April 9, 2015

Biological Technical Report

Yerington Lands Conveyance

Lyon and Mineral County, Nevada

Prepared For:

BLM Carson City District
5665 Morgan Mill Road
Carson City, NV 90701

City of Yerington
102 S. Main Street
Yerington, Nevada 89447

Prepared By:

Sheila Anderson & Jeremy Drew
Resource Concepts, Inc.
340 N. Minnesota Street
Carson City, NV 89703
(775) 883-1600

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Biological Study Area 1

1.2 Yerington Land Conveyance Area 1

2.0 ENVIRONMENTAL SETTING 3

2.1 Geology 5

2.2 Soils and Ecological Site Correlations 5

Yerington loamy fine sand 0-2% slope; 2-4% slope; 4-8% slope. 7
Patna sand 0-4% slope 7
Theon very gravelly sandy loam 8-30% slope 7
Tocan sandy loam 2-4% slope 7
Tocan gravelly sandy loam 4-8% slope 7
Tocan-Yerington complex 0-4% slope 7
Rawe gravelly sandy loam 4-15% slope 7
Cleaver gravelly sandy loam 2-4% slope 8

2.3 Ecological Sites and Vegetation Types 8

Gravelly loam, 4-8 P.Z. 10
Sandy 5-8 P.Z. 10
Stony slope 4-8 P.Z. 10
Barren gravelly slope 4-8 P.Z. 11

2.4 Vegetation Landcover 11

3.0 AGENCY BACKGROUND INFORMATION 13

3.1 Nevada Natural Heritage Program (NNHP) 13

3.2 Nevada Department of Wildlife (NDOW) 13

Mule deer 13
Pronghorn Antelope, Elk, Bighorn Sheep 14
Greater sage-grouse 14
Raptors 14
General Wildlife 14

3.3 US Fish and Wildlife Service (FWS) 15

Columbia spotted frog 16
Greater sage-grouse / Greater sage-grouse Bi-State DPS 16
Yellow-billed cuckoo 18
Lahontan cutthroat trout / Cui-ui 18
Migratory Birds 18

3.4 Bureau of Land Management (BLM) 18
3.5 Summary BLM Sensitive Species 32
3.6 Summary Migratory Birds 33

4.0 SITE RECONNAISSANCE AND SURVEY RESULTS 34

4.1 Previous Baseline Studies Within the Biological Study Area 34
JBR Environmental Consultants, Inc..... 34
Great Basin Ecology, Inc. (GBE) 34
4.2 RCI 2014 Baseline Field Work..... 35
RCI Botanical, Sensitive Plant Species, and Invasive Species Surveys..... 35
2014 Sensitive Plant Survey Results..... 37
2014 Noxious and Invasive Species Survey Results 37
4.3 2014 Wildlife Reconnaissance and Sensitive Wildlife Species Surveys..... 37
RCI Screening Level Bat Habitat Survey 37
RCI Screening Level Burrowing Owl Survey 40
RCI Screening Level Sagebrush Obligate Species Survey 40
Incidental Wildlife Sightings 40

REFERENCES..... 41

List of Tables

Table 1. At-risk taxa recorded near the Biological Study Area (NNHP 2014). 13
Table 2. Wildlife species that have been observed in the vicinity of the Biological Study Area (NDOW 2014). 14
Table 3. Federally listed threatened, endangered, and candidate species that occur within Lyon and Mineral Counties, Nevada..... 16
Table 4. Habitat assessment and analysis for sensitive species, migratory birds, and bird species of conservation concern from US Fish and Wildlife Service and BLM Carson City District and BLM Statewide lists. 19
Table 5. BLM Sensitive species that have habitat and potential for occurrence in the Biological Study Area. 32

List of Figures (Administrative Draft)

Figure 1. General Vicinity and Land Status (Ownership) in the Biological Study Area .. 2
Figure 2. Location of Disturbance Areas (2006) in the Biological Study Area ..... **Error! Bookmark not defined.**
Figure 3. Soils and Soil Associations in the Biological Study Area..... 6
Figure 5. Landcover Classes in the Biological Study Area (SW ReGAP) 12

Figure 6. Proposed critical habitat for Bi-State DPS Greater sage-grouse in the vicinity of the Biological Study Area. 17
Figure 7. Vegetation Survey Routes in the Biological Study Area 36
Figure 8. Location of Mine Adits and Shafts Surveyed for Bat Activity in the Biological Study Area. 39

Appendices:

Appendix A – Agency Background Letters

Nevada Natural Heritage Project, letter dated November, 2014

Nevada Department of Wildlife, letter dated March 13, 2014

US Fish and Wildlife Service, letter dated November, 2014

Appendix B – Plant Lists

JBR Plant List from 2007 Threatened, Endangered, Candidate & Sensitive Plant Survey. Prepared for Pumpkin Copper, Inc. Yerington, NV.

RCI Plant List from 2014

Appendix C – Site Photos

2015-04-10 FINAL 508 BioTechRpt NvCopper 14-162.1 sa bb.docx
April 14, 2015

1.0 INTRODUCTION

This Biological Technical Report (Report) was prepared by Resource Concepts Inc. (RCI) to characterize the biological environment of the Nevada Copper Pumpkin Hollow Study Area, and the Yerington Land Conveyance Area. The Biological Study Area is located in Lyon and Mineral counties, Nevada approximately 5.5 miles southeast of Yerington, Nevada in T13N R25E sections 24, 25, 36; T13N R26E sections 14, 15, 16, 17, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36; and T12N R26E sections 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12.

This report describes the existing physical environment and evaluates the potential for occurrence of state and federally listed threatened, endangered, and candidate species, and species designated as sensitive by the Bureau of Land Management (BLM) Carson City District. The report also summarizes information on noxious weeds and invasive species in the Biological Study Area, and summarizes the results from previous field studies.

1.1 Biological Study Area

The Biological Study Area encompasses approximately 19,000 acres of public lands administered by the Carson City District Office and includes an active underground mining operation under development by Nevada Copper that is wholly located on private lands leased from RGGS Land & Minerals Ltd. The Biological Study Area includes the Yerington Land Conveyance Area and a block of land to the east of the main portion of the Yerington Land Conveyance Area that may be used for future mineral exploration activities.

1.2 Yerington Land Conveyance Area

On December 19, 2014 the National Defense Authorization Act for Fiscal Year 2015 (Act) was signed into law (Public Law [PL] 113-291). The Act, which includes Section 3009 (a), titled the “Northern Nevada Land Conveyances,” requires the BLM Carson City District Office to convey to the City of Yerington (City) approximately 10,400 acres public lands within 180 days of enactment. The BLM has assigned this project case file number NVN 093739.

The general location, land ownership, and boundaries of the Biological Study Area and Yerington Land Conveyance Area are shown in Figure 1.

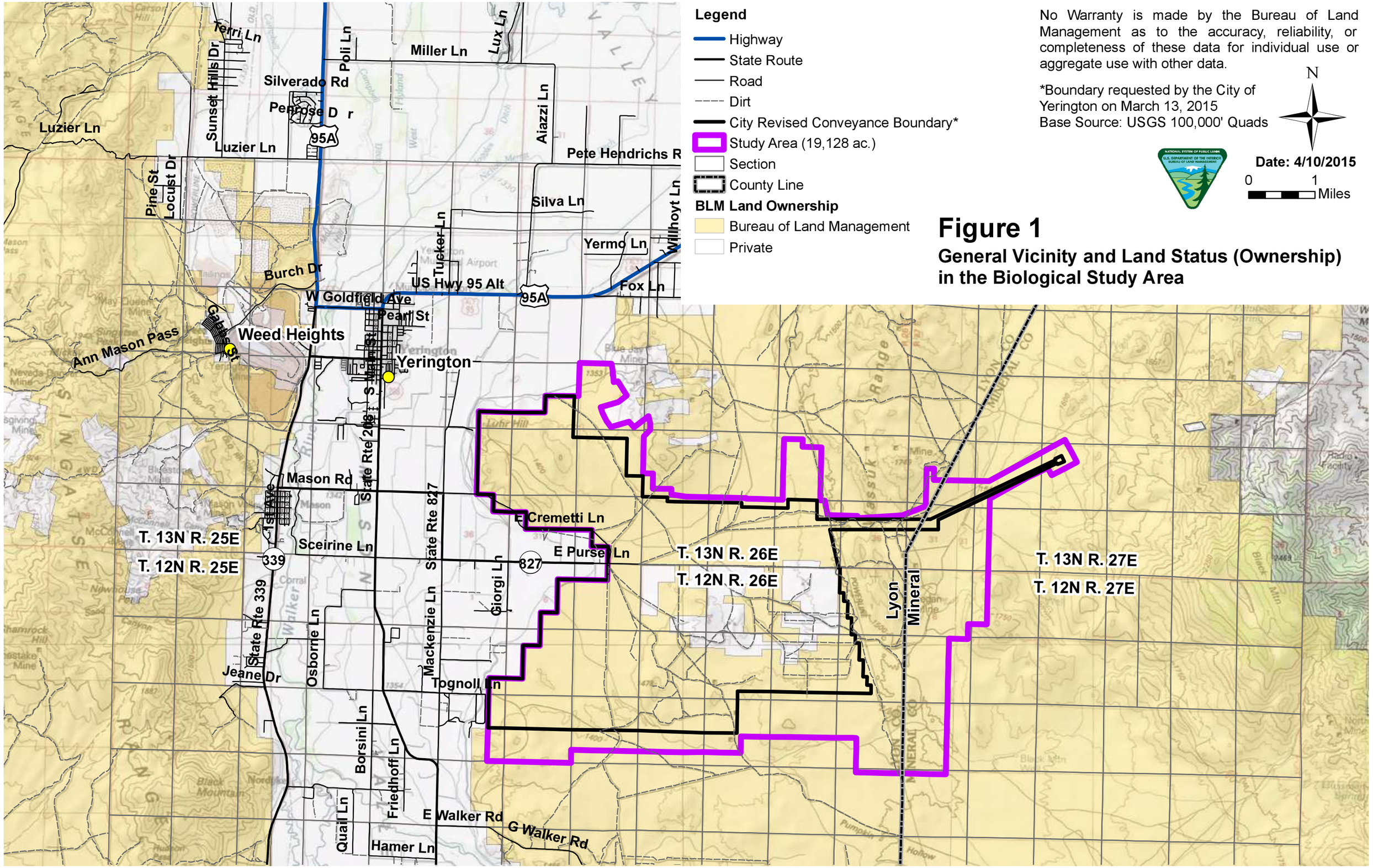


Figure 1

General Vicinity and Land Status (Ownership) in the Biological Study Area

2.0 Environmental Setting

The elevation in the Biological Study Area ranges from approximately 4,300 feet near US Highway 95A to 6,270 feet in the Wassuk Range. The climate is characterized by a semi-arid temperate climate with cold wet winters, wet springs, and warm dry summers. Precipitation is erratic and variable and ranges in the four to eight inch precipitation zone. Existing land disturbances from previous land uses including mining, mine exploration, and off-highway vehicle recreation use disturbance had occurred across much of the site. Existing disturbance's in the Biological Study Area that were mapped as of 2006 are shown in Figure 2.

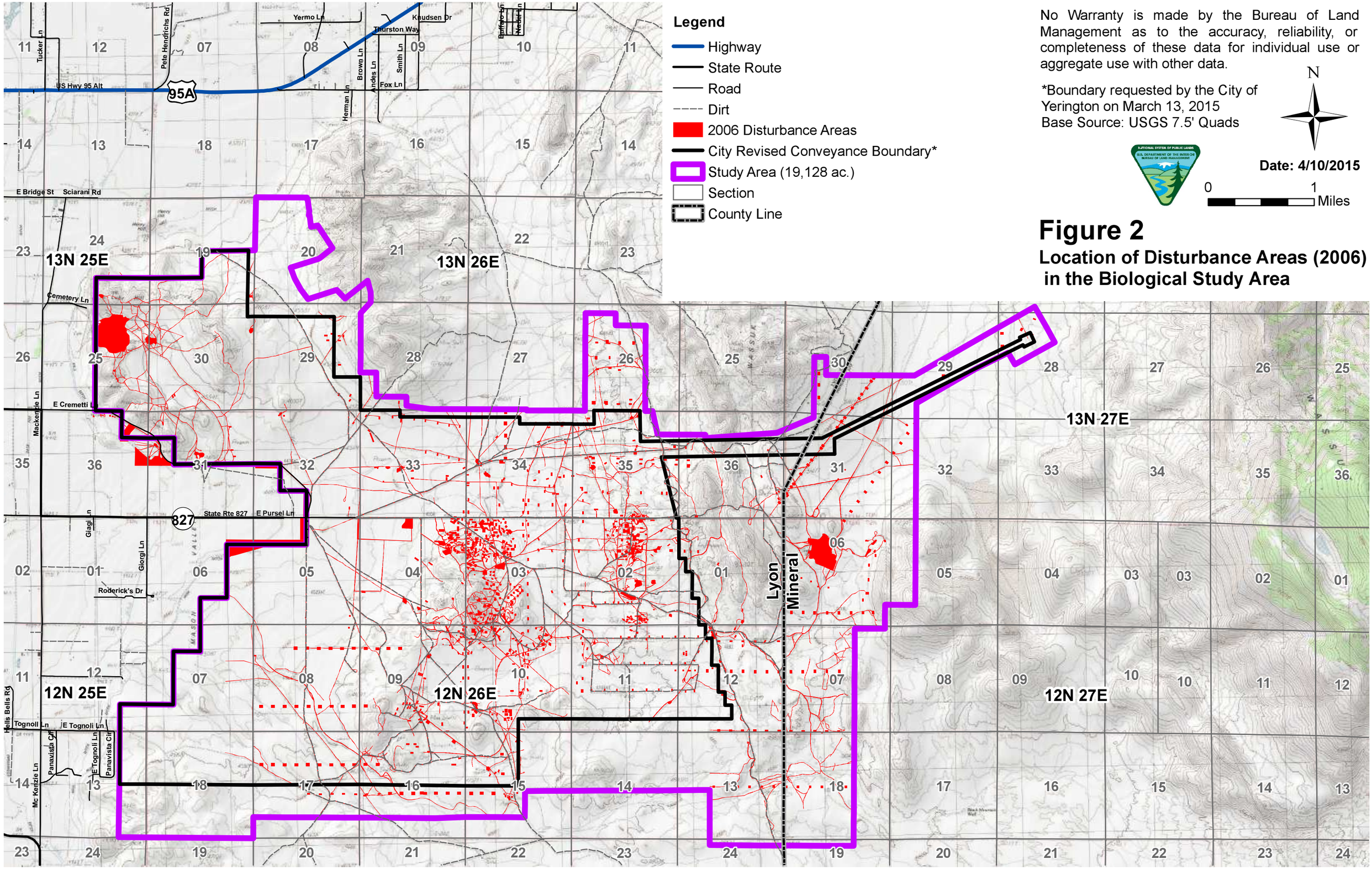


Figure 2

Location of Disturbance Areas (2006) in the Biological Study Area

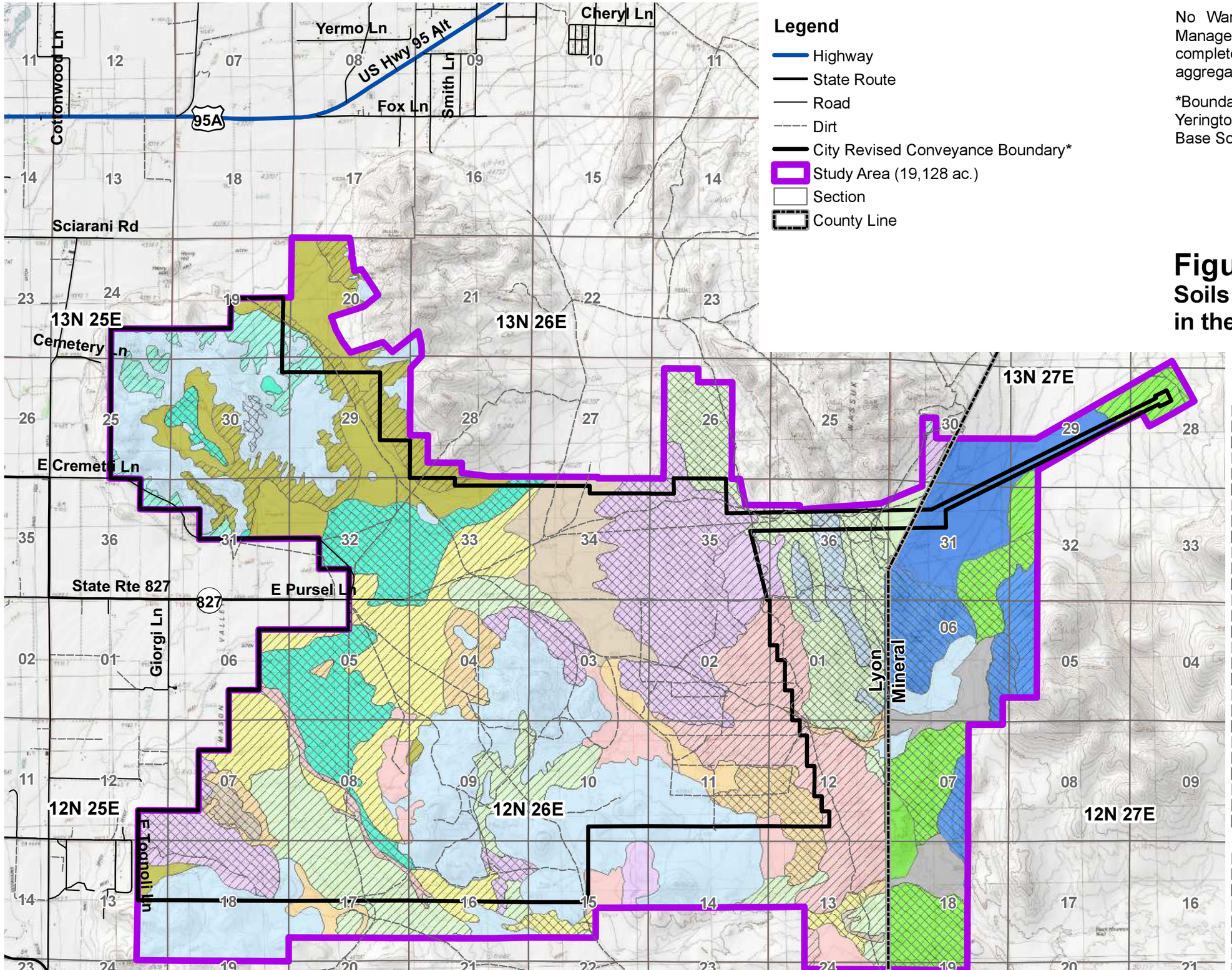
2.1 Geology

The private land areas are dominated by Quaternary alluvium, mainly alluvial fan gravel, stream-laid gravel, sand, and silt, some talus material and dune sand. The conveyance area includes a variety of geological units. The area is generally dominated by Quaternary alluvium in the low-lying areas with the following exceptions:

- T12N R26E Section 3 is dominated by the Harford Hill Rhyolite Tuff, a widespread biotite rhyolite pumice tuff-breccia and welded tuff.
- T12N R26E Sections 9, 10, and 16 include the Hartford Hill Rhyolite Tuff, Cretaceous granitic porphyry, and Triassic and Jurassic metavolcanic rocks. These include andesite breccias, tuffs, and flows, basalt, and rhyolite with interbedded volcanic-derived sedimentary rocks and limestones, metamorphosed to greenschist or higher metamorphic facies.
- The area in T13N R26E Section 32 is dominated by Quaternary fine sand, silt, and clay of river flood plains, and playa clay and sand.
- The northeast quadrant of the Biological Study Area is dominated by Hartford Hill Rhyolite Tuff and Cretaceous granite.

2.2 Soils and Ecological Site Correlations

The Biological Study Area lies within Major Land Resource Area (MLRA) 27. Two NRCS soil surveys cover this area. The majority of the area is included in *NRCS Soil Survey 625 Lyon County Area, Nevada*. The eastern edge of the Biological Study Area is included in *NRCS Soil Survey 774 Mineral County Area, Nevada*. The predominant soils types are sand, sandy loam, and gravelly sandy loam In general, soils are well drained and are slightly too strongly alkaline. NRCS soil survey map units in the Biological Study Area are shown in Figure 3.



Legend

- Highway
- State Route
- Road
- Dirt
- City Revised Conveyance Boundary*
- Study Area (19,128 ac.)
- Section
- County Line

No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

*Boundary requested by the City of Yerington on March 13, 2015
Base Source: USGS 7.5' Quads

N

Date: 4/10/2015

0 1 Miles

Figure 3
Soils and Soil Associations in the Biological Study Area

NRCS Soil Type Key

NRCS Soil Survey 625

- Cleaver gravelly sandy loam, 2 to 4 percent slopes
- Cleaver stony sandy loam, 4 to 15 percent slopes
- Gypsum land
- Juva gravelly silt loam, 0 to 2 percent slopes
- Malpais gravelly loamy sand, 2 to 8 percent slopes
- Otomo gravelly sandy loam, 4 to 15 percent slopes
- Patna fine sand, 4 to 15 percent slopes
- Patna sand, 0 to 4 percent slopes
- Patna sandy loam, occasionally flooded, 0 to 2 percent slopes
- Perazzo gravelly loam, 2 to 8 percent slopes
- Rawe gravelly sandy loam, 4 to 15 percent slopes
- Singatse-Theon association
- Theon very gravelly sandy loam, 8 to 30 percent slopes
- Theon-Olac association
- Theon-Rock outcrop-Old Camp, 50 to 75 percent slopes
- Theon-Yerington association
- Tocan gravelly sandy loam, 4 to 8 percent slopes
- Tocan sandy loam, 2 to 4 percent slopes
- Tocan-Yerington complex, 0 to 4 percent slopes
- Vylach-Weena association
- Weena-Malpais association
- Yerington gravelly sandy loam, 2 to 4 percent slopes
- Yerington gravelly sandy loam, 4 to 8 percent slopes
- Yerington loamy fine sand, 0 to 2 percent slopes
- Yerington loamy fine sand, 2 to 4 percent slopes
- Yerington loamy fine sand, 4 to 8 percent slopes
- Yerington loamy fine sand, 8 to 15 percent slopes

NRCS Soil Survey 774

- Deefan-Cleaver-Bluewing association
- Deefan-Perazzo association
- Deefan-Rawe-Bluewing association
- Perazzo-Bluewing association
- Silverbow-Rubble land-Smedley association
- Singatse-Theon-Rock outcrop association
- Theon very gravelly sandy loam, 8 to 30 percent slopes
- Trocken-Bluewing association

Document Path: R:\projects\NV_Copper\133_178_1\MXD\Presentation\BLM_4_1_15\Study_Area_Base_Soil_11x17.mxd

Yerington loamy fine sand 0-2% slope; 2-4% slope; 4-8% slope.

Sand sheets derived from eolian deposits. Soil profile: 0-8 inches moderately alkaline; 8-60 inches strongly alkaline. Well drained and classified as farmland soils of statewide importance. Ecological site: SANDY 5-8 P.Z.

Patna sand 0-4% slope

Lake plain eolian deposits over lacustrine deposits. Soil profile: 0-5 inches neutral, sand; 5-15 inches neutral, fine sandy loam; 15-60 inches moderately alkaline, sand. Somewhat excessively drained and classified as farmland of statewide importance. Ecological site: 027 SANDY 5-8 P.Z.

Theon very gravelly sandy loam 8-30% slope

Hills derived from colluvium and/or residuum weathered from volcanic rock. Soil profile: 0-2 inches slightly alkaline, very gravelly sandy loam; 20-11 inches slightly alkaline, very gravelly clay loam; 11-21 inches to bedrock. Well drained. Ecological site: 027 STONY SLOPE 4-8 P.Z.

Tocan sandy loam 2-4% slope

Alluvial fans derived from mixed alluvium. Soil profile: 0-6 inches slightly alkaline, sandy loam; 6-15 inches slightly alkaline, sandy clay loam; 15-60 inches strongly alkaline, stratified very gravelly sand to loam. Well drained and classified as prime farmland soils if irrigated and reclaimed of excess salts and sodium. Ecological site: 027 GRAVELLY LOAM 4-8 P.Z.

Tocan gravelly sandy loam 4-8% slope

Alluvial fans derived from mixed alluvium. Soil profile: 0-6 inches slightly alkaline, gravelly sandy loam; 6-15 inches slightly alkaline, sandy clay loam; 15-60 inches strongly alkaline, stratified very gravelly sand to loam. Well drained and classified as prime farmland soils if irrigated and reclaimed of excess salts and sodium. Ecological site: 027 GRAVELLY LOAM 4-8 P.Z.

Tocan-Yerington complex 0-4% slope

Alluvial flats derived from mixed alluvium. Soil composition: 50% Tocan and similar soils; 40% Yerington and similar soils; 10% Patna.

Rawe gravelly sandy loam 4-15% slope

Alluvial fans derived from mixed alluvium. Soil profile: 0-2 inches slightly alkaline, gravelly sandy loam; 1-10 inches slightly alkaline, gravelly clay; 10-60 inches strongly

alkaline, very gravelly sandy loam. Well drained and classified as farmland of statewide importance. Ecological site: 027 GRAVELLY LOAM 4-8 P.Z.

Cleaver gravelly sandy loam 2-4% slope

Alluvial fans derived from mixed alluvium. Soil profile: 0-3 inches slightly alkaline, gravelly sandy loam; 3-10 inches slightly alkaline, gravelly clay loam; 11-20 inches cemented material; 20-60 inches slightly alkaline, stratified extremely gravelly coarse sand to very gravelly sandy loam. Well drained. Ecological site: 027 GRAVELLY LOAM 4-8 P.Z.

2.3 Ecological Sites and Vegetation Types

Rangeland ecological sites are interpretive landscape units that are designated by soils, topography, and climate. Each site supports a native plant community typified by an association of species that differs from that of other range sites in the kind or proportion of species or in total production. Soils, landform, and precipitation zones in the Biological Study Area are correlated with four predominate ecological sites shown in Figure 4 and described as follows.

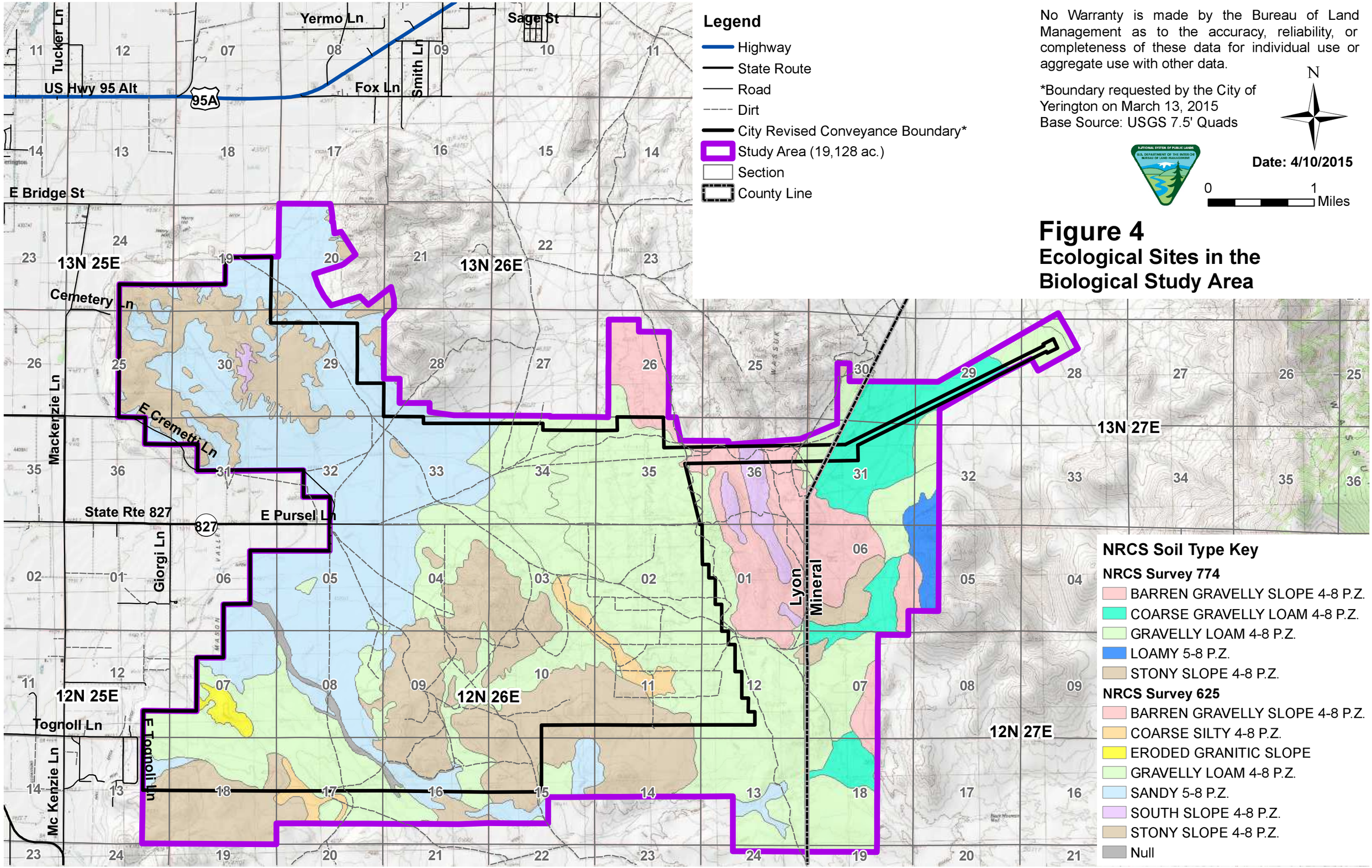


Figure 4
Ecological Sites in the Biological Study Area

Gravelly loam, 4-8 P.Z.

The potential native plant community is dominated by Bailey's greasewood (*Sarcobatus baileyi*), shadscale (*Atriplex confertifolia*), and Indian ricegrass (*Achnatherum hymenoides*). Potential vegetative composition is about 70% shrubs, 5% forbs, and 25% grasses. Other important plant species include bottlebrush squirreltail (*Elymus elymoides*), Sandberg bluegrass (*Poa sandbergii*), desert needlegrass (*Achnatherum speciosum*), globemallow (*Sphaeralcea* sp.), and bud sagebrush (*Picrothamnus desertorum).*

If ecological condition were to decline in this site, the plant composition trend in the alternative ecological states would be increased Bailey's greasewood and shadscale as Indian ricegrass and other palatable grasses and shrubs decreased.

In general, the species most likely to invade this site following unreclaimed surface disturbances are cheatgrass (*Bromus tectorum*), and annual mustards. (NRCS 2003).

Sandy 5-8 P.Z.

The potential native plant community is dominated by Indian ricegrass and fourwing saltbush (*Atriplex canescens*). Potential vegetative composition is about 75% grasses, 5% forbs, and 20% shrubs. Other important plant species include needleandthread (*Hesperostipa comata*), bottlebrush squirreltail, globemallow, winterfat *(Krascheninnikovia lanata*), Bailey's greasewood, spiny hopsage (*Grayia spinosa).*

If ecological condition were to decline in this site, the plant composition trend in the alternative ecological states would be increased Nevada dalea (Psorothamnus polydenius), Bailey's greasewood, and littleleaf horsebrush (*Tetradymia glabrata*) while Indian ricegrass, fourwing saltbush, winterfat, and needleandthread decreased. Under continued site degradation, Bailey's greasewood may dominate the plant community.

In general, the species most likely to invade this site following unreclaimed surface disturbances are annual mustards and Russian thistle (NRCS 2003).

Stony slope 4-8 P.Z.

The potential natural plant community is dominated by Bailey's greasewood, shadscale, and Indian ricegrass. Potential vegetative composition is about 25% grasses, 5% forbs, and 70% shrubs. Other important plant species include desert needlegrass, bottlebrush squirreltail, globemallow, princesplulme (*Stanleya* sp.), bud sagebrush, Nevada ephedra (*Ephedra nevadensis*), and spiny hopsage.

If ecological condition were to decline in this site, the plant composition trend in the alternative ecological states would be increased shadscale, littleleaf horsebrush, and Bailey's greasewood as Indian ricegrass decreased.

In general, the species most likely to invade this site following unreclaimed surface disturbances is cheatgrass (NRCS 2003).

Barren gravelly slope 4-8 P.Z.

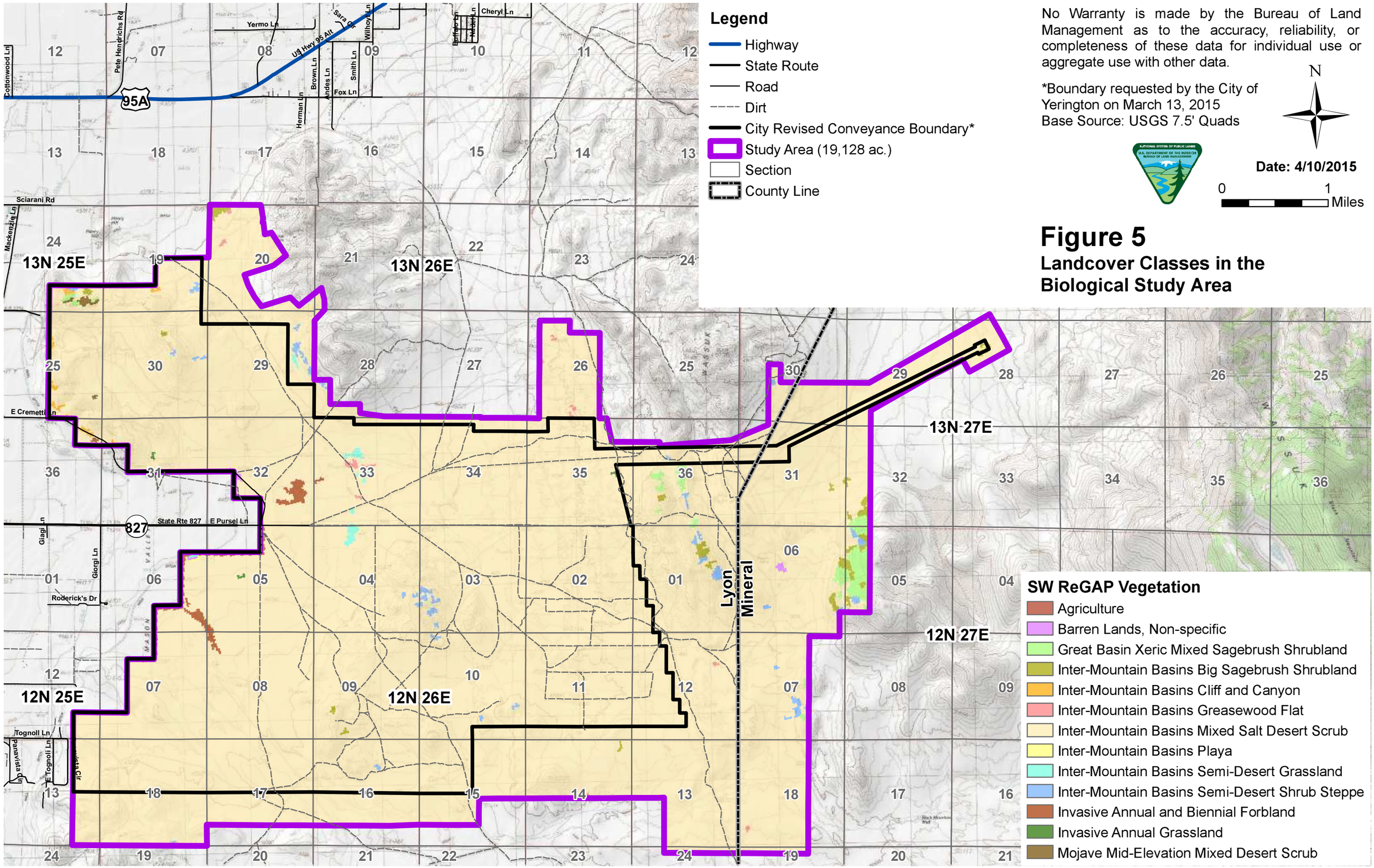
The potential natural plant community is dominated by shadscale and Indian ricegrass. Potential vegetative composition is about 25% grasses, 5% forbs, and 70% shrubs. Other important plant species include desert needlegrass, bottlebrush squirreltail, galleta (*Hilaria jamesii*), buckwheat (*Eriogonum* sp.), bud sagebrush, Bailey's greasewood, winterfat, spiny hopsage, littleleaf horsebrush, and Douglas rabbitbrush (*Chrysothamnus viscidiflorus).*

If ecological condition were to decline in this site, the plant composition trend in the alternative ecological states would be increased horsebrush and Douglas rabbitbrush as shadscale and perennial grasses decreased.

In general, the species most likely to invade this site following unreclaimed surface disturbances are cheatgrass and annual mustards (NRCS 2003).

2.4 Vegetation Landcover

The Biological Study Area is located in the Great Basin major phytogeographic region and the Eastern Sierra Nevada Ranges minor phytogeographic region of northern Nevada (NNHP 2001a). The Southwest Regional Gap (SWReGAP) Analysis Project landcover class map shows nearly the entire area characterized as Intermountain Basins Mixed Salt Desert Scrub with very small inclusions of Great Basin Xeric Mixed Sagebrush Shrubland, Intermountain Basins Big Sagebrush Shrubland, and Intermountain Basins Semi-Desert Shrub Steppe in the Wassuk Range as shown in Figure 5.



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

*Boundary requested by the City of Yerington on March 13, 2015
Base Source: USGS 7.5' Quads

N

Date: 4/10/2015

0 1 Miles

Figure 5

Landcover Classes in the Biological Study Area

3.0 AGENCY BACKGROUND INFORMATION

3.1 Nevada Natural Heritage Program (NNHP)

The Nevada Natural Heritage Program database was queried to identify known locations of special status species in the vicinity of the Biological Study Area. The NNHP November 2014 response confirmed no documented occurrences of federally listed taxa within a 1.2 mile (two-kilometer) radius of the Biological Study Area (Appendix A). The NNHP database search identified one plant species and three bat species shown in Table 1 as at-risk taxa within the vicinity of the Biological Study Area.

Table 1. At-risk taxa recorded near the Biological Study Area (NNHP 2014).

Common Name	Scientific Name	Date Last Observed	Status*
Plants	blank	blank	blank
Lahontan Basin buckwheat	*Eriogonum rubricaule*	2008	S3
Nevada suncup	*Camissonia nevadensis*	Not given	Determined to be vulnerable by the Nevada Natural Heritage Program
Mammals	*blank*	blank	blank
Townsend's big-eared bat	*Corynorhinus townsendii*	1969	BLM Sensitive NV, CA State Protected; S2
Western small-footed myotis	*Myotis ciliolabrum*	1969	BLM Sensitive; S3
Western pipistrelle	*Parastrellus hesperus*	1939	BLM Sensitive; S4

* State rank indicator based on distribution in Nevada:
S2 – Imperiled due to rarity or other demonstrable factors
S3 – Vulnerable to decline because rare and local throughout its range; or with very restricted range
S4 - Long-term concern, though now apparently secure; usually rare in parts of its range, especially at its periphery

3.2 Nevada Department of Wildlife (NDOW)

An inquiry was made with the Nevada Department of Wildlife (NDOW) to identify wildlife species of concern in the vicinity of the Biological Study Area. The NDOW response is included in Appendix A. To adequately provide the following wildlife information, NDOW delineated an area of interest that included a four-mile (6.4 kilometer) buffer area around the Biological Study Area. NDOW reported the following results.

Mule deer

Occupied mule deer distribution exists within the four-mile buffer around the Biological Study Area along the west perimeter, but outside of the area boundary.

Pronghorn Antelope, Elk, Bighorn Sheep

No known occupied habitat for pronghorn antelope, elk, or bighorn sheep occurs in the vicinity of the Biological Study Area.

Greater sage-grouse

Greater sage-grouse habitat within the four-mile buffer around the Biological Study Area is primarily categorized as unsuitable habitat. A small extent of Low Value Habitat/Transitional Range exists east of the Biological Study Area in the Wassuk Range and south of the Biological Study Area in the Gray Hills.

Raptors

Various species of raptors, which use diverse habitat types, are known to reside in the vicinity of the Biological Study Area. American kestrel, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, prairie falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, Swainson's hawk, turkey vulture, and western screech owl have distribution ranges that include the four-mile buffer area. Bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan (NDOW 2012).

Thirty-two known raptor nest sites were recorded within ten miles of the Biological Study Area between 1975 and 2011. According to NDOW records, none of these nests have been identified as active since 1987.

General Wildlife

Other wildlife species known to occur within the vicinity of the Biological Study Area are listed in Table 2.

Table 2. Wildlife species that have been observed in the vicinity of the Biological Study Area (NDOW 2014).

Common Name	*Scientific Name*
Amphibians	blank
California toad	*Anaxyrus boreas halophilus*
Birds	blank
Greater roadrunner	*Geococcyx californianus*

Snowy egret	*Egretta thula*
Brant	*Branta bernicla*
Northern flicker	*Colaptes auratus*
White-faced ibis	*Plegadis chihi*
Fish	blank
Tahoe sucker	*Catostomus tahoensis*
Reptiles	blank
Great Basin whiptail	*Aspidoscelis tigris*
Zebra-tailed lizard	*Callisaurus draconoides*
Great Basin rattlesnake	*Crotalus oreganus lutosus*
Great Basin collared lizard	*Crotaphytus bicinctores*
Long-nosed leopard lizard	*Gambelia wislizenii*
Common kingsnake	*Lampropeltis getula*
Desert horned lizard	*Phrynosoma platyrhinos*
Northern desert horned lizard	*Phrynosoma platyrhinos platyrhinos*
Western fence lizard	*Sceloporus occidentalis*
Great Basin fence lizard	*Sceloporus occidentalis longipes*
Yellow-backed spiny lizard	*Sceloporus uniformis*
Western patch-nosed snake	*Salvadora hexalepis*
Variable ground snake	*Sonora semiannulata*
Common side-blotched lizard	*Uta stansburiana*
Nevada side-blotched lizard	*Uta stansburiana nevadensis*
Mammals	blank
Merriam's kangaroo rat	*Dipodomys merriami*
North American deer mouse	*Peromyscus maniculatus*
Pinyon deermouse	*Peromyscus truei*
Western harvest mouse	*Reithrodontomys megalotis*
Golden-mantled ground squirrel	*Spermophilus canus*
Douglas' squirrel	*Tamiasciurus douglasii*
Chipmunk (unknown)	Not specified
Coyote	*Canis latrans*
Mountain lion	*Felis concolor*
North American river otter	*Lontra canadensis*

3.3 US Fish and Wildlife Service (FWS)

The US Fish and Wildlife Service (FWS) was queried for information on federally listed threatened, endangered, and candidate species and critical habitat within Lyon and Mineral counties, Nevada. The FWS November 2014 response (Appendix A) provided the following list of threatened and candidate species that may occur within Lyon and Mineral counties (Table 3). Proposed critical habitat for the Bi-State distinct population segment

(DPS) of greater sage-grouse (hereafter referred to as Bi-state sage-grouse) was also identified in the response for Lyon and Mineral counties.

Table 3. Federally listed threatened, endangered, and candidate species that occur within Lyon and Mineral counties, Nevada.

Species	Population	Listing Status
Columbia spotted frog (*Rana luteiventris)*	Great Basin	Candidate
Greater sage-grouse (*Centrocercus urophasianus*)	Bi-State	Proposed Threatened
Greater sage-grouse (*Centrocercus urophasianus*)	Entire	Candidate
Yellow-billed Cuckoo (*Coccyzus americanus)*	Western U.S.	Threatened
Lahontan cutthroat trout (*Oncorhynchus clarkii* ssp. *henshawi)*	Entire	Threatened
Cui-ui (*Chasmistes cujus)*	Entire	Endangered

Columbia spotted frog

The Columbia spotted frog is an aquatic amphibian that requires water such as lakes, ponds, slow moving streams, and marshes. There is no aquatic habitat or wet riparian corridors in the Biological Study Area and no potential habitat for Columbia spotted frog.

Greater sage-grouse / Greater sage-grouse Bi-State DPS

The greater sage-grouse is a sagebrush obligate species that utilizes large, continuous expanses of sagebrush habitat year round. There are no large expanses of sagebrush habitat in the Biological Study Area and no potential habitat for greater sage-grouse.

In October 2013, the FWS published a proposed rule to list the Bi-state sage-grouse as a threatened species. FWS also proposed critical habitat for the Bi-state sage-grouse that does not extend within or near the Biological Study Area (Figure 6). A final rule on the status of the Bi-State sage-grouse listing and its critical habitat is pending.

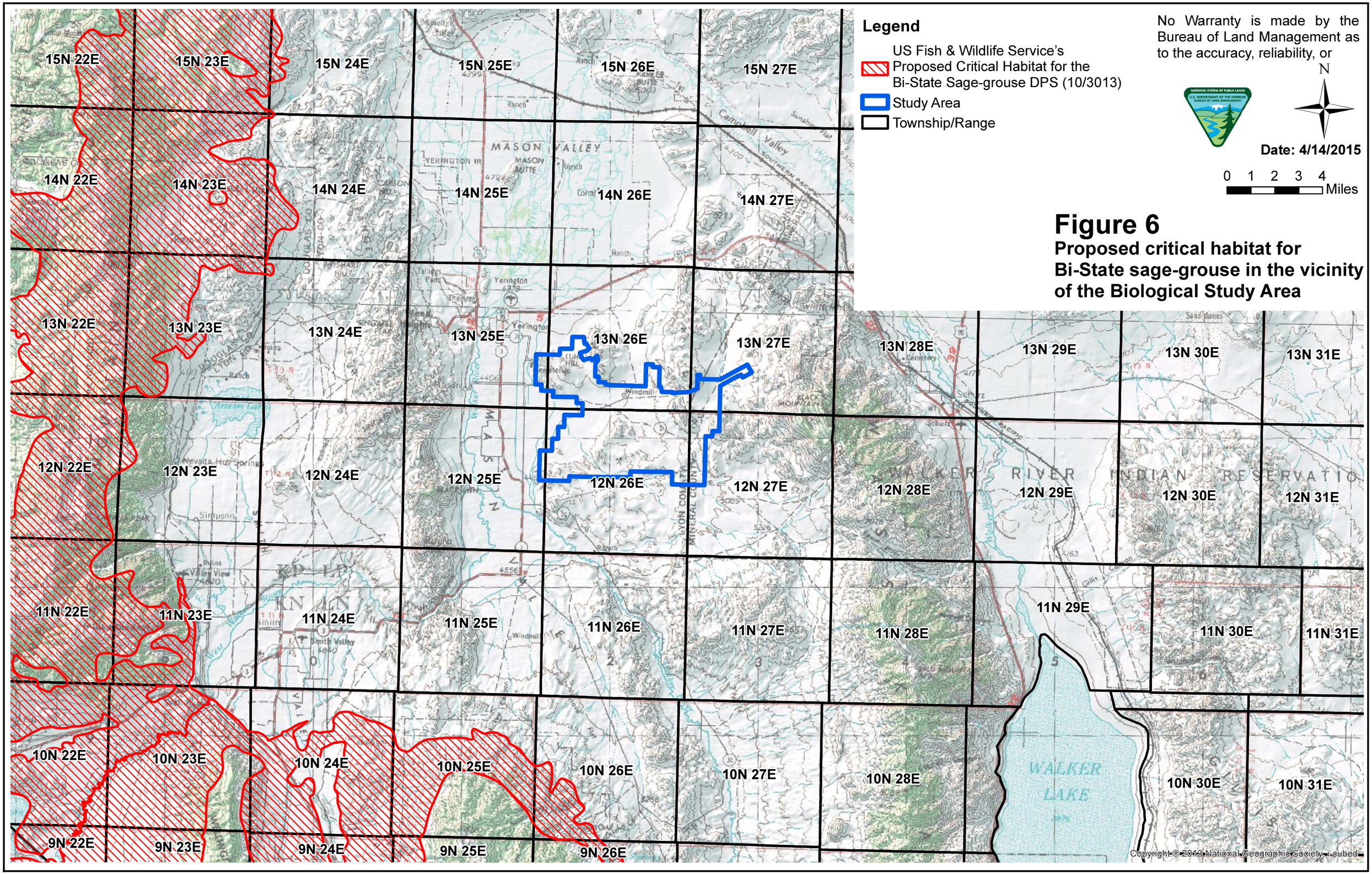


Figure 6

Proposed critical habitat for Bi-State sage-grouse in the vicinity of the Biological Study Area

Yellow-billed cuckoo

The western yellow-billed cuckoo breeds in riparian habitat along low-gradient (less than three percent slope) rivers and streams. Yellow-billed cuckoo require large tracts of willow-cottonwood or mesquite forest or woodland. The optimal patch size for breeding is generally greater than 200 acres in extent with a dense canopy closure and high foliage volume of willows and cottonwood. There is no willow-cottonwood or tamarisk habitat in the Biological Study Area and no potential habitat for yellow-billed cuckoo.

In August 2014 the FWS published a proposed rule to designate critical habitat for the western DPS of the yellow-billed cuckoo. Proposed critical habitat does not extend within or near the Biological Study Area; it occurs along the Carson River near the Lahontan Reservoir. A final rule on designation of critical habitat is pending.

Lahontan cutthroat trout / Cui-ui

Lahontan cutthroat trout and cui-ui are fish species that are dependent upon aquatic habitat. There is no aquatic habitat and no potential for Lahontan cutthroat trout or cui-ui in the Biological Study Area.

Migratory Birds

The FWS Information, Planning, and Conservation System (IPAC) was queried for a list of migratory bird species of concern for Lyon and Mineral counties. The results are included in Appendix A. The habitat assessment for migratory birds on the FWS county lists and the potential for their occurrence in the Biological Study Area are discussed in Table 4.

3.4 Bureau of Land Management (BLM)

In 2011, the Nevada list of BLM Sensitive Species was updated (BLM 2011). The BLM provided the Sensitive Species List for the BLM Carson City District and the BLM NV Statewide Sensitive Species List. Habitat descriptions for each species on both lists were compiled from technical references, the Nevada Wildlife Action Plan, and other readily available web-based information such as the Nevada Natural Heritage Program Nevada Rare Plant Atlas (NNHP 2001b). Species information and photographs were analyzed in conjunction with SWReGAP landcover maps (USGS 2004), soil surveys (Soils Survey Staff NRCS 2013), geologic maps (USGS 1978), ecological site descriptions (Soils Survey Staff NRCS), and satellite imagery (Google Earth) to identify potential habitat for BLM sensitive species within the Biological Study Area. The resulting habitat assessment is included in Table 4.

Table 4. Habitat assessment and analysis for sensitive species, migratory birds, and bird species of conservation concern from US Fish and Wildlife Service and BLM Carson City District and BLM Statewide lists.

Species	Status	Habitat	Habitat present?	Primary source
PLANTS	Blank	Blank	Blank	blank
Eastwood milkweed, *Asclepias eastwoodiana*	BLM Sensitive	Occurs in small washes or other moisture-accumulating microsites, in the shadscale, mixed-shrub, sagebrush, and lower piñon–juniper zones. NV endemic. Esmeralda, Lincoln, Lander, Nye counties. 4,680–7,080 ft. (1,426–2,158 m).	May occur, however not know to occur in Lyon or Mineral counties.	NNHP 2001b
Margaret rushy milkvetch, *Astragalus convallarius* var. *margaretiae*	BLM Sensitive	Rocky slopes and flats in sagebrush in pinyon–juniper and sagebrush communities. 4,592-7,872 ft. (1,400–2,400 m).	No. There is no big sagebrush or pinyon-juniper slopes or flats in the Biological Study Area.	NNHP 2001b
Sodaville milkvetch, *Astragalus lentiginosus* var. *sesquimetralis*	BLM Sensitive State CE	Occurs almost always under natural conditions in wetlands, meadows, seeps, and riparian areas. Known from Mineral and Nye counties, also in CA. 3,132-3,198 ft. (955–975 m).	No. There are no wetlands or riparian areas present in the Biological Study Area.	Calflora; CNPS
Lavin eggvetch, *Astragalus oophorus* var. *lavinii*	BLM Sensitive	Occurs in open, dry, relatively barren gravelly clay slopes, knolls, badlands, or outcrops derived from volcanic ash or carbonate. It is usually found on northeast to southeast aspects, in openings in the pinyon–juniper or sagebrush zones. Known from Douglas, Lyon, and Mineral counties and also in CA. 5,700–7,467 ft. (1,737–2,276 m).	No. There are no clay slopes, knolls or badlands in the Biological Study Area and no sagebrush or pinyon-juniper habitat in the Biological Study Area.	Calflora; NNHP 2001b
Tonopah milkvetch, *Astragalus pseudiodanthus*	BLM Sensitive	Sand dunes and deep sand with *Sarcobatus vermiculatus* and salt tolerant plants. Known from Churchill, Esmeralda, Nye counties, potentially Mineral County and in California. 4,526-6,002 ft. (1,380–1,830 m).	May occur in sandy habitat, however not know to occur in Lyon County.	NNHP 2004b
Ames milkvetch, *Astragalus pulsiferae* var. *pulsiferae*	BLM Sensitive	Occurs in Great Basin scrub and lower montane coniferous forest, and pinyon and juniper woodlands primarily on decomposed granite, or sandy or rocky soils. Washoe County and also in CA. 4,160–5,760 ft. (1,268–1,756 m).	No. There is no Great Basin scrub, lower montane forest, or pinyon-juniper woodlands in the Biological Study Area.	Calflora; BLM Eagle Lake FO

Species	Status	Habitat	Habitat present?	Primary source
Bodie Hills rockcress, *Boechera bodiensis*	BLM Sensitive	Pinyon–juniper community on rolling to steep topography in andesitic soils at elevations of 8,200–10,168 ft. (2,500–3,100 m).	No. There is no pinyon-juniper habitat or andesitic soils in the Biological Study Area which is well below the known elevation range for the species.	Calflora; BLM 2010
Bodie Hills draba, *Cusickiella quadricostata*	BLM Sensitive	Great Basin scrub, pinyon and juniper woodland; clay or rocky sites. Douglas, Lyon, Mineral counties and also in CA. 6,200–8,500 ft. (1,890–2,591 m).	No. There is no Great Basin scrub or pinyon-juniper habitat in the Biological Study Area.	Calflora; NNHP 2001b
Windloving buckwheat, *Eriogonum anemophilum*	BLM Sensitive	High elevation exposed, relatively barren dry, gravelly, ridgeline knolls and outcrops. Low elevations on dry barren and undisturbed knolls in stiff clay soils. 4,750-9,836 ft. (1,448-3,998 m).	No. There are no low elevation dry barren and undisturbed knolls in stiff clay soils in the Biological Study Area.	NNHP 2001b
Beatley buckwheat, *Eriogonum beatleyae*	BLM Sensitive	Dry volcanic outcrops in sagebrush scrub. Known from Churchill, Esmeralda, Eureka, Lander (?), Mineral, and Nye counties, Nevada; also known in CA. 5,600–8,745 ft. (1,707–2,665 m).	No. There are no dry volcanic outcrops or sagebrush scrub habitat in the Biological Study Area.	Calflora; NNHP 2001b
Churchill narrows buckwheat, *Eriogonum diatomaceum*	BLM Sensitive	Occurs on silty diatomaceous deposits of the Coal Valley Formation appearing as white, chalky slopes, in saltbush communities. Known only from a few scattered populations in the Churchill Narrows area south of Fort Churchill State Park in Lyon County. 4,264–4,592 ft. (1,300–1,400 m).	No. There are no silty diatomaceous deposits within the Biological Study Area.	Flora of N. America
Steamboat buckwheat, *Eriogonum ovalifolium* var. *williamsiae*	BLM Sensitive	Occurs on young, shallow, poorly developed, dry soils derived from siliceous opaline sinter precipitated by past thermal spring flows, but not currently near surface water. Dependent on wetland margin areas. Known from Washoe County. 4,565–4,720 ft. (1,391–1,439 m).	No. There are no historic thermal springs and no wetlands within the Biological Study Area.	NNHP 2001b
Lahontan Basin buckwheat, *Eriogonum rubricaule*	BLM Sensitive NNHP S3	Dry, open, light-colored, strongly alkaline shrink-swell clay soils on bluffs and badlands derived from fluviolacustrine silt, volcanic ash, or diatomite deposits, sometimes perched on dark basaltic slopes, in the shadscale, mixed-shrub, and lower sagebrush zones. Churchill, Esmeralda, Humboldt, Lander, Lyon, Mineral, Nye, Pershing counties. 4,100-4,920 ft. (1,250-1,500 m).	No. There are no strongly alkaline clay soils or badlands in the Biological Study Area.	NNHP No date.

Species	Status	Habitat	Habitat present?	Primary source
Altered andesite buckwheat, *Eriogonum robustum*	BLM Sensitive	Occurs on soils derived from weathering of hydrothermal sulfide deposits formed in andesite, or sometimes in rhyolitic or granitoid rocks, forming on ridges, knolls, and steep slopes on all aspects supporting a sparse, stunted relict woodland of yellow pines (*Pinus ponderosa* and/or *P. jeffreyi*) and piñon pine, with an equally sparse understory. Storey and Washoe counties. 4,410–7,325 ft. (1,344–2,233 m).	No. There are no soils derived from weathering hydrothermal sulfide deposits within the Biological Study Area.	NNHP 2001b
Smooth dwarf greasebush, *Glossopetalon pungens*, var. *glabrum*	BLM Sensitive	Crevices of carbonate cliffs and outcrops, generally avoiding southerly exposures, in the pinyon-juniper, mountain mahogany, and montane conifer zones. Known from Clark County. 6,000–7,800 ft. (1,829–2,377 m).	No. There are no cliffs or carbonate outcrops within the Biological Study Area.	NNHP 2001b
Rough dwarf greasebush, *Glossopetalon pungens*, var. *pungens*	BLM Sensitive	Crevices of carbonate cliffs and outcrops, generally avoiding southerly exposures, mainly in the lower piñon–juniper and montane conifer zones. Known from Clark and Nye counties. 4,400–7,800 ft. (1,341–2,377 m).	No. There are no carbonate cliffs or outcrops in the Biological Study Area.	NNHP 2001b
Sand cholla, *Grusonia pulchella*	BLM Sensitive	Sand dunes and deep sand. 3,936-6,297 ft. (1,200–1,920 m).	Yes.	NNHP 2004b
Sierra Valley mousetails, *Ivesia aperta* var. *aperta*	BLM Sensitive	Occurs in wetlands, vernal flats, and meadows where soils are saturated in the spring in sagebrush scrub, yellow pine forest, mountain mahogany, and northern juniper woodland sites. Dependent on wetland margin areas in Storey and Washoe counties; also known in CA. 6,460–7,300 ft. (1,969–2,225 m).	No. No wetlands or meadows present in the Biological Study Area which is below the known elevational range for the species.	Calflora; NNHP 2001b
Pine Nut Mountains mousetails, *Ivesia pityocharis*	BLM Sensitive	Seasonally or periodically wet, otherwise moist to dry decomposed granite soils or sod of meadow margins with shallow underlying water table and/or bedrock, associated with springs, moist drainages, or ephemeral ponds. Aquatic or wetland-dependent. Douglas County. 6,990–8,550 ft. (2,131–2,606 m).	No. There are no shallow water tables, springs, or ephemeral ponds present in the Biological Study Area which is below the known elevational range for the species.	NNHP 2001b

Species	Status	Habitat	Habitat present?	Primary source
Webber ivesia, *Ivesia webberi*	BLM Sensitive	Known in Nevada from the Pine Nut and Carson Ranges and Peavine Mountain. It is restricted to shallow, clayey soils derived from andesitic rock with a rocky pavement-like surface. Occupied low sagebrush sites are restricted to mid-elevation flats, benches, or terraces with no colluvial accumulations. Douglas and Washoe counties. 4,000–5,950 ft. (1,219–1,813 m).	No. There are no shallow clayey soils or low sagebrush habitat present in the Biological Study Area.	NNHP 2001b
Sagebrush pygmyleaf, *Loeflingia squarrosa* var. *artemisiarum*	BLM Sensitive	Occurs in moist, sandy soils of desert dunes and flats in Great Basin sagebrush scrub and Mojave desert scrub in sagebrush and rabbitbrush scrub communities. 2,300– 5,300 ft. (700–1,615 m).	Not likely to occur. There is no sagebrush scrub or Mojave desert scrub habitat in the Biological Study Area.	Calflora; Greene and Sanders
Tiehm blazingstar, *Mentzelia tiehmii*	BLM Sensitive	Known to occur on gypsum spring mounds near the Kirch Wildlife Management Area in White River Valley, Northeastern Nye County, and Lincoln County. 4,950 ft. (1,509 m).	No. There are no gypsum spring mounds in the Biological Study Area which is outside the known distribution of this species.	Center for Plant Conservation
Shevock bristlemoss, *Orthotrichum shevockii*	BLM Sensitive	Found on granitic rock in Joshua tree woodland and pinyon–juniper woodland. 2,461-6890 ft. (759–2,100 m).	No. There is no granitic rock habitat within the Biological Study Area.	Calflora; CNPS
Oryctes, *Oryctes nevadensis*	BLM Sensitive	Sand dunes and deep sands. With halophytic plants. Known to occur in Churchill, Humboldt, Pershing, Washoe, and potentially Esmeralda, and Storey counties and in California. 3,903-5,970 ft. (1,190–1,820 m).	May occur in sand habitat however not known to occur in Lyon County.	NNHP 2004b
Nevada dune beardtongue, *Penstemon arenarius*	BLM Sensitive	Sand dunes and deep sand. Often in alkaline habitats with halophytic plants. Nevada endemic in Churchill, Mineral, Nye counties. 3,903-5,970 ft. (1,190-1,820 m).	Yes.	NNHP 2004b
Lahontan beardtongue, *Penstemon palmeri* var. *macranthus*	BLM Sensitive	Washes, roadsides, canyon floors. Often on carbonate substrates. Nevada endemic known to occur in Churchill, Pershing, Nye, and potentially Lander counties. 3,411-4,559 ft. (1,040–1,390 m).	No. No carbonate substrates or canyons in the Biological Study Area and not known to occur in Lyon County.	NNHP 2001b

Species	Status	Habitat	Habitat present?	Primary source
Wassuk beardtongue, *Penstemon rubicundus*	BLM Sensitive	Occurs in open, rocky to gravelly soils on perched tufa shores, steep decomposed granite slopes, rocky drainage bottoms, and roadsides or other recovering disturbances with enhanced runoff, locally abundant on recent burns, in the pinyon–juniper, sagebrush, and upper mixed-shrub and shadscale zones. Nevada endemic known from Douglas, Esmeralda, Mineral counties. 4,220–6,850 ft. (1,286–2,088 m).	May occur on gravelly sandy loam soils, however not know to occur in Lyon County.	NNHP 2001b
Playa phacelia, *Phacelia inundata*	BLM Sensitive	Alkali playas and seasonally inundated areas with clay soils. 4,920-5,740 ft. (1,500-1,750 m).	No. There are no playas or seasonally inundated clay soils in the Biological Study Area.	NNHP 2001b
Mono County Phacelia, *Phacelia monoensis*	BLM Sensitive	Alkaline, barren or sparsely vegetated shrink-swell clays of mostly andesitic origin, on various slopes and aspects, mostly on stabilized or low-intensity artificial or natural disturbances. Most abundant on road berms, less frequently on naturally eroding badlands in the pinyon–juniper and mountain sagebrush zones. Esmeralda, Lyon, and Mineral counties. 5,920–9,055 ft. (1,804–2,760 m).	No. No alkaline, barren shrink-swell clays or pinyon-juniper or mountain sagebrush habitat in the Biological Study Area.	NNHP 2001b
Washoe pine, *Pinus ponderosa* ssp. washoensis	BLM Sensitive	Washoe pine occurs in three mountain ranges on the western rim of the Great Basin in northeastern California and northwestern Nevada. It occupies a few square miles on the east slopes of Mount Rose, Nevada and can be found in small stands in the southern Warner Mountains and in the Bald Mountain range of northeastern California. Isolated stands have been reported in Oregon and British Columbia.	No. The Biological Study Area is not within the known distribution of the species. There are no 3-needle pines in the Biological Study Area.	USFS
Altered andesite popcorn flower, *Plagiobothrys glomeratus*	BLM Sensitive	Restricted to shallow, rocky, highly acidic small-cone soils derived from hydrothermally altered andesite and occasionally in rhyolitic or granitic rocks with a sparse and stunted relict woodland mainly of Jeffrey and/or ponderosa pine and singleleaf piñon pine. 4,850-6,650 ft. (1,478-2,027 m).	No. No altered andesitic soils are present in the Biological Study Area.	NNHP 2001b

Species	Status	Habitat	Habitat present?	Primary source
Williams combleaf, *Polyctenium, williamsii*	BLM Sensitive	Occurs almost entirely within relatively barren sandy to sandy-clay or mud margins and bottoms of non-alkaline seasonal lakes and playas perched over siliceous volcanic bedrock in sagebrush, piñon–juniper, and mountain sagebrush zones. 5,670-8,930 ft. (1,728-2,722 m).	No. There are no non-alkaline seasonal lakes or playas present in the Biological Study Area.	NNHP 2001b
Masonic Mountain jewelflower, *Streptanthus oliganthus*	BLM Sensitive	Pinyon and juniper woodland volcanic or granitic, rocky outcrops. Known from Esmeralda, Lyon, and Mineral counties. 6,800–8,770 ft. (2,073–2,673 m).	No. There are no pinyon-juniper woodlands present in the Biological Study Area which is below the known elevational range for the species.	NNHP 2001b
Tiehm peppercress, *Stroganowia tiehmii*	BLM Sensitive	Dry, open, very rocky clay soils or soil pockets in or near scree, talus, or boulder fields derived from basalt, or other volcanic rocks, and/or in the sagebrush, upper shadscale, and lower juniper woodland zones. 4,820–6,170 ft (1,469–1,881 m).	No. There is no talus, boulder fields, or scree habitat in the Biological Study Area.	NNHP 2001b
MOLLUSKS	blank	Blank	Blank	Blank
Cain Spring pyrg, *Pyrgulopsis pictilis ovate*	BLM Sensitive	Wetland and aquatic habitats.	No. No wetland or aquatic habitats in Biological Study Area.	NNHP 2004a
Wongs pyrg, *Pyrgulopsis wongi*	BLM Sensitive	Found in springs in Douglas, Esmeralda, and Mineral counties, NV.	No. No wetland or aquatic habitats in the Biological Study Area.	NNHP 2004a
INSECTS	blank	Blank	Blank	Blank
Hardy's aegialian scarab, *Aegialia hardyi*	BLM Sensitive	Sand dunes and deep sands.	No. Known only from Sand Mountain area in Churchill County 45 miles from Biological Study Area. Biological Study Area is not within species range.	NNHP2004b
Sand Mountain pygmy scarab beetle, *Coenonycha pygmaea*	BLM Sensitive	unavailable	No. Known only from Sand Mountain. Biological Study Area is out of species range	BLM WDO 2011
Early blue, Euphilotes enoptes, primavera	BLM Sensitive	unavailable	No. Known only from Mineral County. Biological Study Area is out of species range.	BLM WDO 2011

Species	Status	Habitat	Habitat present?	Primary source
Sand Mountain blue, *Euphilotes pallescens arenamontana*	BLM Sensitive	Sand dunes. Known only from Sand Mountain in NV. Larval food plant Kearney buckwheat (*Eriogonum nummulare*).	No. Known only from Sand Mountain. Biological Study Area is out of species range.	NNHP2004b
Great Basin small blue, *Philotiella speciosa septentrionalis*	BLM Sensitive	Deserts, edges of dry desert lakes, stream edges in foothills. *Oxytheca* and *Eriogonum* larval food plants.	No. There are no dry desert lakes or streams in the Biological Study Area.	BLM WDO 2011; BMNA 2011
Carson wandering skipper, *Pseudocopaeodes eunus obscurus*	BLM Sensitive	Grassland habitats in alkaline substrates.	No. Species is only known to occur in Nevada in Warm Springs Valley north of Reno. Biological Study Area is not within know species range.	Lowden 2011
Carson Valley silverspot, *Speyeria nokomis carsonensis*	BLM Sensitive	Wet meadows and other mesic habitats.	No. Known only to occur in the Carson River drainage in Douglas and Alpine Counties. Biological Study Area is not within the species range.	Lowden 2011
FISHES	blank	Blank	Blank	Blank
Cui-ui, *Chasmistes cujus*	BLM Sensitive	Aquatic. Very limited distribution occurring only in Pyramid Lake.	No. No water bodies in the Biological Study Area.	USFWS 2010
Wall Canyon sucker, *Catastomus* sp.1	BLM Sensitive	Aquatic.	No. No water bodies in the Biological Study Area.	
Hiko White River springfish, *Crenichthys baileyi grandis*	BLM Sensitive	Aquatic.	No. No water bodies present in the Biological Study Area.	USFWS no date
Railroad Valley springfish, *Crenichthys nevadae*	BLM Sensitive	Aquatic.	No. No water bodies in the Biological Study Area.	USFWS 2010
Lahontan cutthroat trout, *Oncorhynchus clarkii henshawi*	BLM Sensitive	Aquatic.	No: No water bodies in the Biological Study Area.	USFWS NVFWO 2011
AMPHIBIANS	blank	Blank	Blank	Blank

Species	Status	Habitat	Habitat present?	Primary source
Dixie Valley [Hot Springs] toad, *Bufo sp.1*	BLM Sensitive	Breeding habitat is aquatic. Later in the year, they are often found in more terrestrial habitats, although often in damp areas or near water.	No. There is no aquatic habitat in the Biological Study Area.	Amphibiaweb
Mountain yellow-legged frog (Sierra NV population), *Rana muscosa*	BLM Sensitive	A member of the mountain yellow-legged frog complex which is comprised of two species: *Rana muscosa* and *Rana sierrae*. Both species are highly aquatic and are always found within a meter or two from the edge of water.	No. No aquatic habitat present in the Biological Study Area.	Amphibiaweb
Northern leopard frog, *Rana pipiens*	BLM Sensitive	A variety of slow moving aquatic habitats.	No. No aquatic habitat in the Biological Study Area.	NDOW 2011
REPTILES	blank	Blank	Blank	Blank
Shasta alligator lizard, *Elgaria coerulea shastensis*	BLM Sensitive	Occurs in woodland, forests, grassland, and coastal chaparral. Commonly found hiding under rocks, logs, bark, boards, trash, or other surface cover. Prefers wetter and cooler habitats but generally found near sunny clearings.	No. No forests or woodlands in the Biological Study Area.	California Herps 2011
MAMMALS	blank	Blank	Blank	Blank
Pallid bat, *Antrozous pallidus*	BLM Sensitive	Arid regions with rocky outcroppings, in pinyon-juniper, blackbrush, creosote, sagebrush, and salt desert scrub habitats, often near water. Day roosts in rock crevices, buildings, caves, mines, and rock piles. Night roosts commonly under bridges.	Not likely to occur. No open water in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
Pygmy rabbit, *Brachylagus idahoensis*	BLM Sensitive	Mature sagebrush, shrub-steppe with deep sands.	No. There are no suitable dense sagebrush stands within the Biological Study Area.	IPRWG 2008
Townsend's big-eared bat, *Corynorhinus townsendii*(NNHP sensitive sp. list)	BLM Sensitive	Found throughout Nevada from low desert to high mountain habitats primarily in pinyon-juniper-mahogany, white fir, blackbrush, sagebrush, salt desert scrub, agricultural, and occasionally urban areas. Distribution strongly correlated with availability of caves, and abandoned mines. Forages almost exclusively in open forest habitats. Recorded in the NNHP database in the vicinity of the Biological Study Area in 1969.	May occur. Caves/abandoned mines are available for roosting; no foraging habitat in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006

Species	Status	Habitat	Habitat present?	Primary source
Big brown bat, *Eptesicus fuscus*	BLM Sensitive	Variety of habitats including pinyon-juniper, blackbrush, creosote, sagebrush, agriculture, and urban areas. Day roosts include caves, trees (ponderosa pine, aspen, oak), attics, barns, and bridges. Winter roosts in Nevada are poorly understood. Forages over land and water in forested and edge habitats.	Not likely to occur No foraging habitat or pinyon-juniper, blackbrush, or sagebrush habitat within the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
Spotted bat, *Euderma maculatum*	BLM Sensitive	Known from few localities in Nevada and linked to availability of cliff roosting-habitat. Generally found in a wide variety of habitats from low elevation desert scrub to high elevation coniferous forest, including pinyon-juniper, sagebrush, riparian and urban high-rise buildings. Forages in canyons, in the open or over riparian vegetation No sightings reported in Pershing or Churchill counties.	Not likely to occur. There is no cliff habitat in the Biological Study Area and no foraging habitat.	NMEMNRD MMD 2011; NBWG 2006
Silver-haired bat, *Lasionycteris noctivagans*	BLM Sensitive	Widely distributed in Nevada, but confined primarily to forested habitats including pinyon-juniper, subalpine fir, white fir, limber pine, aspen, cottonwood, and willow.	No. There are no forested or woodland habitats in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
Western red bat, *Lasiurus blossevillii*	BLM Sensitive	Found primarily in wooded habitats, including mesquite bosque and cottonwood–willow riparian.	No. There are no woodlands or mesquite bosque or cottonwood riparian habitat in the Biological Study Area.	NBWG 2006
Hoary bat, *Lasiurus cinereus*	BLM Sensitive	Trees and woodlands including cottonwood, agriculture areas, and pure stands of Rocky Mountain juniper.	No. There is no woodland habitat in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
Dark Kangaroo mouse, *Microdipodops megacephalus*	BLM Sensitive	Shrubs associated with gravel soils and sand dunes. Found in Nevada.	Yes.	Kim 1999
Pale kangaroo mouse, *Microdipodops pallidus*	BLM Sensitive	Fine sand supporting plants, often in lower parts of valleys with finest sand. Vegetation includes *Atriplex*, *Artemisia*, and *Sarcobatus.*	Yes.	Hall 1946
California myotis *Myotis californicus*	BLM Sensitive	Occurs near water in arid areas. Forages near water and trees. Roost in crevices, trees, and buildings. Hibernates in caves and mines.	Not likely to occur. No foraging habitat in the Biological Study Area. Caves and abandoned shafts may be used for hibernation.	NMEMNRD MMD 2011

Species	Status	Habitat	Habitat present?	Primary source
Western small-footed myotis, *Myotis ciliolabrum*	BLM Sensitive NNHP sensitive	Wide variety of habitats including desert scrub, grasslands, sagebrush steppe, blackbrush, greasewood, pinyon-juniper woodlands, pine-fir forests, agriculture, and urban areas. Roosts in caves, mines, and trees. Forages in the open. Recorded in the NNHP database in the vicinity of the Biological Study Area in 1969.	May occur.	NMEMNRD MMD 2011; NBWG 2006
Long-eared myotis, *Myotis evotis*	blank	Primarily occurs in forested areas including pinyon-juniper, but also found in sagebrush, and desert scrub habitats. Day roosts in hollow trees, crevices in small rock outcrops. Night roosts in caves, mines, and under bridges. Forages over vegetation along rivers, streams, and over ponds.	Not likely to occur. No foraging habitat in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
Myotis lucifugus, Little brown myotis	blank	Forages near trees and water. Hibernates in caves and mine adits. Roost in a variety of places.	Not likely to occur. No foraging habitat in the Biological Study Area.	NMEMNRD MMD 2011
Fringed myotis, *Myotis thysanodes*		Desert scrub and other habitats. Day and night roosts in mines, caves, trees, and buildings. Forages in and among vegetation.	May occur.	NMEMNRD MMD 2011
Long-legged myotis, *Myotis volans*	BLM Sensitive	Forests and woodlands in pinyon-juniper, Joshua tree, and montane coniferous forest. Occasionally found in salt desert scrub, mountain shrub, and sagebrush. Day roosts in hollow trees, rock crevices, caves, mines, and buildings when available. Night roosts in caves and mines. Forages in open area.	May occur.	NMEMNRD MMD 2011; NBWG 2006
Yuma myotis, *Myotis yumanensis*	BLM Sensitive	Variety of habitats near open water including sagebrush, salt desert scrub, agriculture, and riparian area. Day roosts in buildings, caves, mines, bridges. Night roosts usually associated with buildings. Forages over relatively still open surface water such as ponds, reservoirs, or pools in streams and rivers.	Not likely to occur. No open water in the Biological Study Area.	NMEMNRD MMD 2011; NBWG 2006
American pika, *Ochotona princeps*	BLM Sensitive	Subalpine and alpine scree and talus fields near vegetation.	No. No alpine habitat in the Biological Study Area.	Hall 1946
Bighorn sheep, *Ovis canadensis*	BLM Sensitive	Occurs in deserts and mountains. Steep cliffs, talus, and scree important.	No. There is no cliffs, talus, or scree habitat in the Biological Study Area.	Hall 1946; BLM WDO 2011

Species	Status	Habitat	Habitat present?	Primary source
Western pipistrelle, *Parastrellus hesperus*	BLM Sensitive NNHP Sensitive	Upper and Lower Sonoran desert habitats of blackbrush, creosote, salt desert shrub, sagebrush, and occasionally ponderosa and pinyon pine; usually in association with rock features. Roosts in rock crevices, caves, mines, buildings. Forages in the open. Recorded in the NNHP database in the vicinity of the Biological Study Area in 1939.	May occur.	NMEMNRD MMD 2011; NBWG 2006
Brazilian free-tailed bat , *Tadarida brasiliensis*	blank	Summer resident in the Sierra Nevada. Day roosts include cliff faces, mines, caves, building, bridges, and hollow trees. Migrates from colder regions and winters in non-freezing climates in southern Nevada.	No. The Biological Study Area is not located in the Sierra Nevada.	NMEMNRD MMD 2011
BIRDS	blank	Blank	Blank	Blank
Northern Goshawk, *Accipiter gentilis*	BLM Sensitive NDOW Species of Special Concern	Mature, closed canopy conifer and aspen forest habitats.	No. No forested areas in the Biological Study Area.	NDOW 2011
Tricolored Blackbird, *Agelaius tricolor*	FWS migratory and/or bird of conservation concern	Freshwater marshes dominated by cattails and bulrush.	No. No freshwater marsh habitat in the Biological Study Area.	Meese, et al. 2014
Golden Eagle. *Aquila chrysaetos*	BLM Sensitive NDOW Species of Special Concern	Nests on high cliffs. Occurs in a variety of open habitats.	May occur. Could forage in the Biological Study Area. Nesting habitat has been observed within the 10-mile vicinity of the Biological Study Area.	Kochert et al. 2002 NDOW 2014 GBE 2014.
Short-eared Owl, *Asio flammeus*	FWS migratory and/or bird of conservation concern	Winter habitat includes open country woodlots, gravel pits, dumps, prairie, tundra, stubble fields with cyclic small mammals (voles, lemmings) for prey.	Not likely to occur. Incidental winter sightings unlikely without abundant small mammal populations.	Wiggens, et al. 2006.
Western Burrowing Owl, *Athene cunicularia hypugaea*	BLM Sensitive NDOW Species of Special Concern	Occurs in sagebrush and salt desert scrub communities. May also occur in suburban and disturbed sites. Habitat characterized as treeless areas with low vegetation. Nests in burrows dug by fossorial animals. Burrows dug by rodents or other small mammals must be available along with sufficient prey base. Feeds on arthropods, small mammalian and reptilian prey.	Yes. Burrows are available for nesting in the Biological Study Area. Has been observed within the 10-mile vicinity of the Biological Study Area. One owl was seen during the fall. May have been in migration.	NDOW 2011, 2014

Species	Status	Habitat	Habitat present?	Primary source
Ferruginous Hawk, *Buteo regalis*	BLM Sensitive NDOW Species of Special Concern	Deserts, grasslands. Nests in tops of isolated juniper trees.	Not likely to occur. No juniper trees for nesting in the Biological Study Area. Has been observed within the 10-mile vicinity of the Biological Study Area.	Bechard and Schmutz 1995 NDOW 2014
Swainson's Hawk, *Buteo swainsoni*	FWS migratory and/or bird of conservation concern	Variety of open habitats. Nests in trees.	Not likely to occur. No trees are available for nesting in the Biological Study Area. Has been observed within the 10-mile vicinity of the Biological Study Area.	England et al. 1997. NDOW 2014
Costa;s Hummingbird. *Calypte costae*	FWS migratory and/or bird of conservation concern	Mojave and Sonoran desert scrub in Arizona and California.	No. Biological Study Area is outside of breeding range.	Boltosser, et al. 1996.
Cassin's Finch, *Carpodacus cassinii*	FWS migratory and/or bird of conservation concern	A variety of coniferous forest types.	No. No coniferous forest habitat in the Biological Study Area.	Hahn. 1996.
Greater Sage-Grouse, *Centrocercus urophasianus*	BLM Sensitive FWS Candidate, FWS migratory and/or bird of conservation concern	Sagebrush obligate species. Sagebrush habitat used year round. Springs and stringer meadows used in summer for brood rearing.	No. There is no sagebrush habitat in the Biological Study Area. There is no mapped suitable habitat within the Biological Study Area.	NDOW 2011, 2014 NNHP 2008, USFWS NVFWO 2011, USGS 2011
Western Snowy Plover, *Charadrius alexandrinus nivosus*	BLM Sensitive FWS migratory and/or bird of conservation concern	Lake shores and playas.	No. There are No lakes or playas in the Biological Study Area.	Page et al. 2009
Olive-sided Flycatcher, *Contopus cooperi*	FWS migratory and/or bird of conservation concern	Forest edge and openings, including burns, edges of bogs, and marshes, harvested forest with some retained tall prominent trees and snags.	No. There is no forest habitat in the Biological Study Area.	Altman and Sallabanks. 2012.
Peregrine Falcon, *Falco peregrinus*	BLM Sensitive NDOW Species of Special Concern	Variety of open habitats. Nests on cliffs or buildings. Often near water in Nevada. Sagebrush, washes, and mountainous areas with small mammal populations provide potential foraging habitat.	Not likely to occur. There is no nesting habitat in the Biological Study Area. Has been observed within the 10-mile vicinity of the Biological Study Area.	NDOW 2011, 2014
Pinyon Jay, *Gymnorhinus cyanocephalus*	FWS migratory and/or bird of conservation concern	Associated with pinyon–juniper woodlands.	No. There are no pinyon-juniper woodlands in the Biological Study Area.	Balda 2002

Species	Status	Habitat	Habitat present?	Primary source
Bald Eagle, *Haliaeetus leucocephalus*	BLM Sensitive NDOW Species of Special Concern; FWS migratory and/or bird of conservation concern	Near large water bodies.	No. There are no large water bodies in the Biological Study Area. Has been observed within the 10-mile vicinity of the Biological Study Area.	NDOW 2011, 2014
Loggerhead Shrike, *Lanius ludovicianus*	FWS migratory and/or bird of conservation concern	Occurs in open habitats. Nests in shrubs. Requires adequate perches like shrubs or fences with sharp points for impaling prey.	May occur. Thorny shrubs such as black greasewood and bailey's greasewood occur in the Biological Study Area for impaling prey.	Yosef 1996
Lewis's Woodpecker, *Melanerpes lewis*	BLM Sensitive FWS migratory and/or bird of conservation concern	Open woodlands, riparian areas. Prefers burned conifer stands.	No. There is no forested habitat in the Biological Study Area.	Tobalske 1997
Long-billed curlew, *Numenius americanus*	FWS migratory and/or bird of conservation concern	Open, sparse, grassland habitats including cheatgrass and agricultural fields	No. There are no grassland or agricultural field habitats in the Biological Study Area.	Dugger, et al. 2002.
Sage Thrasher, *Oreoscoptes montanus*	BLM Sensitive FWS migratory and/or bird of conservation concern	Mature sagebrush and shrub-steppe habitat.	No. There is no sagebrush habitat in the Biological Study Area.	Reynolds et al. 1999
Fox sparrow, *Passerella liaca*	FWS migratory and/or bird of conservation concern	Impenetrable riparian thickets.	No. There are no riparian thickets in the Biological Study Area.	Weckstein, et al. 2002
Green-tailed Towhee, *Pipilo chlorurus*	FWS migratory and/or bird of conservation concern	Open pinyon-juniper woodlands with High shrub diversity understory dominated by big sagebrush, chokecherry, mtn mahogany, serviceberry.	No. There is no open pinyon-juniper habitat in the Biological Study Area.	Dobbs et al. 2012.
Eared Grebe, *Podiceps nigricollis*	FWS migratory and/or bird of conservation concern	Breeding habitat includes shallow lakes and ponds with emergent vegetation and highly productive macroinvertebrate communities.	No. There is no lake or pond habitat in the Biological Study Area.	Cullen et al. 1999,
Brewer's Sparrow, *Spizella breweri*	BLM Sensitive FWS migratory and/or bird of conservation concern	Sagebrush habitat, shrub-steppe, desert scrub. Nests in shrubs.	May occur. May use desert scrub for early nesting.	Rottenberry et al. 1999
Lucy's Warbler, *Vermivora luciae*	FWS migratory and/or bird of conservation concern.	Breeds in riparian mesquite woodlands (bosques)	No. There are no mesquite woodlands (bosques) in the Biological Study Area.	Johnson et al. 2012.
Calliope Hummingbird, *Stellula calliope*	FWS migratory and/or bird of conservation concern	Shrub-sapling seral stage forest following logging or fire.	No. No early seral forest habitat in the Biological Study Area.	Calder,et al. 1994.

3.5 Summary BLM Sensitive Species

A comparison between the habitat observations and descriptions of the Biological Study Area and the habitat requirements for the sensitive species identified from the agency inquiries indicate potential habitat in the Biological Study Area for the six plant species and seven mammals, and four bird species listed in Table 5.

Table 5. BLM sensitive species that have habitat and potential for occurrence in the Biological Study Area.

SPEICIES COMMON NAME AND GENERAL HABITAT
PLANTS
Eastwood milkweed Small washes or other moisture-accumulating microsites, in the shadscale, mixed-shrub, sagebrush, and lower piñon–juniper zones
Tonopah milkvetch Sand dunes and deep sand habitat
Sand cholla Sand dunes and deep sand habitat
Oryctes Sand dunes and deep sand habitat
Nevada beardtongue Sand dunes and deep sand habitat
Wassuk beardtongue Open, rocky to gravelly soils on perched tufa shores
MAMMALS
Townsend's big-eared bat Salt desert scrub habitat with caves and abandoned mines
Western small-footed myotis Sagebrush steppe and pinyon-juniper
Fringed myotis Desert scrub. Roosts in mines and caves
Long-legged myotis Occasionally in salt desert shrub and sagebrush. Night roosts in caves, mines
Western pipistrelle Salt desert shrub; rock crevices, caves and mines for nesting
Dark kangaroo mouse Shrubs associated with gravel soils and sand dunes

Pale kangaroo mouse Fine sand supporting *Atriplex*, *Artemisia*, and *Sarcobatus*
BIRDS
Golden eagle Eagles may hunt within the Study Area and may nest on tall powerline structures
Burrowing owl Salt desert
Loggerhead shrike Open habitats with thorny shrubs
Brewer's sparrow Sagebrush and desert scrub

3.6 Summary Migratory Birds

A comparison between habitat observations and descriptions of the Biological Study Area and the habitat requirements for the migratory birds and Birds of Conservation Concern identified by FWS indicate potential habitat for the following migratory birds: golden eagle, burrowing owl, loggerhead shrike, and Brewer's sparrow.

4.0 SITE RECONNAISSANCE AND SURVEY RESULTS

Several surveys of the Biological Study Area have occurred between 2007 and 2014 to search for occurrences and suitable habitat for sensitive plants, animals, and noxious weeds.

4.1 Previous Baseline Studies Within the Biological Study Area

JBR Environmental Consultants, Inc.

2007 Threatened, Endangered, Candidate & Sensitive Plant Survey. Prepared for Nevada Copper, Inc. Yerington, NV.

A list of species observed in the 2007 JBR Study Area are included in Appendix B.

Great Basin Ecology, Inc. (GBE)

Pumpkin Hollow Project Golden Eagle and Raptor Surveys and Regional Screening Level Biological Resource Assessment. Survey. Prepared for Nevada Copper Corp. Yerington, NV. Great Basin Ecology, Inc. 2014.

The GBE survey area for eagles and raptors was expanded to a 10-mile radius around the Biological Study Area. Aerial surveys from helicopter were conducted in April 2011 and in April and May 2014. Surveys consisted of flying to all rock outcrops, cliffs, other steep areas, and areas identified as potentially suitable for nests sites from a spatial analysis. A high voltage transmission line with large support structures along the east boundary of the Biological Study Area was also included in the survey area.

2011 Results.

Five golden eagle nests were located in the survey area (outside the Biological Study Area boundary). Three were found on rock ledges/cliffs/outcrops within the Wassuk Range. One was located on a volcanic dike eroded by water. One was located on a transmission line structure. In addition to the five eagle nests, one great horned owl (*Bubo virginianus),* one prairie falcon *(Falco mexicanus*), one red-tailed hawk (*Buteo jamaicensis*), and three common raven(*Corvus corax*) nests were observed during the survey.

2014 Results

A total of 78 nests were located during the two flights in 2014, eighteen of which were active. Six of the active nests were golden eagle nests, two were occupied by red-tailed hawks, one was occupied by prairie falcons, and seven were active raven nests. One nest that looked like a former golden eagle nest was occupied by a Canada goose (*Branta canadensis).* The majority (54) of the active and inactive golden eagle nests were located in cliffs adjacent to upland shrub vegetation. One nest occurred on an abandoned mine pit highwall and one nest was located on a powerline support structure.

No nesting habitat occurs within the Biological Study Area.

4.2 RCI 2014 Baseline Field Work

RCI Botanical, Sensitive Plant Species, and Invasive Species Surveys

Botanical surveys were conducted in May-June 2014 to coincide with the optimal period for plant identification. Botanical surveys were stratified by ecological sites. Study area maps depicting ecological site boundaries, topography, roads, and previous disturbances were prepared to assure adequate coverage of each ecological site and important microhabitat feature. Emphasis on roadsides, depressions, and other surface disturbances were surveyed as vectors for noxious and invasive species.

Site reconnaissance and pedestrian botanical surveys were conducted by RCI Biologists Sheila Anderson, Jeremy Drew, Don Henderson, and JoAnne Michael on May 5-9, 2014 and May 20-22, 2014.

Biologists reviewed technical references, floras, and other readily available web-based information such as the Nevada Natural Heritage Program Nevada Rare Plant Atlas (NNHP 2001b) to verify sensitive plant species morphology, phenology, and habitat prior to surveying. Species information and photographs were used in the field to assist with species identification. All plants observed were identified to a level sufficient to determine if they were a sensitive species.

The sensitive plant surveys were conducted to coincide with the peak flowering-fruiting stages such that species identification was conclusive. Verification of species identification of sensitive species was done in cooperation with NNHP. A List of plant species identified during the 2014 reconnaissance survey is included in Appendix B. Photographs from the Biological Study Area are included in Appendix C. Survey routes throughout the Biological Study Area are shown in Figure 7.

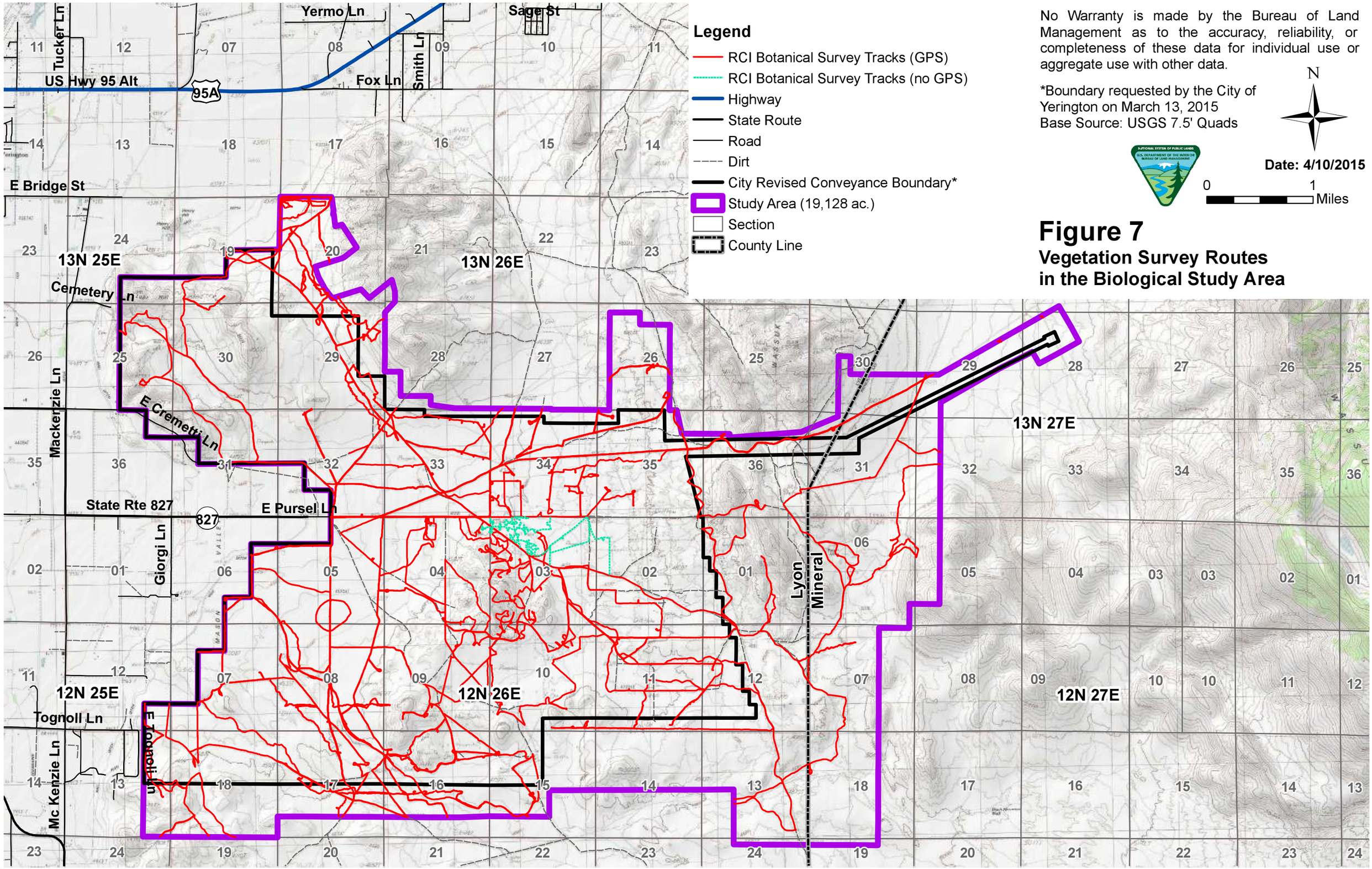


Figure 7

Vegetation Survey Routes in the Biological Study Area

Document Path: R:\projects\NV_Copper\13_078_1\MXD\Presentation\BLM_d_1_15\Study_Area_Base_GPS_11x17.mxd

2014 Sensitive Plant Survey Results

Nevada beardtongue, *Penstemon arenarius*

Nevada beardtongue is a sensitive species in the Carson City BLM District. A population of approximately 200 plants was found in T13N R26E Sections 17 an 20, but outside of the Conveyance Area.

Sand cholla, *Grusonia pulchella*

Sand cholla is a sensitive species in the Carson City BLM District and is protected under Nevada Revised Statutes 527.060.120 and Nevada Administrative Code chapter 527 when proposed for removal or possession at commercial rates or quantities. Several isolated occurrences of sand cholla were observed in the Biological Study Area.

Mojave pricklypear, *Opuntia erinacea*

Mojave pricklypear is protected under Nevada Revised Statutes 527.060.120 and Nevada Administrative Code chapter 527 when proposed for removal or possession at commercial rates or quantities. Several isolated occurrences of Mojave pricklypear were observed in the Biological Study Area.

2014 Noxious and Invasive Species Survey Results

No noxious weed species were found in the Biological Study Area.

Invasive species that occurred during the May survey period in low densities throughout most of the ecological sites in the Biological Study Area included cheatgrass, Russian thistle (*Salsola tragus*), and halogeton (*Halogeton glomeratus)*. Red brome (*Bromus rubens)* was observed at three sites in the south slope, stony slope, and gravelly loam ecological sites.

4.3 2014 Wildlife Reconnaissance and Sensitive Wildlife Species Surveys

RCI Screening Level Bat Habitat Survey

RCI conducted an exit survey of mine adits and shafts as an initial screening level indicator for bat presence in the Biological Study Area. A 2012 report prepared by the Nevada Division of Minerals (NDOM) for Nevada Copper located 19 abandoned mine sites in the Biological Study Area. Two additional adits were along vegetation survey routes. Reconnaissance of 14 of these abandoned mine shafts/adits was conducted on four evenings between May 5 and May 22, 2014.

The survey protocol used was sufficient to confirm bat presence and activity but did not provide sufficient data to determine species or population size. Failure to observe bats did not confirm their absence. Sampling events began near sunset and extended for one-hour. Observers used stationary red-colored, low illumination spotlights for minimal impact night lighting. Survey locations are shown in Figure 8.

Bat Survey Results

Only one bat was observed exiting a mine adit (LY12) during the survey period. Other species that were observed using mine shafts included one to two pigeons at four different mine shafts, and a barn owl observed exiting two mine shafts on different evenings.

Indications of human presence (shotgun shell and bullet casings, empty bottles, tire tracks) were visible at the majority of the survey sites.

Incidental night sightings of bats were made within the Biological Study Area while in transit to and from survey locations.

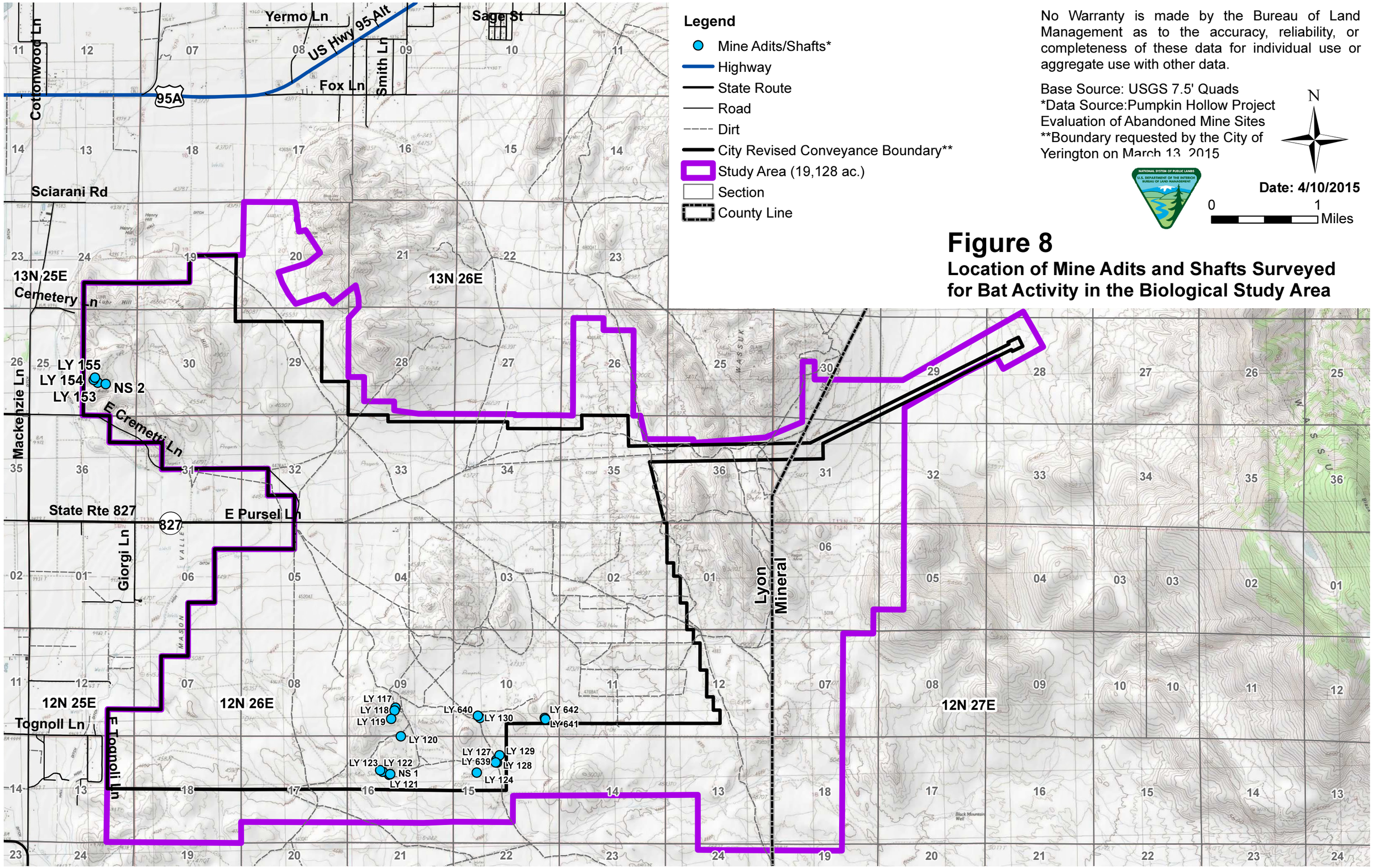


Figure 8

Location of Mine Adits and Shafts Surveyed for Bat Activity in the Biological Study Area

Document Path: R:\projects\NV_Copper\13_178_1\MXD\Presentation\BLM_4_1_15\Study_Area_Bats_11x17.mxd

RCI Screening Level Burrowing Owl Survey

RCI actively searched for burrowing owls, burrows that may be suitable for burrowing owl occupancy, and any sign of burrowing owls in conjunction with botanical surveys.

Burrowing Owl Survey Results

No burrowing owls were observed during the May 2014 survey period. One incidental burrowing owl sighting was made in the Biological Study Area in October 2014 of an owl that may have been in migration. Burrows were scattered throughout the survey. Old sign (owl pellets) was observed around several clustered burrows in the southwest portion of the Biological Study Area.

RCI Screening Level Sagebrush Obligate Species Survey

RCI actively searched for suitable habitat and sign for greater sage-grouse and pygmy rabbit in conjunction with botanical surveys. This search was completed at the request of BLM to verify that no large blocks of contiguous sagebrush habitat occurred within the Biological Study Area that would be suitable for these species.

Sagebrush Obligate Species Survey Results

No greater sage-grouse or sign were observed. No pygmy rabbits or sign were observed. No suitable habitat for either species was located, verifying the SWReGAP vegetation mapping. Some small, isolated patches of sagebrush were observed, but not in an extent that would support either species.

Incidental Wildlife Sightings

RCI observed a variety of wildlife while conducting field surveys in May 2014. Four pronghorn antelope, a species not listed as potentially occurring on site (NDOW 2014) were observed within the Biological Study Area. These individuals likely were immigrants from adjacent herds drawn in by nearby cultivated crops. Other species included zebra-tailed lizard, common side-blotched lizard, Great Basin whiptail, and black-tailed jack rabbit.

REFERENCES

Altman, Bob and Rex Sallabanks. 2012. Olive-sided Flycatcher (*Contopus cooperi*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/502

Baltosser, William H. and Peter E. Scott. 1996. Costa's Hummingbird (*Calypte costae*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/251

Calder, William A. and Lorene L. Calder. 1994. Calliope Hummingbird (*Selasphorus calliope*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/135

Calflora: Information on California plants for education, research and conservation, based on data contributed by dozens of public and private institutions and individuals, including the Consortium of Calif. Herbaria. [web application]. 2011. Berkeley, California: The Calflora Database [a non-profit organization]. Available at: http://www.calflora.org/. Accessed Oct 31, 2011.

California Herps. 2011. A guide to reptiles and amphibians in California. Available at: www.californiaherps.com/lizards/pages/e.c.shastensis.html. Accessed October 31, 2011.

California Native Plant Society Inventory of Rare and Endangered Plants. Available at: http://cnps.site.aplus.net/cgibin/inv/inventory.cgi/Go?_id=astragalus_lentiginosus_var._sesquimetralis&sort=DEFAULT&search=Astragalus%20lentiginosus%20var.%20sesquimetralis. Accessed October 31, 2011.

Center for Plant Conservation. National collection plant profile. *Mentzelia tiehmii.* Available at: http://www.centerforplantconservation.org/Collection/CPC_ViewProfile.asp?CPCNum=44657

Cullen, S. A., J. R. Jehl Jr. and G. L. Nuechterlein. 1999. Eared Grebe (*Podiceps nigricollis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/433doi:10.2173/bna.433

Dobbs, R. C., P. R. Martin and T. E. Martin. 2012. Green-tailed Towhee (*Pipilo chlorurus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/368

Dugger, Bruce D. and Katie M. Dugger. 2002. Long-billed Curlew (*Numenius americanus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/628

England, A. S., M. J. Bechard and C. S. Houston. 1997. Swainson's Hawk *(Buteo swainsoni)*, the birds of North America online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. Available at: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/265doi:10.2173/bna.265

Flora of North America. Available at: www.efloras.org/. Accessed October 31, 2011, February 18, 2012, May 2014.

Greene, J. A. and A. C. Sanders. No date. *Loeflingia squarrosa* Nutt. var. *artemisiarum* (Barneby & Twisselm.) R. Dorn. Herbarium, Department of Botany and Plant Sciences, University of California, Riverside. Available at: www.blm.gov/pgdata/etc/medialib//blm/ca/pdf/pdfs/cdd_pdf.

Jepson Flora Project – Jepson Interchange. 1993. Treatment from the Jepson Manual. Available at: http://ucjeps.berkeley.edu/interchange/I_treat_indexes.html. Accessed February 18, 2012, May 2014.

Google Earth.

Hahn, Thomas Peter. 1996. Cassin's Finch (*Haemorhous cassinii*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/240

Hall, E. R. 1946. Mammals of Nevada. University of Nevada Press, Reno, NV.

Interagency Pygmy Rabbit Working Group (IPRWG). 2008. Surveying for pygmy rabbits (*Brachylagus idahoensis*). February 2008.

JBR Environmental Consultants, Inc. 2007. 2007 Threatened, Endangered, Candidate, & Sensitive Plant Survey Pumpkin Hollow Project. Reno, NV. JBR Project No. 07.000148.01.

JBR Environmental Consultants, Inc. 2007. 2007 Vegetation Baseline Report Pumpkin Hollow Project. Reno, NV. JBR Project No. 07.000148.01.

Johnson, R. Roy, Helen K. Yard and Bryan T. Brown. 2012. Lucy's Warbler (*Oreothlypis luciae*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/318

Kim, D. 1999. "*Microdipodops megacephalus*" (On-line), Animal Diversity Web. Available at: http://animaldiversity.ummz.umich.edu/site/accounts/information/Microdipodops_megacephalus.html Accessed February 13, 2012

Kochert, M. N., K. Steenhof, C. L. Mcintyre and E. H. Craig. 2002. Golden Eagle (*Aquila chrysaetos*), the birds of North America online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. Available at: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/684doi:10.2173/bna.684.

Meese, Robert J., Edward C. Beedy and William J. Hamilton, Iii. 2014. Tricolored Blackbird (*Agelaius tricolor*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/423

NatureServe. 2010. NatureServe explorer: an online encyclopedia of life. Version 7.1. NatureServe, Arlington, VA. Available at: http://www.natureserve.org/explorer. Accessed May, 2011, November 10, 2014.

Nevada Bat Working Group. 2006. The Revised Nevada Bat Conservation Plan. 216pp.

Nevada Copper Inc. 2012. Pumpkin Hollow Project Evaluation of Abandoned Mine Sites. Report File: LND-Mine_Hazard-Evaluation-zcw-120801.docx.

Nevada Department of Wildlife. 2012. Nevada Wildlife Action Plan. 546pp.

Nevada Department of Wildlife (NDOW). Wildlife and habitat: wildlife fact sheets. Available at: http://ndow.org/wild/animals/facts/index.shtm. Accessed March, 2011.

Nevada Natural Heritage Program (NNHP). 2008. GIS at the Nevada Natural Heritage Program: vegetation program. Available at: http://heritage.nv.gov/gis/gis.htm#downloads. Accessed February, 2011, May 2014.

____. 2001a. GIS at the Nevada Natural Heritage Program: phytogeographic regions. Available at: http://heritage.nv.gov/gis/gis.htm#downolads. Accessed July 2013, November 2014.

——. 2001b. Nevada rare plant atlas. Available at: http://heritage.nv.gov/atlas/atlasndx.htm. Accessed Various dates March 2011 – February 2014.

____. No date. Species Information. Eriogonum rubricaule. Available at: http://heritage.nv.gov/taxon_detail/14883 and
____. No date. Species Information. Camissonia nevadensis. Available at: http://heritage.nv.gov/taxon_detail/14049

New Mexico Energy, Minerals and Natural Resources Department: Mining and Minerals Division (NMEMNRD MMD). Wildlife that uses abandoned mines. Available at: http://www.emnrd.state.nm.us/mmd/aml/AMLwildlife.htm. Accessed March, 2011.

Reynolds, T. D., T. D. Rich and D. A. Stephens. 1999. Sage Thrasher (*Oreoscoptes* mont*anus*), the birds of North America online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. Available at: http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/463doi:10.2173/bna.46.

Soil Survey Staff, Natural Resources Conservation Service (NRCS), United States Department of Agriculture. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed May 19, 2013.

____. Nevada Fish and Wildlife Office (NVFWO). Nevada's protected species. Available at: http://www.fws.gov/nevada/protected_species/index.html. Accessed March, 2011.

US Geological Survey (USGS). 2002. SAGEMAP—A GIS database for sage-grouse and shrub steppe management in the Intermountain West. Available at: http://sagemap.wr.usgs.gov/index.aspx. Accessed February, 2011.

____ 2004. National Gap Analysis Program. Provisional digital land cover Map for the Southwestern United States. Version 1.0. RS/GIS Laboratory, College of Natural Resources, Utah State University. Available at: http://earth.gis.usu.edu/swgap/landcover.html

____.2001. North American Breeding Bird Survey. Available at: http://www.pwrc.usgs.gov/bbs/

Weckstein, Jason D., Donald E. Kroodsma and Robert C. Faucett. 2002. Fox Sparrow (*Passerella liaca*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/715

Wiggins, D. A., D. W. Holt and S. M. Leasure. 2006. Short-eared Owl (*Asio flammeus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online:http://bna.birds.cornell.edu/bna/species/062

Yosef, R. 1996. Loggerhead Shrike (*Lanius ludovicianus*), the birds of North America online (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, NY. Online:http://bna.birds.cornell.edu.

APPENDIX A

Agency Responses to Data Requests

Insert pdfs

Brian Sandoval
Governor

Leo Drozdoff
Director

Jennifer Newmark
Administrator

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program

04 November 2014

Shelia Anderson
Resource Concepts, Inc.
340 N. Minnesota Street
Carson City, NV 89705

RE: Data request received 27 October 2014

Dear Ms. Anderson:

We are pleased to provide the information you requested on endangered, threatened, candidate, and/or at risk plant and animal taxa recorded within or near the Pumpkin Hollow Project, in Lyon County. We searched our database and maps for the following, a two kilometer radius around:

Township 12N Range 26E Sections 01-07 and 09-12
Township 13N Range 25E Sections 24, 25, and 36
Township 13N Range 26E Sections 14-17, 19-23, and 26-36

The enclosed printout lists the taxa recorded within the given area. Please be aware that habitat may also be available for: the pale kangaroo mouse, *Microdipodops pallidus*, a Nevada Bureau of Land Management (BLM) Sensitive Species; the Nevada suncup, *Camissonia nevadensis*, a Taxon determined to be Vulnerable by the Nevada Natural Heritage Program; and the Wassuk beardtongue, *Penstemon rubicundus*, a Nevada BLM Sensitive Species. The Nevada Department of Wildlife (NDOW) manages, protects, and restores Nevada's wildlife resources and associated habitat. Please contact Bonnie Weller, NDOW GIS Biologist (775.688.1439) to obtain further information regarding wildlife resources within and near your area of interest. Removal or destruction of state protected flora species (NAC 527.010) requires a special permit from Nevada Division of Forestry (NRS 527.270).

Please note that our data are dependent on the research and observations of many individuals and organizations, and in most cases are not the result of comprehensive or site-specific field surveys. Natural Heritage reports should never be regarded as final statements on the taxa or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments.

Thank you for checking with our program. Please contact us for additional information or further assistance.

Sincerely,

Eric S. Miskow
Biologist/Data Manager

STATE OF NEVADA

DEPARTMENT OF WILDLIFE

1100 Valley Road

Reno, Nevada 89512

(775) 688-1500 • Fax (775) 688-1595

BRIAN SANDOVAL
Governor

TONY WASLEY
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

Sheila Anderson
Senior Resource Specialist
Resource Concepts, Inc.
340 North Minnesota Street
Carson City, Nevada 89705

March 13, 2014

Re: Pumpkin Hollow Study Area

Dear Ms. Anderson:

I am responding to your request for information from the Nevada Department of Wildlife (NDOW) on the known or potential occurrence of wildlife resources in the vicinity of the Pumpkin Hollow Study Area located in Lyon and Mineral Counties, Nevada. In order to fulfill your request an analysis was performed using the best available data from the NDOW's wildlife occurrences, raptor nest sites and ranges, greater sage-grouse leks and habitat, and big game distributions databases. No warranty is made by the NDOW as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data. These data should be considered **sensitive** and may contain information regarding the location of sensitive wildlife species or resources. All appropriate measures should be taken to ensure that the use of this data is strictly limited to serve the needs of the project described on your GIS Data Request Form. Abuse of this information has the potential to adversely affect the existing ecological status of Nevada's wildlife resources and could be cause for the denial of future data requests.

To adequately provide wildlife resource information in the vicinity of the proposed project the NDOW delineated an area of interest that included a four-mile buffer around the project area provided by you (email, March 05, 2014). Wildlife resource data was queried from the NDOW databases based on this area of interest. The results of this analysis are summarized below.

Big Game – Occupied mule deer distribution exists within portions of the project area and four-mile buffer area. No known occupied bighorn sheep, elk, or pronghorn antelope distributions exist in the vicinity of the project area. Please refer to the attached maps for details regarding big game distributions relative to the proposed project area.

Greater Sage-Grouse – Greater sage-grouse habitat in the vicinity of the project area is primarily categorized as Unsuitable Habitat. Low Value Habitat/Transitional Range also exists in the vicinity of the project area. Please refer to the attached maps for details regarding greater sage-grouse habitat relative to the proposed project area. There are no known greater sage-grouse lek sites in the vicinity of the project area.

Raptors – Various species of raptors, which use diverse habitat types, may reside in the vicinity of the project area. American kestrel, bald eagle, barn owl, burrowing owl, Cooper's hawk, ferruginous hawk, golden eagle, great horned owl, long-eared owl, merlin, northern goshawk, northern harrier, northern saw-whet owl, osprey, peregrine falcon, red-tailed hawk, rough-legged hawk, sharp-shinned hawk, short-eared owl, Swainson's hawk, turkey vulture, and western screech owl have distribution ranges that include the project area and four-mile buffer area. Furthermore, the following raptor species have been directly observed in the vicinity of the project area:

American kestrel	great horned owl	rough-legged hawk
bald eagle	long-eared owl	sharp-shinned hawk
burrowing owl	northern harrier	short-eared owl
Cooper's hawk	peregrine falcon	Swainson's hawk
ferruginous hawk	prairie falcon	turkey vulture
golden eagle	red-tailed hawk	

Raptor species are protected by State and Federal laws. In addition, bald eagle, burrowing owl, California spotted owl, ferruginous hawk, flammulated owl, golden eagle, northern goshawk, peregrine falcon, prairie falcon, and short-eared owl are NDOW species of special concern and are target species for conservation as outlined by the Nevada Wildlife Action Plan. Per the *Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance* (United States Fish and Wildlife Service 2010) we have queried our raptor nest database to include raptor nest sites within ten miles of the proposed project area. There are 32 known raptor nest sites within ten miles of the project area. Please refer to the appendix for details regarding these raptor nest sites.

Other Wildlife Resources

The following species have also been observed in the vicinity of the project area:

Common Name	ESA	State	SWAP_SoCP
brant			
California toad			Yes
chipmunk (unknown)			
common kingsnake			
common side-blotched lizard			
coyote			
desert horned lizard			Yes
Douglas's squirrel		Protected	
golden-mantled ground squirrel			
Great Basin collared lizard			Yes
Great Basin fence lizard			
Great Basin rattlesnake			
Great Basin whiptail			
greater roadrunner			
long-nosed leopard lizard			Yes
Merriam's kangaroo rat			
mountain lion			
Nevada side-blotched lizard			
North American deermouse			
North American river otter			Yes
northern desert horned lizard			Yes
northern flicker			
pinon deermouse			
snowy egret			
Tahoe sucker			
variable groundsnake			
western fence lizard			
western harvest mouse			
western patch-nosed snake			
white-faced ibis			Yes

yellow-backed spiny lizard
zebra-tailed lizard

ESA: Endangered Species Act Status
State: State of Nevada Special Status
SWAP_SoCP: Nevada State Wildlife Action Plan (2012) Species of Conservation Priority

The above information is based on data stored at our Reno Headquarters Office, and does not necessarily incorporate the most up to date wildlife resource information collected in the field. Please contact the Habitat Division Supervising Biologist at our Western Region Reno Office (775.688.1500) to discuss the current environmental conditions for your project area and the interpretation of our analysis. Furthermore, it should be noted that the information detailed above is preliminary in nature and not necessarily an identification of every wildlife resource concern associated with the proposed project. Consultation with the Supervising Habitat biologist will facilitate the development of appropriate survey protocols and avoidance or mitigation measures that may be required to address potential impacts to wildlife resources.

Mark Freese - Western Region Supervising Habitat Biologist (775.688.1145)

Federally listed Threatened and Endangered species are also under the jurisdiction of the United States Fish and Wildlife Service. Please contact them for more information regarding these species.

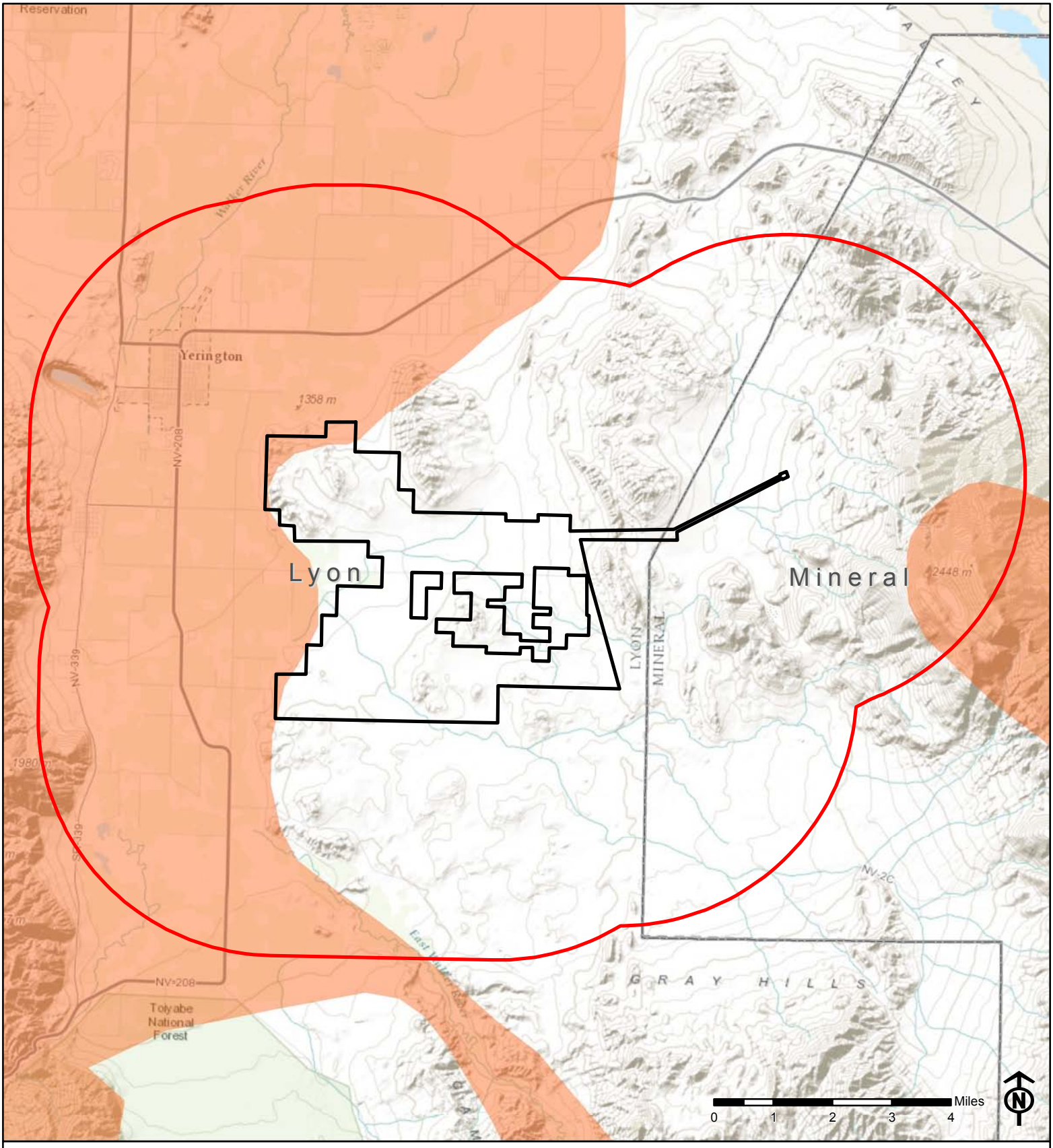
If you have any questions regarding the results or methodology of this analysis please do not hesitate to contact our GIS office at (775) 688-1565.

Sincerely,

Timothy M. Herrick
Biologist

Appendix: Raptor Nest Sites

Probable Use	Last Check	Last Active	Township/Range/Section
Buteo	2/27/1975	2/27/1975	21 0110N 0260E 004
Buteo	3/8/1975		21 0140N 0250E 005
Buteo	3/9/1975	3/9/1975	21 0140N 0260E 030
Buteo	3/9/1975		21 0130N 0250E 001
Buteo	3/9/1975		21 0140N 0250E 021
Buteo	3/9/1975		21 0140N 0260E 033
Buteo	3/29/1975	3/29/1975	21 0120N 0250E 012
Buteo	5/17/1975	5/17/1975	21 0140N 0260E 007
Buteo	1/1/1978		21 0120N 0250E 015
Buteo	1/1/1978		21 0140N 0250E 003
Buteo	1/1/1978		21 0140N 0260E 018
Buteo	5/9/1978	5/9/1978	21 0140N 0250E 002
Buteo	1/1/1986		21 0130N 0250E 026
Buteo	5/28/1987		21 0140N 0250E 015
Buteo	6/9/1987		21 0110N 0250E 004
Buteo	6/9/1987		21 0140N 0250E 003
Buteo	7/9/1987		21 0140N 0250E 022
Eagle	5/1/1975	5/1/1975	21 0110N 0250E 017
Eagle	6/3/1975	6/3/1975	21 0140N 0270E 030
Eagle	4/21/1976	4/21/1976	21 0130N 0270E 011
Eagle	4/22/1976	4/22/1976	21 0110N 0250E 020
Eagle	1/1/1978		21 0120N 0270E 006
Eagle	7/24/2011		21 0130N 0260E 001
Eagle	7/24/2011		21 0140N 0270E 034
Eagle	8/21/2011		21 0130N 0240E 034
Eagle	8/21/2011		21 0140N 0240E 035
Eagle/Buteo	8/21/2011		21 0110N 0250E 017
Owl	2/27/1975	2/27/1975	21 0110N 0260E 036
Owl	3/8/1975		21 0140N 0260E 006
Owl	3/29/1975	3/29/1975	21 0120N 0250E 025
Owl	4/1/1987	4/1/1987	21 0140N 0260E 005
Owl	4/1/1987	4/1/1987	21 0140N 0260E 007



Project Area

Four Mile Buffer Area Boundary

Mule Deer Distribution

County Boundary

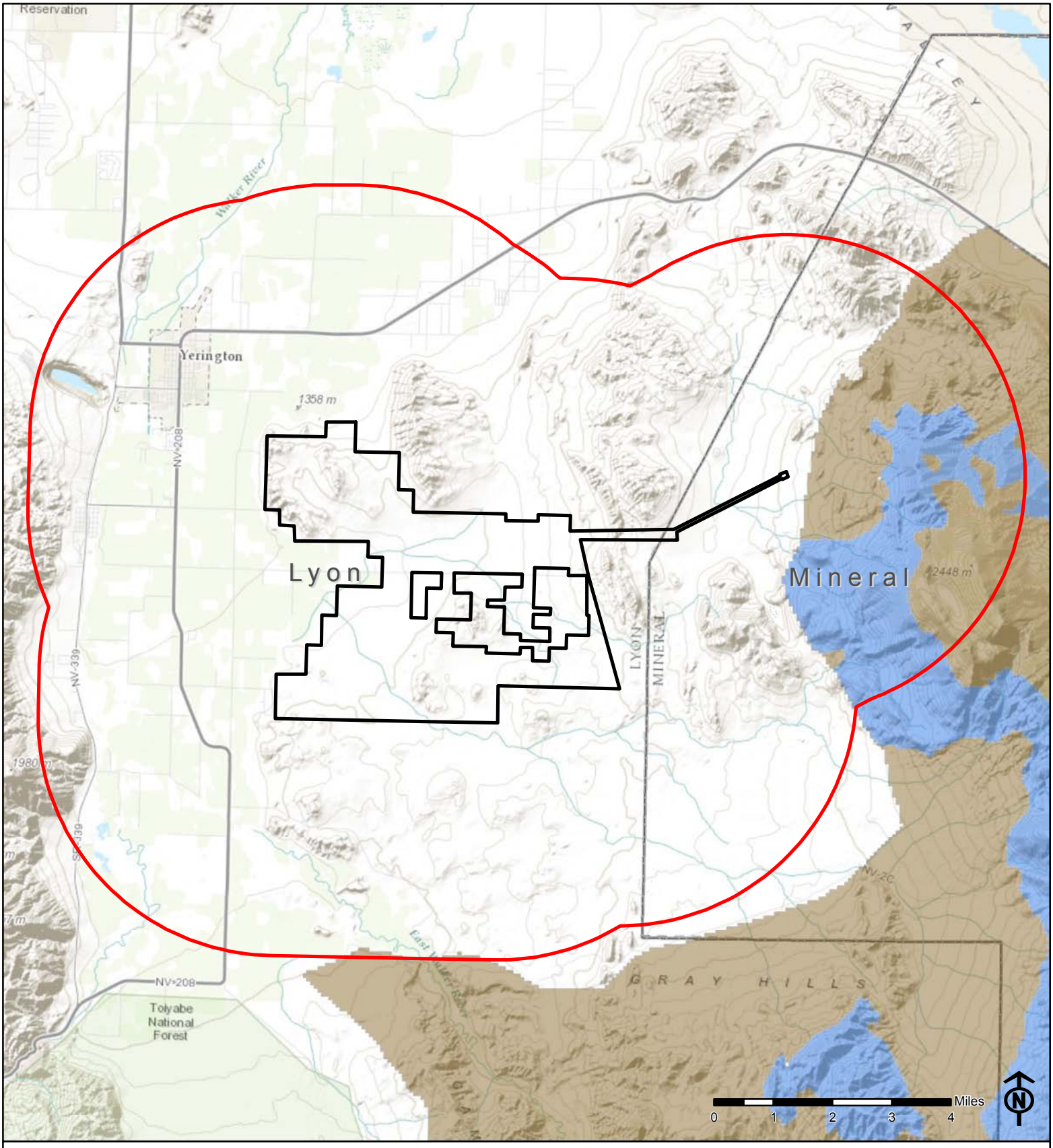
Pumpkin Hollow Study Area
Mule Deer Distribution

March 11, 2014

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

V:\ActiveProjects\DataRequests\Consultants\ResourceConceptsInc\PumpkinHollow\Data Request - Pumpkin Hollow.mxd



Project Area

Four Mile Buffer Area Boundary

County Boundary

Greater Sage-Grouse Habitat

- 1 - Essential/Irreplaceable Habitat
- 2 - Important Habitat
- 3 - Habitat of Moderate Importance
- 4 - Low Value Habitat/Transistional Range
- 5 - Unsuitable Habitat
- Pending Completion

Pumpkin Hollow Study Area
Greater Sage-Grouse Habitat

March 11, 2014

Projection: UTM Zone 11 North, NAD83

No warranty is made by the Nevada Department of Wildlife as to the accuracy, reliability, or completeness of the data for individual use or aggregate use with other data.

V:\ActiveProjects\DataRequests\Consultants\ResourceConceptsInc\PumpkinHollow\Data Request - Pumpkin Hollow.mxd

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
PHONE: (775)861-6300 FAX: (775)861-6301
URL: www.fws.gov/nevada/

Consultation Tracking Number: 08ENVD00-2015-SLI-0061 November 13, 2014
Project Name: Nevada Copper

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (ESA, 16 U.S.C. 1531 *et seq*.), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit http://www.fws.gov/nevada/es/ipac.html.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq*.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally, as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation, for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada’s Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (http://heritage.nv.gov). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (http://www.leg.state.nv.us/NAC/NAC-503.html). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to take, or possess any parts of protected fish and wildlife species. Please visit http://www.ndow.org or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq*.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Service's wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

The Service’s Pacific Southwest Region developed the *Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities* (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (*e.g.*, changes in blade cut-in speed, assessments of blade “feathering” success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee’s Avian Protection Plan template (http://www.aplic.org/) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service’s wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20gro
.

Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 *et seq*.), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat

requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving communications towers (*e.g.*, cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

If wetlands, springs, or streams are are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE’s Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Nevada Copper

Official Species List

Provided by:

Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
http://www.fws.gov/nevada/

Consultation Tracking Number: 08ENVD00-2015-SLI-0061
Project Type: Mining
Project Description: Pumpkin Hollow Project

United States Department of Interior
Fish and Wildlife Service

Project name: Nevada Copper

Project Counties: Lyon, NV

United States Department of Interior
Fish and Wildlife Service

Project name: Nevada Copper

Endangered Species Act Species List

There are a total of 5 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	**Status**	**Has Critical Habitat**	**Condition(s)**
Greater sage-grouse *(Centrocercus urophasianus)* Population: Bi-State	Proposed Threatened	Proposed	
Greater sage-grouse *(Centrocercus urophasianus)* Population: entire	Candidate		
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Fishes			
cui-ui *(Chasmistes cujus)* Population: Entire	Endangered		
Lahontan cutthroat trout *(Oncorhynchus clarkii henshawi)* Population: Entire	Threatened		

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Greater sage-grouse *(Centrocercus urophasianus)* Population: Bi-State	Proposed
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Proposed

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
PHONE: (775)861-6300 FAX: (775)861-6301
URL: www.fws.gov/nevada/

Consultation Tracking Number: 08ENVD00-2015-SLI-0062 November 13, 2014
Project Name: Pumpkin Hollow

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (ESA, 16 U.S.C. 1531 *et seq*.), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit http://www.fws.gov/nevada/es/ipac.html.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq*.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally, as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation, for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada’s Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (http://heritage.nv.gov). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (http://www.leg.state.nv.us/NAC/NAC-503.html). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to take, or possess any parts of protected fish and wildlife species. Please visit http://www.ndow.org or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq*.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Service's wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

The Service’s Pacific Southwest Region developed the *Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities* (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (*e.g.*, changes in blade cut-in speed, assessments of blade “feathering” success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee’s Avian Protection Plan template (http://www.aplic.org/) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service’s wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20gro
.

Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 *et seq*.), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat

requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving communications towers (*e.g.*, cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

If wetlands, springs, or streams are are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE’s Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Pumpkin Hollow

Official Species List

Provided by:

Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
http://www.fws.gov/nevada/

Consultation Tracking Number: 08ENVD00-2015-SLI-0062
Project Type: Mining
Project Description: Copper Mine

Project Counties: Mineral, NV

United States Department of Interior
Fish and Wildlife Service

Project name: Pumpkin Hollow

Endangered Species Act Species List

There are a total of 5 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Amphibians	**Status**	**Has Critical Habitat**	**Condition(s)**
Columbia Spotted frog *(Rana luteiventris)* Population: Great Basin DPS	Candidate		
Birds			
Greater sage-grouse *(Centrocercus urophasianus)* Population: Bi-State	Proposed Threatened	Proposed	
Greater sage-grouse *(Centrocercus urophasianus)* Population: entire	Candidate		
Yellow-Billed Cuckoo *(Coccyzus americanus)* Population: Western U.S. DPS	Threatened	Proposed	
Fishes			
Lahontan cutthroat trout *(Oncorhynchus clarkii henshawi)* Population: Entire	Threatened		

United States Department of Interior
Fish and Wildlife Service

Project name: Pumpkin Hollow

Critical habitats that lie within your project area

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Greater sage-grouse *(Centrocercus urophasianus)* Population: Bi-State	Proposed

U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
http://www.fws.gov/nevada/

Project Name:

Yerington Lands Conveyance

Project Counties:

Lyon, NV

Project Type:

Land - Disposal / Transfer

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **5** threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Birds	Status		Has Critical Habitat	Contact

U.S. Fish and Wildlife Service

Trust Resources List

Greater sage-grouse (*Centrocercus urophasianus*) Population: Bi-State	Proposed Threatened	species info	Proposed critical habitat	Nevada Fish And Wildlife Office
Yellow-Billed Cuckoo (*Coccyzus americanus*) Population: Western U.S. DPS	Threatened	species info	Proposed critical habitat	Nevada Fish And Wildlife Office
Fishes				
cui-ui (*Chasmistes cujus*) Population: Entire	Endangered	species info		Nevada Fish And Wildlife Office
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) Population: Entire	Threatened	species info		Nevada Fish And Wildlife Office
Paiute cutthroat trout (*Oncorhynchus clarkii seleniris*) Population: Entire	Threatened	species info		Nevada Fish And Wildlife Office

Critical habitats within your project area: (View all critical habitats within your project area on one map)

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Greater sage-grouse (*Centrocercus urophasianus*) Population: Bi-State	Proposed critical habitat
Yellow-Billed Cuckoo (*Coccyzus americanus*) Population: Western U.S. DPS	Proposed critical habitat

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There is **1** refuge in your refuge list

Stillwater National Wildlife Refuge Complex (775) 423-5128 1020 NEW RIVER PARKWAY, SUITE 305 FALLON, NV89406	refuge profile

U.S. Fish and Wildlife Service

Trust Resources List

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: http://www.fws.gov/migratorybirds/CCMB2.htm.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:
http://www.fws.gov/migratorybirds/CCMB2.htm.

Migratory birds of concern that may be affected by your project:
There are **20** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the ECOS Help Desk.

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
Bald eagle (*Haliaeetus leucocephalus*)	Yes	species info	Wintering, Year-round

Trust Resources List

Brewer's Sparrow (*Spizella breweri*)	Yes	species info	Breeding
Burrowing Owl (*Athene cunicularia*)	Yes	species info	Breeding
Calliope Hummingbird (*Stellula calliope*)	Yes	species info	Breeding
Cassin's Finch (*Carpodacus cassinii*)	Yes	species info	Year-round
Costa's Hummingbird (*Calypte costae*)	Yes	species info	Breeding
Eared Grebe (*Podiceps nigricollis*)	Yes	species info	Breeding
Fox Sparrow (*Passerella liaca*)	Yes	species info	Breeding, Year-round
Greater sage-grouse (*Centrocercus urophasianus*)	Yes	species info	Year-round
Green-tailed Towhee (*Pipilo chlorurus*)	Yes	species info	Breeding
Lewis's Woodpecker (*Melanerpes lewis*)	Yes	species info	Breeding
Loggerhead Shrike (*Lanius ludovicianus*)	Yes	species info	Year-round
Long-Billed curlew (*Numenius americanus*)	Yes	species info	Breeding
Olive-Sided flycatcher (*Contopus cooperi*)	Yes	species info	Breeding
Pinyon Jay (*Gymnorhinus cyanocephalus*)	Yes	species info	Year-round
Sage Thrasher (*Oreoscoptes montanus*)	Yes	species info	Breeding
Short-eared Owl (*Asio flammeus*)	Yes	species info	Wintering, Year-round
Snowy Plover (*Charadrius alexandrinus*)	Yes	species info	Breeding
Swainson's hawk (*Buteo swainsoni*)	Yes	species info	Breeding

tricolored blackbird (*Agelaius tricolor*)	Yes	species info	Breeding

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Data Limitations, Exclusions and Precautions
The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

U.S. Fish and Wildlife Service

Trust Resources List

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	PEMF	0.6762
Freshwater Emergent Wetland	PEM	13299.5206
Freshwater Emergent Wetland	PEMA	3.9639
Freshwater Emergent Wetland	PEMC	549.191
Freshwater Emergent Wetland	PEMB	25.0482
Freshwater Emergent Wetland	PEM/SSB	2.9789
Freshwater Emergent Wetland	PEM/SS	1716.6323
Freshwater Emergent Wetland	PEM/US	69.2333
Freshwater Forested/Shrub Wetland	PFOB	0.4611
Freshwater Forested/Shrub Wetland	PFOA	1.7059
Freshwater Forested/Shrub Wetland	PSS/EM	172.3161
Freshwater Forested/Shrub Wetland	PFOC	1.8099
Freshwater Forested/Shrub Wetland	PSS	600.9604
Freshwater Forested/Shrub Wetland	PSSA	7.1098
Freshwater Forested/Shrub Wetland	PSSB	9.0369
Freshwater Forested/Shrub Wetland	PSSC	221.6976
Freshwater Forested/Shrub Wetland	PSS1C	10.005
Freshwater Pond	PUBFx	2.9661
Freshwater Pond	PUBHx	1.0363

Trust Resources List

Freshwater Pond	PUB	71.2272
Freshwater Pond	PUBGh	0.3823
Freshwater Pond	PUBF	0.4581
Freshwater Pond	PUBFh	0.4548
Lake	L1UB	10026.9823
Lake	L2US	9137.7099
Lake	L2UB	55.0778
Lake	L2AB	2299.5501
Lake	L2AB/UB	84.9317
Other	PUSA	24.4005
Other	PUSCh	0.1712
Other	PUS	417.7772
Riverine	R3UBH	291.8398
Riverine	R3USA	0.2032

U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Nevada Fish and Wildlife Office
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
http://www.fws.gov/nevada/

Project Name:

Yerington Lands Conveyance

Project Counties:

Mineral, NV

Project Type:

Land - Disposal / Transfer

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **4** threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Amphibians	Status		Has Critical Habitat	Contact

Columbia Spotted frog (*Rana luteiventris*) Population: Great Basin DPS	Candidate	species info		Nevada Fish And Wildlife Office
Birds				
Greater sage-grouse (*Centrocercus urophasianus*) Population: Bi-State	Proposed Threatened	species info	Proposed critical habitat	Nevada Fish And Wildlife Office
Yellow-Billed Cuckoo (*Coccyzus americanus*) Population: Western U.S. DPS	Threatened	species info	Proposed critical habitat	Nevada Fish And Wildlife Office
Fishes				
Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) Population: Entire	Threatened	species info		Nevada Fish And Wildlife Office

Critical habitats within your project area: (View all critical habitats within your project area on one map)

The following critical habitats lie fully or partially within your project area.

Birds	Critical Habitat Type
Greater sage-grouse (*Centrocercus urophasianus*) Population: Bi-State	Proposed critical habitat

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be

unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: http://www.fws.gov/migratorybirds/CCMB2.htm.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:
http://www.fws.gov/migratorybirds/CCMB2.htm.

Migratory birds of concern that may be affected by your project:
There are **18** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the ECOS Help Desk.

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
Bald eagle (*Haliaeetus leucocephalus*)	Yes	species info	Wintering
Brewer's Sparrow (*Spizella breweri*)	Yes	species info	Breeding
Burrowing Owl (*Athene cunicularia*)	Yes	species info	Breeding
Calliope Hummingbird (*Stellula calliope*)	Yes	species info	Breeding

Cassin's Finch (*Carpodacus cassinii*)	Yes	species info	Year-round
Costa's Hummingbird (*Calypte costae*)	Yes	species info	Breeding
Eared Grebe (*Podiceps nigricollis*)	Yes	species info	Breeding
Fox Sparrow (*Passerella liaca*)	Yes	species info	Breeding, Year-round
Greater sage-grouse (*Centrocercus urophasianus*)	Yes	species info	Year-round
Green-tailed Towhee (*Pipilo chlorurus*)	Yes	species info	Breeding
Loggerhead Shrike (*Lanius ludovicianus*)	Yes	species info	Year-round
Long-Billed curlew (*Numenius americanus*)	Yes	species info	Breeding
Lucy's warbler (*Vermivora luciae*)	Yes	species info	Breeding
Pinyon Jay (*Gymnorhinus cyanocephalus*)	Yes	species info	Year-round
Sage Thrasher (*Oreoscoptes montanus*)	Yes	species info	Breeding
Short-eared Owl (*Asio flammeus*)	Yes	species info	Wintering, Year-round
Snowy Plover (*Charadrius alexandrinus*)	Yes	species info	Breeding
Swainson's hawk (*Buteo swainsoni*)	Yes	species info	Breeding

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to

the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Data Limitations, Exclusions and Precautions
The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres

Trust Resources List

Freshwater Emergent Wetland	PEMF	50.9885
Freshwater Emergent Wetland	PEM	3706.5782
Freshwater Emergent Wetland	PEMA	107.2997
Freshwater Emergent Wetland	PEMC	129.3874
Freshwater Emergent Wetland	PEMB	232.2708
Freshwater Emergent Wetland	PEM/SSB	6.786
Freshwater Emergent Wetland	PEM/SSA	8.5792
Freshwater Emergent Wetland	PEMCh	4.5068
Freshwater Emergent Wetland	PEMAh	0.6245
Freshwater Emergent Wetland	PEMAx	0.8122
Freshwater Forested/Shrub Wetland	PFOB	5.7813
Freshwater Forested/Shrub Wetland	PFOA	17.3763
Freshwater Forested/Shrub Wetland	PSS/EM	2817.4229
Freshwater Forested/Shrub Wetland	PSSCh	3.5194
Freshwater Forested/Shrub Wetland	PSS	2999.9632
Freshwater Forested/Shrub Wetland	PSSJ	9.4113
Freshwater Forested/Shrub Wetland	PSSA	297.528
Freshwater Forested/Shrub Wetland	PSSB	77.5108
Freshwater Forested/Shrub Wetland	PSSC	6.0393
Freshwater Pond	PUBFx	18.9041
Freshwater Pond	PUBHx	13.4389
Freshwater Pond	PUBF	1.2415
Freshwater Pond	PUBHh	3.1169
Freshwater Pond	PUBFh	3.083
Lake	L1UBH	30015.7676
Lake	L1UB	5764.2996

Trust Resources List

Lake	L2US	22911.5154
Lake	L2UB	63.4505
Lake	L2USCx	0.2936
Lake	L2USJ	219.4207
Other	PUSJx	4.2897
Other	PUSC	1.2301
Other	PUSA	4.3822
Other	PUSJh	6.729
Other	PUSCx	3.8056
Other	PUSJ	78.3136
Other	PUSAx	9.5254

APPENDIX B

Plant Species Lists

Plant Species Observed in the Biological Study Area 2014

Common Name	Scientific Name	Barren Gravelly Slope	Coarse Gravelly Loam	Coarse Sand	Gravelly Loam	Loam	Sand	South Slope	Stony Slope	Eroded Granitic Slope	Saline Meadow	Wet Meadow
Shrubs												
Basin big sagebrush	*Artemisia tridentata spp. tridentata*	no	no	no	no	no	no	no	no	no	X	no
Wyoming big sagebrush	*Artemisia tridentata spp. wyomingensis*	X	no	no	no	X	no	X	no	no	no	no
Four-wing saltbush	*Atriplex canescens*	no	no	X	X	no	X	no	X	no	X	X
Shadscale	*Atriplex confertifolia*	X	X	X	X	X	no	X	X	X	X	no
Quailbush	Atriplex torreyi	no	no	no	no	no	no	no	no	no	X	no
Rubber rabbitbrush	*Chrysothamnus nauseosus*	no	no	no	no	no	no	no	no	no	X	no
Yellow rabbitbrush	*Chrysothamnus viscidiflorus*	no	X	X	X	no	X	X	X	X	no	no
Mormon tea	*Ephedra nevadensis*	X	X	no	X	X	X	X	X	X	no	no
Spiny hopsage	*Grayia spinosa*	X	X	X	X	X	X	no	X	no	no	no
Burro bush	*Hymenoclea salsola*	X	X	X	X	no	X	X	X	X	no	no
Green molly	*Kochia americana*	no	X	X	X	X	no	X	no	no	no	no
Winterfat	*Krascheninnikovia lanata*	X	X	X	X	X	X	no	X	X	no	no
Budsage	*Picrothamnus desertorum (Artemisia spinescens)*	X	X	X	X	X	X	X	X	X	no	no
Nevada indigo bush [Nevada dalea]	*Psorothamnus polydenius*	no	X	X	X	no	X	no	no	X	no	no

Common Name	Scientific Name	Barren Gravelly Slope	Coarse Gravelly Loam	Coarse Sand	Gravelly Loam	Loam	Sand	South Slope	Stony Slope	Eroded Granitic Slope	Saline Meadow	Wet Meadow
Baileys greasewood	*Sarcobatus baileyi*	X	X	X	X	X	X	X	X	X	X	X
Black greasewood	*Sarcobatus vermiculatus*	no	no	no	no	no	X	no	no	no	no	no
Little leaf horsebrush	*Tetradymia glabrata*	no	X	X	no	X	X	X	no	no	no	no
Short-spine horsebrush	*Tetradymia spinosa*	X	no	X	X	no	X	no	X	X	X	no
Cacti												
Sand cholla	*Grusonia (Opuntia) pulchella*	no	no	no	X	no	no	no	no	no	no	no
Mohave prickly pear	*Opuntia erinacea*	no	X	no	X	no	no	X	no	no	no	no
Grasses												
Needleandthread	*Hesperostipa comata*	no	X	no	no	X	X	no	no	no	no	no
Indian ricegrass	*Achnatherum (Oryzopsis) hymenoides*	X	X	X	X	X	X	X	X	X	no	no
Desert needlegrass	*Achnatherum speciosum*	no	X	no	X	X	X	X	X	X	no	no
Red brome	*Bromus rubens*	no	no	no	X	no	no	X	X	no	no	no
Cheatgrass	*Bromus tectorum*	X	X	X	X	X	X	X	X	X	no	no
Inland saltgrass	*Distichlis spicata*	no	no	no	no	no	no	no	no	no	X	X
Squirreltail	*Elymus elymoides*	X	no	no	X	no	no	X	no	no	no	no
James' galleta	*Hilaria jamesii*	X	X	no	X	X	X	X	no	no	no	no
Sandberg bluegrass	*Poa secunda* ssp. *secunda*	X	no	no	no	no	no	no	no	no	no	no

Common Name	Scientific Name	Barren Gravelly Slope	Coarse Gravelly Loam	Coarse Sand	Gravelly Loam	Loam	Sand	South Slope	Stony Slope	Eroded Granitic Slope	Saline Meadow	Wet Meadow
Forbs												
Wild onion	*Allium sp.*	X	no	no	no	no	no	no	no	no	no	no
Fiddleneck	*Amsinckia sp.*	X	no	no	X	X	X	no	X	X	X	no
Sand verbena	*Abronia villosa*	no	no	no	no	no	X	no	no	no	no	no
Freckled milkvetch	*Astragalus lentiginosus* var. *floribundus*	X	no	no	no	no	X	no	no	no	no	no
Pursh's milkvetch	*Astragalus purshii*	no	X	no	no	no	no	no	no	no	no	no
Booth evening primrose	*Camissonia boothii*	no	X	X	X	no	no	X	no	no	no	no
Brown-eyed evening primrose	*Camissonia claviformis*	no	no	X	X	no	X	no	X	X	no	no
Desert paintbrush	*Castilleja chromosa*	X	no	no	no	no	no	X	no	no	no	no
Wild cabbage	*Caulanthus pilosus*	no	no	no	X (wash)	no	no		no	no	no	no
Flesh color pincushion	*Chaenactis xantiana douglasii*	X	X	X	X	X	X	X	X	X	X	
Nevada goosefoot	*Chenopodium nevadense*	no	no	no	no	no	X	no	no	no	no	no
Rigid spineflower	*Chorizanthe rigida*	no	no	no	X	no	no	no	no	no	no	no
Yellow beeplant	*Cleome lutea*	no	no	no	no	no	X	no	no	X	no	no
Cushion cryptantha	*Cryptantha circumscissa*	X	X	X	X	X	X	no	no	no	no	no
Globe springparsley	*Cymopterus globosus*	no	no	no	no	no	X	no	no	no	no	no
Larkspur	*Delphinium sp.*	no	no	no	no	X	no	X	no	no	no	no

Common Name	Scientific Name	Barren Gravelly Slope	Coarse Gravelly Loam	Coarse Sand	Gravelly Loam	Loam	Sand	South Slope	Stony Slope	Eroded Granitic Slope	Saline Meadow	Wet Meadow
Paradise tansy mustard	*Descurainia paradisa*	no	no	no	no	no	X	no	X	no	no	no
Western tansy mustard (N)	*Descurainia pinnata*	X		X	X	X	X	X	no	X	X	no
Fixweed (introduced)	*Descurainia* sophia	no	no	no	X	no	X	no	no	X	no	no
Desert eriastrum	Eriastrum eremicum	no	no	X	X	no	X	no	no	no	no	no
Bailey buckwheat	*Eriogonum baileyi*	no	X		X	X	X	no	X	X	X	no
Flat-topped buckwheat	*Eriogonum deflexum*	no	no	no	no		X	no	no	no	no	no
Desert trumpet	*Eriogonum inflatum* var. *inflatum*	no	no	no	no	X	no	no	no	no	no	no
Sulfurflower buckwheat	*Eriogonum umbellatum*	no	no	no	no	no	no	X	no	no	no	no
Filaree red-stem storkbill	*Erodium cicutarium*	no	no	no	no	no	no	no	X	no	no	no
Halogeton	*Halogeton glomeratus*	X	X	X	X	X	X	X	X	X	no	no
Morning glory	*Ipomoea sp.*	X	no	no	no	no	no	no	no	no	no	no
Desert pepperweed	*Lepidium fremontii*	X	no	no	no	no	no	no	X	no	no	no
Peppergrass	*Lepidium lasiocarpum*	no	no	no	X	X	no	no	no	no	no	no
Intermontane lupine	*Lupinus pusillus var. intermontanus*	no	no	no	no	no	X	no	no	no	no	no
Desert dandelion	*Malacothrix glabrata*	X	X	X	X	X	X	X	X	X	no	no
Desert blazing star	*Mentzelia* albicaulis	X	no	X	X	X	X	no	X	X	X	no
Winged four o'clock	*Mirabilis alipes*	X	X	X	X	no	X	no	X	X	no	no

Common Name	Scientific Name	Barren Gravelly Slope	Coarse Gravelly Loam	Coarse Sand	Gravelly Loam	Loam	Sand	South Slope	Stony Slope	Eroded Granitic Slope	Saline Meadow	Wet Meadow
Desert wishbone plant	*Mirablils laevie var. villosa*	no	no	no	X	no	X	no	no	no	no	no
Desert purple mat	*Nama demissum*	X	no	X	X	no	X	X	no	no	no	no
Roundleaf puncturebract	*Oxytheca perfoliata*	no	no	no	no	no	no	no	no	X	no	no
Nevada dune beardtongue	*Penstemon arenarius*	no	no	no	no	no	X	no	no	no	no	no
Phacelia	*Phacelia fremontii*	no	no	no	no	no	X	no	no	no	no	no
Showy phlox	*Phlox longifolia*	no	no	no	no	no	X	no	no	no	no	no
Great Basin popcorn flower	*Plagiobothrys kingii*	X	no	X	X	no	no	no	no	no	no	no
Russian thistle	*Salsola tragus*	no	no	no	X	no	X	X	X	X	no	no
Small leaf globemallow	*Sphaeralcea parviflora*	X	X	X	X	X	X	X	X	X	no	no
Panamint prince's plume	*Stanleya elata*	X	X	X	X	no	X	X	X	X	no	no
Brown plume wire lettuce	*Stephanomeria pauciflora*	X	X	no	X	no	X	X	X	X	no	no
Long beaked twisted flower	*Streptanthella longirostris*	X	no	no	X	no	X		X		no	no
Nuttall's crinklemat	*Tiquilia nuttallii*	no	no	no	X	no	X		X	X	no	no

Species Observed in the JBR Study Area May 2007*	
Shrubs and Trees	
Picrothamnus desertorum (Artemisia spinescens)	budsage
Atriplex canescens	four-wing saltbush
Atriplex confertifolia	shadscale
Brickellia microphylla	brickellbush
Chenopodium sp.	goosefoot
Chrysothamnus nauseosus	rubber rabbitbrush
Chrysothamnus viscidiflorus	yellow rabbitbrush
Ephedra nevadensis	Mormon tea
Grayia spinosa	spiny hopsage
Hymenoclea salsola	burro bush
Kochia americana	green molly
Krascheninnikovia lanata	winterfat
Psorothamnus polydenius	Nevada indigo bush (Nevada dalea)
Sarcobatus baileyi	Baileys greasewood
Tetradymia glabrata	little leaf horsebrush
Tetradymia spinosa	shortspine horsebrush
Cacti	
Grusonia (Opuntia) pulchella	sand cholla
Opuntia erinacea	Mohave prickly pear
Grasses and grass-like plants	
Achnatherum (0ryzopsis) hymenoides	Indian ricegrass
Achnatherum speciosum	Desert needlegrass
Blepharidachne kingii	eyelash grass
Bromus rubens	red brome
Bromus tectorum	cheatgrass
Elymus elymoides	squirreltail grass
Hilaria jamesii	James' galleta
Poa secunda ssp. *secunda*	Sandberg blue grass
Herbaceous	
Amsinckia sp.	fiddleneck
Astragalus lentiginosus var. *floribundus*	freckled milkvetch
Camissonia boothii	Booth evening primrose
Camissonia claviformis	brown-eyed evening primrose
Castilleja chromosa	desert paintbrush
Caulanthus pilosus [Brassicaceae]	wild cabbage
Chaetadelpha wheeleri	dune broom
Chenopodium nevadense	Nevada goosefoot
Chorizanthe rigida	rigid spineflower
Cryptantha circumscissa	cushion cryptantha
Cryptantha sp.	cryptantha
Descurainia paradisa	paradise tansy mustard
Descurainia sp.	herb Sophia
Eriastrum sp.	Eriastrum
Eriogonum baileyi	Bailey buckwheat

Eriogonum deflexum	Flat-topped buckwheat
Eriogonum inflatum var. *inflatum*	Desert trumpet
Eriogonum maculatum	Spotted buckwheat
Eriogonum nidularium	Birdnest buckwheat
Gilia sp.	gilia
Halogeton glomeratus	Halogeton
Lepidium fremontii	Desert pepperweed
Lepidium lasiocarpum	Peppergrass
Mentzelia sp.	Desert blazing star
Mirabilis alipes	Winged four o'clock
Oxytheca dendroidea	Narrowleaf oxytheca
Phlox sp.	Phlox-perennial
Salsola tragus	Russian thistle
Sphaeralcea parviflora	Small leaf globemallow
Stanleya elata	Panamint prince's plume
Stephanomeria pauciflora	Brown plume wire lettuce

* Source: JBR Environmental Consultants, Inc. 2007. 2007 Threatened, Endangered, Candidate, & Sensitive Plant Survey Pumpkin Hollow Project. Reno, NV. JBR Project No. 07.000148.01

APPENDIX C

Photographs of the Biological Study Area

Photo 1. Sandy 5-8” P.Z. ecological site during wet spring 2014.

Photo 2. Typical sandy wash.

Photo 3. Gravelly loam 4-8" P.Z. ecological site.

Photo 4. South slope 4-8" P.Z. ecological site.

Photo 5. Coarse gravelly loam 4-8" P.Z. ecological site.

Photo 6. Stony slope 4-8" P.Z. ecological site.

Photo 7. ***Penstemon arenarius***

Photo 8. ***Grusonia pulchella***

Photo 9. ***Opuntia erinacea***

Photo 10. Burrow with sign of past burrowing owl use.