

Lower Duchesne River Wetlands Mitigation Project



UTAH RECLAMATION
MITIGATION
AND CONSERVATION
COMMISSION



UTE INDIAN TRIBE



SUMMARY
FINAL ENVIRONMENTAL IMPACT STATEMENT

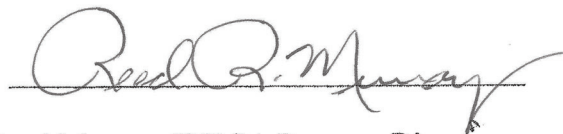
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**UTAH RECLAMATION MITIGATION AND
CONSERVATION COMMISSION**

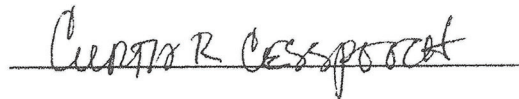
**Final Environmental Impact Statement
For the
Lower Duchesne River
Wetlands Mitigation Project**



Jody L. Williams, Chair
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Ute Indian Tribe

**Lower Duchesne River
Wetlands Mitigation Project**

Final Environmental Impact Statement

SUMMARY

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S.1 INTRODUCTION

The Lower Duchesne River Wetlands Mitigation Project (LDWP) is a Federally mandated project to restore and enhance wetland, riparian and supporting upland along the Duchesne River in the Uinta Basin in Northeastern Utah. The project responds to a need to fulfill mitigation commitments made to the Ute Indian Tribe (Tribe) that resulted from the development of the Bonneville Unit of the Central Utah Project (CUP). The CUP is a major water development project that develops water resources for use locally in the Uinta Basin and that diverts and transports Colorado River water from the Uinta Basin to populous areas on the Wasatch Front. This trans-basin diversion has harmed the Tribe by reducing flows in the Duchesne River, causing a loss of wetlands and wildlife that were important to the Tribe. The purpose of the LDWP is to mitigate for these Tribal losses and to provide additional wetland-wildlife benefits to the Tribe.

S.1.1 Purpose of this Summary

A summary is an essential component of an Environmental Impact Statement (EIS) as required by the National Environmental Policy Act (see 40 CFR 1502.1). At a minimum, the summary should provide an accurate and thorough overview of the EIS. Additionally, it should stress the major conclusions of the EIS, areas of controversy (especially those raised by the public and governmental agencies) and the issues to be resolved. This summary fulfills this requirement in the following organizational format:

- S.1 Introduction and Purpose of the Summary
- S.2 Summary of Chapter 1, Highlighting Background Information and Development of the Proposed Action and Alternatives
- S.3 Public Concerns, Issues, and Areas of Controversy
- S.4 Summary Description of the Proposed Action and Alternatives
- S.5 Major Impact Conclusions, Affected Environment and Environmental Consequences
- S.6 Coordination and Consultation

S.2 SUMMARY OF CHAPTER 1

S.2.1 Background, Purpose and Need

The CUP, originally authorized in 1956 as part of the Colorado River Storage Project Act, is a massive water development project intended to assist Utah in utilizing its apportionment of waters from the Colorado River. The Bonneville Unit, the most expensive and complex subunit of the CUP, is being constructed to deliver water from the Uinta Basin to the populous Wasatch Front. One completed feature of the Bonneville Unit is the Strawberry Aqueduct and Collection System (SACS), an aqueduct system that gathers water from the upper Duchesne River and various tributaries. This water is transported to Strawberry Reservoir for storage and eventual use on the Wasatch Front.

As a result of construction and operation of SACS, wetland-wildlife habitat was lost along the Duchesne River and adjacent to Strawberry Reservoir. Much of these wetland losses occurred on Uintah and

Ouray Indian Reservation lands. As a result, the Tribe lost certain benefits associated with such wetlands, including wetland and riparian habitats, hunting opportunities, plants and fish and wildlife important to the Tribe.

The Federal government recognized as early as 1964 that construction of the CUP would harm the interests of the Tribe. In response, the U.S. Fish and Wildlife Service (FWS) recommended in 1965 that wildlife management areas totaling 6,640 acres be developed to replace wetland and waterfowl habitat for the benefit of the Tribe. The U.S. Bureau of Reclamation (Reclamation), the federal agency then responsible for constructing CUP, adopted this recommendation as a project feature in its September 1965 Supplement to the 1964 Definite Plan Report. The project commitment was affirmed again with the issuance of the 1988 and 2004 Definite Plan Reports for the Bonneville Unit.

The Central Utah Project Completion Act of 1992 (CUPCA) again reaffirmed the commitment of the federal government to complete all unfulfilled mitigation obligations of the CUP and at the same time recognized that fulfillment of these obligations had not kept pace with construction of project features. With the passage of CUPCA, Congress created the Utah Reclamation Mitigation and Conservation Commission (the Mitigation Commission) and gave that new agency the authority and responsibility to complete the unfulfilled CUP environmental mitigation obligations. The CUPCA also established the CUP Completion Act Office under the Office of the Secretary of the Department of the Interior (DOI) to oversee implementation of CUPCA.

The Mitigation Commission and the DOI are the joint-lead agencies for this Final EIS. The Tribe is a key project partner as there is a substantial involvement and commitment of Tribal trust resources involved in the LDWP. Decision making authority for selecting which LDWP alternative to implement rests with the three project partners for this FEIS: the Mitigation Commission, the DOI-Central Utah Project Completion Act Office and the Tribe.

S.2.2 The Development of the Proposed Action and Alternatives

In 1995, the Mitigation Commission initiated planning for the LDWP with the Tribe and DOI. By that time it had been 31 years since the original SACS mitigation obligation had been recognized by Reclamation in the 1964 DPR and in the 1965 Deferral Agreement with the Ute Tribe. Accordingly, a feasibility study was completed in 1998 that reevaluated and revised the original mitigation commitment to embrace more current concepts such as habitat restoration, wetland diversity and ecosystem management required in CUPCA. Greater consideration was given to a much broader range of wetland-dependent species, including deer, raptors, wading birds and songbirds. The U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Indian Affairs (BIA) and Reclamation assisted the Commission, DOI, and Tribe in this planning effort.

The Draft Environmental Impact Statement (DEIS) for the LDWP, issued in 2003, presented three action alternatives. Each alternative addressed the obligation to provide mitigation to the Tribe for the impacts of SACS on wetlands adjacent to the Duchesne River and to provide additional wetland-wildlife benefits to the

Tribe. In addition, the Proposed Action presented in the DEIS also intended to fulfill the federal government mitigation obligation for the related Duchesne River Area Canal Rehabilitation Program (DRACR).

S.3 ISSUES, PUBLIC CONCERNS, AND AREAS OF CONTROVERSY

Several areas of concern and issues were raised during scoping, consultation with cooperating and other agencies, and public review of the DEIS. The impact analysis contained in Chapter 4 of this FEIS addresses those issues in detail. There were several recurring concerns or areas of controversy expressed during public review of the DEIS. In response, the Proposed Action was revised in several important ways (refer to Chapter 5 of the FEIS). Key and recurring issues as well as revisions that were made to the Proposed Action in response to those comments are summarized below and are addressed in greater detail later in this Summary and in the FEIS. A summary table of the environmental impacts of the Proposed Action and Alternatives is also provided at the end of this summary and Figure S-1 on the following page shows the Project Area Map for the Proposed Action.

Issue: The Duchesne River Area Canal Rehabilitation program (DRACR) mitigation obligation should be kept separate from the LDWP.

Response: The DRACR mitigation component has been eliminated from consideration in conjunction with the LDWP mitigation obligation. The Mitigation Commission will develop plans for the DRACR mitigation program, separate and apart from the LDWP.

Issue: The LDWP will increase mosquitoes [and the risk of mosquito-borne West Nile Virus] and the need for mosquito control.

Response: Approximately 43% of the project boundary provides suitable mosquito producing habitat under baseline conditions, and the Proposed Action would increase this amount by 11%. Although the Proposed Action would result in an increase in potential mosquito habitat, there would be less acreage of untreated mosquito habitat under the Proposed Action compared to baseline conditions (Figure S-2). This is because the LDWP would implement a comprehensive mosquito control program that has been expanded and included as Appendix G of the FEIS. All potential breeding habitats within the project boundaries would be treated in accordance with the Mosquito Control Plan.

Issue: The LDWP will increase the amount of weeds in the area and increase the burden on local governments and nearby private landowners for weed control.

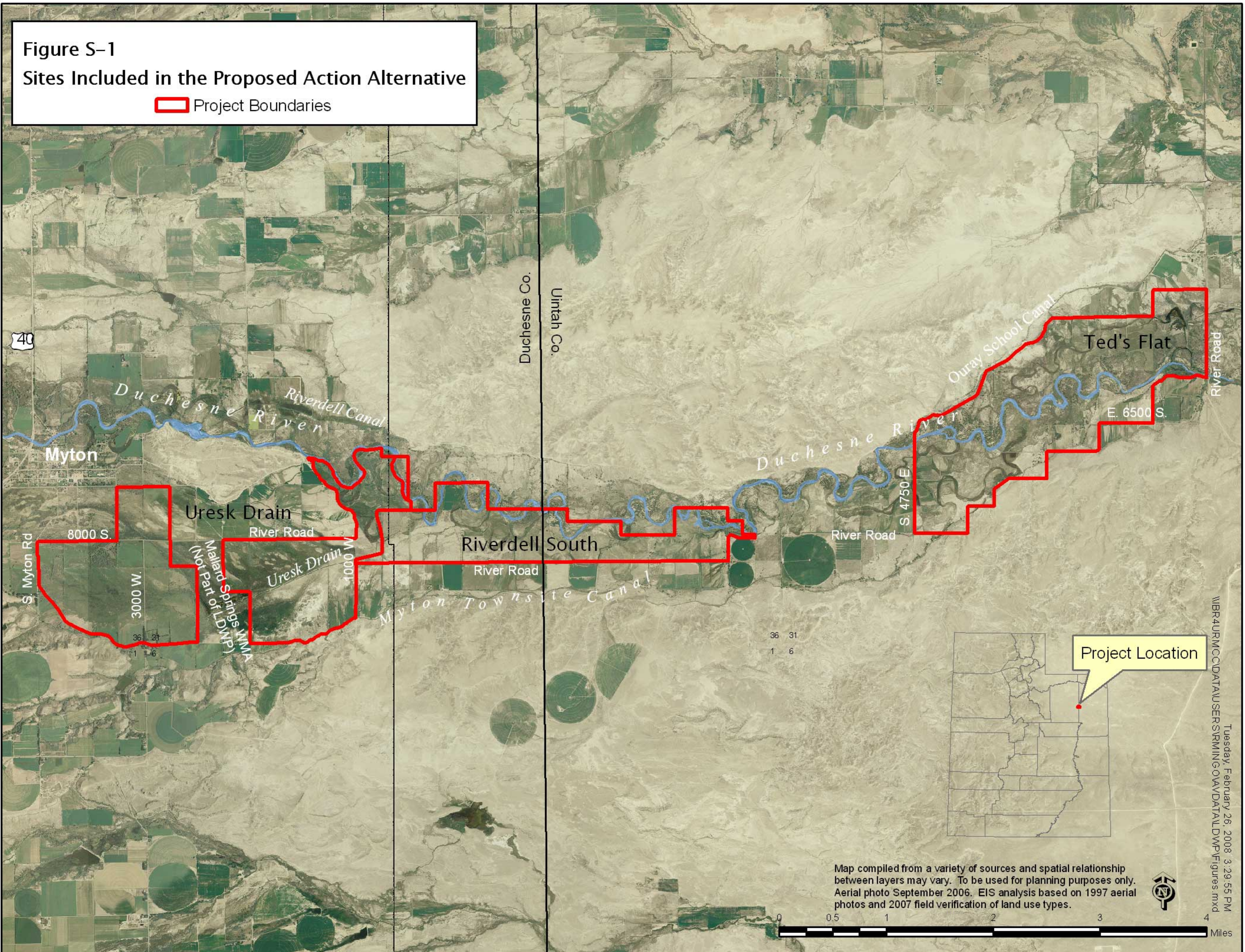
Response: The LDWP will result in a reduction in noxious weeds compared to the No Action Alternative, especially Russian olive, pepperweed, and tamarisk. Noxious weed control would take place during all phases of the project, from preconstruction and construction to operation and maintenance (O&M) in accordance with a detailed weed control plan included as part of the LDWP (Appendix B). Weed control is an LDWP project objective to improve wetland wildlife habitat.

Issue: Funding of mosquito and weed control.

Figure S-1

Sites Included in the Proposed Action Alternative

 Project Boundaries



Map compiled from a variety of sources and spatial relationship between layers may vary. To be used for planning purposes only. Aerial photo September 2006. EIS analysis based on 1997 aerial photos and 2007 field verification of land use types.

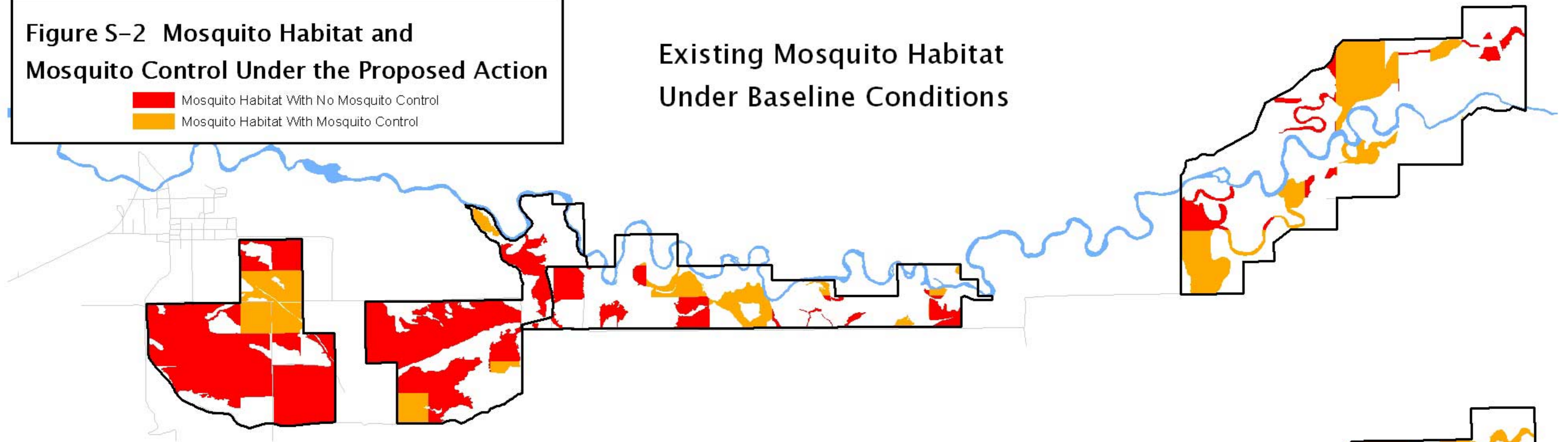


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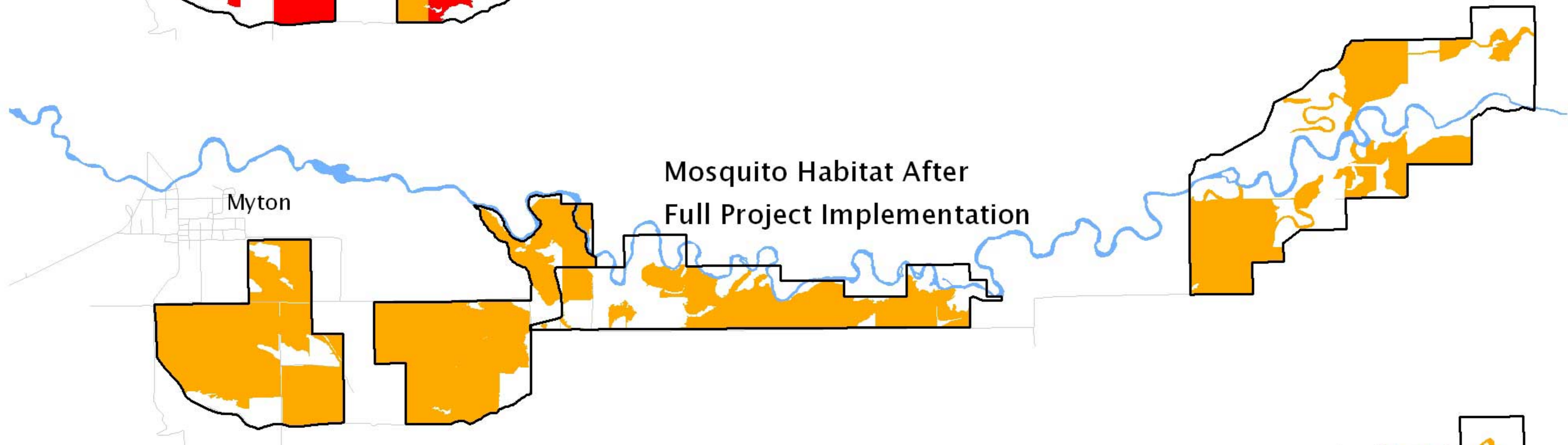
Figure S-2 Mosquito Habitat and Mosquito Control Under the Proposed Action

- Mosquito Habitat With No Mosquito Control
- Mosquito Habitat With Mosquito Control

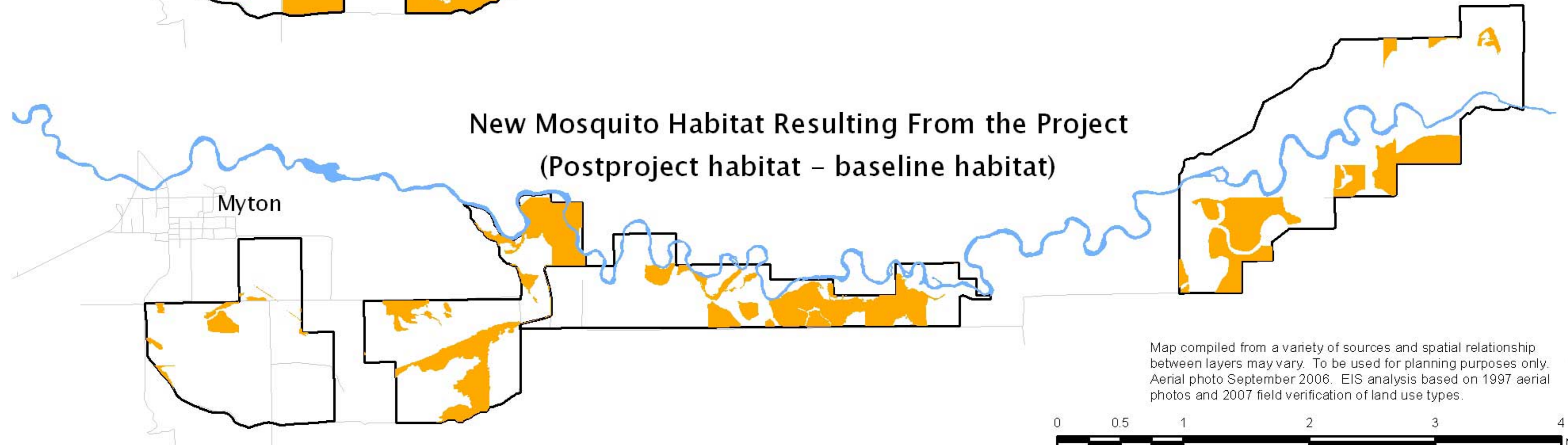
Existing Mosquito Habitat Under Baseline Conditions



Mosquito Habitat After Full Project Implementation



New Mosquito Habitat Resulting From the Project (Postproject habitat – baseline habitat)



Map compiled from a variety of sources and spatial relationship between layers may vary. To be used for planning purposes only. Aerial photo September 2006. EIS analysis based on 1997 aerial photos and 2007 field verification of land use types.



Response: The weed and mosquito control programs will be initiated during construction of the project and continue throughout the life of the project. Funding will be provided by the Federal government specifically for the LDWP.

Issue: Acquisition of Private Lands. There were concerns expressed about (A) the use of eminent domain to acquire private lands for the LDWP; (B) loss of private land; and (C) the tax impact on local government by removing lands from the tax rolls.

Response: (A) The Mitigation Commission and DOI recognize the concerns about using eminent domain to acquire private lands. Although it is necessary for joint-lead agencies to preserve the right of eminent domain for the LDWP, it will be used only as a last resort in the event that all reasonable efforts to complete an acquisition on a willing-seller basis have failed. The process of acquiring lands by eminent domain is controlled by federal regulation and policy and is designed to protect both the private landowner and the taxpayer. (B) The Proposed Action has been revised to reduce the amount of acreage in the project and specifically to reduce the amount of private land needed. This was done primarily by eliminating the site with the most private land (the Flume site), and revising other site boundaries to avoid established cropland where possible. Project goals were revised to emphasize habitat connectivity, equal emphases on wetland and riparian habitat, and ecosystem management. The amount of private lands to be acquired under the Proposed Action has been reduced from 2,154 acres in the DEIS, to 1,592 acres in the FEIS (Figure S-3). (C) Private (fee) lands acquired on a willing-seller basis under the revised Proposed Action will be retained in fee

status under Tribal corporate ownership, thereby retaining those private lands on the local tax rolls and minimizing tax impacts of the project.

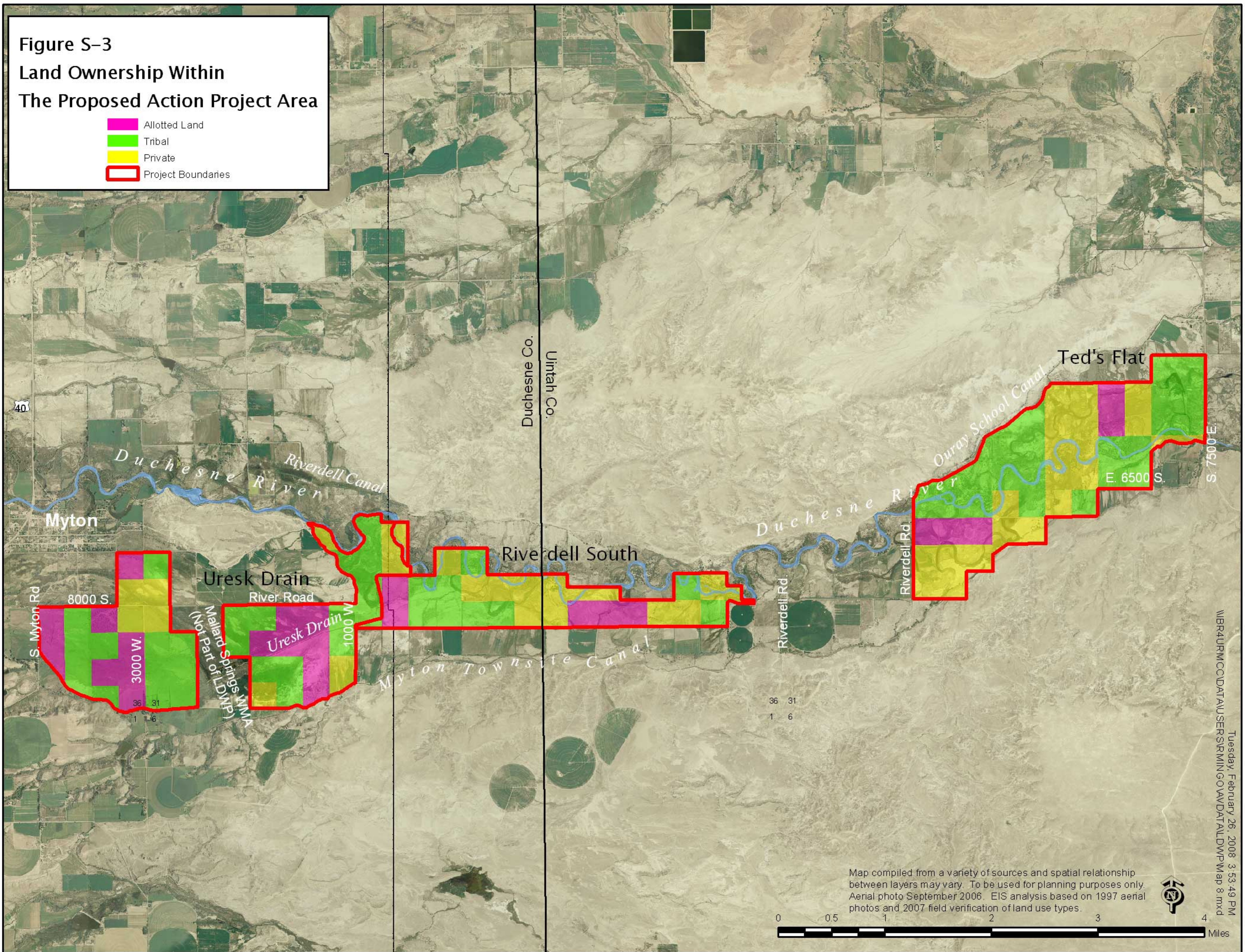
Issue: The impacts of the LDWP on local economies is not accurate in the DEIS, particularly regarding agricultural impacts and the effects on local property taxes and income taxes.

Response: The economic impact analysis was revised for the FEIS using the IMPLAN model, instead of the model developed by the State of Utah that was used for the DEIS. IMPLAN is accepted by and used by the State of Utah for all its economic impact forecasting. None of the changes in economic output under any of the action alternatives would account for more than a 0.1 percent change in the Uinta Basin economy. None of the alternatives would adversely affect any of the local infrastructure, including roads, or local social services.

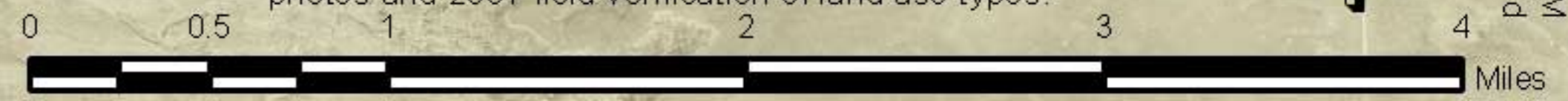
Under the Proposed Action, the total annual tax change within the two-county area from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use could range from zero (with all residents relocating to similar value homes within the two-county area) to \$1,632. The total property tax loss within the two-county area for the Pahcease Alternative would range from \$3,808 (with all residents relocating to similar value homes within the two-county area) to \$7,918 annually. The total property tax loss under the Topanotes Alternative would range from \$3,364 to \$7,043 annually.

Figure S-3
Land Ownership Within
The Proposed Action Project Area

- Allotted Land
- Tribal
- Private
- Project Boundaries



Map compiled from a variety of sources and spatial relationship between layers may vary. To be used for planning purposes only. Aerial photo September 2006. EIS analysis based on 1997 aerial photos and 2007 field verification of land use types.



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Issue: The LDWP will increase groundwater levels outside the project boundary, which will affect neighboring property, and may affect the cemetery in Myton.

Response: Under the Proposed Action, there would be no increase in the ground water table outside of the LDWP project boundaries with the exception of a slight increase in the water table within two existing oxbows south of River Road adjacent to the Riverdell South site. As a result, there would be no effects from the Proposed Action on adjacent infrastructure or cropland through ground water increase. Water test wells were installed in the vicinity of the Myton Cemetery. Results indicate that the groundwater table slopes away from Myton toward the east and south to the Duchesne River. Under the Proposed Action, the water volume and duration associated with water management of the restored wetlands, in conjunction with the baseline water table gradient and soil types, would cause only a very localized, if any, rise in the underlying water table in the Uresk Drain Unit. There would be no effect on the ground water levels at the Myton Cemetery.

Issue: The LDWP will change Duchesne River flows or water quality, and will affect junior water right holders.

Response: Under the LDWP, water availability to junior water right holders would not change in average and high flow years. In dry and very dry years, the Proposed Action could result in a reduction of 127 to 908 acre-feet of water to junior water right holders based upon the full exercise of the senior reserved Indian water rights appurtenant to project lands. The reduction of water for junior water right

holders would be greater under the other alternatives, ranging from 174 to 1,439 acre-feet. All alternatives would result in no measurable change in the Duchesne River flow at Randlett.

Under the Proposed Action, the LDWP would result in an increase in Total Dissolved Solids (TDS) of 0.68 ppm in the Duchesne River downstream of Myton, with no measurable change in the TDS concentrations at Randlett. The net increase in the Duchesne River TDS concentrations considering both surface and ground water contributions for the Pahcease and Topanotes Alternatives would be between 2.6 and 3.0 ppm downstream of Myton and up to 1.7 ppm at Randlett. None of these changes are considered significant when compared to natural TDS levels in the Duchesne River or seasonal fluctuations of TDS due to flow and agricultural uses of water, and would not likely be measurable.

The estimated long-term average annual salt load contributed to the Colorado River by the Duchesne River is 330,000 tons (BOR 1986, as cited in Swanson 2007), which represents 4 percent of the total annual Colorado River salt load of 8.2 million tons at Imperial Dam. Under all alternatives, total annual salt loading from wetlands and irrigated pastures in the project area through ground water seepage would increase by 115 to 1,125 tons of salt. This equates to an increase of 0.03 to 0.3 percent of the salt load of the Duchesne River, an amount too small to be measured at Imperial Dam or to be considered a significant change in the Colorado River.

Issue: Individuals will not be adequately compensated for unharvested crops left for wildlife purposes.

Response: The Proposed Action no longer includes the concept of conservation easement where landowners would be paid to leave 20% of their crops for wildlife purposes. All but 58 acres of cropland has been removed from the project boundaries under the Proposed Action. These 58 acres of cropland would be acquired for the project and developed and managed for wildlife benefits.

S.4 SUMMARY DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

S.4.1 Features Common to All Action Alternatives

The Proposed Action, Pahcease Alternative and Topanotes Alternative would use a variety of measures to rehabilitate wetland and riparian habitat in the Duchesne River corridor. These measures include rewatering oxbows, connecting oxbows to form contiguous systems, enlarging oxbows to at least their 1936 widths (as determined from aerial photographs), enhancing water quality in oxbows receiving agricultural return flows, filling portions of the Uresk Drain (a large drainage ditch) to create a large marsh complex, replanting riparian areas with native woody trees and shrubs, seeding of new wetland edges, removing non-native invasive species and changing management of areas adjacent to wetlands to benefit wildlife.

There are four oxbow systems within the entire project area that historically formed annually flooded, continuous side channels of the Duchesne River. Each alternative would connect the oxbow systems on the sites included within the alternative into a continuous backwater channel and expand

the oxbow widths. Where feasible, the oxbow systems would be reconnected to the Duchesne River by removing impediments to river flow through the oxbows. Oxbow reconnection was identified as feasible if the oxbow would be flooded by the mean annual flood, the flow that occurs on average every 2.3 years. Because the river has narrowed by up to 40 percent, been downcut by 2 to 4 feet and had its flow reduced by diversions, reconnection of all oxbows to the river is no longer feasible without either increased flows or river reconstruction.

Large marshes would be created on the Uresk Drain site in each alternative by filling portions of the main drainage ditch and constructing a series of berms to retain water on the site. Woody riparian vegetation would be planted on former Duchesne River floodplains and non-native and invasive riparian woody species such as tamarisk and Russian olive would be removed through chemical and mechanical means.

A number of upland habitats would not be converted to wetlands, but their value to wetland and riparian species would be enhanced by changes in management. These include portions of currently irrigated wet meadow-grassland complexes and desert shrub habitat. Irrigated grasslands would continue to be irrigated under the Proposed Action, but grazing would be eliminated unless necessary to achieve specific wildlife management objectives. Grasslands would continue to be managed to provide nesting and foraging sites for wildlife. Desert shrub habitats would be maintained as buffers between human activity areas and wetlands.

Land acquired for the project would be held in differing ownerships depending upon the alternative. For the Proposed Action, private lands acquired by the federal government from private landowners on a willing-seller basis would be transferred to Tribal ownership (fee status) and subsequently managed by the Tribe. Private lands acquired by eminent domain, if any, would remain in ownership of the United States and held on behalf of the Tribe. Tribal Trust land (both Reservation and allotted lands) would be placed under easements, with two consecutive 25-year easements used on the Riverdell South property, and for a length of time to be negotiated (a minimum of 10 years) within the other sites. All land would be developed and managed by the Tribe under a single management plan. There would be no conservation easements purchased on established cropland under the Proposed Action as originally proposed in the DEIS.

For the Pahcease and Topanotes Alternatives, all acquired private land would remain in federal government ownership for project purposes. Conservation easements instead of fee purchases would be used to acquire cropland.

Differences among the action alternatives occur in the total size, the final acres and types of wildlife habitats, the amount of private land acquired, the amount of Tribal land incorporated by easement, the final land ownership and management status and how established cropland would be treated. These differences are described below and summarized in the table at the end of this document.

S.4.2 The Proposed Action

- The project area encompasses 4,807 acres.

- Includes 2,681 acres of wetland and riparian habitat, of which 1,025 acres would be created or restored and 1,656 acres of existing habitat would be enhanced.
- Requires the acquisition of 1,592 acres of private land and compensation to the Tribe for loss of income on 3,215 acres of Tribal Trust and Allotted land that would be incorporated into the project. Acquired private land would be generally retained in fee status under Tribal ownership.
- All land would be managed by the Tribe under a single permit and access system.
- Fifty-eight acres of cropland would be acquired for wildlife habitat. No cropland would be placed under conservation easements.

S.4.3 Description of the Pahcease Alternative

- Encompasses 6,765 acres.
- Includes 3,055 acres of wetland and riparian habitat, of which 2,125 acres would be created or restored and 930 acres of existing habitat would be enhanced.
- Requires the acquisition of 1,787 acres of private lands and compensation to the Tribe for loss of income on 3,891 acres of Tribal Trust land that would be incorporated into the project.
- Utilizes the federally-owned Riverdell North property of 1,087 acres for the LDWP, creating a need to purchase an alternative site suitable for DRACR mitigation.
- Acquired private land would be retained by the federal government for project purposes resulting in a

- mix of government and Tribal Trust lands in the project area.
- All land would be managed by the Tribe under a multiple permit and access system.
- No cropland would be purchased strictly for wildlife habitat, but 239 acres of cropland would be placed under conservation easements.

S.4.4 Description of the Topanotes

Alternative

- Encompasses 6,648 acres.
- Includes 3,175 acres of wetland and riparian habitat, of which 1,461 acres would be created or restored and 1,714 acres of existing habitat would be enhanced.
- Requires acquisition of 2,171 acres of private land and compensation to the Tribe for loss of income on up to 4,477 acres of Tribal Trust land that would be incorporated into the project.
- Acquired private land would be retained by the federal government for project purposes, resulting in a mix of government and Tribal Trust lands in the project area.
- All land would be managed by the Tribe under a multiple permit and access system.
- No cropland would be purchased strictly for wildlife habitat, but 356 acres of cropland would be placed under conservation easements.

S.4.5 No Action Alternative

- Restores no wetlands or riparian habitats impacted by SACS.
- Results in a continued decline of existing cottonwood forest and continued expansion of riparian and wetland weeds.

- Results in mitigation obligations to the Tribe identified in the 1988 and 2004 Definite Plan Reports and the 1965 Deferral Agreement remaining unfulfilled.

S.5 MAJOR IMPACT CONCLUSIONS - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

S.5.1 Introduction

This section summarizes important issues and concerns that are evaluated in chapter 4 of this FEIS, Affected Environment and Environmental Consequences. Chapter 4 is organized according to different resource topics, such as water resources or agriculture, and addresses issues raised during the scoping process, during public review of the DEIS, through agency consultation or by the EIS team during analysis. This summary will focus on the most important and controversial of the resource topics. Major issues that were addressed in these topic areas will be identified and the impact analysis for those issues will be summarized. Resource topics that contained little or no controversial information are briefly summarized or deleted from this summary (e.g., noise and air quality). The discussion generally follows the order of the resource topics as they are presented in chapter 4.

S.5.2 Wetland and Riparian Habitats

S.5.2.1 Issues and Concerns

Will the construction and operation of the LDWP change or reduce the existing acreage of wetland and riparian habitat types in the project area?

S.5.2.2 Impact Analysis

Under the Proposed Action, 18.5 acres of wetland and riparian habitats would be temporarily impacted and 7.3 acres permanently impacted. The permanent impacts generally occur where wetland berms are constructed across existing wetlands, notably in the Uresk Drain site. There would also be some conversion of existing wet meadow and emergent marsh habitats to other habitat types, but similar habitats would be developed elsewhere in the project area to compensate for such losses. Construction impacts under the Topanotes and Pahcease Alternatives would be similar to those of the Proposed Action.

The few acres of wetlands lost or altered by the LDWP would be more than offset by the restoration, creation and enhancement of wetlands envisioned by the project. The Proposed Action would restore or create 1,025 acres of wetland and riparian habitat and enhance the value of 1,656 acres of existing wetland and riparian habitats. The Pahcease Alternative would restore or create 2,125 acres and enhance 930 acres of wetland and riparian habitats. The numbers for the Topanotes Alternative are 1,461 and 1,714, respectively. Additionally, all the alternatives would improve the value and function of other existing habitats in the project area, such as cottonwood forests.

S.5.2.3 Issues and Concerns

What will be the impact of the project on wetland and riparian weeds in the project area?

S.5.2.4 Impact Analysis

Two of Utah's listed noxious weeds, pepperweed and Russian olive, are prevalent

in the project area. Tamarisk, a non-native invasive species, is also abundant in the active floodplain of the Duchesne River.

The LDWP would decrease the abundance of noxious weeds in the project area, representing a beneficial impact of the project. The Proposed Action would remove 339 acres of Russian olive and tamarisk as well as treat for pepperweed. The Pahcease and Topanotes would treat 801 and 578 acres of noxious weeds, respectively. Moreover, an ongoing weed control program, as outlined in Appendix B of this FEIS, would be an integral part of the LDWP Comprehensive Conservation and Management Plan.

S.5.3 Wildlife Resources

S.5.3.1 Issues and Concerns

The construction of the LDWP would alter wetland and riparian habitats in the project area, as well as impact the adjacent uplands. What effects will this alteration have on the health and populations of the different species of waterfowl, fish, songbirds, raptors and mammals that are currently found in the project area?

S.5.3.2 Impact Analysis

Construction of the LDWP would improve the habitat for all of the nine major wildlife species groups that were evaluated.

Elimination of cattle grazing and better management of upland grasslands would benefit songbirds, provide grazing for mule deer, elk, and antelope and improve habitat for small mammals (in turn providing an additional food source for raptors). The restoration of cottonwood forests along the river corridor would provide habitat for a variety of birds, as well as nesting habitat

for raptors, golden and bald eagles and great blue herons. These forests would also provide winter habitat for mule deer as well as a wood source for beaver. The creation of open water areas and marsh habitat would benefit a variety of ducks and other waterfowl, while the reduction in cropping on agricultural lands would increase the food base for a number of species. There would be some minor negative impacts to wildlife as one type of habitat is converted to another, but these impacts are almost all temporary and would eventually be offset by improved habitat of similar types in other areas of the project. Generally, habitat improvements that benefit wildlife are considered to be significant beneficial impacts of the Proposed Action and alternatives.

S.5.4 Threatened, Endangered and Candidate Species (Listed Species)

S.5.4.1 Issues and Concerns

Would the LDWP affect any listed species through mortality, disturbance through key life stages or habitat degradation?

S.5.4.2 Impact Analysis

Only seven listed species are known to occur or to have potential habitat within the LDWP project area of influence: Two are plants (Uinta Basin hookless cactus and Ute ladies'-tresses orchid); two are fish known to occur in the Duchesne River in this area (Colorado pikeminnow and razorback sucker); two are birds (mountain plover and western yellow-billed cuckoo).

The construction and operation of the LDWP would not adversely impact any of these listed species but would benefit several of them. The Uinta Basin hookless

cactus is found in desert shrub north of the Riverdell Canal, where its habitat would be improved through the elimination of grazing (Pahcease Alternative only). Ute ladies'-tresses have been observed upstream on the Duchesne River, but not in the project area. Habitat improvements anticipated by the project are not expected to inhibit its possible emergence in the area. No impacts to either the Colorado pikeminnow or the razorback sucker are expected from the LDWP, because no change in water quantity or quality in the Duchesne River is anticipated. The western yellow-billed cuckoo is expected to benefit from the project as the restoration of the cottonwood forest provides improved roosting and feeding habitat.

S.5.5 Water Resources

S.5.5.1 Issues and Concerns

Would the construction and operation of the LDWP interfere with the water rights of existing users, reduce water availability or alter existing water supply patterns to these users?

S.5.5.2 Impact Analysis

All of the irrigable lands within the project area, except the Riverdell North property which has a 1916 water right, are supplied by certified 1861 Indian water rights and are authorized for direct diversion from the Duchesne River. These water rights, which will be available for the LDWP, total 12,403 acre-feet for the Proposed Action and up to 19,611 acre-feet for the other alternatives. Water budgets prepared for the Proposed Action identify a water requirement that ranges from 8,452 to 10,118 acre-feet, with water requirements of 11,286 to 14,420 acre-feet for the Pahcease and Topanotes

Alternatives. As these numbers indicate, there are secure water rights available on project lands to fulfill LDWP needs without obtaining water from other sources outside the project area.

Under the LDWP, the water budget would remain similar among years, instead of varying from year to year. This would not change water availability to junior water right holders in average and high flow years. In dry and very dry years, the Proposed Action could result in a reduction of 127 to 908 acre-feet of water to junior water right holders based upon the full exercise of the senior reserved Indian water rights appurtenant to project lands. The reduction of water for junior water right holders would be greater under the other alternatives, ranging from 174 to 1,439 acre-feet.

All alternatives would result in slight local increases in return flows among the sites, but no measurable change in the Duchesne River flow at Randlett.

S.5.5.3 Issues and Concerns

Would the LDWP affect ground water levels on properties outside of the project area?

S.5.5.4 Impact Analysis

Under the Proposed Action, there would be no increase in the ground water table outside of the LDWP project boundaries with the exception of a slight increase in the water table within two existing oxbows south of River Road adjacent to the Riverdell South site. As a result, there would be no effects of the Proposed Action on adjacent infrastructure or cropland through ground water increase. Under the other alternatives there would be an increased water table to the east of the Uresk Drain and adjacent to

the Flume. This increased water table could affect 40 acres of pasture land east of the Uresk Drain and nine acres of cropland adjacent to the Flume site. None of the alternatives would affect the ground water levels at the Myton Cemetery.

S.5.6 Water Quality

S.5.6.1 Issues and Concerns

Would the LDWP increase contaminants or salts in the mitigation wetlands to a point where wildlife would be adversely affected? Would the project affect salinity inputs to the Duchesne River in terms of the total amount or concentration of salts?

S.5.6.2 Impact Analysis

Boron and total dissolved solids (TDS) have been identified as the most problematic contaminants in the project area. Under the Proposed Action and alternatives, the wetlands would be operated as flow-through systems with a water quality control factor added to each site's wetland water budget to maintain water quality. By increasing the flow through the project area, concentrations of boron and TDS in surface water return flows entering the Duchesne River would be reduced under all alternatives by seven to nine percent.

The estimated long-term average annual salt load contributed to the Colorado River by the Duchesne River is 330,000 tons (BOR 1986, as cited in Swanson 2007), which represents 4 percent of the total annual Colorado River salt load of 8.2 million tons at Imperial Dam. Under all alternatives, total annual salt loading from wetlands and irrigated pastures in the project area through ground water seepage would increase by 115 to 1,125 tons of salt. This equates to an

increase of 0.03 to 0.3 percent of the salt load of the Duchesne River, an amount too small to be measured at Imperial Dam or to be considered a significant change in the Colorado River.

Under the Proposed Action, the net change of both the decreased TDS concentration of surface water runoff and the increased TDS concentration of ground water seepage would result in a TDS increase of 0.68 ppm in the Duchesne River downstream of Myton, with no measurable change in the TDS concentrations at Randlett. The net increase in the Duchesne River TDS concentrations considering both surface and ground water contributions for the Pahcease and Topanotes Alternatives would be between 2.6 and 3.0 ppm downstream of Myton and up to 1.7 ppm at Randlett.

S.5.7 Agriculture and Land Use

S.5.7.1 Issues and Concerns

Will the LDWP negatively impact the agriculture industry in the two counties through the elimination of grazing or changes in crop production in the project area? Will the LDWP impact agricultural production outside of the project area?

S.5.7.2 Impact Analysis

The LDWP would reduce agricultural output within the project area in two different ways. Grazing would be eliminated on 4,807 to 6,765 acres of pasture land to allow the creation and restoration of different wetland and upland habitats. The forage value of these lands for grazing varies from about 0.1 AUM to 2.5 AUMs per acre. As a result, elimination of grazing would result in a 0.2 percent reduction of the Uinta Basin livestock cash receipts.

Cropland would be addressed differently among the various alternatives. Under the Proposed Action 58 acres of cropland would be acquired and managed for wildlife purposes. Under the other alternatives no established cropland would be acquired, but from 239 to 356 acres of cropland would be placed under conservation easements in which the landowner would be paid to retain 20 percent of their crop for wildlife. These changes would result in a 0.1 to 0.2 percent reduction in marketable crop yield.

Neither action is expected to have a significant impact on the agriculture industry as a whole in the two counties.

There would be no direct effect on agricultural practices or production outside of the project boundaries under the Proposed Action. Under the other action alternatives, crop production on nine acres of cropland adjacent to the Flume site could be affected by an increase in the local groundwater table.

S.5.7.3 Issues and Concerns

Both Uintah and Duchesne Counties have adopted county land use plans that call for "no net loss of private land" in the county. How will the LDWP address these county policies?

S.5.7.4 Impact Analysis

Unavoidably, private lands would be acquired under all action alternatives ranging from 1,592 under the Proposed Action to 2,171 acres under the Topanotes Alternative. Between 3,215 to 4,477 acres of Tribal Trust and Allotted land would be placed under a negotiated easement. Acquired private land would be transferred to the Tribe as private fee lands under the

Proposed Action, but retained by the federal government under the Pahcease and Topanotes Alternatives.

S.5.7.5 Issues and Concerns

Will the LDWP split properties leaving the owners with uneconomical remainders?

S.5.7.6 Impact Analysis

There may be partial landholding acquisitions (acquisitions in which portions of the land holdings fall inside the LDWP boundary and portions fall outside of the boundary) under all alternatives. In the event of a partial landholding acquisition, the appraised value and the amounts offered to landowners would be based on not only the fair market value of the interest in the land the United States actually acquires, but also any difference in the before and after fair market value of the remaining parcel retained by the landowner.

S.5.8 Socioeconomics

S.5.8.1 Issues and Concerns

Will the LDWP have a positive or negative impact on socioeconomic conditions in the area? Will there be impacts on county services or community infrastructure? How will the LDWP affect county taxes?

S.5.8.2 Impact Analysis

Construction of the Proposed Action, Pahcease Alternative and Topanotes Alternative would increase the net economic output (\$924,729 to \$1,259,642), personal earnings (\$316,387 to \$375,305) and employment (13.1 to 15.1 jobs) in the local economy during construction. The net increase in revenue considers both the actual

decrease in agricultural revenue and the multiplier effect of this decrease. Even with the multiplier effect, the net economic output would be considerably larger than the decrease in agricultural revenue during construction for all alternatives.

Operation of the project would continue to contribute to increased revenue in the local economy by \$197,331 (Topanotes Alternative) to \$335,810 (Proposed Action and Pahcease Alternative). As for the construction economic analysis, the O&M period revenue accounts for both the decrease in agricultural output and the multiplier effect of this output. None of the changes in output represent more than a 0.1 percent change in the Uinta Basin economy. None of the alternatives would adversely affect any of the local infrastructure, including roads, or local social services. None of the alternatives would impact the Myton cemetery.

Changes in county tax revenues would vary among alternatives. Tax revenues would be affected by changes in two factors: changes in land ownership and changes in some parcel tax status from residential to greenbelt use. There would be no change in county taxes associated with changes in land ownership under the Proposed Action, as land would generally be maintained in fee status. Land acquired for the Pahcease and Topanotes Alternatives would remain in federal ownership resulting in annual county tax revenue decreases of \$3,808 and \$3,364, respectively.

Changes in tax revenues associated with acquisition of residences and conversion from residential to greenbelt use could result from the project.

Under the Proposed Action, the total tax change within the two-county area could range from zero (with all residents relocating to similar value homes within the two-county area) to \$1,632. The total property tax loss within the two-county area for the Pahcease Alternative from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use would range from \$3,808 (with all residents relocating to similar value homes within the two-county area) to \$7,918. The total property tax loss under the Topanotes Alternative would range from \$3,364 to \$7,043.

Under certain circumstances, these tax losses might be offset by federal reimbursements through the Payment in Lieu of Taxes (PILT) Program, a program that provides payments to counties to offset the practical costs of having lands in their jurisdiction that generate no tax revenues.

S.5.9 Health and Safety (Mosquito Control)

S.5.9.1 Issues and Concerns

One of the most controversial areas of concern regarding the LDWP is the concern that the project will increase marshy habitats that can provide potential breeding sites for mosquitoes. There are two important questions related to this issue: (1) will there be a significant increase in nuisance mosquitoes from wetlands and marshes within two miles of the town of Myton, and (2) will there be a significant increase in disease-bearing mosquitoes in the Uinta Basin that cannot be reasonably controlled?

S.5.9.2 Impact Analysis

Much of the land within the LDWP project boundaries is irrigated or contains wetlands and has the potential to produce mosquitoes. Under all alternatives, the existing wetland habitat would be maintained and irrigation of grasslands would continue. Additionally, there would be an increase of wetlands. Under the Proposed Action, there would be an eleven percent increase, or 497 acres, of potential mosquito-breeding habitat. Increases in the other action alternatives would be from 12 to 13 percent (776 to 849 acres). These increases would result in an overall increase of 0.4 to 1 percent increase in potential mosquito-producing habitat within the Uinta Basin. Within the Myton vicinity, there would be a net increase of 124 acres of potential mosquito breeding habitat, of which 68 acres would be of the West Nile Virus (WNV) vector (*Culex tarsalis*) type. This would be a significant impact if not for the implementation of a mosquito control program. Under all action alternatives including the Proposed Action, all potential breeding habitats within the project boundaries would be treated in accordance with a Mosquito Control Plan (refer to Appendix G of the FEIS) modeled after plans recommended by the Centers for Disease Control. Under baseline conditions for the Proposed Action, only 34 percent of the project area (1,592 acres) is presently treated by the local Mosquito Abatement Districts (MADs) for mosquitoes, with the remainder (3,215 acres) either untreated or only sporadically treated. Therefore, even though the amount of mosquito breeding habitat will increase locally under the Proposed Action or other action alternatives, there would be a mosquito-control program implemented on all LDWP project lands. Because most of the existing habitat within the project area is not currently treated for

mosquitoes, there would be a greater level of mosquito control in the LDWP area under the Proposed Action and alternatives than under baseline conditions (Figure S-4).

S.5.10 Recreation Resources

S.5.10.1 Issues and Concerns

Would the project change existing recreational use or access within the Duchesne River corridor?

S.5.10.2 Impact Analysis

There is the slight potential for recreational use of the project area to increase as the LDWP brings more wildlife to the area. Permits and access conditions for hunting, fishing and non-consumptive recreation would vary among the alternatives. Under the Proposed Action, hunting, fishing and non-consumptive recreation would require Tribal permits or Tribal permission for access. Multiple hunting/fishing permits (State and/or Tribal) plus Tribal permission for access could be required for the Pahcease and Topanotes Alternatives.

S.5.11 Transportation

S.5.11.1 Issues and Concerns

Would the LDWP change the existing levels of service (LOS) on roads that would be used by workers traveling to and from the job, deliveries of various materials or visits by recreational users? (LOS is a highway rating system that evaluates traffic flow conditions on various road segments. LOS declines as traffic increases and roads become unable to adequately handle traffic flow.) Would the LDWP result in any physical damage to the paved county roads

or close any roads necessary for property access?

S.5.11.2 Impact Analysis

During peak construction periods, it is expected that implementation of the LDWP would add up to 50 vehicle round trips per day to the road network in the surrounding area, particularly between Myton and Roosevelt. This volume of traffic is not expected to cause any deterioration in the road infrastructure nor any noticeable decline in the LOS on the roads. One exception to this might be during peak evening traffic periods in Roosevelt, where LDWP project traffic would add to the increasing congestion and might cause the LOS to decline slightly.

Although internal roads would generally be closed to motorized vehicles, except those needed for administrative use, all existing road rights-of-way necessary for property access would be maintained.

Wetlands would be constructed so as to not pond against county roads, culverts would be repaired or installed at wetland-county road crossings as necessary and the roadside drainage ditches maintained. As a result, there would be no impacts to county roads through surface or ground water.

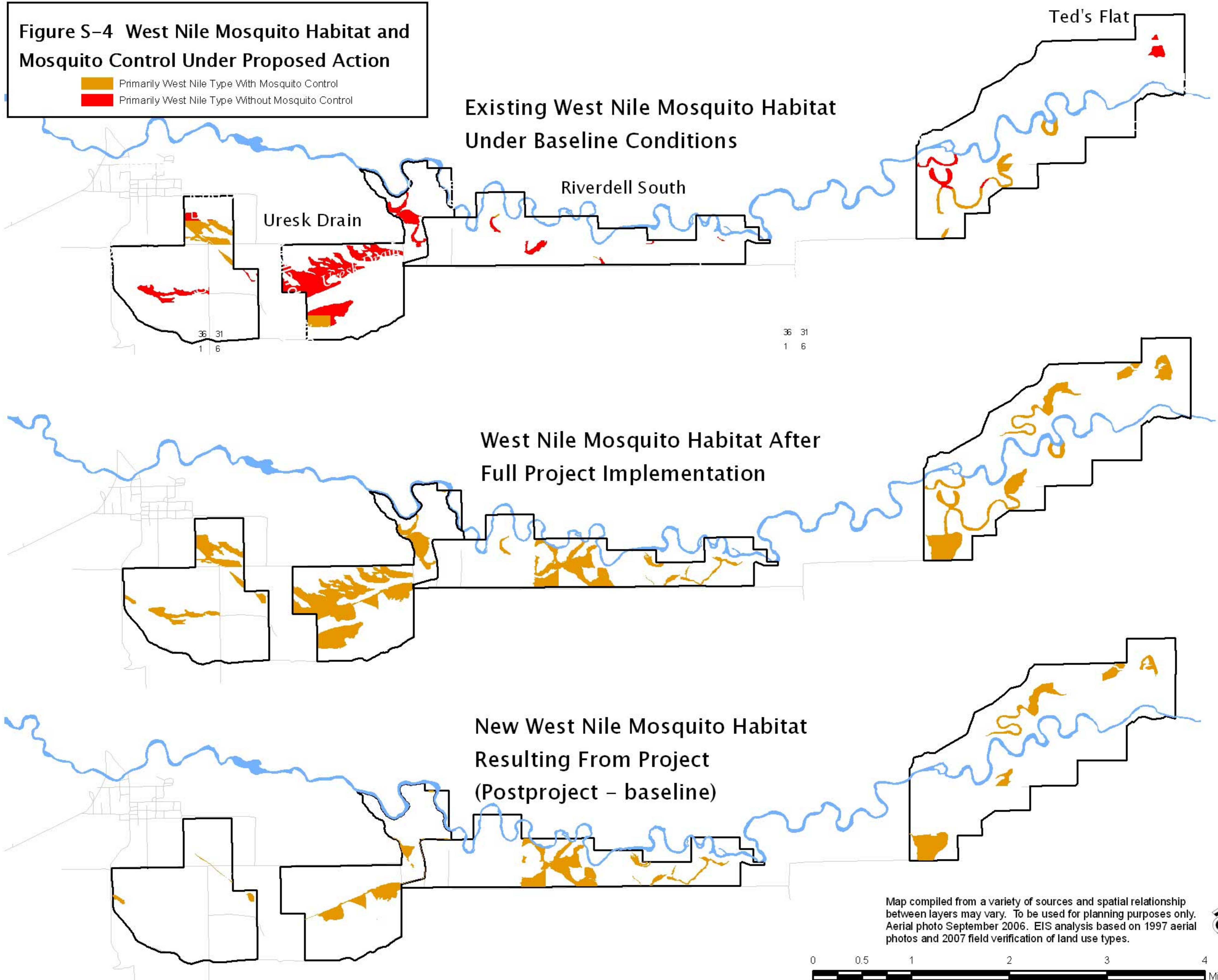
S.5.12 Cultural Resources

S.5.12.1 Issues and Concerns

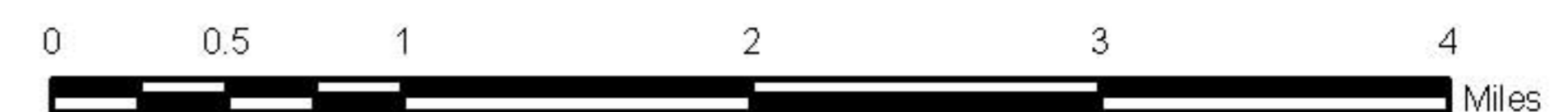
Would the LDWP affect any prehistoric or historic sites eligible for the National Register of Historic Places (NRHP)? Would the LDWP affect any Tribe traditional or religious use areas?

Figure S-4 West Nile Mosquito Habitat and Mosquito Control Under Proposed Action

- Primarily West Nile Type With Mosquito Control
- Primarily West Nile Type Without Mosquito Control



Map compiled from a variety of sources and spatial relationship between layers may vary. To be used for planning purposes only. Aerial photo September 2006. EIS analysis based on 1997 aerial photos and 2007 field verification of land use types.



S.5.12.2 Impact Analysis

Most of the known sites within the project area are historic structures or engineering features. Significant cultural resources in the LDWP project area are limited to four historic canals that have been determined to be eligible for the NRHP; the remaining five sites are either unevaluated or have been judged insignificant by field recorders. There would be no impacts to these known sites. There are no known sites of cultural importance or sacred sites to the Tribe within the project area.

Since cultural resources surveys of the impact area of influence have not been comprehensive, additional cultural and paleontological surveys and analyses would be conducted under a Programmatic Agreement among the Utah State Historic Preservation Office (SHPO), Mitigation Commission, DOI and the Tribe (see Appendix F of the FEIS).

S.5.13 Native American Trust Resources/Environmental Justice

S.5.13.1 Issues and Concerns

Would the LDWP affect Tribal sovereignty? Would the LDWP insure that Trust resources are utilized for the benefit of the Tribal owners? Would the project have a disproportional effect on minority or low income populations such as Tribal members?

S.5.13.2 Impact Analysis

The Proposed Action would occur on portions of the Uintah and Ouray Indian Reservation and would utilize land and water rights of the Tribe. The Tribe would be compensated for placing easements on its

land and leasing its water to the project. The Tribe would also receive the benefit of increased wetland-wildlife resources. The Tribe is a lead partner on this project for planning purposes specifically to ensure that tribal sovereignty and resources are protected. The Tribe has developed the conceptual project plans and would manage the entire wetland-wildlife area.

Under the Proposed Action, construction would occur over a 7-year period generating jobs for up to 30 local residents. Construction contractors would be required to give preference to qualified Ute Indians in hiring and income would be generated for some individual Ute Indians during project construction. Employment would be provided for an estimated regular staff of three personnel with periodic needs for temporary workers to meet operation and maintenance needs. Both project employment opportunities and increased wetland-wildlife resources would provide a positive impact on the Tribe (a minority and low-income population) without significantly affecting the health or safety of local residents or the local economy. None of the alternatives would disproportionately adversely affect low-income or minority communities.

S.6 SUMMARY OF CONSULTATION AND COORDINATION

S.6.1 Initial Project Planning

The Tribe, in conjunction with the Mitigation Commission and DOI, conducted extensive consultation and coordination while preparing this FEIS. Consultation and coordination was initiated in 1997 during preparation of project feasibility reports. Public input was sought by the Tribe through individual landowner contacts,

preparation and distribution of a survey to Tribal members, field tours of the project area and a series of presentations made by the Tribe to area high schools, at Tribal Council meetings and at public Mitigation Commission meetings. Less formal consultation with agencies, organizations and technical experts took place throughout the preparation of the initial environmental documents.

Early in the planning process, the lead federal agencies appointed representatives to be involved in an LDWP Planning Team. Planning Team members included representatives from the Tribe, Mitigation Commission, DOI, FWS, Reclamation and the BIA. The first Planning Team meeting was held on April 15, 1997, in Salt Lake City. Between April 1997 and initiation of the DEIS with public scoping meetings, 18 additional Planning Team meetings were held.

S.6.2 Development of the DEIS

Public scoping meetings were held in Fort Duchesne and Roosevelt on May 15, 2001, and in Salt Lake City on May 16, 2001. Thirty oral and written comments were received. Results of the scoping meetings and comments received during the scoping process were used to establish the scope of the DEIS and focus the environmental analysis on important issues and concerns. Issues and concerns focused on seven general categories: potential economic impacts, loss of private land (fee) status, project costs and long-term financing, mosquito and weed control, wildlife benefits and recognition of SACS impacts on wetlands. There was strong support for immediate completion of the mitigation obligation.

Prior to the DEIS preparation, draft project descriptions and an administrative DEIS were submitted to Planning Team members for review and comment. Preparation of a Preliminary DEIS (PDEIS) was initiated in January 2003; on April 30, 2003, this completed document was distributed to all cooperating and lead agencies, including Planning Team members, for review and comment. Comments on the PDEIS were used to prepare the DEIS. The following agencies participated in the PDEIS review:

- U.S. Department of the Interior
- U.S. Bureau of Indian Affairs
- U.S. Fish and Wildlife Service
- U.S. Bureau of Reclamation
- Ute Indian Tribe Business Committee
- Ute Indian Tribe Fish and Wildlife Advisory Board
- Utah Reclamation Mitigation and Conservation Commission

S.6.3 Review of the DEIS

The DEIS was filed with the Environmental Protection Agency on November 17, 2003, and a Notice of Availability (NOA) published in the Federal Register on November 24, 2003 (68 FR 65943). Public meetings were announced in the Federal Register NOA and within the Uinta Basin. Notices regarding the release of the DEIS were published in the Salt Lake Tribune (December 12, 2003), the Uinta Basin Standard (December 16, 2003), the Vernal Express (December 10, 2003) and the (Provo) Daily Herald (December 11, 2003). Flyers publicizing the DEIS release and announcing the dates, times and locations of public hearing meetings on the DEIS were posted in conspicuous locations throughout the Uinta Basin in November 2003. Announcements regarding the Uinta Basin

public hearings were made on two local radio stations (KNEU and KVEL).

Approximately 200 copies of the DEIS were distributed by mail or provided electronically to federal and state resource agencies, individuals and organizations for official review and comment. DEIS copies were also available at the public hearings to all individuals attending.

Three public hearings were held on the DEIS in December 2003; one in Fort Duchesne, one in Roosevelt and one in Salt Lake City. The public comment period remained open until January 16, 2004. In response to requests, the comment period was extended for an additional 30 days by additional notice in the Federal Register on February 5, 2004 (69 FR 5567) for a total of a 90-day comment period.

S.6.4 FEIS Coordination

All written and oral comments on the LDWP DEIS were considered and used to develop a revised Proposed Action that met the project Purpose and Need while also addressing issues raised during the DEIS review.

Subsequent to the DEIS release, Executive Order 13352 was issued on August 24, 2004, and implementing regulations associated with this Executive Order were issued on June 6, 2005. These documents provide that local governments with resource jurisdiction or special expertise be afforded, upon request, cooperating agency status. Uintah and Duchesne counties expressed interest in participating more closely in the LDWP planning effort and were extended offers (September 15, 2006) to participate as cooperating agencies during the FEIS preparation. Subsequently, both

counties participated in the FEIS preparation, along with the agency Planning Team members for the DEIS.

As a result of both public and agency Planning Team member input, the Proposed Action represented in this FEIS was revised as described in sections S.3 and S.4.

An administrative draft FEIS was completed on July 31, 2007 and distributed to all project partners and cooperating agencies on September 18, 2007. Additional input from these agencies was used in the preparation of the FEIS.

Table S-1. Summary of Environmental Impacts

	Proposed Action Alternative	Pahcease Alternative	Topanotes Alternative
	<p>There would be a eleven percent increase in potential mosquito-breeding habitat within the project boundaries which represents an overall increase of 0.4 percent in the Uinta Basin; not a significant impact. Within the Myton vicinity, there would be a net increase of 124 acres of potential mosquito breeding habitat, of which 68 acres would be of the West Nile Virus vector (<i>Culex tarsalis</i>) type. This would be a significant impact if not for the implementation of a mosquito control program.</p> <p>All potential breeding habitats within the project boundaries would be treated in accordance with a Mosquito Control Plan (refer to Appendix G of the FEIS). Under baseline conditions 66 percent of the project area (3,215 acres) is either untreated or only sporadically treated for mosquitoes. Therefore, there are significantly more acres of untreated mosquito habitat under baseline conditions compared to the Proposed Action Alternative.</p>		
Mosquitoes		<p>Similar to the Proposed Action, except there would be a twelve percent increase in potential mosquito-breeding habitat</p> <p>Would remove 801 acres of Russian olive and tamarisk as well as treat for pepperweed, representing a beneficial impact of the project. A detailed Weed Control Plan is included as Appendix B of the FEIS.</p> <p>The project would encompass 6,765 acres including 1,787 acres of private land that would be acquired for the project.</p> <p>Acquired private land would be retained by the federal government and would not be consistent with Duchesne and Uintah Counties' "no net loss" of private land policies.</p>	<p>Similar to the Proposed Action, except there would be a thirteen percent increase in potential mosquito-breeding habitat</p> <p>Would remove 578 acres of Russian olive and tamarisk as well as treat for pepperweed, representing a beneficial impact of the project. A detailed Weed Control Plan is included as Appendix B of the FEIS.</p> <p>The project would encompass 6,648 acres including 2,171 acres of private land that would be acquired for the project.</p>
Weeds	<p>Would remove 339 acres of Russian olive and tamarisk as well as treat for pepperweed, representing a beneficial impact of the project. A detailed Weed Control Plan is included as Appendix B of the FEIS.</p> <p>The project would encompass 4,807 acres including 1,592 acres of private land that would be acquired for the project.</p> <p>Acquired private land would be transferred to the Tribe as fee lands consistent with Duchesne and Uintah Counties' "no net loss" of private land policies.</p>		
Private Land Acquisition and Project Size			
"No-net loss" of Private Lands Policy			Same as Pahcease Alternative

Summary of Environmental Impacts

	Proposed Action Alternative	Pahcease Alternative	Topanotes Alternative
Partial Land Acquisitions Duchesne River Area Canal Rehabilitation (DRACR)	<p>There may be partial landholding acquisitions as part of the project (acquisitions in which portions of a property owner's land holdings fall inside the project boundary and portions fall outside of the boundary). In these instances, property owners would not only be compensated for the acquired lands, but also for any reduction in the value of the remainder property resulting from the acquisition.</p> <p>DRACR mitigation not included as an element of this alternative.</p> <p>There would be no increase in the ground water table outside of the LDWP project boundaries with the exception of a slight increase in the water table within two existing oxbows south of River Road adjacent to the Riverdell South site. There would be no effects on adjacent infrastructure or cropland through ground water increase. None of the alternatives would affect the ground water levels at the Myton Cemetery.</p>	<p>Same as Proposed Action</p> <p>Same as Proposed Action</p> <p>Same as the Proposed Action except there would be an increased water table to the east of the Uresk Drain and adjacent to the Flume. This increased water table could affect 40 acres of pasture land east of the Uresk Drain and nine acres of cropland adjacent to the Flume site.</p>	<p>Same as Proposed Action</p> <p>Same as Proposed Action</p> <p>Same as Pahcease Alternative</p>
Groundwater Levels	<p>There are secure water rights available on project lands to fulfill project needs without obtaining water from other sources outside the project area. Could result in a reduction of 127 to 908 acre-feet of water to junior water right holders in dry and very dry years. No measurable change in the Duchesne River flow at Randlett.</p> <p>There would be net increase in TDS of 0.68 ppm in the Duchesne River downstream of Myton, with no measurable change in the TDS concentrations at Randlett; not a significant impact.</p>	<p>Same as the Proposed Action except could result in a reduction of 174 to 1,439 acre-feet of water to junior water right holders in dry and very dry years. There would be net increase in TDS between 2.6 and 3.0 ppm in the Duchesne River downstream of Myton and up to 1.7 ppm at Randlett; not a significant impact.</p>	<p>Same as Pahcease Alternative</p> <p>Same as Pahcease Alternative</p>
Water Rights	<p>There would be net increase in TDS of 0.68 ppm in the Duchesne River downstream of Myton, with no measurable change in the TDS concentrations at Randlett; not a significant impact.</p>	<p>The total property tax loss within the two-county area from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use would range from \$3,808 to</p>	<p>The total property tax loss within the two-county area from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use would range from \$3,364 to \$7,043</p>
Water Quality	<p>The total loss of tax revenues within the two-county area would range from \$0 to \$1,632 annually.</p>	<p>The total property tax loss within the two-county area from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use would range from \$3,808 to</p>	<p>The total property tax loss within the two-county area from both the conversion of private land to federal ownership and the conversion of some parcels from residential to greenbelt use would range from \$3,364 to \$7,043</p>
County Tax Revenues			

Summary of Environmental Impacts		
	Proposed Action Alternative	Topanotes Alternative
	Pahcease Alternative	Topanotes Alternative
	\$7,918 annually.	annually.
	Construction of the project would increase the net economic output (\$924,729 to \$1,259,642), personal earnings (\$316,387 to \$375,305) and employment (13.1 to 15.1 jobs) to the local economy. After construction, operation of the project would increase the net economic output by \$335,810 annually. Not a significant impact.	Same as Proposed Action except net economic output would increase by \$197,331 after construction.
Socioeconomics	Grazing would be eliminated on 4,807 acres of pasture land to allow the creation and restoration of different wetland and upland habitats. As a result, elimination of grazing would result in a 0.2 percent reduction of the Uinta Basin livestock cash receipts; not a significant impact.	Same as Proposed Action
Agriculture industry	Fifty-eight acres of cropland would be acquired and managed for wildlife purposes and no longer used for crop production; not a significant impact. 18.5 acres of wetland and riparian habitats would be temporarily impacted and 7.3 acres permanently impacted. Would restore or create 1,025 acres of wetland and riparian habitat and enhance the value of 1,656 acres of existing wetland and riparian habitats. Significant beneficial impact.	Same as Proposed Action No established cropland would be acquired, but from 239 to 356 acres of cropland would be placed under conservation easements in which the landowner would be paid to retain 20 percent of their crop for wildlife. These changes would result in a 0.1 to 0.2 percent reduction in marketable crop yield.
Cropland	Would improve the habitat for all of the nine major wildlife species groups that were evaluated. Habitat improvements that benefit wildlife are significant beneficial impacts.	Same as Pahcease Alternative
Wetland and Riparian Habitat Types	Would not adversely impact any threatened, endangered or candidate species. Would benefit Uinta Basin hookless cactus and western yellow-billed cuckoo.	Negative impact similar to the Proposed Action. Would restore or create 1,461 acres and enhance 1,714 acres of wetland and riparian habitats. Significant beneficial impact.
Wildlife Resources		Same as Proposed Action
Threatened, Endangered and Candidate Species (Listed Species)		Same as Proposed Action

Summary of Environmental Impacts			
	Proposed Action Alternative	Pahcease Alternative	Topanotes Alternative
Recreation	<p>Hunting, fishing and non-consumptive recreation would require Tribal permits or access permission.</p> <p>Increased traffic from construction vehicles is not expected to cause any deterioration in the road infrastructure nor any noticeable decline in the Level Of Service on the roads (a measure of volume and flow rates and traffic congestion).</p> <p>Although internal roads would generally be closed to motorized vehicles, except those needed for administrative use, all existing road rights-of-way necessary for property access would be maintained.</p> <p>There would be no impacts to county roads through surface or ground water.</p>	<p>Multiple permits and access permissions could be required to fish, hunt or recreate along the Duchesne River corridor.</p>	<p>Same as Pahcease Alternative</p>
Transportation	<p>There would be no impacts to known sites eligible for listing to the National Register of Historic Places. There are no known sites of cultural importance or sacred sites to the Tribe within the project area. Consultation with the State Historic Preservation Officer would be conducted pursuant to an MOA with SHPO upon project implementation (refer to Appendix F of the FEIS).</p>	<p>Same as Proposed Action</p>	<p>Same as Proposed Action</p>
Cultural Resources		<p>Same as Proposed Action</p>	<p>Same as Proposed Action</p>
Native American Trust Resources/Environmental Justice	<p>Would not disproportionately adversely affect low-income or minority communities.</p>	<p>Same as Proposed Action</p>	<p>Same as Proposed Action</p>