al. 1993), and that it is a habitat generalist, searching over a range of habitats for a suitable carcass (Lomolino et al. 1995). Surveys of American burying beetles often produce minimal specimens, even when sampling locations of known populations. No surveys have been conducted at the project site. However, in the nine counties surrounding Osage County, a total of 1,205 trap nights at 13 locations produced only two beetles (USFWS 2004b). The study by Lomolino et al. (1995), conducted at Camp Gruber in Muskogee County where a known population has been surveyed extensively, was more efficient with 215 beetles caught over 2,081 trap nights. However, this population is located 78 miles southeast of the project site. Although it is unlikely that American burying beetles are present at the Candy Lake project site, protocol-level surveys for the burying beetle were not conducted because negative

results would not prove absence. Therefore, for the purposes of this EA, it is assumed that American burying beetles could occur, although rarely, at the project site.

3.5.2 Critical Habitat

The ESA also calls for the conservation/protection and management of critical habitat; defined as the areas of land, water, and air space that an endangered species requires for survival. Critical habitat also includes such things as food, breeding sites, cover or shelter, and sufficient habitat to provide for normal population growth and behavior. One of the primary threats to many species is the destruction or modification of essential habitat by uncontrolled land and water development. No critical habitat for any protected species is located within or near the proposed project location.

3.5.3 State

The ODWC maintains an annotated list of rare species. This list includes species whose occurrence in Oklahoma is Federally listed as endangered threatened, proposed endangered/threatened, and candidate for listing. The list also includes those species that are state endangered, threatened, or rare. The Federally protected species were previously discussed in Section 3.5.1. The state listed species with the potential to occur in Osage County are found in Appendix A.

3.6 AIR QUALITY

3.6.1 Applicable Air Quality Statutes

The US Environmental Protection Agency (EPA) is the agency responsible for enforcing the Clean Air Act (CAA) of 1970 and its 1977 and 1990 Clean Air Act Amendments (CAAA). The purpose of the CAAA is to establish National Ambient Air Quality Standards (NAAQS), to classify areas as to their attainment status relative to the NAAQS, to develop schedules and strategies to meet the NAAQS, and to regulate emissions of criteria pollutants and air toxics to protect the public health and welfare. Under the CAA, individual states are allowed to adopt air quality standards and other regulations provided that they are at least as stringent as the Federal standards.

3.6.2 Background in Air Quality Management

The EPA established NAAQS, for specific pollutants determined to be of concern with respect to the health and welfare of the general public. The EPA defines ambient air quality in 40 CFR 50 as "that portion of the atmosphere, external to buildings, to which the general public has

access." Ambient air quality standards are intended to protect public health and welfare and are classified as either "primary" or "secondary" standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. The major pollutants of concern, or criteria pollutants, are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, suspended particulate matter less than ten microns, and lead. NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Short-term standards (1-, 8- and 24-hour averaging periods) are established for pollutants contributing to acute health effects, while long-term standards (annual averages) are established for pollutants contributing to long-term health effects. The NAAQS are included in Table 3-3. Areas that do not meet these standards are called non-attainment areas; areas that meet both primary and secondary standards are known as attainment areas.

The EPA requires each state to develop a State Implementation Plan (SIP) that sets forth how the CAA provisions would be implemented within that state to obtain the NAAQS. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain compliance with the NAAQS within each state. To provide consistency in different state programs and ensure that a state program complies with the requirements of the CAA and EPA, approval of the SIP must be made by the EPA. The purpose of the SIP is twofold. First, it must provide a strategy that would result in the attainment and maintenance of the NAAQS. Second, it must demonstrate that progress is being made in attaining the standards in each nonattainment area.

The State of Oklahoma established the Oklahoma Clean Air Act (OCAA) under article 27A-2-5-101 in 1967. It is the purpose of the OCAA to provide the means to achieve and maintain atmospheric purity necessary for the protection and enjoyment of human, plant or animal life and property consistent with and limited by generally accepted social standards and requirements, desired employment and industrial development, area conditions, and the availability of economic and feasible controls. The Oklahoma Department of Environmental

Table 3-3. National Ambient Air Quality Standards

POLLUTANT	STANDARD VALUE*	STANDARD TYPE
Carbon Monoxide (CO)		
8-hour average	9ppm (10mg/m ³)	P
1-hour average	35ppm (40mg/m ³)	P
Nitrogen Dioxide (NO₂)		
Annual arithmetic mean	0.053ppm (100µg/m ³)	P and S
Ozone (O₃)		
1-hour average	0.12ppm (235µg/m ³)	P and S
8-hour average	0.08ppm (157µg/m ³)	P and S
Lead (Pb)		
Quarterly average	1.5µg/m ³	P and S
Particulate<10 micrometers (PM-10)		
Annual arithmetic mean	50µg/m ³	P and S
24-hour average	150µg/m ³	P and S
Particulate<2.5 micrometers (PM-2.5)		
Annual arithmetic mean	15µg/m ³	P and S
24-hour Average	65µg/m ³	P and S
Sulfur Dioxide (SO₂)		
Annual arithmetic mean	0.03ppm (80µg/m ³)	P
24-hour average	0.14ppm (365µg/m ³)	P
3-hour average	0.50ppm (1300µg/m ³)	S

Source: EPA, 2004a

Legend: P = Primary

S = Secondary

ppm = parts per million

mg/m³ = milligrams per cubic meter

µg/m³ = micrograms per cubic meter

*Parenthetical value is an approximately equivalent concentration.

Quality (ODEQ) is designated as the administrative agency for the OCAA and has established air quality standards consistent with, and not more stringent than NAAQS. The State of Oklahoma is currently in attainment of the NAAQS (EPA 2004b).

Sources of pollutants in Osage County include road traffic and construction, agriculture, petroleum refining, and wildfires. Air pollution in Osage County is equivalent to the national average for particulate matter, ammonia (NH₃), Hazardous Air Pollutants (HAP), and Acrolein, and better than average in all other pollutants. Oklahoma has established 17 air-monitoring stations, seven of which are considered permanent. The closest permanent station is in Skiatook, which is 12 miles south of the Candy Lake project area. Skiatook has had the highest 3-hour. (0.083 ppm) and 8-hour. (0.094 ppm) ozone readings in Oklahoma, but remains in compliance with the NAAQS and the OCAA.

3.7 WATER RESOURCES

3.7.1 Surface And Ground Water Resources

The Candy Creek Basin is located in northeastern Oklahoma within the Verdigris River Basin (a tributary to the Arkansas River) and is elliptical in shape from north to south. The Candy Creek drainage system's headwaters are located about five miles southwest of Bartlesville. Candy Creek is a dendritic system with a 12-mile long mainstem that flows south into Bird Creek near Avant. USACE used rainfall data and available flow records to estimate flow conditions in Candy Creek for a 36-year period, October 1935 through September 1969. Streamflows ranged from 0 cubic feet per second (cfs) to 11,800 cfs, with peak flow occurring in October of 1959, and average flows were 3,845 cfs (USACE 1986). The Candy Creek watershed is located in a region with relatively moderate winters and long summers characterized by high temperatures. The average annual precipitation is 34.7 inches (range 20 – 54 inches) with May typically being the wettest month and January the driest. Evaporation in the basin has been estimated to be 76.0 inches annually. The majority of the project area is in Flood Zone A according to the Federal Emergency Management Association Flood Insurance Rate Maps (FIRM) for the project site (FIRM map panels 4001460450C and 4001460535C).

3.7.2 Waters of the U.S. and Wetlands

Section 404 of the Clean Water Act (CWA) of 1977 (P.L. 95-217) authorizes the Secretary of the Army, acting through the USACE, to issue permits for the discharge of dredged or fill material into Waters of the United States (WUS), including wetlands. WUS (Section 328.3[2] of the CWA) are those waters used in interstate or foreign commerce, subject to ebb and flow of tide, and all interstate waters including interstate wetlands. WUS are further defined and may include waters such as intrastate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, or impoundments of waters, tributaries of waters, and territorial seas. Jurisdictional boundaries for WUS are defined in the field as the ordinary high water marks which is that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural lines impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Activities that result in the dredging or filling of jurisdictional wetlands are regulated under Section 404 of the CWA. The USACE has established Nationwide Permits (NWP) to efficiently authorize common activities, which do not significantly impact WUS, including wetlands. The NWP were modified and reissued by the USACE in the Federal Register on 15 January 2002, with an effective date of 18 March 2002. All NWP have an expiration date of 19 March 2007. The USACE has the responsibility to authorize permitting under a NWP, or to require an Individual Permit.

Potential WUS within the project area include Candy Creek and its tributaries. Additionally, several potentially jurisdictional in-stream ponds and one potentially jurisdictional wetland were found within the project area during September 2003 surveys (Figure 3-3).

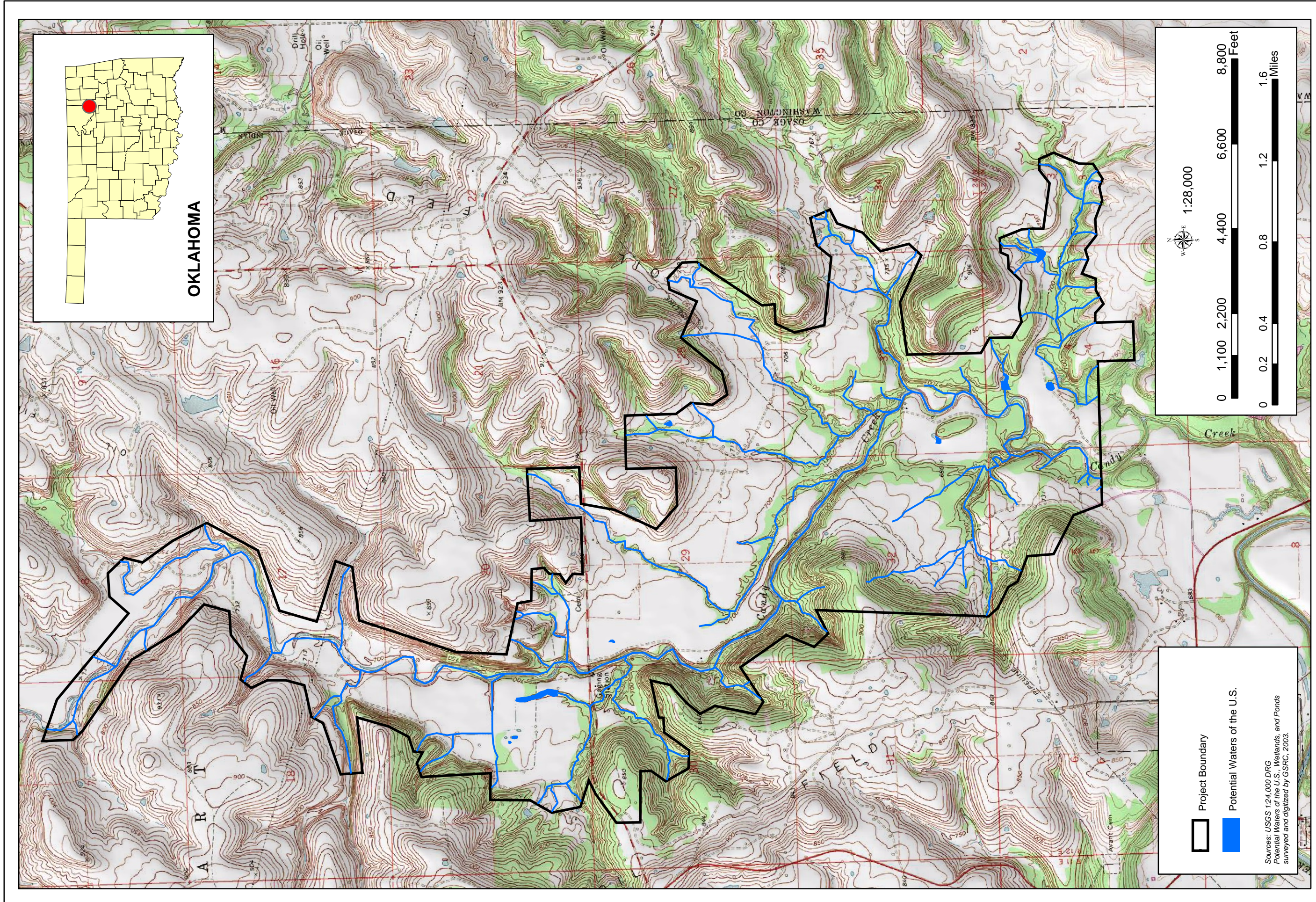
3.7.3 Water Quality

There is little information available concerning water quality of Candy Creek. Water samples were taken by the USACE in Candy Creek and its tributaries during August and September of 1973 (USACE 1986). These samples indicated that the proposed Candy Lake would have provided water acceptable for public water supply. Chloride concentrations were evaluated by the USGS in Candy Creek at two stations in 1999. At one station near Wolco, chloride concentrations were relatively high at 30.0 milligrams per liter (mg/L) in February and 28.0 mg/L in August. At one station near Avant, chloride concentrations were 15.0 mg/L (USGS 2004b).

3.8 SOCIOECONOMICS

3.8.1 Population

The Region of Influence (ROI) on socioeconomics for the proposed project is Osage County, Oklahoma. Osage County is in the Tulsa Metropolitan Statistical Area (MSA). Oklahoma's total population in 2001 was 3,460,097 while the Tulsa MSA's total population in 2001 was 812,507, which ranked 71st in the nation among other MSAs (U.S. Census Bureau [USCB] 2004; Bureau of Economic Analysis [BEA] 2004). The estimated total population of Oklahoma in 2002 was 3,493,714 (USCB 2004). The 2000 population of Osage County was 44,437, which ranked 18th in the state (USCB 2004; BEA 2004). The racial mix of Osage County of the 2000 population consisted predominantly of Caucasians (67%) followed by Native American (14%) and African



Project Boundary
 Potential Waters of the U.S.

Sources: USGS 1:24,000 DRG
 Potential Waters of the U.S., Wetlands, and Ponds
 surveyed and digitized by GSRC, 2003.

North Arrow
 Scale: 1:28,000
 0 1,100 2,200 4,400 6,600 8,800 Feet
 0 0.2 0.4 0.8 1.2 1.6 Miles

Figure 3-3: Potential Waters of the U.S. for the Candy Lake Project Area

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American (11%). The remaining 8% is divided among Asians, Native Hawaiians and other Pacific Islanders, and people claiming to be two or more races or race other than those listed above (U.S. Census Bureau 2004). Only about 2% of the total population of Osage County claim to be of Hispanic origin (U.S. Census Bureau 2002). The average annual growth rate between 1990 and 2000 was 0.65%. The estimated 2002 total population of Osage County is 45,166 (USCB 2004). Racial breakdowns of this estimated population were not available at the time of this report.

3.8.2 Employment and Income

The total number of jobs in Osage County in 2001 was 12,224, an increase of 14% over the 1991 number of jobs of 10,688 (BEA 2004). Job breakdowns by industry for 2001 were not available at the time of this report. The November 2003 unemployment rate for Osage County was 5.7%. This is slightly higher than the November 2003 unemployment rate for the state of Oklahoma of 5.1% (Oklahoma Employment Security Commission 2004).

The 2001 annual total personal income (TPI) for Osage County was \$8.8 million. This TPI ranked 18th in the state of Oklahoma and accounted for 1.0% of the state total (BEA 2004). Over the past 10 years, the average annual growth rate of TPI was 4.5%. This is lower than the annual growth rate for the state (5.0%) and lower than that for the nation (5.5%) (BEA 2004). Per capita personal income (PCPI) for Osage County was \$19,701 in 2001. This PCPI ranked 41st in the state, and was 79% of the state average (\$24,945) and 65% of the national average of (\$30,413) (BEA 2004). The average annual growth rate of PCPI over the past 10 years was 3.7%, which is lower than the state's growth rate of 4.1% and the national growth rate of 4.3% (BEA 2004). The estimated number of people of all ages in poverty for Osage County was 5,501. This represented 12.7% of the county, which is lower than the percentage of state population (13.9%) that lives in poverty (USCB 2004).

3.8.3 Housing Analysis

The total number of housing units in Osage County was 18,826 in 2000 (USCB 2004). This represents 1% of the total housing units reported for the State of Oklahoma. Of the housing units within Osage County, 16,617 (88%) are occupied and the remaining 2,209 (12%) are vacant. Approximately 81% (13,401) of the occupied housing units are owner occupied, while 19% (3,216) are renter occupied (U.S. Census Bureau 2004). The number of housing units within Osage County was 18,196 in 1990. This represents an average annual growth rate of

0.34% for Osage County (U.S. Census Bureau 2004). The number of new private housing units by authorized building permits in 2000 was 46 (U.S. Census Bureau 2004).

3.8.4 Executive Order (EO) 12898, Environmental Justice

The fair treatment of all races has been assuming an increasingly prominent role in environmental legislation and implementation of environmental statutes. In February 1994, President Clinton signed EO 12898 titled, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This action requires all Federal agencies to identify and address disproportionately high and adverse effect of its programs, policies, and activities on minority and low-income populations.

3.8.5 Executive Order 13045, Protection of Children

EO 13045 requires each Federal Agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children”; and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” This EO was prompted by the recognition that children, still undergoing physiological growth and development, are more sensitive to adverse environmental health and safety risks than adults.

3.9 NOISE

Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, etc.) or subjective judgments (community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Sound on the decibel scale is referred to as a sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the EPA (EPA 1974) and has been adopted by most Federal agencies (Federal Interagency Committee on Noise [FICON] 1992).

A DNL of 65 dB is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction, which do

cause noise. Areas exposed to DNL above 65 dB are generally not considered suitable for residential use. A DNL of 55 dB was identified by EPA as a level below which there is effectively no adverse impact (EPA 1974). The lowest level at which adverse health effects could be credible is a DNL of 75 dB (EPA 1974).

Noise levels are very low within the Candy Lake project area. For the most part, noise is limited to some small generators and power supplies for oil wells scattered throughout the project area and occasional vehicle noise on nearby rural roads. During hunting season, very limited gunfire sounds can be heard. Furthermore, the site is mostly undeveloped and there are only a few nearby rural residences.

3.10 CULTURAL RESOURCES

The land parcel with which this survey is concerned is part of what was the Osage Reservation, established in 1875 for the residence of the remnants of the Osage Tribe, who had been living in Kansas after their removal from Missouri. The boundaries of current Osage County correspond with the boundaries of the former reservation. In 1907, just prior to Oklahoma statehood, the reservation land was allotted to tribal members according to a numbered lottery system, like that used for other tribes in the former Indian Territory. Each tribe member received a portion of the reservation land, and assumed rights and responsibilities of private ownership. Several of the original homestead allotments, as well as surplus land allotments, are located within the project area (Proctor 2004).

3.10.1 Cultural History

3.10.1.1 Paleo-Indian

Physical evidence, and perhaps more importantly, a change of mindset, have been mounting to substantiate the presence of pre-Clovis material in North America, and in Oklahoma (Table 3-4). Although most evidence is ambiguous and remains to be substantiated, the Clovis is a cultural stage pre-dating the earliest Paleo-Indian stage, and is likely to be assimilated into most culture histories in the near future. Evidence for human occupation prior to 11,500 years before present (B.P.) may have been located at sites such as Burnham, northwestern Oklahoma, and the Cooperton Site, in Kiowa County. Clovis sites, belonging to the first firmly accepted stage of the Paleo-Indian, are almost as difficult to locate as pre-Clovis material. For these early periods, there is a substantial amount of geomorphological activity that has affected site visibility

and integrity. Sites may be very deeply buried in alluvium, and thus difficult to locate, or erosional processes and later occupations may have seriously affected them, making them less pristine in terms of physical integrity. Both the Clovis and Folsom (Table 3-4), along with the more diverse Late Paleo-Indian complexes, are characterized by the use of distinctive fluted and later, lanceolate, projectile points, elaborate and fine-quality flaking techniques, and some emphasis on the use of extinct large herd animals. The spectacular nature of “megafauna” kill sites and the beautiful fluted points led to an initial emphasis by archeologists on big-game hunting by the Paleo-Indian people. In recent decades, the increase in numbers and types of Paleo-Indian sites being investigated has allowed researchers to recognize greater diversity in the toolkit and in the subsistence strategy, which was fairly broad-based and utilized many types of animal and plant resources (Proctor 2004).

Table 3-4. Chronological Scheme for Northeastern Oklahoma

Cultural/Temporal Stage	Dates
Paleo-Indian	11,500-9500 B.P.
Clovis	
Folsom	
Archaic	9500-2300? B.P.
Early	9500-6000 B.P.
Middle	6000-4000? B.P.
Late	3400?-2300? B.P.
Woodland	?1900-1200 B.P.
Plains Village	1200-500 B.P.
Protohistoric	A.D. 1540 to ~1700
Historic	After A.D. 1700

(Proctor 2004)

3.10.1.2 Archaic

The significantly greater number of sites known for the succeeding Archaic period suggests an increase in Native American populations in the time from approximately 8500 to 2000 years B.P. This period may have been characterized by utilization of a larger variety of resources (floral and faunal), and a greater diversity of equipment for processing these resources. The presence of plant processing equipment suggests more long-term occupations, possibly seasonal rounds in specific areas. The diet of the Archaic people seems to have diversified to include more small animals, possibly in response to dwindling populations of large species. Projectile points

are generally smaller, typically notched and stemmed points, and differ significantly from preceding Paleo-Indian fluted points. The archaic period is generally divided into three different periods, Early, Middle and Late Archaic (Proctor 2004).

3.10.1.3 Woodland

By 2000 years B.P., a number of technological changes in the plains and forests of what is now Oklahoma signaled a transition to the Woodland Period (ca. 2000-1250 B.P.) or Plains Woodland (ca. 2000-1000 B.P.). The most visible change was the appearance of smaller projectile points, thought to indicate a shift from the use of atlatls and darts to bow and arrow (Proctor 2004). Second, and also highly important technologically, was the introduction of ceramic technology, which seems to have occurred in this region some time between 2500-2100 B.P. The intensely important shift to full-scale agriculture is ongoing during the Woodland, a process still not clearly understood and probably quite variable in different areas (Proctor 2004).

3.10.1.4 Plains Village/Village Farmer

After about 1250 B.P., much of eastern Oklahoma was occupied by sedentary or semi-sedentary agricultural societies, as part of a tradition of village societies in the Great Plains and Midwest. The term Plains Village is typically applied to sites of this time period in western and central Oklahoma. In eastern Oklahoma, the evolving cultural traits of the prior Woodland period had, by approximately 1100-1200 B.P., coalesced into a single dynamic expression known as the "Caddo" or "Caddoan", which would last until the historic period in the Arkansas and Red River basins. The Caddoan culture is characterized by an assemblage of traits that includes mound construction, maize and squash agriculture, and differential treatment of the dead. This period of relative cultural continuity marked the apex of social complexity in the Arkansas and Red River basins, and produced some of the largest mounded earthen works, as well as some of the finest examples of prehistoric ceramic technology and art, to be found in North America (Proctor 2004).

Sometime after 1200 B.P., the Woodland adaptations appear to expand in diversity of cultural traits and in density of population. The new cultural expression is known collectively as the Plains Village or Village Farmer period, with numerous local variants recognized on the Southern Plains and its periphery. On the eastern margin of the region, including eastern Kansas and Oklahoma, the Plains Villagers exhibit some traits more associated with the

Eastern Woodlands-type Mississippi tradition (Proctor 2004). Caddoan influence can be seen in some cultural traits in northeastern Oklahoma, but the sites generally resemble Plains manifestations more closely (Proctor 2004). The “classic” Plains Village expression includes traits such as permanent houses, more dependence on horticulture, and development of a strong tradition of bison hunting (Proctor 2004). This basic adaptation continues in north-central Oklahoma into the historic period, as documented in historic Wichita villages (Proctor 2004).

The nearby Caddoan archeological area (Proctor 2004) extends from northeast Texas and northwest Louisiana, northward through eastern Oklahoma and western Arkansas, and ends in southwestern Missouri. The Caddoan Archeological Area is divided into three distinct subareas, classified as the Northern, Western, and Central Caddoan. These divisions are based primarily upon “a set of longstanding and distinctive cultural, social, and political elements that have temporal, spatial, and geographic connotations” (Proctor 2004). Caddo culture bears strong similarities to societies of the Mississippi period (1100-300 B.P.), which originated in the western Ozarks, themselves apparently a localized western expression of the larger Mississippian societies to the east. Mississippi people of the Ozarks seem to have had frequent interaction with the Arkansas and Mississippi River valleys (Proctor 2004).

Sites of the Plains Village period in Oklahoma are typically found along major drainages, with smaller settlements on smaller streams. They may occur as small “villages” in closely spaced clusters, or larger communities near stream mouths, with smaller settlements in the higher reaches of the drainages. Domestic structures have been documented, with storage pits, scattered sheet middens, and sometimes, isolated burials or definitive cemeteries (Proctor 2004). In addition to horticulture, the economy appears to have been supported by bison hunting. Diverse wild plant and animal resources no doubt continued to be significant, regardless of the visibility of bison remains in the domestic refuse of this period (Proctor 2004).

3.10.1.5 Protohistoric and Early Historic

The beginning of the Protohistoric period in the southern Plains is marked by Coronado’s initial explorations into the North American continent from Spanish territory in Mexico (Proctor 2004). It encompasses time between the 16th and 17th centuries when there were limited European contacts with the area and only brief journeys into or through the area (Proctor 2004). The Europeans coming into the southern Plains were mostly explorers looking for new territory, or fur trappers (Proctor 2004). In the Caddoan Archeological Area nearby, the period between

European contact and colonization is called Caddo IV. During this time, mound construction ceased, and mortuary practices shifted away from multiple shaft burials in mounds and household cemeteries to individual flexed burials in large household cemeteries (Proctor 2004).

Contact with Europeans increased toward the end of the protohistoric, ca A.D. 1650-1700. French and Spanish settlements along the Red River at Natchitoches and Los Adaes in eastern Texas were centers of commerce for the Caddo as well as other Native American groups. The distinction between the Protohistoric and Historic periods is somewhat vague. Native lifeways did not immediately change across the board with the first appearance of Europeans, and the sporadic nature of contacts with actual persons or with the new material culture meant that European influence was minor at first (Proctor 2004). Also, archeological remains that can be clearly assigned to protohistoric groups are poorly documented (Proctor 2004).

3.10.1.6 Historic Period

The Historic period refers to the time post-dating European colonization of the region. In the Caddoan Archeological Area, the period after European colonization is called Caddo V. The period is relatively short-lived, and appears to have ended in the Red River basin by approximately A.D. 1750 (Proctor 2004). After this, the Caddo abandoned the area. Episodes of severe raiding by the Osage forced abandonment in favor of relocation further to the south. All of Oklahoma, like the rest of the continent, was substantially affected by the encroachment of European peoples and their culture after A.D. 1500. In considering the archeological expression of human culture in this region, all interpretations must take account of the significant changes created by Euro-American/African-American influx. Some overall trends in post-Contact history are outlined here that are relevant to Oklahoma in general. Events and developments more specific to Osage County and the project area follow (Proctor 2004).

European and Euro-American exploration begins with the Coronado expedition, known to have entered what is now Texas and Oklahoma in 1541. Spanish and French presence in the Oklahoma/Texas region was sporadic, but continued until the transfer of the huge area known as the Louisiana Territory to the U.S. in 1803. Purchase of the Louisiana Territory by the U.S. began another phase of exploration. This period can be described as more systematic, related to scientific as well as military motives. American exploration was initiated by Lewis and Clark in 1804. Other American expeditions of a semi-scientific and military nature were led by Zebulon Pike and Lieutenant James Wilkinson, Major Stephen Long, and others (Proctor 2004).

Trade and colonization were well underway in Oklahoma by the start of the 19th century. Early efforts of St. Denis and Bourgmont led to a successful French-dominated fur trade in the river basins. By 1812, hunters and trappers of various nationalities drawn to the region began to settle more permanently, often integrating with the aboriginal culture through marriage to native women (Proctor 2004). Possibly the most significant trend in coloring the character of modern Oklahoma and Kansas encompassed the two phenomena of the push for Indian “removal” from desirable lands in the east and southeast, and the overall hunger for land that characterized early American culture. Numerous treaties, both before and after 1830, were promulgated to deal with transfers of land by specific tribes, but the Indian Removal Act of 1830 became the watershed of public policy from which there was no return for native groups. Oklahoma was treated as “empty land” suitable for re-settlement of Eastern tribes despite the presence of aboriginal societies already in place. Later, the area saw serious conflict as U.S. citizens demanded that these economically desirable lands be opened to white settlement (Proctor 2004).

The Civil War, though fought mainly in the eastern half of the U.S., had serious effects on the native inhabitants of Indian Territory. The legacy of mistrust and fraudulent or broken treaties made many groups distrustful of the Union. When advocates for the Confederacy began to proselytize in the region, many of the “Five Civilized Tribes” saw the secessionist movement as a chance to escape the oppression of the Federal government. Reconstruction after the war was as destructive to Native American communities as it was to former Confederate cities. Raiding and guerrilla-type fighting caused considerable loss of life to native civilians (Proctor 2004).

The final decades of the 19th century saw an explosion of the railroad as the primary transportation across the West. Inroads were made in eastern Oklahoma by proponents of the new lines. Treaties allowed rights-of-way across lands of the Five Civilized Tribes. Outlaws and renegades that had profited from post-war Indian poverty were assisted even more by the growth of the railroads. Land runs became rampant in Oklahoma after 1889, when the Unassigned Lands in the center of the state were opened to settlement. Both white and black settlers, many of the latter former slaves of the Five Civilized Tribes, obtained parcels all over the territory, as even sovereign Indian areas fell to the land hunger. Importantly, the black settlers founded more all-black towns in the state than anywhere else in the U.S. Statehood,

however, did not come until 1907, long after similar settlement trends had fully altered the ethnic composition of nearby Kansas, Texas and Arkansas (Proctor 2004).

3.10.2 Recent Investigations

Archeological work sponsored by the USACE in the Candy Lake project area was first done by Cheek and Wilcox (1974) and provided initial site descriptions of prehistoric and historic sites (34OS147 – 158). Additional research on the Candy Lake property was conducted under the direction of D. Kevin Leehan in 1976 (Leehan 1977) and by Joe Saunders and colleagues in 1979 (Saunders 1980). Leehan's (1977) work in 1976 consisted of the reexamination and testing of eight previously recorded archeological sites (34OS147, 34OS149, 34OS151, 34OS153, 34OS154, 34OS155, 34OS157, 34OS158) and the archeological survey of approximately 675 acres in the upper reaches of the proposed Candy Lake Reservoir. Two of the sites 34OS149 and 34OS153 could not be investigated due to access problems. As a result, Leehan (1977) recommended that testing be carried out on those sites when access was obtained. In addition, Leehan (1977) recommended additional testing and mitigation be done at 34OS155, as it would provide valuable additional information. Leehan (1977) recommended no additional work for the rest of the sites investigated (34OS147, 34OS151, 34OS154, 34OS157, and 34OS158). Leehan's (1977) survey of 675 acres in the upper reaches of the proposed Candy Lake Reservoir yielded three additional sites (34OS190, 34OS191, and 34OS187) along with a headstone near 34OS191. Leehan recommended no additional work at any of the sites. The headstone, found along the riverbank, bore the surname of Dickey. According to local informants, a number of graves, possibly 14, were located in this general area and the markers had been bulldozed from their original locations during pasture clearing operations (Leehan 1977).

Saunders (1980) conducted test excavations on three archeological sites (34OS149, 34OS153, and 34OS155) in 1979. Excavations at 34OS149 produced both historic and prehistoric artifacts. The prehistoric element probably represents an extremely disturbed late prehistoric occupation. Excavations carried out at 34OS153 suggest that the site may represent a Plains woodland occupation. Saunders carried out extensive data recovery excavations at 34OS155 along with radiocarbon dating of samples and extensive lithic analysis. Saunders found three horizontally distinct concentrations of cultural material. Each of the concentrations seems to represent temporary campsites, or "transient camps", which were occupied for differing amounts

of time. Two of the areas date to the Plains Woodland period and one area dates to the Archaic period. Saunders made no recommendations for additional work at any of the sites.

More recent surveys were conducted in 2001 in support of this land transfer (Raab and Rust 2002). During these surveys of 1223 acres comprising parcels in the northern and southern ends of the Candy Lake property, one new site (34OS664) and 10 isolated finds were recorded. The 10 isolated finds were recommended as ineligible for listing on the National Register of Historic Places (NRHP) and no further work is recommended for any of those locations. Artifacts recovered from 34OS664 include faunal remains, a partial Folsom preform, and a dart point dating to the Archaic period. Further work is recommended for this site because of its information potential for both the archeology and geomorphology of the area. Both 34OS664 and the previously recorded 34OS155 are located on Mason series soils. Their association with Mason series soils conform to a predictive model developed by Reid and Artz (1984) for locating pre-A.D. 1 occupations within the region based on the presence of Mason series soils. These soils provide good drainage in the middle and lower reaches of stream valleys, providing stable surfaces for soil development. The Osage County Soil Survey documents Mason soils throughout much of the Candy Creek floodplain, suggesting potential for further discovery of human activity dating to the Early and Middle Holocene.

Four previously recorded archeological sites (34OS155, 34OS187, 34OS191, and 34OS192) were revisited in the 2001 surveys. Site 34OS155 could not be relocated during the 2001 survey. However, site 34OS155 has been extensively tested and evaluated and was concluded that further investigation would be unlikely to yield data or information of a unique or significant scientific nature. As a result, no additional work is recommended at this site. A rock shelter was located opposite of 34OS155 but no cultural material was recovered from either the surface or in shovel tests in the vicinity of the rock shelter. The three other previously recorded sites (34OS187, 34OS191, and 34OS192) were already determined to be not eligible for listing on the NRHP and the findings of the 2001 survey concur with the previous assessments of the sites. The current project has made reference to these investigations and has reexamined several of the sites recorded by them. Additional information has been gathered on the history of the area from Mary Elizabeth Good's publication on the Bird Creek Basin (Good 1977).

A pedestrian survey of the remaining 2,434 acres of the Candy Lake project site was completed in 2003 and 2004. Locations of eight previously recorded archeological sites were revisited and

reevaluated (Table 3-5). They are sites 34OS148, 34OS149, 34OS150, 34OS151, 34OS152, 34OS153, 34OS154, and 34OS158. The scope of work and schedule for the current fieldwork allowed the crew to reexamine known archeological sites by conducting limited shovel testing along with the pedestrian walkover. At least two of the sites, 34OS149 and 34OS150 yielded surface and subsurface material indicating the presence of cultural deposits having some level of integrity. However, cultural deposits at site 34OS149 appear to be of very low density and may have a questionable degree of integrity. Therefore site 34OS149 was recommended as ineligible for listing on the NRHP. Only a single flake from one shovel test was recovered from site 34OS150, and provided no indication of the presence of intact prehistoric or historic cultural deposits at the site. Therefore site 34OS150 was also recommended as ineligible for listing on the NRHP. Four of the sites could not be relocated using GPS plotting, walkover, and shovel testing. One site, 34OS154, appears to have been destroyed. One other site, 34OS152, appears to be a natural feature. This site had been recorded originally as a 2-3 course wall with evidence of fire nearby (recorded by Saunders 1980—does not appear in survey report). Because only a few rocks were observed, it might be conjectured that much of the structure has eroded away in the intervening years. There was no good evidence, however, that any of the rocks observed during this survey had been placed deliberately.

Efforts to relocate the remaining previously recorded archeological sites were unsuccessful. Site 34OS148 was originally recorded as a small artifact scatter and sites 34OS151, -153, and -158 were originally recorded as prehistoric lithic scatters. Thus, based on previous archeological work and because sites 34OS148, -151, -153, and -158 could not be relocated, they were recommended as ineligible for listing on NRHP.

Two additional historic period archeological sites were recorded on the Candy Lake property, 34OS699, and 34OS700 (see Table 3-5). Site 34OS699 was identified as a more recent home site and appears to date from a time after the initial Osage allotments, and does not seem to conform to the location of any known Osage homestead in the project area. Its later date, lack of structural integrity, and lack of clear association with recorded Osage tribal activity suggests that it is ineligible for inclusion in the NRHP. No additional research is recommended there at this time.

Table 3-5. Archeological Sites Recorded, and Recommended NRHP Status

Site No.	USACE NRHP Eligibility Determination	OAS NRHP Eligibility Determination	SHPO NRHP Eligibility Determination
34OS147	Ineligible	Ineligible	N/A
34OS148	Ineligible	Ineligible	Ineligible
34OS149	Ineligible	Ineligible	Ineligible
34OS150	Ineligible	Ineligible	Ineligible
34OS151	Ineligible	Ineligible	N/A
34OS152	Ineligible	N/A	Ineligible
34OS153	Ineligible	Ineligible	N/A
34OS154	Ineligible	Ineligible	N/A
34OS155	Eligible, but mitigated	Sufficient mitigation completed	N/A
34OS156	Ineligible	Ineligible	N/A
34OS157	Ineligible	Ineligible	N/A
34OS158	Ineligible	Ineligible	N/A
34OS187	Ineligible	Ineligible	Ineligible
34OS191	Ineligible	Ineligible	N/A
34OS192	Ineligible	Ineligible	Ineligible
34OS664	Potentially eligible	Potentially eligible	N/A
34OS699	Ineligible	N/A	Ineligible
34OS700	Potentially eligible	N/A	Potentially eligible

Site 34OS700, also a historic homestead, appears to have undergone greater alteration in modern times, with the addition of concrete and cinderblock features. The site cannot be considered NRHP-eligible based on structural integrity, but may have historic associations with a known Osage family, as well as archeological information. Additional research, both archeological and archival, is needed to confirm its NRHP status.

Lastly, it is important to evaluate the potential effect of the proposed property transfer on buried floodplain deposits that could not be tested within the parameters of the current project, as well as areas with heavy vegetative cover that could not be fully explored with shovel tests. Information from Saunders' earlier study provides a fairly clear picture of the broad sequence of deposition in the Candy Creek floodplain (Saunders 1980). It would be irresponsible to postulate the existence of well-preserved paleo-land surfaces based on Saunders's single radiocarbon date of 8,445±140 B.P. for Unit C, but it does suggest that sediments falling well within the time range of human occupation could occur at depths of more than nine feet below the current surface. Further, the possible existence of the Copan Paleosol at Candy Creek, known from other locations in the region, increases the probability that buried sites are present

that are closer to the ground surface and thus more susceptible to disturbance by ranching, farming, or oil production.

3.11 AESTHETICS

Aesthetic resources are the natural and man-made landscape features that appear indigenous to the area and give a particular environment its visual characteristics. Aesthetic resources are present throughout the project area and consist of woodlands and grasslands on ridges along the edge of the Candy Creek floodplain. In general, the visual characteristics of the area are open space consisting of natural areas within a primarily rural region.

3.12 HAZARDOUS, TOXIC, AND RADIOLOGICAL WASTE

The potential for discovery of hazardous, toxic, and radiological waste (HTRW) during the conveyance procedures of the Candy Lake property was evaluated through examination of historic and current land use, review of environmental data bases, interviews with local regulatory personnel, and visual observations.

Lands in the project area are primarily composed of agricultural land, undeveloped riparian woodlands and other categories of undeveloped lands. As such, these lands have not been subject to industrial development or other land use activities with associated potential for significant HTRW contamination. In addition, lands in close proximity to the project area share similar land uses and have a low potential for contaminant transport to the project. Accordingly, there is no reason to believe that environmental media in the project area have been significantly contaminated by past or current land practices or by releases from adjoining properties. No hazardous, toxic or radiological waste was observed, and potential for encountering these materials is minimal.

A search of environmental databases revealed no documented areas of HTRW contamination near the project location. A search of the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database revealed the presence of five CERCLIS-listed sites in Osage County, Oklahoma. However, all are a significant distance from the project. Similarly, 78 sites listed on the Resource Conservation and Recovery Information System (RCRIS) database were noted in Osage County, but also are removed from the area and are related primarily to petroleum activities. Based on the information in these

environmental databases, there is a low probability of HTRW related problems from documented sources of contamination.

In addition to searches of environmental databases, local personnel of the Tulsa District Corps of Engineers in Osage and Tulsa County, Oklahoma were contacted for information related to potential areas of contamination that could affect conveyance procedures. None of the individuals contacted were aware of any HTRW related issues near the project.

Although petroleum activities are not considered under HTRW guidelines, a Phase I Environmental Site Assessment was conducted in September and October 2003 to identify recognized environmental conditions, as defined in ASTM Standard E 1527-00, associated with oil and gas exploration and production on the project. Historical and current oil and gas exploration and production was evident through historical records, light-duty roads, shut-in wellheads, active producing wells, flow lines, pits, and tank batteries. Historical records indicate that over 200 wells have been drilled on the project since the early 1900's. Most impacts identified were at active well sites and tank batteries. Some residual contamination was still present at inactive tank batteries that historically had adverse impacts. Impacts identified during the assessment included stained soil and erosion scars from previous oil and brine releases, crude oil at virtually all active wells, spills or leaks from drums of chemicals, spills during oil or salt water transfer, overflow of brine or crude oil, spills during cleaning out of tanks, and naturally occurring radioactive material above background levels. The assessment concluded with evidence of two recognized environmental conditions, as defined in ASTM Standard E 1527-00; releases of crude oil and brine at well locations and tank batteries, and naturally occurring radioactive material levels greater than two times background levels at two tank batteries.

Finally, a site visit was conducted in May 2004 and included a search for sites with visual evidence of potential HTRW-related problems. The site visit included the use of ATV's for greater access to and better coverage of the project area. Visual evidence of potential HTRW contamination such as areas of soil staining, unusual vegetative distress, drums of containerized waste, unusual topography (mounds or depressions), or other indicators of HTRW contamination was not noted at any location. A few solid waste dumping areas were noted that consisted essentially of household waste (household products, furniture, appliances, etc.) that could contain hazardous material. However, the areas are small (generally less than 20 feet x

20 feet). The potential for discovery of hazardous materials in these areas exists due to the unknown nature of the products disposed, although the likelihood of encountering a significant problem is low. Apart from these small areas that appear to be household trash dumps, the potential for discovery of HTRW during the land transfer is believed to be very low. However, no toxic or hazardous substances subject to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or requiring removal have been identified.

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SECTION 4.0
ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION



4.0 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

This section of the EA describes the potential impacts, beneficial and adverse, of the Proposed Action and No Action alternatives on the human and natural environment. An impact (consequence or effect) is defined as a modification to the human or natural environment that would result from the implementation of an action. The impacts can be either beneficial or adverse, and can be either directly related to the action or indirectly caused by the action (secondary, indirect, or synergistic effects). The effects can be temporary (short-term), long lasting (long-term), or permanent. For purposes of this EA, temporary effects are defined as those that would last less than three years after completion of the action. Long-term impacts are defined as those that would last three or more years.

Impacts can vary in degree or magnitude from a slightly noticeable change to a total change in the environment. The significance of the impacts presented in this EA is based upon existing regulatory standards, scientific and environmental knowledge, and best professional opinions of the authors of the EA. The significance of the impacts on each resource would be described as either significant, insignificant (or negligible), or no impact. Significant impacts are those effects that would result in substantial changes to the environment (as defined by 40 CFR 1500-1508) and should receive the greatest attention in the decision-making process.

The following discussions describe and, where possible, quantify the potential effects of the two alternatives on the resources within or near the project area. The analysis assumes direct impacts would only occur as a result of the land conveyance from public to private ownership and that indirect impacts would be a result of any modifications to the property after the transfer to private ownership. It is impossible to accurately predict future specific use of the transferred lands. It is assumed that the future use in private ownership would be similar to historic land uses prior to Government ownership. However, because the land is zoned Agricultural, after the parcels are returned to private ownership they can be subdivided into any lot size with approval from the Osage County Planning and Zoning (Osage County Planning and Zoning Department). These discussions are presented in the same sequential order as they appeared in Chapter 3 for each alternative carried forward for analysis.

4.1 LAND USE

4.1.1 Proposed Action Alternative

The Candy Lake project area is generally undeveloped and the conveyance of the land would have no direct impacts on land use. However, indirect impacts to land use are dependent on the decisions of future landowners. Grazing and petroleum extraction are expected to continue at or below current rates resulting in no indirect impacts. Under private ownership, hunting and wildlife viewing would be limited to the discretion of landowners. However, opportunities and lands available for wildlife viewing are abundant in the area (e.g., 20 State Parks are located in the northeastern region of Oklahoma) and the conveyance of Candy Lake lands would have no impact to wildlife viewing on a regional scale. Public access for hunting is substantially more limited locally but more widely available regionally. However, hunting opportunities would still be available on many private lands locally and future uses of the Candy Lake area under private ownership may still include hunting. Therefore, this change in land use constitutes a minor indirect impact.

Candy Lake is in a rural area of Oklahoma and the potential for conveyance to result in future development of housing or industry is minor. Furthermore, the majority of the land is located in a flood zone restricting housing development. Skiatook is the nearest, growing urban area and represents the only potential source of urban growth. Although Skiatook is only 15 miles south, it is a small rural community that serves as a buffer against development of the Candy Lake area by the northward expansion of the city of Tulsa, which is south of Skiatook. Furthermore, the lack of available potable water supply system also limits the development of housing in the project area.

4.1.2 No Action Alternative

Hunting activities would continue at current levels. Wildlife viewing is limited due to current lack of infrastructure and is not expected to improve under the No Action Alternative. Oil and gas drilling would be maintained at current levels and would not be impacted by the No Action Alternative. However, lands in the Candy Lake project area would be protected from development.

4.2 SOILS AND PRIME FARMLAND

4.2.1 Proposed Action Alternative

Under the Proposed Action Alternative no direct impacts to soils would occur. Land conveyance could have a minor beneficial indirect impact to soils through the incentive of private owners to practice sustainable grazing and to limit damages caused by petroleum extraction. However any improvements in grazing practices are completely dependent upon the actions of future landowners. Indirect adverse impacts to soils from the construction of new houses, roads or buildings by future landowners cannot be quantified. However, it is anticipated that future landowners would construct few new buildings or associated infrastructure resulting in no more than a minor impact to soils. It is unlikely that any direct or indirect impacts would occur to prime farmlands because the likely future land use under private ownership would be grazing and agriculture.

4.2.2 No Action Alternative

No changes in current land use would occur with the No Action Alternative; therefore, no impacts to soils or prime farmlands are anticipated.

4.3 VEGETATION

4.3.1 Proposed Action Alternative

Conveyance to private ownership would result in no direct impacts to vegetation. There are no grazing leases on the Candy Lake lands at present; therefore, much of the vegetation in the area is relatively undisturbed. Private landowners would likely increase grazing on the project area. However, private landowners would have the ability to instill sustainable grazing practices that would result in an insignificant beneficial impact to prairie communities. Private landowners would have the option of clearing upland or riparian communities for development or agriculture. Conversion of these communities would have a moderate impact locally. However, post oak – blackjack forest communities are relatively intact at a regional scale, especially when compared to other forest communities in North America. Bottomland and riparian woodlands are also well represented regionally. Therefore, any future conversion of upland and riparian communities for development or agriculture would have only a minimal regional impact to vegetation.

4.3.2 No Action Alternative

The lack of adequate fencing suggests that grazing does occur on at least a small part of the Candy Lake project area. Due to the lack of on site management in the area and inadequate infrastructure, it is difficult to monitor or enforce stocking rates in accordance with accepted, sustainable grazing practices. A continued lack of management would contribute to the current trend of prairie habitat degradation resulting in a further loss of native grasses and forbs in portions of the project area. Overall, this impact is insignificant. There would be no impacts to riparian or other upland plant communities from the No Action Alternative.

4.4 WILDLIFE

4.4.1 Proposed Action Alternative

Conveyance to private ownership would result in no direct impacts to wildlife. Indirect impacts would depend on the actions of landowners as previously described, but because the wildlife habitats at Candy Lake are locally and regionally common, and are fragmented from other resource lands by agriculture and development, any actions by landowners are expected to have only minor impacts to wildlife populations. Hunting pressure on some wildlife species (e.g., deer) may be reduced as a result of the land transfer.

4.4.2 No Action Alternative

Most of the management at the project site has been for small game hunting. Future conditions for wildlife would be similar to existing conditions; therefore, there would be no impact to wildlife under the No Action Alternative.

4.5 PROTECTED SPECIES AND CRITICAL HABITATS

4.5.1 Proposed Action Alternative

Because the project consists of the transfer of land from public to private ownership, no direct impacts to any protected species would occur as a result of the Proposed Action Alternative. Furthermore, no American burying beetles are known from Osage County and only two individuals have ever been trapped in all of northeastern Oklahoma; therefore, the conversion to private ownership and subsequent changes in land use are unlikely to have any indirect effects to the American burying beetle. Furthermore, activities that are likely to have the greatest impact on protected species are oil and gas extraction and grazing, and these activities currently occur in the project area. No direct or indirect impacts would occur to the bald eagle

as a result of the Proposed Action Alternative since no nesting habitat is present on-site and suitable foraging habitat for bald eagles is widely available in northeastern Oklahoma.

4.5.2 No Action Alternative

There would be no impacts to any protected species from the No Action Alternative because no changes to land use or to habitat quantity or quality would occur.

4.6 AIR QUALITY

4.6.1 Proposed Action Alternative

Conveyance to private ownership would have no direct impacts on air quality. Conversion of lands for development or agriculture has the potential to indirectly impact air quality both temporarily and long term. However, increased fugitive dust or emissions would be minimal due to the limited area that would likely be developed. Furthermore, limiting public access to existing dirt and gravel roads could provide a beneficial indirect impact by reducing fugitive dust emissions. Minor or no changes in air quality associated with petroleum extraction are anticipated under the Proposed Action Alternative.

4.6.2 No Action Alternative

Impacts on air quality resulting from current levels of vehicle traffic or petroleum extraction are insignificant.

4.7 WATER RESOURCES

4.7.1 Proposed Action Alternative

Conveyance to private ownership would have no direct impacts on water quality. However, any future conversion of lands for development or agriculture has the potential to impact water quality both temporarily and long term. Increases in erosion or agricultural/petroleum pollution would be minimal due to the limited area likely to be developed, and the potential impact is insignificant. Since little development by private landowners is anticipated, no impacts to the region's water supply are anticipated. The transfer of land would have no direct effect on WUS, wetlands or floodplains. Furthermore, any future development by private landowners would be subject to Federal, state and local regulations concerning impacts to WUS and wetlands as well as constructing in a floodplain. These regulations would insure that there are no long-term impacts to water resources from the Proposed Action.

4.7.2 No Action Alternative

Impacts to water quality resulting from vehicle traffic or petroleum extraction would not change from existing conditions. No impacts to WUS or wetlands would occur and no development would be placed in the floodplain.

4.8 SOCIOECONOMICS

4.8.1 Proposed Action Alternative

Under conveyance to private ownership a minor increase in local population may occur as some new owners relocate to newly acquired land. As a result there would also be a minimal increase in housing in the area. Since no major shift in land use is expected to result from this alternative, population and housing increases are expected to be minimal with most of the land being used for grazing. Because the land would be transferred to private ownership there would be a minor increase in tax revenues. In addition, more lands would be open for production, particularly grazing, which would also cause a minimal increase in local revenues. As a result, conveyance to private ownership would have minor beneficial impacts to the overall socioeconomics of the area.

EO 12898 requires each Federal agency to identify and address, as appropriate, disproportionate adverse effects of its proposed actions on minority populations and low-income communities. As indicated earlier in this EA, the racial mix of the study area is predominantly Caucasian and low-income populations are prevalent in the ROI. No adverse impacts to any population, minority or otherwise, are expected from the conveyance of the land to private ownership. Furthermore, minor beneficial impacts to socioeconomics of the region are expected from the land conveyance.

EO 13045 requires each Federal agency “to identify and assess environmental health risks and safety risks that may disproportionately affect children;” and “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.” Conveyance of the land to private ownership would not increase any environmental health or safety risks to any population, including children.

4.8.2 No Action Alternative

No impacts, either adverse or beneficial, are expected from the No Action Alternative.

4.9 CULTURAL RESOURCES

4.9.1 Proposed Action Alternative

The USACE has completed consultation with the Oklahoma State Historic Preservation Office (SHPO), the Oklahoma Archeological Survey (OAS) and the Osage Tribe regarding potential impacts to cultural resources. It has been determined that sites 34OS147, -148, -149, -150, -151, -152, -153, -154, -157, -158, -187, -191, and -192 are ineligible for listing on the NRHP. Site 34OS155 has been previously determined to be eligible for the NRHP, but was mitigated through archeological excavation in 1979. Site 34OS664 is a buried cultural deposit and additional geomorphological and archeological work is required to assess the integrity of the cultural resources on-site and is therefore potentially eligible. Site 34OS699 is an historic site that has been determined to be ineligible for listing on the NRHP while site 34OS700 is also an historic site that requires additional archeological and archival research to determine its NRHP eligibility. Therefore, parcels containing sites 34OS664 and -700 would require additional assessment prior to their transfer. If either site were found to be eligible for the NRHP then mitigation would be conducted as recommended by the SHPO.

There remains a high probability of buried cultural deposits in the Candy Creek valley and adjacent stream terraces. Additional subsurface exploration of the Candy Creek valley would be necessary to determine the potential effect on cultural resources of the proposed land transfer. Trenches would be established at specific locations determined in consultation with the SHPO and OAS prior to the transfer of specific tracts of land within the Candy Creek valley.

The Proposed Action Alternative would have no impacts on historic properties involving parcels that do not contain sites or areas previously proposed as requiring additional archeological work. Furthermore, those parcels that do contain sites would have further evaluation prior to their transfer. As a result, no significant adverse impacts are anticipated from the conveyance of land to private ownership.

4.9.2 No Action Alternative

Under the No Action Alternative the current level of active protection and preservation of cultural resources would continue. As a result, no adverse impacts, either direct or indirect, would be anticipated to cultural resources under the No Action Alternative.

4.10 NOISE

4.10.1 Proposed Action Alternative

It is not anticipated that noise levels would change over the long term with the implementation of the Proposed Action Alternative. The project area would remain primarily rural with similar levels of noise generated from oil and gas activities. Some reduction in noise from small game hunting may occur as public hunting is eliminated. No sensitive noise receptors (e.g., churches, schools) are present in the project area.

4.10.2 No Action Alternative

No change in hunting or oil and gas activities would occur from the No Action Alternative; therefore, no impacts from noise would occur.

4.11 AESTHETICS

4.11.1 Proposed Action Alternative

Some land use changes associated with the Proposed Action Alternative have the potential to indirectly impact the aesthetic resources of the Candy Lake area. The proposed action could lead to land clearing by private landowners or the construction of houses, barns and driveways. However, the area would remain primarily rural and visually appealing; therefore, the proposed action would have only a minor impact on aesthetics.

4.11.2 No Action Alternative

No changes to the visual properties of the project area would occur from the No Action Alternative.

4.12 SOLID AND HAZARDOUS WASTE

4.12.1 Proposed Action Alternative

The sale of the 26 parcels to private ownership would terminate the Federal Government's operation under CERCLA. CERCLA requires that the USACE determine whether the parcels are potentially contaminated prior to the land transfer. If any of the parcels are found to be contaminated with toxic substances subject to CERCLA, the USACE would be required to ensure that the contamination is cleaned-up prior to the land transfer. This would insure that

there would be no adverse impacts from hazardous waste on the site as a result of the land transfer.

4.12.2 No Action Alternative

There would be no effect on hazardous waste from the implementation of the No Action Alternative. Any identified hazardous waste on the project site would be cleaned-up.

4.13 SUMMARY OF EFFECTS.

Table 4-1 provides a summary of the potential effects that would occur upon implementation of each alternative.

4.14 CUMULATIVE EFFECTS

This section of the EA addresses the potential cumulative impacts associated with the implementation of the alternatives and other projects/programs that are planned for the region. The following paragraphs present a general discussion regarding cumulative effects that would be expected irrespective of the alternative selected.

The CEQ defines cumulative impacts as the incremental impact of multiple present and future actions with individually minor but collectively significant effects. Cumulative impacts can be concisely defined as the total effect of multiple land uses and developments, including their interrelationships, on the environment.

Only one project was identified in the immediate vicinity of the Candy Lake Project area. Osage County is in the planning stages of realigning County Road E0330 and replacing the Candy Creek Bridge on E0330. This County Road bisects the Candy Lake project area. The realignment would and bridge replacement would only affect approximately 2500 feet of the road. Under the Proposed Action, this project is not anticipated to cause significant cumulative environmental impacts.

Table 4-1. Summary Matrix of Potential Impacts

Affected Resource	No Action Alternative	Conveyance to Private Ownership
Land Use	No impacts to land use are expected.	No direct impacts. Minor indirect impacts due to the loss of public access for hunting.
Soils	No impacts to soils are expected.	No direct impacts. Potential indirect impacts from the construction of new buildings and roads by future landowners but impacts impossible to quantify.
Biological Resources	No impacts are expected.	Minor indirect impacts to vegetation from clearing of upland and riparian plant communities by private landowners. No impacts to wildlife or protected species are anticipated from the land conveyance.
Cultural Resources	No effects are anticipated.	Parcels that do not contain sites or areas requiring additional archeological work would be transferred with no impacts. Cultural resources that are determined to be eligible for listing in the NRHP would be mitigated prior to the transfer of those parcels from Federal ownership.
Air Quality	No adverse effects are anticipated.	Only minimal increases in fugitive dust from the conversion of land to agriculture are anticipated.
Water Resources	No adverse impacts are anticipated.	No significant impact to region's water supply or water quality. Although WUS including wetlands occur within the project area, any future development by private landowners would need to comply with Federal, state and local regulations.
Socioeconomics	No effect on the regional or local economy is expected.	No direct impacts. Slight benefits to the region of influence due to an increased tax base are anticipated.
Environmental Justice and Protection of the Children	No impacts are expected to occur.	No impacts are expected to occur.
Noise	No adverse impacts are expected.	No changes in noise levels are expected.
Aesthetics	No impacts are expected to occur.	Some land clearing may occur under private ownership but the area would remain visually appealing resulting in only minor impacts to aesthetics.
Hazardous Materials	No adverse impacts are expected.	Any parcels found to be contaminated would be remediated prior to the conveyance of the land to private ownership.

SECTION 5.0
MITIGATION PLAN



5.0 MITIGATION PLAN

This chapter describes environmental design measures that would be implemented as part of the land transfer to reduce or eliminate impacts from the proposed actions. Therefore, mitigation measures are only described for those resources with potential for impacts.

5.1 CULTURAL RESOURCES

Coordination with the SHPO, OAS and interested Native American Tribes has been completed as part of the Section 106 and NEPA process. For those parcels that do not contain sites or areas requiring additional archeological work, they can be transferred out of Federal ownership without any mitigation. Sites 34OS664 and -700 require additional archeological work prior to the parcels on which they reside being transferred out of Federal ownership. If additional archeological work determines that either site 34OS664 or 34OS700 are eligible for listing in the NRHP, mitigation (e.g. through excavation or another mutually agreed to measure) would be implemented.

Because the Candy Lake valley and adjacent stream terraces have a high probability of buried cultural deposits, additional subsurface exploration of the Candy Creek valley would occur prior to the transfer of those parcels. Specific locations for trenches would be determined in consultation with the SHPO, OAS, and interested Native American tribes, but would likely occur in landforms representative of the Candy Creek valley while maximizing the number of parcels that would be immediately available for sale to the previous landowners.

Through all levels of the Section 106 and NEPA process, consultation would be conducted with the appropriate Federally recognized tribes that claim a cultural affinity to the impacted area. These consultations could take the form of formal consultation letters, reviews of the NEPA documents, and reviews of the cultural resources survey reports for the appropriate projects.

5.2 HAZARDOUS WASTE

The USACE would insure that the requirements of CERCLA are met prior to the conveyance of any of the 26 parcels.

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SECTION 6.0
FEDERAL, STATE AND LOCAL AGENCY COORDINATION



6.0 FEDERAL, STATE AND LOCAL AGENCY COORDINATION

The draft EA was coordinated with the following agencies having legislative and administrative responsibilities for environmental protection. A copy of the correspondence from those agencies that provided comments and planning assistance for preparation of the draft EA are in the appendices. The mailing list for the 30-day public review period for this EA is in Appendix A.

- U.S. Fish and Wildlife Service (USFWS)
- Oklahoma Department of Wildlife Conservation (ODWC)
- U.S. Environmental Protection Agency (EPA)
- U.S. Forest Service (USFS)
- Natural Resource Conservation Service (NRCS)
- Oklahoma Archeological Survey
- Oklahoma State Historic Preservation Office
- Oklahoma Department of Environmental Quality
- Osage Nation of Oklahoma
- Kaw Tribe of Oklahoma
- Cherokee Nation of Oklahoma
- Wichita and Affiliated Tribes of Oklahoma
- Quapaw Tribe of Oklahoma

6.1 PUBLIC REVIEW

The draft EA was made available for public review for a period of 30 days. The Notice of Availability (NOA) of the draft EA for the 30-day public review period was published in local newspapers and the draft EA was made available electronically at <http://www.swt.usace.army.mil/>. Comments received during the public review period are included in Appendix E.

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SECTION 7.0
REFERENCES



7.0 REFERENCES

- Anderson, R.S. 1982. On the decreasing abundance of *Nicrophorus americanus* Olivier (Coleoptera: Silphidae) in eastern North America. *Coleopterists Bulletin* 36:362-365.
- Bellah, R. and L. Hulbert. 1974. Forest succession on the Republican River Floodplain in Clay County, Kansas. *Southwest Naturalist*. 19(2): 155-166.
- Bureau of Economic Analysis (BEA). 2004. Internet Website: <http://www.bea.gov>. Last accessed: February 9, 2004.
- Burt, W. H., and R. P. Grossenheider. 1964. A field guide to the mammals. Houghton Mifflin Co., Boston.
- Conant, R., 1958. A field guide to reptiles and amphibians of eastern North America. Boston: Houghton-Mifflin.
- Conestoga-Rovers & Associates 2004. *Phase I Environmental Site Assessment, U.S. Army Corps of Engineers Property, Proposed Candy Lake Osage County, Oklahoma.*
- Creighton, J.C., C.C. Vaughn, and B.R. chapman. 1993. Habitat preference of the endangered American burying beetle (*Nicrophorus americanus*) in Oklahoma. *Southwestern Naturalist* 38:275-277.
- Federal Interagency Committee on Noise. 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues.*
- Good, M.E. 1977. *Historical Review: Bird Creek Basin from 1800.* Prepared under Contract #DACW56-77-C-0016. Submitted to the USACE, Tulsa District, Tulsa, Oklahoma.
- Johnson, R. and P. Risser. 1972. Some vegetation-environment relationships in the upland forest of Oklahoma. *Journal of Ecology* 60:655-663.
- Johnson, F.L., and P.G. Risser. 1973. Correlation Analysis and Annual Ring Index of Central Oklahoma Blackjack and Post oak. *American Journal of Botany*. 60:475-47.
- Leehan, D. Kevin. 1977. *Archeological Investigations at Candy Lake, Osage County, Oklahoma.* Archeological Research Associates. Tulsa, Oklahoma
- Lish, J.W., and Sherrod, S.K. 1986. A history of bald eagle nesting activity in Oklahoma. *Proceedings of Oklahoma Academy of Science* 66:15-20.
- Lomolino, M.V., J.C. Creighton, G.D. Schnell, and D.L. Certain. 1995. Ecology and conservation of the endangered American burying Beetle (*Nicrophorus americanus*). *Conservation Biology*, 9:605-614.
- Oklahoma Department of Wildlife Conservation. 2004. 2002 Deer Harvest Totals, Electronic Document: <http://www.wildlifedepartment.com/deer.htm>. Last accessed March 12, 2004.

- Oklahoma Employment Security Commission. 2004. Local Area Unemployment Statistics, Electronic Document: <http://www.oesc.state.ok.us/lmi/LAUS/2003/lfs-1103.htm>. Last accessed February 9, 2004.
- Proctor, Rebeca. 2004. *Cultural Resources Inventory of 2,434 Acres at Candy Lake, Osage County*. Engineering and Environmental Management Inc. (e²M). Littleton, Colorado.
- Raab, Holly A. and James F. Rust. 2002. *Cultural Resources Survey of 1,224 Acres at Candy Lake, Osage County, Oklahoma*. Engineering and Environmental Management Inc (e²M). Littleton, Colorado.
- Reid, K.C. and J.A. Artz 1984. *Hunters of the Forest Edge: Culture, Time and Process in the Little Caney Basin (1980, 1981, and 1982 Field Seasons)*. Laboratory of Archeology, Contributions in Archeology 14 and Oklahoma Archeological Survey, Studies in Oklahoma's Past 13. University of Tulsa, Tulsa, Oklahoma.
- Saunders, Joe. 1980. *A Reassessment of Certain Archeological Sites in the Candy Lake Area, Oklahoma*. Archeological Research Associates Research Report No. 22. Tulsa, Oklahoma.
- Sutton, G.M. 1967. *Oklahoma Birds*. Univ. of Oklahoma Press, Norman, OK.
- U.S. Army Corps of Engineers. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Waterways Experiment Station, Corps of Engineers, Vicksburg, Mississippi.
- U.S. Census Bureau. 2004. Internet Website: <http://www.census.gov/>. Last accessed February 9, 2004.
- U.S. Department of Agriculture. 1979. *Soil Survey of Osage County, Oklahoma*. U.S. Department of Agriculture Soil Conservation Service and U.S. Department of the Interior Bureau of Indian Affairs.
- U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety*. 550/9-47-007. U.S. Environmental Protection Agency Office of Noise Abatement and Control.
- U.S. Environmental Protection Agency. 2004a. Electronic Document: <http://www.epa.gov/air/criteria.html>. Last accessed March 12, 2004.
- U.S. Environmental Protection Agency. 2004b. Electronic Document: <http://www.epa.gov/air/data/nonat.html?st~OK~Oklahoma>. Last accessed March 12, 2004.
- U.S. Geological Survey 2004b. Internet Website: <http://nwis.waterdata.usgs.gov/>. Last accessed March 12, 2004.
- U.S. Fish & Wildlife Service. 2004a. Electronic Document: <http://ifw2es.fws.gov/EndangeredSpecies/lists/ListSpecies.cfm>. Last accessed March 12, 2004.

U.S. Fish & Wildlife Service. 2004b. Electronic Document:

<http://ifw2es.fws.gov/Oklahoma/beetle1.htm>. Last accessed March 12, 2004.

U.S. Fish & Wildlife Service 2004. Internet Website: <http://ifw2es.fws.gov/AustinTexas>. Last accessed January 28, 2004.

Ward, M. and R. McWright 2004. personal communication. Natural Resource Conservation Service, Pawhuska Field Office.

Wilson, E.O. 1971. *The Insect Societies*. Harvard University Press, Cambridge, Massachusetts.

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SECTION 8.0
APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

8.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

This EA analyzes the potential environmental impacts, both beneficial and averse, associated with the implementation of the proposed action and alternatives to the proposed action. In addition to NEPA, the pertinent environmental requirements that guided the development of this EA are presented in Table 8-1 below.

Table 8-1. Pertinent Environmental Statues and Regulations

Federal Statutes	Compliance of Alternatives*
Archeological and Historical Preservation Act of 1974	Full Compliance
Clean Air Act of 1955, as amended	Full Compliance
Clean Water Act of 1977, as amended	Full Compliance
Endangered Species Act of 1973, as amended	Full Compliance
Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.	Full Compliance
Migratory Bird Treaty Act of 1972	Full Compliance
National Historic Preservation Act of 1966, as amended	Full Compliance
National Environmental Policy Act of 1969, as amended	Full Compliance
Water Resources Development Act of 1999	Full Compliance
Watershed Protection and Flood Prevention Act of 1954	Full Compliance
Wild and Scenic Rivers Act of 1968, as amended	Full Compliance
Farmland Protection Policy Act of 1980	Full Compliance
Native American Graves Protection and Repatriation Act of 1990	Full Compliance
Comprehensive Environmental Response, Compensation, and Liability Act, 1980, as amended, 42 U.S.C. 9601, et seq.	Full Compliance
Resource Conservation and Recovery Act, 1976, as amended, 42 U.S.C. 6901 et seq.	Full Compliance
Executive Orders, Memorandums, etc.	
Floodplain Management (E.O. 11988) of 1977	Full Compliance
Protection of Wetlands (E.O. 11990) of 1977	Full Compliance
Federal Actions to Address Environmental Justice to Minority Populations and Low-Income Populations (E.O. 12898) of 1994	Full Compliance
Protection of Children from Environmental Health Risks (E.O. 13045) of 1997	Full Compliance
Protection of Migratory Birds & Game Mammals (E.O. 11629) of 2001	Full Compliance
Indian Sacred Sites (E.O. 13007) of 1996	Full Compliance
Executive Order (E.O.) No. 11593, "Protection and Enhancement of the Cultural Environment of 1971	Full Compliance
Consultation and Coordination with Indian Tribal Governments (E.O. 13175) of 2000	Full Compliance
Government-to-Government Relations with Native American Tribal Governments (Presidential Memorandum) of 1994	Full Compliance

*Note: Full Compliance – Having met all requirements of the statutes, Executive Orders, or other environmental requirements for the current stage of planning. N/A – Not Applicable

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SECTION 9.0
LIST OF PREPARERS



9.0 LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Assessment.

Name	Agency/Organization	Discipline/Expertise	Experience	Role In Preparing EA
Chris Ingram	Gulf South Research Corporation	Biology/Ecology	25 years NEPA and related studies	Document review
Eric Webb	Gulf South Research Corporation	Biology/Ecology	14 years NEPA and related studies	Project Manager
John Lindemuth	Gulf South Research Corporation	Archeology and Anthropology	11 years archeological studies	Socioeconomics, cultural resources
Brad Yarbrough	Gulf South Research Corporation	Environmental Studies	3 years natural resource and NEPA studies	Field surveys, water resources
Michael Hodson	Gulf South Research Corporation	Plant Biology/Ecology	3 years of natural resources and NEPA studies	Report Preparation
James Henderson	Gulf South Research Corporation	Botany/Ecology	10 years of natural resources and NEPA studies	Field surveys, plant taxonomy, vegetation and wildlife
David Alford	Gulf South Research Corporation	GIS/Soils	5 year in GIS analyses and cartography	Cartography and graphics, soils

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SECTION 10.0
LIST OF ACRONYMS AND ABBREVIATIONS



10.0 LIST OF ACRONYMS AND ABBREVIATIONS

ASTM	American Society for Testing and Materials
BEA	Bureau of Economic Analysis
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulation
CO	Carbon monoxide
CWA	Clean Water Act
dB	decibel
DNL	Day-Night Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act or Environmental Site Assessment
FICON	Federal Interagency Committee on Noise
FONSI	Finding of No Significant Impact
HAP	Hazardous Air Pollution
SA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOx	Nitrogen Oxides
NO ₂	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NORM	Naturally Occurring Radioactive Material
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWP	Nationwide Permits
O ₃	Ozone
OAS	Oklahoma Archeological Survey
OCAA	Oklahoma Clean Air Act
ODWC	Oklahoma Department of Wildlife Conservation
PCPI	Per Capita Personal Income
PL	Public law
PM	Particulate matter
REC	Recognized Environmental Condition
ROI	Region of Influence
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
TPI	Total Personal Income
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture

USFWS
WUS

United States Fish and Wildlife Service
Waters of the United States

APPENDIX A
COORDINATION/CORRESPONDENCE



Mailing List

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401 South Boston, Suite 3310
Tulsa, OK 74103

U.S. Representative John Sullivan
2424 E. 21st St.
Suite 510
Tulsa, OK 74114

U.S. Representative Frank Lucas
720 South Husband
Suite 7
Stillwater, OK 74075

Senator J. Berry Harrison
State Capitol
2300 North Lincoln Blvd., Rm. 517-C
Oklahoma City, OK 73105

Senator John W. Ford
2300 N. Lincoln Blvd., Rm 512
Oklahoma City, OK 73105

Senator Randy Brogdon
2300 N. Lincoln Blvd., Rm. 527-A
Oklahoma City, OK 73105

Representative Steve Martin
2300 N. Lincoln Blvd., Rm. 528-B
Oklahoma City, OK 73105

Representative Mike Wilt
2300 N. Lincoln Blvd., Rm. 400-B
Oklahoma City, OK 73105

Representative Joe Sweeden
State Capitol
2300 North Lincoln Blvd., Rm. 434
Oklahoma City, OK 73105

Mr. Tom Clapper
Oklahoma State Senate
Federal Action Monitor
Room 310, State Capitol
Oklahoma City, OK 73105

Mr. Michael Jansky
Office of Planning and Coordination
U. S. Environmental Protection Agency
1445 Ross Ave., Suite 1200
Dallas, TX 75202

Mr. Jerry Brabander
Field Supervisor
U.S. Fish & Wildlife Service
222 South Houston, Suite A
Tulsa, OK 74127

Mr. Bobby Jack Jones
Natural Resources Conservation Service
Agriculture Center Office Bldg.
Farm Road & Brumley Street
Stillwater, OK 73074

Ms. Kathy Peter
District Chief
U.S. Geological Survey
202 NW 66th
Oklahoma City, OK 73116

Mr. Greg D. Duffy
Director
Oklahoma Department of Wildlife
Conservation
1801 N. Lincoln
Oklahoma City, OK 73152

Mr. Steve Thompson
Executive Director
Oklahoma Department of Environmental
Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

Mr. Duane Smith
Director
Oklahoma Water Resources Board
3800 N. Classen Blvd.
Oklahoma City, OK 73118

Mr. Ken Morris, C.F.M.
State Floodplain Manager
Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118

Mr. Ian H. Butler
Oklahoma Natural Heritage Inventory
Oklahoma Biological Survey
111 E. Chesapeake Street
Norman, OK 73019-0575

INCOG
Attn: Eugene Edward
201 West 5th St., Suite 600
Tulsa, OK 74103

Dr. Robert L. Brooks
University of Oklahoma
Oklahoma Archeological Survey
111 E. Chesapeake
Norman, OK 73019-0575

Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
2704 Villa Prom, Shepherd Mall
Oklahoma City, OK 73107

Mr. Gary McAdams, President
Wichita and Affiliated Tribes of Oklahoma
P. O. Box 729
Anadarko, OK 73005

Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74465

Osage Nation of Oklahoma
627 Grandview Avenue
Pawhuska, OK 74056

Mr. John Berrey, Chairman
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Kaw Indian Tribe of Oklahoma
Drawer 50
Kaw City, OK 74641

Ms. Margaret Ruff
Administrative Director
Oklahoma Wildlife Federation, Inc.
P.O. Box 60126
Oklahoma City, OK 73146

Mr. Tim Grogan
State Director, Oklahoma Chapter
The Nature Conservancy
2727 East 21st St., Suite 102
Tulsa, OK 74114

Mr. George Brenner
Chair, Green Country Sierra Club
3941 E. 37th Pl.
Tulsa, OK 74135

Mr. John Kennington
President, Tulsa Audubon Society
P.O. Box 2476
Tulsa, OK 74101

Tulsa World
World Publishing Company
318 Main Mall
Tulsa, OK 74103

Barnsdall Times
117 N. 5th
Barnsdall, OK 74002

Bartlesville Examiner-Enterprise
4125 Nowata Rd.
Bartlesville, OK 74006

Skiatook Journal
500 W. Rogers
Skiatook, OK 74070

Public Involvement



U.S. Army Corps of Engineers
Tulsa District

U.S. Army Corps
of Engineers®

PUBLIC SCOPING MEETING
ENVIRONMENTAL ASSESSMENT
FOR
U.S. ARMY CORPS OF ENGINEERS
CANDY LAKE LAND TRANSFER PROJECT
SEPTEMBER 23, 2003

Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
1 Don Jendry	RR 1 Box 115 Barnesdale, Okla	Don Jendry SHILOH LIFE RY OKLA	yes
2 G.F. Murphy	R.F.D. #1 Box 171	Murphy Ranch	yes 774652
3 Francis Murphy	Rt 1 Box 210 Shiloh OK 74652	Murphy Ranch	yes
4 Bernie Filston	Rt 1 Box 498 Barnesdale 74002	Land owner	yes
5 Anne Brantley	1125 W. Main Tulsa OK 74056	County Comm Osage County	Yes



U.S. Army Corps of Engineers
Tulsa District

US Army Corps
of Engineers

Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
Lewis Robert Rutherford	P.O. Box 183 Remond, OK 74061	Self	Yes
Brenda Carter	213 Cedars Lane Horning, OK. 74035	Father	Yes
Chester Thornton	404 S. Wood Horning, OK 74035	Self	Yes
Loyal Henson	Barnsdall, OK 74002	Self	Yes
W.K. Ferguson	15345 Lake Rd Skiatook	Self	Yes.
Glen Hayes	116 N. Avant Ave	Self	Yes
Jim & Phyllis Sims	Box 157 Okmulgee 74051	Self	Yes



U.S. Army Corps of Engineers
Tulsa District

US Army Corps
of Engineers.

Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
13 Doral (Kohmeyer) White	Skiatook, OK. 74070 727 E. 166th St. N.	Self	Yes
14 Michael Saalblad	1831 E 176st. N. Skiatook OK 74076	Self	yes
15 Thye Kohlmeier	RT 1 Box 170 Barksdale OK 74002	Self	yes
16 J.A. Morris	RT 1 Box 231 Skiatook OK 74002	R. Lee, Glasco	Yes
17 W.R. Morrison	Rt Box 304 Barksdale, OK	Myself	yes
18 Jim B. Askew	RR1 Box 301 Barksdale, OK	Kim Adams	Yes.
19 Alberta Cantor-Byfield	Box 174 Delbarton, OK		



U.S. Army Corps of Engineers
Tulsa District

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Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
20 LEESA LEESON PARKER	1013 N FIR JENKS OK 74037	Leeson	Y
21 MARXINE LEESON	40770 N. 3960 RD. SKIATOOK	Leeson	Yes
22 Allan Leeson	40770 N 3960 RD 222 S. Houston Ave TULSA, OK 74127	Leeson U.S. Fish + Wildlife Service, Region 2	Yes
23 Richard Stark	11409 E. 101st St. N. Dwassu, OK 74055	Kohlmeyer	yes
24 Karyn Hofeman	401 S. Boston, Suite 3310 Tulsa, OK 74103	US Senator Don Nickles	yes
25 JERRY MORRIS	1924 S. UTICA, SUITE 530 TULSA, OK 74109-6511	US SEN. TIM WIRTH	yes
26 Curt Peace			



U.S. Army Corps of Engineers
Tulsa District

US Army Corps
of Engineers.

	Name (Please Print)	Address (Mailing)	Representing	Would you like to receive a copy of the environmental assessment?
27	Martin Tucker	Rt 2. Box 59-D Skiatook 74070	Self	Yes
28	Dudley Whitlow	3904 S. Wood Henning	Osage National	Yes
29				
30				
31				
32				
33				



US Army Corps
of Engineers.

Candy Lake Land Transfer Project Barnsdall, Oklahoma Question, Comments, or Suggestions

The Corps of Engineers is interested in addressing your concerns and questions regarding this study. The Corps encourages suggestions as well. Your input is an important part of the Corps study process. Please write your question, comment, or suggestion on the space provided below. If you would like to be kept informed about this study please provide your name and address. Feel free to use the back of this form or add pages if needed. You may also take this form with you and return it to the address below.

Mr. David L. Combs:

The underload in a former meeting we can select
an appraiser in case we are not satisfied with
your appraisal.

The land is only good for ranching purposes because
"a water tap" is not available. We bought the land for
ranching and had completely fenced it with T posts and
5 wire fence. The fences are torn down and our hay meadow
plowed up. We built a cattle pond.

We want to know the depth & thickness of the water table.
Will there be sufficient water for a household?

Optional Information: We would like to be kept informed of further development.
Thank you.

Name: Harvey Littleton & Naomi Littleton Affiliation: _____
Address: RP1 Box 498 City: Barnsdall State: OK
Zip: 74002 Phone: 918-336-1376 E-mail: nglitt@bartnet.net

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



US Army Corps
of Engineers

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*My Opinion is to leave the land, as is, with the
Corps of Engineers. Leave it to the Original owners until
such time as the government will approve the
building of the Lake. Give the indians royalties from
Water usage, instead of oil royalties. The existing oil
wells are not being pumped now anyway.*

*A lake would provide water for the existing Water
Districts in the area. Some of the Districts are now using
all the allotted amounts from the existing lake.*

please consider this option. Thank you.

Also Flood Control for Bird Creek and Highway 11 and 20
Optional Information:

Name: Michael Eschbach Affiliation: Owner
Address: 1831 E 124th N City: Skiatook State: OK
Zip: 74070 Phone: - E-mail:

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



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DEAR SIR

THE LAND IS ALREADY USED AS PUBLIC HUNTING.
 WHY NOT TURN IT OVER TO TALL GRASS PRAIRIE OR
 SOME OTHER ENTITY THAT WILL KEEP IT TOGETHER IN
 ONE PIECE. AT SOME POINT IN TIME PERHAPS
 THE OIL WILL BE LESS THAN WHAT WATER USAGE WILL BE
 I STILL THINK THE SAVINGS DOWN STREAM WITH
 FLOOD CONTROL & SALES OF WATER WOULD BE WORTH
 MORE TO THE INDIANS & PEOPLE OF THE AREA
 THAN OIL WILL BE. WHEN THAT TIME COMES
 IT COULD BE REACQUIRED MUCH EASIER.

THANK YOU

Optional Information:

Name: JOE ECKHART Affiliation: _____
 Address: 1407 E 176TH City: SKIA TOOK State: OK
 Zip: 74070 Phone: _____ E-mail: FLETJE@AOL.COM

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
 1645 S. 101st East Avenue ATTN: CESWT-PE-E
 Tulsa, OK 74128-4629 Phone: 918-669-7660
 e-mail: David.L.Combs@usace.army.mil



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We would like to see the Corp. retain ownership of the property and continue leasing the property back to the old land owners. Continue this relationship until such time that the lake can and would be built. We have an interest in the lake as water rights possibilities with Oklahoma Water Resources and as everybody knows water is a precious resource.

Please consider this as an option.

Thank You.

Optional Information:

Name: Jerry Gammill Affiliation: Washington Co. Rural Water District #3
Address: P.O. Box 70 City: Collinsville State: OK
Zip: 74021 Phone: 918 - 371-2055 E-mail: _____

Point of Contact :

Mr. David L. Combs

**U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil**



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My 2 main concerns are that
the land be sold back the owners
or heirs and that the sell price should
be what was paid to the original owners.
Not today's fair market value.

The reason it should not be fair market
value is because the land is not in the
same condition as it was when it was sold.

It is all over grown, fences are in disrepair
and roads are impassable. It would cost →

Optional Information:

Name: Karyn Hoffman Affiliation: Kohlmeier Property
Address: 11409 E. 101st St N. City: Owasso State: OK
Zip: 74055 Phone: 918-272-1558 E-mail: _____

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil

So much to get the land back
in living/farming condition. This fact
should be taken into consideration
when a sell price is decided.

Abstracts?

Optional Information:
Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Point of Contact: _____
Mr. David L. Combs
U.S. Army Corps of Engineers, Tulsa District
1615 S. 101st East Avenue, STE. C25W1-P-1
Tulsa, OK 74128-6029 Phone: 918-466-7600
e-mail: David.L.Combs@usace.army.mil



US Army Corps
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I will be concerned about what the price will be, when it will be available and I would like to receive all information as it progresses. If I am deceased before the sales are finalized will my children be able to purchase as our heirs. Also has our "Kohlmeier" land been declared overflow or "flood land."

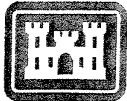
Optional Information:

Name: MRS. DPAI (Kohlmeier) White Affiliation: PREVIOUS OWNER *Kohlmeier Property*
Address: 727 E. 166th St. N. City: SKATOOK State: OK.
Zip: 74070 Phone: 596-1310 E-mail: _____

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



US Army Corps
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Candy Lake Land Transfer Project Barnsdall, Oklahoma

Question, Comments, or Suggestions

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Has groundwater elevation been determined?

Is there stratigraphic data?

Optional Information:

Name: Lewis Rutherford Affiliation: landowner
Address: PO Box 183 City: Ramona State: OK
Zip: 74061 Phone: - E-mail:

Harry Littleton
Route 1 Box 498
Barnsdall OK
74002

Point of Contact :
Mr. David L. Combs
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



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I am interested in the
land that belonged to Floyd
Lemley. I am interested in
the price.

Optional Information:

Name: Paul J. Lemley Affiliation: Floyd Lemley
Address: RR 1 Box 115 City: Barnsdall State: Okla.
Zip: 74002 Phone: 817-2263 E-mail: _____
198

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



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I would like to know the APPRAISAL
for the two Kohlmeier properties.

IT is my understanding that this
should be public information: per the
Public Information ACT.

Kyle Kohlmeier

Optional Information:

Name: Kyle Kohlmeier Affiliation: HEIR
Address: RT 1 Box 170 City: BARNSDALL State: OK
Zip: 74002 Phone: 918-877-3506 E-mail: Kyle@PP@ATTG.net

Point of Contact :
Mr. David L. Combs
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



US Army Corps
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1. What was the last
appraisal of the Lason
property
Trac 108
trac 108 E-1, E2 + E3
Of Osage Co.

Is this not public information
on the Public Inf Act -
freedom Inf Act

Optional Information:

Name: Marie Lason Affiliation: owner Alberta Lason Crutchfield
Address: Pt 1 Box 192 City: Shistok State: OK
Zip: 74070 Phone: 918-376-322 E-mail: _____

Point of Contact :
Mr. David L. Combs
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil



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My concerns are so numerous I can't begin
to tell them all.

I guess my main concern is that the
appraisals are going to be too high for anyone
to afford the property.

My second concern is that this has went on
so long I would like to get this put
behind us one way or the other.

Optional Information:

Represent Henry + Wima Kohlmeier owners
Name: Kyle Kohlmeier Affiliation: HEIR
Address: RT 1 Box 170 City: Barnsdall State: _____
Zip: 74002 Phone: 918-847-3506 E-mail: Kyle007@attg.net

Point of Contact :

Mr. David L. Combs

U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue ATTN: CESWT-PE-E
Tulsa, OK 74128-4629 Phone: 918-669-7660
e-mail: David.L.Combs@usace.army.mil

Ronald E Hazelwood
23591 N. 4020 Road
Bartlesville, OK
74006
918-333-3559

- (1) Needs to be offered to original landowners
 - (2) Price needs to be comparable to original price owners received.
 - (3) Wants to buy it back.
- Wants comments for record
 - Wants on mailing list for all other documentation or announcements (ie, EA)

David Bond

RAYMOND W. GLASCO
Route 1 Box 231
Skiatook, OK 74070

October 1, 2003

Mr. David L. Combs
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101 St. East Avenue
Tulsa, Ok 74128-4629

Attn: CESWT-PE-E

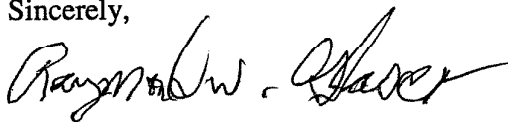
Mailed Via Registered Mail

Dear Sir:

I, Raymond Glasco, am the former owner of 530.65 acres of land in the Candy Creek Lake project. I still own approximately 1,475 acres that adjoins the Corp owned land. Attached is a stipulation agreement dated November 2, 1979. In the agreement the Corp agrees to build 3.80 miles of pasture fence. This fence has not been built to date. I have an ongoing problem with hunters and fisherman trespassing on my ranch lands since there is no fence to mark the boundary between the Corp land and my land.

I would like to know your proposed time table to build the fence as agreed to in the 1979 agreement.

Sincerely,



Raymond Glasco

Coordination and Correspondence



DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
1645 S. 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4629

REPLY TO
ATTENTION OF

November 12, 2003

Planning, Environmental, and Regulatory Division

SUBJECT: Environmental Assessment for Proposed Candy Lake Land Transfer,

Oklahoma Department of Wildlife Conservation

Attn: Greg Duffy, Director

P.O. Box 53465

Oklahoma City, Oklahoma 73152-3465

Dear Mr. Duffy,

The U.S. Army Corps of Engineers, Tulsa District, intends to prepare an Environmental Assessment (EA) for the Candy Lake Land Transfer Project. The Corps will offer to return 26 tracts of land, originally purchased to create a multi-purpose flood control reservoir, to the previous landowners, and their descendents, at Fair Market Value. If the previous landowners do not have an interest in the tracts of land, the parcels will be processed through Federal screening. Attached is a map illustrating the approximate project location and project boundaries. The EA will evaluate the potential impacts of transferring this land to private ownership.

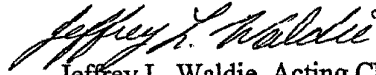
We are currently in the process of gathering the most current information available regarding Federally and state listed species potentially occurring within the vicinity of the project site. We respectfully request that your agency provide a list of the protected species that may occur within or near the site. We also request a description of the sensitive resources (e.g., rare or unique plant communities) that you believe may be affected by the proposed project. Any information you may have regarding critical habitat areas for these species would also be greatly appreciated.

The Corps conducted a public scoping meeting to solicit input from the general public. The scoping meeting was held on September 23, 2003 at the Barnsdall Elementary School.

We also intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Cynthia Kitchens at (918) 669-7042.

Sincerely,


Jeffrey L. Waldie, Acting Chief
Environmental Analysis and
Compliance Branch

Enclosure

Copy furnished w/o enclosure

Ms. Cynthia Kitchens
U.S. Army Corps of Engineers
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4269

Mr. Melvin Freeman
General Services Administration
819 Taylor Street
Fort Worth, Texas 76102

✓ Mr. Eric Webb
Gulf South Research Corporation
7602 GSRI Avenue
Baton Rouge, Louisiana 70820

WILDLIFE CONSERVATION COMMISSION

DON RITTER
CHAIRMAN
HARLAND STONECIPHER
VICE CHAIRMAN
MARK PATTON
SECRETARY
ED ABEL
MEMBER

JOHN B. "JACK" ZINK
MEMBER
JOHN D. GROENDYKE
MEMBER
WILLIAM CRAWFORD
MEMBER
VYRL KEETER
MEMBER



FRANK KEATING, GOVERNOR
GREG D. DUFFY, DIRECTOR

DEPARTMENT OF WILDLIFE CONSERVATION

1801 N. LINCOLN

P.O. BOX 53485

OKLAHOMA CITY, OK 73105

PH. 521-3861

January 6, 1997

Nancy Kaufman
USF&W
500 Gold Avenue
Albuquerque, NM 87102

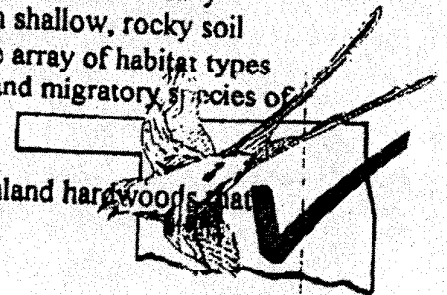
Dear Ms. Kaufman

The U.S. Army Corps of Engineers Candy Lake Project located just northeast of Avant in Osage county is currently up for deauthorization. The deauthorization process would make Candy project lands available to other federal agencies.

A brief look at the history of the Candy Lake project shows that it was initiated in 1976 by the U.S. Army Corps of Engineers under the authority of the 1962 Flood Control Act for purposes of flood control, water supply, recreation, and fish and wildlife. Funds expended were used to acquire surface acreage for the project and for construction of a project access road. In 1981, the 3,658 acre project was delayed indefinitely when condemnation proceedings were withdrawn to acquire mineral rights on the Skiatook lake project from the Osage Nation. In 1984, the project was placed in deferred status and made available for agricultural use as well as limited recreational use. In 1987, the Oklahoma Department of Wildlife Conservation entered a cooperative management agreement with the U.S. Army Corps of Engineers to assist in managing the project until 1992. This cooperative agreement has continued informally until the present date.

Candy project lands are very important to wildlife because of its diversity, its bottomland hardwoods, and the increase in habitat destruction on surrounding private land. The project has a wide variety of habitat types. Corridors of mature bottomland hardwoods are found along the riparian zones. Post oak/blackjack forests are found on the hills along the project boundary. While many of the open areas have been converted to exotic grasses, the reduction in the intensity of brush and forb control measures has made most of these areas good habitat for wildlife as well. Candy creek and its tributaries are different than most others in this part of the state. The limestone rock bottom of this creek keeps the water relatively clear except in times of heavy runoff. There is also an area with limestone outcroppings and an area with shallow, rocky soil that each provide unique vegetative communities to the project. This wide array of habitat types and their good interspersions make the project vital for numerous resident and migratory species of wildlife.

The second reason that Candy is so important to area wildlife is the bottomland hardwoods that



are present on the area. While modest in acreage compared to other areas of the state, Candy's bottomland hardwoods are found in an area dominated by open prairies with scattered patches of post oak/blackjack oak. The reduction in brush control measures on project lands mentioned earlier has increased the acreage of young stands of bottomland hardwoods. If protection is continued/increased, this habitat type will become even more valuable to wildlife in the future.

The third reason the Candy project is so important to wildlife is the continued destruction of wildlife habitat in the region. Habitat in the area is being lost to: the urban sprawl of the Tulsa metropolitan area; conversion of native prairies to introduced pastures; herbicide applications to reduce forbs and woody growth in pastures and rangeland; continued fire suppression in areas with native vegetation; flooding of bottomland hardwoods via reservoir construction; and oil field activity. As the amount of quality habitat in the region continues to dwindle, area wildlife will become more dependent on the remaining areas with good habitat.

The importance of Candy's habitat is magnified by its close proximity to the Tulsa metropolitan region. Project lands are located within 30 miles of the second largest city in the state. The demand in the area for wildlife related recreational access certainly exceeds what is available.

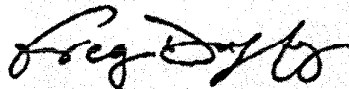
Over 95% of the land in Oklahoma is private property and accessibility to it continues to decrease for many Oklahomans. This situation makes providing sufficient outdoor opportunities for the public a big challenge for our agency.

Obviously, our agency feels that it is important to protect the habitat and the public use that is present on the Candy project. Since other federal agencies have the first opportunity to obtain deauthorized Corps land, I am requesting the assistance of your agency in protecting this valuable area.

An ideal situation for our Department would be to lease these lands from your agency. This would protect and enhance the area's wildlife habitat, while securing wildlife related access on the area for the public.

If you have any questions or comments on the Candy project, please contact my office at (405) 521-4660.

Sincerely,



Greg Duffy
Director

Oklahoma Dept. Wildlife Conservation

GD/JP:jp

cc: Johnny Herd
Richard Hatcher
Alan Peoples
Candy WMA file



United States
Department of
Agriculture

Natural
Resources
Conservation
Service

Natural Resource Conservation Service
1000 W. Main, STE. 102
RT. 1 Box 650
PAWHUSKA, OK. 74056

Mr. Eric Webb
Environmental Resources Manager
Gulf South Research Corp.
PO Box 83564
Baton Rouge, LA. 70884-3564

February 20, 2004

Subject: Candy Lake Environmental Assessment

Mr. Webb,

As requested by your agency I ran the soils that are located in the Candy Wildlife Management area. Many of the soils in the area are classified as Prime Farmland; I have included a list of the soils. Of these Map Units 1, 3,8,9,15,16,31,38,46 are designated as Prime Farmland by the NRCS. The potential for significant erosion concerns is high considering the location of the ground in relation to the riparian area.

If you need any other information please call me at 918-287-3570 ext. 3

A handwritten signature in cursive script that reads "Matt Ward".

Matt Ward
District Conservationist
Pawhuska Field Office

Non-Technical Descriptions

Osage County, Oklahoma

Only those map units that have entries for the selected non-technical description categories are included in this report.

Map Unit: 1 - Apperson silty clay loam, 1 to 3 percent slopes

Description Category: SOI

APPERSON SILTY CLAY LOAM IS 40-60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 1-3 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 7.2-9.5; MAJOR CONSIDERATIONS: WATER TABLE, DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3W.

Map Unit: 3 - Barnsdall very fine sandy loam, 0 to 1 percent slopes, rarely flooded

Description Category: SOI

BARNSDALL VERY FINE SANDY LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 8.7-11.9; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 1.

Map Unit: 8 - Pocasset fine sandy loam, 0 to 1 percent slopes, occasionally flooded

Description Category: SOI

POCASSET FINE SANDY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 5.2-9.0; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 2W.

Map Unit: 9 - Pocasset fine sandy loam, 1 to 3 percent slopes, occasionally flooded

Description Category: SOI

POCASSET FINE SANDY LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 5.6-9.0; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 2W.

Map Unit: 14 - Darnell-stephenville complex, 1 to 8 percent slopes

Description Category: SOI

STEPHENVILLE FINE SANDY LOAM IS 20-40 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 1-8 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 3.1-4.9; MAJOR CONSIDERATIONS: DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3E.

Description Category: SOI

DARNELL FINE SANDY LOAM IS 10-20 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 1-8 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.4-1.9; MAJOR CONSIDERATIONS: DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3S.

Non-Technical Descriptions - Continued

Osage County, Oklahoma

Map Unit: 15 - Agra silt loam, 1 to 3 percent slopes

Description Category: SOI

AGRA SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 1-3 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 7.8-12.5; MAJOR CONSIDERATIONS: WATER TABLE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 2E.

Map Unit: 16 - Agra silt loam, 3 to 5 percent slopes

Description Category: SOI

AGRA SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 3-5 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 7.8-12.5; MAJOR CONSIDERATIONS: WATER TABLE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3E.

Map Unit: 23 - Foraker-shidler complex, 12 to 25 percent slopes

Description Category: SOI

FORAKER SILTY CLAY LOAM IS 20-40 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 12-25 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 3.8-7.1; MAJOR CONSIDERATIONS: WATER TABLE, SLOPE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND; LAND CAPABILITY CLASS: 7E.

Description Category: SOI

SHIDLER SILTY CLAY LOAM IS 4-20 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 12-25 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.4-1.8; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: RANGELAND; LAND CAPABILITY CLASS: 7S.

Map Unit: 31 - Braman silt loam, 0 to 1 percent slopes, rarely flooded

Description Category: SOI

LAWRIE SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 9.0-14.3; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 1.

Map Unit: 33 - Braman-drummond complex, 0 to 1 percent slopes, rarely flooded

Description Category: SOI

DRUMMOND SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 5.5-10.3; MAJOR CONSIDERATIONS: FLOODING, WATER TABLE, SODICITY; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3W.

Non-Technical Descriptions - Continued

Osage County, Oklahoma

Map Unit: 33 - Braman-drummond complex, 0 to 1 percent slopes, rarely flooded

Description Category: SOI

LAWRIE SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 9.0-14.3; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 1.

Map Unit: 35 - Niotaze-darnell complex, 3 to 15 percent slopes

Description Category: SOI

NIOTAZE STONY SILT LOAM IS 20-40 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 3-15 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.9-4.1; MAJOR CONSIDERATIONS: WATER TABLE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 7S.

Description Category: SOI

DARNELL EXTREMELY STONY FINE SANDY LOAM IS 10-20 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 3-8 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.2-1.6; MAJOR CONSIDERATIONS: DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND; LAND CAPABILITY CLASS: 7S.

Map Unit: 36 - Niotaze-darnell complex, 15 to 25 percent slopes

Description Category: SOI

NIOTAZE STONY LOAM IS 20-40 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-25 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 2.5-5.4; MAJOR CONSIDERATIONS: WATER TABLE, SLOPE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 7E.

Description Category: SOI

DARNELL EXTREMELY STONY FINE SANDY LOAM IS 10-20 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 15-20 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.2-1.6; MAJOR CONSIDERATIONS: SLOPE, DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: RANGELAND; LAND CAPABILITY CLASS: 7S.

Map Unit: 38 - Norge silt loam, 1 to 3 percent slopes

Description Category: SOI

NORGE SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 1-3 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 9.0-13.5; MAJOR CONSIDERATIONS: NONE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 2E.

Map Unit: 46 - Osage silty clay, 0 to 1 percent slopes, occasionally flooded

Non-Technical Descriptions - Continued

Osage County, Oklahoma

Map Unit: 46 - Osage silty clay, 0 to 1 percent slopes, occasionally flooded

Description Category: SOI

OSAGE SILTY CLAY IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 5.4-7.5; MAJOR CONSIDERATIONS: FLOODING, WATER TABLE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 3W.

Map Unit: 49 - Parsons-pharoah complex, 0 to 3 percent slopes

Description Category: SOI

PHAROAH SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-3 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 8.2-12.8; MAJOR CONSIDERATIONS: WATER TABLE, SODICITY; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3W.

Description Category: SOI

PARSONS SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 0-3 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 7.7-13.5; MAJOR CONSIDERATIONS: WATER TABLE; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3E.

Map Unit: 54 - Shidler silty clay loam, 1 to 5 percent slopes

Description Category: SOI

SHIDLER STONY SILTY CLAY LOAM IS 4-20 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 1-5 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 0.7-1.4; MAJOR CONSIDERATIONS: DEPTH TO HARD ROCK; LANDUSE MAY INCLUDE: RANGELAND; LAND CAPABILITY CLASS: 7S.

Map Unit: 59 - Stephenville-darnell complex, 1 to 5 percent slopes

Description Category: SOI

STEPHENVILLE FINE SANDY LOAM IS 20-40 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 5-8 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 3.6-5.7; MAJOR CONSIDERATIONS: DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 4E.

Description Category: SOI

DARNELL FINE SANDY LOAM IS 10-20 INCHES DEEP WITH A LIGHTER COLORED SURFACE LAYER AND SLOPES OF 1-5 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 1.9-2.5; MAJOR CONSIDERATIONS: DEPTH TO SOFT ROCK; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND; LAND CAPABILITY CLASS: 3S.

Map Unit: 66 - Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded

Non-Technical Descriptions - Continued

Osage County, Oklahoma

Map Unit: 66 - Verdigris silt loam, 0 to 1 percent slopes, occasionally flooded

Description Category: SOI

VERDIGRIS SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 9.4-14.4; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: CROPLAND, RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 2W.

Map Unit: 67 - Verdigris silt loam, 0 to 1 percent slopes, frequently flooded

Description Category: SOI

VERDIGRIS SILT LOAM IS MORE THAN 60 INCHES DEEP WITH A DARK COLORED SURFACE LAYER AND SLOPES OF 0-1 PERCENT. AVAILABLE WATER CAPACITY IN INCHES: 9.4-14.4; MAJOR CONSIDERATIONS: FLOODING; LANDUSE MAY INCLUDE: RANGELAND, WOODLAND; LAND CAPABILITY CLASS: 5W.

1. Oklahoma's Endangered Species

(An "*" indicates the species is also federally endangered)

A. Mammals

- Gray Bat (Myotis grisescens) *
- Indiana Bat (Myotis sodalis) *
- Ozark Big-eared Bat (Plecotus townsendii ingens) *

B. Birds

- Bald Eagle (Haliaeetus leucocephalus) *
- Whooping Crane (Grus americana) *
- Interior Least Tern (Sterna antillarum) *
- Black-capped Vireo (Vireo atricapillus) *
- Red-cockaded Woodpecker (Picoides borealis) *

C. Fish

- Longnose Darter (Percina nasuta)

D. Invertebrates

- Cave Crayfish (Cambarus tartarus)
- American Burying Beetle (Nicrophorus americanus) *
- Ouachita Rock Pocketbook (Arkansia wheeleri) *
- Neosho Mucket (Lamprolaima rafinesqueana) (Federal Candidate)
- Scaleshell (Leptodea leptodon) *

II. Oklahoma's Threatened Species

(An "*" indicates the species is also federally threatened)

A. Birds

- Piping Plover (Charadrius melodus) *

B. Reptiles

- American Alligator (Alligator mississippiensis) *
(By similarity of appearance)

C. Fish

- Ozark Cavefish (Amblyopsis rosae) *
- Neosho Madtom (Noturus placidus) *
- Arkansas River Shiner (Notropis girardi) *
- Leopard Darter (Percina pantherina) *
- Blackside Darter (Percina maculata)

III. Oklahoma's Species of Special Concern

(An "*" indicates the species is also a federal species of concern)

A. Category I Species

1. Birds

Ferruginous Hawk (Buteo regalis)
 Golden Eagle (Aquila chrysaetos)
 Prairie Falcon (Falco mexicanus)
 Mountain Plover (Charadrius montanus) (Federal Candidate) *
 Long-billed Curlew (Numenius americanus)

2. Invertebrates

Pilsbry's Narrow-apertured Land Snail (Sterotrema pilsbryi)

B. Category II Species

1. Mammals

Desert Shrew (Notiosorex crawfordi)
 Keen's Myotis (Myotis keenlii)
 Small-footed Myotis (Myotis leibii)
 Southeastern Myotis (Myotis austroriparius)
 Western Big-eared Bat (Plecotus townsendii pallescens)
 Rafinesque's Big-eared Bat (Plecotus rafinesquii)
 Seminole Bat (Lasiurus seminolus)
 Mexican Free-tailed Bat (Tadarida brasiliensis)
 Black-tailed Prairie Dog (Cynomys ludovicianus) (Federal Candidate) *
 Woodchuck (Marmota monax)
 Eastern Harvest Mouse (Reithrodontomys humulis)
 Rice Rat (Oryzomys palustris)
 Meadow Jumping Mouse (Zapus hudsonius)
 Texas Kangaroo Rat (Dipodomys elator)
 Ringtail (Bassariscus astutus)
 River Otter (Lutra canadensis)
 Hog-nosed Skunk (Conepatus mesoleucus)
 Long-tailed Weasel (Mustela frenata)
 Swift Fox (Vulpes velox)
 Mountain Lion (Felis concolor)

2. Birds

Swainson's Hawk (Buteo swainsoni)
 Snowy Plover (Charadrius alexandrinus)
 Barn Owl (Tyto alba)
 Burrowing Owl (Athene cunicularia)
 Migrant Loggerhead Shrike (Lanius ludovicianus migrans)
 Bell's Vireo (Vireo bellii)

Bachman's Sparrow (*Aimophila aestivalis*)

3. Reptiles

Alligator Snapping Turtle (*macrolemys temminckii*)
 Map Turtle (*Graptemys geographica*)
 Earless Lizard (*Holbrookia maculata*)
 Round-tailed Horned Lizard (*Phrynosoma modestrum*)
 Texas Horned Lizard (*Phrynosoma cornutum*)
 Gulf Crayfish Snake (*Regina rigida sincola*)
 Louisiana Milk Snake (*Lampropeltis triangulum amaura*)
 Northern Scarlet Snake (*Cemophora coccinea copei*)
 Texas Garter Snake (*Thamnophis sirtalis annectens*)
 Texas Longnosed Snake (*Rhinocheilus lecontei tessellatus*)
 Western Mud Snake (*Farancia abacura reinwardtii*)
 Desert Massasauga (*Sistrurus catenatus edwardsii*)

4. Amphibians

Three-toed Amphiuma (*Amphiuma tridactylum*)
 Western Lesser Siren (*Siren intermedia nettingi*)
 Mole Salamander (*Ambystoma talpoideum*)
 Ringed Salamander (*Ambystoma annulatum*)
 Four-toed Salamander (*Hemidactylum scutatum*)
 Ouachita Dusky Salamander (*Desmognathus brimleyorum*)
 Rich Mountain Salamander (*Plethodon ouachitae*)
 Grotto Salamander (*Typhlotriton spelaeus*)
 Oklahoma Salamander (*Eurycea tynerensis*)
 Squirrel Treefrog (*Hyla squirella*)
 Western Bird-voiced Treefrog (*Hyla avivoca avivoca*)

5. Fish

Alabama Shad (*Alosa alabamae*)
 Alligator Gar (*Atractosteus spatula*)
 Arkansas River Speckled Chub (*Hybopsis aestivalis tetranemus*)
 Arkansas Darter (*Etheostoma cragini*) (Federal Candidate Species) *
 Black Buffalo (*Ictiobus niger*)
 Blue Sucker (*Cycleptus elongatus*)
 Bluehead Shiner (*Notropis hubbsi*)
 Bluntnosed Shiner (*Cyprinella camura*)
 Brown Bullhead (*Ictalurus nebulosus*)
 Chian Pickerel (*Esox niger*)
 Colorless Shiner (*Notropis peripallidus*)
 Crystal Darter (*Ammocrypta asprella*)
 Cypress Minnow (*Hybognathus hayi*)
 Flathead Chub (*Hybopsis gracilis*)
 Goldstripe Darter (*Etheostoma parvipinne*)
 Harlequin Darter (*Etheostoma histrio*)
 Ironcolor Shiner (*Notropis chalybaeus*)

Kiamichi Shiner (Notropis ortenburgeri)
 Mooney (Hiodon tergisus)
 Mountain Madtom (Noturus eletherus)
 Pallid Shiner (Notropis amnis)
 Plains Topminnow (Fundulus sciadicus)
 Redbreast Sunfish (Lepomis auritus)
 Ribbon Shiner (Lythurus fumeus)
 River Darter (Percina shumardi)
 Shorthead Redhorse (Moxostoma macrolepidotum)
 Shovelnose Sturgeon (Scaphirhynchus platorynchus)
 Southern Brook Lamprey (Ichthyomyzon gagei)
 Spotfin Shiner (Cyprinella spiloptera)
 Stonecat (Noturus flavus)
 Taillight Shiner (Notropis maculatus)
 Wichita Mountains Spotted Bass (Micropterus punctulatus wichitae)

6. Invertebrates

Bowman's Cave Amphipod (Stygobromus bowmani)
 Oklahoma Cave Amphipod (Allocrangonyx pellucidus)
 Prairie Mole Cricket (Gryllotalpa major)
 Regal Fritillary Butterfly (Speyeria idalia)
 Spectacle-case Mussel (Quadrula cylindrica)
 Western Fanshell Mussel (Cyprogenia aberti)

C. Federal Candidate/Not State Species of Special Concern

1. Birds

Lesser Prairie Chicken (Tympanuchus pallidicinctus)

U.S. FISH AND WILDLIFE OKLAHOMA ECOLOGICAL SERVICES FIELD OFFICE 918-581-745

WHAT CAN I DO TO HELP OKLAHOMA'S ENDANGERED SPECIES?

- **REPORT RARE SPECIES SIGHTINGS?**
- **Become an Amateur Biologist**

For color photographs, range maps and species descriptions, visit the Oklahoma Natural Heritage Invent

APPENDIX B
SECTION 404 PERMIT

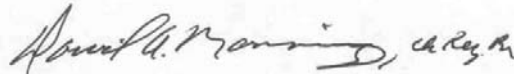


May 27, 2004

MEMORANDUM FOR CESWT-PE-E, ATTN: Mr. Jerry Sturdy

SUBJECT; Candy Lake Land Transfer, Project No. 13822

1. A review has been conducted for the proposed Candy Lake land transfer of property located in Osage County, northeast of Avant, Oklahoma. The information provided does not indicate that a placement of dredged or fill material will be required, permanently or temporarily, into any "waters of the United States," including jurisdictional wetlands. Therefore, this proposal is not subject to regulation pursuant to Section 404 of the Clean Water Act, and a Department of the Army (DA) permit will not be required.
2. Although DA authorization is not required, this does not preclude the possibility that other Federal, State, or local permits may be required.
3. This project has been assigned Identification Number 13822. Please refer to this number during future correspondence. If further assistance is required, contact Mr. Jeff Knack at 918-669-4904.



Larry D. Hogue, P.E.
Chief, Planning, Environmental,
and Regulatory Division

APPENDIX C
FISH AND WILDLIFE COORDINATION ACT REPORT



DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
1645 S. 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4629

REPLY TO
ATTENTION OF

November 12, 2003

Planning, Environmental, and Regulatory Division

SUBJECT: Environmental Assessment for Proposed Candy Lake Land Transfer,

U.S. Fish and Wildlife Service
Tulsa Field Office
Attn: Jerry Brabander, Field Supervisor
222 S. Houston, Suite A
Tulsa, Oklahoma 74127

Dear Mr. Brabander,

The U.S. Army Corps of Engineers, Tulsa District, intends to prepare an Environmental Assessment (EA) for the Candy Lake Land Transfer Project. The Corps will offer to return 26 tracts of land, originally purchased to create a multi-purpose flood control reservoir, to the previous landowners, and their descendents, at Fair Market Value. If the previous landowners do not have an interest in the tracts of land, the parcels will be processed through Federal screening. Attached is a map illustrating the approximate project location and project boundaries. The EA will evaluate the potential impacts of transferring this land to private ownership.

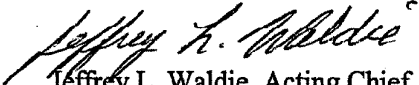
We are currently in the process of gathering the most current information available regarding Federally and state listed species potentially occurring within the vicinity of the project site. We respectfully request that your agency provide a list of the protected species that may occur within or near the site. We also request a description of the sensitive resources (e.g., rare or unique plant communities) that you believe may be affected by the proposed project. Any information you may have regarding critical habitat areas for these species would also be greatly appreciated.

The Corps conducted a public scoping meeting to solicit input from the general public. The scoping meeting was held on September 23, 2003 at the Barnsdall Elementary School. We were pleased to meet Richard Stark from your office at the meeting.

We also intend to provide your agency with a copy of the Draft EA once it is completed. Please inform us if additional copies are needed and/or if someone else within your agency other than you should receive the Draft EA.

Your prompt attention to this request would be greatly appreciated. If you have any questions, please call Ms. Cynthia Kitchens at (918) 669-7042.

Sincerely,


Jeffrey L. Waldie, Acting Chief
Environmental Analysis and
Compliance Branch

Enclosure

Copy furnished w/o enclosure

Ms. Cynthia Kitchens
U.S. Army Corps of Engineers
Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4269

Mr. Melvin Freeman
General Services Administration
819 Taylor Street
Fort Worth, Texas 76102

✓ Mr. Eric Webb
Gulf South Research Corporation
7602 GSRI Avenue
Baton Rouge, Louisiana 70820



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

222 S. Houston, Suite A

Tulsa, Oklahoma 74127

In Reply Refer To:

FWS/R2/OKES/02-14-04-I-0152

February 11, 2004

Jeffrey L. Waldie, Acting Chief
Environmental Analysis and Compliance Branch
U.S. Army Corps of Engineers
1645 South 101st East Avenue
Tulsa, Oklahoma 74128-4609

Dear Mr. Waldie:

The U.S. Fish & Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps) request for information on federally-listed species and other sensitive natural resources that may occur in the Candy Reservoir Project area. The information would be used in an Environmental Assessment (EA) that is being prepared by the Corps.

The bald eagle *Haliaeetus leucocephalus* and American burying beetle *Nicrophorus americanus* are federally-listed species likely to occur near the project area. Bald eagles are not known to nest in the project area, but are likely to forage in the area at times. American burying beetles are not known to occur in the project area, but do occur in nearby counties. Suitable habitat exists in the project area and the Service recommends the Corps conduct surveys to determine the presence or absence of American burying beetles.

Other sensitive and relatively rare fish and wildlife resources occur in the project area. The Service and Oklahoma Department of Wildlife Conservation (ODWC) previously provided comments on some of these resources in 1997 (letters enclosed). Bottomland hardwoods, old growth post oak/blackjack forest, native grasslands, limestone outcrops, and glades all occur in the project area. The area includes a variety of habitat types that are important to migratory birds and other wildlife.

Lands with public access for hunting, fishing, hiking, birding, camping, and other recreational uses are limited in Oklahoma and the Candy Wildlife Management Area has provided much needed outdoor recreational opportunities relatively close to the Tulsa metropolitan area. The Service continues to support transfer of the Candy Project lands to the ODWC to maintain existing recreational opportunities in the region and to partially offset fish and wildlife habitat losses from construction of Birch and Skiatook reservoirs. The Corps proposed action would result in the loss of habitat and public recreational opportunities on 3,657 acres. The proposed action should be considered a major Federal action significantly affecting the quality of the human environment. Consequently an environmental impact statement (EIS) would be required

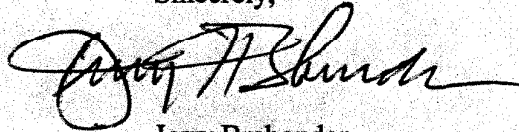
Mr. Waldie

2

to comply with the National Environmental Policy Act (NEPA). An EA is not adequate for such a major action.

Thank you for allowing us the opportunity to provide information and comments. If you have any questions please contact Kevin Stubbs at (918) 581-7458 ext. 236.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerry Brabander". The signature is fluid and cursive, with a large initial "J" and "B".

Jerry Brabander
Field Supervisor

Enclosure

cc: ARD-ES, U.S. Fish and Wildlife Service, Albuquerque, NM
Attn: Dean Watkins
Director, ODWC, Oklahoma City, OK
Attn: Natural Resources Division

TULSA ESPU
 SUPERVISOR 28-11
 ASST. SUPV.
 ADD. SUPV.
 DEPT. OF THE INTERIOR
 DIVISION OF FISH AND WILDLIFE SERVICE
 HENSLEY
 LANGER
 MARTIN
 MARTINEZ
 MEANS
 WALSH
 WILLIAMS
 OFC. ASST.
 O.A. ASST.
 READ/FILE/RECYCLE/SHRED

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
 222 S. Houston, Suite A
 Tulsa, Oklahoma 74127

August 11, 1997

The Honorable Tom Coburn
 U.S. House of Representatives
 511 Cannon House Office Building
 Washington, DC 20515

Dear Representative Coburn:

This concerns a proposal to return the Candy Lake Wildlife Management Area to private sector ownership through legislative action. The U.S. Fish and Wildlife Service (Service) has worked with the U.S. Army Corps of Engineers Corps), Oklahoma Department of Wildlife Conservation (ODWC), and other agencies over the past number of years on the disposition of lands in this deauthorized reservoir site. The Service's recommendation has always been that the 3,658 acres be retained under management of the ODWC, which has for the past ten years provided stewardship of the area through a formal agreement with the Corps.

As you know, Candy Reservoir was originally authorized as a part of a multi-reservoir project to control flooding in the Bird Creek basin. Because the Federal government did not obtain adequate interest in the mineral rights of the site, Candy was abandoned and subsequently deauthorized by Congress in December, 1996. The Corps has been in the process of declaring the property as excess. The Service has recommended on several occasions that ownership of the Candy lands be transferred to the ODWC at least in part to offset fish and wildlife-related habitat losses at Birch and Skiatook reservoirs.

Upwards of 97 percent of the land in Oklahoma is privately owned. Especially in the vicinity of our metropolitan areas, existing public lands are over crowded. Located within 30 miles of Tulsa, Candy Wildlife Management Area provides much needed outdoor recreational opportunities for thousands who are unable to gain access to private land.

Candy Wildlife Management Area supports a diversity of habitats and wildlife species. Bottomland hardwood habitat is found along the riparian zones of Candy Creek and its tributaries. Post oak/blackjack forest and native grasslands occur in the uplands. Limestone outcrops and glades are interspersed with these habitats to create a diverse mosaic of terrestrial cover types which are important to a wide array of resident and migratory wildlife species.

Candy Creek itself also provides unique aquatic habitat, with limestone streambeds and clear water.

Should you wish to discuss any aspects of Candy Reservoir lands, please contact me at 918/581-7458 ext. 224.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerry J. Brabander". The signature is fluid and cursive, with a large initial "J" and "B".

Jerry J. Brabander
Field Supervisor

APPENDIX D
CULTURAL RESOURCES COORDINATION





DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 23, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Dr. Robert Brooks
State Archeologist
Oklahoma Archeological Survey
111 East Chesapeake
Norman, OK 73019-0575

Dear Dr. Brooks:

The purpose of this letter is to initiate consultation pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA) concerning the proposed disposal of property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. The earliest USACE sponsored work in the Candy Lake project area was conducted by Cheek and Wilcox and is documented in the 1974 report entitled "An Assessment of the Cultural Historical Resources of Candy Creek Reservoir, Osage County, Oklahoma." In this report Cheek and Wilcox provide initial descriptions of prehistoric and historic sites they located within the Candy Creek valley and environs, specifically sites 34OS147 - 158.

In 1976 additional archeological survey was undertaken by Archeological Research Associates of Tulsa, Oklahoma. This work is documented in the report "Archeological Investigations at Candy Lake, Osage County, Oklahoma" by D. Kevin Leehan and dated

1977. During the execution of this contract approximately 675 acres located in the northern one-third of Candy Lake in Sections 6, 7, 8, 17, 18, and 19 of T24N R12E were surveyed for archeological sites. In addition, sites 34OS147, 151, 154, 155, 157, and 158 were tested for National Register of Historic Places (NRHP) eligibility. Sites 34OS149 and 153 were also to have been tested, but problems with property access prevented this work. All of the sites investigated in 1976 were prehistoric in nature. Due to the low density of artifacts recovered in the testing, sites 34OS147, 151, 154, 157, and 158 were recommended as being ineligible for listing on the NRHP. Sites 34OS149 and 153 were recommended for further archeological work in order to determine their potential significance, while site 34OS155 was recommended for mitigation through archeological data recovery.

In 1979, Archeological Research Associates returned to Candy Lake to test sites 34OS149 and 153 and to mitigate 34OS155. This work was documented in the report "A Reassessment of Certain Archeological Sites in the Candy Lake Area, Oklahoma" by Joe Saunders and dated 1980. As a result of this work sites 34OS149 and 153 were found to contain very limited cultural materials and have minimal sub-surface deposits. According to the researchers, these sites did not contribute significant information on the prehistory of the region, and as such were not recommended for further investigation. Excavations at 34OS155 revealed the presence of three separate occupation areas, one dating to the Late Archaic and the other two dating to the Late Woodland period.

More recently, two large pedestrian archeological surveys have been conducted that in total cover the entire COE administered property at Candy Lake. Beginning in late 2001, engineering-environmental Management, Inc. (e2M) conducted an intensive pedestrian cultural resources survey of 1224 acres composed of parcels located at the northern and southern ends of the Candy Lake property. The results of this survey are documented in the enclosed report entitled "Cultural Resources Inventory of 1224 Acres at Candy Lake, Osage County, Oklahoma" and dated August 2002.

During this survey a total of four previously recorded sites (34OS155, 187, 191, and 192) were revisited and one new archeological site (34OS664) was recorded (see enclosed report and site forms). Efforts to relocate 34OS155 in 2001 proved unsuccessful, probably due in large part to the low surface and subsurface artifact densities previously noted for the site.

e2M recommends no further work at the site. We concur with the opinion of e2M that the previous archeological excavations at 34OS155 have been sufficient to mitigate any potential adverse effect to the site that may result from the transfer of the property from federal ownership. Site 34OS187 was recorded in 1976 as a small historic artifact scatter. Reported as destroyed in the original recordation of the site, the site was determined to be ineligible for listing on the NRHP due to a lack of site integrity. Efforts by e2M to relocate the site in 2001 proved unsuccessful, but resulted in the discovery of a single prehistoric lithic biface from the surface of the presumed site area. Based on observations in the field, it appears likely that the site has been further disturbed by earth moving activities associated with more recent road and pipeline construction. We concur with e2M that 34OS187 is not eligible for listing on the NRHP. Site 34OS191 was recorded in 1976 as a small prehistoric lithic scatter located within the Candy Creek floodplain. The site was determined to be ineligible for the NRHP due to a lack of site integrity. Efforts by e2M to relocate the site were unsuccessful, and it appears that the site has been destroyed. We concur with the opinion of e2M that site 34OS191 is not eligible for listing on the NRHP. Site 34OS192 was recorded in 1976 as a small scatter of historic artifacts, and was assessed as ineligible for listing on the NRHP. Efforts by e2M to relocate the site were unsuccessful, and it also appears that this site has been destroyed. We agree with the opinion of e2M that site 34OS192 is not eligible for listing on the NRHP. We request your comment on our opinion of NRHP eligibility regarding these previously recorded sites.

One new site, 34OS664, was recorded by e2M during their 2001 field work. This site is located upstream of 34OS155 on the west bank of Candy Creek. This site consists of a buried layer of bone and chipped stone artifacts, including a portion of a possible fluted projectile point, in a layer of gravel exposed on the west cutbank of Candy Creek. We agree with e2M that additional archeological and geomorphological work is required at 34OS664 to assess the integrity of the cultural deposits before a determination of NRHP eligibility can be made. We request your comment on our opinion of NRHP eligibility regarding site 34OS664.

The other recent large cultural resources survey at Candy Lake was also undertaken by e2M under contract to Gulf South Research Corporation (GSRC). This effort focused on the remaining 2434 acres at Candy Lake that was not covered by the 2001 work. Undertaken in 2003 and 2004, the results of this

survey are documented in the enclosed draft report entitled "Cultural Resources Inventory of 2434 Acres at Candy Lake, Osage County, Oklahoma" and dated June 1, 2004.

During this most recent survey work a total of eight previously recorded sites (34OS148, 149, 150, 151, 152, 153, 154, and 158) were revisited and two new archeological sites (34OS699 and 700) were recorded (see enclosed report and site forms). Site 34OS148 was originally recorded as a small historic artifact scatter, and sites 34OS151, 153, and 158 were originally recorded as prehistoric lithic scatters. Efforts to relocate sites 34OS148, 151, 153, and 158 were unsuccessful. Site 34OS154 was also not relocated, and appears to have been destroyed by earthmoving activities associated with construction of a pond at the site. We feel that site 34OS154 is ineligible for listing on the NRHP due to a loss of site integrity. Site 34OS152 was originally recorded as a possible rock wall across an erosional channel near a tributary of Candy Creek. Reexamination of the area by e2m revealed that the feature is in fact composed of naturally occurring limestone blocks that have fractured in blocky shapes that resemble shaped building stones. This natural rock feature does not qualify as an archeological site or a historic property. We request your comment on our opinion of NRHP eligibility regarding these sites.

Sites relocated during the latest e2M cultural resources inventory include 34OS149 and 150. Site 34OS149 was identified by e2M as a surface prehistoric lithic scatter within a two-track road. A single shovel test transect paralleling the road recovered 4 additional flakes and a single historic transfer-print sherd. Artifacts were recovered from 0 to 60cm below the existing ground surface. e2M feels that the deposits remaining at 34OS149 are extensive enough for the site to be considered to be potentially eligible for listing on the NRHP. We disagree with the NRHP assessment of e2M regarding 34OS149. As previously documented by testing efforts at the site in 1979, cultural deposits at 34OS149 appear to be of very low density and may have a questionable degree of integrity. For those reasons, we feel that site 34OS149 is ineligible for listing on the NRHP. Site 34OS150 was also relocated. Previously recorded as a historic site, e2M found a single flake in one shovel test at a depth of 20-30cm below the ground surface. On the basis of the recovery of a previously undocumented prehistoric component at the site, e2M is recommending additional archeological work at 34OS150 to determine NRHP eligibility. We disagree with the assessment of e2M that additional archeological work at the site is needed to determine NRHP eligibility. Shovel tests at the

site only recovered a single flake from one shovel test, and provided no indication of the presence of intact prehistoric or historic cultural deposits at the site. Accordingly, we feel that site 34OS150 is ineligible for listing on the NRHP. We request your comment on our opinion of NRHP eligibility regarding these previously recorded sites.

In addition to the previously recorded sites, e2M found three new historic period archeological sites. One of these sites, the Riddle Homestead and cemetery (34OS698), was found to be located on a privately held parcel within the Candy Lake project, and will not be dealt with further as part of this coordination effort. The second new historic site found by e2M is 34OS699. Identified as a more recent historic home site containing concrete foundations, corrugated sheet metal, lumber, and shallow cultural deposits, e2M assessed this site as being ineligible for listing on the NRHP. We agree with e2M that site 34OS699 is ineligible for inclusion on the NRHP. The third new historic site identified by e2M was 34OS700. Consisting of the remains of a residence, well, and associated outbuildings and improvements, this farmstead may be associated with the original Osage tribal allottee of the property. E2M feels that additional archeological and archival research is necessary to assess the NRHP eligibility of this site. We agree with e2M that additional archeological and archival research is needed at 34OS700 in order to adequately assess the NRHP eligibility of the site. We request your comment on our opinion of NRHP eligibility regarding these newly recorded historic sites.

To summarize, cultural resources investigations since 1974 in the Candy Lake project area have identified a number of prehistoric and historic archeological sites. Based on previous archeological work, we feel that sites 34OS147, 148, 151, 153, 154, 157, 158, 187, 191, and 192 are ineligible for listing on the NRHP. Site 34OS149 was previously determined to have limited cultural materials and minimal sub-surface deposits, and the most recent revisit to the site confirms these earlier assessments. We feel that site 34OS149 is ineligible for listing on the NRHP. Site 34OS150 is a previously recorded historic site with a newly discovered prehistoric component. We feel that site 34OS150 is ineligible for listing on the NRHP due to the low density of cultural remains present at the site. Site 34OS152 has been determined to be a natural rock feature, and is not eligible for the NRHP. Site 34OS154 appears to have been destroyed by earthmoving activities associated with pond construction. We feel that site 34OS154 is ineligible for listing on the NRHP due to a loss of site integrity. Site

34OS155, previously determined to be eligible for the NRHP, was mitigated through archeological excavation in 1979. The proposed property disposal will have "no effect" on this site due to the previous mitigation effort. Site 34OS664 is a buried cultural deposit in the west cutbank of Candy Creek. We feel that site 34OS664 requires additional archeological and geomorphological work in order to assess the integrity of the cultural deposits at the site. Sites 34OS699 and 700 are both historic sites. We feel that site 34OS699 is ineligible for the NRHP, while site 34OS700 requires additional archeological and archival research to adequately assess the NRHP eligibility of the site.

As documented by earlier research in the region (and confirmed by the more recent discovery of site 34OS664), the Candy Lake project area has a high probability of buried cultural deposits existing in the Candy Creek valley and adjacent stream terraces. As previously discussed with your office, we agree that additional subsurface exploration of the Candy Creek valley is warranted to adequately assess the potential effect of the proposed transfer of the Candy Lake project property on cultural resources. We propose to establish the specific locations of these trenches in consultation with your office and based on an actual field assessment of the terrain, but in general the trenches would be situated in portions of Sections 4 and 5, T23N R12E, and Sections 19, 29, 32, and 33, T24N R12E (specifically in portions of tracts 102, 107, 113, 121, and 201). Placing the trenches in these specific tracts will allow access to landforms representative of Candy Creek valley while maximizing the number of tracts that will be immediately available for sale to the previous landowners (Figure 3).

In accordance with public law, proceeds from the sale of Candy Lake property to the previous landowners or their descendants may be utilized to recover expenses related to the disposal of the property. However, any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order).

We feel that the proposed project will have "no effect" on historic properties involving Candy Lake parcels that do not contain sites or areas previously proposed as requiring

additional archeological work. Specifically, the parcels of property that do not contain sites or areas requiring additional archeological work include Tracts 101-1, 101-2, 106, 107-E10, 108, 109, 110E, 112, 114-1, 114-2, 116, 117, 118, 119-1, 119-2, 202, 203, 204, 206-1, 206-2, 207-1, 207-2, and 207-E17 (Figures 4 and 5). We propose to proceed with the disposition of these tracts of land in accordance with federal law as soon as possible. We request your comment on our opinion of effect regarding this project.

Thank you for your help with this request. We look forward to working with you on this project. If you have any questions, please contact Mr. Louis Vogele, Archeologist, at 918-669-4934.

Sincerely,



Susan J. Haslett
Acting Chief,
Planning, Environmental,
and Regulatory Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 23, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
2704 Villa Prom, Shepherd Mall
Oklahoma City, OK 73107

Dear Dr. Blackburn:

The purpose of this letter is to initiate consultation pursuant to Section 106 of the National Historic Preservation Act of 1966 (NHPA) concerning the proposed disposal of property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. The earliest USACE sponsored work in the Candy Lake project area was conducted by Cheek and Wilcox and is documented in the 1974 report entitled "An Assessment of the Cultural Historical Resources of Candy Creek Reservoir, Osage County, Oklahoma." In this report Cheek and Wilcox provide initial descriptions of prehistoric and historic sites they located within the Candy Creek valley and environs, specifically sites 34OS147 - 158.

In 1976 additional archeological survey was undertaken by Archeological Research Associates of Tulsa, Oklahoma. This work is documented in the report "Archeological Investigations at Candy Lake, Osage County, Oklahoma" by D. Kevin Leehan and dated

1977. During the execution of this contract approximately 675 acres located in the northern one-third of Candy Lake in Sections 6, 7, 8, 17, 18, and 19 of T24N R12E were surveyed for archeological sites. In addition, sites 34OS147, 151, 154, 155, 157, and 158 were tested for National Register of Historic Places (NRHP) eligibility. Sites 34OS149 and 153 were also to have been tested, but problems with property access prevented this work. All of the sites investigated in 1976 were prehistoric in nature. Due to the low density of artifacts recovered in the testing, sites 34OS147, 151, 154, 157, and 158 were recommended as being ineligible for listing on the NRHP. Sites 34OS149 and 153 were recommended for further archeological work in order to determine their potential significance, while site 34OS155 was recommended for mitigation through archeological data recovery.

In 1979, Archeological Research Associates returned to Candy Lake to test sites 34OS149 and 153 and to mitigate 34OS155. This work was documented in the report "A Reassessment of Certain Archeological Sites in the Candy Lake Area, Oklahoma" by Joe Saunders and dated 1980. As a result of this work sites 34OS149 and 153 were found to contain very limited cultural materials and have minimal sub-surface deposits. According to the researchers, these sites did not contribute significant information on the prehistory of the region, and as such were not recommended for further investigation. Excavations at 34OS155 revealed the presence of three separate occupation areas, one dating to the Late Archaic and the other two dating to the Late Woodland period.

More recently, two large pedestrian archeological surveys have been conducted that in total cover the entire COE administered property at Candy Lake. Beginning in late 2001, engineering-environmental Management, Inc. (e2M) conducted an intensive pedestrian cultural resources survey of 1224 acres composed of parcels located at the northern and southern ends of the Candy Lake property. The results of this survey are documented in the enclosed report entitled "Cultural Resources Inventory of 1224 Acres at Candy Lake, Osage County, Oklahoma" and dated August 2002.

During this survey a total of four previously recorded sites (34OS155, 187, 191, and 192) were revisited and one new archeological site (34OS664) was recorded (see enclosed report and site forms). Efforts to relocate 34OS155 in 2001 proved unsuccessful, probably due in large part to the low surface and subsurface artifact densities previously noted for the site.

e2M recommends no further work at the site. We concur with the opinion of e2M that the previous archeological excavations at 34OS155 have been sufficient to mitigate any potential adverse effect to the site that may result from the transfer of the property from federal ownership. Site 34OS187 was recorded in 1976 as a small historic artifact scatter. Reported as destroyed in the original recordation of the site, the site was determined to be ineligible for listing on the NRHP due to a lack of site integrity. Efforts by e2M to relocate the site in 2001 proved unsuccessful, but resulted in the discovery of a single prehistoric lithic biface from the surface of the presumed site area. Based on observations in the field, it appears likely that the site has been further disturbed by earth moving activities associated with more recent road and pipeline construction. We concur with e2M that 34OS187 is not eligible for listing on the NRHP. Site 34OS191 was recorded in 1976 as a small prehistoric lithic scatter located within the Candy Creek floodplain. The site was determined to be ineligible for the NRHP due to a lack of site integrity. Efforts by e2M to relocate the site were unsuccessful, and it appears that the site has been destroyed. We concur with the opinion of e2M that site 34OS191 is not eligible for listing on the NRHP. Site 34OS192 was recorded in 1976 as a small scatter of historic artifacts, and was assessed as ineligible for listing on the NRHP. Efforts by e2M to relocate the site were unsuccessful, and it also appears that this site has been destroyed. We agree with the opinion of e2M that site 34OS192 is not eligible for listing on the NRHP. We request your comment on our opinion of NRHP eligibility regarding these previously recorded sites.

One new site, 34OS664, was recorded by e2M during their 2001 field work. This site is located upstream of 34OS155 on the west bank of Candy Creek. This site consists of a buried layer of bone and chipped stone artifacts, including a portion of a possible fluted projectile point, in a layer of gravel exposed on the west cutbank of Candy Creek. We agree with e2M that additional archeological and geomorphological work is required at 34OS664 to assess the integrity of the cultural deposits before a determination of NRHP eligibility can be made. We request your comment on our opinion of NRHP eligibility regarding site 34OS664.

The other recent large cultural resources survey at Candy Lake was also undertaken by e2M under contract to Gulf South Research Corporation (GSRC). This effort focused on the remaining 2434 acres at Candy Lake that was not covered by the 2001 work. Undertaken in 2003 and 2004, the results of this

survey are documented in the enclosed draft report entitled "Cultural Resources Inventory of 2434 Acres at Candy Lake, Osage County, Oklahoma" and dated June 1, 2004.

During this most recent survey work a total of eight previously recorded sites (34OS148, 149, 150, 151, 152, 153, 154, and 158) were revisited and two new archeological sites (34OS699 and 700) were recorded (see enclosed report and site forms). Site 34OS148 was originally recorded as a small historic artifact scatter, and sites 34OS151, 153, and 158 were originally recorded as prehistoric lithic scatters. Efforts to relocate sites 34OS148, 151, 153, and 158 were unsuccessful. Site 34OS154 was also not relocated, and appears to have been destroyed by earthmoving activities associated with construction of a pond at the site. We feel that site 34OS154 is ineligible for listing on the NRHP due to a loss of site integrity. Site 34OS152 was originally recorded as a possible rock wall across an erosional channel near a tributary of Candy Creek. Reexamination of the area by e2m revealed that the feature is in fact composed of naturally occurring limestone blocks that have fractured in blocky shapes that resemble shaped building stones. This natural rock feature does not qualify as an archeological site or a historic property. We request your comment on our opinion of NRHP eligibility regarding these sites.

Sites relocated during the latest e2M cultural resources inventory include 34OS149 and 150. Site 34OS149 was identified by e2M as a surface prehistoric lithic scatter within a two-track road. A single shovel test transect paralleling the road recovered 4 additional flakes and a single historic transfer-print sherd. Artifacts were recovered from 0 to 60cm below the existing ground surface. e2M feels that the deposits remaining at 34OS149 are extensive enough for the site to be considered to be potentially eligible for listing on the NRHP. We disagree with the NRHP assessment of e2M regarding 34OS149. As

previously documented by testing efforts at the site in 1979, cultural deposits at 34OS149 appear to be of very low density and may have a questionable degree of integrity. For those reasons, we feel that site 34OS149 is ineligible for listing on the NRHP. Site 34OS150 was also relocated. Previously recorded as a historic site, e2M found a single flake in one shovel test at a depth of 20-30cm below the ground surface. On the basis of the recovery of a previously undocumented prehistoric component at the site, e2M is recommending additional archeological work at 34OS150 to determine NRHP eligibility. We disagree with the assessment of e2M that additional archeological work at the site

is needed to determine NRHP eligibility. Shovel tests at the site only recovered a single flake from one shovel test, and provided no indication of the presence of intact prehistoric or historic cultural deposits at the site. Accordingly, we feel that site 34OS150 is ineligible for listing on the NRHP. We request your comment on our opinion of NRHP eligibility regarding these previously recorded sites.

In addition to the previously recorded sites, e2M found three new historic period archeological sites. One of these sites, the Riddle Homestead and cemetery (34OS698), was found to be located on a privately held parcel within the Candy Lake project, and will not be dealt with further as part of this coordination effort. The second new historic site found by e2M is 34OS699. Identified as a more recent historic home site containing concrete foundations, corrugated sheet metal, lumber, and shallow cultural deposits, e2M assessed this site as being ineligible for listing on the NRHP. We agree with e2M that site 34OS699 is ineligible for inclusion on the NRHP. The third new historic site identified by e2M was 34OS700. Consisting of the remains of a residence, well, and associated outbuildings and improvements, this farmstead may be associated with the original Osage tribal allottee of the property. E2M feels that additional archeological and archival research is necessary to assess the NRHP eligibility of this site. We agree with e2M that additional archeological and archival research is needed at 34OS700 in order to adequately assess the NRHP eligibility of the site. We request your comment on our opinion of NRHP eligibility regarding these newly recorded historic sites.

To summarize, cultural resources investigations since 1974 in the Candy Lake project area have identified a number of prehistoric and historic archeological sites. Based on previous archeological work, we feel that sites 34OS147, 148, 151, 153, 154, 157, 158, 187, 191, and 192 are ineligible for listing on the NRHP. Site 34OS149 was previously determined to have limited cultural materials and minimal sub-surface deposits, and the most recent revisit to the site confirms these earlier assessments. We feel that site 34OS149 is ineligible for listing on the NRHP. Site 34OS150 is a previously recorded historic site with a newly discovered prehistoric component. We feel that site 34OS150 is ineligible for listing on the NRHP due to the low density of cultural remains present at the site. Site 34OS152 has been determined to be a natural rock feature, and is not eligible for the NRHP. Site 34OS154 appears to have been destroyed by earthmoving activities associated with pond construction. We feel that site 34OS154 is ineligible for

listing on the NRHP due to a loss of site integrity. Site 34OS155, previously determined to be eligible for the NRHP, was mitigated through archeological excavation in 1979. The proposed property disposal will have "no effect" on this site due to the previous mitigation effort. Site 34OS664 is a buried cultural deposit in the west cutbank of Candy Creek. We feel that site 34OS664 requires additional archeological and geomorphological work in order to assess the integrity of the cultural deposits at the site. Sites 34OS699 and 700 are both historic sites. We feel that site 34OS699 is ineligible for the NRHP, while site 34OS700 requires additional archeological and archival research to adequately assess the NRHP eligibility of the site.

As documented by earlier research in the region (and confirmed by the more recent discovery of site 34OS664), the Candy Lake project area has a high probability of buried cultural deposits existing in the Candy Creek valley and adjacent stream terraces. As previously discussed with your office, we agree that additional subsurface exploration of the Candy Creek valley is warranted to adequately assess the potential effect of the proposed transfer of the Candy Lake project property on cultural resources. We propose to establish the specific locations of these trenches in consultation with your office and based on an actual field assessment of the terrain, but in general the trenches would be situated in portions of Sections 4 and 5, T23N R12E, and Sections 19, 29, 32, and 33, T24N R12E (specifically in portions of tracts 102, 107, 113, 121, and 201). Placing the trenches in these specific tracts will allow access to landforms representative of Candy Creek valley while maximizing the number of tracts that will be immediately available for sale to the previous landowners (Figure 3).

In accordance with public law, proceeds from the sale of Candy Lake property to the previous landowners or their descendants may be utilized to recover expenses related to the disposal of the property. However, any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order).

We feel that the proposed project will have "no effect" on historic properties involving Candy Lake parcels that do not

contain sites or areas previously proposed as requiring additional archeological work. Specifically, the parcels of property that do not contain sites or areas requiring additional archeological work include Tracts 101-1, 101-2, 106, 107-E10, 108, 109, 110E, 112, 114-1, 114-2, 116, 117, 118, 119-1, 119-2, 202, 203, 204, 206-1, 206-2, 207-1, 207-2, and 207-E17 (Figures 4 and 5). We propose to proceed with the disposition of these tracts of land in accordance with federal law as soon as possible. We request your comment on our opinion of effect regarding this project.

Thank you for your help with this request. We look forward to working with you on this project. If you have any questions, please contact Mr. Louis Vogele, Archeologist, at 918-669-4934.

Sincerely,



Susan J. Haslett
Acting Chief,
Planning, Environmental,
and Regulatory Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 24, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Gary McAdams, President
Wichita and Affiliated Tribes of Oklahoma
P.O. Box 729
Anadarko, OK 73005

Dear President McAdams:

In accordance with 36 CFR 800.4, Protection of Historic Properties, the purpose of this letter is to request your assistance in identifying cultural properties that may be of traditional religious or cultural significance to the Wichita and Affiliated Tribes in property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

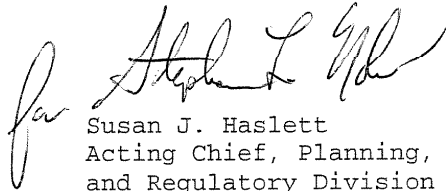
Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. Any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order). The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. Most recently, two large pedestrian archeological surveys have been conducted that in total cover the entire USACE administered property at the Candy

Lake project. As a result of these surveys, we have identified one prehistoric and one historic archeological site that we feel require additional archeological and/or archival research before we can make an assessment of their eligibility for the National Register of Historic Places. In addition, we have identified areas within the Candy Creek valley portion of the project area that will require additional deep trenching in order to determine whether additional buried archeological sites may be present. In order to assist us in the assessment of the potential impacts of the proposed property disposal on cultural resources, we are requesting information that the Wichita and Affiliated Tribes are willing to share on any traditional religious or culturally significant properties located within the proposed project area so that we may adequately assess the effects of the proposed project on cultural resources.

Thank you for your help with this request. If you have any questions, please contact Mr. Louis Vogele, Archeologist, at 918-669-4934.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan J. Haslett".

Susan J. Haslett
Acting Chief, Planning, Environmental,
and Regulatory Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 24, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Dear Sirs:

In accordance with 36 CFR 800.4, Protection of Historic Properties, the purpose of this letter is to request your assistance in identifying cultural properties that may be of traditional religious or cultural significance to the Quapaw Tribe in property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

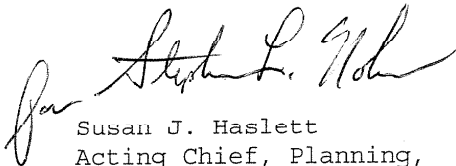
Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. Any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order). The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. Most recently, two large pedestrian archeological surveys have been conducted that in total cover the entire USACE administered property at the Candy Lake project. As a result of these surveys, we have identified one prehistoric and one historic archeological site that we feel

require additional archeological and/or archival research before we can make an assessment of their eligibility for the National Register of Historic Places. In addition, we have identified areas within the Candy Creek valley portion of the project area that will require additional deep trenching in order to determine whether additional buried archeological sites may be present. In order to assist us in the assessment of the potential impacts of the proposed property disposal on cultural resources, we are requesting information that the Quapaw Tribe is willing to share on any traditional religious or culturally significant properties located within the proposed project area so that we may adequately assess the effects of the proposed project on cultural resources.

Thank you for your help with this request. If you have any questions, please contact Mr. Louis Vogele, Archeologist, at 918-669-4934.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan J. Haslett". The signature is written in dark ink and is positioned to the left of the typed name.

Susan J. Haslett
Acting Chief, Planning,
Environmental, and Regulatory
Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 24, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Mr. Anthony Whitehorn
Cultural Resource Management
Osage Nation of Oklahoma
627 Crandview Ave.
Pawhuska, OK 74056

Dear Mr. Whitehorn:

In accordance with 36 CFR 800.4, Protection of Historic Properties, the purpose of this letter is to request your assistance in identifying cultural properties that may be of traditional religious or cultural significance to the Osage Nation in property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

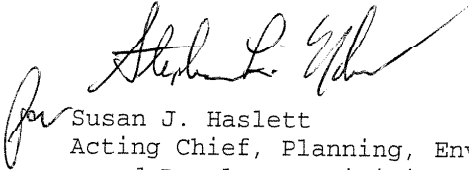
Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. Any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order). The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. Most recently, two large pedestrian archeological surveys have been conducted that in total cover the entire USACE administered property at the Candy

Lake project. As a result of these surveys, we have identified one prehistoric and one historic archeological site that we feel require additional archeological and/or archival research before we can make an assessment of their eligibility for the National Register of Historic Places. In addition, we have identified areas within the Candy Creek valley portion of the project area that will require additional deep trenching in order to determine whether additional buried archeological sites may be present. In order to assist us in the assessment of the potential impacts of the proposed property disposal on cultural resources, we are requesting information that the Osage Nation is willing to share on any traditional religious or culturally significant properties located within the proposed project area so that we may adequately assess the effects of the proposed project on cultural resources.

Thank you for your help with this request. If you have any questions, please contact Mr. Louis Vogele, Archeologist, at 918-669-4934.

Sincerely,


for Susan J. Haslett
Acting Chief, Planning, Environmental,
and Regulatory Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 24, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Kaw Tribe of Oklahoma
P.O. Drawer 50
Kaw City, OK 74641

Dear Sirs:

In accordance with 36 CFR 800.4, Protection of Historic Properties, the purpose of this letter is to request your assistance in identifying cultural properties that may be of traditional religious or cultural significance to the Kaw Tribe in property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

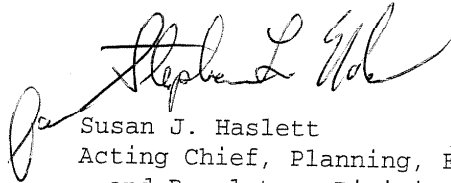
Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. Any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order). The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. Most recently, two large pedestrian archeological surveys have been conducted that in total cover the entire USACE administered property at the Candy Lake project. As a result of these surveys, we have identified one prehistoric and one historic archeological site that we feel

require additional archeological and/or archival research before we can make an assessment of their eligibility for the National Register of Historic Places. In addition, we have identified areas within the Candy Creek valley portion of the project area that will require additional deep trenching in order to determine whether additional buried archeological sites may be present. In order to assist us in the assessment of the potential impacts of the proposed property disposal on cultural resources, we are requesting information that the Kaw Tribe is willing to share on any traditional religious or culturally significant properties located within the proposed project area so that we may adequately assess the effects of the proposed project on cultural resources.

Thank you for your help with this request. If you have any questions, please contact Mr. Louis Vogeleson, Archeologist, at 918-669-4934.

Sincerely,



Susan J. Haslett
Acting Chief, Planning, Environmental,
and Regulatory Division

Enclosures



DEPARTMENT OF ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
1645 SOUTH 101ST EAST AVENUE
TULSA, OKLAHOMA 74128-4609

September 24, 2004

Planning, Environmental, and Regulatory Division
Environmental Analysis and Compliance Branch

Cherokee Nation of Oklahoma
P.O. Box 948
Tahlequah, OK 74465

Dear Sirs:

In accordance with 36 CFR 800.4, Protection of Historic Properties, the purpose of this letter is to request your assistance in identifying cultural properties that may be of traditional religious or cultural significance to the Cherokee Nation in property acquired for construction of the Candy Lake project in Osage County, Oklahoma.

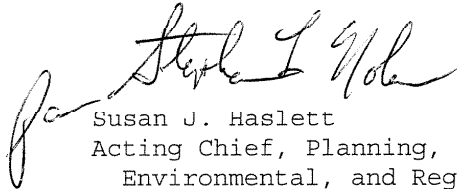
Section 563(c) of the Water Resource Development Act (WRDA) of 1999, Public Law 106-53, 113 Stat. 269, as amended by Section 348 of WRDA 2000, directs the conveyance of the Government's interest in the land acquired for the Candy Lake project (except all flowage easements which are extinguished), and that the previous owners of the land, or their descendants, be given the first option to purchase the property at Fair Market Value. Any parcels not conveyed to the previous owners or their descendants as prescribed by the legislation shall be reported as excess to the General Services Administration, and shall be disposed of according to standard methods (i.e. property shall be offered to other federal agencies, state agencies, and the general public, in that order). The property to be disposed of totals 3657 acres, and is located in Sections 3, 4, and 5 of T23N R12E, and Sections 7, 8, 17, 18, 19, 20, 28, 29, 30, 32, 33, and 34 of T24N R12E in Osage County, Oklahoma (Figures 1 and 2). The U.S. Army Corps of Engineers (USACE), Tulsa District, has administered the lands comprising the Candy Lake project since their purchase in the 1980s.

USACE has conducted archeological work in the Candy Lake project area since the early 1970s. Most recently, two large pedestrian archeological surveys have been conducted that in total cover the entire USACE administered property at the Candy Lake project. As a result of these surveys, we have identified one prehistoric and one historic archeological site that we feel

require additional archeological and/or archival research before we can make an assessment of their eligibility for the National Register of Historic Places. In addition, we have identified areas within the Candy Creek valley portion of the project area that will require additional deep trenching in order to determine whether additional buried archeological sites may be present. In order to assist us in the assessment of the potential impacts of the proposed property disposal on cultural resources, we are requesting information that the Cherokee Nation is willing to share on any traditional religious or culturally significant properties located within the proposed project area so that we may adequately assess the effects of the proposed project on cultural resources.

Thank you for your help with this request. If you have any questions, please contact Mr. Louis Vogeles, Archeologist, at 918-669-4934.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan J. Haslett".

Susan J. Haslett
Acting Chief, Planning,
Environmental, and Regulatory
Division

Enclosures



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

September 30, 2004

Susan J. Haslett
Acting Chief, Planning, Environmental,
and Regulatory Division
Department of the Army
Corps of Engineers, Tulsa District
1645 South 101st East Ave
Tulsa, OK 74128-4609

Re: Proposed disposal of property acquired through the Candy Lake project.
Legal Description: Section 5 T23N R12E; Sections 7, 8, 17-20, 28-30,
And 32-34 T24N R12E, Osage County, Oklahoma.

Dear Ms. Haslett:

I have received two reports and a series of appendices documenting the results of cultural resource investigations for the above referenced action. This work was accomplished by Engineering- Environmental Management (E²M) on December 9-17, 2001, September 9-18, 2003 and May 11-13, 2004. Some 3658 acres was re-inventoried by their personnel with additional effort allocated to the reexamination of 34OS148-155, 158, 187, and 191-192. Four previously unrecorded archaeological sites (34OS664, 698-700) were also documented during the survey efforts.

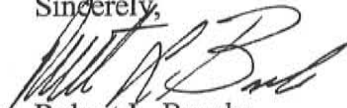
Previously recorded archaeological sites 34OS148, 151, 153, 154, 158, 187, 191, and 192 were not relocated or the location was revisited with no additional cultural materials being visible due to site loss through erosion or cultural disturbances. As these sites were previously identified as not meeting the criteria for National Register eligibility, I concur with the findings of E²M and the Corps of Engineers regarding these cultural resources. **However, I defer to further comment from the Historic Archaeologist with the State Historic Preservation Office concerning those sites with historic material that were not relocated.** Site 34OS152, previously identified as a culturally derived stone wall was documented by E²M as naturally occurring limestone slabs. **Here, I also defer to the Historical Archaeologist with the Sate Historic Preservation Office regarding the cultural/natural origin of the stone, potential eligibility, and project effect.** Site 34OS155 was also not relocated. However, this site received extensive data recovery

treatment in 1979 and I concur with the Corps of Engineers assessment that this resource has received adequate treatment. Engineering-Environmental Management has recommended as potentially eligible 34OS149. This is based on a total of five items (4 flakes and 1 historic sherd) from up to 60 cm below surface. I concur with the Corps of Engineers that the return on shovel testing does not hold the content in respect to the prehistoric record to merit further evaluation and that at least the prehistoric component at 34OS149 is ineligible for the National Register. **I defer comment on the historic ceramic from 34OS149 to the Historic Archaeologist with the State Historic Preservation Office.** I also agree with the Corps of Engineers that one flake from a shovel test at 34OS150 is insufficient evidence to warrant further National Register eligibility consideration (at least regarding the prehistoric component). **However, the potential eligibility of the historic comment needs to be addressed by the Historic Archaeologist from the State Historic Preservation Office. I also defer comment on the three new historic sites recorded during the survey (34OS698-700) to the State Historic Preservation Office.**

From this assessment, one prehistoric site recorded during the recent survey effort (34OS664) merits additional evaluation. This is a deeply buried site along the stream channel. At this point, the site appears to have a quite complex depositional history that merit further study, especially considering the presence of a Paleoindian biface fragment within the context of these deposits. Work should focus on clarification of the depositional history as well as the substantive content of the cultural deposits. This site also points to the potential for additional buried cultural deposits within the Candy Creek valley. As the Corps of Engineers will be returning this land from federal ownership and protection, there is a responsibility to inventory the nature of this action. From my perspective this also includes an assessment of buried deposits necessitating deep testing at high probability locations by a geomorphologist with archaeological training.

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Sincerely,



Robert L. Brooks
State Archaeologist

Cc: SHPO
E²M
Osage Nation
Wichita and Affiliated Tribes



Oklahoma Historical Society *Founded May 27, 1893*

State Historic Preservation Office • 2704 Villa Prom • Shepherd Mall • Oklahoma City, OK 73107-2441
Telephone 405/521-6249 • Fax 405/947-2918

October 21, 2004

Ms. Susan Haslett, Acting Chief
Planning, Environmental & Reg. Div.
Tulsa District Corps of Engineers
1645 South 101 East Avenue
Tulsa, OK 74128-4609

RE: File #2633-04; Candy Lake CORPS Surplus Land Disposal Project,
Osage County

Dear Ms. Haslett:

We have reviewed the documentation submitted on the above project and are in agreement with your assessment that additional archeological and archival research is necessary before a determination can be made about the National Register eligibility of historic Osage allotment farmstead site 34OS700.

Furthermore, we concur with your assessment that historic and/or multicomponent prehistoric/historic archeological sites 34OS148, 34OS149, 34OS150, 34OS152, 34OS187, 34OS192 and 34OS699 are not eligible properties and that in certain instances (34OS149 & 34OS150) this opinion is not expressed by the authors. Also, none of the Isolated Find localities discussed in the reports are eligible for the National Register.

We defer to and are in agreement with Dr. Robert Brooks' assessment of the prehistoric sites discussed in the reports and in agreement with comments expressed in your September 23, 2004 letter concerning sites 34OS147, 34OS151, 34OS153, 34OS154, 34OS155, 34OS157, 34OS158, 34OS191 and 34OS664.

In regards to site 34OS698, the Riddle farmstead and cemetery, we do not have enough information on this site to agree with e2M's determination that this location is an eligible property. As discussed in the report, site 34OS698 is not on CORPS property. In this regard, the site will not be affected by the federal undertaking.

Thank you for the opportunity to review this project. If you have any questions, please call Charles Wallis, Historical Archeologist, at 405/521-6381. Please reference the above underlined file number when responding. Thank you.

Sincerely,

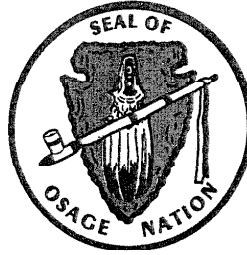
Melvena Heisch
Deputy State Historic
Preservation Officer

MH:pm

cc: Robert Brooks

JIM GRAY
Principal Chief

KENNETH H. BIGHORSE
Assistant Principal Chief



MEMBERS OF COUNCIL

MARK FREEMAN Jr.
TERRY MASON MOORE
HARRY ROY RED EAGLE
JODIE SATEPAUHOODLE
JERRY SHAW
PAUL R. STABLER
DUDLEY WHITEHORN
JOHN W. WILLIAMS

OSAGE TRIBAL COUNCIL

October 19, 2004

US Army Corps of Engineers
Attn: Regulatory Branch
Attn: Susan J. Haslett
1645 South 101st East Ave.
Tulsa, OK 74128-4609

RE: Candy Lake Property Disposal, Osage County, OK

To Whom It May Concern:

The Osage Tribe of Oklahoma has evaluated the above reference sites, and we have determined that the site could have religious or cultural significance to the Osage Tribe being our former reservation & homeland. However, if construction activities should expose Osage archeological materials, such as bone, pottery, chipped stone, etc., we ask that construction activities cease, and this office be contacted so that an evaluation can be made.

Should you have any questions, you can reach me at (918) 287-5446.

Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony P. Whitehorn".

Anthony P. Whitehorn
Tribal Enterprise Manager



Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

December 14, 2004

Stephen L. Nolen
Chief, Environmental Analysis and
Compliance Branch
Planning, Environmental, and
Regulatory Division
Department of the Army
Corps of Engineers
1645 South 101st East Avenue
Tulsa, OK 74128-4609

Re: *Cultural Resource Inventory of 2434 Acres at Candy Lake, Osage
County, Oklahoma* by E²M.

Dear Mr. Nolen:

I have completed a review of the above referenced report. This work was accomplished as a Section 106 action as a consequence of dispersal of this federal property to private, state, Indian, or other entities. Cultural resource investigations for this portion of the project consisted of the examination of some 2434 acres for previously undocumented cultural resources. This work was accomplished by E²M from September 9-18, 2003 and May 11-13, 2004 with three historic archaeological sites recorded (34OS698-700). **I defer opinion on the potential eligibility of these sites and the effect of the undertaking to the Historic Archaeologist with the State Historic Preservation Office.**

Investigations also included the reassessment of eight previously recorded archaeological sites (34OS148-154, 158). Of these sites, 34OS148 could not be relocated. Additionally, sites 34OS151, 153, and 158 yielded no additional material from surface survey or shovel tests. Previously recorded historic site 34OS152 has been redefined as a natural feature. It is my opinion that all of the above resources are not eligible for the National Register. Assuming that the investigators were at the correct locations, the absence of material on the surface and from shovel tests for 34OS151, 153, and 158 suggest minimal site content and context and further evaluation is probably not warranted. This concept also applies to 34OS148. **I defer additional comment on the natural feature issue of 34OS152 to the State Historic Preservation Office.**


Site 34OS 154 is reported destroyed by bulldozing and clearcutting. As the site was on federal property, there needs to be some accounting as why this site was not afforded protection until it was adequately assessed. Regardless of the status of Candy Lake, all sites on Corps of Engineers land should be afforded the same protection until they have been determined to be not eligible for the National Register and a no effect determination requested for the action.

Sites 34OS149 and 34OS150 contain prehistoric and historic materials. Based on the limited content from shovel tests at 34OS149, I question whether this site is potentially eligible. However, both sites merit further evaluation to qualify their status in respect to National Register eligibility. **I defer here to the Historic Archaeologist with the State Historic Preservation Office on the historic components at these sites.**

I also note that state site forms have not been submitted for 34OS698-700. This needs to be completed before the project file on Candy Lake is closed.

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Sincerely,



Robert L. Brooks
State Archaeologist

Cc: SHPO
E²M ✓
Wichita and Affiliated Tribes
Osage Nation

APPENDIX E
PUBLIC COMMENTS





Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

May 5, 2005

Stephen L. Nolen
Chief, Environmental Analysis
and Compliance Branch
Department of the Army
Corps of Engineers, Tulsa District
1645 South 101st East Avenue
Tulsa, OK 74128-4609

Re: *Environmental Assessment for the Candy Lake Land Transfer Project,
Osage County, Oklahoma.*

Dear Mr. Nolan:

I have completed a review of the above referenced action for its potential affect on Oklahoma's prehistoric and early historic archaeological record. It is my opinion that the information in the environmental assessment accurately and correctly describes the findings and recommendations performed under Section 106 of the National Historical Preservation Act and the National Environmental Policy Act. I am also in agreement with the proposed plan of action for treatment of properties meeting the eligibility criteria for the National Register of Historic Places and examination of deeply buried cultural contexts within select areas of the project floodplain.

This review has been conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Sincerely,

Robert L. Brooks
State Archaeologist

Cc: SHPO

APPENDIX F
NEWSPAPER PUBLIC NOTICE



PROOF OF PUBLICATION

The Barnsdall Times
Barnsdall, Oklahoma

CERTIFICATE OF PUBLICATION:
STATE OF OKLAHOMA, OSAGE COUNTY ss:

I, the undersigned, of lawful age, being first duly sworn, depose and say:

That I am the Publisher of The Barnsdall Times, a weekly newspaper published and paid general subscription circulation in Osage County, Oklahoma, at the time of the publication of the Legal Notice hereto attached, and with entrance into the United States mails as periodical class mail matter, and printed in the County where delivered to the United States mail, and which newspaper has been continuously and uninterruptedly published during a period of one hundred and four weeks consecutively prior to the first publication mentioned hereinafter, that said newspaper comes within all the prescriptions and requirements of Chapter 4, Title 25, Oklahoma Statutes, 1981.

That the said Legal Notice, a printed copy of which is hereto attached and made a part hereof, was published in the regular and entire issues of said newspaper during the period and time of publication and not in a supplement, on the following dates:

Thursday, May 5, 2005 - 1t

Forrest A. Smith
(Publisher)

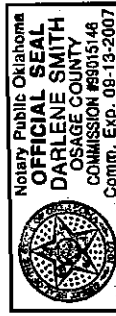
SUBSCRIBED AND SWORN to me this

5th day of May, 2005.

Darlene Smith
Notary Public

My Commission expires 9-13-07

Publisher's Fee \$ 39.48 (Total Amount)



LEGAL NOTICE
(Published in the Barnsdall Times, Thursday, May 5, 2005 - 1t)

**Announcing: COMMENT PERIOD
DRAFT ENVIRONMENTAL ASSESSMENT**
as related to the

Candy Lake Land Transfer Project
Candy Lake, Osage County, Oklahoma
in compliance with

The National Environmental Policy Act

FORMAL COMMENT PERIOD: May 4, 2005 through June 3, 2005

The draft Environmental Assessment (EA) addresses the effects of the conveyance of the Government's interest in the land acquired for the Candy Lake Project. The comment period is a continuation of public involvement used to develop the draft assessment for the conveyance. The public is invited to review the draft assessment and make comments. A copy of the draft EA is available online at <http://www.swr.usace.army.mil> as well as at:

Bartlesville Public Library
600 South Johnson
Bartlesville, OK 74003

Written comments and questions will be addressed in the Final EA. To be included in the final assessment, comments and questions must be received prior to the close of the formal comment period. Comments and questions about the draft EA can be directed to:

Mr. Stephen L. Nolen
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-6629
Fax: (918) 669-7546
Email: Stephen.L.Nolen@swr03.usace.army.mil

80304103g

AFFIDAVIT OF PUBLICATION

State of Oklahoma)
) SS
County of Washington)

Peggy Sanders

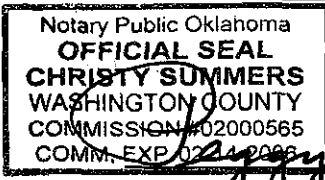
of lawful age, being duly sworn and authorized, says that she is the legal advertising representative of the Examiner-Enterprise, Bartlesville, Okla., 74006

a Daily newspaper printed in the City of Bartlesville, Washington County, Oklahoma, a newspaper qualified to publish legal notices, advertisements and publications as provided in Section 106 of Title 25, Oklahoma Statutes 1971 as amended, and complies with all other requirements of the laws of Oklahoma with reference to legal publications.

That said notice, a true copy of which is attached herto, was published in the regular edition of said newspaper during the period and time of publication and not in supplement, on the following dates:

May 4

2005



Peggy Sanders
Legal Advertising Representative

(Published in the Bartlesville, [Oklahoma] Examiner-Enterprise on May 4th, 2005).

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Mr. Stephen L. Nolen
U.S. Army Corps of Engineers, Tulsa District
1645 S. 101st East Avenue
Tulsa, OK 74128-4629
Fax: (918) 669-7546
Email: Stephen.L.Nolen@swt03.usace.army.mil

Subscribed and sworn to before me this 4

day of May, 05

Christy Summers

My Commission expires, Feb 14, 2006

Publisher's fee: \$ 28.70

Examiner-Enterprise Number 320963

