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Proposed Red Cliffs Desert Reserve/Long Valley Land Exchange between the Bureau of Land Management, St. George Field Office and Brennan Holdings, LLC

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CONTENTS

Chapter 1.0. Purpose of and Need for Action 1
1.1. Introduction 1
1.2. Background 1
1.3. Purpose of and Need for the Proposed Action 2
1.4. Conformance with the BLM Land Use Plan 2
1.5. Relationships to Statutes, Regulations, and Other Plans 4
1.6. Issue Identification 5
1.7. Issues Considered but Eliminated from Further Analysis 7
Chapter 2.0. Description of Alternatives 8
2.1. Introduction 8
2.2. Alternative A. Proposed Action 8
2.3. Alternative B. No Action 10
2.4. Alternatives Considered but Eliminated from Further Analysis 11
Chapter 3.0. Affected Environment 12
3.1. Introduction 12
3.2. General Setting 12
3.3. Cultural Resources 13
3.4. Soils 14
3.5. Vegetation Excluding USFWS-Designated Species 14
3.6. Wildlife Excluding USFWS-Designated Species 15
3.7. Migratory Birds 15
3.8. Threatened, Endangered, or Candidate Animal Species 21
3.9. Livestock Grazing 26
Chapter 4.0. Environmental Impacts 28
4.1. Introduction 28
4.2. General Analysis Assumptions and Guidelines 28
4.3. Direct and Indirect Impacts 29
4.4. Cumulative Impacts 38
4.5. Conclusions and Determinations 46
Chapter 5.0. Consultation and Coordination 48
5.1. Introduction 48
5.2. Persons, Agencies, and Organizations Consulted 48
5.3. Summary of Public Participation 49
5.4. List of Preparers 50
Chapter 6.0. Literature Cited 52

APPENDICES

Appendix A. Interdisciplinary Team Checklists
Appendix B. Parcel Descriptions and Maps
Appendix C. Birds Protected By The Migratory Bird Treaty Act Occurring in Washington County, Utah.

FIGURES

Figure 2-1. Location of the Red Cliffs Parcel and Long Valley Parcel that are proposed for exchange by the Proposed Action. 9
Figure 3-1. Location of survey line and Mojave desert tortoise sign (live, burrows, and scats) for the proposed Long Valley Parcel (from McLuckie 2015). 24
Figure 3-2. Mojave desert tortoise designated critical habitat boundaries, in relation to the Red Cliffs and Long Valley Parcels....25
Figure 3-3. Dome Allotment boundary in relation to the Long Valley Parcel. 27

TABLES

Table 3-1 Migratory Bird Species Documented in Washington County, Utah, That Have Conservation Status* and Their Primary and Secondary Breeding and Wintering Habitats 17
Table 5-1. List of Persons, Agencies, and Organizations Consulted 48
Table 5-2. BLM Preparers and Reviewers 50
Table 5-3. Other Preparers and Reviewers....51

CHAPTER 1.0. PURPOSE OF AND NEED FOR ACTION

1.1. INTRODUCTION

This environmental assessment (EA) has been prepared to disclose and analyze the environmental consequences of the proposed Red Cliffs Desert Reserve (RCDR)/Long Valley land exchange between the Bureau of Land Management's (BLM) St. George Field Office and Brennan Holdings, LLC (Brennan Holdings). Under the Proposed Action, approximately 605 acres of BLM-managed public land in Long Valley (the Long Valley Parcel) would be exchanged for an equal value of private inholdings from a 788-acre parcel owned by Brennan Holdings (the Red Cliffs Parcel) in the RCDR. This EA is a site-specific analysis of potential impacts that could result with the implementation of the proposed land exchange, which is the Proposed Action. This EA will assist BLM to comply with the National Environmental Policy Act (NEPA) and in making a determination as to whether any "significant" impacts could result from the analyzed actions. *Significance* is a finding defined in 40 Code of Federal Regulations (CFR) 1508.27.

An EA provides evidence for determining whether to prepare an environmental impact statement (EIS) or finding of no significant impact (FONSI). If the Proposed Action is determined to have no significant impacts on the natural and human environment, then a FONSI would be prepared and included in the decision record, which briefly presents the reasons why the Proposed Action would not result in significant environmental impacts beyond those already addressed in the *St. George Field Office Record of Decision and Resource Management Plan (ROD/RMP)* (BLM 1999). If the BLM decision maker determines that the Proposed Action would have significant impacts, then an EIS would be prepared.

The EA includes information and has been formatted to serve as the biological assessment that will be submitted to the U.S. Fish and Wildlife Service (USFWS) to initiate consultations under Section 7 of the Endangered Species Act (ESA), as amended.

1.2. BACKGROUND

USFWS listed the Mojave desert tortoise (*Gopherus agassizii)*, located north and west of the Colorado River, as a threatened species in 1990 under the federal ESA. In 1994, USFWS designated 129,100 acres of critical habitat for the Mojave desert tortoise in Washington County, Utah. At that time, growth and development on private lands in the county were resulting in the "take" of individual tortoises and the adverse modification to and loss of critical habitat. Under the ESA, *take* is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. To comply with the ESA, Washington County developed a habitat conservation plan (HCP) for the Mojave desert tortoise and prepared an EIS to support implementation of the HCP and the county's application for an Incidental Take Permit (ITP). USFWS approved the county's HCP and granted its ITP in 1996. The key mitigation component of the county's HCP is the perpetual protective management of an approximately 62,000-acre multi-jurisdictional reserve, comprised of federal, state, municipal, and undeveloped private lands, to assist the recovery and delisting of the Mojave desert tortoise; this mitigation reserve is locally known as the RCDR. In 1996, approximately one-third of its

land base was owned by private parties or administered by the State of Utah School and Institutional Trust Lands Administration (SITLA). Acquisition of these private and SITLA inholdings was identified as one of highest priorities for implementation of the HCP.

When the RCDR was established, the private landowners voluntarily included their properties in the reserve, with the understanding that these inholdings could be acquired by the federal government at fair market value. The private landowners also retained the option to withdraw their properties from the RCDR at any time and develop their lands, but only after complying with the mandates of Section 10 of the ESA. Compliance with this section of the ESA would require that each landowner develop an HCP and mitigate the take of tortoises and adverse modification of critical habitat through the establishment of a mitigation reserve on the private property. The need to leave substantial areas of the property undeveloped to serve as a mitigation reserve could significantly reduce the property's value. For these reasons, many private land inholders in the RCDR have elected to pursue land exchanges with BLM or are willing sellers, as funds are available for the direct purchase of their properties by the federal government.

The 1999 St. George Field Office RMP/ROD included management goals, objectives, and decisions to further implementation of the county's HCP, including a commitment to acquire private inholdings through the exchange of public lands or the direct purchase from willing sellers. Since the RMP was approved in 1999, BLM has acquired more than 6,500 acres of private inholdings in the RCDR through exchange, direct purchase, and donation. The 788-acre Brennan Holdings property is one of the largest remaining private inholdings remaining in the RCDR to be acquired.

In 2009, Congress designated the approximately 45,000 acres of BLM-managed public lands within the RCDR as the Red Cliffs National Conservation Area (NCA), through the Omnibus Public Land Management Act of 2009 (OPLMA; Public Law [PL] 111-11 at Subtitle O, Section 1974). BLM was directed by Congress to manage the NCA so as "to conserve, protect, and enhance the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources" of the public lands, with a particular emphasis on threatened and endangered species.

1.3. PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of and need for the proposed land exchange are to acquire privately-owned lands in the RCDR that support populations of the threatened Mojave desert tortoise and provide designated critical habitat for this species into federal ownership, where they will not be at risk of future development. Completion of this exchange would further BLM's legal obligations under the ESA to assist the recovery and delisting of threatened and endangered species, as well as the goals of the recovery plan for the Mojave desert tortoise (USFWS 1994, revised 2011) and those of Washington County's HCP.

1.4. CONFORMANCE WITH THE BLM LAND USE PLAN

The proposed RCDR/Long Valley land exchange would conform to the following management goals and decisions in the St. George ROD/RMP (BLM 1999):

LD-02: Land ownership changes will be considered on lands not specifically identified in this plan for disposal or acquisition if the changes are in accordance with resource management objectives and other Plan decisions and will accomplish one or more of the following criteria:

1. *Such changes are determined to be in the public interest and will accommodate the needs of local and state governments, including needs for the economy, public purposes, and community growth.*

2. *Such changes result in a net gain of important and manageable resources on public lands such as crucial wildlife habitat, significant cultural sites, quality riparian areas, live water, listed species habitat, or areas key to productive ecosystems.*

3. *Such changes ensure public access to lands in areas where access is needed and cannot otherwise be obtained.*

4. *Such changes promote more effective management and meet essential resource objectives through land ownership consolidation.*

5. *Such changes result in acquisition of lands which serve regional or national priorities identified in applicable policy directives.*

The Proposed Action would conform to the 1999 St. George ROD/RMP because the proposed exchange would meet all of the above criteria, except for number 3.

LD-05: Over the life of the Plan, it is expected that BLM may acquire up to 18,000 acres of land within Washington County. Nearly all of these acres will result from BLM's fulfilling its commitment to acquire available state and private lands within the Washington County HCP… A pool of 30,030 acres of non-federal lands, which may meet the criteria listed in LD-02, is shown on Map 2.1 for potential acquisition as opportunities arise to help meet objectives for resource management descried elsewhere in this Plan.

The Proposed Action would conform to the 1999 St. George ROD/RMP because the Red Cliffs Parcel is identified for acquisition on Map 2.1 in the St. George ROD/RMP.

LD-06: Over the life of the Plan, it is expected that up to 18,000 acres of public lands may be transferred out of public ownership in Washington County. Most of these transfers will occur as a result of land exchanges needed to complete acquisition of state and private lands within the Washington County HCP Reserve.

The Proposed Action would conform to this decision from the St. George ROD/RMP.

FW-02: Consistent with other priorities, BLM will consolidate blocks of public lands resulting in improved habitat management capability. Such will occur in key habitat areas for listed species and other important wildlife populations including, but not limited to, lands within the Washington County Habitat Conservation Plan (HCP) Reserve.

The Proposed Action would conform to the 1999 St. George ROD/RMP because acquisition of the Red Cliffs Parcel would allow BLM to acquire designated critical habitat for the Mojave desert tortoise and consolidate federal landownership and management in the RCDR.

> *FW-13: Public lands supporting federally-listed or sensitive animal species will be retained in public ownership unless exchange or transfer will result in acquisition of better habitat for the same species or provide for suitable management by another agency or qualified organization. Habitats for such species may be acquired where logical to consolidate management areas and where BLM or qualified partners have the resources needed to effectively manage for the intended purpose.*

The Proposed Action would conform to the 1999 St. George ROD/RMP because the Red Cliffs Parcel in the RCDR provides designated critical habitat for the Mojave desert tortoise.

> *RC-20(e): Generally, lands within the [Sand Mountain] SRMA not already identified in the RMP for disposal will be maintained in public ownership to provide long term stability to user groups such as the OHV community who, as a result of urbanization and land use restrictions, have lost much of their traditional open use areas.*

The Long Valley Parcel is located within the Sand Mountain Special Recreation Management Area (SRMA), identified in the St. George ROD/RMP to provide motorized and non-motorized recreational opportunities. Although RMP decision RC-20 states that public lands within the SRMA would *generally* be retained in public ownership, the decision language provides BLM with the needed flexibility to dispose of lands in the SRMA, when the public interest would continue to be served. The Long Valley Parcel is not within the Open use area of the SRMA and, because of its location and physical features, it is not heavily used for motorized recreation. Therefore, the proposed exchange of this parcel would be in conformance with decision RC-20 from the RMP.

1.5. RELATIONSHIPS TO STATUTES, REGULATIONS, AND OTHER PLANS

The Proposed Action is consistent with federal laws, implementing regulations, and BLM policy, including the requirements of Title II, Section 206 of the Federal Land Policy and Management Act (FLPMA) (43 United States Code [USC] 1716) and the Federal Land Exchange Facilitation Act of August 20, 1988 (PL 100-409; 102 Stat. 1086).

The Proposed Action conforms to *The General Plan of Washington County 2010* (Washington County 2012). The general plan incorporates the *Washington County Resource Management Plan 2009*, which states in Section 6, Planning Guidelines and Policy Statements:

> *The county supports any increase in private land holdings in the county, and cannot support any net loss of private land for any purposes. The county believes that it is appropriate to transfer from federal ownership, through sale or exchange, certain lands to private ownership if such a transaction will benefit the county's economic base.*

The Proposed Action also conforms to the Washington County HCP.

Required elements of specific laws have been considered by the BLM Interdisciplinary (ID) Team as documented in the ID Team Checklists in Appendix A.

1.6. ISSUE IDENTIFICATION

The BLM ID Team screened the proposed land exchange and completed ID Team Checklists for the Red Cliffs Parcel and the Long Valley Parcel (see Appendix A) to identify resource values and land uses that could be impacted by the exchange and therefore require analysis in the EA.

The Notice of Exchange Proposal (NOEP) was published in the *St. George Spectrum* for 4 consecutive weeks beginning on September 1, 2015. The NOEP and invitations to provide comments were also mailed to landowners of parcels adjoining the Red Cliffs Parcel and the Long Valley Parcel, rights-of-way (ROW) holders on the Long Valley Parcel, the holder of the grazing permit for the Long Valley Parcel, Utah's Congressional delegation, Native American Tribes, local city and county government entities, state agencies, and other parties who have previously expressed interest in the land exchange. A complete list of the persons, agencies, and organizations contacted is presented in Table 5-1 in Chapter 5. A BLM point of contact was identified in these postings and mailings, and the public was invited to provide scoping comments and identify issues that should be evaluated in the EA. BLM received no comments in response to the publication of the NOEP or its mailings.

1.6.1. Issues Identified for the Long Valley Parcel

1.6.1.1. *Cultural Resources*

Four archeological sites that are located on the Long Valley Parcel have been evaluated as being eligible for the National Register of Historic Places (NRHP). If the proposed exchange is approved, these sites would no longer be protected under federal historic preservation laws and would likely be damaged or destroyed by future development of the parcel, when it is in private ownership.

Under Section 106 of the National Historic Preservation Act (NHPA), when federal actions are proposed, such as the RCDR/Long Valley land exchange, federal agencies are required to take into account the effects of their actions on archeological sites or other types of cultural resources that are listed on or eligible for the NRHP; such sites or resources are referred to as historic properties. Properties are initially evaluated by professional archeologists as to whether they retain integrity of location, design, setting, materials, workmanship, feeling, and association. If so, they are further evaluated against four criteria of significance (listed in 36 CFR 60.4 (a-d)) and must meet one or more of those criteria to be recommended eligible for the NRHP. Federal agencies are further mandated under the NHPA to avoid or minimize adverse effects to NRHP-listed or NRHP-eligible properties that could result from agency actions.

Where avoidance is not an option, adverse effects must be lessened to the extent possible through treatments or mitigation measures developed through consultations between the federal agency, the Utah State Historic Preservation Officer (Utah SHPO), the Advisory Council on Historic Preservation, American Indian tribes that claim cultural affiliation to southern Utah, the public, and other interested parties. In accordance with the implementing regulations for Section 106, adverse effects to historic properties do not necessarily qualify as a significant impact under NEPA, as defined by 40 CFR 1508.27.

1.6.1.2. *Soils*

If the proposed exchange is approved and the Long Valley Parcel goes into private ownership, it is anticipated that development would occur and that some or all of the soils on the 605-acre parcel could be impacted.

1.6.1.3. *Vegetation Excluding USFWS-Designated Species*

The Mojave mid-elevation desert scrub vegetation community is present on the Long Valley Parcel (U.S. Geological Survey [USGS] 2016). Native vegetation on some or all of the 605-acre Long Valley Parcel may be damaged or destroyed, if this parcel is transferred out of federal ownership and subsequently developed by the private landowner.

1.6.1.4. *Wildlife Excluding USFWS-Designated Species*

The Long Valley Parcel provides habitat for many native wildlife species, including BLM Sensitive Species, which are species at risk, but not currently listed under the ESA. If the proposed exchange is approved, and the Long Valley Parcel goes into private ownership, it is anticipated that development would occur that could damage or destroy habitat for wildlife and result in injuries or mortalities to some individuals.

1.6.1.5. *Migratory Birds*

The Long Valley Parcel has been identified as having potential habitat for migratory birds. If the proposed exchange is approved and the Long Valley Parcel goes into private ownership, it is anticipated that development would occur and habitat for migratory birds would be damaged or destroyed.

1.6.1.6. *Threatened, Endangered, or Candidate Animal Species*

The Long Valley Parcel has the potential to provide suitable habitat for the Mojave desert tortoise and may support a small population of this threatened species, based on observations of Mojave desert tortoises immediately south of this parcel. The Long Valley Parcel is not, however, within the designated critical habitat for Mojave desert tortoise that was identified by USFWS in 1994. If the proposed exchange is approved and the Long Valley Parcel goes into private ownership, it is anticipated that development would occur and that potential Mojave desert tortoise habitat would be damaged or destroyed. There is a possibility that individual tortoises could be injured or killed during development, if they are found on this parcel. The EA analyzes the potential impacts to Mojave desert tortoise as one of the issues carried forward for detailed study.

1.6.1.7. *Livestock Grazing*

The grazing of domestic cattle is authorized by BLM, through a federal grazing permit, in the Dome Allotment, which overlaps the Long Valley Parcel. Transfer of the Long Valley Parcel into private ownership would reduce the public land acreage in the Dome Allotment and would require modifications to the federal grazing permit, potentially affecting the numbers of livestock grazed, the season of use, or other terms and conditions.

1.7. ISSUES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

The ID Team Checklists (see Appendix A) detail issues and resources considered by the BLM ID Team and provide a rationale for the findings of the resource specialists. Issues and resources were dismissed from further analysis in this EA because they are either not present or would not be affected to a degree that requires detailed analysis.

Field inventories or studies for many resources or resource values were not conducted in support of the proposed exchange by BLM or others for the Red Cliffs Parcel, because no impacts to resource values would result from acquisition of the parcel by BLM. Should the exchange be authorized, all resource values would benefit from the protections of federal environmental and heritage resource protection laws and management within the Red Cliffs NCA. BLM is mandated by OPLMA to manage the public lands for conservation and protection of resource values. Where existing data were available on resource values on the Red Cliffs Parcel, such as population data for the Mojave desert tortoise, these data were included in the description of the Affected Environment of the Red Cliffs Parcel and the analysis in Chapter 4.

CHAPTER 2.0. DESCRIPTION OF ALTERNATIVES

2.1. INTRODUCTION

This chapter describes the Proposed Action and a No Action Alternative. Although the No Action Alternative does not meet the purpose for and need for action, it forms a baseline for the comparison of environmental impacts that might result from implementation of the Proposed Action.

2.2. ALTERNATIVE A. PROPOSED ACTION

Under the Proposed Action, approximately 605 acres of BLM-managed public land in Long Valley would be exchanged for an equal value of private inholdings in the RCDR and NCA, expected to total approximately 80 to 100 acres (refer to Figure 2-1 for locations of both parcels). The interests to be conveyed include the surface and subsurface mineral estates for the Long Valley Parcel and the surface estate only for the Red Cliffs Parcel. Both exchange parcels would be subject to valid existing rights and any encumbrances of record at the time of conveyance. Holders of valid ROWs issued by BLM on the Long Valley Parcel would be afforded the opportunity to amend their ROWs to establish a new term, including in perpetuity, for that ROW or, if applicable, to an easement.

The exchange would be completed on an equal value basis, based on appraisals approved by the U.S. Department of the Interior, Office of Valuation Services. The amount of acreage to be acquired from the Brennan Holdings private property will be determined by the appraised value of the federal Long Valley Parcel. The Brennan Holdings property will be appraised in accordance with Public Law 104-333, which requires the following:

> *In acquiring any lands and any interests in lands in Washington County, Utah, by purchase, exchange, donation or other transfers of interest, the Secretary of the Interior shall appraise, value, and offer to acquire such lands and interests without regard to the presence of a species listed as threatened or endangered or any proposed or actual designation of such a property as critical habitat or a species listed as threatened or endangered pursuant to the Endangered Species Act of 1973.*

Legal descriptions of the Long Valley and Red Cliffs Parcels are included in Appendix B, including the interests to be conveyed or reserved, encumbrances of record, and maps of each parcel.

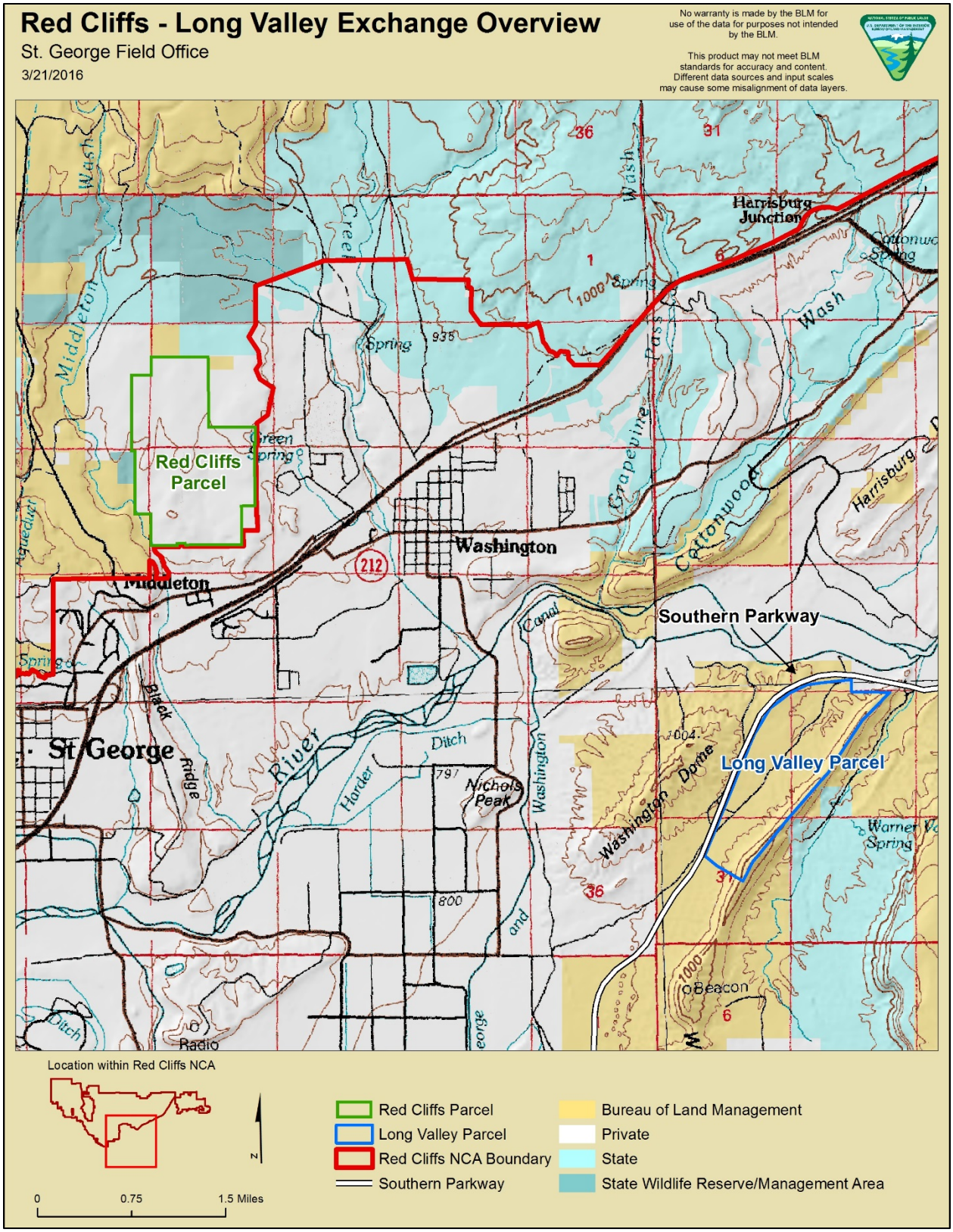


Figure 2-1. Location of the Red Cliffs Parcel and Long Valley Parcel that are proposed for exchange by the Proposed Action.

2.2.1. Future Use and Management of the Exchanged Parcels

2.2.1.1. *Long Valley Parcel*

The Long Valley Parcel of public lands is located in an unincorporated area of Washington County and is zoned as "Open Space Conservation – 20 Acre Minimum." The parcel is identified in *The Washington City General Plan Heritage, Pride and Progress* (Washington City 2005) as an area eventually to be annexed into the city boundaries. It is expected that this parcel in private ownership would be developed, although the nature and extent of that development cannot be conclusively known at this time.

2.2.1.2. *Red Cliffs Parcel*

If acquired into federal ownership, the Red Cliffs Parcel would be managed by BLM in accordance with relevant federal laws, including OPLMA, which designated the Red Cliffs NCA, implementing federal regulations, and agency policies. Management goals, objectives, and decisions would further the Congressionally-defined purpose of resource conservation and protection for the NCA, including the protection of all species listed under the authority of the ESA. OPLMA withdrew the public lands of the NCA from all forms of entry under the General Mining Law, and from operation of the mineral leasing, mineral materials, and geothermal leasing laws, subject to valid existing rights. However, the subsurface estate of the Red Cliffs Parcel has been reserved by SITLA, and BLM does not have the authority to prevent access to or the development of state-owned minerals. Mineral development could occur on this parcel, but would be subject to mitigation requirements under the ESA and other federal laws. The Red Cliffs NCA ROD/RMP, when approved, will provide specific goals, objectives, and management actions for all public lands within the NCA, including any acquired lands.

2.3. ALTERNATIVE B. NO ACTION

The No Action Alternative is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action. Under this alternative, BLM would not exchange the lands identified under the Proposed Action. The Long Valley Parcel would be retained in federal ownership and would continue to be managed under applicable federal laws, regulations, agency policies, and management decisions from the St. George ROD/RMP.

The Red Cliffs Parcel would be expected to remain undeveloped by Brennan Holdings, at least in the short term. Mineral development could occur, as SITLA has reserved the subsurface mineral estate, subject to the requirements of the ESA. Brennan Holdings could also apply for a Section 10 permit from USFWS, under the authority of the ESA, to develop this property for other uses. This permit could allow some development of that parcel to occur, if appropriate mitigation measures for the take of Mojave desert tortoise and adverse modification of designated critical habitat are approved by USFWS.

2.4. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

2.4.1. Larger Long Valley Exchange Parcel

When the Long Valley Parcel was initially proposed for exchange, the identified parcel totaled approximately 830 acres of public land, because the purpose of the exchange was to equalize appraised values and acquire as much of the private inholdings of Brennan Holdings in the RCDR as possible. However, field inventories by BLM biologists identified habitat and populations of the federally-listed endangered dwarf bear claw poppy (*Arctomecon humilis),* as well as a number of Mojave desert tortoises and suitable tortoise habitat on the southern end of the parcel. The parcel acreage was reduced by approximately 225 acres to exclude the habitats and populations of both federally-listed species. This proposed alternative for a larger Long Valley exchange parcel was not carried forward for detailed study in the EA because the environmental impacts on two federally-listed species and their habitats would have been unacceptably high and adverse.

CHAPTER 3.0. AFFECTED ENVIRONMENT

3.1. INTRODUCTION

This chapter presents the potentially affected environment (i.e., the physical, biological, social, and economic values and resources) as identified in the ID Team Checklists found in Appendix A and presented in Section 1.6 of this EA. This chapter provides the baseline for comparison of impacts and consequences described in Chapter 4.

As required by federal law, field inventories and studies to support the analysis were conducted for resources that may be affected by the exchange on the Long Valley Parcel. The results of these inventories and studies are presented in this section. Field inventories or studies are not required by federal law or BLM policy on parcels to be acquired by BLM and were not conducted in support of the proposed exchange for the Red Cliffs Parcel. Should the exchange be authorized, all resource values would benefit from the protections of federal environmental and heritage resource protection laws and management within the Red Cliffs NCA. Where existing data were available on resource values on the Red Cliffs Parcel, such as population data for the Mojave desert tortoise, soil types, and native vegetation, these data were included in this section as additional information for the reader.

Only those resources that were identified as potentially impacted through the ID Team scoping process are described in this chapter. The BLM ID Team identified resources that were not present or not likely to be affected by the Proposed Action, and these are listed in the ID Team Checklists in Appendix A.

3.2. GENERAL SETTING

3.2.1. Long Valley Parcel

The Long Valley Parcel is in Long Valley, approximately 1.5 miles from the new St. George Airport, 6 miles east of the City of St. George, and just outside of the city limits of Washington City, in unincorporated Washington County. The parcel is between Washington Dome and Warner Ridge, which are prominent geological formations in the area (refer to Figure 2.1).

A dry wash generally bisects the parcel, following the natural sloping terrain toward the Virgin River to the northeast. A portion of the natural drainage flows to the southwest near the southern portion of the parcel. Elevation ranges from approximately 2,800 feet above sea level near the center of the site to near 3,466 feet above sea level near the southeast corner along Warner Ridge. The parcel has generally moderate to rolling topography near the middle and western portion of the parcel, with steep sloping hillside terrain along the east boundary of the parcel along Warner Ridge.

The north and west boundaries of the 605-acre parcel are contiguous to the Southern Parkway highway, and there is one interchange that provides access to the parcel.

Encumbrances on the parcel include a 69-kilovolt powerline ROW granted to Dixie Rural Electric, a Washington City road ROW, and a ROW granted to the Federal Highway

Administration for the Southern Parkway. The ROW granted to the Federal Highway Administration includes a portion of an off-ramp and a temporary material site. The material site ROW will expire in August 2017.

3.2.2. Red Cliffs Parcel

The Red Cliffs Parcel is between Cottonwood Road (approximately 0.5 mile west of the parcel) and the Green Springs master planned community (adjacent to the parcel on the east). The southern portion of the parcel is in the city limits of St. George, whereas the northern portion is in an unincorporated area of Washington County, Utah. The parcel is zoned as "Open Space." The parcel is just east of the Middleton Bench, a prominent geological formation in the area (refer to Figure 2.1).

Mesquite and cottonwood trees are found in Middleton Wash, located adjacent to Middleton Bench on the extreme southwest portion of the parcel. Steep cliffs overlook the west edge of the parcel and abut Middleton Wash. The area is dominated by sandstone outcrops, caves, and protrusions particularly on the south and west sides. The remainder of the parcel has undulating terrain with a mixture of moderate to gradually sloping terrain. Elevation ranges from approximately 3,000 feet above sea level to near 3,250 feet above sea level.

The 788-acre parcel has improved access points from the east within the Green Springs area and from the south within the Middleton area. Encumbrances include a utility easement held by the City of St. George for a buried water pipeline; a utility easement held by PacifiCorp for electric transmission and distribution lines and associated facilities; a Use Agreement and Stipulated Judgment under which Dixie Escalante Rural Electrical Association, Inc. has the right to utilize the PacifiCorp easement for the construction, access, and maintenance of their powerline easement; a road easement in favor of Brennan Holdings, His Family Matters, and SITLA, providing legal access to their respective land holdings in the area; and an easement in favor of the Trust for Public Land, providing access across the parcel to a 22.4-acre parcel that was purchased by the Trust for Public Land and subsequently conveyed to the United States.

3.3. CULTURAL RESOURCES

3.3.1. Long Valley Parcel

As discussed above, in Section 1.6.1, the NHPA requires that federal agencies take into account the effects of their undertakings on sites that are eligible for the NRHP.

Literature reviews were conducted by BLM archeologists, using a cultural resources database housed in the St. George Field Office and the online statewide cultural resources database maintained by the Utah Division of State History. This review identified that portions of the Long Valley Parcel had previously been inventoried at the Class III level by qualified professional archeologists and that prehistoric or historic period archeological sites had been documented on the Long Valley Parcel as a result of field investigations conducted for the Southern Parkway highway project. A number of the previously documented sites had been evaluated as meeting one or more of the eligibility criteria for listing to the NRHP. BLM archeologists conducted Class III–level inventories on those areas of the Long Valley Parcel that had not been previously investigated and re-visited previously recorded sites to determine if the site records required updating. A cultural resources report for the Long Valley Parcel was

prepared and submitted to the Utah SHPO for consultations under Section 106 of the NHPA (State Report #U-15-BL-0416b). Through these consultations, the Utah SHPO has concurred with BLM's determinations that the 605-acre Long Valley Parcel comprises the area of potential effects (APE) for the proposed exchange, and that four sites located on the parcel were eligible for the NRHP (sites 42WS3998, 42WS5162, 42WS5164, and 42WS5360). Two of the sites are prehistoric period sites and the other two are Civilian Conservation Corps–era erosion control complexes. The erosion control structures were constructed in the late 1930s on this parcel because the erodible soils and sparse native vegetation cover made this parcel susceptible to wind and water erosion.

3.3.2. Red Cliffs Parcel

The Red Cliffs Parcel has not been systematically inventoried to identify cultural resources, as it is in private ownership.

3.4. SOILS

3.4.1. Long Valley Parcel

The soil type on the Long Valley Parcel has been classified in the Washington County Soil Survey as being Pintura loamy fine sand, 1%–5% slopes (Natural Resources Conservation Service [NRCS] 2016). This soil is largely formed by windblown sand and is well drained. The erosion potential of this soil type is moderate to severe (NRCS 2016), and the native vegetation cover is sparse and insufficient to prevent wind and water erosion. Precipitation runoff from the steep-sided, rocky slopes of the Warner Ridge accelerates water erosion of the soil and transports sediments to the Virgin River. In the 1930s, the Civilian Conservation Corps crews constructed soil erosion control structures on the Long Valley Parcel to slow the soil movement and to prevent it from eroding into the Virgin River and Washington Canal.

3.4.2. Red Cliffs Parcel

Most soil on the Red Cliffs Parcel has been classified in the Washington County Soil Survey as Harrisburg fine sandy loam, 1%–5% slopes (NRCS 2016). This soil is largely derived from sandstone and siltstone. The native vegetation is desert shrubs, forbs, and grasses, including creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), Mormon tea (*Ephedra* spp.), and big galleta (*Pleuraphis rigida*). The erosion susceptibility of the soils on the Red Cliffs Parcel is slight (NRCS 2016). The parcel is located on a gently sloping mesa, and the topography does not contribute to any notable erosion concerns.

3.5. VEGETATION EXCLUDING USFWS-DESIGNATED SPECIES

3.5.1. Long Valley Parcel

The Long Valley Parcel contains vegetation typical of the Mojave mid-elevation desert scrub community (USGS 2016). Vegetation is dominated by creosote bush, white bursage, Mormon tea, Mojave indigo bush (*Psorothamnus arborescens*), sand sage (*Artemisia filifolia*), bunch grasses like big galleta, and a variety of native desert shrubs and cacti (McLuckie 2015).

3.5.2. Red Cliffs Parcel

The Red Cliffs Parcel also contains vegetation typical of the Mojave mid-elevation desert scrub community (USGS 2016). Vegetation on the parcel is dominated by creosote and white bursage as well as Mormon tea, eastern Mojave buckwheat (*Eriogonum fasciculatum*), blackbrush (*Coleogyne ramosissima*), Mojave indigo bush, *Krameria* sp., sand sage, and cacti (*Opuntia* spp.). Mesquite (*Prosopis* spp.) and cottonwood trees (*Populus* spp.) are found in Middleton Wash, on the extreme southwest portion of the parcel (McLuckie 2015).

3.6. WILDLIFE EXCLUDING USFWS-DESIGNATED SPECIES

3.6.1. Long Valley Parcel

The Long Valley Parcel provides habitat for a variety of resident small mammals, birds, and reptiles that use Mojave Desert scrub communities. These species may include badger (*Taxidea taxus*), antelope ground squirrel (*Ammospermophilus leucurus*), kangaroo rat (*Dipodomys ordii*), deer mouse (*Peromyscus maniculatus*), desert wood rat (*Neotoma lepida*), Gambel's quail (*Callipepla gambelii*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), wrens (*Catherpes mexicanus, Salpinctes obsoletus*), house finch (*Carpodacus mexicanus*), side-blotched lizard (*Uta stansburiana*), western whiptail (*Cnemidophorus tigris*), coyote (*Canis latrans*), and gray fox (*Urocyon cinereoargenteus*). These species may use the area year-long or for a portion of the year.

The Long Valley Parcel may also provide habitat and support populations of the following BLM Sensitive Species that are known to use Mojave Desert scrub communities: burrowing owl (*Athene cunicularia*, summer resident, uncommon), ferruginous hawk (*Buteo regalis*, winter visitor, fairly common), northern goshawk (*Accipiter gentilis*, winter use only, rare), Allen's big-eared bat (*Idionycteris phyllotis*, permanent resident, extremely rare), big free-tailed bat (*Nyctinomops macrotis*, summer resident, rare), fringed myotis (*Myotis thysanodes*, permanent resident, uncommon), kit fox (*Vulpes macrotis*, permanent resident, uncommon), spotted bat (*Euderma maculatum*, permanent resident, rare), Townsend's big-eared bat (*Corynorhinus townsendii*, permanent resident, fairly common), and western red bat (*Lasiurus blossevillii*, permanent resident, extremely rare), During field inventories of the Long Valley Parcel completed by biologists from BLM and Washington County HCP, Gila monster (*Heloderma suspectum*) tracks were observed (BLM 2014).

3.6.2. Red Cliffs Parcel

The Red Cliffs Parcel contains Mojave Desert scrub habitats similar to the Long Valley Parcel, and the same species are potentially present on both parcels.

3.7. MIGRATORY BIRDS

Migratory bird species including raptors, songbirds, and shorebirds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 and Executive Order 13186. Eagles are also protected under the Bald and Golden Eagle Protection Act (BGEPA). The MBTA protects species or families of birds that live, reproduce, or migrate within or across international borders during their life cycle. Under authority of the MBTA, it is unlawful to take, kill, or possess

migratory birds, their parts, nests, or eggs—including the disturbance or destruction of a migratory bird nest that results in the loss of eggs or young. Executive Order 13186 was enacted, in part, to ensure that environmental analyses of federal actions evaluate the impacts of actions and agency plans on migratory birds. It also states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and it prohibits the take of any migratory bird without authorization from USFWS. The BGEPA makes it illegal to take (e.g., disturb, molest), possess, sell, purchase, barter, or transport any bald or golden eagle, alive or dead, or any part, nest, or egg thereof.

The decline of neotropical migratory birds (i.e., landbirds that breed north of Mexico and then migrate to Mexico, Central and South America, and the Caribbean) in North America is well documented (Rappole and McDonald 1994). Partners in Flight (PIF) is a cooperative partnership program involving federal and state governmental agencies (e.g., BLM, USFWS, Utah Division of Wildlife Resources [UDWR]) that focuses on the conservation of migratory birds and maintains a PIF High-Priority Bird Species list (Parrish et al. 2002). USFWS also maintains a list of Birds of Conservation Concern for each Bird Conservation Region in the United States (USFWS 2008). Washington County is in USFWS Bird Conservation Region 6, the Mountain-Prairie Region. In cooperation with the UDWR, Utah-BLM maintains an avian Sensitive Species list (UDWR 2015).

Over 300 species of migratory birds have been documented using habitats in Washington County for breeding, nesting, foraging, and migration (Fridell and Comella 2007; Parrish et al. 2002; see Appendix C). Table 3-1 provides a list of migratory bird species that have been observed in Washington County, including USFWS Birds of Conservation Concern, BLM Sensitive Species, and PIF High-Priority Bird Species.

Table 3-1 Migratory Bird Species Documented in Washington County, Utah, That Have Conservation Status* and Their Primary and Secondary Breeding and Wintering Habitats

Common Name[1, 2]	**Scientific Name[1, 2]**	**USFWS Birds of Conservation Concern[3]**	**Utah-BLM Sensitive Bird Species[4]**	**Utah-PIF High-Priority Bird Species[5]**	**Primary Breeding[4, 5]**	**Secondary Breeding[4, 5]**	**Winter Habitat[4, 5]**
Horned grebe	*Podiceps auritus*	X			Marshes	Ponds	Migrant
American white pelican	*Pelecanus erythrorhynchos*		X	X	Lakes	Marshes	Migrant
American bittern	*Botaurus lentiginosus*	X			Freshwater marshes	Freshwater marshes	Migrant
Least bittern	*Ixobrychus exilis*	X			Freshwater marshes	Brackish marshes	Accidental
Northern goshawk	*Accipiter gentilis*		X		Conifer forests	Mixed forests	Forests
Ferruginous hawk	*Buteo regalis*	X	X	X	Tree-snag	Cliff	Open habitats
Golden eagle	*Aquila chrysaetos*	X			Cliff	Tree-snag	Open habitats
Bald eagle	*Haliaeetus leucocephalus*	X	X		Tree-snag	Cliff	Migrant
Prairie falcon	*Falco mexicanus*	X			Cliff	Bank	Open habitats
Peregrine falcon	*Falco peregrinus*	X			Cliff	Tree-snag	Open habitats
Gambel's quail	*Callipepla gambelii*			X	Desert scrub	Lowland riparian	Desert scrub
Snowy plover	*Charadrius nivosus*	X			Sand beaches	Alkaline flats	Migrant

Common Name[1, 2]	**Scientific Name[1, 2]**	**USFWS Birds of Conservation Concern[3]**	**Utah-BLM Sensitive Bird Species[4]**	**Utah-PIF High-Priority Bird Species[5]**	**Primary Breeding[4, 5]**	**Secondary Breeding[4, 5]**	**Winter Habitat[4, 5]**
Mountain plover	*Charadrius montanus*	X		X	Shortgrass prairie	Sandy deserts	Migrant
American avocet	*Recurvirostra americana*			X	Marshes	Lake edges	Migrant
Black-necked stilt	*Himantopus mexicanus*			X	Marshes	Lake edges	Migrant
Long-billed curlew	*Numenius americanus*	X	X	X	Grasslands	Agricultural fields	Migrant
Marbled godwit	*Limosa fedoa*	X			Marshes	Shortgrass prairie	Migrant
Short-billed dowitcher	*Limnodromus griseus*	X			Marshes	Lake edges	Migrant
Yellow-billed cuckoo	*Coccyzus americanus*			X	Riparian woodlands	Marshes	Migrant
Short-eared owl	*Asio flammeus*	X	X		Grasslands	Wetlands	Open habitats
Burrowing owl	*Athene cunicularia*	X			Grasslands	High desert scrub	Migrant
Flammulated owl	*Psiloscops flammeolus*	X			Ponderosa pine	Sub-alpine conifer	Migrant
Black swift	*Cypseloides niger*		X	X	Mountain cliffs	Mountain waterfalls	Migrant
Broad-tailed hummingbird	*Selasphorus platycercus*			X	Mountain conifer	Mountain riparian	Migrant
Red-headed woodpecker	*Melanerpes erythrocephalus*	X			Open woodlands	Orchards	Accidental

Common Name[1, 2]	**Scientific Name**[1, 2]	**USFWS Birds of Conservation Concern**[3]	**Utah-BLM Sensitive Bird Species**[4]	**Utah-PIF High-Priority Bird Species**[5]	**Primary Breeding**[4, 5]	**Secondary Breeding**[4, 5]	**Winter Habitat**[4, 5]
Lewis's woodpecker	*Melanerpes lewis*	X	X	X	Pine/oak woodlands	Lowland riparian	Pine/oak woodlands
American three-toed woodpecker	*Picoides dorsalis*			X	Sub-alpine conifer	Lodgepole pine	Sub-alpine conifer
Willow flycatcher	*Empidonax traillii*	X			Riparian habitats	Marshes	Migrant
Loggerhead shrike	*Lanius ludovicianus*	X			High desert scrub	Pinyon-juniper	Open habitats
Gray vireo	*Vireo vicinior*	X		X	Pinyon-juniper	Scrub oak	Migrant
Bell's vireo	*Vireo bellii*	X		X	Scrublands	Riparian woodlands	Migrant
Pinyon jay	*Gymnorhinus cyanocephalus*	X			Pinyon pine	Juniper	Pinyon-juniper
Bewick's wren	*Thryomanes bewickii*	X			Lowland riparian	Pinyon-juniper	Brush-open woodlands
Sage thrasher	*Oreoscoptes montanus*	X			Sagebrush	Pinyon-juniper	Migrant
Virginia’s warbler	*Oreothlypis virginiae*			X	Scrub oak	Pinyon-juniper	Migrant
Lucy’s warbler	*Oreothlypis luciae*			X	Cottonwood-mesquite	Dry desert washes	Migrant
Black-throated gray warbler	*Setophaga nigrescens*			X	Pinyon-juniper	Dry conifer	Migrant
Abert’s towhee	*Melozone aberti*			X	Shrublands	Riparian woodlands	Shrub-riparian

Common Name[1, 2]	**Scientific Name[1, 2]**	**USFWS Birds of Conservation Concern[3]**	**Utah-BLM Sensitive Bird Species[4]**	**Utah-PIF High-Priority Bird Species[5]**	**Primary Breeding[4, 5]**	**Secondary Breeding[4, 5]**	**Winter Habitat[4, 5]**
Sagebrush sparrow	*Artemisiospiza nevadensis*	X		X	Sagebrush	Desert scrub	Deserts
Brewer's sparrow	*Spizella breweri*			X	Sagebrush	Pinyon-juniper	Migrant
Grasshopper sparrow	*Ammodramus savannarum*	X			Grasslands	Prairies	Migrant
McCown's longspur	*Rhynchophanes mccownii*	X			Shortgrass prairie	Grasslands	Migrant
Chestnut-collared longspur	*Calcarius ornatus*	X			Shortgrass prairie	Grasslands	Migrant
Bobolink	*Dolichonyx oryzivorus*			X	Wet meadow	Prairie	Migrant
Black rosy-finch	*Leucosticte atrata*	X		X	Alpine cliffs	Alpine habitats	Mountain valleys
Cassin's finch	*Haemorhous cassinii*	X			Mountain conifer	Pinyon-juniper	Mountain conifer

* Conservation status = USFWS Birds of Conservation Concern, Utah-BLM Sensitive Species, Utah-PIF High-Priority Bird Species.
1 Data from Chesser et al. (2013).
2 Data from Fridell and Comella (2007).
3 Data from USFWS (2008).
4 Data from UDWR (2015).
5 Data from Parrish et al. (2002).

3.7.1. Long Valley Parcel

The Long Valley Parcel provides habitat for migratory bird species that are typically associated with Mojave Desert scrub vegetation communities and the transition zone from the Mojave Desert to the Colorado Plateau ecological regions. A number of migratory bird species may occupy the area year-round or for a portion of the year (see Table 3-1). Nesting by migratory bird species generally occurs in the spring and summer between April 1 and August 31. No special nesting or roosting areas have been identified on the parcel.

3.7.2. Red Cliffs Parcel

The Red Cliffs Parcel provides similar migratory bird habitat and is likely to support similar migratory birds as the Long Valley Parcel.

3.8. THREATENED, ENDANGERED, OR CANDIDATE ANIMAL SPECIES

Although the Long Valley and Red Cliffs Parcels provide suitable habitat for the threatened Mojave desert tortoise, only the Red Cliffs Parcel is designated critical habitat for this species. No other threatened, endangered, or candidate species or designated critical habitats are known to occur on the parcels proposed for exchange.

3.8.1. Listing Status

3.8.1.1. *Mojave Desert Tortoise*

In response to the dramatic decrease in numbers of the Mojave desert tortoise throughout its entire range, USFWS emergency-listed the species as endangered on August 4, 1989 (54 *Federal Register* 32326). The Mojave desert tortoise was then proposed under normal listing procedures on October 13, 1989 (54 *Federal Register* 42270), and subsequently listed as threatened on April 2, 1990 (55 *Federal Register* 12178).

On March 30, 1993, USFWS released the *Draft Recovery Plan for the Desert Tortoise* (*Mojave Population*) (58 *Federal Register* 16691). The final Recovery Plan was released on June 28, 1994 (USFWS 1994) and was revised in 2011 (USFWS 2011). The 1994 Recovery Plan described a strategy for recovering the Mojave population of the desert tortoise, which included the identification of six recovery units, recommendations for a system of Desert Wildlife Management Areas within the recovery units, and development and implementation of specific recovery actions, especially within Desert Wildlife Management Areas to facilitate an ecosystem approach to land management and desert tortoise recovery (USFWS 1994).

3.8.1.2. *Mojave Desert Tortoise Designated Critical Habitat*

Using the Desert Wildlife Management Areas as the basis for areas recommended for recovery, USFWS proposed a rule to list critical habitat for the Mojave desert tortoise on August 30, 1993 (58 *Federal Register* 45748), under provisions of the ESA. Following an extensive review of information and public comments, USFWS formally designated 129,100 acres of critical habitat for the Mojave desert tortoise in Washington County in a final ruling, published on February 8, 1994 (59 *Federal Register* 5820).

3.8.2. Distribution, Description, and Life History

3.8.2.1. *Mojave Desert Tortoise*

The federally threatened Mojave desert tortoise occurs in the Mojave Desert, north and west of the Colorado River. The range of the Mojave desert tortoise roughly conforms to the distribution of the creosote bush scrub community in southern California, southern Nevada, northwestern Arizona, and the southwest corner of Utah.

In the Mojave Desert, tortoises are primarily active between March and June, with a secondary activity period from September through October. During inactive periods, tortoises hibernate, estivate, or rest in subterranean burrows or caliche caves, spending as much as 98% of their time underground (Nagy and Medica 1986). During active periods, they usually spend nights and the hotter portion of the day in their burrows. Tortoises construct and maintain a series of single-opening burrows, using anywhere from seven to 12 burrows at a given time within their range (Barrett 1990; Bulova 1994).

Individual tortoises remain primarily within their own core area or home range. Home ranges of tortoises overlap because tortoises do not defend a specific or exclusive area. Home range sizes can be from 10 to 450 acres and can vary with sex, age, season, and density or availability of resources (59 *Federal Register* 5820). Tortoises typically avoid plateaus, playas, sand dunes, steep slopes (grades of greater than 20%), and areas with obstacles, such as dense vegetation and rocky terrain, that would inhibit movement. Tortoises generally prefer areas characterized by scattered shrubs and abundant inter-space for growth of herbaceous plants, with soils ranging from sand to sandy gravel. Friable soil is important for digging burrows.

Mojave desert tortoises are “dietary specialists,” foraging selectively on forbs, grasses, shrubs, and succulent plants (Grover and DeFalco 1995; Jennings 1997; Minden 1980). Plants containing essential dietary nutrients for growth and reproduction, such as water, protein, fiber, nitrogen, phosphorus, calcium, and magnesium, are selectively consumed, whereas those that contain high concentrations of potassium are generally avoided. Native forage species selected by Mojave desert tortoises in Washington County include Indian ricegrass (*Achnatherum hymenoides*), bush muhly (*Muhlenbergia porter*), wirelettuce (*Stephanomeria* spp.), desert globemallow (*Sphaeralcea ambigua*), locoweed (*Astragalus nuttallianus*), white bursage (*Ambrosia dumosa*), brittlebush (*Encelia farinosa*), and prickly pear (*Opuntia erinacea*) (Coombs 1977; Esque 1994; Minden 1980; Woodbury and Hardy 1948).

Habitat requirements for the Mojave desert tortoise may vary by the different regions in which it occurs; in Utah, Mojave desert tortoise typically occur on flats, valleys, bajadas, and rolling hills, generally between 609 and 1,066 meters (2,000 and 3,500 feet) in elevation. Many of the habitats occupied by Mojave desert tortoise in the St. George area, including the Long Valley and Red Cliffs Parcels, are covered by exposed bedrock, lava flows, sand dunes, and shallow sandy soils over bedrock. In the Red Cliffs NCA, tortoises dig into the soil to create burrows or dens in south-facing locations that will provide shelter from both summer heat and the colder winter temperatures (BLM 2015).

3.8.3. Status of the Species and Designated Critical Habitat in the Action Area

3.8.3.1. *Long Valley Parcel*

Mojave Desert Tortoise

The Long Valley Parcel contains suitable Mojave desert tortoise habitat dominated by creosote, white bursage, Mormon tea, Mojave indigo bush, sand sage, bunch grasses (e.g., big galleta), and several species of cacti. The area is in a large expansive valley (i.e., Warner Valley), between two rugged land formations, Washington Dome and Warner Ridge. Habitat disturbance on the parcel includes user-created routes, unauthorized trash dumping areas, and livestock trails. During field investigations conducted for the feasibility study associated with the proposed RCDR/Long Valley land exchange, biologists from UDWR, BLM, and Washington County HCP Administrator's Office surveyed the Long Valley Parcel and adjacent federal lands that had been previously considered for inclusion in the exchange (McLuckie 2015). During these surveys, 6 live tortoises were encountered representing several age classes (i.e., 3 adults, 2 immatures, and 1 juvenile). In addition, 13 shelter sites (i.e., 3 pallets, 3 burrows, and 7 dens) and numerous tortoise scats were observed (McLuckie 2015; Figure 3-1). All of the described tortoise signs were observed in areas that are near, but outside, the boundaries of the Long Valley Parcel proposed for exchange (see Figures 2-1 and 3-1).

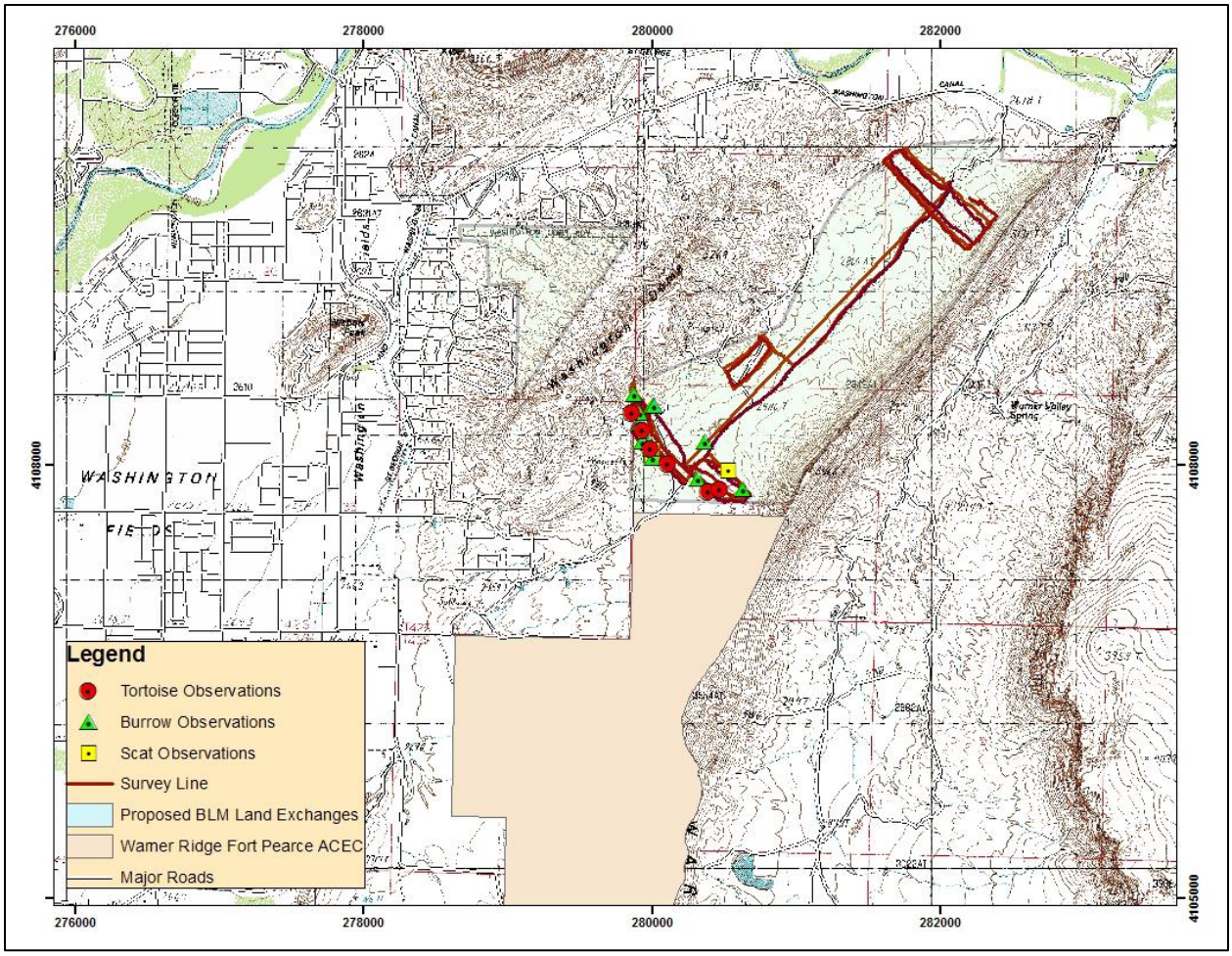


Figure 3-1. Location of survey line and Mojave desert tortoise sign (live, burrows, and scats) for the proposed Long Valley Parcel (from McLuckie 2015).

Designated Critical Habitat

The Long Valley Parcel is not located within the critical habitat designated by USFWS in 1994 for the Mojave desert tortoise in Washington County, Utah (Figure 3-2).

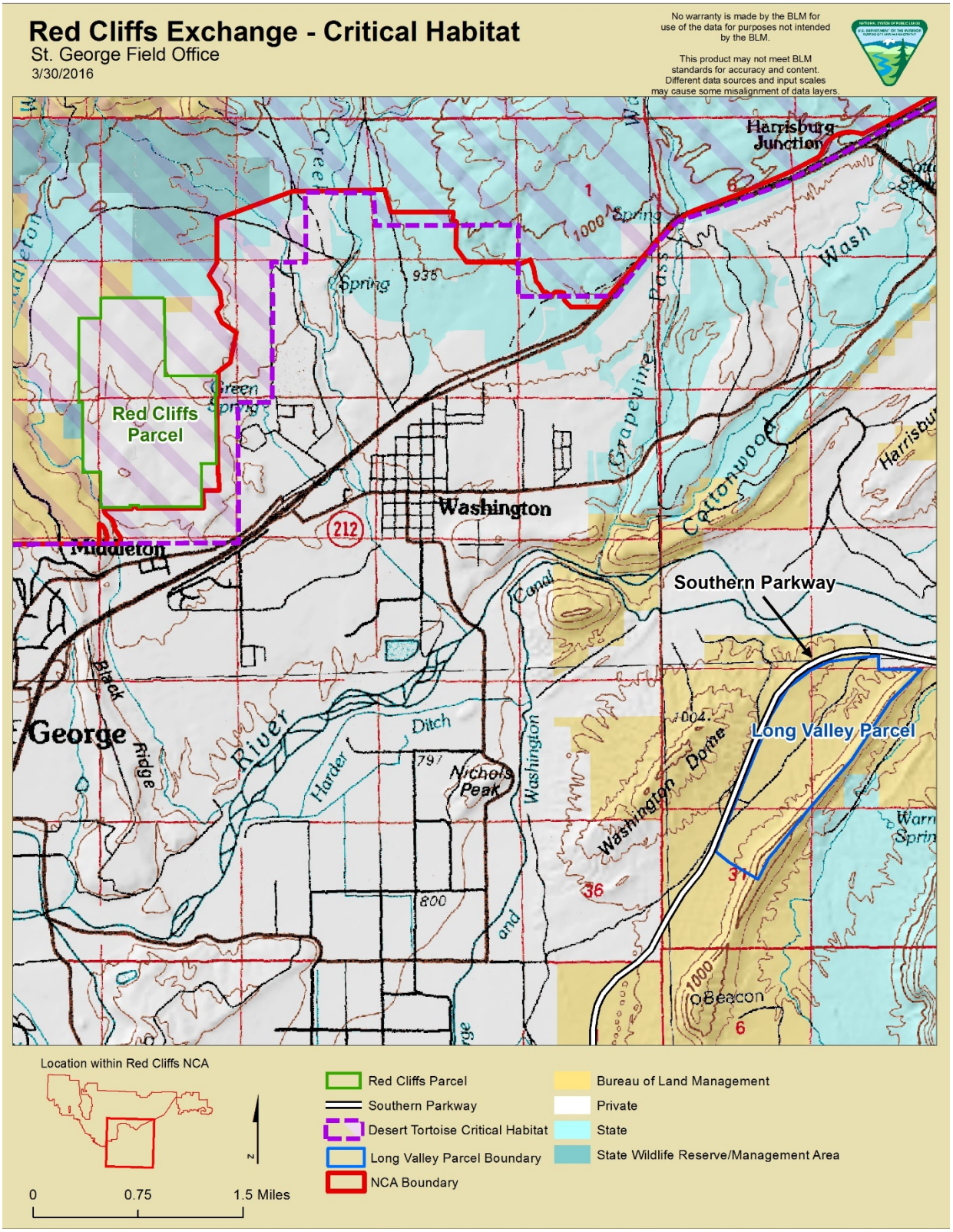


Figure 3-2. Mojave desert tortoise designated critical habitat boundaries, in relation to the Red Cliffs and Long Valley Parcels.

3.8.3.2. *Red Cliffs Parcel*

Mojave Desert Tortoise

The Red Cliffs Parcel supports healthy populations of Mojave desert tortoise. Dominant vegetation on the parcel includes species that provide tortoise habitat, including creosote bush, white bursage, Mormon tea, blackbrush, brittlebush, Mojave indigo bush, big galleta, Mojave buckwheat, *Krameria* spp., and cacti (McLuckie et al. 2015). The Red Cliffs Parcel also contains a variety of substrates and geologic features that are available for winter and summer burrows, egg laying, and foraging, including rugged sandstone outcrops, creosote-bursage flats, and sandy valleys (McLuckie et al. 2014). The UDWR has implemented a long-term monitoring program since 1998 to assess density, abundance, and mortality of Mojave desert tortoise populations within the RCDR (McLuckie et al. 2014). Density estimates were obtained annually from 1998 to 2001 and thereafter in alternate years (2003–2015). Survey results show that the Red Cliffs Parcel contains some of the highest relative Mojave desert tortoise densities within the RCDR with an estimated 48 to 64 adult tortoises on the parcel (McLuckie et al. 2014).

Designated Critical Habitat

The Red Cliffs Parcel is located in Mojave desert tortoise designated critical habitat in the Upper Virgin River Recovery Unit (see Figure 3-2). The 232,320-acre Upper Virgin River Recovery Unit is in the northeastern-most portion of the range of the Mojave desert tortoise; the 62,000-acre RCDR was established as a conservation area within this critical habitat unit (USFWS 2011; Washington County 1995).

3.9. LIVESTOCK GRAZING

3.9.1. Long Valley Parcel

The Long Valley Parcel is within the approximately 2,021-acre Dome Allotment (Figure 3-3). The current grazing permit licenses use on this grazing allotment for 43 cattle (212 animal unit months [AUMs]), with a season of use from December 1 to May 10. Rangeland inventory studies suggest there are approximately 70 AUMs that would be associated with the Long Valley Parcel. The construction of the Southern Parkway has bisected the Dome Allotment, with approximately half of the allotment located on either side of the highway.

3.9.2. Red Cliffs Parcel

The Red Cliffs Parcel is not within an active grazing allotment; livestock grazing is not an authorized land use on public lands within most of the RCDR.

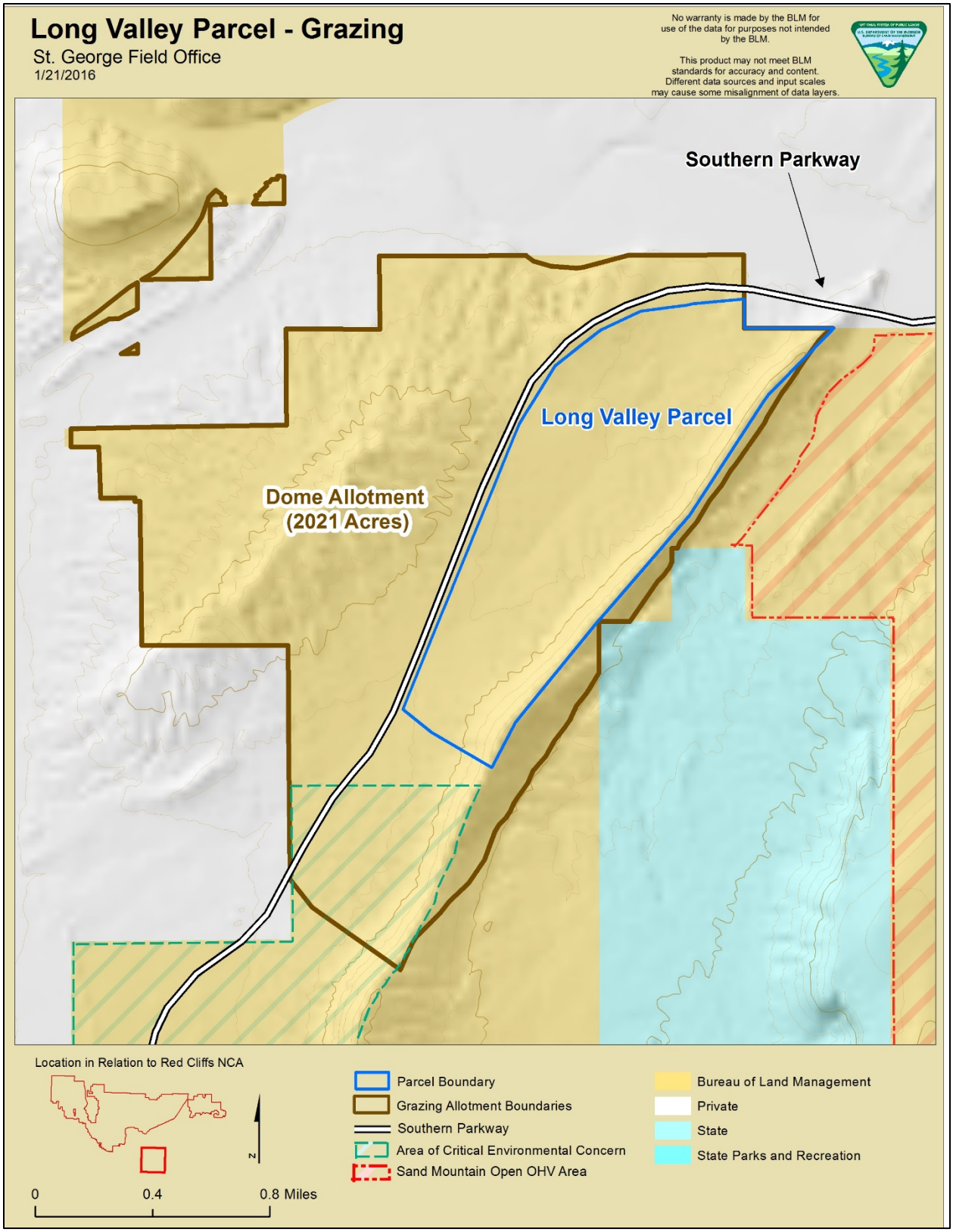


Figure 3-3. Dome Allotment boundary in relation to the Long Valley Parcel.

CHAPTER 4.0. ENVIRONMENTAL IMPACTS

4.1. INTRODUCTION

This chapter analyzes the environmental effects of the Proposed Action and No Action Alternative on the resources identified as potentially impacted in the ID Team Checklists found in Appendix A and presented in Chapters 1 and 3 of this EA.

4.2. GENERAL ANALYSIS ASSUMPTIONS AND GUIDELINES

Resource impacts that are likely to occur with the implementation of the Proposed Action were evaluated by BLM resource specialists, through the ID Team review process. Impacts were quantified to the extent possible. Several assumptions were made to facilitate the analysis of the projected impacts. The assumptions described in this section apply to all resource categories.

The resource impacts identified in this EA are largely based on the assumption that should the exchange be approved and the Long Valley Parcel transferred to private ownership, some or all of the 605 acres would be developed. The analysis assumes that all applicable state laws, as well as county and municipal ordinances, would be adhered to during the subsequent development of the parcel.

Because the land to be acquired from the Red Cliffs Parcel would be managed consistent with all federal laws, regulations, and agency policies, including OPLMA (which directs BLM to manage the Red Cliffs NCA "to conserve, protect, and enhance the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources" of the public lands), the effects of the acquisition of the Red Cliffs Parcel would be beneficial for resource values.

The analysis of impacts in this chapter is based on the best available data. Knowledge of the area and professional judgment are used to infer environmental impacts where data are incomplete or unavailable.

Acreage figures and other numbers used in the analyses are approximate projections for comparison and analytic purposes only. Readers should not infer that they reflect exact measurements or precise calculations.

4.2.1. General Methodology or Analyzing Effects

Impacts or effects can be direct or indirect. Direct impacts or effects are those caused by the management action and occur at the same time and place. Indirect impacts or effects are those that are reasonably foreseeable consequences of the action but are further removed in time or distance. For the purposes of the analysis in this document, impacts associated with the exchange of ownership of the parcels are considered direct effects of the Proposed Action. Impacts associated with the potential development of the Long Valley Parcel, or other impacts that may occur after the exchange is completed, are considered indirect effects of the Proposed Action.

Impacts can be both adverse and beneficial; to avoid confusion, they are defined as "adverse impacts" or "beneficial effects" in this analysis. Adverse impacts could result from management

actions that diminish any of the resource values described in the analysis. Beneficial effects could result from management actions that maintain or enhance any of the resource values described in the analysis. The intensities of impacts are also described, where possible, using the following definitions:

- Negligible: The impact or effect is at the lower level of detection; there would be no measurable change.
- Minor: The impact or effect is slight but detectable; there would be a small change.
- Moderate: The impact or effect is readily apparent; there would be a measurable change.
- Major: The impact or effect is severe, highly noticeable, and potentially permanent.

4.3. DIRECT AND INDIRECT IMPACTS

4.3.1. Proposed Action

4.3.1.1. *Cultural Resources*

Long Valley Parcel

Four archeological sites eligible for the NRHP were identified on the Long Valley Parcel. The land transfer, resulting in the loss of federal legal protections for these historic properties and potential subsequent development of the parcel, would constitute direct, long-term, and adverse effects to their integrity and NRHP eligibility. BLM is legally required to lessen adverse effects to NRHP-eligible properties to the maximum extent possible through the development of treatments, in consultation with the Advisory Council on Historic Preservation, the Utah SHPO, American Indian tribes, and other consulting parties.

The implementing regulations for Section 106 of the NHPA direct BLM to develop a memorandum of agreement (MOA) through further consultations with the Advisory Council on Historic Preservation, the Utah SHPO, the Paiute Indian Tribe of Utah, the Shivwits Band of the Paiute Indian Tribe of Utah, the Hopi Tribe, Washington County, and other consulting parties. The MOA will include treatment plans to mitigate effects to the four sites. Data recovery and analysis would occur at the two prehistoric archaeological sites to prevent the loss of important scientific information. A Level 2 Historic American Landscape Survey is proposed to document the two Civilian Conservation Corps–era erosion control feature sites. Washington County has committed to funding the implementation of the MOA and the required treatment plans, thereby lessening the adverse effects to the four historic properties to the maximum extent possible and fulfilling BLM's legal obligations under the NHPA.

Red Cliffs Parcel

Archeological inventories have not been conducted on the Red Cliffs Parcel. Acquisition of this parcel by BLM would place all archeological sites that are located on that property under the protection of federal heritage preservation laws, including the NHPA. The acquired lands would be managed consistent with OPLMA's mandates for the Red Cliffs NCA, ensuring that cultural

and historic resources are conserved, protected, and restored to the extent possible by BLM. This management would be a direct, long-term beneficial effect for any archeological resources located on the Red Cliffs Parcel.

4.3.1.2. *Soils*

Long Valley Parcel

The Proposed Action would not have any direct effects on soils on the Long Valley Parcel, as the change in ownership would not immediately affect soil conditions or susceptibility to erosion. However, the subsequent development of the Long Valley Parcel would be an indirect effect of the Proposed Action and could impact soils on some or all of the approximately 605 acres of the parcel. Soils may be impacted through compaction, increased susceptibility to wind and water erosion, and the long-term loss of soil productivity to paving or other surface alterations. The scope, extent, and timing of the impacts would be determined by the nature of the development activities approved by the applicable development authority (i.e., Washington City or Washington County), which cannot be determined at this time. Development that is poorly planned or not designed in consideration of the moderate to severe erosion potential of the soils on the parcel could result in a measurable increase in sedimentation into the Virgin River, which is approximately 0.25 mile north of the parcel. Increased sedimentation into the Virgin River would constitute an adverse effect on water quality and soil stability on the Long Valley Parcel. This impact could be short or long term, depending on the severity of the erosion. However, any development would be required to comply with applicable laws and regulations (e.g., development of a storm water pollution prevention plan), which would minimize the impacts of erosion during development. Because of compliance with applicable laws and regulations related to erosion control, the development of the Long Valley Parcel is not anticipated to result in more than minor loss of soil productivity and negligible sedimentation into the Virgin River.

Red Cliffs Parcel

Federal acquisition of the Red Cliffs Parcel and its subsequent management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would be expected to provide long-term beneficial effects for soil resources on the parcel. Soils on the Red Cliffs Parcel would be protected from impacts related to new surface disturbances or developments on the parcel to the extent possible by BLM.

4.3.1.3. *Vegetation Excluding USFWS-Designated Species*

Long Valley Parcel

The Proposed Action would not have any direct effects on vegetation on the Long Valley Parcel, as the change in ownership would not immediately affect vegetation. However, any subsequent development of the Long Valley Parcel would be an indirect effect of the Proposed Action and could impact vegetation on the parcel. The development of the Long Valley Parcel would likely result in the removal and replacement of much of the native Mojave mid-elevation desert scrub vegetation on the parcel. Some areas of vegetation are likely to be replaced with impervious surfaces such as roads, sidewalks, and buildings. Other areas of the parcel are likely to be landscaped during development. Vegetation in these areas after landscaping is likely to include

irrigated landscaping bushes, shrubs, trees, and grass. Other impacts to the vegetation on the Long Valley Parcel, including areas where development activities do not occur, may include removal of vegetation, alteration of vegetation, and introduction of non-native species and noxious weeds. The development would be required to comply with applicable laws and regulations (e.g., compliance with county noxious weed standards), which would minimize, but not eliminate, the impacts of introducing non-native species and noxious weeds on adjacent lands.

There are approximately 205,000 acres of Mojave mid-elevation desert scrub vegetation in Washington County (USGS 2016). The loss of 605 acres of this vegetation type from the Long Valley Parcel would be much less than 1 percent of this vegetation type in Washington County and would constitute only a minor adverse impact on the distribution of this vegetation type.

Red Cliffs Parcel

Federal acquisition of the Red Cliffs Parcel and its subsequent management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would have long-term beneficial effects for vegetation located on the parcel. Vegetation on the Red Cliffs Parcel would be protected from impacts related to new surface disturbances or developments on the parcel to the extent possible by BLM.

4.3.1.4. *Wildlife Excluding USFWS-Designated Species*

Long Valley Parcel

The Proposed Action is anticipated to impact wildlife species, including BLM Sensitive Species, which occupy the Long Valley Parcel or adjacent lands during some or all of the year. The land exchange and transfer of the Long Valley Parcel into private ownership would result in the loss of protections provided to some of these species, including BLM Sensitive Species, which are provided when the parcel is in federal ownership. The loss of federal protections would be a permanent, direct, and adverse effect of the Proposed Action. During any future development of the parcel, individuals of species that use the parcel may be killed, injured, or displaced. The development of the Long Valley Parcel would also reduce the amount of habitat available for the species that use the parcel. The loss of habitat to development and associated mortality and displacement of wildlife would be an indirect adverse effect of the Proposed Action. The loss of habitat to development is expected to be permanent.

There are approximately 205,000 acres of Mojave Desert scrub vegetation in Washington County (USGS 2016) that provide similar habitats and are used by a similar suite of wildlife species as the Long Valley Parcel. The loss of 605 acres of this habitat type from the development of the Long Valley Parcel would be much less than 1 percent of this habitat type in Washington County. As a result, the Proposed Action is anticipated to have only minor adverse impacts on populations of wildlife, including BLM Sensitive Species that use the Long Valley Parcel.

Red Cliffs Parcel

The acquisition of the Red Cliffs Parcel would result in acquisition of Mojave Desert scrub habitats that generally support the common and BLM Sensitive Species of wildlife found on the Long Valley Parcel. The acquired lands would be managed for conservation, protection, and restoration as part of the Red Cliffs NCA. This management would be a beneficial, long-term effect of the Proposed Action for wildlife, including BLM Sensitive Species.

4.3.1.5. *Migratory Birds*

Long Valley Parcel

The Proposed Action would not be anticipated to have any direct effects on migratory birds on the Long Valley Parcel, as the protections of the MBTA are afforded to species protected by the act regardless of the ownership of the land the species occupy. Any impacts on migratory bird species that occupy the parcel or adjacent lands during some or all of the year as a result of the subsequent development of the Long Valley Parcel would be an indirect effect of the Proposed Action. During any future development of the parcel, some individuals of species that use the parcel may be killed, injured, or displaced by use of construction equipment and conversion of natural Mojave Desert scrub habitats to residential and other developments. The protections afforded by the MBTA are anticipated to help reduce the mortality of birds and destruction of active nests during the development of the Long Valley Parcel. However, the MBTA does not prohibit modification of habitats, and the development of the Long Valley Parcel would be expected to reduce the amount of Mojave Desert scrub habitat available for the species that use the parcel over the long term.

There are approximately 205,000 acres of Mojave Desert scrub vegetation in Washington County (USGS 2016) that provide similar habitats and are used by a similar suite of migratory bird species as the Long Valley Parcel. The loss of 605 acres of this habitat type from the development of the Long Valley Parcel would be much less than 1 percent of this habitat type in Washington County. As a result, the Proposed Action is anticipated to have only minor adverse impacts on populations of migratory bird species that use the Long Valley Parcel.

Red Cliffs Parcel

The acquisition of the Red Cliffs Parcel would result in acquisition of Mojave Desert scrub habitats that can support the same migratory bird species that are present on the Long Valley Parcel. The acquired lands would be managed for conservation, protection, and restoration as part of the Red Cliffs NCA. This management would be a beneficial, long-term effect of the Proposed Action for migratory bird species that use the Red Cliffs Parcel.

4.3.1.6. *Threatened, Endangered, or Candidate Animal Species*

For the purposes of ESA Section 7 consultation, the action area describes all areas in which the Proposed Action and interdependent/interrelated actions may directly or indirectly affect federally protected species (50 CFR 402.02). The Proposed Action analyzed in this document is a proposed land exchange, and the action area for the purposes of Section 7 consultation is the area encompassed by the Long Valley and Red Cliffs Parcels.

4.3.1.6.1. *MOJAVE DESERT TORTOISE*

Long Valley Parcel

The Long Valley Parcel is within the known range of the Mojave desert tortoise in Washington County; however, no signs of tortoise occupation were located on the parcel during surveys conducted to support the land exchange. The parcel is located near areas where tortoises have been observed and where suitable Mojave desert tortoise habitat is present that could support Mojave desert tortoise.

Should the exchange be executed, the change in ownership of the Long Valley Parcel itself would not directly impact Mojave desert tortoise or the habitats located on the parcel. Any impacts on Mojave desert tortoise would occur as a result of subsequent development activities and would be an indirect effect of the Proposed Action. At the time of development, the Long Valley Parcel would be private land. Provisions outlined in Chapter 4 of the Washington County HCP would apply, because the parcel is located outside the RCDR. The parcel would meet the definition of "potential habitat" as identified in Chapter 4 the HCP. Under this classification, standard measures of tortoise clearance would be required before any development activity and would be completed by Washington County's HCP staff. Any tortoises located on the parcel would be removed and the standard protocols of the HCP followed (quarantine, testing for disease, etc.). After the standard procedures have been completed, healthy tortoises could be relocated, either to Zone 4 of the RCDR or to another location approved by USFWS. Any tortoises removed would be counted against the incidental take total of Washington County's permit.

The development of the Long Valley Parcel would result in the loss of some Mojave Desert scrub habitats that could support desert tortoise. There are approximately 205,000 acres of Mojave Desert scrub vegetation in Washington County (USGS 2016) that provide similar habitats for desert tortoise. The loss of 605 acres of this habitat type from the development of the Long Valley Parcel would be much less than 1 percent of this habitat type in Washington County and is located in an area that is not known to be occupied by the species. As a result, the loss of potential habitat from development of the Long Valley Parcel is anticipated to have only minor impacts on the availability of potential Mojave desert tortoise habitat in Washington County.

Red Cliffs Parcel

The BLM acquisition of the Red Cliffs Parcel and associated Mojave desert tortoise habitats that are known to be of high quality and support high densities of Mojave desert tortoise would have entirely beneficial effects for the species. The Red Cliffs Parcel is located in habitat with minimal fragmentation where Mojave desert tortoise conservation is placed as a high priority and is contiguous and interconnected with large blocks of adjacent tortoise habitat. The Red Cliffs Parcel would be managed for conservation, protection, and restoration, and would be managed to assist in the recovery and delisting of the Mojave desert tortoise as part of the Red Cliffs NCA. Furthermore, the acquisition of the Red Cliffs Parcel by BLM would help to consolidate the land base in the RCDR under federal management, enlarging the block of habitat that is protected from development or incompatible human uses to the extent possible by BLM. Because this area supports the highest tortoise densities in the Upper Virgin River Recovery Unit, appropriate

management of populations and habitat in this zone could help further the recovery of this species in Washington County.

4.3.1.6.2. *MOJAVE DESERT TORTOISE DESIGNATED CRITICAL HABITAT*

Long Valley Parcel

The Long Valley Parcel does not contain Mojave desert tortoise designated critical habitat. Therefore, the exchange of this parcel into private ownership would have no effects on Mojave desert tortoise designated critical habitat.

Red Cliffs Parcel

The Proposed Action would result in BLM acquiring Mojave desert tortoise designated critical habitat located on the Red Cliffs Parcel. The acquisition of designated critical habitat would be entirely beneficial, as the habitat would be managed for conservation, protection, and restoration, and would be managed to assist in the recovery and delisting of the Mojave desert tortoise as part of the Red Cliffs NCA. Furthermore, the acquisition of the Red Cliffs Parcel by BLM would help to consolidate the land base, including designated critical habitat, in the RCDR and NCA under federal management.

4.3.1.7. *Livestock Grazing*

Long Valley Parcel

The proposed land exchange would have the direct effect of reducing the acreage of public land available for livestock grazing in the Dome Allotment and would require BLM to modify the terms and conditions of the federal grazing permit. The current grazing permit authorizes 212 AUMs, based on the Dome Allotment's 2,021 acres of public land. If the Long Valley Parcel is exchanged, approximately 605 acres of public land and forage would no longer be available for grazing, representing a 30% reduction in the public land base of this allotment. This reduction would require BLM to reduce the number of permitted AUMs by approximately 70, to a new total of 142 AUMs. The reduction in land available for grazing and AUMs would have a moderate effect on allowable livestock grazing use on the Dome Allotment. Reducing allowable grazing use may also have the indirect effect of requiring a change in the season of grazing use, potentially shortening that season. The timing of the reductions would be dependent on several factors, such as whether Brennan Holdings would lease the parcel to the grazing operator in the short term and the timing of development of the property.

The grazing permittee was notified of the proposed land exchange and of the potential loss of grazing use on the federal land, concurrently with BLM's publication of the NOEP in September 2015, which began the required 2-year notification process. There is no legal requirement for BLM to mitigate the loss of grazing use on public lands after notification has been made, and no range improvements would be affected by the exchange proposal.

Red Cliffs Parcel

Acquisition of the Red Cliffs Parcel would have no impact on livestock grazing. The parcel is not currently used for grazing, and the majority of public and state lands in the RCDR have not

been available for livestock grazing since the mid-1990s when Washington County purchased and retired the grazing permits to implement the goals of its HCP.

4.3.2. No Action

Under the No Action Alternative, BLM would not exchange the lands identified under the Proposed Action, and the Long Valley Parcel would remain under federal management. Resource management on the Long Valley Parcel would conform to applicable federal laws and regulations, BLM policies, and management decisions contained in the St. George ROD/RMP.

The Red Cliffs Parcel would be expected to remain undeveloped by Brennan Holdings, at least in the short term. Mineral development could occur, as the State of Utah has reserved the subsurface mineral estate, subject to the requirements of the ESA. Brennan Holdings could also apply for a Section 10 permit from USFWS, under the authority of the ESA, to develop this property for other uses. This permit could allow some development of that parcel to occur, if appropriate mitigation measures for the take of Mojave desert tortoise and adverse modification of designated critical habitat are approved by USFWS.

4.3.2.1. *Cultural Resources*

Long Valley Parcel

Under the No Action Alternative, the adverse effects on the four NRHP-eligible cultural resource sites resulting from the land exchange would not occur, and these sites would retain the federal legal protections offered to eligible cultural sites on the Long Valley Parcel.

Red Cliffs Parcel

Under the No Action Alternative, the beneficial legal protections that would be offered to any cultural resources located on the Red Cliffs Parcel after acquisition by BLM would not occur.

4.3.2.2. *Soils*

Long Valley Parcel

Under the No Action Alternative, the potential adverse effects of erosion, soil compaction, and loss of the existing soil productivity resulting from the development of the Long Valley Parcel after the land exchange would not occur. The existing sparse vegetation and Civilian Conservation Corps erosion control structures that help prevent erosion and sedimentation from the parcel into the Virgin River would remain in their present state, and the current level of soil erosion from wind and water would be expected to continue into the future.

Red Cliffs Parcel

If the land exchange is not completed, the benefits to soil resources from acquiring the Red Cliffs Parcel and managing it according to the Congressionally-defined conservation purposes of the Red Cliffs NCA, including protections from new surface-disturbing activities, would not occur.

4.3.2.3. *Vegetation Excluding USFWS-Designated Species*

Long Valley Parcel

Under the No Action Alternative, the Mojave Desert scrub vegetation located on the Long Valley Parcel would not experience the adverse effects of removal, alteration, and potential introduction of non-native species and noxious weeds resulting from the development of the Long Valley Parcel. The vegetation on the parcel would be anticipated to remain in its existing condition for the foreseeable future.

Red Cliffs Parcel

If the land exchange is not completed, the benefits to vegetation resources from acquiring the Red Cliffs Parcel and managing it according to the Congressionally-defined conservation purposes of the Red Cliffs NCA, including protections from new surface-disturbing activities, would not occur.

4.3.2.4. *Wildlife Excluding USFWS-Designated Species*

Long Valley Parcel

Under the No Action Alternative, the wildlife species, including BLM Sensitive Species that use habitats located on the Long Valley Parcel, would not experience the adverse effects of habitat loss, mortality, and displacement associated with development of the parcel. The Mojave Desert scrub habitats located on the parcel would remain in their existing condition for the foreseeable future.

Red Cliffs Parcel

If the land exchange is not completed, the benefits of acquiring the wildlife habitats located on the Red Cliffs Parcel and managing them according to the Congressionally-defined conservation purposes of the Red Cliffs NCA, which are to protect the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources for the benefit and enjoyment of present and future generations, would not be realized.

4.3.2.5. *Migratory Birds*

Long Valley Parcel

Under the No Action Alternative, the migratory bird species that use habitats located on the Long Valley Parcel would not experience the adverse effects of habitat loss, mortality, and displacement associated with development of the parcel. The Mojave Desert scrub habitats located on the parcel would be anticipated to remain in their existing condition and available for use by migratory birds for the foreseeable future.

Red Cliffs Parcel

If the land exchange is not completed, the benefits of acquiring the migratory bird habitats located on the Red Cliffs Parcel and managing them according to the Congressionally-defined

conservation purposes of the Red Cliffs NCA, which are to protect the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources for the benefit and enjoyment of present and future generations, would not be realized.

4.3.2.6. *Threatened, Endangered, or Candidate Animal Species*

4.3.2.6.1. *MOJAVE DESERT TORTOISE*

Long Valley Parcel

Under the No Action Alternative, Mojave desert tortoises that use the habitat on the Long Valley Parcel would not experience the adverse effects from habitat loss, mortality, and displacement associated with future development of the parcel. The potential desert tortoise habitats located on the parcel would remain in their existing condition and available for use by desert tortoise for the foreseeable future

Red Cliffs Parcel

If the land exchange is not completed, the beneficial effects of BLM acquiring high-value Mojave desert tortoise habitat known to be occupied by high densities of tortoise and managing these areas consistent with the identified purposes of the Red Cliffs NCA, which are to protect the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources for the benefit and enjoyment of present and future generations, would not occur.

4.3.2.6.2. *MOJAVE DESERT TORTOISE DESIGNATED CRITICAL HABITAT*

Long Valley Parcel

The Long Valley Parcel does not contain designated critical habitat. If the land exchange is not completed, there would be no effect on Mojave desert tortoise designated critical habitat on the parcel.

Red Cliffs Parcel

If the land exchange is not completed, the beneficial effects of BLM acquiring Mojave desert tortoise designated critical habitat and managing these areas consistent with the identified purposes of the Red Cliffs NCA, which are to protect the ecological, scenic, wildlife, recreational, cultural, historical, natural, educational, and scientific resources for the benefit and enjoyment of present and future generations, would not occur.

4.3.2.7. *Livestock Grazing*

Long Valley Parcel

Under the No Action Alternative, BLM would not be required to reduce the size of and number of AUMs available on the Dome Allotment, and the grazing permittee could continue to use the allotment as they do today. BLM would continue to authorize grazing on the Dome Allotment from December 1 to May 10 for 212 AUMs on approximately 2,021 acres.

Red Cliffs Parcel

Livestock grazing does not currently occur on the Red Cliffs Parcel. If the exchange is not completed, there would be no effect on livestock grazing on the Red Cliffs Parcel.

4.4. CUMULATIVE IMPACTS

Cumulative impacts are those impacts resulting from the incremental impact of an action when added to other past, present, or reasonably foreseeable actions regardless of what agency or person undertakes such other actions.

4.4.1. Past and Present Actions

Past and present actions near the RCDR/Long Valley land exchange include the following:

- Livestock grazing on and around the Long Valley Parcel.
- Agricultural development.
- Off-highway vehicle use on and around the Long Valley Parcel.
- Construction of residential, commercial, and industrial developments.
- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.
- Construction of the Southern Parkway, including an associated borrow pit located on the Long Valley Parcel.

4.4.2. Reasonably Foreseeable Actions

Reasonably foreseeable future actions near the RCDR/Long Valley land exchange include the following:

- Continued livestock grazing and off-highway vehicle use on and around the Long Valley Parcel.
- Construction of additional residential developments.
- Construction of the Warner Valley Reservoir and associated dam. The Warner Valley Reservoir is planned for a site to the east of the Long Valley Parcel.
- Construction of the Sand Hollow Regional Pipeline by the Washington County Water Conservancy District, including associated water tanks and connections to existing water storage facilities. The pipeline will connect the Sand Hollow Reservoir to the cities of Washington and St. George, using a route to the south of the Long Valley Parcel.
- Construction of the Purgatory Road by the Federal Highway Administration and the Utah Department of Transportation. The Purgatory Road will connect State Road 9 with the Southern Parkway. The road is likely to be located in Washington City, Hurricane City, and unincorporated Washington County to the north of the Long Valley Parcel.

4.4.3. Cultural Resources

The cumulative impact assessment area for cultural resources is the area encompassed by the Long Valley and Red Cliffs Parcels. Cultural resources would not be affected by the proposed land exchange outside of the two parcels. The cumulative impact assessment areas for the two parcels are not contiguous and are addressed separately in this analysis.

Long Valley Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for cultural resources on the Long Valley Parcel include the following:

- Livestock grazing on the Long Valley Parcel.
- Off-highway vehicle use on the Long Valley Parcel.
- Construction of residential developments.
- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.
- Construction of the Southern Parkway, including an associated borrow pit located on the Long Valley Parcel.

Some of the cultural resources on the Long Valley Parcel were located in the APE for the construction of the Southern Parkway. Data recovery treatments associated with the construction of the highway were conducted by the Utah Department of Transposition for these sites before construction of the highway to lessen the effects on these sites and to recover valuable scientific information. The four NRHP-eligible sites located on the Long Valley Parcel described in Section 3.3.1 were not located in the APE for the Southern Parkway and were not included in data recovery treatments for that project.

As discussed in Section 4.3.1.1, BLM is developing an MOA through further consultations with the Advisory Council on Historic Preservation, the Utah SHPO, the Paiute Indian Tribe of Utah, the Shivwits Band of the Paiute Indian Tribe of Utah, the Hopi Tribe, Washington County, and other consulting parties. The MOA will include an approved data recovery treatment plan agreed upon by the consulting parties that would lessen adverse effects to the historic properties resulting from the land exchange. The data recovery treatments that would be conducted would help ensure that any archeological data from the affected sites are recovered and analyzed using consistent field methodologies and laboratory methods and would prevent the loss of important scientific information. However, following the data recovery treatments, BLM anticipates that the subsequent development of the Long Valley Parcel would eliminate these cultural resource sites.

Red Cliffs Parcel

There are no reasonably foreseeable future actions in the cumulative impact assessment area for cultural resources on the Red Cliffs Parcel. Past and present actions in the cumulative impact assessment area for cultural resources on the Red Cliffs Parcel include the following:

- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.

As described in Chapter 3, formal cultural resource inventories have not been conducted on the Red Cliffs Parcel. However, acquisition of the parcel would have entirely beneficial effects on any cultural resource sites located on the Red Cliffs Parcel and would not contribute to the effects of past, present, or future actions on cultural resources.

4.4.4. Soils

The cumulative impact assessment area for soil resources is the Middleton Wash-Virgin River (12-digit Hydrologic Unit Code 150100080910) and Cottonwood Wash-Virgin River (12-digit Hydrologic Unit Code 150100080909) subwatersheds, which adjoin one another and encompass both the Long Valley and Red Cliffs Parcels. The cumulative impact assessment areas are contiguous and are addressed collectively in this analysis.

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for soil resources include all of the actions listed in Section 4.4.1 and 4.4.2.

Soil resources in the cumulative impact assessment area have been adversely impacted by past and present development activities, especially the development of agricultural, residential, commercial, and industrial facilities in the City of St. George, Washington City, Hurricane City, and other adjacent communities. These developments, especially those that remove vegetative cover, have resulted in soil erosion and loss of soil productivity in the cumulative impact assessment area. These effects are most prevalent in the lower elevations of the subwatersheds, where urban development is most concentrated along the Virgin River. Reasonably foreseeable future actions, especially those that involve ground-disturbing activities and removal of vegetation, would also be expected to increase the possibility of erosion and loss of soil productivity.

The proposed land exchange could facilitate additional development that may contribute to the adverse effects of erosion, soil compaction, and loss of soil productivity in the cumulative impact assessment area. All developments are required to adhere to laws and regulations that limit the effects of development on soil resources and prevent erosion. The development of the Long Valley Parcel would not result in a substantial increase in the amount of development in the cumulative impact assessment area, which includes the City of St. George and Washington City. Furthermore, erosion and loss of soil productivity have not been identified as environmental issues of particular concern in the cumulative impact assessment area by local governments or resource management agencies, and acquisition of the Red Cliffs Parcel and its subsequent management for conservation would help prevent future impacts on soils.

4.4.5. Vegetation Excluding USFWS-Designated Species

The cumulative impact assessment area for vegetation excluding USFWS-designated species is the extent of Mojave mid-elevation desert scrub vegetation located in the Middleton Wash-Virgin River (12-digit Hydrologic Unit Code 150100080910) and Cottonwood Wash-Virgin River (12-digit Hydrologic Unit Code 150100080909) subwatersheds, which adjoin one another

and encompass both the Long Valley and Red Cliffs Parcels. The cumulative impact assessment areas are contiguous and are addressed collectively in this analysis.

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for vegetation excluding USFWS-designated species include all of the actions listed in Section 4.4.1 and 4.4.2.

Vegetation resources in the cumulative impact assessment area have been impacted by past and present development activities, especially the development of agricultural, residential, commercial, and industrial facilities in and around the City of St. George, Washington City, Hurricane City, and other adjacent communities. These developments have resulted in removal of native Mojave mid-elevation desert scrub vegetation and introduction of non-native species and noxious weeds. Reasonably foreseeable future actions, especially those that involve ground-disturbing activities, would further contribute to the loss of native vegetation and spread of non-native species and noxious weeds.

The proposed land exchange and anticipated subsequent development of the Long Valley Parcel would contribute to the loss of Mojave mid-elevation desert scrub vegetation and potential introduction of non-native species and noxious weeds. However, the Proposed Action and all reasonably foreseeable future actions are not anticipated to result in a major change in the present amount of development, amount of Mojave mid-elevation desert scrub vegetation, or presence of non-native species and noxious weeds in the cumulative impact assessment area, which includes the City of St. George and Washington City.

4.4.6. Wildlife Excluding USFWS-Designated Species

The cumulative impact assessment area for wildlife excluding USFWS-designated species is the Long Valley and Red Cliffs Parcels, as well as a 0.5-mile area around each of the parcels. The 0.5-mile area encompasses the area that may be impacted by the indirect effects of the land exchange, such as noise or dust during the development of the Long Valley Parcel. The cumulative impact assessment areas for the two parcels are not contiguous and are addressed separately in this analysis.

Long Valley Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for wildlife excluding USFWS-designated species on the Long Valley Parcel include all of the actions listed in Section 4.4.1 and 4.4.2.

Wildlife and wildlife habitats in the cumulative impact assessment area around the Long Valley Parcel have been impacted by past and present development activities. These activities have fragmented wildlife habitats by the construction of roads and trails. Wildlife habitats in the cumulative impact assessment area around the Long Valley Parcel have also been somewhat degraded as a result of existing frequent human visitation, off-highway vehicle use, illegal trash dumping, and noise associated with adjacent developments (e.g., the Southern Parkway). The reasonably foreseeable future actions around the Long Valley Parcel are likely to perpetuate the somewhat degraded condition of wildlife habitats on and around the parcel. The Proposed Action would be expected to result in the loss of much of the habitats located on the Long Valley Parcel

and may contribute to the mortality and displacement of wildlife in the cumulative impact assessment area. Additionally, the impacts of noise, human presence, domestic pets, and other effects associated with the development of the parcel would be anticipated to adversely impact wildlife and wildlife habitats on adjacent non-developed parcels.

The BLM lands adjacent to the Long Valley Parcel are anticipated to remain undeveloped and available for use by wildlife for the foreseeable future. Like the Long Valley Parcel, the habitat located on these lands has been somewhat degraded by the effects of past and present actions. Although populations of wildlife, including BLM Sensitive Species, located in the cumulative impact assessment area may experience local declines as a result of the Proposed Action and other past, present, and reasonably foreseeable future actions, similar Mojave Desert scrub habitats are widespread throughout Washington County, and county-wide population effects are not anticipated.

Red Cliffs Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for wildlife excluding USFWS-designated species on the Red Cliffs Parcel include the following:

- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.
- Construction of residential, commercial, and industrial developments.
- Construction of additional residential developments.

As described in Chapter 3, acquisition of the Red Cliffs Parcel would have entirely beneficial effects on any wildlife species, including BLM Sensitive Species that use the parcel. The Proposed Action would not contribute to the adverse effects of past, present, or future actions on wildlife species, including BLM Sensitive Species in the cumulative impact assessment area for the Red Cliffs Parcel.

4.4.7. Migratory Birds

The cumulative impact assessment area for migratory birds is the Long Valley and Red Cliffs Parcels, as well as a 0.5-mile area around each of the parcels. The 0.5-mile area encompasses the migratory bird habitats that may be impacted by the indirect effects of the land exchange such as noise or dust during the development of the Long Valley Parcel. The cumulative impact assessment areas for the two parcels are not contiguous and are addressed separately in this analysis.

Long Valley Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for migratory birds on the Long Valley Parcel include all of the actions listed in Section 4.4.1 and 4.4.2.

Migratory birds occupy that same Mojave Desert scrub habitats as wildlife resources and respond similarly to disturbances as many wildlife species. Therefore, the cumulative impacts to

migratory birds for the Long Valley Parcel would be the same as those described for wildlife excluding USFWS-designated species.

Red Cliffs Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for migratory birds on the Red Cliffs Parcel include the following:

- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.
- Construction of residential, commercial, and industrial developments.
- Construction of additional residential developments.

As described in Chapter 3, acquisition of the Red Cliffs Parcel would have entirely beneficial effects on migratory birds that use the parcel. The Proposed Action would not contribute to the adverse effects of past, present, or future actions on migratory birds in the cumulative impact assessment area for the Red Cliffs Parcel.

4.4.8. Threatened, Endangered, or Candidate Animal Species

Cumulative impacts for purposes of NEPA analyses are assessed differently than for purposes of Section 7 consultation under the ESA. BLM has elected to include additional information in this section such that the analysis can be used to meet BLM's obligations under both NEPA and the ESA.

Under NEPA (40 CFR 1508.7), cumulative impacts are those impacts on the environment that 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.

Under the ESA, for the purposes of Section 7 consultation, cumulative effects are defined as those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur in the action area of the federal action subject to consultation (50 CFR 402.02).

4.4.8.1. *Mojave Desert Tortoise*

Endangered Species Act Section 7 Consultation Analysis

For the purposes of Section 7 consultation, cumulative effects are assessed in the action area defined in Section 4.3.1.6, which is the area encompassed by the Long Valley and Red Cliffs Parcels. The subsequent development of the Long Valley Parcel is an indirect effect of the land exchange and would be regulated by the Washington County HCP. There are no state or private activities that are reasonably certain to occur in the action area for either parcel that are not direct or indirect effects of the Proposed Action. Therefore, for the purposes of Section 7 consultation, no cumulative effects on Mojave desert tortoise are anticipated.

National Environmental Policy Act Analysis

For the purposes of assessing cumulative effects under NEPA, the cumulative impact assessment area for Mojave desert tortoise is a 1-mile buffer around the Long Valley and Red Cliffs Parcels. This area was selected because it should be large enough to encompass the entire home range of any Mojave desert tortoise that are located on the parcels, based on an assumption that the home range sizes may vary between 10 and 450 acres (59 *Federal Register* 5820). The cumulative impact assessment areas for the two parcels are not contiguous and are addressed separately in this analysis.

Long Valley Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for the Long Valley Parcel include all of the actions listed in Section 4.4.1 and 4.4.2.

Mojave desert tortoise and the species' potential habitats in the cumulative impact assessment area around the Long Valley Parcel have been impacted by past and present development activities. These activities have fragmented Mojave desert tortoise habitats by the construction of roads and trails. Potential habitats in the cumulative impact assessment area around the Long Valley Parcel have also been somewhat degraded as a result of existing frequent human visitation, off-highway vehicle use, illegal trash dumping, and noise associated with adjacent developments (e.g., the Southern Parkway). The reasonably foreseeable future actions around the Long Valley Parcel are likely to perpetuate the somewhat degraded condition of wildlife habitats on and around the parcel. The Proposed Action would be expected to result in the loss of much of the habitats located on the Long Valley Parcel and may contribute to the mortality and displacement of Mojave desert tortoises in the cumulative impact assessment area. Additionally, the impacts of noise, human presence, domestic pets, and other effects associated with the development of the parcel would be anticipated to adversely impact Mojave desert tortoise and Mojave desert tortoise habitats on adjacent non-developed parcels

The BLM lands adjacent to the Long Valley Parcel where Mojave desert tortoise are known to occur are anticipated to remain undeveloped and available for use by the species for the foreseeable future. Although the Proposed Action and other past, present, and reasonably foreseeable future actions would reduce the amount of potential Mojave desert tortoise habitat available in the cumulative impact assessment area, habitats that are known to be occupied by the species would not be developed and would remain available to support the current population.

Red Cliffs Parcel

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for the Red Cliffs Parcel include the following:

- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.
- Construction of residential, commercial, and industrial developments.
- Construction of additional residential developments.

As described in Chapter 3, acquisition of the Red Cliffs Parcel would have entirely beneficial effects on Mojave desert tortoise. The Proposed Action would not contribute to the adverse effects of past, present, or future actions on Mojave desert tortoise in the cumulative impact assessment area for the Red Cliffs Parcel.

4.4.8.2. *Mojave Desert Tortoise Designated Critical Habitat*

Endangered Species Act Section 7 Consultation Analysis

For the purposes of Section 7 consultation, cumulative effects are assessed in the action area defined in Section 4.3.1.6, which is the area encompassed by the Long Valley and Red Cliffs Parcels. The Long Valley Parcel does not contain Mojave desert tortoise designated critical habitat, and there are no state or private activities that are reasonably certain to occur in the Red Cliffs Parcel that would affect designated critical habitat. Therefore, for the purposes of Section 7 consultation, no cumulative effects on Mojave desert tortoise designated critical habitat are anticipated.

National Environmental Policy Act Analysis

For the purposes of assessing cumulative effects under NEPA, the cumulative impact assessment area for Mojave desert tortoise designated critical habitat is the area encompassed by the Red Cliffs Parcel. This area was selected because it encompasses all designated critical habitat that may be affected by the project.

There are no reasonably foreseeable future actions in the cumulative impact assessment area on the Red Cliffs Parcel. Past and present actions in the cumulative impact assessment area on the Red Cliffs Parcel include the following:

- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.

Acquisition of the Red Cliffs Parcel would have entirely beneficial effects on Mojave desert tortoise designated critical habitat. The Proposed Action would not contribute to the adverse effects of past actions on Mojave desert tortoise designated critical habitat in the cumulative impact assessment area.

4.4.9. Livestock Grazing

The cumulative impact assessment area for livestock grazing is the boundaries of the Dome Allotment (see Figure 3-3). The Dome Allotment is the only grazing area that would be impacted by the proposed land exchange.

Past, present, and reasonably foreseeable future actions in the cumulative impact assessment area for livestock grazing include the following:

- Off-highway vehicle use.
- Construction of access roads, trails, fences, powerlines, pipelines, and water storage facilities.

- Construction of the Southern Parkway, including an associated borrow pit located on the Long Valley Parcel.
- Construction of the Warner Valley Reservoir and associated dam. The Warner Valley Reservoir is planned for a site to the east of the Long Valley Parcel.

The past, present, and reasonably foreseeable future actions in the Dome Allotment would result in decreases to the amount of acreage and AUMs available on the allotment. The construction of the Southern Parkway also created a barrier inhibiting the movement of livestock around the allotment. The proposed RCDR/Long Valley land exchange would require BLM to reduce the acreage and number of AUMs by approximately 30% of what is currently available on the allotment. As described in Section 4.3.1.7, the grazing permittee was notified by Certified Mail of this proposed sale of land and potential loss of grazing use on the federal land concurrently with BLM's publication of the NOEP. The anticipated required reduction in AUMs from the Proposed Action, in conjunction with the barrier inhibiting the movement of livestock created by construction of the Southern Parkway collectively constitute major modifications to the use of the Dome Allotment. However, BLM would continue to allow grazing and issue a grazing permit for the Dome Allotment, and there is no legal requirement to mitigate the loss of grazing use on public lands after notification has been made.

4.5. CONCLUSIONS AND DETERMINATIONS

4.5.1. Threatened, Endangered, or Candidate Animal Species

4.5.1.1. *Mojave Desert Tortoise*

Completion of the land exchange ***may affect, but is not likely to adversely affect,*** the Mojave desert tortoise. Acquisition of the Red Cliffs Parcel by BLM and its subsequent management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA, which include the long-term recovery of the Mojave desert tortoise, would provide clear benefits to the species. The change in ownership of the Long Valley Parcel itself would not be expected to impact Mojave desert tortoise or the habitats located on the parcel. Any impacts on Mojave desert tortoise would occur as a result of subsequent development activities. At the time of development, the Long Valley Parcel would be private land, and the specific provisions of Chapter 4.0 of the Washington County HCP would apply. The Long Valley Parcel is now known to have evidence of tortoise occupation, but it was not designated as critical habitat by USFWS. Therefore, it can be considered "potential habitat" as identified in the HCP. Under this classification, standard measures of tortoise clearance would be completed by Washington County's HCP staff, prior to the actual development of the parcel by the private landowner. Any tortoises located on the parcel would be removed and the standard protocols of the HCP followed (quarantine, testing for disease, etc.). After the standard procedures have been completed, healthy tortoises could be relocated, either to Zone 4 of the RCDR or to another location approved by USFWS. The habitat acreage for the Long Valley Parcel would not be counted against the incremental take acreage identified in the county's ITP, but any tortoises that are removed would be counted against the incidental take total of the permit.

4.5.1.2. *Mojave Desert Tortoise Designated Critical Habitat*

Completion of the land exchange would not adversely modify the constituent elements of Mojave desert tortoise designated critical habitat. These elements include sufficient space to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species; and suitable substrates for burrowing, nesting, and overwintering. Over the long term, the land exchange would be expected to improve condition of critical habitat by enlarging the area of contiguous critical habitat that is protected from development or incompatible human uses to the extent possible by BLM, and managed for the benefit of Mojave desert tortoise.

CHAPTER 5.0. CONSULTATION AND COORDINATION

5.1. INTRODUCTION

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The ID Team Checklists provide the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process, as described in Sections 5.2 and 5.3 below.

5.2. PERSONS, AGENCIES, AND ORGANIZATIONS CONSULTED

Table 5-1. List of Persons, Agencies, and Organizations Consulted

Name	Purpose and/or Authorities for Consultation or Coordination	Findings and Conclusions
U.S. Congressman Chris Stewart and Senators Orrin Hatch and Mike Lee and their respective offices.	Information sharing and coordination.	There was no reply from these representatives. Lack of response is interpreted by BLM to indicate that the representatives have no concerns relative to the Proposed Action.
Utah SHPO.	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531).	The Utah SHPO concurred with BLM's identification of historic properties in the APE for the Long Valley Parcel, with BLM's evaluations of eligibility for sites in the APE, and with BLM's assessment of effects related to the land exchange on "historic properties" in the APE on September 8, 2015. The SHPO is a signatory to the MOA for this undertaking.
The Shivwits Band of the Paiute Indian Tribe of Utah, the Kaibab Paiute Tribal Council, the Paiute Indian Tribe of Utah, and the Hopi Tribe.	Government-to-government consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531), Native American Graves and Repatriation Act, and NHPA (16 USC 1531); as well as protocol established in the MOU between BLM and the Paiute Indian Tribe of Utah.	Consultations are ongoing with the Shivwits Band of the Paiute Indian Tribe of Utah, the Paiute Indian Tribe of Utah, and the Hopi Tribe, and they been invited to be signatories to the MOA for this undertaking.
USFWS.	Informal consultation under the ESA (16 USC 1531).	–

Name	Purpose and/or Authorities for Consultation or Coordination	Findings and Conclusions
ROW holders on the Long Valley Parcel that could be affected by the Proposed Action were contacted by letter.	Per 43 CFR 2807.14, ROW or lease holders are informed.	There was no reply from the ROW holders. Federal lands would be conveyed subject to existing terms and conditions of the respective grants.
Local government entities, including the Washington County Commission, City of Hurricane, and the Washington County Community Development.	Information sharing and coordination.	There was no reply from these parties. Lack of response is interpreted by BLM to indicate that the cities have no concerns relative to the Proposed Action.
State government entities, including the Office of Governor Gary Herbert and Governor's Public Land Policy Coordination Office.	Information sharing and coordination.	There was no reply from these parties. Lack of response is interpreted by BLM to indicate that these entities have no concerns relative to the Proposed Action.
Livestock grazing permittee.	Notification required by FLPMA Section 402(g).	No response was received from the permittee.
Adjoining landowners to the Red Cliffs and Long Valley Parcels.	Information sharing and coordination.	There was no reply from the adjoining landowners. Lack of response is interpreted by BLM to indicate that the landowners have no concerns relative to the Proposed Action.
Utah Public Lands Alliance.	Information sharing and coordination.	There was no reply from the Utah Public Lands Alliance. Lack of response is interpreted by BLM to indicate that the alliance has no concerns relative to the Proposed Action.

5.3. SUMMARY OF PUBLIC PARTICIPATION

The NOEP was published in the *St. George Spectrum* for 4 consecutive weeks beginning on September 1, 2015. Notices were also mailed to adjoining landowners, authorized users, interested parties, Congressional representatives, and local and state entities. A BLM point of contact was identified in these postings, and the public was invited to provide scoping comments and identify issues that should be evaluated in the EA. BLM received no comments in response to the publication of the NOEP or mailings.

BLM is providing a 30-day public review and comment period for the preliminary EA, beginning on April 5, 2016. A notice of availability will be sent to all federal, state, and local agencies, and interested publics. Copies of the EA will be available upon request and can be

reviewed in the Public Room of the St. George Field Office and on the BLM's ePlanning website during the public review and comment period.

5.4. LIST OF PREPARERS

BLM staff specialists who determined the affected resources for this document are listed in the ID Team Checklists in Appendix A. Those who contributed to the preparation of the EA and provided review comments on the EA are listed in Tables 5-2 and 5-3.

Table 5-2. BLM Preparers and Reviewers

Name	Title	Responsible for the Following Section(s) of this Document
Dawna Ferris-Rowley	NCA Manager, Beaver Dam Wash and Red Cliffs NCAs	EA technical review, cultural resources
Lori Hunsaker	NCA Archeologist	Cultural resources
Joy Wehking	Realty Specialist, BLM Utah State Office	Lands and realty, public involvement
Teresa Burke	Realty Specialist, St. George Field Office	Lands and realty
John Kellam	NCA Wildlife Biologist	BLM NEPA project manager, EA technical review, biological resources
Robert Douglas	Wildlife Biologist, St. George Field Office	Special status plants and wildlife
Dave Corry	Natural Resource Specialist, St. George Field Office	Soil and water resources, vegetation, livestock grazing
Thomas Lilly	NCA GIS Specialist	GIS data management, cartographic products

Table 5-3. Other Preparers and Reviewers

Name	Title	Responsible for the Following Section(s) of this Document
Robert Sandberg	Washington County HCP Administrator	EA technical review
Cameron Rognan	Biologist, Washington County HCP Administrator's Office	EA technical review, biological resources
Ann McLuckie	Biologist, UDWR	Biological resources, Mojave desert tortoise, vegetation
Reid Persing	Project Manager, SWCA Environmental Consultants	Project management, document preparation, technical coordination
Tom Hale	Senior NEPA Project Manager, SWCA Environmental Consultants	Technical and NEPA review
Eric Koster	Wildlife Biologist, SWCA Environmental Consultants	Technical review, Mojave desert tortoise
Linda Burfitt	Technical Editor and NEPA Publications Specialist, SWCA Environmental Consultants	Technical editing
Debbi Smith	Desktop Publishing and Production Coordinator, SWCA Environmental Consultants	Formatting and document production

CHAPTER 6.0. LITERATURE CITED

Barrett, S.L. 1990. Home range and habitat of the desert tortoise (*Xerobates agassizii*) in the Picacho Mountains of Arizona. *Herpetologica* 46:202–206.

Bulova, S.J. 1994. Patterns of burrow use by desert tortoises: gender differences and seasonal trends. *Herpetology Monograph* 8:133–143.

Bureau of Land Management (BLM). 1999. *St. George Field Office Record of Decision and Resource Management Plan*. United States Department of the Interior, Bureau of Land Management. Utah State Office and St. George Field Office.

———. 2014. Biological Survey results of potential exchange parcels. Unpublished report prepared by Tim Croissant, Wildlife Biologist. Bureau of Land Management, St. George Field Office. September 2014.

———. 2015. *Draft Resource Management Plans Beaver Dam Wash National Conservation Area, Red Cliffs National Conservation Area, Draft Amendment to the St. George Field Office Resource Management Plan, Draft Environmental Impact Statement*. U.S. Department of the Interior, Bureau of Land Management. Utah State Office and St. George Field Office.

Bureau of Land Management and Washington County. 2014. *Memorandum of Understanding between The Department of the Interior, Bureau of Land Management, St. George Field Office and Washington County, Utah Regarding a Proposed Exchange of Real Property in the Red Cliffs Desert Reserve for other Real Property in the State of Utah*.

Coombs, E. 1977. *Wildlife Observations of the Hot Desert Region, Washington County, Utah, with Emphasis on Reptilian Species and their Habitat in Relation to Livestock Grazing*. Report to U.S. Department of Interior, Bureau of Land Management, Cedar City, Utah.

Chesser, R.T., R. Banks, F.K. Barker, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen, Jr., J.D. Rising, D.F. Stotz, and K. Winker. 2013. Fifty-Fourth Supplement to the American Ornithologists' Union Check-list of North American Birds. *The Auk* 130(3):558–572.

Esque, T.C. 1994. Diet and diet selection of the desert tortoise (*Gopherus agassizii*) in the northeast Mojave Desert. M.S. Thesis. Colorado State University, Ft Collins, Colorado.

Fridell, R., and K. Comella. 2007. Birds Protected by the Migratory Bird Treaty Act Occurring in Washington County, Utah. Utah Division of Wildlife Resources and Utah Division of Parks and Recreation, unpublished data.

Grover, M.C., and L.A. DeFalco. 1995. *Desert Tortoise (*Gopherus agassizii*): Status-Of-Knowledge Outline with References*. Gen. Tech. Rep. INT-GTR-316. U.S. Department of Agriculture, Forest Service, Intermountain Research Station, Ogden, Utah.

Hansen R.M., M.K. Johnson, and T.R. Van Devender. 1976. Foods of the desert tortoise, Gopherus agassizii, in Arizona and Utah. *Herpetologica* 32(3):247.

Jennings, W.B. 1993. Foraging Ecology of the Desert Tortoise (Gopherus agassizii) in the Western Mojave Desert. M.A. thesis, University of Texas, Arlington.

———. 1997. Habitat use and food preferences of the desert tortoise, *Gopherus agassizii*, in the western Mojave and impacts of off-road vehicles. In *Proceedings of the International Conference on Conservation, Restoration, and Management of Tortoises and Turtles*, edited by Van Abbema, pp. 42–45. New York Turtle and Tortoise Society, New York.

McLuckie, A. 2015. *Field Report on the Long Valley Land Exchange*. Utah Division of Wildlife Resources, Washington County Field Office.

McLuckie, A.M., E.T. Woodhouse, and R.A. Fridell. 2014. *Regional Desert Tortoise Monitoring in the Red Cliffs Desert Reserve, 2013.* Utah Division of Wildlife Resources Publ. Number 14-15. Salt Lake City, Utah.

Minden, R.L. 1980. *Investigations of Desert Tortoise* Gopherus Agassizii *on the Beaver Dam Slope, Washington County, Utah*. Utah Division of Wildlife Resources, Salt Lake City, Utah.

Nagy, K.A., and P.A. Medica. 1986. Physiological ecology of desert tortoises in southern Nevada. *Herpetologica* 42:73–92.

Natural Resources Conservation Service. 2016. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/app/. Accessed January 21, 2016.

Parrish, J. R., F.P. Howe, R.E. Norvell. 2002. *Utah Partners in Flight Avian Conservation Strategy Version 2.0.* Utah Partners in Flight Program, Utah Division of Wildlife Resources, Salt Lake City, Utah.

Rappole, J.H., and M.V. McDonald. 1994. Cause and Effect in Population Declines of Migratory Birds. *The Auk* 111(3):652–660.

U.S. Fish and Wildlife Service. 1994. *Desert Tortoise (Mojave Population) Final Recovery Plan*. U.S. Fish and Wildlife Service, Portland, Oregon.

———. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. Available at: http://www.fws.gov/migratorybirds. Accessed March 28, 2016.

———. 2011. *Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*).* U.S. Fish and Wildlife Service, Pacific Southwest Region, Sacramento, CA.

U.S. Geological Survey (USGS). 2016. National Gap Analysis Program (GAP). Available at: http://gapanalysis.usgs.gov/gaplandcover/viewer/. Accessed March 25, 2016.

Utah Division of Wildlife Resources (UDWR). 2015. *Utah Sensitive Species List*. Available at: http://dwrcdc.nr.utah.gov/ucdc/ViewReports/SS_List.pdf. Accessed March 28, 2016.

Washington City. 2005. *The Washington City General Plan Heritage, Pride and Progress*. Available at: http://new.washingtoncity.org/development/index.php?sub=CommunityDevelopment&page=GeneralPlan. Accessed January 21, 2016.

Washington County. 1995. *Final Implementation Agreement Habitat Conservation Plan Washington County, Utah*. Part IV of the Washington County, Utah Desert Tortoise Incidental Take Permit Application Documents.

———. 2009. *Washington County Resource Management Plan 2009*. Available at: http://www.washco.utah.gov/community-development/pdf/2009%20Resource%20Management%20Plan.pdf. Accessed January 21, 2016.

———. 2012. *The General Plan of Washington County 2010*. Amended August 2012. Available at: http://www.washco.utah.gov/community-development/pdf/generalPlan/General%20Plan%202011-2012%20-%2020120920.pdf. Accessed January 21, 2016.

Washington County HCP Steering Committee and SWCA Environmental Consultants. 1995. *Habitat Conservation Plan Washington County, Utah*. Submitted by: Washington County Commission. Submitted to: U.S. Fish and Wildlife Service.

Woodbury, A.M., and R. Hardy. 1948. Studies of the desert tortoise, *Gopherus agassizii*. *Ecological Monographs* 18:146–200.

Appendix A.
Interdisciplinary Team Checklists

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Red Cliffs Desert Reserve/ Long Valley Land Exchange,
Long Valley Tract

NEPA Log Number: DOI-BLM-UT-C030-2013-0006-EA

File/Serial Number: UTU-88966
Legal Description:
SLM, Utah, T. 42 S, R. 14 W,
Sec. 20, lots 13 and 14;
Sec. 29, lots 2, 4, 5, 7, 9, 12, 14, and15 NE1/4NW1/4, SW1/4NW1/4;
Sec. 30, lots 13, 16, 18, 19, 22, 24, and 25, NE 1/4SE1/4;
Sec. 31, lots 14, 15, 18, 20, and 22, NW1/4NE1/4

Project Leaders: Joy Wehking, Utah State Office

The St. George Field Office is proposing to transfer approximately 605 acres of BLM-managed public lands, located southeast of Washington City and adjacent to the new Southern Parkway highway, to private ownership; the tract is slated for a future residential housing development.

In exchange, BLM would acquire between 80 and 100 acres of private inholdings in the multi-jurisdictional mitigation reserve, locally known as the Red Cliffs Desert Reserve (RCDR). The protective management of public lands in the RCDR by BLM, the State of Utah, and local municipalities serves as the key mitigation component for Washington County's Habitat Conservation Plan (HCP, approved 1996) and an associated Incidental Take Permit (ITP). The County's ITP allows growth and development to occur on non-federal land in the St. George Basin that have been designated by the US Fish and Wildlife Service as critical habitat for the federally listed threatened Mojave desert tortoise.

This checklist identifies the resource values or resource issues related to the public land tract in Long Valley (the Long Valley Parcel), to assist the preparation of an EA that addresses the potential impacts of the transfer of the public lands from federal ownership and the protection afforded by various Federal laws. A separate checklist identifies the resource values of private lands that would be acquired, where these values are known.

DETERMINATION OF STAFF: ***(Choose one of the following abbreviated options for the left column)***

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi-nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	If the proposed Long Valley exchange is executed, the tract would become private land and is proposed for residential development. Air quality could be impacted by construction or other activities related to that future development, but the scope, extent, and timing of the impacts cannot be conclusively determined at this time.	D. Corry	11/4/2015

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NP/NI	Greenhouse Gas Emissions**	If the proposed Long Valley exchange is executed, the tract would become private land and is proposed for residential development. Short-term greenhouse gas emissions could be generated by future construction or development activities, but the scope, extent, and timing of the impacts cannot be conclusively determined at this time.	D. Corry/R. Reese	11/5/2015
NP	Wastes (hazardous or solid)	The proposed Long Valley exchange tract has been inspected for the presence of hazardous and solid wastes, with negative findings.	Dave Corry	11/4/2015
NP	Water Resources/Quality (drinking/surface/ground)	No springs, streams, or seeps are found on the proposed Long Valley exchange tract. The proposed transfer of public lands into private ownership and future development would not be expected to impact surface or groundwater, as no water rights are conveyed with the public lands.	Dave Corry	11/4/2015
NP	Areas of Critical Environmental Concern	The proposed Long Valley exchange tract is not within an ACEC.	J. Kellam	11/5/2015
PI	Cultural Resources	Literature reviews and Class III intensive pedestrian inventories of the Area of Potential Effect (APE) were conducted by BLM to identify National Register of Historic Places (NRHP)-eligible or listed sites on the Long Valley exchange tract (State Report #U-15-BL-0416b). Consultations with the Utah State Historic Preservation Officer under Section 106 of the NHPA have determined that four NRHP-eligible properties, two of which are prehistoric period sites, are found within the APE and that these properties would be adversely affected by the proposed transfer of the public lands into private ownership, as the sites would lose the protections afforded under the federal NHPA and by proposed development of the tract as residential housing. A Memorandum of Agreement is being developed and a Data Recovery Treatment Plan to lessen adverse effects to historic properties agreed upon through Section 106 consultations with the Utah SHPO, the Hopi Tribe, the Paiute Indian Tribe of Utah, the Shivwits Band of the Paiute Indian Tribe of Utah, Washington County, and other affected parties.	D. Ferris-Rowley	11/6/2015
NI	Native American Religious Concerns	During ongoing consultations, the Hopi Tribe and the Paiute Indian Tribe of Utah have indicated that they view all prehistoric archeological sites to be Traditional Cultural Properties, as they are the "footprints" of their ancestors. Both are consulting parties to the Section 106 process for this project that will address adverse effects to two prehistoric sites that are located within the proposed Long Valley exchange tract. However, there are no known sacred sites or areas where religious activities are conducted by Native Americans on the proposed Long Valley exchange tract.	D. Ferris-Rowley	11/6/2015

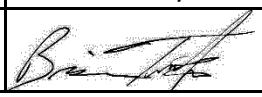
Determi-nation	Resource	Rationale for Determination*	Signature	Date
NP	Paleontology	Proposed exchange tract is composed primarily of alluvial and colluvial deposits that are not predicted to contain paleontological resources of scientific importance.	K. Voyles	11/6/15
NI	Geology / Mineral Resources/Energy Production	The Federal parcel was segregated from the public land laws and mineral laws through a Federal Register Notice published on April 8, 2015. There are no mining claims or leases for energy production on the proposed exchange tract. A borrow site is present on the tract and is being utilized on a temporary basis in conjunction with the construction of the Southern Parkway. The temporary right-of-way for the borrow site will expire in August of 2017. BLM would convey both the surface and mineral estate in the exchange, to avoid the creation of split estate.	K. Voyles	11/10/15
NI	Environmental Justice	According to the EPA Region VIII, State of Utah, Environmental Justice Map, this region has been categorized as having a 10-20% minority population and a similar percentage of low income population. The minority and low income populations are generally located in the St. George, Santa Clara, and Washington City municipalities (see http://epamap14.epa.gov/ejmap.) The public lands of the Long Valley tract are located in a generally undeveloped area. The proposed exchange of the Long Valley tract of public lands itself would not result in disproportionately high or adverse health or environmental impacts on low income or minority populations, nor would subsequent development of the land as residential housing.	D. Ferris-Rowley	11/5/2015
NI	Socio-Economics	If the proposed Long Valley exchange is executed, the tract would become private land and is proposed for development. As private land, this tract would be subject to property taxes and impacts fees related to future development, resulting in a benefit to the local economy that is unquantifiable at this time.	D. Kiel	11/5/2015
NP	Farmlands (Prime or Unique)		D. Corry	11/5/2015
PI	Soils	If the proposed Long Valley exchange is executed, the tract would become private land and is proposed for development. Soils would be impacted by future development, although the scope, extent, and timing of the impacts cannot be conclusively determined at this time.	D. Corry	11/5/2015
NP	Floodplains		D. Corry	11/5/2015
NP	Wetlands/Riparian Zones	No wetlands, springs, or riparian areas occur on the proposed Long Valley exchange tract.	D. Corry	11/5/2015
PI	Fish and Wildlife Excluding USFW	The project area provides habitat for a variety of resident small mammals, birds, and reptiles. The more	B. Douglas/ J. Kellam	11/6/20

Determi-nation	Resource	Rationale for Determination*	Signature	Date
	Designated Species	common would include: badgers (Taxidea taxus), antelope ground squirrels (Ammospermophilus leucurus), kangaroo rats (*Dipodomys ordii*), deer mice (*Peromyscus maniculatus*), desert wood rats (*Neotoma lepida*), Gambel's quail (*Lophortyx gambelii*), mourning doves (*Zenaida macroura*), common ravens (*Corvus corax*), wrens (*Catherpes mexicanus*, *Salpinctes obsoletus*), house finches (*Carpodacus mexicanus*), side-blotched lizards (*Uta stansburiana*), and Western whiptail (*Cnemidophorus tigris*). Coyotes (*Canis latrans*) and gray fox (*Urocyon cinereoargenteus*) may use the area year-long or for a portion of the year. The following BLM Sensitive species may occur in the area: burrowing owl (*Athene cunicularia*, summer resident, uncommon), ferruginous hawk (*Buteo regalis*, winter visitor, fairly common; Northern goshawk (*Accipiter gentilis*, winter use only, rare), Allen's big-eared bat (*Idionycteris phyllotis*, permanent resident, extremely rare), big free-tailed bat (*Nyctinomops macrotis*, summer resident, rare), fringed myotis (*Myotis thysanodes*, permanent resident, uncommon), kit fox (*Vulpes macrotis*, permanent resident, uncommon), spotted bat (*Euderma maculatum*, permanent resident, rare), Townsend's big-eared bat (*Corynorhinus townsendii*, permanent resident, fairly common), Western red bat (*Lasiurus blossevillii*, permanent resident, extremely rare), During field inventories, Gila monster tracks were observed. If the proposed Long Valley exchange is authorized, the tract would become private land and is proposed for development, potentially as shown in the attached Concept Plan. Wildlife habitat would be lost to future development and some individuals killed, injured, and displaced by future development. However, the scope, extent, and timing of the impacts cannot be conclusively determined at this time.		15
PI	Migratory Birds	A number of migratory bird species may be found in the area, yearlong or for a portion of the year. Nesting by migratory bird species generally occurs in the spring and summer (April 1 to August 31). No special nesting or roosting areas have been identified on the exchange parcel. If the proposed Long Valley exchange is authorized, the tract would become private land and is proposed for development. Migratory birds could be displaced by future development of the property and by the loss of habitat, although the scope, extent, and timing of the impacts cannot be conclusively determined at this time	B. Douglas/J. Kellam	11/10/15
NP	Threatened, Endangered or Candidate Plant	Field inventories have confirmed that there are no threatened, endangered, or candidate plant species on the proposed Long Valley exchange tract.	B. Douglas/ J. Kellam	11/10/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
	Species			
PI	Threatened, Endangered or Candidate Animal Species	The threatened Mojave desert tortoise (*Gopherus agassizii*) has been observed on and near the Long Valley exchange tract. The proposed exchange tract is not within designated critical habitat for this or other federally listed animal species. The federal action of transferring the land from federal ownership to private ownership would not directly result in the "take" of a listed species. When the Long Valley tract becomes private land, it could be covered under Washington County's Incidental Take Permit. Prior to the development of the property, field inventories would be conducted by Washington County's HCP Administrator's Office and any tortoise(s) found would be relocated to federal lands. The California condor (Gymnogyps californianus) from the experimental, non-essential population that has been released on the Arizona Strip may fly over the area. These birds are treated as a proposed threatened species under the ESA. As the proposed exchange tract does not include habitat suitable for condor nesting or use, there would be no impacts on this species.	B. Douglas/ J. Kellam	11/10/15
PI	Vegetation Excluding USFW Designated Species	If the proposed Long Valley exchange is executed, the tract would become private land and is proposed for development. Native vegetation would be lost to development, potentially in those areas shown in the attached Concept Plan where residential housing and roadways would be constructed. However, the amount of acreage and the timing of the development cannot be conclusively determined at this time, as this is a Concept Plan, rather than approved Development Plan.	D. Corry/R. Reese	11/09/15
NI	Woodland / Forestry	The proposed Long Valley exchange tract does not support woodlands or forest resources.	D. Corry	11/09/15
NI	Fuels/Fire Management	The proposed exchange of this tract into private ownership would not impact fire management.	D. Corry	11/09/15
NI	Invasive Species/Noxious Weeds (EO 13112)	Exotic invasive brome grasses are present in the proposed Long Valley exchange tract but the federal action of transferring this parcel to private ownership would not result in the introduction or spread of invasive species or noxious weeds.	D. Corry/R. Reese	11/5/2015
NI	Lands/Access	Encumbrances include a right of way for a 69Kv power transmission line, the FHWA granted ROW for the Southern Parkway, and an access road to the Southern Parkway. These would remain valid existing rights after the exchange. The United States would reserve a right-of-way for ditches and canals in the exchange.	T. Burke/K.Thomas	11/10/2015
PI	Livestock Grazing	The proposed Long Valley exchange parcel is located within the Dome Allotment. The forage for a majority of the AUM's allocated for in this allotment is found	D. Corry	11/09/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		within the exchange tract. If the proposed exchange is executed, the size of the Dome Allotment and the number of livestock that could be permitted to graze based on forage would be reduced to the extent that this allotment would very likely not be a viable grazing allotment. The grazing operator has been provided the required notification regarding the proposed exchange and would be allowed to continue grazing for a period of time after the tract has become private property.		
NI	Rangeland Health Standards	The proposed exchange would have no impact on Rangeland Health Standards, as the Long Valley tract would leave federal ownership. Until the exchange is completed, BLM would continue to monitor Rangeland Health Standards.	D. Corry	11/09/15
NI	Recreation	The proposed exchange parcel is within the 40,000 acre Sand Mountain Special Recreation Management Area, but is not an area where intensive or extensive recreation uses occur. It not within the Open OHV area and there are no developed trails or other amenities. Recreational activities that currently take place on the parcel include motorized OHV riding on existing unpaved roads. The exchange of this tract would not result in measurable impacts on recreational users of public lands or a substantial reduction in the acreage of the SRMA that affects the quality of recreational experiences in the SRMA.	K. Voyles	11/6/2015
NI	Visual Resources	If the proposed Long Valley exchange is executed, the tract would become private land and no longer subject to management to protect visual resources.	D. Kiel	11/9/15
		NLCS		
NP	National Conservation Areas		D. Kiel	11/5/2015
NP	National Historic Trails (Old Spanish Trail)		D. Kiel	11/5/2015
NP	National Recreational Trails (Gooseberry)		K. Voyles	11/5/2015
NP	Wild and Scenic Rivers		K. Voyles	11/5/2015
NP	Wilderness/WSA		K. Voyles	11/5/2015
NP	Lands with Wilderness Characteristics**	All public lands have been inventoried for wilderness characteristics, using GIS modeling and field inspections. The proposed Long Valley exchange tract does not have wilderness characteristics, based on intrusions such the Southern Parkway highway, powerlines, and multiple two-track roads.	D. Kiel	11/5/2015

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator		12/4/2015	
Authorized Officer		12/4/2015	

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Red Cliffs Desert Reserve/ Long Valley Land Exchange, Red Cliffs Tract

NEPA Log Number: DOI-BLM-UT-C030-2013-0006-EA

File/Serial Number: UTU-88966
Legal Description: SLM-Utah, T. 42 S., R. 15 W., Sec. 8, 9, 16, 17

Project Leaders: Joy Wehking, Utah State Office

The St. George Field Office is proposing to transfer approximately 605 acres of BLM-managed public lands, located southeast of Washington City and adjacent to the new Southern Parkway highway, to private ownership; the tract is slated for a future residential housing development. In exchange, BLM would acquire between 80 and 100 acres of private inholdings in the Red Cliffs Desert Reserve (RCDR), the multi-jurisdictional mitigation reserve for Washington County's Habitat Conservation Plan (HCP) and Incidental Take Permit. BLM signed an Implementation Agreement for the HCP that committed the agency to pursue land exchanges of public lands for the private inholdings, thereby consolidating land tenure into public ownership to better protect the threatened Mojave desert tortoise and its designated critical habitat. The Red Cliffs National Conservation Area (NCA) comprises 70% of the land base of the RCDR and was Congressionally-designated in 2009 through the Omnibus Public Land Management Act of 2009 (Public Law 111-11) to conserve, protect, and restore multiple resource values on the public lands. The private land inholdings to be acquired are within the NCA boundaries and would be managed consistent with the conservation purposes of the NCA.

This checklist identifies the known resource values or resource issues relevant to Brennan Holdings private land inholdings (the Red Cliffs Parcel) in the RCDR, to assist the preparation of an EA that addresses the potential impacts of the transfer of the public lands in Long Valley. The effects of the acquisition of the private lands into Federal ownership and management as part of the Red Cliffs NCA would be generally be beneficial to a wide array of resource values, as federal laws, regulations, and policies would be in force.

DETERMINATION OF STAFF: ***(Choose one of the following abbreviated options for the left column)***

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi-nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)				
NI	Air Quality	Management of the acquired lands would be for conservation, protection, and restoration of natural and cultural resources values, creating no impacts on air quality	D. Corry	11/14/15
NP	Greenhouse Gas Emissions**	Management of the acquired lands would be for conservation, protection, and restoration of natural and cultural resources values, creating no greenhouse gas emissions.	D. Corry/R. Reese	11/14/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
NP	Wastes (hazardous or solid)	No hazardous or solid wastes are present on the proposed acquisition lands, based on field inspections.	Dave Corry	11/14/15
NP	Water Resources/Quality (drinking/surface/ground)	No springs, seeps, streams or other surface water sources are found on this parcel. There are no water rights or points of diversion on the private land parcel. Management of the acquired lands for conservation of resource values would not impact ground water.	Dave Corry	11/14/15
NP	Areas of Critical Environmental Concern		B. Douglas/D.Kiel/ G. McEwen	11/14/15
NI	Cultural Resources	Unknown-archeological inventories have not been conducted on the private land. However, any resources present would be protected under federal heritage preservation laws. Management of the acquired lands would be for conservation, protection, and restoration, as part of the Red Cliffs NCA and would help to ensure the long-term preservation of any cultural resources.	Dawna Ferris-Rowley	11/10/15
NP	Native American Religious Concerns	However, there are no known sacred sites or areas where religious activities are conducted by Native Americans on the proposed Brennan Holdings acquisition tract.	Dawna Ferris-Rowley	11/10/15
NI	Paleontology	Unknown, as no inventories have been completed. Any resources present would be protected under federal heritage preservation laws. Management of the acquired lands would be for conservation, protection, and restoration, as part of the Red Cliffs NCA, would help to ensure the long-term preservation of paleontological resources.	K. Voyles	11/10/15
NI	Geology / Mineral Resources/Energy Production	Mineral inventories indicate the private land has deposits of sand and gravel. The subsurface estate has been reserved by the State of Utah. There are no oil and gas leases or other mineral leases encumbering the parcel. The subsurface estate has been reserved by the State of Utah and the BLM cannot preclude access and mineral development activities of State-owned minerals. Use of the surface would be subject to mitigation requirements from the ESA and OPLMA.	K. Voyles	11/10/15
NP	Environmental Justice	According to the EPA Region VIII, State of Utah, Environmental Justice Map, this region has been categorized as having a 10-20% minority population and a similar percentage of low income population. The minority and low income populations are generally located in the St. George, Santa Clara, and Washington City municipalities (see http://epamap14.epa.gov/ejmap.). The proposed acquisition of this private land would not result in	D. Ferris-Rowley	11/6/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		disproportionately high or adverse health or environmental impacts on low income or minority populations.		
NI	Socio-Economics	The private land is within designated critical habitat for the threatened Mojave desert tortoise and supports populations of desert tortoise. This parcel was voluntarily included within the Red Cliffs Desert Reserve and left undeveloped by the property owner, with the expectation that eventually the private inholdings would be acquired into public ownership, either by exchange or purchase at fair market value. Development of the private land could only occur if a project area-specific Habitat Conservation Plan and Incidental Take Permit were to be approved by the USFWS.	D. Kiel	11/5/2015
NP	Farmlands (Prime or Unique)		D. Corry	11/5/15
NI	Soils	Federal acquisition of this private land and management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would protect soils from impacts related to new surface disturbances or developments.	D. Corry	11/5/15
NP	Floodplains		D. Corry	11/5/15
NP	Wetlands/Riparian Zones	There are no riparian or wetland areas on the private parcel.	D. Corry	11/5/15
NI	Fish and Wildlife Excluding USFW Designated Species	The private lands provide habitat for wildlife species that are typically associated with the transition zone from the Mojave Desert to the Colorado Plateau ecological regions. Management of the acquired lands would for conservation, protection, and restoration, as part of the Red Cliffs NCA, would help to ensure the long-term preservation of wildlife resources.	B. Douglas/ J. Kellam	11/5/15
NI	Migratory Birds	The private lands provide habitat for migratory bird species that are typically associated with the transition zone from the Mojave Desert to the Colorado Plateau ecological regions. Management of the acquired lands would for conservation, protection, and restoration, as part of the Red Cliffs NCA, would help to ensure that migratory birds are not impacted during nesting or other critical breeding or foraging periods.	B. Douglas	11/5/15
NP	Threatened, Endangered or Candidate Plant Species	Federally listed plant species are not expected to occur on the private lands as the specific soil and other habitat requirements are not present.	B. Douglas/ J. Kellam	11/5/15
NI	Threatened, Endangered or Candidate Animal Species	Mojave desert tortoises are present on the private lands and this parcel is within designated critical habitat, within the Upper Virgin River Recovery Unit. Federal acquisition of this private land and management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would protect Mojave desert tortoise and other at-risk species from impacts	B. Douglas/ J. Kellam	11/5/15

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		related to new surface disturbances or developments.		
NI	Vegetation Excluding USFW Designated Species	Federal acquisition of this private land and management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would protect native vegetation from impacts related to new surface disturbances or developments.	B. Douglas/R. Reese	11/5/15
NP	Woodland / Forestry	The native vegetation communities covering the private land are typical of the Mojave Desert and Colorado Plateau transition zone and include low shrubs, grasses, and forbs.	D. Corry	11/5/15
NI	Fuels/Fire Management	Acquisition of the private land inholdings into federal management would have no impact on fire management.	D. Corry	11/5/15
NI	Invasive Species/Noxious Weeds (EO 13112)	Unknown, as inventories have not been conducted. Exotic invasive brome grasses and Russian thistle are expected to be present. Federal acquisition of this private land and management consistent with the Congressionally-defined conservation purposes of the Red Cliffs NCA would preclude new surface disturbances or developments that could result in the introduction or spread of noxious weeds or the proliferation of exotic invasive species.	D. Corry/R. Reese	11/5/15
NI	Lands/Access	A legal easement was created in conjunction with the purchase of a 22 acre portion of the Brennan Holdings property by the United States in 2013. Other utility easements to the City of St. George, PacifiCorp, and Dixie Escalante Rural Electrical Association may cross the private parcel, depending on how many and where the acquired acres occur. These would remain valid existing rights of use following acquisition by the United States.	T. Burke/K.Thomas	11/5/2015
NP	Livestock Grazing	The private inholdings are not within an active grazing allotment and a majority of the public and state lands within the RCDR/NCA have not been available for livestock grazing since the mid-1990s.	D. Corry	11/5/15
NI	Rangeland Health Standards	No evaluations have been conducted, as the tract is private land and not part of a federal grazing allotment.	D. Corry	11/5/2015
NP	Recreation	Recreational use in the RCDR/NCA is limited to non-motorized activities on designated trails. There are no designated trails on the private inholdings.	K. Voyles	11/5/2015
NI	Visual Resources	The private lands are currently not subject to federal visual resource management classifications. Following acquisition, these lands would be management under the same classification as the adjoining public lands, to be determined through the RMP currently being prepared for Red Cliffs NCA.	D. Kiel	11/5/2015
		NLCS		
NI	National Conservation Areas	Acquisition of the private lands and management consistent with the Congressionally-defined purposes of the NCA would further the goals of the Red Cliffs NCA,	D. Kiel	11/5/2015

Determi-nation	Resource	Rationale for Determination*	Signature	Date
		by consolidating land tenure to achieve resource conservation purposes.		
NP	National Historic Trails (Old Spanish Trail)		D. Kiel	11/5/2015
NP	National Recreational Trails (Gooseberry)		K. Voyles	11/5/2015
NP	Wild and Scenic Rivers		K. Voyles	11/5/2015
NP	Wilderness/WSA		K. Voyles	11/5/2015
NP	Lands with Wilderness Characteristics**	Private inholdings have not been inventoried but would not meet the criteria for lands with wilderness characteristics based on size and intrusions such as powerlines, roads, and other infrastructure.	D. Kiel	11/5/2015

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator		12/4/2015	
Authorized Officer		12/4/2015	

Appendix B.

Parcel Descriptions and Maps

EXHIBIT A
Federal Lands and Interests Proposed for Exchange
Brennan/Red Cliffs Land Exchange (UTU-88966-FD)

Description of Land:

Salt Lake Meridian, Utah
T. 42 S., R. 14 W.
Sec. 20, lots 13 and 14;
Sec. 29, lots 2, 4, 5, 7, 9, 12, 14, and 15, NE1/4NW1/4, SW1/4NW1/4;
Sec. 30, lots 13, 16, 18, 19, 22, 24, and 25, NE1/4SE1/4;
Sec. 31, lots 14, 15, 18, 20, and 22, NW1/4NE1/4.

Acreage: 605.61

Interests to be Conveyed or Reserved: The parcel will be conveyed with a reservation to the United States for a right-of-way thereon for ditches or canals constructed by the authority of the United States under the Act of August 30, 1890 (43 U.S.C. 945). There is no water, timber, or other rights associated with the property.

Encumbrances of Record: The parcel will be conveyed subject to the following third-party rights:

1. Transmission line right-of-way UTU-55640 granted to Dixie Rural Electric for a term ending December 31, 2044. Consistent with BLM policy, the right-of-way holder will be given the opportunity to amend this authorization for conversion to a perpetual term or to an easement prior to completion of the exchange.

2. Access road right-of-way UTU-88924, granted to the City of Washington, for a perpetual term.

3. Highway right-of-way UTU-87808, granted to the Federal Highway Administration for a perpetual term. Note the parcel boundary is the easterly right-of-way edge, however, the authorization includes a borrow pit and interchange/off-ramp located on the exchange parcel. The borrow pit is authorized for a temporary term of 3 years. Construction of the off-ramp is not currently planned.

4. Rights of grazing permittee, Dennis Iverson, may have to continue grazing under Federal grazing permit No. 14019 (Dome Allotment). The permit will remain in effect for a two-year period following formal notice to the permittee as required by 43 CFR 4110.4-2. Notice will be provided concurrent with publication of the NOEP.

Exhibit A
Red Cliffs/Long Valley Exchange - Federal Parcel

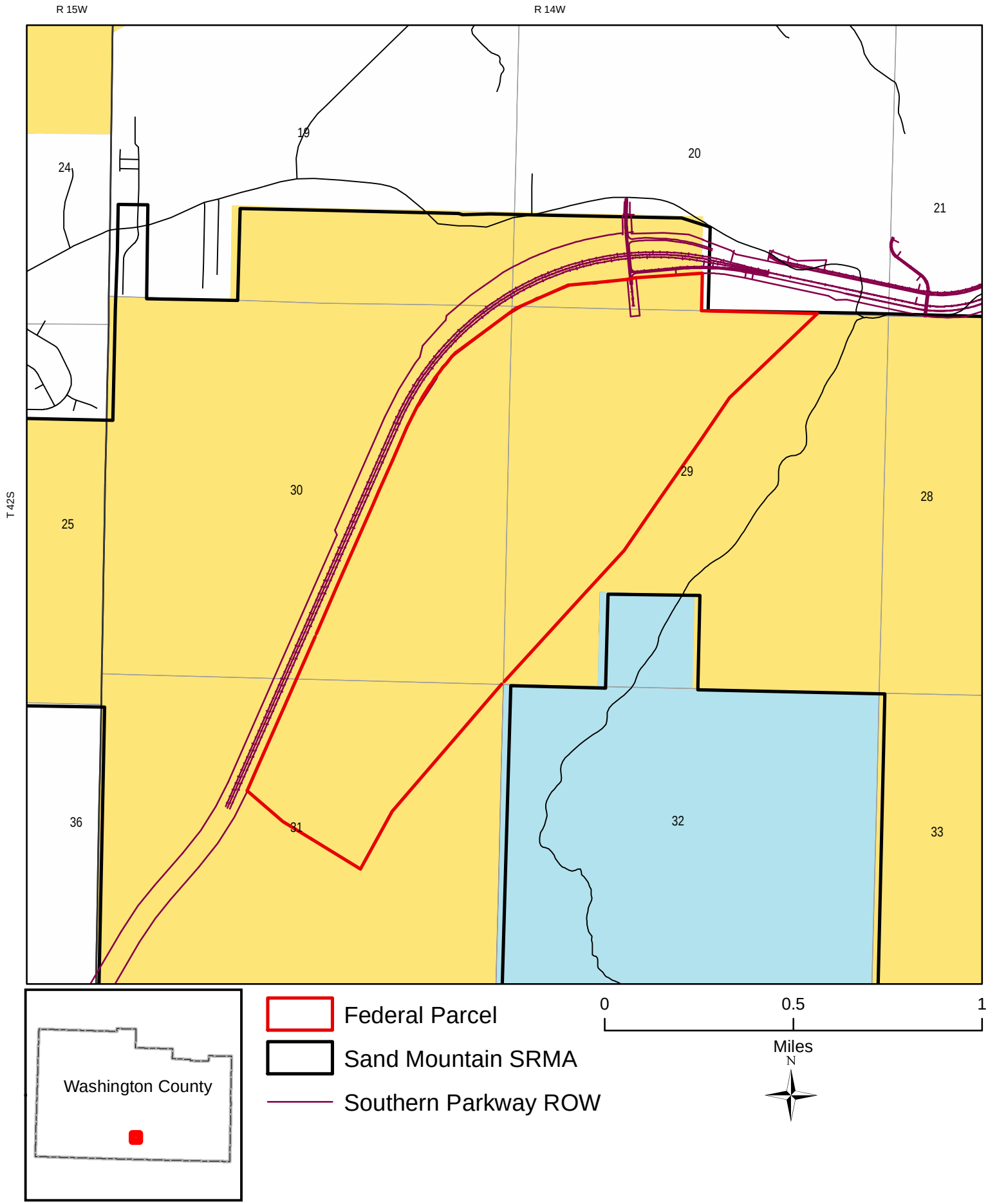


Exhibit A
Red Cliffs/Long Valley Exchange - Federal Parcel

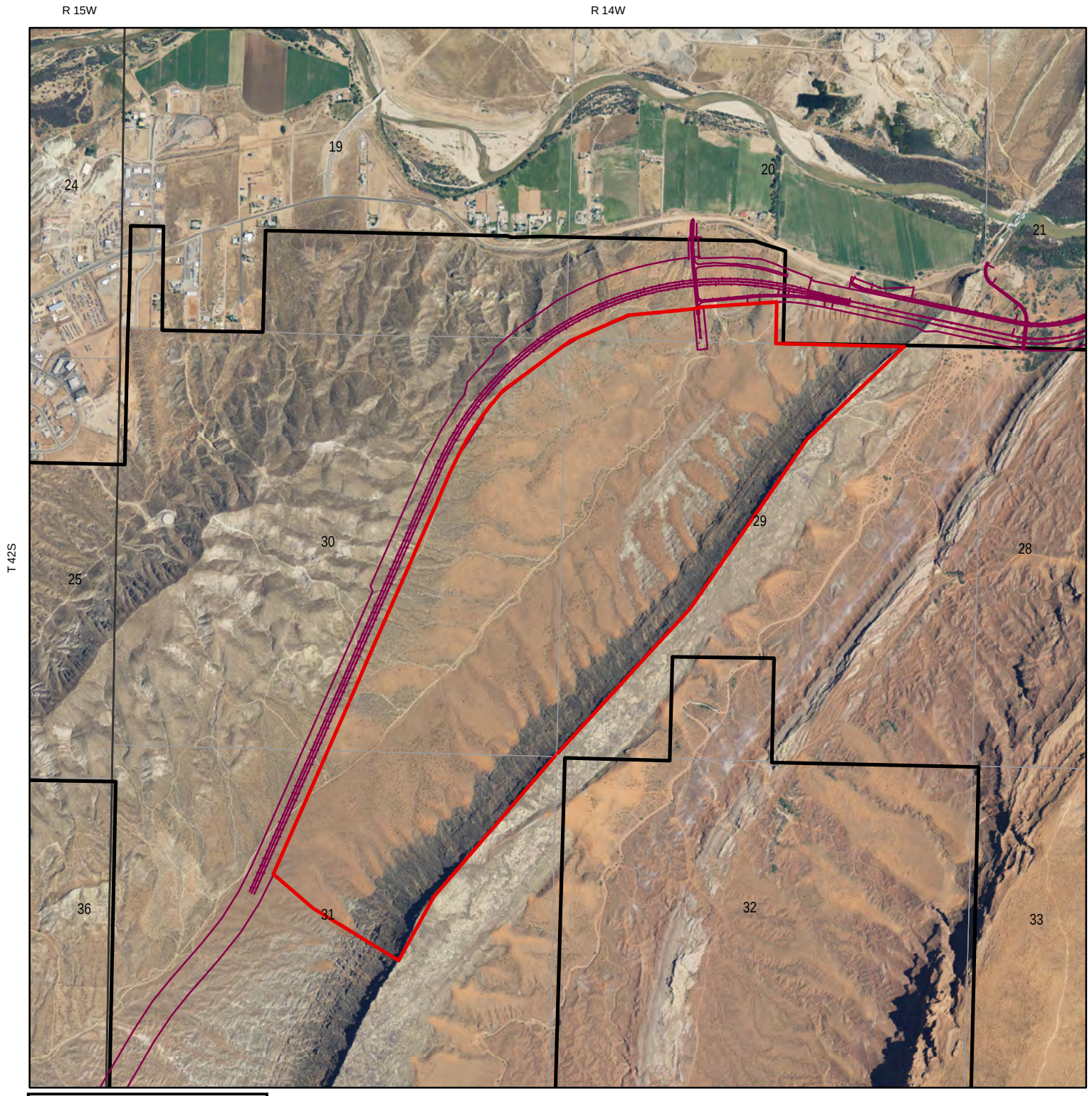


EXHIBIT B
Non-Federal Lands and Interests Proposed for Exchange
Red Cliffs/Long Valley Land Exchange (UTU-88966-PT)

Description of Land:

The description of the parcel to be acquired will be determined through a survey, following valuation of the Federal and non-Federal lands. The parcel will constitute a portion of the 788-acre parcel owned by Brennan located within Sections 8, 9, 16, and 17 in T. 42 S., R. 15 W., Salt Lake Meridian. The portion to be acquired will originate on the northern boundary of the parcel, contiguous to BLM-administered lands in Section 9, and will extend south to the extent that the value will be equivalent with the value of the Federal parcel.

Acreage: To be determined

Interests to be Conveyed or Reserved: Conveyance of the non-Federal land would include the surface estate only. The mineral estate was reserved in a prior transaction by the State of Utah. There is no water, timber, or other rights associated with the property.

Encumbrances of Record: Encumbrances on the larger 788-acre parcel are listed below. Depending on the final parcel configuration, some encumbrances may not cross the parcel. All encumbrances have been previously determined to be administratively acceptable and waived by the Office of the Solicitor:

1. Utility easement held by the City of St. George for a buried water pipeline.

2. Utility easement held by PacifiCorp for electric transmission and distribution lines and associated facilities.

3. Use Agreement and Stipulated Judgment under which Dixie Escalante Rural Electrical Association, Inc. has the right to utilize the above-noted PacifiCorp easement for the construction, access and maintenance of their power line easement.

4. Road easement in the favor of Brennan, His Family Matters, and the SITLA, providing legal access to their respective land holdings.

5. Easement agreement in favor of the Trust for Public Land, providing an appurtenant easement to a 22.4-acre parcel which was purchased by TPL and subsequently conveyed to the United States.

Exhibit B
Red Cliffs/Long Valley Exchange - Non-Federal Parcel

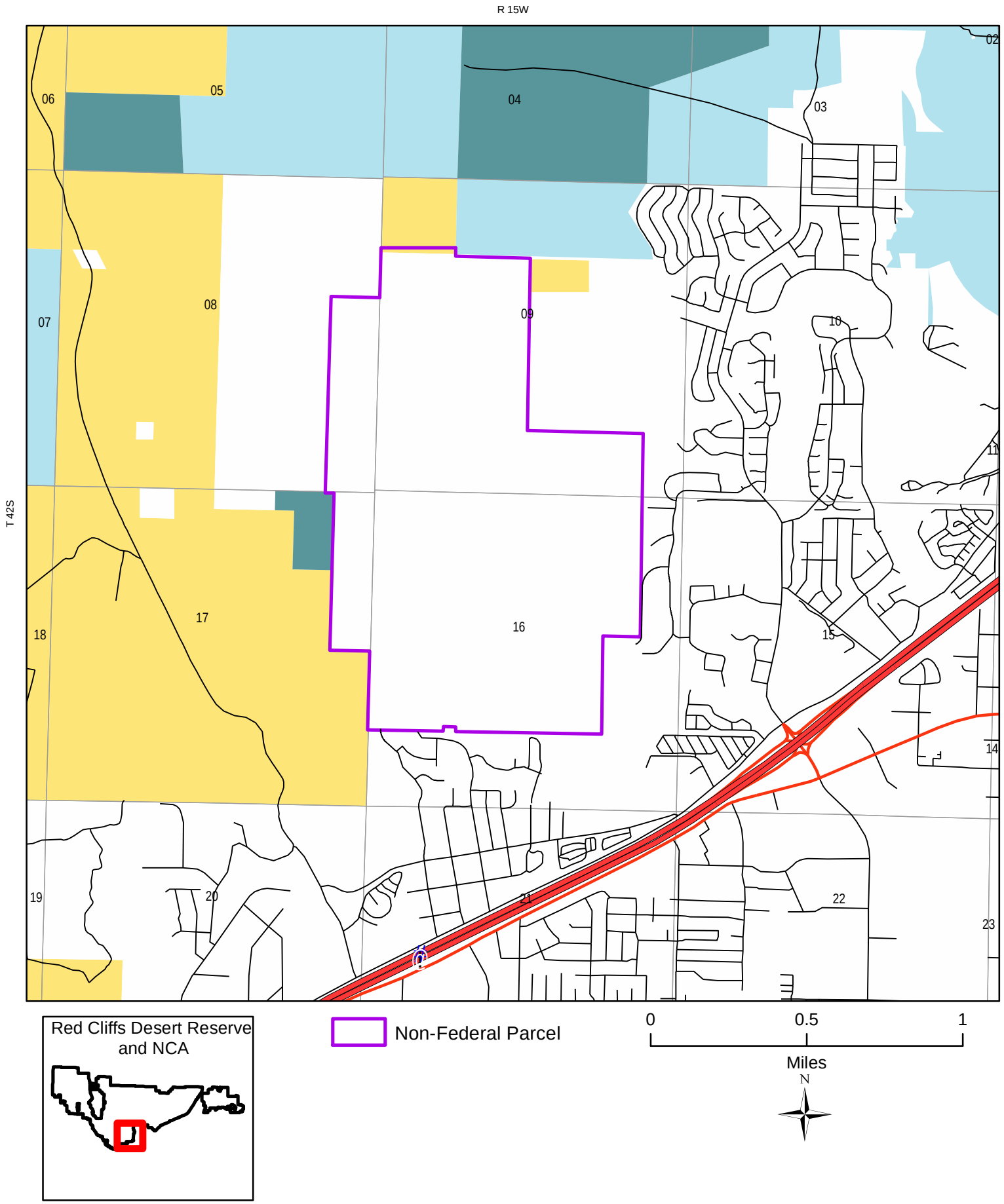
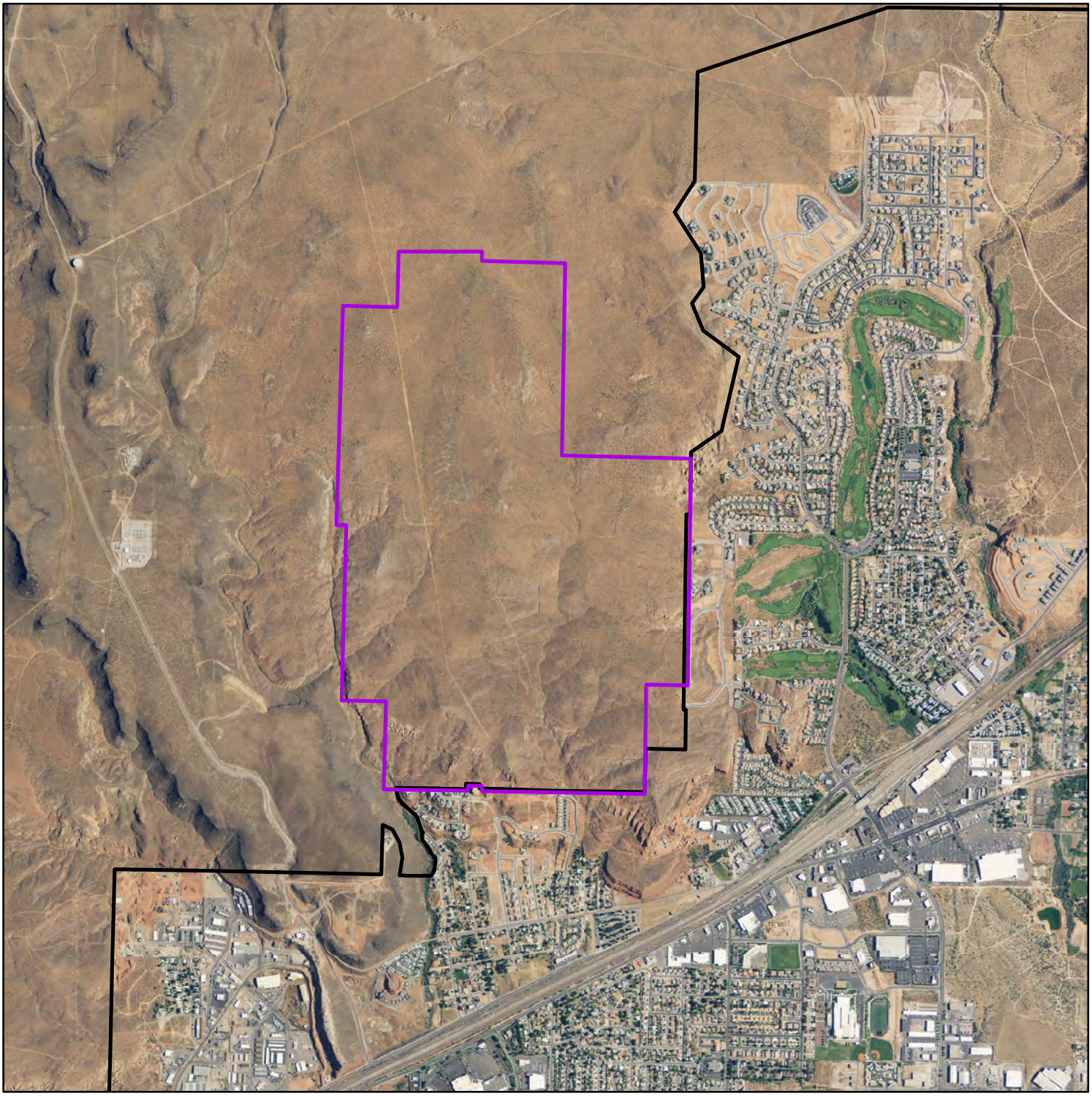


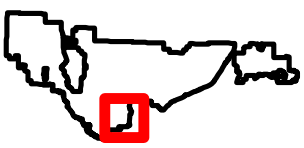
Exhibit B
Red Cliffs/Long Valley Exchange - Non-Federal Parcel

R 15W

T 42S



Red Cliffs Desert Reserve and NCA



Red Cliffs NCA

Non-Federal Parcel

0 0.5 1

Miles

N

Appendix C.
Birds Protected By The Migratory Bird Treaty Act Occurring In Washington County, Utah

APPENDIX C

BIRDS PROTECTED BY THE MIGRATORY BIRD TREATY ACT OCCURRING IN WASHINGTON COUNTY, UTAH.

Over 300 species of migratory birds have been documented using habitats within Washington County, Utah, for breeding, nesting, foraging, and migration. The following list of species was compiled by Rick Fridell (Utah Division of Wildlife Resources, St. George, Utah), and Kristen Comella (Utah Division of Parks and Recreation, Snow Canyon Park, Ivins, Utah) (Fridell and Comella 2007).

Common Name	*Scientific Name*	Common Name	Scientific Name
Greater White-fronted Goose	*Anser albifrons*	Hammond's Flycatcher	*Empidonax hammondii*
Snow Goose	*Chen caerulescens*	Gray Flycatcher	*Empidonax wrightii*
Ross's Goose	*Chen rossii*	Dusky Flycatcher	*Empidonax oberholseri*
Canada Goose	*Branta canadensis*	Pacific-slope Flycatcher	*Empidonax difficilis*
Trumpeter Swan	*Cygnus buccinator*	Cordilleran Flycatcher	*Empidonax occidentalis*
Tundra Swan	*Cygnus columbianus*	Black Phoebe	*Sayornis nigricans*
Wood Duck	*Aix sponsa*	Eastern Phoebe	*Sayornis phoebe*
Gadwall	*Anas strepera*	Say's Phoebe	*Sayornis saya*
Eurasian Wigeon	*Anas penelope*	Vermilion Flycatcher	*Pyrocephalus rubinus*
American Wigeon	*Anas americana*	Ash-throated Flycatcher	*Myiarchus cinerascens*
Mallard	*Anas platyrhynchos*	Brown-crested Flycatcher	*Myiarchus tyrannulus*
Blue-winged Teal	*Anas discors*	Cassin's Kingbird	*Tyrannus vociferans*
Cinnamon Teal	*Anas cyanoptera*	Western Kingbird	*Tyrannus verticalis*
Northern Shoveler	*Anas clypeata*	Eastern Kingbird	*Tyrannus tyrannus*
Northern Pintail	*Anas acuta*	Loggerhead Shrike	*Lanius ludovicianus*
Green-winged Teal	*Anas crecca*	Northern Shrike	*Lanius excubitor*
Canvasback	*Aythya valisineria*	Bell's Vireo	*Vireo bellii*
Redhead	*Aythya americana*	Gray Vireo	*Vireo vicinior*
Ring-necked Duck	*Aythya collaris*	Plumbeous Vireo	*Vireo plumbeus*
Greater Scaup	*Aythya marila*	Cassin's Vireo	*Vireo cassinii*
Lesser Scaup	*Aythya affinis*	Blue-headed Vireo	*Vireo solitarius*
Surf Scoter	*Melanitta perspicillata*	Warbling Vireo	*Vireo gilvus*
White-winged Scoter	*Melanitta fusca*	Philadelphia Vireo	*Vireo philadelphicus*
Black Scoter	*Melanitta nigra*	Red-eyed Vireo	*Vireo olivaceus*
Long-tailed Duck	*Clangula hyemalis*	Gray Jay	*Perisoreus canadensis*
Bufflehead	*Bucephala albeola*	Steller's Jay	*Cyanocitta stelleri*
Common Goldeneye	*Bucephala clangula*	Blue Jay	*Cyanocitta cristata*
Barrow's Goldeneye	*Bucephala islandica*	Western Scrub-Jay	*Aphelocoma californica*
Hooded Merganser	*Lophodytes cucullatus*	Pinyon Jay	*Gymnorhinus cyanocephalus*
Common Merganser	*Mergus merganser*	Clark's Nutcracker	*Nucifraga columbiana*
Red-breasted Merganser	*Mergus serrator*	Black-billed Magpie	*Pica hudsonia*
Ruddy Duck	*Oxyura jamaicensis*	American Crow	*Corvus brachyrhynchos*
Red-throated Loon	*Gavia stellata*	Common Raven	*Corvus corax*
Pacific Loon	*Gavia pacifica*	Horned Lark	*Eremophila alpestris*
Common Loon	*Gavia immer*	Purple Martin	*Progne subis*
Yellow-billed Loon	*Gavia adamsii*	Tree Swallow	*Tachycineta bicolor*
Pied-billed Grebe	*Podilymbus podiceps*	Violet-green Swallow	*Tachycineta thalassina*
Horned Grebe	*Podiceps auritus*	Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Red-necked Grebe	*Podiceps grisegena*	Bank Swallow	*Riparia riparia*
Eared Grebe	*Podiceps nigricollis*	Cliff Swallow	*Petrochelidon pyrrhonota*

Common Name	*Scientific Name*	Common Name	Scientific Name
Western Grebe	*Aechmophorus occidentalis*	Barn Swallow	*Hirundo rustica*
Clark's Grebe	*Aechmophorus clarkii*	Black-capped Chickadee	*Poecile atricapillus*
American White Pelican	*Pelecanus erythrorhynchos*	Mountain Chickadee	*Poecile gambeli*
Double-crested Cormorant	*Phalacrocorax auritus*	Juniper Titmouse	*Baeolophus ridgwayi*
American Bittern	*Botaurus lentiginosus*	Verdin	*Auriparus flaviceps*
Least Bittern	*Ixobrychus exilis*	Bushtit	*Psaltriparus minimus*
Great Blue Heron	*Ardea herodias*	Red-breasted Nuthatch	*Sitta canadensis*
Great Egret	*Ardea alba*	White-breasted Nuthatch	*Sitta carolinensis*
Snowy Egret	*Egretta thula*	Pygmy Nuthatch	*Sitta pygmaea*
Reddish Egret	*Egretta rufescens*	Brown Creeper	*Certhia americana*
Cattle Egret	*Bubulcus ibis*	Cactus Wren	*Campylorhynchus brunneicapillus*
Green Heron	*Butorides virescens*	Rock Wren	*Salpinctes obsoletus*
Black-crowned Night-Heron	*Nycticorax nycticorax*	Canyon Wren	*Catherpes mexicanus*
White-faced Ibis	*Plegadis chihi*	Bewick's Wren	*Thryomanes bewickii*
Wood Stork	*Mycteria americana*	House Wren	*Troglodytes aedon*
Turkey Vulture	*Cathartes aura*	Winter Wren	*Troglodytes troglodytes*
California Condor	*Gymnogyps californianus*	Marsh Wren	*Cistothorus palustris*
Osprey	*Pandion haliaetus*	American Dipper	*Cinclus mexicanus*
White-tailed Kite	*Elanus leucurus*	Golden-crowned Kinglet	*Regulus satrapa*
Bald Eagle	*Haliaeetus leucocephalus*	Ruby-crowned Kinglet	*Regulus calendula*
Northern Harrier	*Circus cyaneus*	Blue-gray Gnatcatcher	*Polioptila caerulea*
Sharp-shinned Hawk	*Accipiter striatus*	Black-tailed Gnatcatcher	*Polioptila melanura*
Cooper's Hawk	*Accipiter cooperii*	Eastern Bluebird	*Sialia sialis*
Northern Goshawk	*Accipiter gentilis*	Western Bluebird	*Sialia mexicana*
Common Black-Hawk	*Buteogallus anthracinus*	Mountain Bluebird	*Sialia currucoides*
Red-shouldered Hawk	*Buteo lineatus*	Townsend's Solitaire	*Myadestes townsendi*
Broad-winged Hawk	*Buteo platypterus*	Veery	*Catharus fuscescens*
Swainson's Hawk	*Buteo swainsoni*	Swainson's Thrush	*Catharus ustulatus*
Zone-tailed Hawk	*Buteo albonotatus*	Hermit Thrush	*Catharus guttatus*
Red-tailed Hawk	*Buteo jamaicensis*	Rufous-backed Robin	*Turdus rufopalliatus*
Ferruginous Hawk	*Buteo regalis*	American Robin	*Turdus migratorius*
Rough-legged Hawk	*Buteo lagopus*	Varied Thrush	*Ixoreus naevius*
Golden Eagle	*Aquila chrysaetos*	Gray Catbird	*Dumetella carolinensis*
American Kestrel	*Falco sparverius*	Northern Mockingbird	*Mimus polyglottos*
Merlin	*Falco columbarius*	Sage Thrasher	*Oreoscoptes montanus*
Peregrine Falcon	*Falco peregrinus*	Brown Thrasher	*Toxostoma rufum*
Prairie Falcon	*Falco mexicanus*	Bendire's Thrasher	*Toxostoma bendirei*
Virginia Rail	*Rallus limicola*	Curve-billed Thrasher	*Toxostoma curvirostre*
Sora	*Porzana carolina*	Crissal Thrasher	*Toxostoma crissale*
Common Moorhen	*Gallinula chloropus*	Le Conte's Thrasher	*Toxostoma lecontei*
American Coot	*Fulica americana*	American Pipit	*Anthus rubescens*
Sandhill Crane	*Grus canadensis*	Bohemian Waxwing	*Bombycilla garrulus*
Black-bellied Plover	*Pluvialis squatarola*	Cedar Waxwing	*Bombycilla cedrorum*
American Golden-Plover	*Pluvialis dominica*	Phainopepla	*Phainopepla nitens*
Snowy Plover	*Charadrius alexandrinus*	Tennessee Warbler	*Vermivora peregrina*
Semipalmated Plover	*Charadrius semipalmatus*	Orange-crowned Warbler	*Vermivora celata*
Killdeer	*Charadrius vociferus*	Nashville Warbler	*Vermivora ruficapilla*
Mountain Plover	*Charadrius montanus*	Virginia's Warbler	*Vermivora virginiae*
Black-necked Stilt	*Himantopus mexicanus*	Lucy's Warbler	*Vermivora luciae*
American Avocet	*Recurvirostra americana*	Northern Parula	*Parula americana*
Spotted Sandpiper	*Actitis macularius*	Yellow Warbler	*Dendroica petechia*
Solitary Sandpiper	*Tringa solitaria*	Chestnut-sided Warbler	*Dendroica pensylvanica*
Wandering Tattler	*Tringa incana*	Magnolia Warbler	*Dendroica magnolia*
Greater Yellowlegs	*Tringa melanoleuca*	Black-throated Blue Warbler	*Dendroica caerulescens*
Willet	*Tringa semipalmata*	Yellow-rumped Warbler	*Dendroica coronata*
Lesser Yellowlegs	*Tringa flavipes*	Black-throated Gray Warbler	*Dendroica nigrescens*
Whimbrel	*Numenius phaeopus*	Townsend's Warbler	*Dendroica townsendi*
Long-billed Curlew	*Numenius americanus*	Hermit Warbler	*Dendroica occidentalis*
Marbled Godwit	*Limosa fedoa*	Yellow-throated Warbler	*Dendroica dominica*
Red Knot	*Calidris canutus*	Grace's Warbler	*Dendroica graciae*
Sanderling	*Calidris alba*	Prairie Warbler	*Dendroica discolor*
Semipalmated Sandpiper	*Calidris pusilla*	Palm Warbler	*Dendroica palmarum*
Western Sandpiper	*Calidris mauri*	Blackpoll Warbler	*Dendroica striata*
Least Sandpiper	*Calidris minutilla*	Black-and-white Warbler	*Mniotilta varia*

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Baird's Sandpiper	*Calidris bairdii*	American Redstart	*Setophaga ruticilla*
Pectoral Sandpiper	*Calidris melanotos*	Prothonotary Warbler	*Protonotaria citrea*
Dunlin	*Calidris alpina*	Worm-eating Warbler	*Helmitheros vermivorum*
Stilt Sandpiper	*Calidris himantopus*	Northern Waterthrush	*Seiurus noveboracensis*
Short-billed Dowitcher	*Limnodromus griseus*	Louisiana Waterthrush	*Seiurus motacilla*
Long-billed Dowitcher	*Limnodromus scolopaceus*	Kentucky Warbler	*Oporornis formosus*
Wilson's Snipe	*Gallinago delicata*	MacGillivray's Warbler	*Oporornis tolmiei*
Wilson's Phalarope	*Phalaropus tricolor*	Common Yellowthroat	*Geothlypis trichas*
Red-necked Phalarope	*Phalaropus lobatus*	Hooded Warbler	*Wilsonia citrina*
Red Phalarope	*Phalaropus fulicarius*	Wilson's Warbler	*Wilsonia pusilla*
Franklin's Gull	*Larus pipixcan*	Painted Redstart	*Myioborus pictus*
Bonaparte's Gull	*Larus philadelphia*	Yellow-breasted Chat	*Icteria virens*
Heermann's Gull	*Larus heermanni*	Summer Tanager	*Piranga rubra*
Ring-billed Gull	*Larus delawarensis*	Scarlet Tanager	*Piranga olivacea*
California Gull	*Larus californicus*	Western Tanager	*Piranga ludoviciana*
Herring Gull	*Larus argentatus*	Green-tailed Towhee	*Pipilo chlorurus*
Sabine's Gull	*Xema sabini*	Spotted Towhee	*Pipilo maculatus*
Black-legged Kittiwake	*Rissa tridactyla*	Abert's Towhee	*Pipilo aberti*
Least Tern	*Sternula antillarum*	Rufous-crowned Sparrow	*Aimophila ruficeps*
Caspian Tern	*Hydroprogne caspia*	American Tree Sparrow	*Spizella arborea*
Black Tern	*Chlidonias niger*	Chipping Sparrow	*Spizella passerina*
Common Tern	*Sterna hirundo*	Clay-colored Sparrow	*Spizella pallida*
Forster's Tern	*Sterna forsteri*	Brewer's Sparrow	*Spizella breweri*
Band-tailed Pigeon	*Patagioenas fasciata*	Black-chinned Sparrow	*Spizella atrogularis*
White-winged Dove	*Zenaida asiatica*	Vesper Sparrow	*Pooecetes gramineus*
Mourning Dove	*Zenaida macroura*	Lark Sparrow	*Chondestes grammacus*
Inca Dove	*Columbina inca*	Black-throated Sparrow	*Amphispiza bilineata*
Common Ground-Dove	*Columbina passerina*	Sage Sparrow	*Amphispiza belli*
Ruddy Ground-Dove	*Columbina talpacoti*	Lark Bunting	*Calamospiza melanocorys*
Yellow-billed Cuckoo	*Coccyzus americanus*	Savannah Sparrow	*Passerculus sandwichensis*
Greater Roadrunner	*Geococcyx californianus*	Grasshopper Sparrow	*Ammodramus savannarum*
Barn Owl	*Tyto alba*	Fox Sparrow	*Passerella iliaca*
Flammulated Owl	*Otus flammeolus*	Song Sparrow	*Melospiza melodia*
Western Screech-Owl	*Megascops kennicottii*	Lincoln's Sparrow	*Melospiza lincolnii*
Great Horned Owl	*Bubo virginianus*	Swamp Sparrow	*Melospiza georgiana*
Northern Pygmy-Owl	*Glaucidium gnoma*	White-throated Sparrow	*Zonotrichia albicollis*
Elf Owl	*Micrathene whitneyi*	Harris's Sparrow	*Zonotrichia querula*
Burrowing Owl	*Athene cunicularia*	White-crowned Sparrow	*Zonotrichia leucophrys*
Spotted Owl	*Strix occidentalis*	Golden-crowned Sparrow	*Zonotrichia atricapilla*
Long-eared Owl	*Asio otus*	Dark-eyed Junco	*Junco hyemalis*
Short-eared Owl	*Asio flammeus*	McCown's Longspur	*Calcarius mccownii*
Northern Saw-whet Owl	*Aegolius acadicus*	Lapland Longspur	*Calcarius lapponicus*
Lesser Nighthawk	*Chordeiles acutipennis*	Chestnut-collared Longspur	*Calcarius ornatus*
Common Nighthawk	*Chordeiles minor*	Snow Bunting	*Plectrophenax nivalis*
Common Poorwill	*Phalaenoptilus nuttallii*	Rose-breasted Grosbeak	*Pheucticus ludovicianus*
Black Swift	*Cypseloides niger*	Black-headed Grosbeak	*Pheucticus melanocephalus*
Chimney Swift	*Chaetura pelagica*	Blue Grosbeak	*Passerina caerulea*
Vaux's Swift	*Chaetura vauxi*	Lazuli Bunting	*Passerina amoena*
White-throated Swift	*Aeronautes saxatalis*	Indigo Bunting	*Passerina cyanea*
Broad-billed Hummingbird	*Cynanthus latirostris*	Dickcissel	*Spiza americana*
Blue-throated Hummingbird	*Lampornis clemenciae*	Bobolink	*Dolichonyx oryzivorus*
Magnificent Hummingbird	*Eugenes fulgens*	Red-winged Blackbird	*Agelaius phoeniceus*
Ruby-throated Hummingbird	*Archilochus colubris*	Western Meadowlark	*Sturnella neglecta*
Black-chinned Hummingbird	*Archilochus alexandri*	Yellow-headed Blackbird	*Xanthocephalus xanthocephalus*
Anna's Hummingbird	*Calypte anna*	Rusty Blackbird	*Euphagus carolinus*
Costa's Hummingbird	*Calypte costae*	Brewer's Blackbird	*Euphagus cyanocephalus*
Calliope Hummingbird	*Stellula calliope*	Common Grackle	*Quiscalus quiscula*
Broad-tailed Hummingbird	*Selasphorus platycercus*	Great-tailed Grackle	*Quiscalus mexicanus*
Rufous Hummingbird	*Selasphorus rufus*	Bronzed Cowbird	*Molothrus aeneus*
Belted Kingfisher	*Megaceryle alcyon*	Brown-headed Cowbird	*Molothrus ater*
Lewis's Woodpecker	*Melanerpes lewis*	Orchard Oriole	*Icterus spurius*
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Hooded Oriole	*Icterus cucullatus*
Acorn Woodpecker	*Melanerpes formicivorus*	Bullock's Oriole	*Icterus bullockii*
Williamson's Sapsucker	*Sphyrapicus thyroideus*	Altamira Oriole	*Icterus gularis*
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Scott's Oriole	*Icterus parisorum*

Common Name	***Scientific Name***	**Common Name**	**Scientific Name**
Red-naped Sapsucker	*Sphyrapicus nuchalis*	Gray-crowned Rosy-Finch	*Leucosticte tephrocotis*
Red-breasted Sapsucker	*Sphyrapicus ruber*	Black Rosy-Finch	*Leucosticte atrata*
Ladder-backed Woodpecker	*Picoides scalaris*	Pine Grosbeak	*Pinicola enucleator*
Downy Woodpecker	*Picoides pubescens*	Cassin's Finch	*Carpodacus cassinii*
Hairy Woodpecker	*Picoides villosus*	House Finch	*Carpodacus mexicanus*
American Three-toed Woodpecker	*Picoides dorsalis*	Red Crossbill	*Loxia curvirostra*
Northern Flicker	*Colaptes auratus*	Pine Siskin	*Carduelis pinus*
Olive-sided Flycatcher	*Contopus cooperi*	Lesser Goldfinch	*Carduelis psaltria*
Western Wood-Pewee	*Contopus sordidulus*	Lawrence's Goldfinch	*Carduelis lawrencei*
Willow Flycatcher	*Empidonax traillii*	American Goldfinch	*Carduelis tristis*
Least Flycatcher	*Empidonax minimus*	Evening Grosbeak	*Coccothraustes vespertinus*