SUPPLEMENTAL

ENVIRONMENTAL ASSESSMENT

O.C. FISHER LAKE ECOSYSTEM RESTORATION PROJECT
SAN ANGELO, TEXAS

Prepared for

O.C. Fisher Lake Office

by

US Army Corps of Engineers
Fort Worth District

July 2010

FINDING OF NO SIGNIFICANT IMPACT

O.C. FISHER LAKE ECOSYSTEM RESTORATION PROJECT
SAN ANGELO, TEXAS

Description of Action. The purpose of this Supplemental Environmental Assessment (SEA) is to assess the potential environmental effects from the change in project implementation regarding the reduction of the mesquite on the project to more natural and historical level and detailing the potential impacts that may occur as a result of those changes. With the exception of the points described in this SEA, the original EA accurately represents: the project's purpose and need; the analyses of the project's design alternatives, including the alternative of no action and the preferred alternative, and the potential environmental impacts associated with each alternative. The proposed change to project implementation would be to use helicopter aerial herbicide application for Mesquite control rather than the mechanical means of excavation and extraction outlined in the original EA.

Anticipated Environmental Effects. This proposed change in project implementation will have positive environmental effects on Cultural Resources and soils located on project lands. Due to the change there will be no ground disturbing activities associated with the Mesquite removal which will protect the potential cultural resource sites and negate the SHPO requirement to perform a ground survey on the 2,455 acre area with medium to high potential to contain cultural resource sites. Also the lack of ground disturbing activities will limit the amount of exposed bare soil from mechanical removal methods which would decrease the potential for soil erosion. The potential for negative environmental effects from vapor drift of herbicide to adjacent private property will be mitigated through the use a helicopter for aerial herbicide application, strict adherence to required atmospheric conditions for spraying prior to herbicide application and creation of a 100 ft. buffer strip between areas to be treated and adjacent private property.

Facts and Conclusions. Based on a review of the information contained in the Original EA and this SEA it is concluded that the change in project implementation from mechanical removal of Mesquite to helicopter aerial application of herbicide for Mesquite removal is not a major Federal action, which would significantly affect the quality of the human environment within the meaning of Section 102(2)(c) of the National Environmental Policy Act of 1969, as amended.

Date: 14 Sept 2010

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INTRODUCTION

This document supplements the *Detailed Project Report and Integrated Environmental Assessment for the O.C. Fisher Lake Ecosystem Restoration Project* (EA) which was prepared by the US Army Corps of Engineers, Forth Worth District in June, 2005 and will replace the Finding of No Significant Impact (FONSI), which was signed on 28 September 2005. The EA disclosed the potential environmental impacts for the proposed project which includes removal of salt cedar and reduction of mesquite, willow baccharis and prickly pear. The plan also includes native tree and shrub plantings within degraded riparian woodlands (154.7 acres with 300 seedlings planted per acre) and black willow riparian habitat (5.7 acres and 150 seedlings per acre). After full implementation of the recommended restoration plan, the five existing habitat classifications (aquatic-lacustrine, aquatic-riverine, aquatic-riverine-intermittent, riparian woodland and transitional) would be improved by restoring the biological integrity, diversity and stability of the ecosystem within lands owned by the United States Army Corps of Engineers (USACE) at O.C. Fisher Lake.

The original EA describes plans to remove mesquite, salt cedar, willow baccharis, and prickly pear. Salt cedar, willow baccharis and prickly pear reduction plans are separate from the mesquite reduction described in the original EA and will remain unchanged. The purpose and scope of this Supplemental Environmental Assessment (SEA) is limited to discussing the proposed changes to project implementation regarding the reduction of the mesquite on the project to more natural and historical level and detailing the potential impacts that may occur as a result of those changes. With the exception of the points described in the following sections, the original EA accurately represents: the project's purpose and need; the analyses of the project's design alternatives, including the alternative of no action and the preferred alternative, and the potential environmental impacts associated with each alternative.

A new Finding of No Significant Impact for the proposed project will be prepared including the changes as identified in this Environmental Assessment (EA).

BRIEF DESCRIPTION AND HISTORY OF THE PROJECT

Study Authority. The study is authorized under the authority of Section 1135 (b) of the Water Resources Development Act of 1986, as amended (33 USC 2201). In a letter dated May 14, 2002, City of San Angelo expressed their desire to participate in an ecosystem restoration study comprising all federal lands associated with O.C. Fisher Lake. The Upper Colorado River Authority (UCRA) joined the project as the local non-federal Sponsor during project design and implementation.

Study Objective. The objective of the study is to examine ecosystem degradation within and surrounding O.C. Fisher Lake, and recommend an ecosystem restoration project for implementation if one could be found that is technically and economically feasible,

environmentally acceptable, and supported by the city of San Angelo and the Upper Colorado River Authority.

Study Participants. The O.C. Fisher Lake Ecosystem Restoration Project Study was initiated at the request of the City of San Angelo. In addition to USACE and City of San Angelo, the study has been a multi-disciplinary effort among a wide range of participants including the United States Fish and Wildlife Service (USFWS), United States Natural Resources Conservation Service (NRCS), Texas Parks and Wildlife (TPWD), Angelo State University (ASU), Texas Agricultural Extension Service (TAES), Upper Colorado River Authority (UCRA), and Texas State Soil and Water Conservation Board (TSSWCB).

Location. O.C. Fisher Lake is located in west Texas on the North Concho River, 6.3 miles above the river's confluence with the South Concho River and approximately 65 miles above its confluence with the Colorado River. The lake is adjacent to the city limits of San Angelo in the northwest corner of Tom Green County, Texas. Figure 1 is a location map of O. C. Fisher Lake.

O.C. Fisher Lake. O.C. Fisher Lake is a multipurpose reservoir operated by the US Army Corps of Engineers (USACE) and authorized primarily for flood control purposes. Other missions of the reservoir include water supply for the City of San Angelo, recreation, and wildlife habitat. Construction of the reservoir began in May 1947 and was completed in February 1952.

The conservation pool is 5,440 surface acres at 1908 feet mean sea level (msl), and its flood pool is 12,700 surface acres at 1938 feet MSL. All lands are owned by USACE and USACE operates and maintains the dam and uncontrolled spillway. The remaining lands are operated and maintained through license agreements with USACE. ASU operates and maintains the land north of the North Concho River for fish and wildlife management, biological research, education, and plant conservation. Texas Parks and Wildlife Department (TPWD) operates lands south of the river for recreational purposes.

PROPOSED CHANGES TO PROJECT IMPLEMENTATION

The *Detailed Project Report and Integrated Environmental Assessment for the O.C. Fisher Lake Ecosystem Restoration Project* which was prepared by the US Army Corps of Engineers, Forth Worth District in June 2005 detailed the potential environmental impacts of five different alternatives including the no-action alternative. Plan 3 was selected as the National Ecosystem Restoration (NER) Plan. The selected plan included removal of salt cedar and reduction of mesquite, willow baccharis and prickly pear. The plan also includes native tree and shrub plantings within degraded riparian woodlands (154.7 acres with 300 seedlings planted per acre) and black willow riparian habitat (5.7 acres and 150 seedlings per acre). After full implementation of the recommended restoration plan, the five existing habitat classifications (aquatic-lacustrine, aquatic-riverine, aquatic-riverine-intermittent, riparian woodland and transitional) would be

substantially improved by restoring the biological integrity, diversity and stability of the ecosystem within lands owned by USACE at O.C. Fisher Lake.

As mentioned in the Purpose and Needs changes are limited to the methods for removing mesquite. Several methods for Mesquite removal were considered in the EA including several mechanical methods, herbicide application, and prescribed burning.

Prescribed burning was eliminated from consideration because it is not effective upon mature mesquite plants, those greater in age than a few years. Mesquite trees within the study area are predominately very mature trees and fire is not a viable alternative for initial removal of mesquite.

Herbicide application is an effective means of removing mesquite. Due to the vast acreage, density, height of the mesquite and the terrain, herbicide application through individual plant treatment is not feasible for consideration. The only feasible alternative for herbicide application within the study area is aerial application. Aerial herbicide (fixed wing) application can result in significant vapor drift during application and the herbicide has been documented to kill agricultural crops, especially cotton, and other desirable vegetation within vapor drift areas. Helicopter aerial herbicide application would reduce vapor drift, but due to the nature of the herbicide and application requirements it cannot be reduced significantly. There are residential areas and businesses adjacent to mesquite areas and vapor drift is a major concern. Due to the consequences of vapor drift, aerial herbicide application was not considered further in the original EA.

2005 RECOMMENDED PLAN

The recommended method of Mesquite Reduction in the recommended plan was by mechanical means using excavation and extraction methods. The estimated costs for mesquite reduction using the recommended plan were approximately $140 per acre for a total of $1,160,000.

REVISED RECOMMENDED PLAN

The Upper Colorado River Authority (UCRA) procured a contract to remove the mesquite on the project at a significant cost savings over the estimate in the EA. The contractor effectively performed mesquite removal operations on approximately 392 acres, before defaulting on the contract. The UCRA will not be able to fund their portion of the cost share for mesquite removal due to budgetary constraints, unless a more cost effective method of removal/reduction of mesquite is not identified. The UCRA has proposed using herbicide application to treat the mesquite. The Revised Recommended Plan using aerial application herbicide is approximately $45 per acre for a total of $382,000 for a total cost reduction of $778,000 from the Mesquite Removal portion of the 2005 Recommended Plan. Two herbicides would be used in combination, Reclaim Herbicide and Remedy Ultra Herbicide both products of Dow AgroSciences. The mixture is particularly efficient in removing mesquite trees.

The new recommended treatment method would be with aerial application using a helicopter, which in the original EA, was stated to reduce the concerns of vapor drift to adjacent private property. The mesquite will be killed with herbicide and left to degrade overtime, not mechanically removed. Several other Best Management Practices (BMPs) would also be taken to ensure adjacent private property is protected. These include:

- Strict adherence to required atmospheric conditions for spraying prior to herbicide application. Temperature, humidity and time of year will govern the appropriate times to spray.
- Creation of a 100 ft. buffer strip between areas to be treated and adjacent private property.
- Use of course large droplet sprays to minimize drift.
- Application would take place when drift potential is lowest between 2 and 10 mph.
- The contractor for herbicidal application would be required to possess and maintain all appropriate local, state and federal permits for herbicidal application.

Figure 2 below shows the vegetation types located on the project. Additional information on environmental consequences from this proposed change is noted below.

ENVIRONMENTAL CONSEQUENCES

Soils. Soils within the study area are predominately contained within three soil series; Angelo series, Kimbrough series and Tulia series. Angelo series is described as nearly level to gently sloping soils on smooth outwash plains. Angelo soils are well-drained, have slow surface runoff, moderately slow permeability, and are well suited to crops or to range. The Kimbrough series is described as gently sloping to sloping and undulating soils on outwash plains. Kimbrough soils are well-drained, surface run-off medium, moderate permeability and are mostly used as range and wildlife habitat. The Tulia series is described as nearly level to gently sloping soils on outward plains. It is well-drained, surface runoff medium, moderate permeability and suitable for crops, range and wildlife habitat (Soil Conservation Service 1976).

2005 Recommended Plan: Mesquite removal through excavation as presented in the original EA produces the most soil disturbance of the restoration project, creating holes approximately three to four feet wide, sloping from the edge to about 18 inches deep in the middle. Excavated soils remain immediately adjacent to the hole and over time the holes would gradually recapture the soil.

Revised Recommended Plan: The proposed change to helicopter aerial herbicide application to control mesquite on project lands would reduce ground disturbing activities and reduce the amount of bare soil that would be subject to erosion during project construction.

Archeological and Cultural Resources. The richness of cultural resources within the study area requires special consideration. The State Historical Preservation Officer reviewed the restoration project and provided recommendations with which to follow to prevent adverse impacts upon the cultural resources within the study area. In addition to 39 recorded cultural resources sites, an additional 2,455 acres were identified to exhibit medium to high potential to contain cultural resources within mesquite removal areas. .

2005 Recommended Plan: Cultural resource surveys would be conducted within these areas before mesquite removal could take place. Vegetative plantings would involve planting only seedlings within riparian woodland as approved by SHPO. (State Historical Preservation Office 2003)Without special consideration, a potential exists that implementation of the restoration project could result in detrimental impacts to the cultural resources within the study area.

Revised Recommended Plan: Since aerial application would not have ground disturbances the aerial application of herbicide would have no adverse impacts to cultural resources.

Vegetation. During the preparation of the original EA, the predominant agricultural crop grown adjacent to project lands was cotton. Cotton is very susceptible to damage from vapor drift from aerial application of the herbicide used to control Mesquite. In recent years, local farmers have begun to predominantly plant other crops such as wheat on fields adjacent to the project area which make them much less susceptible to damage from the herbicide used to treat Mesquite.

2005 Recommended Plan: Mechanical removal would not affect the vegetation on adjacent properties.

Revised Recommended Plan: The 2005 Recommended Plan mechanically removed 392 acres of mesquite before being halted due to budgetary constraints. The remaining 8338 acres would be removed using aerial herbicide. The Revised Recommended Plan would complete the restoration for a total of 8730 acres of restored habitat and the native species will be allowed to return.

To eliminate adverse effects of vapor drift on the vegetation of adjacent private properties a 100 ft. buffer strip would be maintained between areas to be treated and adjacent private property, also strict adherence to the required atmospheric conditions (wind speed, humidity, temperature etc.) would be maintained throughout the spraying operation. Herbicide application will be preformed when less sensitive crops are in season to further avoid damage to adjacent private properties.

The two herbicides used in combination, Reclaim Herbicide and Remedy Ultra Herbicide both products of Dow AgroSciences have a synergistic effect in killing mesquite. They are designed to also kill broad leaf plants, a complete list of plants controlled can be found on the specimen label for each herbicide. Because more native species will be planted according to the original 2005 Recommended Plan after sufficient hydrology has

been restored to the tributaries, there are no permanent adverse impacts to the project area vegetation.

Existing Project and Land Use.

2005 Recommended Plan: The proposed project would not have any adverse impacts to project or land use in the area. Land use authorized under existing leases would remain in effect. Improved stream flow and increased native vegetation diversity would improve land use. It is hoped that the proposed restoration project would serve as a model for landowners with lands under similar degraded conditions and demonstrate the positive environmental benefits that may be achieved through restoration.

Revised Recommended Plan: The effects would be the same as the 2005 Recommended Plan.

Hydrologic Impacts on O.C. Fisher Lake. Using the computer program HEC-5 monthly observed data from 1972-1996 for model calibration, and data bases for various alternative brush, range and riparian management schemes the with-project lake level is projected at 1900.96 assuming average rainfall and groundwater pumping amounts will remain relatively unchanged.

2005 Recommended Plan: It is estimated that the implementation of the recommended plan would yield increased stream flows and would increase the lake level.

Revised Recommended Plan: The effects would be the same as the 2005 Recommended Plan.

Aquatic Habitat and Species.

No work would be performed within existing aquatic habitat containing surface water. As the restoration project progresses, the hydrology component so lacking within the ecosystem would drastically improve, increasing available surface water and improving water quality. Vegetation along adjacent riparian areas would provide shade to maintain water temperatures within ranges optimal for the growth and development of aquatic organisms.

2005 Recommended Plan: Because the restoration project involves excavation adjacent to surface water, there is some potential for temporary adverse impacts from sediment deposition within streambeds. Safeguards to reduce soil erosion would be implemented as necessary if the potential for erosion exists.

Revised Recommended Plan: Because there would be no ground disturbances and BMP's would be used to minimize/avoid aerial drift no adverse impact to the aquatic habitat or aquatic species is anticipated. Specimen label directions for the use of Reclaim and Remedy Ultra would be followed including no direct application to surface water. The area to be sprayed is located approximately one mile from the nearest open surface water.

Wetlands. No wetlands are indicated within the study area on National Wetland Inventory (NWI) maps. Small areas adjacent to existing springs and tributaries may function marginally as wetlands.

2005 Recommended Plan: Restoring the hydrology within the ecosystem may transform these to a more aquatic habitat, but overall, the restoration project would improve the quantity and quality of any wetlands found within the study area. The effects would be the same for both projects.

Revised Recommended Plan: The effects would be the same for both projects.

Terrestrial Habitat and Species. Lands within the study area include aquatic, riparian and transitional habitats offering a high level of biodiversity. Bottomland hardwoods and associated aquatic habitats support approximately 116 species of fish, 31 species of amphibians, 54 species of reptiles, 273 species of birds, and 45 species of mammals (Fentress 1986).

2005 Recommended Plan: There would be no adverse impacts to the terrestrial resources in the proposed project area from implementation of the recommended plan. Existing terrestrial habitat would be restored from the dominant degraded shrub land condition to its historical condition dominated by grass species with scattered tree mottes. The ecosystem restoration project contains 86.2 acres of undisturbed bottomland hardwood community, and restoration of an additional 160.4 acres, would benefit the large majority of these bottomland hardwood wildlife species.

Revised Recommended Plan: The effects would be similar for both plans; however, the revised plan would result in snags being left standing until they deteriorate. This would provide habitat for wildlife. The amount of herbicide required for the removal of mesquite would not adversely affect the area fauna.

Threatened and Endangered Species. USFWS reports that two endangered species, two threatened species, and one candidate species are federally listed and known to occur within Tom Green County, as summarized in the original EA. In addition, the American peregrine falcon (*Falco perigrinus* var. *anatum*) and Texas horned lizard (*Phrynosoma cornutum*) are listed as State endangered species for Tom Green County. Most of these species are not known to occur within the study area. Species of particular interest identified by the USFWS within the proposed project area include the black-capped vireo and the Concho water snake.

2005 Recommended Plan: The proposed restoration project was reviewed by the USFWS and TPWD. The Planning Aid Report provided by USFWS reviewed the potential impact of the restoration project upon endangered and threatened species within Tom Green County. The report states that due to lack of suitable habitat and/or location, most of the species are not expected to be found within the study area. The report provided a discussion of two endangered species which may occur within the study area, the Concho

water snake and the black-capped vireo, but concluded that it is unlikely that either species would utilize the study area (USFWS 2004). Potential exists that the improved habitat condition derived during and upon implementation of this restoration may benefit most of the state and federal listed endangered or threatened species, including the Concho water snake, black-capped vireo, American peregrine falcon, bald eagle, whooping crane (migration), and Texas horned lizard. The effects would be the same for both projects.

Revised Recommended Plan: The effects would be the same for both projects.

Air Quality. Tom Green County meets or exceeds the primary standard for air quality established by the U.S. Environmental Protection Agency (EPA) and is therefore classified as an attainment area. The primary standard considers pollutant levels of carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, particulate matter and lead. The closest air monitoring station is located in Odessa of Ector, County, 132 miles north-northwest of San Angelo. Since 1998, the air monitoring station recorded only 2 days in 2001 when the air quality index reached unhealthy levels of air pollutants (EPA 2004).

2005 Recommended Plan: No significant adverse impacts to air quality would occur from implementation of the proposed project.

Revised Recommended Plan: Minimal and temporary impacts would be observed from aerial application of herbicide. These impacts would be minimized with BMP's and would be temporary in nature. Because these impacts would be very temporary in nature, these would be insignificant.

Direct inhalation or skin contact of the herbicide can cause irritation. Because the herbicide would be applied using aerial application in combination with BMP's the risk of direct contact with sensitive receptors would be eliminated. Neither herbicide is found to cause cancer in lab animals.

Water Quality. O.C. Fisher Lake is listed as impaired for salinity, total dissolved solids, sulfates, and chloride according to the 2004 Clean Water Act 303(d) list. High levels of chloride are presumably in part due to the exudation of salt crystals from large stands of salt cedar within the lake bed.There is very little potential for adverse impacts to water quality within O.C. Fisher Lake, North Concho River, Pott Creek and Turkey Creek on a temporary basis. Additionally, high chloride levels due to salt exudation of salt cedar would drop as salt cedar is removed from the ecosystem. The removal of salt cedar is not altered in Revised Recommended Plan.

2005 Recommended Plan: As mesquite trees are removed, soil may be exposed for a brief period but herbaceous vegetation should reestablish readily. Tree and shrub seedling planting within riparian woodland habitat would cause extremely minimal disturbance to the soil. Safeguards to reduce soil erosion would be implemented as necessary if the potential for erosion exists. As natural vegetative succession takes place, improved water quality would result because total suspended and dissolved solids would

be reduced. Grass and forb species would create a thicker herbaceous layer offering greater protection from erosion.

Revised Recommended Plan: The nearest surface water is located approximately one mile from the project area. No adverse impacts to water quality would occur.

Hazardous, Toxic and Radioactive Waste. No restoration project work would be conducted within identified hazardous, toxic, or radioactive waste locations within the study area. Only one documented environmental condition exists, an above ground storage tank located within a maintenance yard where no work would be performed.

2005 Recommended Plan: USACE would conduct an on-site visit to verify that any environmental conditions would not impact proposed restoration work. The effects would be the same for both projects.

Revised Recommended Plan: The effects would be the same for both projects.

Recreational, Scenic and Aesthetic Resources. Monocultures of mesquite, salt cedar and willow baccharis would be restored to habitat dominated with historical grassland conditions containing scattered tree mottes, enabling the public opportunities to observe aquatic habitats and historic grassland habitats, which were otherwise obscured by invasive brushy species and for the most part simply non-existent. With improved recreational, scenic and aesthetic resources, the public would desire to spend more time within the study area and camping would also increase.

2005 Recommended Plan: Mechanically removing the mesquite would leave temporary holes caused by excavation. The holes would gradually recapture soil and become overgrown with native plants, over time the aesthetic benefits can be fully recognized.

Revised Recommended Plan: The aerial herbicidal application would cause the mesquite to degrade over a period of time. This would delay aesthetic and recreational benefits.

Socioeconomic Conditions. Tom Green County encompasses 1,522 square miles with a population of 103,528 in 2003 (US Census Bureau 2004). Economy of the county is derived predominately from agriculture and ranching (Texas State Historical Association 1996). The county is referred to as the "Sheep and Wool Capital" (Tom Green County Information Technology Department 2004). San Angelo, comprised of 58.6 square miles and a population of 88,439 in 2000 (US Census Bureau 2004), is the county seat. San Angelo is known as the "Agribusiness Capital of Texas" and serves as a trade center for the agribusiness region known as "Concho Valley", including Coke, Coleman, Concho, Crockett, Irion, McCulloch, Menard, Reagan, Runnels, Schleicher, Sterling, Sutton, and Tom Green Counties. Primary agricultural commodities for the Concho Valley, for 1998-2000 were beef cattle, sheep/goats, cotton, hunting and recreation, dairy/milk, wheat, grain sorghum, hay, and pecans (San Angelo San Angelo Chamber of Commerce 2003).

2005 Recommended Plan: The restoration plan would create positive socioeconomic impacts within San Angelo and local communities, as well as Tom Green County as a whole. Upon improving the hydrologic conductivity of the watershed the O.C. Fisher Lake can return to historic levels increasing tourism. San Angelo Chamber of Commerce reports that a significant portion of local revenues are derived from tourism (San Angelo Chamber of Commerce 2003). The effects would be the same for both projects.

Revised Recommended Plan: The effects would be the same for both projects.

CUMULATIVE IMPACTS

In accordance with the Council on Environmental Quality (CEQ) regulations, indirect and cumulative effects must be considered for any projects that are subject to the National Environmental Policy Act (NEPA). The assessment of cumulative impacts is addressed in NEPA by its reference to interrelations of all components of the natural environment.

Federal law defines cumulative impacts as impacts "on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR § 1508.7). Cumulative impacts tend to be less defined than indirect impacts and are therefore more difficult to quantify.

A reasonably foreseeable action is an action that is sufficiently likely to occur such that a person of ordinary prudence would take it into account in making a decision. Factors that would indicate that a project or action is reasonably foreseeable include federal funding approvals for an anticipated project, pending funding before an agency to begin a project, and whether there is evidence of active preparation to make a decision on alternatives to a project.

Past, Present and Reasonably Foreseeable Projects of Others. No studies or projects are currently being conducted within the immediate study area. As mentioned earlier, O.C. Fisher Lake is an existing Federal Reservoir and the Revised Recommended Plan would be located within the boundaries of O.C. Fisher Lake and its surrounding land. The Texas State Soil and Water Conservation Board (TSSWCB) is implementing a major project, the North Concho River Pilot Brush Control Project, along the North Concho River, the major tributary of O.C. Fisher Lake. The project is in its sixth year and its purpose is to enhance the amount of water flowing from the North Concho River watershed through brush control on 432,000 acres, approximately half of the entire river's watershed. Currently, 295,510 acres of brush have been treated and treatment is continuing with additional state funding. The Upper Colorado River Authority (UCRA) reports that springs are beginning to flow and perennial characteristics within the main stem of the river are observed.

Soils and Archeological Cultural Resources. The aerial herbicidal application would not disturb the ground or any archeological and cultural resources in the area. The Revised Recommended Plan in combination with other projects would not result in any cumulative impacts to cultural resources or soils in the project area.

Land Use of Adjacent Private Property. With the use of BMPs the proposed project would not adversely affect the private properties adjacent to the study area. The Revised Recommended Plan would be vegetative management and would not affect land use. The Revised Recommended Plan in combination with other projects would have no cumulative impacts or changes to land use.

Hydrologic Impacts on O.C. Fisher Lake. Due to substantial evapotranspiration the North Concho River Watershed, including O.C. Fisher Lake has lost many of its naturally occurring springs. The current ongoing North Concho River Pilot Brush Control Project, along the North Concho River is successfully enhancing the amount of water flowing from the North Concho River watershed through brush control. As a result of the clearing the Upper Colorado River Authority (UCRA) reports that springs are beginning to flow and perennial characteristics within the main stem of the river are observed. With the additional salt cedar and reduction of mesquite, willow baccharis and prickly pear, the Revised Recommended Plan would further increase hydrologic conductivity in the watershed.

This would allow for maximum surface water retention during the restoration process as the invasive, phreatophytic vegetation is removed within the perennial aquatic habitat. As the invasive, phreatophytic brushy species are removed, the hydrology of the ecosystem would improve. Riverine base flows would increase as the groundwater table rises and spring flows improve. Lacustrine habitat would increase with increased base flows within riverine and riverine-intermittent habitats. Riparian areas would be restored as riverine habitat is capable of sustaining it. Fire would be returned to the transitional habitat within the ecosystem in the form of prescribed burns to aid in sustaining the ecosystem. The Revised Recommended Plan in combination with the North Concho River Pilot Brush Control Project in the area would have a positive cumulative impact on the hydrologic conductivity of the area, including O.C. Fisher Lake.

Aquatic Resources. As stated above the surface water area of the O.C. Fisher Lake is and would continue to increase. Additionally, the quality of surface water has been improved by controlling invasive vegetative species through increased erosion control resulting in increasing native groundcover vegetation. As natural vegetative succession takes place, improved water quality would result because total suspended and dissolved solids would be reduced. With increasing surface area and water quality the aquatic habitat and species would also improve.

Areas adjacent to existing springs and tributaries may function marginally as wetlands. Restoring the hydrology within the ecosystem may transform these to a more aquatic habitat, but overall, the restoration project would improve the quantity and quality of any wetlands found within the study area. The Revised Recommended Plan in combination

with the North Concho River Pilot Brush Control Project would improve conditions for aquatic habitat and species; along with maximize the potential for wetlands providing a positive cumulative impact.

Terrestrial Habitat Vegetation and Species. Allowing the mesquite and willow to degrade overtime by herbicide would preserve habitat created by the trees while native species are restored. The study area would return to a historic grass species with scattered tree mottes and wildlife diversity would increase within the study area. Joined with the North Concho River Pilot Brush Control Project there would be an increase in native habitat connectivity, increasing the opportunity for wildlife to flourish. The Revised Recommended Plan in addition to the North Concho River Pilot Brush Control Project would result in a cumulative total of 440,730 acres restored to native habitat.

Threatened and Endangered Species. Potential exists that the improved habitat condition derived during and upon implementation of this restoration may benefit most of the state and federal listed endangered or threatened species, including the Concho water snake, black-capped vireo, American peregrine falcon, bald eagle, whooping crane (migration), and Texas horned lizard. In combination with the habitat benefits of the North Concho River Pilot Brush Control Project the Revised Recommended Plan would potentially provide a positive cumulative impact.

Air Quality. No significant adverse impacts to air quality would occur from implementation of the proposed project or other current projects in the area.

Hazardous, Toxic and Radioactive Waste. The Revised Recommended Plan work would not be conducted within identified hazardous, toxic, or radioactive waste locations within the study area. There would be no adverse cumulative impacts.

Recreational, Scenic and Aesthetic Resources. The removal of mesquite would have extremely significant beneficial impacts upon the recreational, scenic and aesthetic resources within the study area. Restoring the hydrology within the ecosystem would increase surface water within the lacustrine and riverine habitats and would in-turn increase the recreational opportunities available to the public. Existing lacustrine and riverine habitat conditions render boat ramps and swimming areas completely useless, but upon full implementation of the restoration project, the boat ramps and swimming areas would once again be located along the shoreline affording the public opportunities for boating and swimming. With the increased lacustrine and riverine habitat, additional opportunities for fishing, hunting, birdwatching, wildlife viewing and sight-seeing would also increase. The habitat through which existing recreational trails traverse would offer improved scenic and aesthetic resources for the public. The Revised Recommended Plan in combination with the North Concho Pilot Brush Control Project would provide a positive cumulative impact.

Socioeconomic Conditions. Through a fully implemented O.C. Fisher Lake Ecosystem Restoration Project in addition to the North Concho River Pilot Brush Control Project,

lake levels would rise to levels approaching that which previously existed upon reservoir construction, offering more recreational opportunities. As public visitation increases, revenue of the local economy would also increase as the public obtains necessary supplies and services to support their recreational activity.

A tremendous, welcomed economic benefit would be realized for San Angelo through the restoration of O.C. Fisher Lake approaching historical lake level. There is no doubt that an unreliable, ever depleting water source for San Angelo negatively impacts the ability of San Angelo to attract new companies, businesses and industries to the area. With the establishment of a reliable water source, the attractiveness of San Angelo and the local communities is much improved and the Socioeconomic conditions within San Angelo, local communities and Tom Green County would improve. The Revised Recommended Plan in combination with the North Concho River Pilot Brush Control Project would produce a positive cumulative impact.

Summary of Cumulative Impacts. In summary the Revised Recommended Plan in combination with other projects in the area would have no adverse cumulative impacts to the project or surrounding areas.

FINDINGS AND CONCLUSIONS

The changes to the proposed project would not create any significant impacts to the environment or human population. The proposed changes are limited to the removal methods for mesquite, from mechanical to chemical (herbicide) methods. Helicopter aerial application of herbicide is being used for control of Salt Cedar and Willow Baccharis on this project and is an effective means for removal of Mesquite. Helicopter aerial application of herbicide for Mesquite control is also being used on other brush control projects in the area by the UCRA effectively and safely with no adverse impacts. With the 100 ft. buffer strip, strict adherence to required atmospheric conditions and the change in agricultural land use adjacent to the project area, no adverse impacts are anticipated to adjacent private property.

Therefore, the USACE, after considering a wide range of regulatory, environmental and socio-economic factors, in compliance with the National Environment Policy Act, has identified no significant impacts to the environment resulting from the proposed changes to project implementation.

PUBLIC REVIEW

A Supplemental Environmental Assessment (SEA) and Finding of No Significant Impact (FONSI) for the proposed project were prepared by the Fort Worth District, U.S. Army Corps of Engineers (USACE) in accordance with the requirements of NEPA. The public review period was initiated on 15 July 2010 and public notices were sent to interested parties. The comment period ended on 14 August 2010 with only two official comments received.

The Environmental Protection Agency (EPA) responded with two official letters the first dated 3 August 2010. The Environmental Protection Agency had documented that they reviewed the project and determined that the project area did not contain a sole source aquifer (SSA) and thus is not eligible for review under the SSA program.

The Environmental Protection Agency second letter, dated 11 August 2010, documented that they reviewed the project and identified potential areas of concern. The comments included rare species and/or habitat, disposal method of the treated mesquite trees, and measures taken to avoid adverse affects of herbicidal runoff to the adjacent waterways. USACE addressed all comments and responded in an official letter dated 31 August 2010. The comment letters and USACE response letters can be found in Appendix A.

No official comments were received from the United States Fish and Wildlife Service, Texas Historical Commission, Texas Commission on Environmental Quality, or Texas Parks and Wildlife Department during the 30-day public review of the EA. No significant comments were received during the public review period to warrant changes to the FONSI or posting of an additional public notice.

The Final SEA, Final FONSI, comment letters and USACE responses will be posted on the USACE, Fort Worth District website at http://www.swf.usace.army.mil.

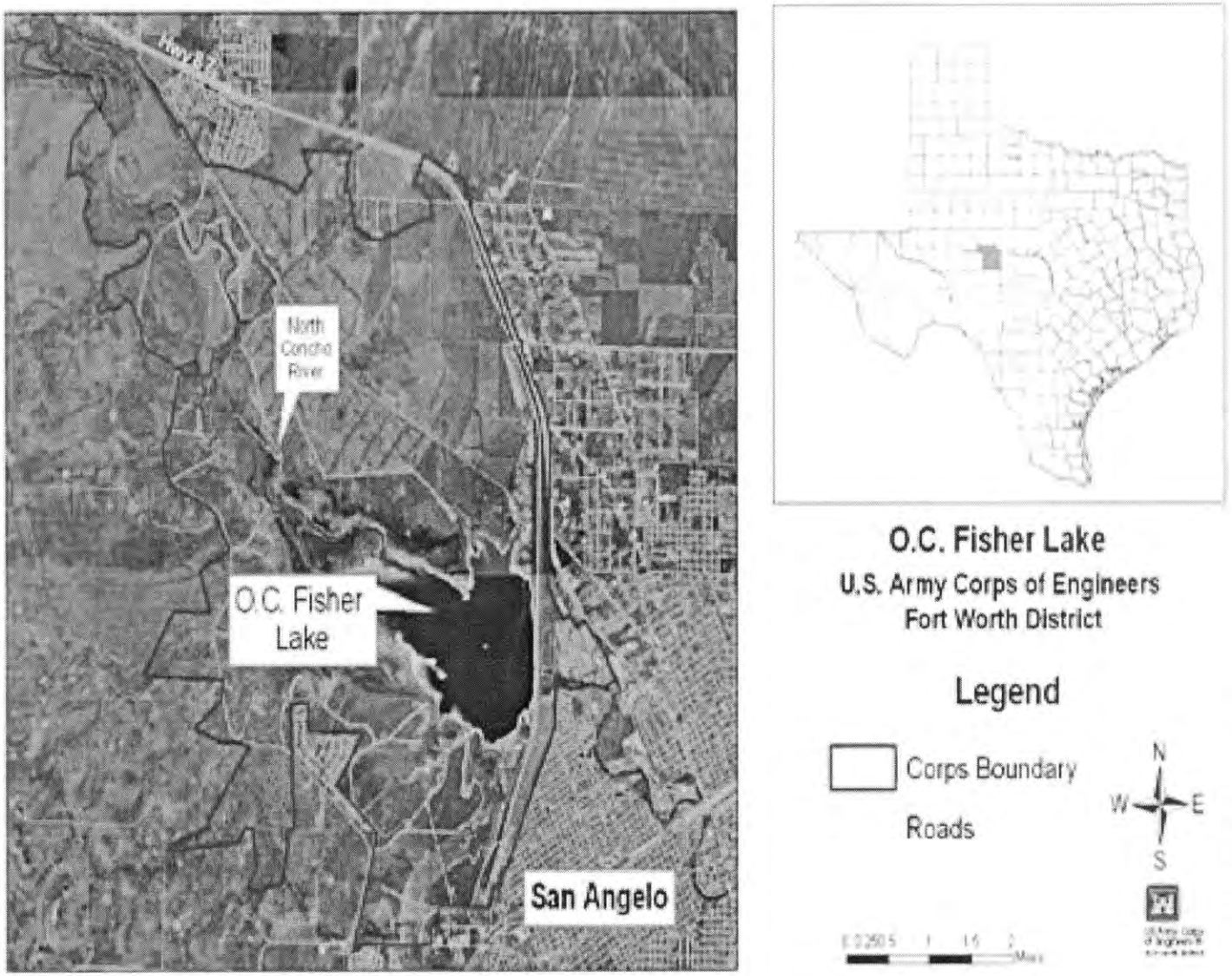

Figure 1: Location Map

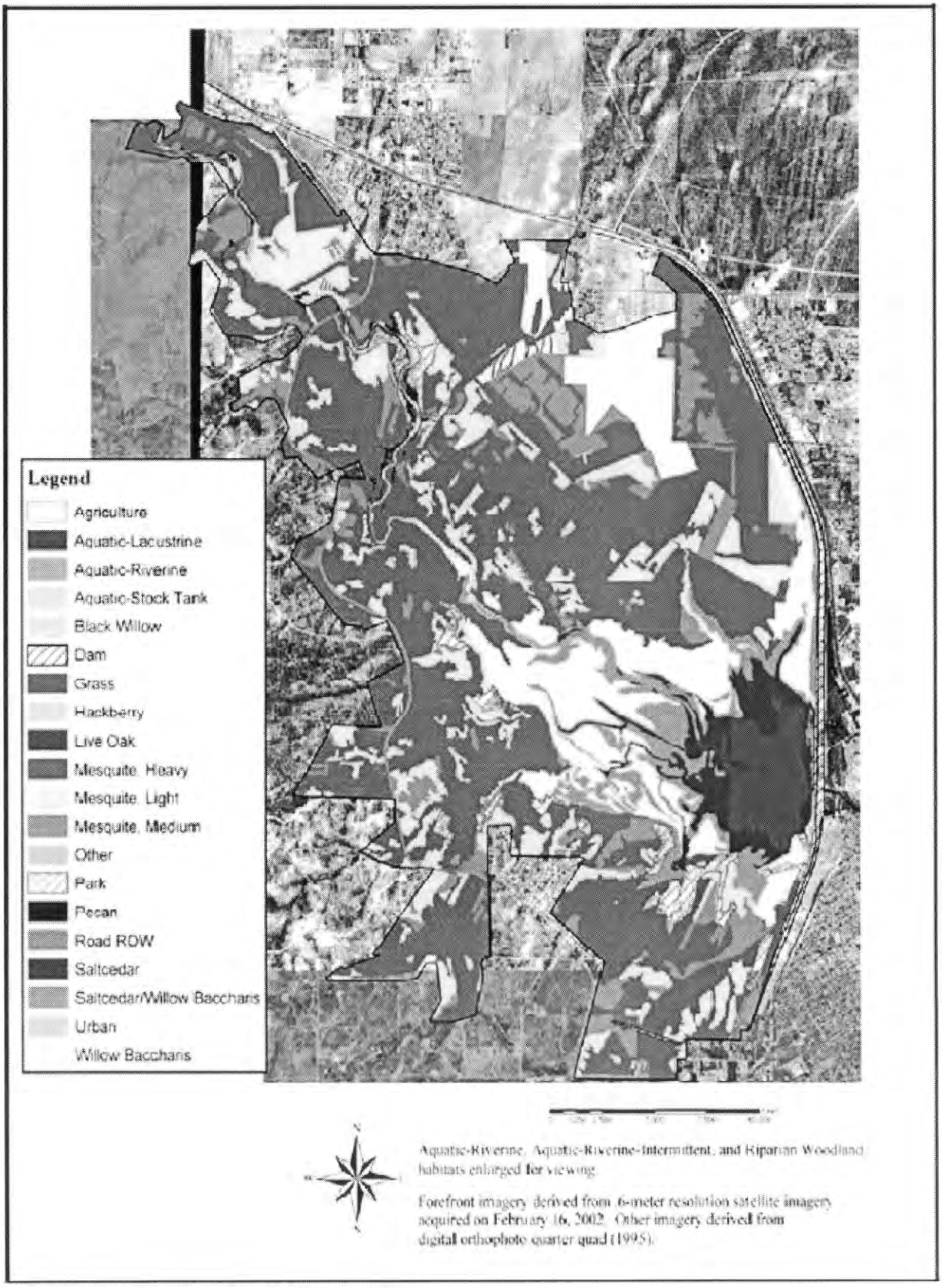

Figure 2: Project Area Vegetation

APPENDIX A

Comments and Responses

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

August 3, 2010

William Fickel. Jr.
Chief
Planning , Environmental and
Regulatory Division
Department of the Army
Corps of Engineers
P.O. Box 17300
Ft. Worth, TX 76102-0300

Dear Mr. Fickel:

Thank you for your July 15, 2010, letter requesting our evaluation of the potential environmental impacts which might result from the following project:

Proposed
O. C. Fisher Lake Ecosystem
Restoration Project
Restoration Project
Tom Green County
San Angelo, Texas

In administering the sole source aquifer (SSA) program under Section 1424 of the Safe Drinking Water Act our Office performs evaluations of projects with federal financial assistance which are located over a designated sole source aquifer.

Based on the information provided, we have concluded that the project does not lie within the boundaries of a designated sole source aquifer and is thus not eligible for review under the SSA program.

If you did not include the Parish/County; a legal description; project location and the latitude and longitude if available, please do so in future Sole Source Aquifer correspondence. To view a map of the Sole Source Aquifer delineation(s) for your state go to the following website. http://www.epa.gov/region6/water/swp/ssa/maps.htm

If you have any questions on this letter or the sole source aquifer program please contact me at (214) 665-7133.

Sincerely yours,

Michael Bechdol, Coordinator
Sole Source Aquifer Program
Ground Water/UIC Section

Internet Address (URL) • http://www.epa.gov/region6
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RECEIVED 5 Aug 2010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

August 11, 2010

Hollie Hunter
US Army Corps of Engineers
CESWF-PER-EE
P. O. Box 17300
Fort Worth, TX 76102-0300

Dear Ms. Hunter:

The Environmental Protection Agency (EPA) Region 6 has received your correspondence, dated July 15, 2010, regarding the Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for the proposed O. C. Fisher Lake Ecosystem Restoration Project, San Angelo, TX. EPA has identified potential areas of concern that should be addressed in the SEA, including the development of alternatives and mitigation:

- Rare species and/or habitat, rare ecological community types, or wildlife management areas may exist within the study area boundary.
- O. C. Fisher Lake is listed as impaired for salinity, total dissolved solids, sulfates, and chlorides according to the 2004 Clean Water Act 303(d) list.
- It is unclear from the SEA what disposal method will be used for the treated mesquite brush. EPA is concerned that if the treated mesquite is mulched, it may be applied to residential or commercial property and damage or kill vegetation.
- It is unclear from the SEA what practices or measures would occur to prevent runoff of herbicide during or after a rain event.

EPA would like to be placed on the mailing list to receive notifications and updates regarding this project, as they become available. We appreciate the opportunity to provide comments to aid you in the development of the SEA. If you have questions or wish to coordinate further, please contact Dr. Sharon L. Osowski, of my staff at osowski.sharon@epa.gov or by phone at 214-665-7506.

Sincerely,

Cathy Gilmore

Cathy Gilmore, Chief
Office of Planning and Coordination
Compliance Assurance and Enforcement Division

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

August 30, 2010

Planning, Environmental, and Regulatory Division

Cathy Gilmore
Environmental Protection Agency
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Dear Ms. Gilmore:

The U.S. Army Corps of Engineers (USACE) has received your letter dated August 11, 2010, in response to the Supplemental Environmental Assessment (SEA) and Draft Finding of No Significant Impact (FONSI) for the proposed O. C. Fisher Lake Ecosystem Restoration Project, San Angelo, TX. USACE would like to address the potential areas of concern in your response letter in the attached comment matrix.

USACE will include the EPA in any mailing lists including notifications or updates regarding the O.C. Fisher Lake Ecosystem Restoration Project. EPA's comments are appreciated and if you have any additional comments please feel free to contact Ms. Hunter at CESWF-PER-EE, Post Office Box 17300, Fort Worth, Texas 76102-0300, or by e-mail at Hollie.Hunter@usace.army.mil.

Sincerely,

William Fickel, Jr.
Chief, Planning, Environmental, and
Regulatory Division

Enclosure

O. C. Fisher Lake Ecosystem Restoration Project Supplemental Environmental Assessment
COMMENT MATRIX

EPA Comment 1:

- Rare species and/or habitat, rare ecological community types, or wildlife management areas may exist within the study area boundary.

USACE Response 1:

- There are two species of particular interest identified by the United States Fish and Wildlife Service (USFWS) that could potentially be in the study area. As described in the original EA; due to the lack of suitable habitat and its relatively disturbed nature, it is unlikely that these species would utilize the study area.

EPA Comment 2:

- O. C. Fisher Lake is listed as impaired for salinity, total dissolved solids, sulfates, and chlorides according to the 2004 Clean Water Act 303 (d) list.

USACE Response 2:

- USACE will include this information in the Final SEA.

EPA Comment 3:

- It is unclear from the SEA what disposal method will be used for the treated mesquite brush. EPA is concerned that if the treated mesquite is mulched, it may be applied to residential or commercial property and damage or kill vegetation.

USACE Response 3:

- USACE clarified in the SEA that the mesquite trees would not be removed after herbicide application; they would be left to degrade naturally providing habitat.

EPA Comment 4:

- It is unclear from the SEA what practices or measures would occur to prevent runoff of herbicide during or after a rain event

USACE Response 4:

- The herbicidal spray is intended for broad leafed plants and would not be directly applied to the ground reducing the risk of runoff. BMP's would be implemented including not applying herbicide when rain is forecasted and leaving a buffer between the herbicide application area and adjacent lands to help prevent herbicide from reaching area waterways. The proposed treatment areas are over a mile from the main body of water at O. C. Fisher Lake further reducing the chance of negative runoff effects.