State of California
California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE

FINAL LAND MANAGEMENT PLAN

for

INDIAN JOE SPRINGS ECOLOGICAL RESERVE
Inyo County, California

April, 2018

INDIAN JOE SPRINGS ECOLOGICAL RESERVE
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ACKNOWLEDGEMENTS

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I. INTRODUCTION

A. Purpose and History of Acquisition

The Indian Joe Springs Ecological Reserve (Ecological Reserve) property was acquired by the California Department of Fish and Wildlife (Department) to protect the Mojave desert water sources and associated riparian habitat providing critical habitat for the Inyo California towhee (*Melozone crissalis eremophilus*). This subspecies occurs only in the Argus Range and is dependent on the riparian habitat associated with isolated springs.

Recognizing the importance of the high quality towhee habitat occurring on the Indian Joe Springs parcel, the property was acquired by the Wildlife Conservation Board on behalf of the Department on September 24, 1992. Prior to acquisition, the property represented the only privately owned portion of critical habitat for the species. The Ecological Reserve consists of five contiguous parcels totaling 520 acres. The property was formally designated as the Indian Joe Springs Ecological Reserve by the California Fish and Game Commission in 1994.

Funding used for the acquisition came from Proposition 70 Wildlife and Natural Areas Conservation Program bond funds. The acquisition followed the classification of the subspecies as endangered by the California Fish and Game Commission in October 1980 and threatened by the U.S. Fish and Wildlife Service in August 1987.

B. Purposes of This Management Plan

Overall, the goal for management of Department lands is to optimize the ecological integrity of habitats in balance with the needs for public use. To accomplish this, the Department strives to protect and maintain the biological and physical processes that contribute to this integrity, with an emphasis on adaptive management of habitats, and public uses that are compatible with these efforts. Toward these goals, this Land Management Plan (LMP) serves the following purposes:

1. The plan guides the adaptive management of habitats, species, and programs described herein to achieve the department's mission to protect and enhance wildlife values.

2. The plan serves as a guide for appropriate public uses of the property.

3. The plan serves as a descriptive inventory of fish, wildlife, and native plant habitats which occur on or use this property.

4. The plan provides an overview of the property's operation and maintenance,

and personnel requirements to implement management goals. It serves as a budget planning aid for annual regional budget preparation.

5. The plan provides a description of potential and actual environmental impacts and subsequent mitigation which may occur during management, and contains environmental documentation to comply with state and federal statutes and regulation

II. PROPERTY DESCRIPTION

A. Geographic Setting

Indian Joe Springs canyon and Searles Valley

Indian Joe Springs Ecological Reserve is located on the eastern slope of the Argus Range in southern Inyo County, California (Figure I). The Ecological Reserve is situated in a canyon with an intermittent stream and multiple spring sources draining from the higher peaks into Searles Valley to the east. This feature is referred to variously as Indian Joe canyon, Joe Peterson creek, and Peterson creek. Argus Peak rises to an elevation of 6,562 feet two miles northwest of the property. Elevations on the Ecological Reserve range from 2,020 feet at the mouth of the canyon to 3,800 feet at the northwest end of the property towards the crest of the Argus Range.

The Ecological Reserve is located approximately five miles north of the community of Trona and 31 miles northeast of the city of Ridgecrest. Access to the Ecological Reserve is via a sandy unimproved dirt road labeled as Bureau of Land Management (BLM) Route P36 extending 2.5 miles west from the intersection with Trona-Wildrose Road (an extension of Highway 178 leading to the adjacent Panamint Valley and Death Valley National Park). P36 is gated at the property boundary with the adjacent aggregate quarry; however an alternate route is available on the north side of the wash beginning at mile 2.2. A rough path extends to the springs.

Indian Joe Springs Ecological Reserve is located on the Trona West 7.5 minute USGS quadrangle in Sections 23, 24, and 25 of Township 24 South, Range 42 East, and Section 30 of Township 24 South, Range 43 East MDB&M.

B. Property Boundaries and Adjacent Land Use

The Ecological Reserve is bordered by BLM property on all but the southern and

eastern sides of the southeastern most parcels. The property's legal boundaries are illustrated in Figure 2 and Figure 3. The legal description of the land is included as Appendix A.

The BLM lands surrounding the reserve are included within the Great Falls Basin/ Argus Range Area of Critical Environmental Concern (ACEC) as established in the 1980 California Desert Conservation Area Plan. The area was designated with this special management status to protect wildlife and scenic values, specifically for the protection of habitat for the Inyo California towhee.

The boundary of the China Lake Naval Air Weapons Station (NAWS) is located ¾ mile to the west of the western boundary of the Ecological Reserve. The mission of this facility is to support the Navy's research, testing and evaluation missions to provide cutting-edge weapons systems to the warfighter. The facility is the Navy's largest landholding encompassing more than 1.1 million acres. The Environmental Management Office at China Lake NAWS is actively engaged in efforts to manage habitat for towhee and other species as guided by the Integrated Natural Resources Management Plan for the station. Because the Department, BLM, and China Lake NAWS all have land management responsibilities surrounding the Reserve, the three agencies may pursue joint projects where feasible.

Portions of the Ecological Reserve abut privately owned parcels at the south as shown on Figure 2. Land uses adjacent to the Reserve include a quarry and various unimproved roads. The aggregate quarry is under active use and currently shares the primary access road serving the reserve.

C. Geology, Soils, Climate, and Hydrology

1. Geology and Soils

The Ecological Reserve is underlain entirely by a Mesozoic granitic pluton; specifically, a quartz diorite that is fractured and weathered. Regional jointing and faulting is primarily west-northwest and represents a conjugate joint stress pattern related to Basin and Range extension and the nearby Garlock Fault. The only published geologic map is the much generalized 1962 Trona 2 x 1 degree sheet published as part of the Geologic Map of California (Jennings, et al), which shows the entire southern part of the Argus Range as "granitic." Wilson Canyon, 1.25 miles south of Indian Joe Spring site, is shown on that map as a west-northwest trending fault that defines the linear character of that canyon and its counterpart on the west side of the range. This tectonic feature appears, from aerial photographic evidence, to control the fracture patterns in the granite in the Ecological Reserve. Further information may be available in an unpublished PhD dissertation by Moore (1976). The trend of this feature is parallel to the trend of the 370 mile-long Independence Dike Swarm (Smith 1962; Carl, et al 1998) that is mapped in

the southern Argus Range. Those igneous dikes cut through the Indian Joe Canyon area batholith and extend northwestward into the granitic batholiths of the Sierra Nevada. This major structural fabric of the northern Mojave Desert ranges and Sierra/Owens Valley areas helps us interpret the large-scale stress fields present during intrusion of the late Mesozoic batholiths.

Two reports by Stone, et al (1987; 1989) discuss the Paleozoic rocks of the Argus Range farther north. Those rocks are older than the granitic pluton at Indian Joe Canyon, and are largely cherty limestones and marble. These Osborn Canyon and Darwin Canyon Formations are of Pennsylvanian age and are noted from the Darwin area at the north end of the Argus Range southward to the central Argus Range. It appears that the granitic plutons have completely displaced all such older sedimentary rocks at the south end of the range where the Ecological Reserve is located. However, there may be local concentrations of carbonate rocks or contact alteration in fragments of roof pendants that are not mapped in the old regional maps. This possibility is suggested by the fact that there is local economic mineralization (judging from the mining prospects and mines near the Reserve; e.g., Mohawk Mine to the northeast), and by the fact that the pluton has differing geochemistry (a quartz monzonite) in that vicinity. If so, those carbonate rocks may provide habitat for an alkaline carbonate plant community that may require careful management. It is not known if such a carbonate-dependent flora exists in the Ecological Reserve.

A 1992 U.S. Geological Survey study of uranium favorability in the Trona 1º x 2º sheet (Hofstra 1992) provides almost 1000 pages of tables and maps based on extensive geochemical sampling in this area for possible uranium resources. No such resources were found, but the geochemical analysis and detailed classification of rocks that were sampled at various locations provide a kind of geologic and soils map. Although the microfiche government publication is virtually unreadable for water quality and water chemistry analyses that might have included the springs themselves, the rock, soil, stream sediment, and gravel samples in the vicinity of the Ecological Reserve can be interpreted. The local bedrock of quartz diorite had only about 1 ppm of uranium and 6 ppm of thorium that were the focus of the investigation when sampled in 1978-1980. These values were based on interpretation of radiometric measurements at the rock surface in the creek bed in Wilson Creek just south (1.25 miles) of Bainter Spring.

Two samples for more extensive geochemical analysis were collected in the canyon just below the Indian Joe Springs. These included quartz diorite and tufa. If indeed tufa, as formed and exposed in the nearby Searles Lake bed, it indicates that the Indian Joe Springs site was at various times along the lake shoreline of Pleistocene Lake Manley. The Owens Valley filled with runoff at each glacial peak and interglacial time, and those waters overflowed into China Lake, thence to Searles Valley, and on to Panamint and finally into

Indian Joe Springs Ecological Reserve	Map 1. Vicinity Map

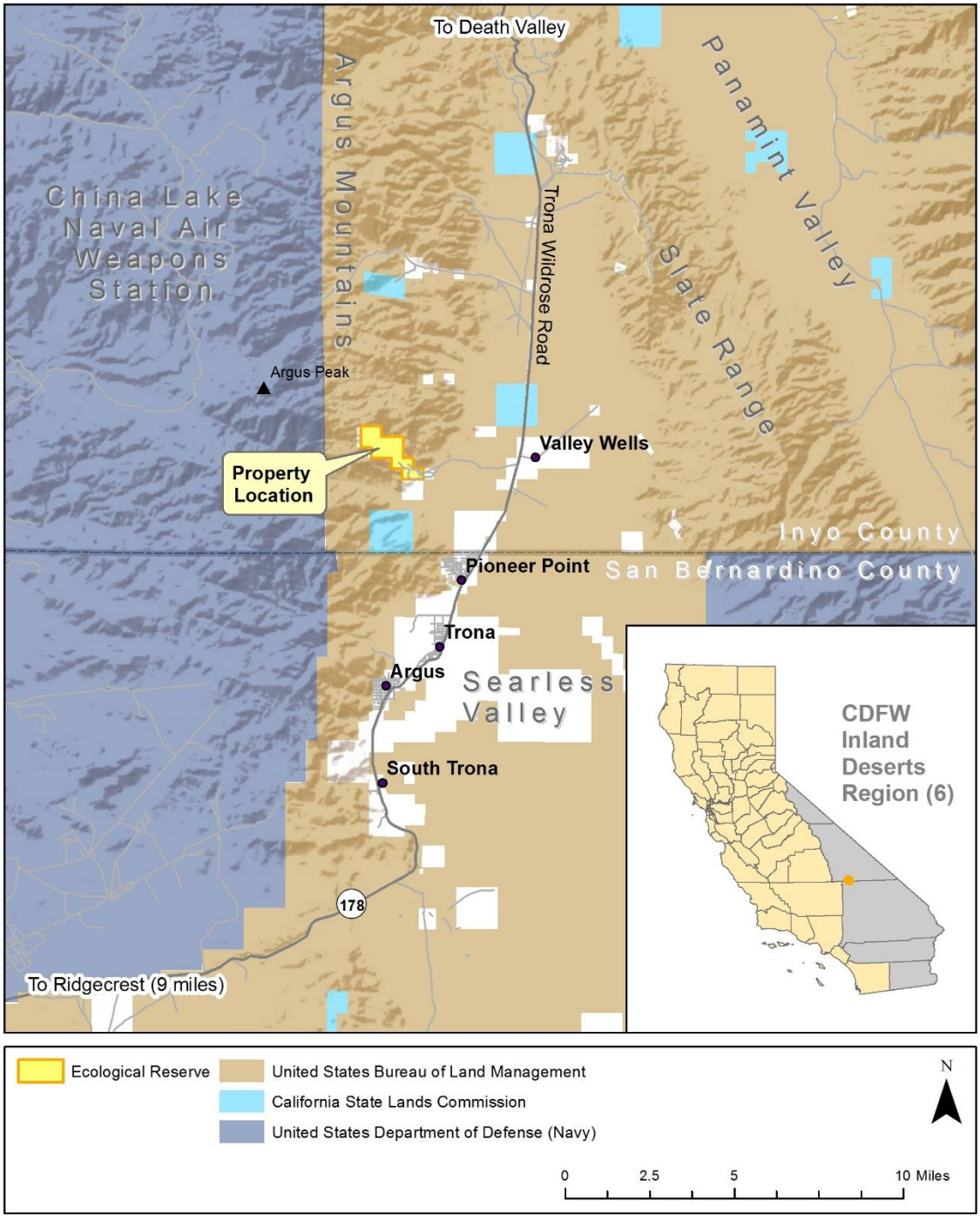

Figure I. Indian Joe Ecological Reserve vicinity map.

Indian Joe Springs Ecological Reserve	Map 2. Property Map

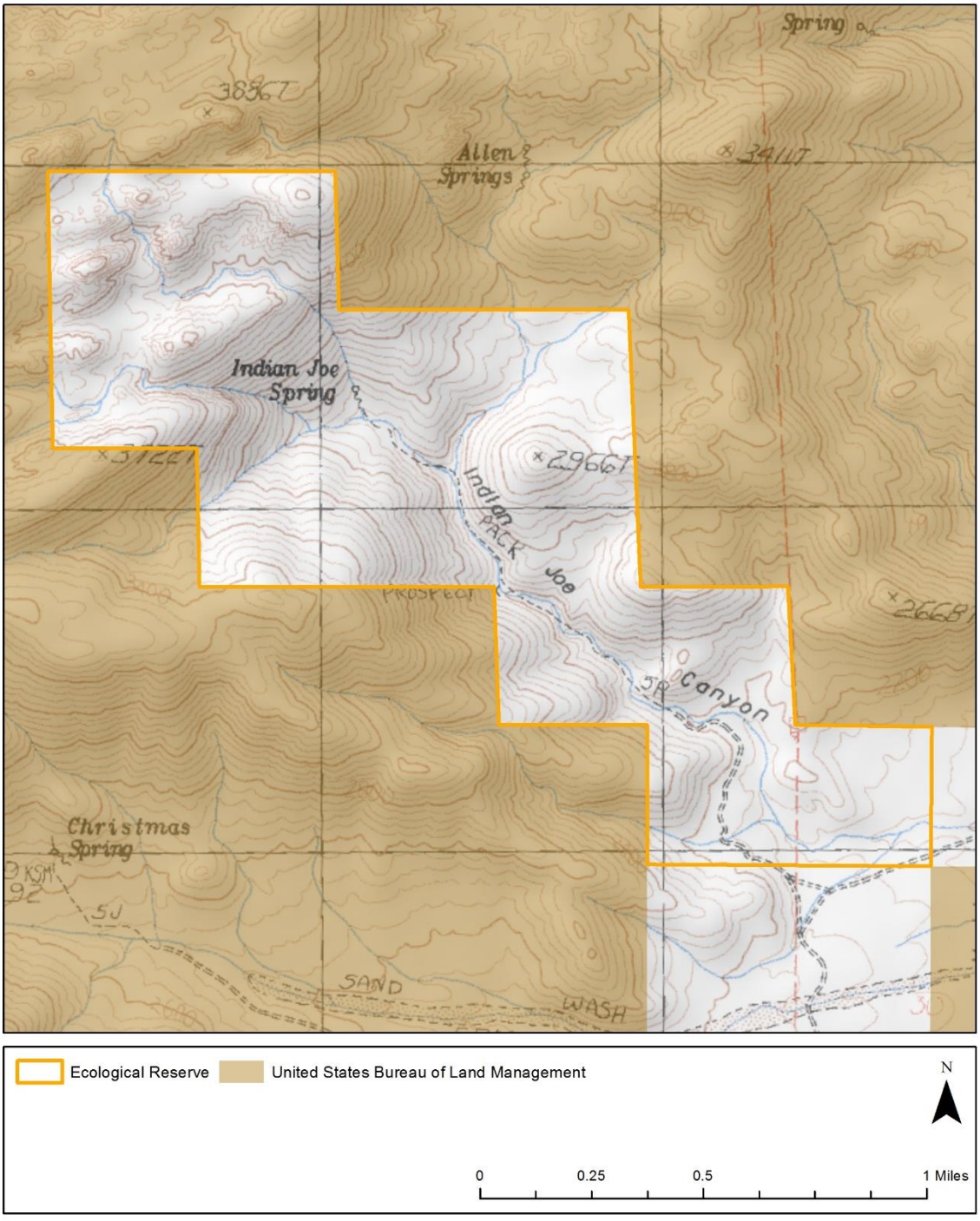

Figure 2. Indian Joe Ecological Reserve property map.

Indian Joe Springs Ecological Reserve	Map 3. Aerial Photo Map

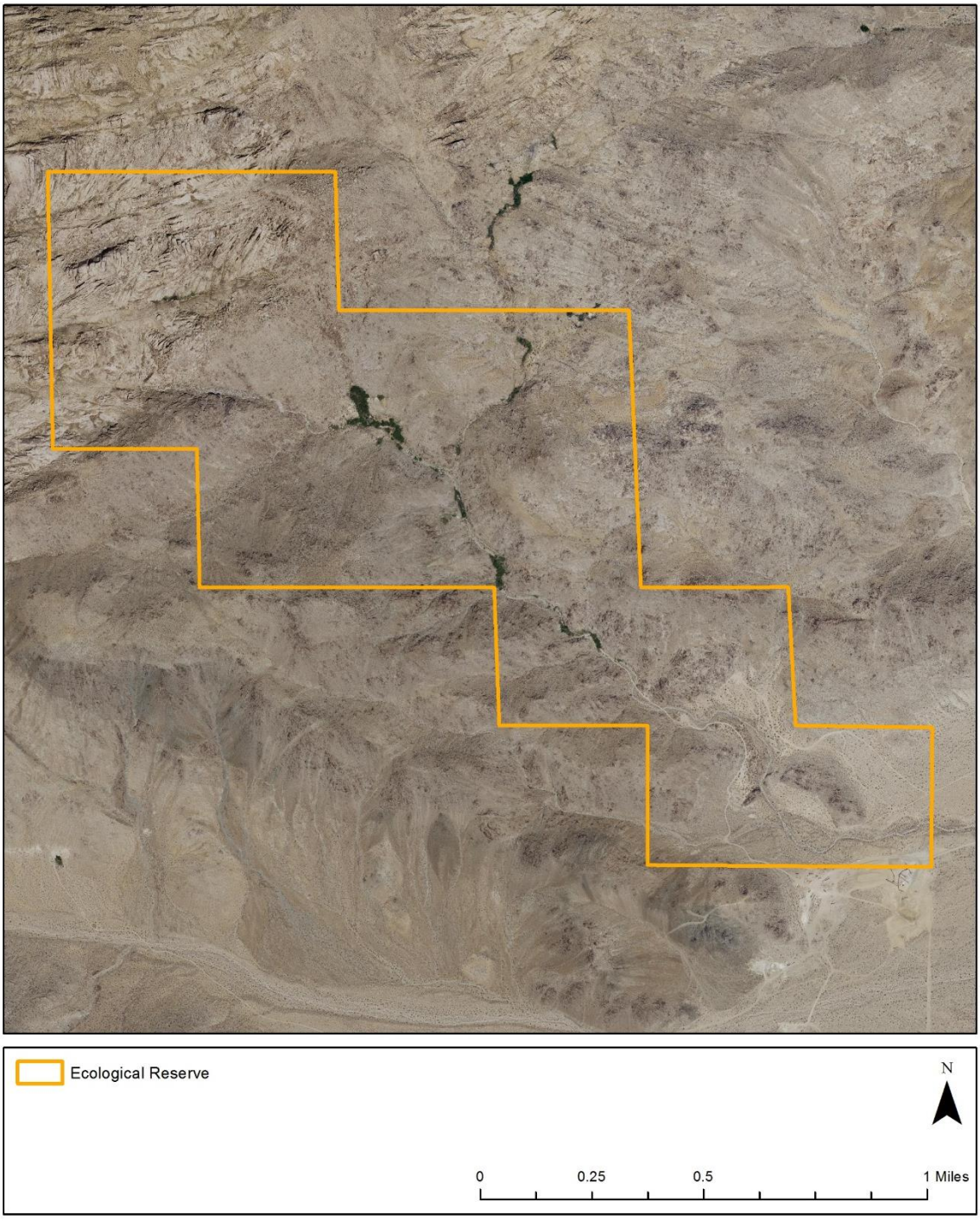

Figure 3. Indian Joe Ecological Reserve aerial photograph map.

Death Valley, forming a series of large inland lakes. A single sample out of many thousands suggests a high shoreline near Indian Joe Springs (Smith, 1979; Garcia et al 1993). The presence of tufa along such a high freshwater Pleistocene lake would indicate inflow of spring water through the lakebed during a substantially wetter mid-glacial time (see the chronology of GI Smith 1979).

Soil samples were taken by the US Geological Survey for the uranium study of 1978-80. Two soil samples were taken in Wilson Canyon 1.25 miles south of the Indian Joe Springs site. These are not described but chemical data are presented. These appear to be alluvial lag deposits derived from the quartz diorite parent material. Their residual radioactivity suggests about 2 ppm uranium and 7 ppm thorium in an alkaline weakly weathered matrix. Chemistry is as expected in a desert weathering environment with granitic parent materials.

Investigations along the Argus Range for contemporary pollen rain (E. Leopold, U. Washington, personal communication 1965) revealed that the eastern side of that range in the vicinity of the Indian Joe Canyon area has an accumulation of Aeolian material primarily from the Searles Lake basin but also from as far away as west of the Sierra Nevada. Such material would be expected to provide an alkaline fine-grained matrix within the stony desert soils that provide both short-term soil moisture holding capacity for desert plants and seed banks, but also provide the requisite geochemical environment for caliche and desert varnish deposits under and on top of stones that mantle the soil. Such stone pavements on the lower fan segments are critical for maintenance of site productivity for plants and insects after those rainfall events that occur in 2 out of 10 years. It is vital to keep vehicles and foot trails off those stone pavements if desert blooms are to be maintained in wet years.

2. Climate

The Indian Joe Springs Ecological Reserve is located on the eastern slope of the Argus Range about three miles east-southeast of the summit of its highest peak, Argus Peak (6,562 feet). Indian Joe springs is at 2,700 feet elevation in a dry canyon at the head of a desert fan that extends down to Searles Lake. Much of the fan surface is coated in stones with a well-developed desert varnish indicating geologically long very dry conditions.

The local meteorology of the Ecological Reserve is not well known. Based on the distribution of vegetation and springs around Argus Peak, it is probable that summer convective thunderstorms move in from the southeast while winter frontal moisture comes from the northwest. Seasonal variations in precipitation follow the conventional Mediterranean climate model with winter maxima for rainfall and snow. Although snowfall is rare at Trona, it can be

observed at the higher elevations in the Argus Range following cold winter storms. The short intense rainstorms of summer months contribute a significant portion of the annual precipitation at this desert site.

A nearby (about five miles south of the Reserve) climate station recorded a continuous record from Jan. 1, 1931 to December 31, 2005 at Trona. For this LMP, a synthesized statistical climate record for the Indian Joe Springs site was used based on regional data extending from Death Valley to southernmost Owens Valley that is highly weighted by the nearest Trona record. This record is synthesized by the National Weather Service's Hydrometeorological Design Studies Center, using algorithms that weight record length, elevation, distance, and other factors to develop a frequency-duration-magnitude analysis for precipitation (only). For temperature, the Trona cooperative meteorological record for California station 049035 as reported by the Western Regional Climate Center in Reno is used. Trona is at about the same elevation as Indian Joe Springs.

Figure 4 presents both precipitation and temperature average data for Trona, south of the Ecological Reserve. These data should very closely represent the Ecological Reserve conditions. Long-term mean annual precipitation at Trona is 3.76 inches.

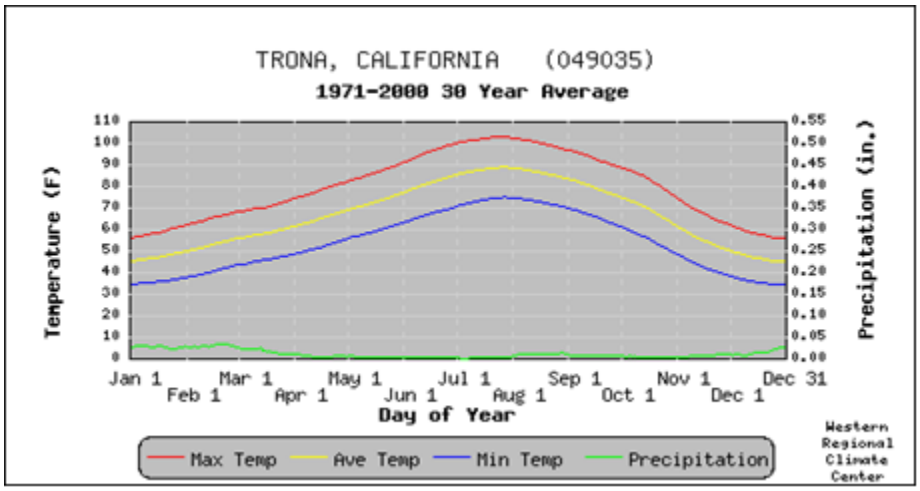

Figure 4. Precipitation and temperature averages for Trona, California.

The rainfall events that are most significant for management are probably the 60-minute and 24-hour 20-to-100 year events. Two to 3.5 inches of rainfall may be expected in these short periods that would generate overland flow and flow on the lower fans, obscuring roads and trails. Longer duration rainfall events would not be expected to exceed infiltration capacities, no matter how large.

Geomorphically significant rainfall events are within the range of 30-minutes to 24 hours with 1.5 to 4 inches of intense precipitation probably associated

with summer convective thundershower/cloudburst conditions. When such events occur, infrastructure will be damaged in the natural course of the development of desert canyons and washes, with significant transport of sediment in the canyon bottoms and cascading waterfalls on many of the upland breaks in slope at the 100-year frequency event. These are very brief events but serve to reset the geomorphic equilibrium of the desert canyons.

Seasonal vegetation in these desert areas is dependent upon antecedent seasonal precipitation. The 10-day precipitation plot in Figure 5 presents probabilities of 10-day cumulative precipitation throughout the year. The bottom two lines (0.5 and 1.0-inch) are those that reflect precipitation events that will lead to germination of long-dormant seed bank vegetation, no matter when it occurs. There is a late summer (August-September) peak and a midwinter (January-February) peak. Each triggers germination of particular plant species adapted to those particular rainfall sources. This plot indicates that such germination events should occur at frequencies of about one year out of four to one year out of ten.

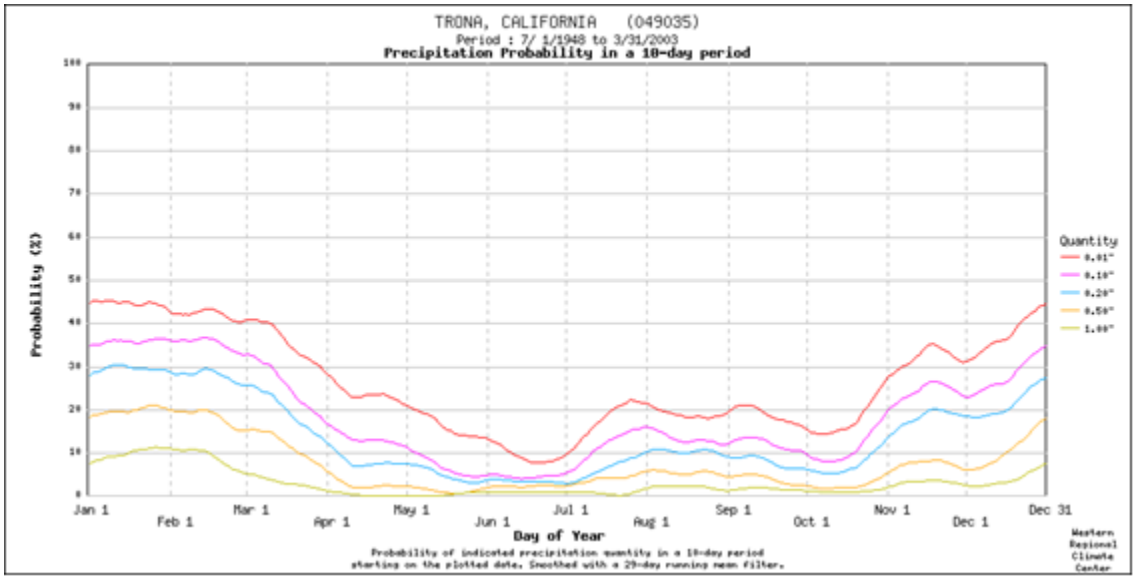

Figure 5. 10-day precipitation probability plot for Trona, California.

3. Hydrology

Indian Joe Springs supports approximately 2 acres of riparian habitat with spring flow varying seasonally and year-to-year. Additional patches of riparian vegetation supported by additional seeps and springs occur in the canyon bottoms.

To estimate the flow of the springs such as Indian Joe on the eastern flank of Argus Peak, it is assumed that the precipitation recorded at Trona is representative of that about 5 miles north at Indian Joe (3.76 to 4.14 inches per annum) at the same elevation. The higher elevation of Trona Peak and its

Seasonal pool along Indian Joe canyon below springs

eastern basin (4,100 feet mean) is 1,600 feet higher than Trona and the site of Indian Joe Springs. Each of the several springs on the eastern flank of Trona Peak, including Indian Joe (basically the Great Falls Basin), would yield in an average year an estimated 2,000 gallons per day of total flow and seep.

In a recent survey, Andy Zdon found that the flow at nearby Christmas Spring located 0.6 miles south of the Ecological Reserve in the adjacent Wilson Canyon had a flow rate of 2.5 gallons per minute with a pH of 7.69, conductivity of 676 microsiemens per centimeter, total dissolved solids of 338 mg/ L, dissolved oxygen of 2.73 mg/ L and salinity of 0.324 parts-per-trillion (Zdon 2016). An earlier document notes that water flows of 4 gallons per minute were consistently recorded at Indian Joe Springs.

It can be assumed that effective recharge is 1 percent of the annual precipitation or 10 percent of summer cloudburst volumes over a recharge area of about 3.5 square miles, with one-third of that ultimately draining to Indian Joe Springs (Figure 6). Precipitation intensities for a 10-year return period (about 2 inches in 24 hours) should be sufficient to generate overland flow in canyon bottoms. A 25-year return period summer rain (1-inch in 60 minutes) should be sufficient to generate overland flow and rilling on hillslopes with some discharge at the heads of alluvial fans. Such storm periods have the highest probability of occurrence between June 15 and August 1. A 25-year return period storm has about a 2 percent chance of reoccurrence during that time window. Thus, trails and roads across fans and open slopes can be expected to be damaged about two times every century, but sediment may be transported in canyon bottoms once every 10 years.

Interannual variability is very high and spring flow and habitats would be expected to be severely stressed when annual precipitation is less than 20% of normal for two or more successive years. US Department of Agriculture climate data for Trona reveal that 2 years in 10 will have total annual precipitation of less than 1.35 inches and that in an average year there are only 5 days with 0.1 inch of precipitation or greater. Two years out of 10 will also be wet with 6.6 inches of annual precipitation or greater.

Because soil moisture is a function of precipitation and because antecedent moisture is critical for both plants and runoff, the high interannual variability in precipitation amounts suggests that years with strong monsoonal summer

moisture from the south may be years with summer runoff but with little or no winter runoff. Alternate conditions with higher than normal winter precipitation would be expected to occur in times of high indices of zonal westerly circulation with little summer thundershower activity.

The Ecological Reserve is within the watershed but located primarily outside the boundary of the Searles Valley Groundwater Basin. This is a closed basin without external drainage. Groundwater recharge occurs through percolation of rainfall and runoff through alluvial fans along the mountains at the north of the basin and subsurface inflow from Salt Wells and Pilot Knob Valleys (DWR 2003). According to the California Department of Water Resources Groundwater Basin Bulletin 118, groundwater levels declined by about 110 feet at nearby Valley Wells between 1917 and 1967 as the result of pumping for extraction of evaporate minerals.

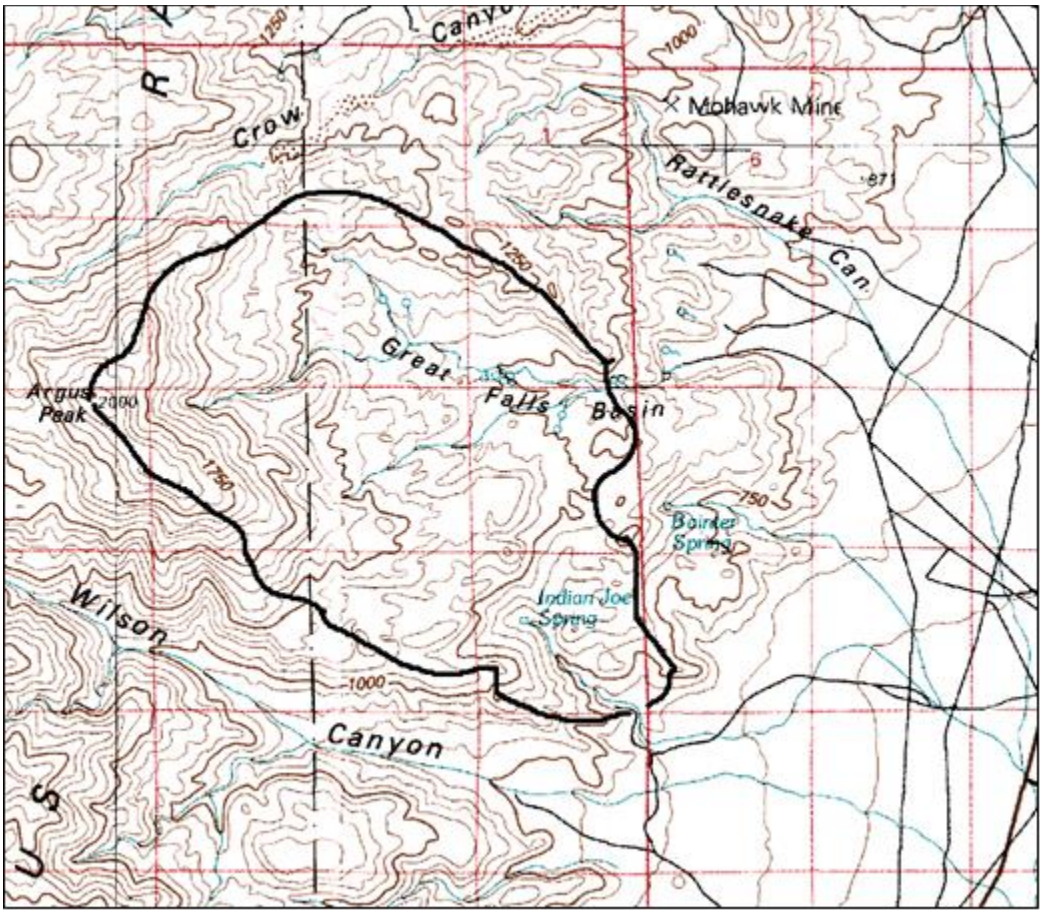

Figure 6. Potential catchment area for Indian Joe and adjacent springs. Red squares are approximately 1 square mile; contours are in meters.

D. Cultural Features

1. Archaeology

Archaeological investigations of the Argus Range, Coso and nearby Panamint Valley regions indicate that groups of hunters and gatherers had populations centered around pluvial lakes such as Searles Lake from 12,000 to 8,000 years ago, utilizing the abundant water, vegetation, and wildlife (Kaldenberg 1978). The most important plant food resources included pinon pine nuts, mesquite beans, and bunchgrass seeds. Hunted species included desert bighorn sheep, deer, rabbits, packrats and other rodents as well as lizards such as chuckwalla. These residents often gathered at winter camp locations typically in the mountain foothills near springs and relied on food stores gathered during the summer and fall. In late winter and early spring these groups would disperse into smaller family groups spreading out to obtain food resources (Hall 1975). Because of the hydrologically dynamic nature of this desert canyon, it is likely that Native American artifacts and sites are buried in the young soils in the wash above and below the springs. These soils should be protected from disturbance by human activities to the extent possible.

A cultural records search was conducted for this property through the Eastern Information Center at UC Riverside. No records of archaeological surveys exist for this area.

2. Historic Land Use

In the 1870s at the time of the discovery of borate deposits in Searles Dry Lake, the Ecological Reserve site was occupied by a Native American man named Joe Peterson commonly known as “Indian Joe” and his family. These residents were displaced by John Searles in his efforts to provide food and water for workers at his nearby borax mine. However, after Searle’s death in 1897 Patterson and his family returned to the land and were granted ownership under a federal patent consisting of 160 acres (Fairchild 2015).

Walnut tree and old rock wall below springs

Portions of the Reserve near the springs were used for growing fruit and vegetables to provide for early settlers and miners in the Trona and Ballarat area (Fairchild 2015). Some of the garden terraces and fruit and nut trees, including figs, grapes, and walnuts, are still present in the upper canyon.

Water was also piped from the springs in the canyon and sold to supply the Trona area with water for domestic and mineral processing uses. In 1929 Indian Joe Springs was one of 38 springs from which water was captured into pipelines for the “Mountain Water System” supplying Trona. This system once included over 36 miles of transmission pipelines ranging from 1 inch to 6 inches in diameter (Patchick 1964). Indian Joe Spring was not among the most productive spring sources and had long been disconnected from the water system at the time that the property was acquired by the Department. The pipeline has long since been removed and the springs now flow freely down the canyon.

A mine adit approximately 30 feet deep is located in the middle section of the canyon. No historic information has been located about this long abandoned prospect. The mine was assessed by the California Department of Conservation’s Division of Mine Reclamation and was classified as an “open stable adit” and given a low priority for remediation due to the remote location.

Historically, a road continued up Indian Joe Canyon to just below Indian Joe Springs. Most of this road has washed out over the years and an unimproved trail is currently the only access route up the canyon. This trail is also washed out in several places. Public access into much of the Ecological Reserve is by foot only.

3. Existing Structures

There are no structures located on the Ecological Reserve.

III. HABITAT AND SPECIES DESCRIPTIONS

A. Vegetation Communities and Habitats

Overview

Indian Joe Springs Ecological Reserve consists of four different vegetation types: the eastern open sandy soils with a diffuse scrub community, two different scrub communities on the north/east or south/west facing slopes, and the riparian area of a narrow canyon floor that bisects the property. The flora consists of species associated with the western Mojave Desert.

Methods

Botanical data for this LMP was compiled using a combination of field surveys, aerial photo interpretation, herbarium records, and the California Natural Diversity Database (CNDDB) records for the area. For the field surveys, two botanists inventoried the vegetation communities and plant species during a one-day survey on March 31, 2003. Prior to the survey, the CNDDB was reviewed to determine the potential for sensitive plant species based on prior recorded occurrences in the vicinity. Geological information indicated, however, that there was no appropriate habitat for the one species documented from the vicinity in the CNDDB. Composition of plant community associations and their boundaries were determined by walking the site and conducting visual surveys. Specific areas walked were mapped and plant associations were mapped on a topographic field map (Figure 7). These data were later transferred to aerial photographs. The minimum mapping unit was 10 acres; smaller patches of varying vegetation types are not noted in this report. Plant species and community data were recorded in a field notebook and these data were transferred into the plant association descriptions located in the following section of this report.

Plant Associations

For management purposes, the habitats of the Ecological Reserve were categorized into five different major associations (Table 1). Descriptions of plant communities are based on the system used in A Manual of California Vegetation, Second Edition (Sawyer 2009) as further refined by the List of California Terrestrial Natural Communities Recognized by CNDDB (CDFW 2010).

In Table 1 and the descriptive text that follows the table, each community was described first by the common name of the dominant plant species, followed by the scientific name of the species in brackets, which was in turn followed by a

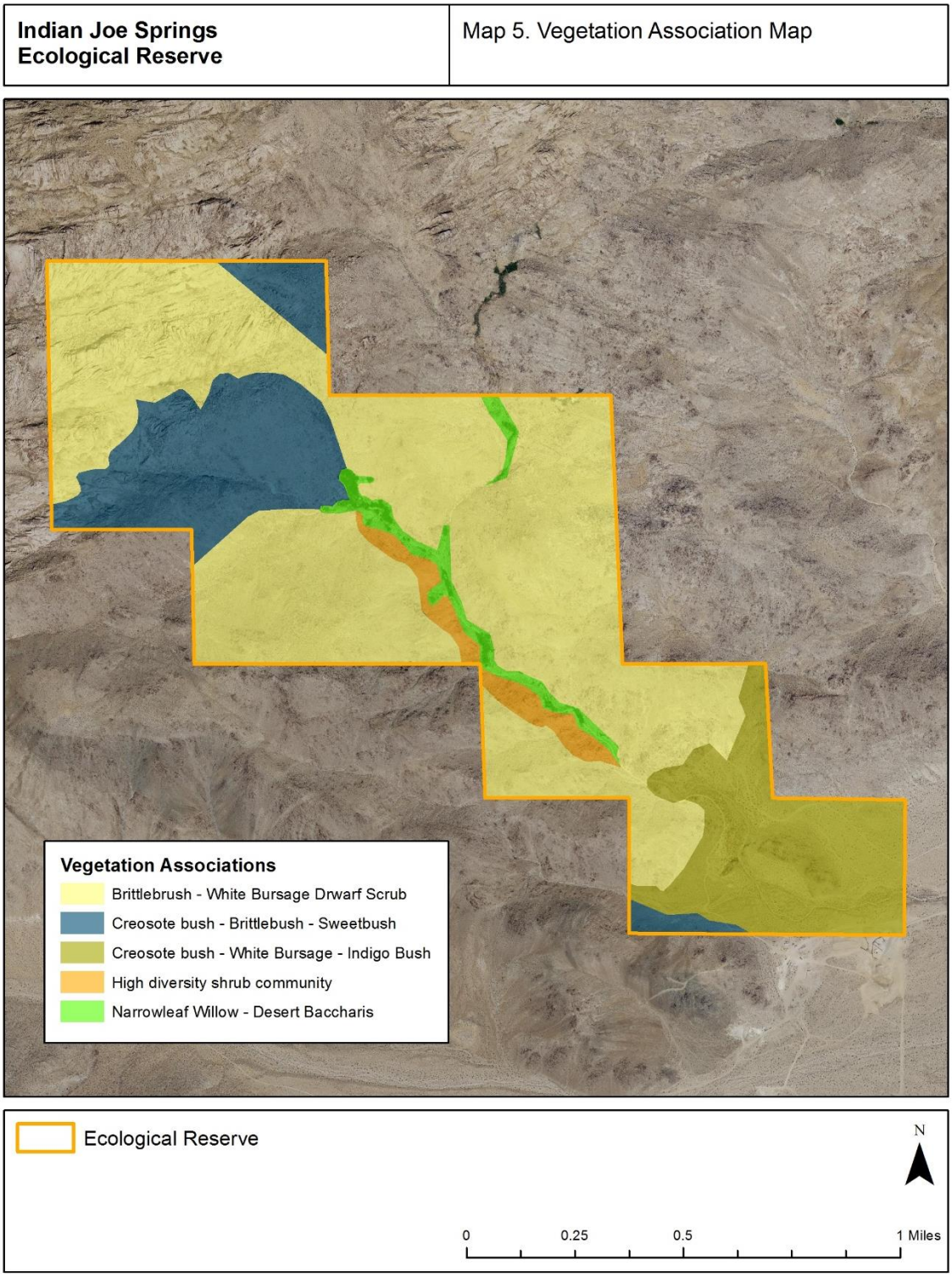

Figure 7. Indian Joe Springs Ecological Reserve Vegetation Association Map

numeric value that is the catalog number for that vegetation type.

Table 1. Plant associations of the Indian Joe Springs Ecological Reserve

Association Name	Diagnostic Species	CNDDB Number	Acreage
Creosote bush-White bursage-Indigo bush	*Larrea tridentata-Ambrosia dumosa-Psorothamnus schottii*	33.140.07	81
Creosote bush-Brittlebush-Sweetbush	*Larrea tridentata-Encelia farinosa – Bebbia juncea*	33.027.02	186
High diversity shrub community dominated by Asteraceae	Many shrubs, especially in the family Asteraceae (e.g., *Gutierrezia microcephala, Encelia farinosa, Larrea tridentata, Chrysothamnus spp., Ambrosia dumosa)*	None available	11
Brittlebush – White Bursage Dwarf Scrub	*Encelia farinosa-Ambrosia dumosa*	33.030.00	330
Narrowleaf Willow - Desert Baccharis	*Salix exigua-Baccharis sergiloides*	61.209.04	10

- **Creosote bush-White bursage-Indigo Bush**
  (*Larrea tridentata-Ambrosia dumosa-Psorothamnus schottii*) [33.140.07]

  A community with three co-dominant species (creosote bush, white bursage, indigo bush) was located on the eastern, lower elevations of the Reserve, on loose, sandy soils. These three species together provided approximately 60% cover. There was a high percentage of bare soil (20%), and the remaining cover was a carpet of ephemeral herbs, dominated in 2003 by blazing star (*Mentzelia affinis*), old Han grass (*Schismus barbata*) and Fremont pincushion (*Chaenactis fremontii*). At the time of the survey, this area contained a stunning abundance of spring wildflowers and associated (especially night-flying) pollinators.

- **Creosote bush-Brittlebush-Sweetbush**
  (*Larrea tridentata-Encelia farinosa-Bebbia juncea*) [33.027.02]

  A community with three co-dominant species (creosote bush, brittlebrush, and sweetbush) was located on north- to east-facing slopes, on the rocky hillsides of the Ecological Reserve. There was 15% bare soil, with the dominant shrubs composing nearly 60% of the cover. The remaining species were grasses, other shrubs, and forbs.

- **High diversity shrub community dominated by Asteraceae**
  (e.g., *Gutierrezia microcephala, Encelia farinosa, Larrea tridentata, Chrysothamnus spp., Ambrosia dumosa*, etc.) [no CNDDB description]

On the north and east-facing slopes, there was a complex vegetation association co-dominated by numerous shrub species, especially in the family Asteraceae. Because of its complexity, a more time consuming data collecting methodology would be necessary to quantify the 6 or more co-dominant species found on these slopes. Bare soil throughout this area was quite low, less than 10%.

- **Brittle bush - White Bursage Dwarf Scrub**
  (*Encelia farinosa-Ambrosia dumosa*) [33.030.00]

  On the south and west-facing slopes, there was a community co-dominated by brittle bush and white bursage dwarf scrub (30% cover, each). California buckwheat (*Eriogonum fasciculatum*– 15% cover) is also an important species in this association that also has 25% cover bare soil as well as a number of other species of small shrubs and herbaceous species.

- **Narrowleaf Willow - Desert Baccharis**
  (*Salix exigua-Baccharis sergiloides*) [61.209.04]

  The Ecological Reserve is bisected by a main canyon system that contains about 5-10 acres of discontinuous riparian habitat dominated by mostly narrowleaf willow and desert Baccharis with patches of rushes (*Juncus mexicanus*) and grasses (especially *Phragmites australis* and *Distichlis spicata*).

Ranked Vegetation Communities

The five associations above fall into two macrogroups within the National Vegetation Classification (USNVC) Hierarchy as ranked for consideration as priority conservation targets in the State Wildlife Action Plan (CDFW 2015): Warm Southwest Riparian Forest (formerly Southwestern North American Riparian) and Mojavean-Sonoran desert scrub. Both of these vegetation communities were selected as conservation targets for the Desert Province in SWAP, although not specifically prioritized for the Mojave Ecoregion. The common names for these two associations are American Southwest Riparian Forest and Woodland and Mojave and Sonoran Desert Scrub.

B. Plant Species

A list of plant species observed or possibly occurring on the Ecological Reserve is presented in Appendix B.

Sensitive Species

The 2003 survey located a single sensitive plant species: *Juglans californica* var. *californica* (California walnut), a species listed as CNPS Rare Plant Rank 4.2: uncommon and fairly endangered in California. This tree species is known to occur in human settlement areas, probably planted far outside of its native range

by either early old-world originated settlers or Native Americans. At the Reserve, there is a grove of these trees in a known historic settlement area, along the riparian corridor, at upper elevations of the Ecological Reserve.

The Ripley's aliciella noted by CNDDB records to occur in the vicinity was not located during the survey (Table 2); it is unlikely that the species occurs on the Ecological Reserve, however, due to lack of carbonate soils with which it normally occurs.

The Ecological Reserve has not received sufficient botanical surveying. As noted in Chapter 4, Biological Element 5, additional focused surveys should take place to confirm the presence or absence of sensitive plant species.

Table 2. Sensitive plant species known from the vicinity of Indian Joe Springs Ecological Reserve

Species	Status	Ecology	Presence
Aliciella ripleyi Ripley's aliciella	CRPR 2B.3	Perennial herb; blooms May-July; occurs in creosote bush scrub around limestone cliffs	Not observed; unlikely due to requirement of limestone soils. Nearest record in Panamint Mountains (24 mi)
Astragalus atratus var. mensanus Darwin Mesa milk-vetch	CRPR 1B.1	Perennial herb; blooms April-June, occurs in foothills with pinyon-juniper woodland and sagebrush scrub	Not observed; nearest record is in Homewood Canyon in Argus Range (7 mi)
Castela emoryi Emory's crucifixion-thorn	CRPR 2B.2	Shrub; blooms June-July; occurs in creosote bush scrub on dry gravelly washes and slopes	Not observed; nearest record below Bainter Canyon (1.8mi); possible at lower elevations on the Ecological Reserve
Cordylanthus eremicus ssp. eremicus *Panamint Bird's Beak*	CRPR 4.3	Annual herb (hemiparasitic); blooms July-October; occurs in riparian areas within creosote bush scrub	Not observed; nearest record is in Homewood Canyon in Argus Range (7 mi)
Cryptantha clokeyi Clokey's cryptantha	CRPR 1B.2	Annual herb; blooms in April; occurs in creosote bush scrub on rocky to gravelly slopes and ridges	Not observed; nearest record is in Homewood Canyon in Argus Range (7 mi)
Eremothera boothii ssp. boothii Booth's evening-primrose	CRPR 2B.3	Annual herb; blooms June-August; occurs on sandy flats and steep loose slopes	Not observed; nearest record is in sandy wash west of Trona in Argus Range (5 mi).
Juglans californica var. californica Southern black walnut	CRPR 4.2	Tree; blooms March-June; likely introduced by human settlement	Present; observed in canyon on Reserve

Penstemon fruticiformis var. amargosae Death Valley beardtongue	CRPR 1B.3	Perennial herb; blooms April-June; occurs in creosote bush scrub	Not observed; nearest record is in Homewood Canyon in Argus Range (7 mi)

C. Animal Species

Indian Joe Springs Ecological Reserve contains about five acres of relatively healthy desert willow riparian scrub habitat, with several year-round springs, surrounded by rocky outcrops and sparse low desert scrub vegetation. Habitat in the Ecological Reserve supports a variety of wildlife species including the state listed endangered and federally listed threatened Inyo California towhee. The towhee's range is geographically restricted to a small portion of the Argus Range of Inyo County; the most recent population estimate for the species was 729 birds in 2011, up from fewer than 200 in 1987 at the time of federal listing (USFWS 2013).

CDFW staff surveying for birds. Photo courtesy of © Andrea Laue

To date, comprehensive survey projects have been completed for birds and reptiles. Baseline and ongoing studies are necessary to quantify presence of habitat and species, and to direct management efforts in the future. At the earliest feasible opportunity, and before natural habitats are manipulated, inventories will be conducted on the Reserve to ensure that sensitive species will not be negatively impacted by management activities.

Indian Joe Springs falls within the general boundary covered by the BLM's Great Falls Basin Habitat Management Plan (HMP) and the Great Falls Basin/Argus Range Area of Critical Environmental Concern (ACEC). The goals and use philosophy for the ACEC are: "wildlife, wildlife habitat and scenic quality will be protected and enhanced on public land. Multiple uses of the public lands will be accommodated provided they do not jeopardize the key natural resources being protectively managed. A specific goal is to manage habitat for the towhee so that the population will be at a maximum sustained level. This ACEC is managed as an Environmental Resource area for the following resources: watershed, scenery, recreation and wildlife habitat for the Inyo California towhee."

Habitat Discussion

The primary threats to the riparian, dry wash, and upland habitats at the Ecological Reserve are habitat destruction by burros, wildfire, and invasive plants. Burros, especially productive breeders, cause more problems than

horses, but both must be controlled to protect habitat. These animals also create or exacerbate soil compaction and erosion issues. The Wild Free-Roaming Horses and Burros Act of 1971 (Public Law 92-195) requires the protection, management, and control of wild free-roaming horses and burros on public lands under the jurisdiction of the BLM and US Forest Service. Additionally, the 1994 California Desert Protection Act designated the Department of the Navy to manage for wild horses and burros on the NAWS administered lands. The Ecological Reserve is located within the Centennial Herd Area (HA) but approximately 10 miles south of the designated Centennial Herd Management Area (HMA). BLM has established the appropriate management level for horses under the herd management plan as 100-168 animals; however, the population estimate in 2017 was 592 horses. The appropriate management level for burros is zero; however, the 2017 population estimate was 331 animals (Alexander Neibergs, BLM Ridgecrest, pers. comm.). Burros are more common than horses on the eastern side of the Argus range and adjacent Panamint and Slate HAs. BLM does not presently have any immediate horse or burro management activities planned for the HA or HMA, however there is interest in continuing work to reduce the impacts of equines on Inyo California towhee habitat.

Wildfire is a significant threat to habitat on the Ecological Reserve. In May 2016 a fire started near a BLM route within the Great Falls Basin ACEC, believed to be the result of an escaped campfire. The fire burned 6 acres total including Austin Springs, a known towhee site within the critical habitat for that species, as well as creosote scrub providing habitat for desert tortoise and Mojave ground squirrel. It is important that the Department continue to enforce a ban on campfires on the Ecological Reserve and dismantle fire rings when observed during routine site visits.

Tamarisk has not been documented on the Ecological Reserve during field surveys; however, the species would be capable of flourishing in the Ecological Reserve if it became established, and an invasion of tamarisk would severely deteriorate Ecological Reserve habitat. It is recommended that surveys for tamarisk be conducted in conjunction with other annual wildlife work. If tamarisk is found, immediate removal and follow-up work should be carried out to eradicate this species before it becomes a much larger problem. In addition, it is recommended that the Department work closely with the BLM to eradicate the species if and where it occurs within seed transfer distance of the Ecological Reserve.

Wildlife Discussion

At least 50 mammals including 13 bat species may be found on the Ecological Reserve. Large land mammals found locally are desert bighorn sheep *(Ovis canadensis nelsoni*), feral burro *(Equus asinus*), feral horse (*Equus caballus*) and mountain lion (*Puma concolor)*. Although bighorn sheep have not been seen within the area for many years, the species still occupy nearby mountain ranges.

NAWS reports a herd of 75-100 desert mule deer (*Odocoileus hemionus*) on the station above 4,500 feet (NAWS 2004). Carnivores occurring in the region include coyote, bobcat, mountain lion, American badger, grey and kit foxes, skunks, and ring-tailed cat. Many species of small mammals such as rabbits, hares, squirrels, ground squirrels, chipmunks, packrats, mice, gophers, moles, shrews and bats may occupy suitable habitats in the Ecological Reserve (Appendix C). Several species of bats have been documented on the Ecological Reserve. Bats may use rocky outcrops on the steep canyon walls, the mine adit, trees, and even shrubs for roosting. Additional surveys for bats should be completed using wildlife acoustic recording devices and automatic acoustic bat identification software.

The Ecological Reserve is located within the ranges of at least 99 bird species, and the Pacific Flyway. The year-round fresh water source is a valuable resource for resident, wintering and breeding birds as well as for migratory birds.

At least thirty-six species of amphibians and reptiles may utilize the Ecological Reserve. Pacific tree frogs and red spotted toads have been observed on site. Slender salamander (*Batrachoseps sp.)* have been noted in the Argus Range (NAWS 2004, BLM 1980) and if present may be a new species. No fish are known to inhabit Indian Joe Springs.

D. Endangered, Threatened, and Rare Species

At least 25 listed or sensitive species have ranges that encompass the Ecological Reserve (Table 3). A search of the California Natural Diversity Database (CNDDB) was conducted for this plan. The following nine 7.5 minute USGS quadrangle maps were queried for listed species: Burro Canyon, Homewood Canyon, Lone Butte, Mountain Springs Canyon, Searles Lake, Slate Range Crossing, Trona East, Trona West, and Westend. Internal coordination has been accomplished with Department experts to address any management concerns for state-listed species.

Sixteen animal species have been reported to the CNDDB on or in the vicinity of the Ecological Reserve: prairie falcon, western snowy plover, burrowing owl, long-eared owl, LeConte's thrasher, yellow warbler, Inyo California towhee, Mohave tui chub, western small-footed myotis, spotted bat, Townsend's big-eared bat, pallid bat, Mohave ground squirrel, desert bighorn sheep, desert tortoise, and Panamint alligator lizard. Another species likely to occur is the Nevada ring-tailed cat, a fully protected species. Not all of these species will find suitable habitat in the Ecological Reserve such as the tui chub and plover. Suitable habitat for Mohave ground squirrel and borrowing owl exists in the lower portion of the Ecological Reserve (in the valley just outside the canyon itself). Suitable habitat for desert tortoise also exists within this portion of the Ecological Reserve, and desert tortoises are known to inhabit Searles Valley and have been observed by Department staff within 1 mile of the property.

Seventeen animal Species of Greatest Conservation Need have been reported in the vicinity or are likely to occur on the Ecological Reserve. These are the species identified in the California State Wildlife Action Plan (SWAP) that have the greatest need for conservation. These include species protected under the California Endangered Species Act (CESA), those that have received the California Species of Special Concern (SSC) designation, and those species that have been identified by the Department as being highly vulnerable to climate change.

Four major focal species will be addressed in this document. They are the Inyo California towhee, Mohave ground squirrel, desert tortoise, and bighorn sheep. The towhee is known to use the site, and the Ecological Reserve is part of the US Fish and Wildlife Service (USFWS) designated critical habitat for the towhee. The bighorn sheep, Mohave ground squirrel, and desert tortoise are not currently known to use the Ecological Reserve, but because valuable habitat for these species exists on the Ecological Reserve, and they are of special concern to the Department, they will be addressed in this document.

Species Accounts

The following species accounts were selected because of their special interest to the Department. It is assumed that management for these focal species will address other species utilizing the same habitats in the Ecological Reserve. In the future, the status of habitat and species should be reevaluated, and species-specific management goals should be redefined as needed.

The following species information is based on the Department publication "California's Wildlife" (Zeiner 1990) as maintained and updated by the California Wildlife Habitats Relationships (CWHR) Program. Additional information and opinions on the status and management of the species on the Ecological Reserve were provided by the Department and USFWS staff and are included at the end of the discussion for each species.

Table 3. Endangered, Threatened, and Sensitive Species found in and adjacent to the Indian Joe Springs Ecological Reserve.

Species	Status	Ecology	Presence
BIRDS			
American peregrine falcon *Falco peregrinus anatum*	FESA D CESA D CDFW: FP	Riparian areas are important habitats yearlong, especially in non-breeding seasons. Breeds near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes, mounds.	Present at Indian Joe Springs Ecological Reserve.

Burrowing owl *Athene cunicularia*	FESA None CESA None CDFW: SSC	A yearlong resident of desert habitats. Usually nests in old burrow of ground squirrel, or other small mammal. May dig own burrow in soft soil.	Not observed; nearest CNDDB occurrence near Ridgecrest. Ecological Reserve within range of burrowing owl and suitable habitat is located below canyon.
Cooper's hawk *Accipiter cooperi*	FESA None CESA None CDFW: WL	Uses riparian vegetation for cover; hunts small prey on habitat edge. Eats small birds, mammals, and reptiles.	Present at Ecological Reserve.
Golden eagle *Aquila chrysaetos*	FESA None CESA None CDFW: FP, WL	Needs open terrain for hunting. Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert. Eats mostly lagomorphs and rodents.	Present at Ecological Reserve.
Inyo California towhee *Melozone crissalis eremophilus*	FESA Threatened (FPD) CESA Endangered	Breeds and seeks cover in brush and dense thickets and forages in open areas. Feeds on seeds, insects, and fruit.	Present at Ecological Reserve.
Loggerhead shrike *Lanius ludovicianus*	FESA None CESA None CDFW: SSC	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Present at Ecological Reserve.
Long-eared Owl *Asio otus*	FESA None CESA None CDFW: SSC	Riparian habitat required. Uses old crow, magpie, hawk, heron, or squirrel nests in a variety of trees with dense canopy.	Present at Ecological Reserve.
Merlin *Falco columbarius*	FESA None CESA None CDFW: WL	Seldom found in heavily wooded areas or open deserts. Dense tree stands close to bodies of water are needed for cover.	Present at Ecological Reserve.
Prairie falcon *Falco mexicanus*	FESA None CESA None CDFW: WL	Associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas. Usually nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area.	Present at Ecological Reserve.
Sharp-shinned Hawk *Accipiter striatus*	FESA None CESA None CDFW: WL	Nest sites are usually located in small but dense stands of conifers that are cool, moist, and well-shaded, with little ground cover, and near water.	Present at Ecological Reserve.
Vermillion flycatcher *Pyrocephalus rubinus*	FESA None CESA None CDFW: SSC	Breeds and forages near water. Occupies riparian thickets on edge of mesic habitats. Sallies for flying insects.	Uncommon; historical records of the species in the vicinity of the Ecological Reserve.
Willow flycatcher *Empidonax traillii*	FESA None CESA Endangered	Dense willow thickets. Sallies for flying insects.	Present at Ecological Reserve.

Yellow Warbler *Setophaga petechia*	FESA None CESA None CDFW: SSC	Open-canopy riparian woodlands near water. Gleans and hovers eating insepcts.	Present at Ecological Reserve.
Yellow-breasted Chat *Icteria virens*	FESA None CESA None CDFW: SSC	Dense riparian thickets of willow near water. Gleans insects and fruit from shrubs.	Present at Ecological Reserve.
MAMMALS			
Mohave ground squirrel *Xerospermophilus mohavensis*	FESA None CESA Threatened	Sandy to gravelly soils. Establishes burrows at the base of shrubs for cover.	Not observed; multiple CNDDB occurrences nearby, including less than 1 mile away.
Desert bighorn sheep *Ovis canadensis nelsoni*	FESA None CESA None CDFW: FP	Rocky, steep terrain for escape and bedding. Summer range limited by proximity to water.	Not observed; reintroduced in Argus Range in late 1980s after extirpation by 1971.
Nevada ringtail cat *Bassariscus astuts nevadensis*	FESA None CESA None CDFW: FP	Rocky hillsides and riparian areas. Scavenger, though primarily insectivorous.	Not observed; suitable habitat available on Reserve. Indicated in region by historic records.
Pallid bat *Antrozous pallidus*	FESA None CESA None CDFW: SSC WBWG: H	Roosts in caves, and mines. Feeds on a variety of insects typically gleaning or on the ground.	This species is known to occur at the Ecological Reserve.
Spotted bat *Euderma maculatum*	FESA None CESA None CDFW: SSC WBWG: H	Roosts in rock crevices. Eats moths and other insects in flight over water and washes.	This species is known to occur at the Ecological Reserve.
Townsend's big-eared bat *Corynorhinus townsendii*	FESA None CESA None CDFW: SSC WBWG: H	Roosts in caves, and mines. Feeds on moths and other insects in flight.	This species is known to occur at the Ecological Reserve.
Western small-footed myotis *Myotis ciliolabrum*	FESA None CESA None WBWG: M	Roosts in rocky crevices, caves, and mines. Feeds on small flying insects. Forages among trees and over water.	This species is known to occur at the Ecological Reserve.
Reptiles			
Desert tortoise (Mojave) *Gopherus agassizii*	FESA Threatened CESA Threatened	Requires friable, sandy, well-drained soil for burrow. Herbivorous, forbs preferred.	Not observed; has been observed by CDFW staff within 1 mile of Reserve.
Panamint alligator lizard *Elgaria panamintina*	FESA None CESA None CDFW: SSC	Most commonly found near permanent water with riparian vegetation and rocky rubble. Eats arthropods.	Not observed; potentially suitable habitat available on the Reserve, however not located during a survey for the species in 2014.

SCT = State Candidate Threatened
FPD = Federally Proposed Delisting
SSC = State Species of Special Concern
FP = State Fully Protected
D = Delisted

WL = CDFW Watch List
WBWG = Western Bat Working Group, High (H), Medium (M), Low (L) Priority

BIRDS

Inyo California Towhee (*Melozone* (*Pipilo*) *crissalis eremophilus*)

Status: FESA Threatened (1987), CESA Endangered (1980)

Inyo California Towhee
Photo courtesy of © Bob Steele

The Inyo California Towhee is a subspecies of the California Towhee that occurs only in the Argus Range in the Mojave Desert of California. The California Towhee is a common, characteristic resident of foothills and lowlands in most of cismontane California. The species frequents open chaparral and coastal scrub, as well as brushland patches in open riparian, hardwood, hardwood-conifer, cropland, and urban habitats. It commonly uses edges of dense chaparral and brushy edges of densely wooded habitats. In 2010, the American Ornithologists' Union changed the scientific name of the genus to *Melozone* from *Pipilo*.

The 2011 range wide population estimate for the Inyo California Towhee was 729 adults. Since 1998 the total population estimate has ranged from 640 to 741 individuals. The bird's range is located 68 percent on NAWS land, 26 percent BLM, 5 percent on the Ecological Reserve, and less than 1 percent on private property.

Towhees feed on seeds, insects, and some fruits, and glean and scratch in litter, pick seeds and fruits from plants, and rarely fly-catch. The species prefers to forage on open ground adjacent to brushy cover. Insects and other invertebrates are important during the breeding season, often constituting a third of the diet, and nestlings are fed a diet composed exclusively of invertebrates.

The species nests in brush and dense thickets and forages in adjacent open areas. Most of the towhee's foraging time is spent in upland habitat (LaBerteaux 1989). Shrubs in broken chaparral, margins of dense chaparral, willow thickets, and brushy understory of open wooded habitats provide cover. The nest is a bulky cup of thin twigs, forb stems with leaves and flower-heads, and grasses. It is lined with fine stems, grasses, and hairs, and concealed in low, dense foliage of a shrub or tree. The nest is usually placed 3-12 feet above ground, and occasionally as high as 35 feet. LaBertaeux notes that of 78 nests found between 1985 and 211, 57.7% were located in upland and dry wash habitats relative to 42.3% in wetland and riparian habitats, underscoring the importance of protecting

wash and upland habitats adjacent to water sources within the range of the towhee (LaBerteaux, pers. comm.).

LaBerteaux (1989) determined that Inyo California Towhee territories range from 25 to 62 acres in size and are defended by both male and females. The breeding season begins in early spring, coinciding with plant growth (USFWS 2013b). Clutches usually contain 2 to 4 eggs. Incubation is about 14 days, by the female. Altricial young are tended by both parents; they leave the nest at about 8 days and are independent by 6 weeks, but remain within the natal territory through the subsequent fall and winter. The species is not migratory.

The Inyo California Towhee is the only member of the species found on the east side of the Sierra, and is confined to riparian and surrounding habitats in canyons of the southern Argus Range. LaBerteaux et al (1998) further defines riparian as "habitat at springs or seeps or along perennial or intermittent streams which supports willows… desert olive… and/or cottonwood". This very restricted range may be due to the destruction of habitat by burros and horses, mining and recreational activities, cattle grazing, water exportation and encroachment by rural residents. Additional impacts include military activities, increased demand for recreational and off road vehicle areas, possible geothermal development, continued desertification over time, negative impacts from a small gene pool, and an increase in the parasitic cowbird population (LaBerteaux, et al., 1998).

In LaBerteaux's study, Inyo California Towhees populated sites within the elevational limits of 2,680 to 5,630 feet, and nested in a variety of plants, including allscale (*Atriplex polycarpa*), peach thorn (*Lycium cooperi*), Mono senecio (*Senecio flaccidus* var*. monoensis*), squaw waterweed (*Baccharis sergiloides*), wash rabbitbrush (*Chrysothamnus paniculatus*), showy goldenbush (*Ericameria linearifolia*), cheesebush (*Hymenoclea salsola*), creosote bush (*Larrea tridentata*), Joshua tree (*Yucca brevifolia*), fourwing saltbush (*Atriplex canescense*), antelope brush (*Purshia tridentata* var. *glandulosa*), rubber rabbitbush (*Chrysothamnus nauseousus*), desert olive (*Forestiera pubescens*), green ephedra (*Ephedra viridis*), and bladder sage (*Salazaria mexicana*). Of 21 post fledging nest sites returned to for further study, 5 were located in, under, or immediately adjacent to riparian; 2 nests were in moist desert wash scrub containing dense squaw waterweed; 5 nests were in dry desert wash scrub containing dense Atriplex spp. or wash rabbitbrush; and 9 nests were in mixed desert scrub surrounding riparian or wash communities. LaBerteaux noted that proximity to riparian trees was a major discriminating factor in nest site selection.

Inyo California Towhees begin nesting activities from late March to early April, and conclude in late August. LaBerteaux estimated initiation dates for first nests ranging between 31 March and 22 April. Second nesting attempts were from 9 May and 30 June. LaBerteaux considered May nests to be re-nesting attempts by unsuccessful pairs, and June nests to be by birds who were attempting a second successful clutch for the year. Apparently, successful second clutching is

possible, as she noted pairs with young of different ages.

In 2010 a Cooperative Management Agreement (CMA) for the subspecies was completed by BLM, NAWS, USFWS, and the Department for the purpose of "provide[ing] an administrative framework for the Parties to continue their respective on-going, long-term conservation efforts for the benefit of the federally listed (threatened) Inyo California towhee". Under this CMA the parties have agreed to work together to implement the Recovery Plan for the bird, including monitoring populations and habitat, eliminating threats, and rehabilitating impacted habitats. Specific recovery actions noted in the CMA include "management of burros and horses; protection of springs; elimination or control of exotic and invasive vegetation; restriction of incompatible development, mining operations, and military activities; and management of off-highway vehicle (OHV) and other recreational activities". The Department remains committed to working with these partners to complete monitoring for the species and implement recovery actions for the towhee.

In November 2013 the USFWS proposed removing the Inyo California Towhee from the Federal List of Endangered and Threatened Wildlife due to recovery. This finding was based on data indicating a stable self-sustaining population, reduction of threats, and implementation of the CMA. However, the proposed delisting was not completed and as the result of extended drought, recent wildfire, and increasing equine numbers, further review is now needed.

The most critical current issues on the Ecological Reserve for this species are the protection of high and moderate quality breeding and foraging habitats from humans and equines, and protection from human disturbance during the breeding season.

Willow Flycatcher (*Empidonax traillii*)

Status: FESA None, CESA Endangered (1991, includes all subspecies)

The willow flycatcher is a rare to locally uncommon, summer resident in wet meadow and montane riparian habitats at 2,000 – 8,000 feet in the Sierra Nevada and Cascade Range. It most often occurs in broad, open river valleys or large mountain meadows with lush growth of shrubby willows. Willow flycatcher may still nest elsewhere in lowland California but definite records are lacking. It is a common spring (mid-May to early June) and fall (mid-August to early September) migrant at lower elevations, primarily in riparian habitats throughout the state exclusive of the North Coast.

Willow flycatcher, Photo © 2015 Stephen Dowlan

The species is usually found near languid streams, standing water, or seeps and is most numerous in extensive thickets of low, dense willows, or edges of wet meadows, ponds, or backwaters. The flycatcher makes short sallies for flying insects from exposed perches in willow thickets or from low perches in adjacent meadows. It occasionally eats berries and seeds. It requires dense willow thickets for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches. In the Sierra Nevada, this species is consistently absent from otherwise apparently suitable areas where the lower branches of willows had been browsed heavily by livestock.

The species arrives from Central and South American wintering grounds in May and June, and departs in August, though transients are noted through mid-September. In the breeding season, home range is probably equal to territory. Density estimates range from 9.2 pairs per 100 acres in eastern Washington scrub habitat (King 1955), to 60.7 individuals per 100 acres in Michigan scrub habitat (Berger 1957). In Michigan, Walkinshaw (1966) found average territory of 1.7 acres, with a range of 0.8 to 2.9 acres.

The nest is an open cup nest placed in an upright fork of willow or other shrub, or occasionally on a horizontal limb, at a height of 1.5 to 10 feet. The flycatcher is monogamous and peak egg laying is in June. Incubation is 12-13 days, and clutches average 3-4 eggs. The species is probably single-brooded. Both sexes care for altricial young. Fledging age is 13-14 days.

The species is frequently parasitized by the brown-headed cowbird. It formerly bred commonly in willow thickets throughout most of lowland and montane California, but numbers have declined drastically in recent decades because of cowbird parasitism and habitat destruction (Gaines 1977a, Remsen 1978, Serena 1982). Heavy grazing of willows by livestock apparently reduces numbers (Ehrlich et al. 1988).

Similar to the towhee, the most critical current issues on the Ecological Reserve for this species are the protection of high quality breeding habitat from humans and burros, and protection from human disturbance during the breeding season. Any manipulation of riparian vegetation or habitats should be preceded by a survey for this species by permitted field biologists. Important nesting sites should be protected from humans during the nesting season.

MAMMALS

Mohave Ground Squirrel (*Xerospermophilus mohavensis*)

Status: FESA None, CESA Threatened (1971)

This species is rare throughout its range and restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties. Optimal habitats are

open desert scrub, alkali desert scrub, and Joshua tree: it also feeds in annual grasslands, and has been found from 1,800 – 5,000 feet elevation. The Mohave ground squirrel eats a wide variety of green vegetation, seeds, and fruits. It forages on the ground or in shrubs and Joshua trees, and caches food. The Mojave ground squirrel uses burrows at the base of shrubs for cover and gains water from diet and drinks free water if available.

Mohave ground squirrel Photo courtesy of US Army Corps of Engineers

This species prefers sandy to gravelly soils and avoids rocky areas. Populations are reduced by urban development, off-road vehicle use, agriculture and predation. Nests are built in the burrow system, which may be as long as 20 feet, and as deep as 3.3 ft.

This diurnal ground squirrel is active above ground in the spring and early summer. Emergence dates vary from February to June, depending on elevation. Squirrels begin aestivation in July or August. Stored body fat is the principal source of energy for aestivation, although food is stored, and captive individuals eat during intermittent periods of wakefulness. Studies on home ranges for the species suggested an average size of 0.91 acres, with a variation of 0.25 to 2 acres. Home range boundaries are at the outer extent of the burrow system. Burt (1936) estimated density at 15-20 animals per square mile. The squirrel defends most of the home range, with little overlap between home ranges. Young are born from March to May with a peak in April. Litter size is about 6. In years with total winter rainfall of less than three inches the squirrel will not reproduce. As a result, multiple years of severe drought can result in localized population extirpation. Recolonization may occur after conditions favoring reproduction resume.

This species occurs sympatrically with the white-tailed antelope squirrel. The Mohave ground squirrel is competitively superior to the white-tailed antelope squirrel, but it lacks adaptations that allow the antelope squirrel to continue activity at higher temperatures. Predators include badgers, foxes, coyotes, hawks, and eagles.

The species was listed as Threatened by the Department in 1971 and has twice been considered for federal status as endangered or threatened (most recently in 2011) but USFWS has determined that listing is not warranted. The Mohave Ground Squirrel Technical Advisory Group identifies several key actions to benefit the species including acquisition of private inholdings from willing sellers within core areas and restriction of OHVs to designated routes to avoid damage to habitat and crushing burrows.

The Ecological Reserve is not located within one of the four “core areas” for

Mohave ground squirrel, however records indicate that the species has been observed less than 1 mile east of the property and suitable habitat may exist. The critical issues for the Ecological Reserve regarding this species are protection of suitable habitat and population and habitat monitoring if located. Any manipulation of soil or habitats should be preceded by a thorough survey for this species. Vehicle use must be restricted to existing roads and OHV use prohibited.

Desert Bighorn Sheep (*Ovis canadensis nelson*)

Status: FESA None, CDFW Fully Protected (1986, except hunting)

Desert bighorns (also called Nelson bighorns) occur in desert mountain ranges from White Mountains of Mono and Inyo Counties, south to San Bernardino Mountains and southeastward to the Mexican border. Habitats used include alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian.

The desert bighorn is classified as Fully Protected under the California Fish and Game Code outside of hunt zones and there are no hunt zones within the North Mojave meta-population. As a Fully Protected species, the desert bighorn “may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research”.

Desert bighorn sheep
Photo courtesy of USFWS

Bighorns graze and browse on a wide variety of plant species; green, succulent grasses and forbs are preferred. Browse is important all year, especially for populations in arid habitats. They feed in open habitats, such as rocky barrens, meadows, and low, sparse brushlands. Rocky, steep terrain is used for escape and bedding, and they remain near rugged terrain while feeding in open habitat. Steep, rugged slopes and canyons are also used for lambing areas. Water is critical in arid regions; they use springs, water in depressions, and human-made sources. The latter are significant means of enhancing habitat (Leslie and Douglas 1979). Desert bighorn sheep prefer open areas of low-growing vegetation for feeding, with close proximity to steep, rugged terrain for escape, lambing, and bedding, an adequate source of water, and travel routes linking these areas.

The sheep are active yearlong; activity is mostly diurnal with movement to bedding areas at night. Bad weather may restrict activity. Desert sheep are least active during the hot midday, when they remain near water. Sheep migrate between winter and summer ranges. Desert bighorns are restricted to the vicinity of water during the hot summer, dispersing at other times of year. Home range includes summer and winter ranges and routes of travel between. Desert bighorns have smaller ranges in summer because of water restrictions. Welles and Welles (1961) reported desert bighorns remained within a radius of 19 miles during their lifespan. Groups of ewes stay in distinct ranges, with little interchange between groups. Rams may travel between groups, particularly during the rut (Geist 1971, Lawson and Johnson 1982). Sheep are polygamous and rutting may be yearlong for desert bighorns, peaking in August and September. Gestation is 5.5- 6.0 months. Desert bighorns may give birth at any time, but most births occur from January to April.

Bighorn are extremely sensitive to disease. Diseases, particularly those of livestock, are a major factor in decline and loss of populations. Feral ungulates and livestock compete with desert bighorns for water, and may compete for forage. Other threats include: predation, human development, small population size (causing increased effects from weather, climate, and other unpredictable natural events), and inbreeding depression (low genetic diversity).

Surveys completed in 1971 determined that desert bighorn sheep had been extirpated in the Argus Range. In 1986, the Department and BLM released 28 sheep from the Old Dad Peak population on the east side of the Argus Range in Knight Canyon. By 1994 the reintroduced population was estimated to be between 50-100 sheep; low re-sight of marked animals during aerial surveys during the decade following translocation also suggested high recruitment.

Critical issues for the Ecological Reserve regarding this species are coordinated efforts with federal agencies regarding the management of feral equines and the protection of important water sources.

REPTILES

Desert Tortoise (*Gopherus agassazii)*

Status: FESA Threatened (1990), CESA Threatened (1989)

The desert tortoise is widely distributed throughout the Mojave and Colorado deserts from below sea level to 5,500 feet, and up to 7,300 feet. It is most common in creosote bush scrub where diversity of perennial plants and production of annual vegetation is high (USFWS 2011), but occurs in almost every desert habitat except on the most precipitous slopes. Densities range from 9.2 per square mile in the eastern Mojave to more than 2600 per square mile in the western Mojave near California City.

Mojave Desert Tortoise
Photo courtesy Gerald and Buff Corsi
© California Academy of Sciences

Tortoises are herbivorous, eating annual forbs and grasses; many species are taken, but forbs are preferred over grasses and green vegetation is preferred over dry. Desert tortoises have been observed eating carrion and feces as well as excavating and eating calcium carbonate mineral deposits. Water is not required, but tortoises will drink if water is available.

Desert tortoises occur in a wide variety of habitats in arid and semiarid regions. They require friable soil for burrow and nest construction. Highest densities are achieved in creosote bush communities with extensive annual wildflower blooms, such as occur in the western Mojave. However, tortoises can be found in areas of extensive lava formations, alkali flats and most other desert habitats. This species requires friable, sandy, well-drained soil for excavation of nests, and normally excavates a burrow under bushes, overhanging soil or rock formations, or digs into the soil in the open. Burrows are most extensive in the northern part of the range where winter temperatures are coldest. On occasion, a tortoise will take cover under a bush or any natural shelter. The burrows are often crucial to survival, especially in hot weather when the direct rays of the sun can kill a tortoise in an hour or less.

Tortoises may be active at any time of year, but most activity takes place between March and June. In early spring, tortoises may be active all day but by late spring, activity is reduced to less than an hour in early morning, 1 out of 4 days. Home range size seems to depend upon the quality of the habitat. In the western Mojave, home ranges are 2-15 ha (5-38 ac), but in the eastern Mojave,

home ranges may be 10 times as large. Tortoises are aggressive but there is no evidence that they defend territories.

Copulation begins shortly after the tortoises become active in late March or early April. Eggs are laid in early summer (late May to July). Clutches average 5 (range 2-9) eggs and take 3-4 months to hatch. Nests are often constructed at the entrance to burrows. Failure of rainfall and consequent scarcity of annual plants may result in reproductive failure. When tortoises are young and vulnerable, they are eaten by many predators (ravens, eagles, coyotes, foxes, etc.). When mature, they have few enemies, though badgers and coyotes may attack an adult tortoise. Disease, particularly upper respiratory tract disease, may have been responsible for significant population declines in some regions.

The Mojave population, which includes all desert tortoises north and west of the Colorado River, was listed as Threatened on April 2, 1990 by the USFWS. According to the Revised Recovery Plan (USFWS 2011) the vast majority of threats to the desert tortoise are associated with human land uses. Specifically, the plan identifies habitat loss, fragmentation and degradation, disease, and predation of hatchlings and juveniles as the primary threats to desert tortoise. This Land Management Plan supports a number of Recovery Actions identified in the Revised Recovery Plan, particularly those actions within the “Protect Existing Populations and Habitat” strategic element.

The Ecological Reserve is located within the large Western Mojave Recovery Unit for the Mojave desert tortoise, however the property does not occur within one of the designated Critical Habitat units for the species. Key issues for the Ecological Reserve regarding this species are protection of suitable habitat, and population and health monitoring if located. Any manipulation of soil or habitats should be preceded by a thorough survey for this species. Vehicle use must be restricted to existing roads at low speeds and OHV use prohibited.

IV. MANAGEMENT GOALS AND ENVIRONMENTAL IMPACTS

A. Definitions of Terms Used in This Plan

Element: An element refers to any biological unit, public use activity, or facility maintenance program as defined below for which goals have been prepared and presented within this plan.

Biological Element: These elements consist of species, habitats, or communities for which specific management goals have been developed within the plan.

Public Use Elements: Public use elements are any recreational, scientific, or other use activity appropriate to and compatible with the purposes for which this property was acquired.

Facility Maintenance Element: This is a general purpose element describing the maintenance and administrative program which helps maintain orderly and beneficial management of the area.

Biological Goal: A biological goal is the statement of intended long-range results of management based upon the feasibility of maintaining, enhancing or restoring species populations and/or habitat.

Public Use Goal: A public use goal is the statement of the desired type and level of public use compatible with the biological element goals previously specified within the plan.

Tasks: Tasks are the individual projects or work elements which implement the goal and are useful in planning operation and maintenance budgets.

It is important to note that the implementation of many of the Tasks that are identified in this LMP is dependent upon the availability of additional staff to perform those respective Tasks. The establishment of an adequate operations and maintenance budget is also required to support the management of the Ecological Reserve. The Ecological Reserve is currently underfunded and new resources will be required in order to accomplish the tasks identified in this Chapter. Because of limited resources the following goals and tasks are presented within each element type based on priority.

B. Biological Elements: Goals, Constraints, & Impacts

Optimum wildlife habitat on the Ecological Reserve is a functioning, dynamic aquatic, desert riparian, and upland system with an associated mosaic of vegetation including an uneven-aged dense riparian shrub layer with intermittent sparse tree layer overstory, bounded by shrub-dominated uplands with dense grass and forb layers. The desert riparian vegetation complex should have maximum allowable area-to-perimeter ratio to

promote productivity of nesting avian species, especially the Inyo California towhee and willow flycatcher. Generally, this habitat currently exists on the Ecological Reserve, and little vegetation manipulation is required to achieve the optimum state. Some management opportunities do exist however, that will maximize habitats along with wildlife species dependent upon them.

Impacts to special status species resulting from actions recommended in this LMP are analyzed in Appendix D.

Biological Element 1: Riparian and Aquatic Habitats

Protect the springs and associated seasonal creek that support the American Southwest Riparian Forest and Woodland vegetation type and intermittent aquatic habitat on the Ecological Reserve. Appropriate management of this element will benefit important special status species including the Inyo California towhee and willow flycatcher, bats, amphibians and other wildlife. Threats to this element are surface diversions, water quality deterioration resulting from surface ground disturbance activities, habitat destruction by feral equines, wildfire, and invasion by non-native species.

Goal 1: Protect the spring sources and riparian vegetation from disturbance by feral equines and livestock

Task 1: Continue to monitor, and repair if necessary, the pipe corral that has been erected around the springs to protect it from feral burro impacts.
Task 2: Continue to support and assist with (as requested) the feral burro and horse capture and relocation program.
Task 3: Prevent unauthorized grazing on the Ecological Reserve through signage, routine property visits, and coordination with federal agencies regarding any proposed livestock grazing on adjacent federal lands.

Goal 2: Maintain and protect the water supply, quality, and quantity

Task 1: Document and monitor Indian Joe springs and maintain water right to spring sources for habitat purposes.
Task 2: Prevent uses of water on the property that may be detrimental to existing habitats (surface diversion).

Goal 3: Protect spring and riparian vegetation from invasion by noxious non-native and aggressive native plants

Task 1: Survey the property regularly for non-native plants and aggressive native vegetation such as tamarisk and phragmities (if needed).
Task 2: Remove and control undesirable vegetation using the methods that are most effective and environmentally sound following Department policies and practices.

Goal 4: Reduce the threat of human-caused wildfire

Task 1: Continue to prohibit campfires and unauthorized camping on the Ecological Reserve.
Task 2: Maintain signage regarding camping and campfires to reduce the likelihood of human caused wildfire.
Task 3: Remove established campfire rings as they appear on the property.

The modification of existing fences and removal of non-native plants constitutes a minor modification to the existing landscape. This may represent a degree of degradation to the area's aesthetic value. However, it is anticipated that these impacts would not be substantial and that these projects would have a net benefit to wildlife and sensitive habitats.

Biological Element 2: Inyo California Towhee and Willow Flycatcher

Approximately 5% of the known range of the Inyo California towhee is located on the Ecological Reserve. Both the 1998 USFWS Recovery Plan and 2010 Cooperative Management Agreement identify recovery actions to be taken by the involved agencies to benefit the species. Goals and tasks for this Biological Element may also be covered by other LMP Elements, such as Biological Element 1, but are included here due to the importance of this species on the Ecological Reserve. Goals and Tasks to benefit the towhee are expected to also benefit the willow flycatcher due to the reliance of that species on similar habitats.

Goal 1: Protect and manage habitat for the Inyo California towhee and willow flycatcher

Task 1: Reduce impacts to riparian, dry wash, and upland habitats from feral burros and horses by coordinating with BLM and NAWS and recommending removal, translocation, or other appropriate management actions as necessary.
Task 2: Continue to monitor, repair and make record of the condition of the pipe corral that has been erected around the springs to protect it from feral burro impacts.
Task 3: Map the extent of and eliminate or control exotic and invasive vegetation.
Task 4: Meet annually with BLM, CDFW, NAWS, and USFWS to discuss towhee related issues, such as the timing of future surveys, funding for surveys, tamarisk removal, any new threats, and potential new conservation measures.
Task 5: Manage recreational activities such as passive uses (e.g. hiking, birdwatching) and off-highway vehicles (OHV) to ensure that they do not negatively impact avian use of riparian habitats of the property.

Biological Element 3: Desert tortoise and Mohave ground squirrel

Desert tortoise and Mohave ground squirrel have both been observed in close proximity to the Ecological Reserve, and suitable habitat exists at lower elevations within the Mojave and Sonoran Desert Scrub vegetation community. The USFWS 1994 Recovery Plan and 2011 Revised Recovery Plan identify actions to benefit the Mojave population of desert tortoise which are reflected in the tasks below and incorporated into other related elements in this plan.

Goal: Maintain or enhance suitable habitat for desert tortoise and Mohave ground squirrel on the Ecological Reserve.

Task 1: Conduct comprehensive surveys of appropriate habitat on the Ecological Reserve for desert tortoise and Mohave ground squirrel.
Task 2: Coordinate with BLM to encourage management of feral burros, which may collapse and trample underground burrows and compete for limited resources.
Task 3: Provide adequate signage on roads (speed limits, prohibiting off-road travel)
Task 4: Evaluate feasibility of acquisition of adjacent lands from willing sellers that may contain high quality suitable habitat.

Biological Element 4: Desert Bighorn Sheep

Desert bighorn sheep were re-introduced to the Argus Mountains and it is believed that they continue to occur in the region, primarily occupying the range north of the Ecological Reserve. However, individuals or groups of bighorns may periodically utilize water and food resources in the Reserve.

Goal: Encourage use of the Ecological Reserve by bighorn sheep

Task 1: Coordinate with BLM to encourage management of feral burros to minimize disease threat and competition for limited resources.
Task 2: Evaluate the pipe corral at the head of the springs to determine if it may preclude access and use by bighorn sheep.
Task 3: Coordinate with other agencies and researchers to facilitate management and recovery of this species as appropriate.
Task 4: Regularly identify threats to bighorns and their habitat that may be minimized or precluded.

Biological Element 5: Sensitive Plant Species

The Ecological Reserve has not been sufficiently surveyed for sensitive species; however, a number of rare plant species are known to occur in the region. Additional surveys should take place to determine the presence of sensitive plants, and any discoveries should be catalogued in the California Natural Diversity Database.

Goal: Survey the Ecological Reserve for additional plant species

Task 1: Complete a plant species inventory for the Ecological Reserve; any sensitive species of plants should be recorded with the California Natural Diversity Database.
Task 2: If detected, implement protection strategies for rare plant populations and avoid activities that may be detrimental to these populations.

Constraints on Biological Elements

The primary constraint on achieving goals for biological elements is limited Department funding and staff time. The impacts of wild equines, particularly burros, increasingly poses a threat to sensitive riparian habitats; however, the Department has limited control over the management of these animals. Under the Wild Free-Roaming Horses and Burros Act of 1971 these equines are managed and protected by the BLM and Navy with State wildlife agencies having a consultation role regarding management activities.

C. Biological Monitoring Elements: Goals, Constraints, & Impacts

The State Wildlife Action Plan states, “all aspects of wildlife management, particularly efforts to restore species at risk, depend on biological information. The increasing stresses on wildlife resources, including the loss, degradation, and fragmentation of habitats, effects of water diversions, and proliferation of invasive species, have further increased the need to assess the status and trends of wildlife species and ecosystems in California.”

Biological Monitoring Element: Species and Habitat Monitoring

Goal 1: Monitor habitat and status of Inyo California towhee and willow flycatcher to ensure that ongoing management actions continue to benefit the towhee and that the population remains stable.

Task 1: Assess towhee abundance, habitat quality, water flow, and land use on the Ecological Reserve using the established protocol identified in the Cooperative Management Agreement.
Task 2: Complete a range wide census of known and potential habitat in collaboration with the partner agencies every 4 years (as funding allows).
Task 3: Monitor and document nest parasitism by brown-headed cowbird during towhee population monitoring efforts.
Task 4: Include willow flycatcher observations in any avian surveys conducted for towhee.
Task 5: Establish permanent vegetation transects within Inyo California towhee critical habitat including riparian, dry wash, and adjacent upland habitats (as funding allows).

Goal 2: Monitor habitat and presence of desert tortoise and Mohave ground squirrel

Task 1: Conduct baseline surveys to determine population status and extent of suitable habitat for Mohave ground squirrel and desert tortoise on and near the Ecological Reserve.
Task 2: Conduct visual surveys of suitable habitat on the Ecological Reserve (if identified) no less frequently than every 5 years to monitor changes in occupancy.
Task 3: Coordinate with other agencies and researchers to facilitate management and recovery of these species as appropriate.
Task 4: If desert tortoise is present, consult with USFWS as needed prior to any activities that may disturb soil, vegetation protecting burrows, burrows themselves, or other habitats.

Goal 3: Monitor habitat and presence of desert bighorn sheep

Task 1: Assess desert bighorn habitat quality and water source accessibility on the Ecological Reserve every 2 years.
Task 2: Coordinate with NAWS and BLM to monitor bighorn sheep use of the Argus Mountains and the Ecological Reserve.
Task 3: Utilize technologies such as motion-triggered wildlife cameras placed in suitable locations to monitor use of the Ecological Reserve by desert bighorn sheep.
Task 4: Coordinate with other agencies and researchers to facilitate management and recovery of these species as appropriate.

Goal 4: Establish a thorough baseline inventory of wildlife and plant species which use the Ecological Reserve across seasons and habitats

Task 1: Conduct baseline surveys for plants, birds, mammals, reptiles, amphibians, and invertebrates.
Task 2: Seek opportunities to collaborate with partners that may be interested in assisting with species inventories (academic, scientific, etc.).
Task 3: Utilize technologies such as motion-triggered wildlife cameras to monitor use of the Ecological Reserve by wildlife and feral equines.
Task 4: Utilize wildlife acoustic recording devices and automatic acoustic bat identification software. These devices may be available from Wildlife Branch on a temporary basis.

Goal 5: Monitor trends in use of Ecological Reserve by plant and wildlife species

Task: Conduct surveys of plants and wildlife during key periods (flowering, migration, etc.)

Goal 6: Monitor rare plant populations

Task: Conduct semi-annual surveys for all sensitive plant species known or with

potential to occur on the Ecological Reserve.

Plant and wildlife assessments such as small mammal trapping and mist netting birds can at times negatively impact the individuals under study. However, the resulting benefits of study outweigh these potential impacts by better informing management decisions. All assessment and monitoring will be conducted according to established protocols and extreme care will be taken to minimize and prevent injury to wildlife.

Constraints on Biological Monitoring Elements

The primary constraint on achieving goals for biological monitoring elements is limited Department funding and staff time. Environmental conditions at the Ecological Reserve vary year to year and may influence management's ability to implement aspects of this LMP. Access for performing biological monitoring is also limited by weather (extreme summer heat) and the distance to the remote location from the nearest office.

D. Public Use Elements: Goals, Constraints, & Impacts

It is a policy of the Fish and Game Commission that:

Lands under the administration of the Department be made available to the public for fishing, hunting or other forms of compatible wildlife-dependent recreational use, and for scientific studies whenever such use or uses will not unduly interfere with the primary purpose for which such lands were acquired (California Fish and Game Commission 2002).

The primary purposes for the acquisition of the Indian Joe Springs Ecological Reserve are to protect the Mojave Desert water sources and associated riparian habitat providing critical habitat for the Inyo California towhee and other wildlife. In keeping with Commission policy, the overall public use goal for the Ecological Reserve is to provide opportunities for recreational activities and scientific studies that do not have significant adverse impacts on those biological resources. Compatible activities are those that are either wildlife-dependent or related, and that have low potential to negatively impact the habitats and wildlife of the Ecological Reserve. These may include upland game hunting, bird watching, and nature study. It is the intent of this LMP that the following Public Use Elements be implemented in a manner consistent with all applicable sections of the California Code of Regulations (CCR) governing public use on Department Lands, including but not limited to §550, 550.5, and 630.

Public Use Element 1: Parking and Access

To access the Ecological Reserve, visitors must drive approximately 2.5 miles along the dirt track from the paved Trona-Wildrose Road. There is no designated parking area, but visitors can park on the property on existing roads or pullouts in a number of locations.

Goal 1: Facilitate safe and authorized access

Task 1: Post information along access roads at property boundaries about use designations and restrictions, and emergency contacts.
Task 2: Work with adjacent landowners that share access road to ensure that adequate signage is available to visitors for navigation and safety.

Goal 2: Encourage responsible day use practices on the Ecological Reserve.

Task 1: Conduct archaeological and biological surveys for areas proposed for any new day use areas or access roads.
Task 2: Provide enforcement of camping and day use restrictions through warden patrols and coordination with BLM law enforcement.
Task 3: Monitor public use and ongoing impacts from any illegal camping, day use, and vehicle access (Lands staff and wardens as available).

Goal 3: Minimize impacts by visitors to the riparian habitats and sensitive wildlife

Task: Investigate the feasibility of closure periods during critical periods for sensitive species (towhee breeding/nesting, etc.).

Public Use Element 2: Interpretation, Education, Wildlife Viewing, and Research

Informing and educating the public about the Ecological Reserve and its authorized and compatible uses, including the fragile nature of its ecosystems, is key to the successful management of the Ecological Reserve's public use elements. This research may provide scientific and management data necessary to promote the adaptive management of the Ecological Reserve.

Goal 1: Provide visitors with information on the various physical, cultural, and biological resources present at the Ecological Reserve

Task 1: Post interpretive signs regarding the Inyo California towhee and willow flycatcher at the trailhead.
Task 2: Provide interpretive information describing the physical, cultural, and biological resources of the Ecological Reserve, including the need for closures (if needed).

Goal 2: Provide opportunities for scientific research, inventory, and monitoring that will support adaptive management of the Ecological Reserve

Task 1: Establish working relationships with universities and other research institutions for engaging in on-site data collection and information sharing.
Task 2: Engage with community groups such as Audubon and Native Plant Society to share information about the Ecological Reserve and unique plant and animal species that occur there.

Public Use Element 3: Hunting

Upland game hunting is an allowed activity at Ecological Reserve, and is consistent with the purposes for acquisition of the property. The Regional Manager has the authority to restrict access for hunting purposes should sensitive species determinations be made as a result of biological resource assessment and monitoring tasks as listed above.

Goal 1: Continue to provide public hunting opportunities in accordance with the general regulations and as compatible with the goals for biological elements of this plan

Task 1: Post regulations and closed/safety areas as necessary.
Task 2: Monitor and patrol the Ecological Reserve for any unauthorized hunting (Lands staff and wardens as available).

Public Use Element 4: Motorized and Off-Highway Vehicle Use

Motorized vehicles are prohibited off existing open roads and must adhere to the 15 mile per hour speed limit. The use of off-highway vehicles (OHVs) and motorcycles is also prohibited. Off-road travel, OHV and motorcycles use may damage vegetation and soils, leading to soil compaction and increased erosion and sediment delivery to streams. Due to the presence of sensitive species and habitats, cultural artifacts, and erodible soils, the activities are not allowed.

Goal 1: Limit impacts of off-road travel, OHVs, and motorcycles

Task 1: Monitor and patrol the Ecological Reserve for any unauthorized motorized use (Lands staff and wardens as available).
Task 2: Post boundaries, post informational signs, speed limits, and build barricades where needed to preclude unauthorized motorized use.
Task 3: Stabilize and restore any areas impacted by motorized use.

Public Use Element 5: Horses and Pets

Equestrian use of the Ecological Reserve is prohibited. Potential issues include impacts to cultural artifacts, trampling of vegetation and direct losses of wildlife, bank cutting, erosion, damage to springs, and an influx of non-native invasive plant species that may be imported in feed, hay, straw and droppings.

Pets are prohibited from entering Ecological Reserves unless they are in a motor vehicle or on a leash of no more than 10 feet in length. Hunting dogs may be used during an open season for an authorized species but must be leashed when not engaged in authorized hunting.

Goal 1: Manage horses and pets consistent with sensitive species, habitat, resource protection, and applicable laws and regulations.

Task 1: Post signs clearly indicating permissible and non-permissible trail use.
Task 2: Monitor trails, roads, and overall area for non-permissible use and impacts (including possible introduction and/or spread of noxious weeds) and change or restrict permissible use as necessary.

Goal 2: Protect wildlife from depredation and harassment by pets.

Task 1: Post and enforce regulations regarding pets within the Ecological Reserve boundaries

The installation of interpretive and regulatory signs constitutes a minor modification to the existing landscape. This may represent a degree of degradation to the area's aesthetic value. However, plan adoption and the implementation of its various tasks would improve the overall aesthetic conditions of the Ecological Reserve by incorporating protection, management, and enhancement strategies for its natural habitats.

Constraints on Goals for Public Use Elements

The primary constraint on achieving goals for public use elements is limited Department funding and staff time. Volunteer work by local groups, schools, or organizations may provide opportunities for community involvement in some public use elements, such as creating resource interpretation materials. However, it is important to note that coordinating volunteer survey efforts still requires significant time and effort on the part of Department staff. Enforcement of regulations requires law enforcement by wardens and BLM rangers whose time for site visits is limited.

E. Facility Maintenance Elements: Goals, Constraints, & Impacts

Effective management of Department lands requires a regular facility maintenance program to meet the goals of biological, cultural, and public use elements, including public and occupational health and safety. Existing and potential facilities at the Ecological Reserve that require periodic maintenance include the parking area, fencing, access gates, and interpretive and regulatory signage.

Facility Maintenance Element 1: Ecological Reserve Boundaries

Goal 1: Control unauthorized uses to protect resources

Task 1: Identify, survey where necessary, document, and permanently mark the property boundaries of the Ecological Reserve (particularly the southeastern portion) to protect resources on the Ecological Reserve from trespass, livestock, off-highway vehicles, and other non-permissible uses, and to facilitate effective management.
Task 2: Post boundary signs every 1/3 mile along the fence line and at all road

and trail entrances to the property.
Task 3: Periodically inspect the boundary and signs.

The installation and maintenance of fences, gates, and signs constitutes a minor modification to the existing landscape. This may represent a degree of degradation to the area's aesthetic value and may result in minimal ground disturbance. These activities would be implemented using best management practices designed to minimize soil erosion and topsoil loss. Plan adoption and the implementation of its various tasks would improve the overall aesthetic and biological conditions of the Ecological Reserve by incorporating protection, management, and enhancement strategies for its natural habitats.

Facility Maintenance Element 2: Law Enforcement

Illegal uses of the Ecological Reserve include the cultivation of marijuana, vandalism of rocks (painting of "No Trespassing"), destruction of gates and fencing, camping and fire-building, and unauthorized motorized vehicle use.

Goal: Maintain law enforcement presence at Ecological Reserve:

Task: Encourage warden patrols and coordination with BLM law enforcement to enforce applicable laws and regulations such as prohibition on camping and campfires.

Facility Maintenance Element 3: Roads and Parking

Public road access is provided to the bottom of Indian Joe Canyon, at the eastern boundary of the Ecological Reserve. Several unimproved pullouts for parking are available to the east of the canyon.

Goal: Maintain adequate roads and parking for public and administrative traffic consistent with resource protection.

Task 1: Monitor and document roads and parking areas and identify those that are in need of maintenance or are impacting resources.
Task 2: Perform maintenance activities or implement closure, restoration, and monitoring of impacted sites as necessary. These activities will be modified and timed as necessary to avoid impacts to resources and sensitive species.

The maintenance of existing roads and parking areas, or restoration and closure of impacted sites, may temporarily impact lands immediately surrounding the work site. However, timely maintenance and repairs to the facilities within the Ecological Reserve will ensure cost-effective remedies and the avoidance of environmental degradation caused by failing infrastructures. These activities would be implemented using best management practices designed to minimize soil erosion and topsoil loss. Plan adoption and the implementation of its various tasks would improve the overall aesthetic and

biological conditions of the Ecological Reserve by incorporating protection, management, and enhancement strategies for its natural habitats.

Constraints on Goals for Facility Maintenance Elements

The primary constraint on achieving goals for facility maintenance elements is limited Department funding and staff time. Maintenance requirements will depend largely on the severity of weather conditions. Some improvements such as signs may attract vandalism. The frequency and severity of vandalism may impact the department's ability to maintain the improvements or to continue to provide them over the long term.

F. Cultural Resource Elements: Goals, Constraints, & Impacts

Cultural Resource Element: Archeological Resources

Goal 1: Inventory and protection of cultural sites and artifacts.

Task 1: Conduct a thorough archaeological and cultural resources survey of the Ecological Reserve.
Task 2: Conduct site-specific archaeological surveys in advance of any proposed ground-disturbing activities, trail maintenance, or construction.
Task 3: Maintain surveillance of known resources by monitoring (photo monitoring) to detect any degradation of archaeologically significant sites.

Constraints on Goals for Cultural Resource Elements

The primary constraint on achieving goals for cultural resource elements is limited Department funding and staff time. The cultural resource goals and tasks will require obtaining additional funding to undertake these tasks.

G. Administrative Elements: Goals, Constraints, & Impacts

Administrative records for the Indian Joe Springs Ecological Reserve are housed at the Department’s Inland Deserts (Region 6) Regional Field Office in Bishop, with copies maintained in the Lands Program Inventory files in Sacramento. These records may consist of title and easement reports, legal descriptions of the property, cooperative agreements with other agencies, research permits and reports, and operations and maintenance records.

Administrative Element 1: Recordkeeping

Goal: Thoroughly document data concerning management and resources of the Ecological Reserve

Task 1: Maintain accurate financial records regarding expenditures, staff, maintenance, funding, and other administrative duties.

Task 2: Document facility needs in a Department maintenance and capital outlay database.
Task 3: Actively pursue funding to facilitate implementation of the management plan.
Task 4: Store any sensitive cultural resource data in a secure area and restrict public access.
Task 5: Prepare annual monitoring and status reports as described in the biological monitoring section.

Administrative Element 2: Resource Coordination

Goal: Establish and maintain positive relationships with neighbors and user groups to address management issues

Task 1: Meet or correspond with local landowners and user groups as needed to maintain communication about management activities at the Ecological Reserve.
Task 2: Develop regular communication procedures with local BLM and NAWS staff to address plans and projects that may affect habitats and species at the Ecological Reserve, including burro management and listed species consultations

Constraints on Administrative Elements

The primary constraint on achieving goals for administrative elements is limited Department funding and staff time.

V. OPERATIONS AND MAINTENANCE SUMMARY

Existing Staff and Additional Personnel Needs Summary

Currently this property is managed by the Department Inland Deserts Region Lands North Program under the supervision of Lands North Senior Environmental Scientist based in the Bishop Field Office. The Lands North program is responsible for managing approximately 100,000 acres of Ecological Reserves and Wildlife Areas. These areas include diverse habitats from desert scrub to montane meadows, which support a wide array of fish, wildlife and plant species. Currently the Lands North Program consists of the Senior Environmental Scientist as also supported by an Environmental Scientist, Wildlife Habitat Supervisor, Scientific Aid and several Retired Annuitants. Additional support may be provided by the Department and BLM (Ridgecrest Field Office) staff and are available to fulfill plant, wildlife and bird monitoring requirements. Specialized expertise as needed to fulfil monitoring requirements for special status species such as the Inyo California towhee may be contracted to qualified academic and non-governmental entities as funding allows. Law enforcement is provided by wardens from the Department Law Enforcement Division Central District.

VI. CLIMATE CHANGE STRATEGIES

According to the California State Wildlife Action Plan, global climate change is a major challenge to the conservation of California's natural resources. The condition of many natural communities is already impaired due to a variety of pressures, many of which are interrelated, and these pressures are likely to be exacerbated by climate change. The effects of climate change are typically described in terms of physical changes such as altered temperature and precipitation, as well as the resultant effects such as altered freshwater hydrologic regime, sea level rise, increased wildfire risk, habitat fragmentation, and increased prevalence of invasive species. These effects will vary considerably from region to region in California, and will be affected by which emission scenario[1] is actually realized (CDFW 2015).

In California's deserts, January average temperatures are projected to increase 2° F to 4° F by 2050, and July average temperatures are projected to increase 3° F to 5° F by 2050. Mean annual precipitation projections for the region vary, with some models predicting increases up to 0.47 in., and others predicting decreases of 0.28 to 2.6 in. (CDFW 2015). Findings cited in the Desert Renewable Energy Conservation Plan (DRECP 2015) predict that increased evaporation from warmer temperatures may have a greater drying effect on soils and streamflow than precipitation changes, and overall drier conditions are projected in the Desert Province, with less soil moisture and less

[1] Climate models predict future climate conditions based on different emission scenarios. These scenarios predict concentrations of greenhouse gases and other pollutants in the atmosphere from both natural and man-made sources, and take into consideration land use, land cover, economics, human population trends, and technological advances over time (DRECP 2014; WMO 2016).

groundwater recharge. Projected changes in vegetation patterns also vary, depending on the precipitation model used. Where increased rainfall may occur, woody vegetation is predicted to expand, and barren areas to decline, whereas drier conditions may lead to increased barrenness and herbaceous vegetation, with declines in woody lifeforms (DRECP 2015).

In the SWAP, the Ecological Reserve occurs within the Mojave Desert ecoregion, one of five ecoregions comprising the Deserts Province in California, and the Northern Mojave-Mono Lake hydrologic unit. Within the Deserts Province, the SWAP has identified 15 conservation targets, of which three occur on the Ecological Reserve: American Southwest Riparian Forest and Woodland, Mojave and Sonoran Desert Scrubs, and Springs and Spring Brooks. Conservation targets are elements of biodiversity at a site for which specific conservation strategies are outlined in the SWAP. Both of the Ecological Reserve's conservation targets are identified within the SWAP as vulnerable to climate change pressures. Further, Species of Greatest Conservation Need[2] (SGCN) associated with these conservation targets, and which are also identified as susceptible to climate change pressures, are Panamint alligator lizard, willow flycatcher, Inyo California towhee, desert tortoise, and Mohave ground squirrel (Appendix C).

Conservation strategies developed in the SWAP for American Southwest Riparian Forest and Woodland, Mojave and Sonoran Desert Scrubs, and Springs and Spring Brooks conservation targets relevant to the Ecological Reserve are listed below, with the corresponding management goals as listed in Chapter 4 of this plan following in parentheses. While these strategies are not intended to specifically address climate change pressures, they are intended to relieve pressures from various sources, thereby conferring greater resiliency to climate change pressures.

<u>Conservation Target: American Southwest Riparian Forest and Woodland</u>

Strategies:

1. Identify critical or sensitive riparian habitats in areas that may require special protections (Biological Element 1, Goal 1).
    a. Identify degraded riparian habitats
    b. Monitor riparian habitats within the range of Inyo California towhee
    c. Obtain funding to implement strategy

2. Manage invasive species: control invasive and problematic vegetation, control invasive mammals (horse and burro), and prevent degradation of riparian habitat and springs from feral horses and burros (Biological Element 1, Goal 1).
    a. Conduct invasive plant removal projects
    b. Implement procedures to control invasive mammals (e.g. burros)

[2] Species of Greatest Conservation Need are those species identified in the SWAP as indicative of California's biodiversity, and having the greatest need for conservation based on their state or federal listing status and other state designations, and/or their vulnerability to climate change.

c. Implement procedure to prevent riparian (spring) habitat degradation

3. Establish co-management partnership to conserve target habitat (Biological Element 3, Goal 1).
    a. Identify and contact NGOs interested in conserving target habitat
    b. Create working alliance between all interested parties
    c. Identify conservation needs of riparian (spring) habitat
    d. Identify funding sources to implement projects

Conservation Target: Mojave and Sonoran Desert Scrub

1. Conserve lands to maintain long-term viability of SGCN (Biological Element 3, Goal 1)
    a. Identify availability of prime habitat
    b. Prioritize acquisition
    c. Evaluate feasibility of acquisition
    d. Evaluate connectivity to existing conserved or preserved lands
    e. Collect data on SCGN to identify priority lands.
    f. Identify and address data gaps.
    g. Implement interagency coordination/acquisition

Conservation Target: Springs and Spring Brooks

1. Study and document impacts of invasive species, renewable energy projects, and dams and water management and use on spring ecosystems and associated species for future management actions (Biological Element 1, Goal 2).
2. Establish and develop co-management partnerships. (Public Use Element 2, Goal 2).

VII. Future Revisions to Land Management Plans

All planning documents eventually become dated and require revision so they can continue to provide practical direction for operational and maintenance activities associated with the property. A common and unfortunate situation is that the revision of planning documents is often neglected for budgetary or staff constraints, or other priorities. To address this challenge, this brief guide incorporates a suggested hierarchy of revision procedures in which the level of process and required involvement is proportionate to the level of change that is proposed. The LMP reflects the best information available during the planning process, but it is understood that new information or circumstances will arise over time and adjustments will be required to keep the LMP current. Such new information or circumstances may include:

- feedback generated by adaptive management of the site
- scientific research that directs improved techniques of habitat management
- research that directs improved management of agricultural resources
- documented threats to fish and wildlife species and their habitats
- new legislative or policy direction
- new acquisitions

When new information dictates a change to the LMP, it is important that there is an appropriate process established to facilitate this change. Public outreach and public input will be necessary in proportion to the proposed policy change established by the LMP. Unless a reasonable and clear revision process exists, the LMP could become outdated and irrelevant. If the appropriate procedure for a particular proposed revision is not apparent, the determination of which of the following procedures to use shall be made by the Regional Manager in consultation with the Lands Program/Wildlife Branch.

A. Minor Revisions

Minor revisions may include the addition of new property to an existing Ecological Reserve or wildlife area or the adoption of limited changes to the goals and tasks through adaptive management, based on other scientific information or policy direction. This procedure will be applicable to revisions that meet the following criteria:

- No change is proposed to the overall purposes of this LMP
- CEQA documentation (if required) is completed and approved
- Appropriate consultation occurs within the region and with other appropriate branches in the Department
- Appropriate consultation with other agencies occurs
- Adjoining neighbors are consulted regarding the revision, if the revision is related to a specific location or the acquisition of additional area

Minor revisions may be prepared by the staff members or with other Department resources, and require approval by the Regional Manager. If additional acquisitions require no changes in existing management, the parcels may be integrated within the

current plan via a memo from the Regional Manager to the Director. The documentation is attached to the management plan and provided to the Lands Program/Wildlife Branch for their files.

B. Major Revisions

Major revisions or a new LMP, require a procedure comparable to the initial LMP planning process, but also proportionate to the level of policy change that is proposed. This procedure is applicable to revisions that meet the following criteria:

- Substantial revision and/or a new policy direction is proposed to the LMP, or the adoption of a completely new plan is proposed
- Appropriate CEQA documentation is completed and approved
- Appropriate consultation occurs throughout the Department
- Appropriate coordination and consultation with other agencies occurs
- A public outreach program is conducted that is proportional to the level of the proposed revision

Major revisions or a new plan may be prepared using available Department resources. Any major revisions or new plan development require prior approval by the Regional Manager. If the appropriate procedure for a particular, proposed revision is not apparent, the determination of which of these procedures to use shall be made by the region in consultation with the Lands Program. The revised plan may need additional CEQA analysis if the revisions present substantive changes. A new plan and/or new CEQA analysis for a revised plan would require the review and approval of the Deputy Director.

C. Plan Status Reports

Periodic evaluation is important to help ensure that the purposes and goals of the LMP are being met. The chapter or section that includes, “Management Goals,” may contain many specific tasks that involve monitoring of the site and evaluation of the adequacy of management activities. Cumulatively, these efforts will provide feedback regarding the success of the overall management effort. Periodic and detailed analysis of this feedback data will be necessary to assess the status of this LMP.

A review of the achievement of the goals of the LMP should be prepared every 5-10 years following the date of adoption of the LMP or subsequent revisions.
A status report documenting this review should, at minimum, include:

- An evaluation of the achievement of the purposes and goals of the LMP
- An evaluation of the completion or annual completion, as appropriate, of each task contained in this LMP
- Monitoring required as a result of a mitigated negative declaration
- A fiscal evaluation of the program

- An evaluation of the effectiveness of the Department's coordination efforts with local governments, and other property management and regulatory agencies involved with the site
- A notation of important new scientific information that has bearing on management
- A recommendation and schedule for revisions to the LMP to incorporate new information and improve its effectiveness

The status report should be prepared or coordinated by the site manager or other regional representative. It should be reviewed by appropriate Regional functions, then submitted to the Regional Manager and forwarded to the Lands Program, Wildlife Branch to be submitted to the Deputy Director. This report should serve as a basis for revision of the LMP and appropriate adjustment to ongoing management practices. Approved copies of the report are included in the management plan files in the region and Lands Program.

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APPENDIX A

Legal Description of Property

PARCEL A:

THE EAST HALF OF THE NORTHEAST QUARTER OF SECTION 23, AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 24, TOWNSHIP 24 SOUTH, RANGE 42 EAST, M.D.M., COUNTY OF INYO, STATE OF CALIFORNIA.

APN: 38-280-02

PARCEL B:

THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 24 AND THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 24, AND THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 25, TOWNSHIP 24 SOUTH, RANGE 42 EAST, M.D.M, COUNTY OF INYO, STATE OF CALIFORNIA.

APN: 38-280-06 AND 38-280-07

THE NORTH HALF OF LOT 2 OF THE NORTHWEST QUARTER (NORTHWEST QUARTER OF THE NORTHWEST QUARTER) OF SECTION 30, TOWNSHIP 24 SOUTH, RANGE 43 EAST M.D.M., COUNTY OF INYO, STATE OF CALIFORNIA.

APN: 38-300-12

PARCEL C:

THE NORTH HALF OF THE SOUTHWEST QUARTER OF SECTION 24 AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 24, AND THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 24, ALL IN TOWNSHIP 24 SOUTH, RANGE 42 EAST, M.D.M., COUNTY OF INYO, STATE OF CALIFORNIA.

APN: 38-280-05

APPENDIX B

Plants with Potential to Occur in Vicinity of Indian Joe Springs Ecological Reserve

Family/Genus	Species	Common name	Status	Source
AMARANTHACEAE				
Amaranthus	*blitoides*	Prostrate pigweed		CalFlora
ASCLEPIACEAE				
Asclepias	*sp.*	unidentified milkweed species		
ASTERACEAE				
Acamptopappus	*sphaerocephalus var. hirtellus*	Hairy goldenhead		CalFlora
Adenophyllum	*cooperi*	Cooper's dogweed		CalFlora
Ambrosia	*dumosa*	White bursage		
Ambrosia	*salsola*	Burrobrush		CalFlora
Amphipappus	*fremontii*	Fremont's chaff bush		CalFlora
Artemisia	*dracunculus*	Tarragon		CalFlora
Artemisia	*ludoviciana ssp. ludoviciana*	Silver wormwood		
Atrichoseris	*platyphylla*	Parachute flower		CalFlora
Baccharis	*sarothroides*	Broom Baccharis		
Baccharis	*sergilloides*	Desert Baccharis		
Bahiopsis	*reticulata*	Net veined viguera		CalFlora
Bebbia	*juncea*	Sweetbush		CalFlora
Brickellia	*atractyloides*	Spear leaved brickellia		
Brickellia	*desertorum*	Desert brickellia		CalFlora
Brickellia	*knappiana*	Knapp's brickellia		CalFlora
Chaenactis	*fremontii*	Fremont pincushion		
Chrysothamnus	*paniculatus*	Blackstem rabbitbush		
Encelia	*actoni*	Acton encelia		CalFlora
Encelia	*farinosa*	Brittlebush		
Ericameria	*cooperi*	Cooper's goldenbush		CalFlora
Ericameria	*cuneata var. spathulata*	Cliff goldenbush		
Ericameria	*teretifolia*	Green rabbitbrush		CalFlora
Erigeron	*divergens*	Spreading fleabane		
Eriophyllum	*ambiguum var. paleaceum*	Annual woolly sunflower		
Eriophyllum	*wallacei*	Wallace's woolly daisy		CalFlora
Gutierrezia	*microcephala*	Sticky snakeweed		
Hymenoclea	*salsola var. pentalepis*	Cheesebush		
Lasthenia	*microglossa*	Smallray goldfields		
Leptosyne	*bigelovii*	Bigelow coreopsis		CalFlora
Malacothrix	*coulteri*	Snake heads		
Malacothrix	*glabrata*	Desert dandelion		
Perityle	*emoryi*	Emory's rock daisy		CalFlora
Pleurocoronis	*pluriseta*	Arrowleaf		CalFlora
Pluchea	*sericea*	Arrow weed		
Porophyllum	*gracile*	Odora		CalFlora

Rafinesquia	*neomexicana*	California chicory		
Senecio	*flaccidus var. monoensis*	Mono groundsel		
Senecio	*vulgaris*	Old man of the spring		
Stephanomeria	*pauciflora*	Wire lettuce		CalFlora
Syntrichopappus	*fremontii*	Fremont's syntrichopappus		
Uropappus	*lindleyi*	Silver puffs		
Viguiera	*reticulata*	Netvein goldeneye		
Xylorhiza	*tortifolia var. tortifolia*	Desert aster		
BORAGINACEAE				
Amsinckia	*tessellata*	Devil's lettuce		
Cryptantha	*angustifolia*	Narrow leaved forget me not		CalFlora
Cryptantha	*circumscissa*	Western forget me not		CalFlora
Cryptantha	*clokeyi*	Clokey's cryptantha	1B.2	CNDDB
Cryptantha	*micrantha*	Purple root cryptantha		
Cryptantha	*pterocarya*	Winged forget me not		CalFlora
Descurainia	*Pinnata*	Yellow tansy mustard		CalFlora
Emmenanthe	*penduiflora*	Whispering bells		CalFlora
Lepidium	*densiflorum var. pubicarpum*	hairy peppergrass		
Pectocarya	*heterocarpa*	Chuckwalla pectocarya		CalFlora
Pectocarya	*penicillata*	Sleeping combseed		
Pectocarya	*setosa*	Moth combseed		CalFlora
Plagiobothrys	*Arizonicus*	Arizona popcornflower		
Rorippa	*nasturtium aquaticum*	Watercress		
Thysanocarpus	*Curvipes*	Fringepod		
BRASSICACEAE				
Descuriania	*pinnata ssp. glabra*	Smooth western tansy mustard		CalFlora
Lepidium	*flavum*	Yellow pepper grass		CalFlora
Streptanthella	*longirostris*	Long beaked twist flower		CalFlora
CACTACEAE				
Echinocactus	*polycephalus*	Cottontop		
Opuntia	*basilaris*	Beavertail cactus		
Opuntia	*echinocarpa*	Golden cholla		
CAPRIFOLIACEAE				
Sambucus	*Mexicana*	Blue elderberry		
CHENOPODIACEAE				
Atriplex	*confertifolia*	Shadscale		
Atriplex	*hymenelytra*	Desert holly		CalFlora
Atriplex	*parryi*	Parry's salbush		CalFlora
Atriplex	*polycarpa*	Cattle spinach		CalFlora
Atriplex	*spinifera*	Spinescale saltbush		CalFlora
Chenopodium	*sp.*	Unidentified goosefoot		
Grayia	*spinosa*	Hop sage		

Suada	*nigra*	Bush seepweed		CalFlora
CUCURBITACEAE				
Marah	*sp.*	Wild cucumber		
CYPERACEAE				
Carex	*sp.*	Unidentified sedge species		
DRYOPTERIDACEAE				
Woodsia	*oregana*	Cliff fern		
EPHEDRACEAE				
Ephedra	*nevadensis*	Nevada ephedra		
EQUISETACEAE				
Equisetum	*sp.*	Horsetail		
EUPHORBIACEAE				
Euphorbia	*ocellata ssp. arenicola*	Dune spurge		
Stillingia	*linearifolia*	Queen's root		
FABACEAE				
Acmispon	*rigidus*	Desert lotus		CalFlora
Astragalus	*atratus var. mensanus*	Darwin mesa milk vetch	1B.1	CNDDB
Astragalus	*layneae*	Widow's milkvetch		
Astragalus	*didymocarpus*	Dwarf white milk vetch		CalFlora
Astragalus	*lentiginosus*	Freckled milk vetch		CalFlora
Astragalus	*lentiginosus var. borreganus*	Borrego milk vetch		CalFlora
Lupinus	*concinnus*	Bajada lupine		
Lupinus	*excubitus*	Grape lupine		
Lupinus	*shockleyi*	Shockley lupine		CalFlora
Medicago	*sp.*	Unidentified sweet clover		
Prosopis	*glandulosa*	Honey mesquite		
Psorothamnus	*fremontii var. fremontii*	Fremont's indigo-bush		
GERANIACEAE				
Erodium	*cicutarium*	Cutleaf filaree		
HALORAGACEAE				
Myriophyllum	*aquaticum*	Parrot's feather		CalFlora
HYDROPHYLLACEAE				
Nama	*demissum var. demissum*	Desert purplemat		
Phacelia	*cicutaria*	Caterpillar phacelia		CalFlora
Phacelia	*fremontii*	Fremont's phacelia		CalFlora
Phacelia	*tanacetifolia*	Tansy-leafed phacelia		
Emmenanthe	*penduliflora var. penduliflora*	Whispering bells		
Pholistoma	*membranaceum*	White fiesta flower		

JUGLANDACEAE				
Juglans	*californica var. californica*	Walnut		
JUNCACEAE				
Juncus	*mexicanus*	Mexican rush		
Juncus	*xiphioides*	Iris-leaved rush		
LAMIACEAE				
Salvia	*columbaria*	Chia sage		
Scutellaria	*mexicana*	Mexican bladdersage		
LILIACEAE				
Dichelostemma	*capitatum ssp. capitatum*	Blue dichs		
LOASACEAE				
Eucnide	*urens*	Desert rocknettle		
Mentzelia	*affinis*	Yellow comet		
Mentzelia	*albicaulis*	White stemmed blazing star		CalFlora
Mentzelia	*desertorum*	Desert blazingstar		
Mentzelia	*veatchiana*	Veach's blazing start		CalFlora
MALVACEAE				
Eremalche	*rotundifolia*	Desert fivespot		CalFlora
Sphaeralcea	*ambigua var. ambigua*	Apricot mallow		
MORACEAE				
Ficus	*Carica*	Fig		
NYCTAGINACEAE				
Mirabilis	*bigelovii var. retorsa*	Desert four o'clock		
Mirabilis	*laevis var. villosa*	Wishbone bush		CalFlora
OLEACEAE				
Forestiera	*pubescens*	Desert olive		
ONAGRACEAE				
Camissonia	*claviformis ssp. claviformis*	Browneyes		
Chylismia	*claviformis*	Clavate fruited primrose		CalFlora
Eremothera	*boothii ssp. boothii*	Booth's evening-primrose	2B.3	CalFlora
OROBANCHACEAE				
Castilleja	*chromosa*	Desert paintbrush		CalFlora
PAPAVERACEAE				
Eschscholzia	*glyptosperma*	Desert gold poppy		CalFlora
Eschscholzia	*minutiflora*	Coville's poppy		
PLATAGINACEAE				

Plantago	*Ovata*	Desert plantain	
POACEAE			
Bromus	*berteroanus*	Chilean chess	CalFlora
Bromus	*carinatus*	California bromegrass	
Bromus	*madritensis*	Foxtail brome	
Elymus	*elymoides*	Squirrel tail grass	CalFlora
Melica	*frutescens*	Tall melica	CalFlora
Melica	*imperfecta*	Small-flowered melicgrass	
Muhlenbergia	*rigens*	Deergrass	
Phragmites	*australis*	Common reed	
Poa	*secunda*	Pine bluegrass	
Schismus	*barbatus*	Old Han schismus	
Stipa	*speciosa*	Desert needle grass	
POLEMONIACEAE			
Aliciella	*latifolia*	Broad leaf gilia	CalFlora
Eriastrum	*diffusum*	Miniature wool star	CalFlora
Gilia	*cana ssp. triceps*	Showy gilia	
Gilia	*micromeria*	Small-flowered Gilia	
POLYGONACEAE			
Chorizanthe	*brevicornus var. brevicornus*	Brittle spineflower	
Eriogonum	*deflexum var. baratum*	Flat topped buckwheat	CalFlora
Eriogonum	*fasciculatum*	California buckwheat	
Eriogonum	*inflatum*	Desert trumpet	
Eriogonum	*pusillum*	Yellow turban	CalFlora
Langloisia	*setosissima ssp. punctata*	Lilac sunbonnet	CalFlora
Linanthus	*arenicola*	Sand linanthus	CalFlora
Loeseliastrum	*matthewsii*	Desert calico	CalFlora
Pterostegia	*drymarioides*	Fairy mist	
PORTULACACEAE			
Claytonia	*sp.*	Miner's lettuce	
PTERIDACEAE			
Myriopteris	*parryi*	Parry's lipfern	
Myriopteris	*viscida*	Viscid cace fern	CalFlora
RANUNCULACEAE			
Delphinium	*parishii*	Parish's larkspur	
ROSACEAE			
Pursia	*tridentata*	Antelope brush	CalFlora
RUBIACEAE			
Galium	*parishii*	Climbing bedstraw	
Galium	*stellatum*	Starry bedstraw	CalFlora
SALICACEAE			

Salix	*exigua*	Narrowleaf willow		CalFlora
Salix	*laevigata*	Red willow		
Salix	*lasiolepis*	Arroyo willow		CalFlora
Salix	*lucida ssp. lasiandra*	Yellow willow		
Salix	*melanopsis*	Dusky willow		CalFlora
SIMAROUBACEAE				
Castela	*emoryi*	Crucifixion thorn		
SCROPHULARIACEAE				
Cordylanthus	*eremicus ssp. eremicus*	Panamint bird's beak	4.3	CNNDB
Mimulus	*cardinalis*	Scarlet monkeyflower		
Mimulus	*guttatus*	Common monkeyflower		
Penstemon	*fruticiformis var. amargosae*	Death Valley beardtongue	1B.3	CNDDB
Scrophularia	*desertorum*	Desert figwort		CalFlora
SOLANACEAE				
Datura	*wrightii*	Jimsonweed		
Lycium	*cooperi*	Cooper's box thorn		CalFlora
Lycium	*pallidum var. oligospermum*	Rabbit thorn		CalFlora
Nicotiana	*obtusifolia*	Desert tobacco		CalFlora
TYPHACEAE				
Typha	*latifolia*	Cattails		
URTICACEAE				
Hesperocnide	*tenella*	Western nettle		
Parietaria	hespera var. hespera	Pellitory		CalFlora
VITACEAE				
Vitus	*sp.*	Grape		
ZYGOPHYLLACEAE				
Larrea	*tridentata*	Creosote bush		

APPENDIX C

Animals with Potential to Occur in Vicinity of Indian Joe Springs Ecological Reserve

Amphibians	**Amphibia**			
Red-spotted toad	*Anaxyrus punctatus*		R	LMP
Pacific tree frog	*Pseudaerus regilla*		R	LMP
Reptiles	**Reptilia**			
Snakes				
Mojave shovel-nosed snake	*Chionactis occipitalis occipitalis*		V	MVZ
Desert striped whipsnake	*Coluber taeniatus taeniatus*		V	CalHerps
Mojave desert sidewinder	*Crotalus cerastes cerastes*		V	MVZ
Panamint Rattlesnake	*Crotalus stephensi*		R	Clause, MVZ
Desert nightsnake	*Hypsiglena chlorophaea*		R	Clause 2014
California kingsnake	*Lampropeltis getula californiae*		V	CalHerps
Red coachwhip	*Masticophis flagellum piceus*		R	Clause 2014
Great Basin gopher snake	*Pituophis catenifer deserticola*		V	CalHerps
Long-nosed snake	*Rheinocheilus lecontei*		V	MVZ
Mojave patch-nose snake	*Salvadora hexalepis mojavensis*		V	CalHerps
Variable groundsnake	*Sonora semiannulata semiannulata*		V	CalHerps
Lizards				
Great Basin whiptail	*Aspidoscelis tigris tigris*		R	Clause 2014
Western zebra-tailed lizard	*Callisaurus draconoides rhodostictus*		V	MVZ
Western banded gecko	*Coleonyx variegatus variegatus*		R	Clause 2014
Great Basin collared lizard	*Crotaphytus bicinctores*		V	MVZ
Northern desert iguana	*Disosaurus dorsalis dorsalis*		V	MVZ
Panamint alligator lizard	*Elgaria panamintina*	SSC, SGCN	V	LMP
Long-nosed leopard lizard	*Gambelia wislizenii*		V	MVZ
Southern desert horned lizard	*Phrynosoma platyrhinos calidiarum*		V	MVZ
Spotted leaf-nosed snake	*Phyllorhynchus decurtatus*		V	MVZ
Western red-tailed skink	*Plestiodon gilberti rubricaudatus*		V	MVZ
Great Basin fence lizard	*Sceloporus occidentalis longipes*		V	MVZ
Desert spiny lizard	*Sceloporus magister*		V	Clause, MVZ
Western side-blotched lizard	*Uta stansburiana elegans*		R	Clause, MVZ
Tortoises	**Testudinidae**			
Mojave desert tortoise	*Gopherus agassizii*	FT, ST, SGCN	V	LMP

Birds	**Aves**			
Vultures	**Cathartidae**			
Turkey vulture	*Cathartes aura*		R	eBird
Kites, Eagles, Hawks	**Accipitridae**			
Cooper's hawk	*Accipiter cooperi*	WL	R	LMP
Sharp-shinned hawk	*Accipiter striatus*	WL	R	eBird
Golden eagle	*Aquila chrysaetos*	FP, WL	R	eBird
Red-tailed hawk	*Buteo jamaicensis*		R	eBird
Swainson's Hawk	*Buteo swainsoni*	SSC	V	LaBerteaux
Falcons	**Falconidae**			
Merlin	*Falco columbarius*	WL	H	MVZ
Prairie falcon	*Falco mexicanus*	WL	R	LMP
American peregrine falcon	*Falco peregrinus anatum*	FP	R	LMP
American kestral	*Falco sparverius*		V	LaBerteaux
Grouse and Quail	**Phasiandidae**			
Chukar partridge	*Alectoris chukar*		R	eBird
California quail	*Callipeple californica*		R	LMP
Desert mountain quail	*Oreortyx pictus*		R	LMP
Pigeons and Doves	**Columbidae**			
Mourning dove	*Zenaida macroura*		R	eBird
Cuckoos and Roadrunners	**Cuculidae**			
Greater roadrunner	*Geococcyx californianus*		R	LMP
Typical Owls	**Strigidae**			
Long-eared owl	*Asio otus*	SSC, SGCN	R	eBird
Burrowing owl	*Athene cunicularia*	SSC, SGCN	R	LMP
Hummingbirds	**Trochilidae**			
Anna's hummingbird	*Calypte anna*		R	LMP
Costa's hummingbird	*Calypte costae*		R	eBird
Rufous Hummingbird	*Selasphorus rufus*		V	LaBerteaux
Swifts	**Apodidae**			
White-throated swift	*Aeronautes saxatalis*	SSC, SGCN	R	LMP
Woodpeckers	**Picidae**			
Northern flicker	*Colaptes auratus*		R	eBird
Ladder-backed woodpecker	*Picoides scalaris*		R	eBird
Red-naped sapsucker	*Sphyrapicus nuchalis*		R	eBird
Red-breasted sapsucker	*Sphyrapicus ruber*		R	eBird
Tyrant Flycatchers	**Tyrannidae**			
Western wood-pewee	*Contopus sordidulus*		R	LMP

Pacific-slope flycatcher	*Empidonax difficilis*		R	LMP/ eBird
Hammond's flycatcher	*Empidonax hammondii*		R	eBird
Dusky flycatcher	*Empidonax oberholseri*		R	eBird
Willow flycatcher	*Empidonax traillii*	SE, SGCN	R	LMP
Gray flycatcher	Empidonax wrightii		V	LaBerteaux
Ash-throated flycatcher	*Myiarchus cinerascens*		R	LaBerteaux
Vermillion flycatcher	*Pyrocephalus rubinus*	SSC, SGCN	H	MVZ
Black phoebe	*Sayornis nigricans*		R	eBird
Say's phoebe	*Sayornis saya*		R	LMP
Western Kingbird	*Tyrannus verticalis*		V	LaBerteaux
Shrikes	**Lanidae**			
Loggerhead shrike	*Lanius ludovicianus*	SSC, SGCN	R	eBird
Vireos	**Vireonidae**			
Cassin's vireo	*Vireo cassinii*		R	eBird
Warbling vireo	*Vireo gilvus*		V	LaBerteaux
Plumbeous vireo	*Vireo plumbeus*		V	LaBerteaux
Jays, Magpies, and Crow	**Corvidae**			
Western scrub-jay	*Aphelocoma californica*		V	LaBerteaux
Woodhouse's scrub jay	*Aphelocoma woodhouseii*		R	LMP
Common raven	*Corvus corax*		R	eBird
Pinyon jay	*Gymnorhinus cyanocephalus*		V	LaBerteaux
Swallows	**Hirundinidae**			
Cliff Swallow	*Petrochelidon pyrrhonota*		V	LaBerteaux
Tree swallow	*Tachycineta bicolor*		R	eBird
Violet-green swallow	*Tachycineta thalassina*		R	CNDDB, eBird
Larks	**Alaudidae**			
Horned lark	*Eremophila alpestris*		R	LMP
Verdin	**Remizidae**			
Verdin	*Auriparus flaviceps*		R	LMP
Bushtits	**Aegithalidae**			
American bushtit	*Psaltriparus minimus*		R	LMP
Wrens	**Troglodytidae**			
Coastal cactus wren	*Campylorhynchus brunneicapillus*		V	MVZ
Canyon wren	*Catherpes mexicanus*		R	LMP
Rock wren	*Salpinctes obsoletus*		R	LMP
Bewick's wren	*Thryomanes bewickii*		V	LaBerteaux
House wren	*Troglodytes aedon*		V	LaBerteaux
Kinglets	**Regulidae**			
Ruby-crowned kinglet	*Regulus calendula*		R	LMP

Gnatcatchers and Thrushes	**Muscicapidae**			
Hermit thrush	*Catharus guttatus*		R	eBird
Swainson's thrush	*Catharus ustulatus*		V	LaBerteaux
Blue-gray gnatcatcher	*Polioptila caerulea*		R	eBird
Mockingbirds, Thrashers, and allies	**Mimidae**			
Northern mockingbird	*Mimus polyglottos*		R	LMP
Sage thrasher	*Oreoscoptes montanus*		R	eBird
Starlings	**Sturnidae**			
European starling	*Sturnus vulgaris*		R	eBird
Waxwings	**Bombycillidae**			
Cedar waxwing	*Bombycilla cedrorum*		R	LMP
Le Conte's thrasher	*Toxostoma lecontei*		R	LMP
Silky-Flycatchers	**Ptilogonatidae**			
Phainopepla	*Phainopepla nitens*		R	LMP
Wood Warblers	**Parulidae**			
Wilson's wabler	*Cardellina pusilla*		R	eBird
MacGillivray's wabler	*Geothlypis tolmiei*		R	eBird
Common yellowthroat	*Geothlypis trichas*		R	eBird
Nashville warbler	*Leiothlypis ruficapilla*		R	eBird
Orange-crowned warbler	*Oreothlypis celata*		R	eBird
Yellow-rumped warbler	*Setophaga coronata*		R	eBird
Black-throated gray warbler	*Setophaga nigrescens*		R	eBird
Hermit warbler	*Setophaga occidentalis*		V	LaBerteaux
Yellow warbler	*Setophaga petechia*	SSC, SGCN	R	LMP
Townsend's warbler	*Setophaga townsendi*		V	LaBerteaux
Orange-crowned Warbler	*Vermivora celata*		V	LaBerteaux
Tanagers	**Thraupidae**			
Western tanager	*Piranga ludoviciana*		V	LaBerteaux
Towhees and Sparrows	**Emberizidae**			
Mojave Bell's sparrow	*Amphispiza belli canescens*		R	eBird
Black-throated sparrow	*Amphispiza bilineata*		R	LMP
Sage sparrow	*Amphispiza nevadensis*		R	eBird
Dark-eyed junco	*Junco hyemalis*		R	LMP
Lincoln's sparrow	*Melozone [=Pipilo] crissalis eremophilus*	FT, SE, SGCN	R	LMP
Song sparrow	*Melospiza lincolnii*		R	eBird
Inyo California towhee	*Melospiza melodia*		R	eBird
Fox sparrow	*Passerella iliaca*		R	MVZ
Green-tailed towhee	*Pipilo chlorurus*		R	eBird
Spotted towhee	*Pipilo maculatus*		R	LMP
Black-chinned sparrow	*Spizella atrogularis*		V	LaBerteaux
Brewer's sparrow	*Spizella breweri*		V	LaBerteaux

Chipping sparrow	*Spizella passerina*		V	LaBerteaux
Golden-crowned sparrow	*Zonotrichia atricapilla*		R	LaBerteaux
White-crowned sparrow	*Zonotrichia leucophrys*		R	LMP
Cardinals, Grosbeaks, and Allies	**Cardinalidae**			
Lazuli bunting	*Passerina amoena*		R	eBird
Black-headed grosbeak	*Pheucticus melanocephalus*		V	LaBerteaux
Blackbirds and Orioles	**Icteridae**			
Scott's oriole	*Icterus parisorum*		V	LaBerteaux
Brown-headed cowbird	*Molothrus ater*		R	LMP
Western meadowlark	*Sturnella neglecta*		R	eBird
Yellow-breasted chat	**Icteriidae**			
Yellow-breasted chat	*Icteria virens*	SSC, SGCN	R	LMP
Finches	**Fringillidae**			
House finch	*Haemorhous mexicanus*		R	eBird
Lesser goldfinch	*Spinus psaltria*		R	LMP

Mammals

Even-toed Ungulates	**Artiodactyla (Order)**			
mule deer	*Odocoileus hemionus*		V	LMP
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	SSC, SGCN	V	LMP
Carnivores	**Carnivora (Order)**			
ring-tailed cat	*Bassariscus astutus*	FP	V	MVZ
coyote	*Canis latrans*			CWHR
bobcat	*Lynx rufus*			CWHR
mountain lion	*Puma concolor*			CWHR
spotted skunk	*Spilogale putorius*		V	MVZ
Striped skunk	*Mephitis mephitis*		V	LaBerteaux
American badger	*Taxidea taxus*	SSC, SGCN		LaBerteaux
gray fox	*Urocyon cinereoargenteus*			CWHR
kit fox	*Vulpes macrotis*			CWHR
Horses	**Equidae**			
burro	*Equus asinus*		R	LMP
Shrews	**Soricadea**			
desert shrew	*Notiosorex crawfordi*		V	Patton
wandering shrew	*Sorex vagrans*		V	Patton
Hares and Rabbits	**Leporidae**			
black-tailed jackrabbit	*Lepus californicus californicus*		V	Patton
desert cottontail	*Sylvilagus audubonii arizonae*		V	Patton

Rodents	**Rodentia (Order)**			
Squirrels	**Scuiridae**			
antelope ground squirrel	*Ammospermophilus leucurus leucurus*			Patton
Mohave ground squirrel	*Xerospermophilus mohavensis*	ST, SGCN	V	CNDDB
Gophers	**Geomyidae**			
Botta's pocket gopher	*Thomomys bottae perpallidus*		V	Patton, LaBerteaux
Kangaroo rats and mice	**Heteromyidae**			
long-tailed pocket mouse	*Chaetodipus formosus mohavensis*		V	Patton
desert kangaroo rat	*Dipodomys deserti deserti*		V	Patton
Merriam's kangaroo rat	*Dipodomys merriami merriami*		V	Patton
chisel-toothed kangaroo rat	*Dipodomys microps microps*		V	Patton
Argus mountains kangaroo rat	*Dipodomys panamintinus argusenis*		V	Patton
Mojave kangaroo rat	*Dipodomys panamintinus mohavensis*		V	Patton
little pocket mouse	*Perognathus longimembris longimembris*		V	Patton
New World rats and mice	**Cricetidae**			
desert woodrat	*Neotoma lepida lepida*		R	Patton
southern grasshopper mouse	*Onychomys torridus pulcher*	SSC, SGCN	V	Patton
rock mouse	*Peromyscus crinitus stephensi*		V	Patton
desert deer mouse	*Peromyscus eremicus eremicus*		V	Patton
deer mouse	*Peromyscus maniculatus sonoriensis*		V	Patton
western harvest mouse	*Reithrodontomys megalotis megalotis*		V	Patton
Bats	**Chiroptera (Order)**			
Pallid bat	*Antrozous pallidus*	SSC, SGCN	R	LMP
Townsend’s big-eared bat	*Corynorhinus townsendii*	SSC, SGCN	R	LMP
Pale big-eared bat	*Corynorhinus townsendii pallescens*		R	LMP
Big brown bat	*Eptescicus fuscus*		R	LMP
Spotted bat	*Euderma maculatum*	SSC	R	LMP
Western small-footed myotis	*Myotis ciliolabrum*		R	LMP
Western pipistrelle	*Pipistrellus hesperus hesperus*		V	LMP
Mexican free-tailed bat	*Tadarida brasiliensis*		R	LMP

SE = State Endangered

ST = State Threatened

FE = Federally Endangered

FT = Federally Threatened

FP = State Fully Protected

SGCN = Species of Greatest Conservation Need, State Wildlife Action Plan 2015

SSC = State Species of Special Concern

R = Observed on Ecological Reserve

V = Record of species in the vicinity of the Ecological Reserve

H = Historic specimen record

[1] very unlikely, but may be found at springs

[2] Identified as *Crotalus mitchellii* in 1956 but was split in 2007 to differentiate between *stephensi* and *michelli*

[3] Identified as *stansburiana stansburiana* in 1941 but identified as *stansburiana elegans* by Clause 2014.

[4] subspecies *argusensis* is known from sites in Argus Range but likely does not extend down to the elevation and habitat of CDWF property; subspecies *mohavensis* is known from vicinity of Searles Station and may extend further north.

APPENDIX D

ENVIRONMENTAL REVIEW

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Land Management Plan for Indian Joe Springs Ecological Reserve

Lead Agency: California Department of Fish and Wildlife, Bishop Field Office | Contact Person: Alisa Ellsworth

Mailing Address: 787 N. Main Street, Suite 220 | Phone: (760) 872-1171

City: Bishop | Zip: CA | County: Inyo

Project Location: County: Inyo | City/Nearest Community: Trona, CA

Cross Streets: Trona Wildrose Rd and Valley Wells Rd (closest intersection) | Zip Code: 93562

Longitude/Latitude (degrees, minutes and seconds): 35 ° 49 ′ 37.80″ N / 117 ° 23 ′ 29.40″ W | Total Acres: 520

Assessor's Parcel No.: 38-280-02, 05, 06, 07, 38-300-12 | Section: 23,24,25 | Twp.: 24S | Range: 43E | Base: MDB&M

Within 2 Miles: State Hwy #: | Waterways: Indian Joe Canyon/ Wilson Canyon (seasonal)

Airports: None | Railways: None | Schools: None

Document Type:

CEQA: ☐ NOP ☐ Early Cons ☒ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ☐ Other:

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI Other: ☐ Joint Document ☐ Final Document ☐ Other:

Governor's Office of Planning & Research

JAN 03 2018

STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☒ Other: Mngmt Plan

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational:
☐ Recreational:
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type
☐ Mining: Mineral
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type
☒ Other: Resources Management/ non-development

Project Issues Discussed in Document:

☒ Aesthetic/Visual ☒ Agricultural Land ☒ Air Quality ☒ Archeological/Historical ☒ Biological Resources ☐ Coastal Zone ☐ Drainage/Absorption ☐ Economic/Jobs
☐ Fiscal ☒ Flood Plain/Flooding ☒ Forest Land/Fire Hazard ☒ Geologic/Seismic ☒ Minerals ☒ Noise ☒ Population/Housing Balance ☒ Public Services/Facilities
☒ Recreation/Parks ☐ Schools/Universities ☐ Septic Systems ☐ Sewer Capacity ☒ Soil Erosion/Compaction/Grading ☒ Solid Waste ☒ Toxic/Hazardous ☒ Traffic/Circulation
☒ Vegetation ☒ Water Quality ☒ Water Supply/Groundwater ☒ Wetland/Riparian ☐ Growth Inducement ☒ Land Use ☒ Cumulative Effects ☐ Other:

Present Land Use/Zoning/General Plan Designation:

Resource Management

Project Description: *(please use a separate page if necessary)*

The Indian Joe Springs Ecological Reserve (IJSER) Land Management Plan (LMP) will guide the adaptive management of habitats, species, and programs on the 520-acre property and intends to protect and enhance fish and wildlife values; serve as a guide for appropriate public uses of IJSER; serve as a descriptive inventory of fish, wildlife, and native and nonnative plants and vegetation communities that occur within IJSER; and provide an overview of the property's planned operation and maintenance activities and of the personnel requirements to implement management goals.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "X".
If you have already sent your document to the agency please denote that with an "S".

_____ Air Resources Board
_____ Boating & Waterways, Department of
_____ California Emergency Management Agency
_____ California Highway Patrol
_____ Caltrans District # _____
_____ Caltrans Division of Aeronautics
_____ Caltrans Planning
_____ Central Valley Flood Protection Board
_____ Coachella Valley Mtns. Conservancy
_____ Coastal Commission
_____ Colorado River Board
_____ Conservation, Department of
_____ Corrections, Department of
_____ Delta Protection Commission
_____ Education, Department of
_____ Energy Commission
_____ Fish & Game Region # _____
_____ Food & Agriculture, Department of
_____ Forestry and Fire Protection, Department of
_____ General Services, Department of
_____ Health Services, Department of
_____ Housing & Community Development
_____ Native American Heritage Commission
_____ Office of Historic Preservation
_____ Office of Public School Construction
_____ Parks & Recreation, Department of
_____ Pesticide Regulation, Department of
_____ Public Utilities Commission
_____ Regional WQCB # _____
_____ Resources Agency
_____ Resources Recycling and Recovery, Department of
_____ S.F. Bay Conservation & Development Comm.
_____ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
_____ San Joaquin River Conservancy
_____ Santa Monica Mtns. Conservancy
_____ State Lands Commission
_____ SWRCB: Clean Water Grants
_____ SWRCB: Water Quality
_____ SWRCB: Water Rights
_____ Tahoe Regional Planning Agency
_____ Toxic Substances Control, Department of
_____ Water Resources, Department of
_____ Other: _____
_____ Other: _____

Local Public Review Period (to be filled in by lead agency)

Starting Date January 3, 2018 Ending Date February 14, 2018

Lead Agency (Complete if applicable):

Consulting Firm: _____
Address: _____
City/State/Zip: _____
Contact: _____
Phone: _____

Applicant: _____
Address: _____
City/State/Zip: _____
Phone: _____

Signature of Lead Agency Representative: Keske Mae Nair **Date:** 1/2/18

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

ENVIRONMENTAL CHECKLIST FORM

PROJECT INFORMATION

1. Project title: Indian Joe Springs Ecological Reserve, Land Management Plan

2. Lead agency name and address: California Department of Fish and Wildlife
   Region 6- Inland Deserts
   3602 Inland Empire Blvd. Suite C-220
   Ontario, CA 91764

3. Contact person and phone number: Alisa Ellsworth, Senior Environmental Scientist
   (760) 872-1173

4. Project location: Indian Joe Springs Ecological Reserve consists of 520 acres of land located on the eastern side of the Angus Range in southern Inyo County

5. Project sponsor's name and address: Same as above

6. General plan designation: Natural Resources (NR)

7. Zoning: N/A

8. Description of project:

   The project is the Land Management Plan (LMP) for the Indian Joe Springs Ecological Reserve (IJSER). The property was acquired to protect the Mojave desert water sources and associated riparian habitats that provide critical habitat for the Inyo California towhee. The purposes of the LMP are:

   - To guide the adaptive management of habitats, species, and programs described herein to achieve the Department's mission to protect and enhance wildlife values
   - To guide compatible public uses of the property
   - To serve as a descriptive inventory of fish, wildlife, plants, and habitats that occur on or use this property
   - To provide an overview of the property's operations, maintenance, and personnel needed to implement management goals and serve as an aid for annual regional budget preparation and work planning
   - To provide a description of potential and actual environmental impacts and subsequent mitigation that may occur during management
   - To provide the environmental documentation necessary to comply with state and federal statutes and regulation

   The LMP consists of the following chapters:

   I. Introduction
   II. Property Description
   III. Habitat and Species Descriptions
   IV. Management Goals and Environmental Impacts
   V. Operations and Maintenance Summary
   VI. Climate Change Strategies
   VII. Future Revisions to Land Management Plans

   This Plan is a general policy guide to the management of the Ecological Reserve. It does not specifically authorize or make any commitment to any substantive physical changes to the Ecological Reserve. With the exception of minor operations, maintenance activities and stewardship activities, any physical changes that

are not currently approved will require subsequent authorizations and approvals. Because any such possible changes will be a part of projects, which have not yet been conceived, designed or funded, it is not possible to reasonably evaluate the impacts of any such subsequent projects. Any such subsequent projects not included within the scope of this project will require analysis pursuant to CEQA when such projects are conceived and proposed.

c9. Surrounding land uses and setting (Briefly describe the project's surroundings):

The Indian Joe Springs Ecological Reserve is composed of 520 acres of wildlife habitat located in southern Inyo County. The area is composed of desert riparian habitat and various communities of mixed desert willow riparian, creosote bush, brittlebush and other arid vegetation. Public Land (Bureau of Land Management) surrounds most of Indian Joe Springs Ecological Reserve, except for private property adjacent to the eastern boundary of the Ecological Reserve which includes an active aggregate mine.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

None

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

On July 3, 2017, in compliance with PRC §21080.3.1 and the CDFW Tribal Communication and Consultation Policy, the Department requested a list of Tribes potentially affected by the LMP from the Native American Heritage Commission (NAHC). On August 8 upon receipt of the listed Tribes and their contacts, the Department provided official notification of the LMP to those Tribal contacts on the NAHC list, as well as to those Tribes that had requested CEQA notification from CDFW for the region, and all Tribes located in Inyo County. These notifications resulted in no requests for formal consultation on the LMP.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology /Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology / Water Quality
☐ Land Use / Planning	☐ Mineral Resources	☐ Noise
☐ Population / Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Tribal Cultural Resources	☐ Mandatory Findings of Significance
		☐ Utilities / Service Systems

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Leslie MacNair	1/2/18
Signature	Date
Leslie MacNair	Regional Manager
Printed Name	Title
California Department of Fish and Wildlife	Inland Deserts - 6
Agency	Region

EVALUATION OF ENVIRONMENTAL IMPACTS

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance

I. AESTHETICS				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

DISCUSSION

a), b), d) No Impact. Adoption and implementation of the proposed LMP would preserve existing native vegetation and natural visual resources, and would not involve the construction of any new buildings or outdoor lighting. Therefore, adoption of the LMP would not adversely affect scenic vistas, views, visual character, or scenic resources, nor would it create light or glare effects.

c) Less than Significant Impact. Some LMP management tasks would involve minor modifications to the existing landscape (e.g., signage and fencing maintenance and repair). However, LMP adoption and task implementation would improve the overall aesthetic conditions of the IJSER by incorporating protection, management, and enhancement strategies for its natural habitats.

II. AGRICULTURE AND FORESTRY RESOURCES.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

DISCUSSION

a), b), c), d), and e) No Impact. The IJSER does not contain lands designated as Prime Farmland or Unique Farmland. None of the IJSER contains Williamson Act contracts. The adoption of the proposed LMP does not prohibit managed grazing for ecological benefit.

III. AIR QUALITY.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

DISCUSSION

a), b), c), d), e) No Impact. The project site is located in a remote area far from substantial populations or potentially sensitive receptors. No long term operational emissions are anticipated, no net increase in automobile trips to and from IJSER are expected, nor are objectionable odors expected to affect a substantial number of people as a result of implementing the proposed LMP. Some of the proposed LMP management tasks may involve the temporary use of construction equipment (e.g., installation of signs, habitat revegetation/restoration projects), and therefore may result in the temporary increase of equipment emissions. These would be short-term impacts involving a limited number of construction machines and would not contribute to a cumulative net increase in any pollutants.

In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

IV. BIOLOGICAL RESOURCES				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

DISCUSSION

a), b), c), d) Less Than Significant Impact. Although implementation of some of the management tasks described in the proposed LMP would have the potential for temporary construction impacts to wildlife and sensitive habitats (e.g., restoration or enhancement activities), it is anticipated that these impacts would not be substantial and that these projects would have a net benefit to wildlife and habitat. Any of these types of activities would be implemented in conformance with regulatory requirements such as CDFW regulations, U.S. Fish and Wildlife Service regulations, State Water Quality Control board regulations, Section 404 of the Clean Water Act, and any applicable plans or ordinances protecting biological resources.

The LMP includes habitat preservation and enhancement as primary goals for the protection of both wildlife and their habitat. It also ensures that all actions comply with federal and state Endangered Species Acts (ESA and CESA).

In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

e), f) No Impact. There are no Habitat Conservation Plans, Natural Community Conservation Plans or other local policies that conflict with the adoption and implementation of the plan.

V. CULTURAL RESOURCES				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?			X	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

DISCUSSION

a) Less Than Significant Impact. Although implementation of some of the management tasks described in the proposed LMP would involve minimal land disturbance (e.g., installation of signs, restoration activities), the goals and tasks in the LMP include inventory and protection of cultural resources.

b), c), d) No Impact. Implementing the LMP will not adversely affect archaeological or paleontological resources, or disturb any human remains.

In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

VI. GEOLOGY AND SOILS				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

DISCUSSION

a), c), d), e) No Impact. LMP implementation will not change the current exposure risk to geologic hazards or expansive soils nor create a substantial risk to lives or property. The LMP does not specifically authorize or make a precommitment to any substantive changes to the Ecological Reserve. With the exception of ongoing restoration and enhancement, and operations and maintenance activities, any substantive physical changes that are not currently approved will require subsequent authorizations.

The LMP does not include construction of septic tanks or alternative waste water disposal systems nor would any be required as a result of the implementation of any of the LMP goals or tasks; therefore, implementation of the LMP would result in no impact.

b) Less Than Significant Impact. Implementation of some of the management tasks described in the proposed LMP could involve minimal ground disturbance (e.g., habitat restoration, enhancement or maintenance activities). These activities would be implemented using best management practices designed to minimize soil erosion and/or topsoil loss, and would be conducted in conformance with regulatory requirements regarding soil erosion.

VII. GREENHOUSE GAS EMISSIONS				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

DISCUSSION

a), b) Less Than Significant Impact. The IJSER is located in the Great Basin Unified Air Pollution Control District. The LMP suggests evaluating the benefits of prescribed fire as an enhancement/restoration technique. If prescribed burns are implemented, they will generate greenhouse gas emissions, but the duration and extent of the burns would be limited and localized, and would be implemented in compliance with conditions enforced by the Great Basin Unified Air Pollution Control District. Therefore, implementing the LMP would not generate greenhouse gas emissions that would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Further, implementing the goals and tasks of the LMP will most likely lead to an overall reduction in greenhouse gases through habitat preservation, wetland restoration, and subsequent carbon sequestration.

VIII. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

DISCUSSION

a), b), c), d), e), f), g), h) No Impact. The LMP does not require the routine use, transport or disposal of hazardous materials. Herbicide or pesticide treatments, if needed to control invasive species, would be targeted to avoid unnecessary impacts to sensitive biological resources and conducted by a certified applicator using appropriate safety precautions. The IJSER is not located within a quarter mile of a school; therefore, children will not be exposed to any hazardous materials. There are no public or private airports within two miles of the IJSER; therefore, LMP adoption will not pose any safety hazards to aircraft or people residing or working in the project area. The IJSER is not located on a site that is included on a list of hazardous materials sites compiles pursuant to California Government Code Section 65962.5. Implementation of the LMP would not interfere with an adopted emergency response plan or emergency evacuation plan.

IX. HYDROLOGY AND WATER QUALITY				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

DISCUSSION

a), c), d) Less Than Significant Impact. Implementation of some of the management tasks described in the proposed plan (e.g., restoration or enhancement activities) would involve a potential for the discharge of sediments or pollutants and alteration of drainage patterns. However, these projects would be conducted in conformance with regulatory requirements regarding erosion and sediment control, flooding, and water quality protection, and would be implemented with a goal of a net improvement in water quality. In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

b), e), f), g), h), i), j) No Impact. Adoption of the proposed plan would not utilize additional surface or groundwater resources, create or contribute stormwater runoff, construct new buildings or impervious surfaces, or alter existing risks of seiche, tsunami, or mudflow. In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

X. LAND USE AND PLANNING				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

DISCUSSION

a), b), c) No Impact. The proposed LMP would not require any physical changes to an established community, nor would implementation of any activity following LMP adoption physically divide an established community. The goals of the LMP provide for natural resource protection and preservation and require that any projects implemented following adoption of the proposed LMP conform to any habitat conservation plans and natural community conservation plans that may be applicable at that time.

XI. MINERAL RESOURCES				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

DISCUSSION

a), b) No Impact. Implementation of the LMP would not result in resource extraction. The IJSER is not located within a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan; therefore, the proposed LMP would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or conflict with mineral resource protection plans or result in the loss of a known mineral resource.

XII. NOISE				
Would the project result in:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

DISCUSSION

a), b), c), d), e), f) No Impact. Although implementation of some of the management tasks described in the proposed LMP could involve the intermittent use of construction equipment (e.g., restoration, enhancement, or maintenance activities) thus temporarily increasing ambient noise, these activities would not result in a substantial increase in ambient noise or groundborne vibration levels above those generated by existing management practices or public uses. Since any increase in ambient noise will be temporary, and due to the isolated nature of the area, people in the vicinity will not be exposed to excessive noise levels or significantly impacted. The IJSER is not located within 2 miles of an airport land use plan or a public airport, or in the vicinity of a private airport. No impact is anticipated to occur.

XIII. POPULATION AND HOUSING				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

DISCUSSION

a), b), c) No Impact. The proposed LMP would not involve any change in housing nor would it induce growth by the provision of new infrastructure or by the removal of any barriers to growth. Implementation of some of the management goals and tasks may require additional staff hours, but this would not be anticipated to induce a population growth that would require additional housing.

XIV. PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services**:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Fire protection?				X
b) Police protection?				X
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

DISCUSSION

a), b), c), d), e) No Impact. Proposed LMP adoption would not require substantial changes to existing public service levels. Implementation of public use and facilities could require minimal increase in staff hours per year by CDFW, but these potential minimal increases do not create the need for new or altered facilities.

XV. RECREATION				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment				X

DISCUSSION

a), b) No Impact. Adoption and implementation of the proposed LMP would not significantly increase the levels of wildlife-dependent recreational use the IJSER area. The number of these recreational users would not exceed the carrying capacity of the natural resources or degrade existing natural features. The proposed LMP does not require construction of any recreational facilities.

XVI. TRANSPORATION/TRAFFIC				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				X
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X

DISCUSSION

a), b), c), d), e), f), g) No Impact. There are no predicted increases in IJSER use levels following LMP adoption. No design changes are proposed for current road access, nor are any changes anticipated with traffic patterns; therefore, no traffic hazards are anticipated. Since changes to current traffic levels or patterns are not anticipated, no changes to emergency access or parking would result from plant adoption, and the plan would not interfere with alternative transportation.

XVII. TRIBAL CULTURAL RESOURCES				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			X	

DISCUSSION

a), b) Less Than Significant Impact. Implementing the LMP will not cause a substantial adverse change in the significance of a tribal cultural resource because no tribal resources have been identified on site.

On July 3, 2017, in compliance with PRC §21080.3.1 and the CDFW Tribal Communication and Consultation Policy, the Department requested a list of Tribes potentially affected by the LMP from the Native American Heritage Commission (NAHC). On August 8 upon receipt of the listed Tribes and their contacts, the Department provided official notification of the LMP to those Tribal contacts on the NAHC list, as well as to those Tribes that had requested CEQA notification from CDFW for the region, and all Tribes located in Inyo County. These notifications resulted in no requests for formal consultation on the LMP.

In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

XVIII. UTILITIES AND SERVICE SYSTEMS				
Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

DISCUSSION

a), b), c), d), e), f), g) No Impact. The LMP does not include a proposal for additional storm drain facilities, additional water supplies, additional wastewater treatment, or additional solid waste disposal. Adoption of the proposed LMP and implementation of the goals and tasks contained therein would not require the construction of new residences or service-related facilities; therefore, adoption of the proposed LMP would generate no changes to storm drain facilities, additional water supplies, or additional wastewater treatment.

XVIX. MANDATORY FINDINGS OF SIGNIFICANCE				
	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				X
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

DISCUSSION

a) Less Than Significant Impact. Adoption of the proposed LMP and implementation of the goals and tasks therein would help preserve and enhance natural resources. Some activities that could be implemented as a result of adoption of the proposed LMP would have a potential for impacts to biological and cultural resources (e.g., restoration or enhancement activities), as described in Sections IV and V above. However, because activities would be conducted following all applicable regulatory requirements, because many of the goals and tasks are designed to have a net benefit to these resources, and because no large scale projects are anticipated which could threaten entire populations or communities, adoption of the proposed LMP would not be anticipated to cause a significant impact to these biological or cultural resources. In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.
.

b) No Impact. Adoption of the proposed LMP and implementation of the goals and tasks contained therein would not require any substantial infrastructure improvements or new construction, and any implementation activities would be conducted following all applicable regulatory requirements. In addition, most of the proposed goals and tasks are designed to encourage a net benefit to environmental conditions. Therefore, although there is a potential for some temporary and less than significant impacts to the environment as described above, none of these impacts are anticipated to be cumulatively considerable. In addition, prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168, in light of the information contained in this document, to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164.

c) No Impact. The proposed project is a LMP, with no construction or substantive physical changes proposed. Implementation of the LMP would comply with all applicable laws and regulations. As a result, adoption of the proposed LMP and implementation of the goals and tasks contained therein is not

anticipated to have any direct or indirect environmental effects which would cause substantial adverse effects on human beings.

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; *Sundstrom v. County of Mendocino,*(1988) 202 Cal.App.3d 296; *Leonoff v. Monterey Board of Supervisors,* (1990) 222 Cal.App.3d 1337; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

Revised 2016
Authority: Public Resources Code sections 21083 and 21083.09
Reference: Public Resources Code sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3/ 21084.2 and 21084.

Notice of Determination

Appendix D

To:
☒ Office of Planning and Research

U.S. Mail: P.O. Box 3044, Sacramento, CA 95812-3044

Street Address: 1400 Tenth St., Rm 113, Sacramento, CA 95814

☐ County Clerk
County of: _____
Address: _____

From:
Public Agency: California Dept. of Fish and Wildlife
Address: 787 N. Main Street, Suite 220
Bishop, CA 93514
Contact: Alisa Ellsworth
Phone: (760) 872-1171

Lead Agency (if different from above):
_____
Address: _____
Contact: _____
Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2018011002

Project Title: Land Management Plan for Indian Joe Springs Ecological Reserve

Project Applicant: California Department of Fish and Wildlife, Region 6

Project Location (include county): 4 miles north of the community of Trona, Inyo County, CA

Project Description:
The Indian Joe Springs Ecological Reserve (IJSER) Land Management Plan (LMP) will guide the adaptive management of habitats, species, and programs on the 520-acre property and intends to protect and enhance fish and wildlife values; serve as a guide for appropriate public uses of IJSER; serve as a descriptive inventory of fish, wildlife, and native and nonnative plants and vegetation communities that occur within IJSER; and provide an overview of the property's planned operation and maintenance activities and of the personnel requirements to implement management goals.

This is to advise that the California Department of Fish and Wildlife has approved the above
(☒ Lead Agency or ☐ Responsible Agency)

described project on 5/14/18 (date) and has made the following determinations regarding the above described project.

1. The project [☐ will ☒ will not] have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [☐ were ☒ were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [☐ was ☒ was not] adopted for this project.
5. A statement of Overriding Considerations [☐ was ☒ was not] adopted for this project.
6. Findings [☐ were ☒ were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
The office location listed above for the lead agency.

Signature (Public Agency): Leslie MacNair Title: Regional Manager

Date: 5/14/18 Date Received for filing at OPR: _____

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

Governor's Office of Planning & Research 2011

MAY 14 2018

STATE CLEARINGHOUSE

APPENDIX E

PUBLIC COMMENTS AND DEPARTMENT RESPONSES

RESPONSE TO COMMENTS

This section provides the Department's responses to comments received during the public review period of the Draft Initial Study and Negative Declaration (IS/ND) for the Indian Joe Springs Ecological Reserve Land Management Plan (LMP). Two comment letters were received during the public review, which are reproduced below. Comments on environmental topics are marked with margin lines and numbered on the reproduced letters.

Letter #1

Denise LaBerteaux

211 Snow Street Weldon, California 93283-9544

February 12, 2018

Alisa Ellsworth
California Department of Fish and Wildlife
Lands North Program
787 North Main Street, Suite 220
Bishop, CA 93514

Dear Ms. Ellsworth:

Thank you for the opportunity to provide comments on the Draft Indian Joe Springs Ecological Reserve Land Management Plan (LMP) with Initial Study/Negative Declaration.

Inyo California Towhee Habitat Protection and Monitoring

For Inyo California Towhee habitat protection, the LMP should include the protection of dry wash and upland habitats that surround spring sources and riparian vegetation. Upland and dry wash habitats within the towhee's range are rarely considered during management discussions, despite that fact that these habitats are included in the definition of Inyo California Towhee critical habitat (U.S. Fish and Wildlife Service 1998). While riparian habitat is a very important component of a towhee's breeding territory, the surrounding upland and dry wash habitats are equally, if not more, important. Most of a towhee's foraging time is spent in the upland habitat (LaBerteaux 1989). Of 78 nests found between 1985 and 2011, 57.7% were placed in upland or dry wash habitats and 42.3% were placed in wetland/riparian habitats (containing squaw waterweed [*Baccharis sergiloides*], willows [*Salix* spp.], and/or desert olive [*Forestiera pubescens*]) (LaBerteaux 1989, 2004, 2008, 2011; LaBerteaux and Garlinger 1998). **1-1**

Feral equine impacts to the dry wash and upland areas should not be taken lightly. Upland habitats take years to recover, as noted in a recent nesting study (Southern Sierra Research Station [SSRS] 2009, 2010, 2011a, 2011b) and in a long-term grazing range recover study (SSRS 2012). Habitat protection plans/programs should focus on protecting all habitat types within the range of the Inyo California Towhee. **1-2**

A plan to monitor dry wash and upland habitats should be developed and should include the installation of permanent vegetation transects. The transects will help to detect invasions of nonnative plants, to detect changes in the plant community due to climate change, and to monitor the progress of plant recovery after devastating wildfires, flash floods, or other disturbances. **1-3**

Feral Equines

The draft LMP states that the Bureau of Land Management (BLM) has not established an appropriate management level for feral burros within the Centennial Herd Management Area. This is incorrect; the appropriate management level for feral burros is zero (BLM 2014). **1-4**

Public Use and Research

The LMP states that unauthorized camping will be prohibited. Will there be any authorized camping? If so, it should be limited to the non-breeding season for Inyo California Towhees. Likewise, any non-biological research should occur during the non-breeding season. For biological research, researchers should spend no more than 90 minutes at a single towhee-occupied site during the breeding season to minimize impacts on towhees. Because of the risk of take during the breeding season, I support the idea of closure periods **1-5**

during critical periods for sensitive species. The Inyo California Towhee breeding season is approximately March 20 – August 20.

Maintenance

Will the trail through the Ecological Reserve be actively maintained? Portions of the trail go through riparian vegetation. I recommend that the trail be regularly maintained by CDFW staff, especially the portions through riparian vegetation, to prevent the public from slashing vegetation during critical periods for sensitive species. All trail maintenance should be completed during the non-breeding season. **1-6**

Literature Cited

Bureau of Land Management. 2014. Herd Area and Herd Management Area Statistics. https://www.blm.gov/sites/blm.gov/files/wildhorse_quickfacts_doc16.pdf.

LaBerteaux, D. L. 1989. Morphology, foraging behavior, and nesting biology of the Inyo California Towhee (*Pipilo crissalis eremophilus*). M. S. Thesis. Northern Arizona Univ., Flagstaff. 114 pp.

LaBerteaux, D. L. 2004. Inyo California Towhee (*Pipilo crissalis eremophilus*) survey in the Argus Range, Inyo County, California. Unpubl. report prepared for Bureau of Land Management (Order No. BFP040032), Ridgecrest, CA. 60 pp. + appendix.

LaBerteaux, D. L. 2008. Inyo California Towhee (*Pipilo crissalis eremophilus*) survey in the Argus Range on the China Lake Naval Air Weapons Station, Inyo County, California. Unpubl. report prepared for Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, Ventura, CA. 84 pp. + appendices.

LaBerteaux, D. L. 2011. Inyo California Towhee (*Melozone crissalis eremophilus*) survey in the Argus Range and Panamint Range, Inyo County, California, Spring 2011. Unpubl. report prepared for Bureau of Land Management, Order No. L11PX00366, Ridgecrest Field Office, CA. 70 pp. + appendices.

LaBerteaux, D. L., and B. H. Garlinger. 1998. Inyo California Towhee (*Pipilo crissalis eremophilus*) census in the Argus and Coso Mountain Ranges, Inyo County, California. Unpubl. report prepared for Commanding Officer (83E000D), Naval Air Weapons Station, China Lake, CA. Contract N62474-98-M-3113). 94 pp. + appendices.

Southern Sierra Research Station (SSRS). 2009. Inyo California Towhee nesting survey at the Naval Air Weapons Station China Lake, California, spring 2008. Unpubl. report prepared for Naval Facilities Engineering Command, Southwest, Cooperative Agreement Number N62473-08-2-0012. Southern Sierra Research Station, Weldon, CA. 37 pp. + appendices.

Southern Sierra Research Station (SSRS). 2010. Inyo California Towhee nesting survey at the Naval Air Weapons Station China Lake, California, spring 2009. Unpubl. report prepared for Naval Facilities Engineering Command, Southwest, Cooperative Agreement Number N62473-08-2-0012. Southern Sierra Research Station, Weldon, CA. 34 pp. + appendices.

Southern Sierra Research Station (SSRS). 2011a. Inyo California Towhee survey at the Naval Air Weapons Station China Lake, California, spring 2010. Unpubl. report prepared for Naval Facilities Engineering Command, Southwest, Cooperative Agreement Number N62473-08-2-0012. Southern Sierra Research Station, Weldon, CA. 36 pp. + appendices.

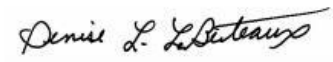
Southern Sierra Research Station (SSRS). 2011b. Inyo California Towhee nesting survey at the Naval Air Weapons Station China Lake, California, spring 2011. Unpubl. report prepared for Naval Facilities Engineering Command, Southwest, Cooperative Agreement Number N62473-08-2-0012. Southern Sierra Research Station, Weldon, CA. 32 pp. + appendices.

Southern Sierra Research Station (SSRS). 2012. Vegetation studies at established long-tern trend study sites on the Naval Air Weapons Station China Lake, California, summer 2009. Unpubl. report prepared for Naval Facilities Engineering Command, Southwest, Cooperative Agreement Number N62473-09-2-0007. Southern Sierra Research Station, Weldon, CA. 39 pp. + appendices.

U.S. Fish and Wildlife Service (FWS). 1998. Recovery Plan for the Inyo California Towhee. U.S. Fish and Wildlife Service, Portland, OR. 32 pp.

Thank you for your time.

Sincerely,



Denise L. LaBerteaux

Letter 1	**Denise LaBerteaux**
Response	**February 12, 2018**

Comment 1-1	The LMP should more specifically address the importance and protection of dry wash and upland habitat for Inyo CA towhee in addition to riparian habitats.
Response:	Additional details as presented in your letter have been incorporated into the species account for the towhee on page 26. Tasks within Section IV.B. (Biological Elements) have been modified to highlight the importance of protecting dry wash and upland habitats within the range of the Inyo CA towhee in addition to riparian habitats.
Comment 1-2:	Habitat protection plans for the Inyo CA towhee should include all habitat types within the range of the Inyo CA towhee and not overlook the importance of dry wash and upland habitats.
Response:	Element descriptions and tasks within Section IV.B. (Biological Elements) have been modified to highlight the importance of protecting dry wash and upland habitats within the range of the Inyo CA towhee in addition to riparian habitats. These changes were made on page 37 within the “Biological Element 2: Inyo California Towhee and Willow Flycatcher”.
Comment 1-3:	Permanent vegetation transects should be established in Inyo CA towhee critical habitat for monitoring purposes.
Response:	A new task for has been created in Section IV.C. (Biological Monitoring Elements) for this purpose on page 39.
Comment 1-4:	The BLM appropriate management level for feral burros is zero.
Response:	The LMP has been corrected to state that the AML for burros is zero on page 21.
Comment 1-5:	Recommends limitations to research and public use such as camping, including seasonal closure, during the towhee breeding season.
Response:	Comment noted. Camping is prohibited on all Department lands designated as ecological reserves, however the Department may elect to provide written authorization for overnight use on a case-by-case basis for research, monitoring, management, or educational purposes. In such cases, specific use limitations are provided to avoid impacts to sensitive wildlife species.
Comment 1-6:	Recommends maintenance of the trail by CDFW during non-breeding season.
Response:	Comment noted. CDFW does not currently have the resources to maintain the trail on an annual basis but is exploring potential partnerships with interested non-governmental organizations and community groups. Any maintenance work performed would be completed during the non-breeding season.

Letter #2

Water Boards

Lahontan Regional Water Quality Control Board

February 13, 2018

File: Environmental Doc Review
Inyo County

Alisa Ellsworth, Senior Environmental Scientist
California Department of Fish and Wildlife
787 N. Main Street, Suite 220
Bishop, CA 93562
Alisa.Ellsworth@wildlife.ca.gov

Comments on the Initial Study and Proposed Mitigated Negative Declaration for the Land Management Plan for Indian Joe Springs Ecological Reserve, Inyo County, State Clearinghouse Number 2018011002

The California Regional Water Quality Control Board, Lahontan Region (Water Board) staff received the Initial Study and Mitigated Negative Declaration (IS/MND) for the above-referenced project (Project) on January 8, 2018. The IS/MND, prepared by the California Department of Fish and Wildlife (CDFW) was submitted in compliance with provisions of the California Environmental Quality Act (CEQA) in order to solicit input on the potential impacts on the environment and ways in which those significant effects are proposed to be avoided or mitigated. Water Board staff, acting as a responsible agency, is providing these comments to specify the scope and content of the environmental information germane to our statutory responsibilities pursuant to CEQA Guidelines, California Code of Regulations, title 14, section 15096. Based on our review of the IS/MND, we recommend the environmental document be recirculated for public review with a revised Project description that includes sufficient detail regarding existing water quality and potential impacts to wetland resources. This information is essential so that responsible agencies reviewing the environmental document have adequate information to evaluate potential impacts to environmental resources that are germane to their authority.

2-1

2-2

WATER BOARD AUTHORITY

All groundwater and surface waters are considered waters of the State. Surface waters include streams, lakes, ponds, and wetlands, and may be ephemeral, intermittent, or perennial. All waters of the State are protected under California law. State law assigns responsibility for protection of water quality in the Lahontan Region to the Lahontan Water Board. Some waters of the State are also waters of the U.S. The Federal Clean Water Act (CWA) provides additional protection for those waters of the State that are also waters of the U.S.

The *Water Quality Control Plan for the Lahontan Region* (Basin Plan) contains policies that the Water Board uses with other laws and regulations to protect the quality of waters of the State within the Lahontan Region. The Basin Plan sets forth water quality standards for

1. Streambed alteration and/or discharge of fill material to a surface water may require a CWA, section 401 water quality certification for impacts to federal waters (waters of the U.S.), or dredge and fill waste discharge requirements for impacts to non-federal waters, both issued by the Lahontan Water Board. All unavoidable permanent impacts to waters of the State must be mitigated to ensure no net loss of beneficial use and wetland function and value. **2-3**

2. Land disturbance of more than 1 acre may require CWA, section 402(p) storm water permits, including a National Pollutant Discharge Elimination System (NPDES) General Construction Storm Water Permit, Water Quality Order (WQO) 2009-0009-DWQ, obtained from the State Water Board, or individual storm water permit obtained from the Lahontan Water Board. Both of these permits require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). **2-4**

    a. The SWPPP should be applicable to all areas of the Project, including construction areas, access roads to and through the site, and staging and stockpile locations.

    b. The Project shall not result in an exceedance of any applicable water quality objective (WQO) for the receiving water. The primary water quality parameters potentially affected by the Project include chemical constituents (as defined by California Code of Regulations, title 22), oil and grease, pH, suspended materials, temperature, and turbidity. Numeric and narrative WQOs for these parameters in surface waters and groundwater are outlined in Chapter 3 of the Basin Plan.

    c. Temporary BMPs must be implemented for all components of the Project until such time that vegetation has been restored to pre-Project conditions or permanent BMPs are in place and functioning.

Thank you for requesting our consultation. If you have any questions regarding this letter, please contact me at (760) 241-7305 (tiffany.steinert@waterboards.ca.gov) or Jan Zimmerman, Senior Engineering Geologist, at (760) 241-7376 (jan.zimmerman@waterboards.ca.gov). Please send all future correspondence regarding this Project to the Water Board's email address at Lahontan@waterboards.ca.gov and be sure to include the Project name in the subject line.

Tiffany Steinert

Tiffany Steinert
Engineering Geologist

cc: State Clearinghouse (state.clearinghouse@opr.ca.gov)

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Letter 2	**Lahontan Regional Water Quality Control Board**
Response	**Tiffany Steinert**
	February 13, 2018

Comment 2-1	Water Board received the Initial Study/ Mitigated Negative Declaration (IS/MND) for review on January 8, 2018.
Response:	Please note that this document includes an Initial Study and Negative Declaration (IS/ND) rather than an MND. No mitigation measures are proposed or have been determined necessary.
Comment 2-2:	Water Board recommends that the document be recirculated for public review with a revised project description with additional detail regarding water quality and potential impacts to wetland resources.
Response:	Comment noted. This LMP does not recommend any specific actions that would have significant impacts to water quality or wetlands. Prior to implementation of any projects that are consistent with the LMP, CDFW would subject them to further CEQA review according to CEQA Guidelines Section 15168 to determine if additional CEQA documentation is necessary. The type of additional CEQA review completed would be determined based on CEQA Guidelines Sections 15162-15164. If CEQA review is warranted, additional opportunity for public review would be provided along with details of the project being proposed and related environmental impacts.
Comment 2-3	Water Board is responsible for permitting streambed alteration and/or discharge of fill into federal waters and waters of the State. No net loss of beneficial use and wetland function and value is permitted.
Response:	Comment noted. No such work is proposed in this LMP. The Department will coordinate with the Water Board on projects that may result in streambed alteration and/or discharge of fill into federal waters and waters of the State.
Comment 2-4	Water Board is responsible for storm water permits for land disturbance over 1 acre.
Response:	Comment noted. No such work is proposed in this LMP. The Department will coordinate with the Water Board on projects that may require storm water permits.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

February 15, 2018

Alisa Ellsworth
California Department of Fish and Wildlife, Region 6 I/M
787 N. Main St, suite 220
Bishop, CA 93514

Subject: Land Management Plan for Indian Joe Springs Ecological Reserve
SCH#: 2018011002

Dear Alisa Ellsworth:

The State Clearinghouse submitted the above named Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on February 14, 2018, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2018011002
Project Title Land Management Plan for Indian Joe Springs Ecological Reserve
Lead Agency Fish & Widlife #6 I/M

Type Neg Negative Declaration

Description Note: Review Per Lead

The Indian Joe Springs Ecological Reserve Land Management Plan will guide the adaptive management of habitats, species, and programs on the 520 acre property and intends to protect and enhance fish and wildlife values; serve as a guide for appropriate public uses of USER; serve as a descriptive inventory of fish, wildlife, and native and nonnative plants and vegetation communities that occur within USER; and provide an overview of the property's planned operation and maintenance activities and of the personnel requirements to implement management goals.

Lead Agency Contact

Name Alisa Ellsworth
Agency California Department of Fish and Wildlife, Region 6 I/M
Phone 760 872-1171 **Fax**
email
Address 787 N. Main St, suite 220
City Bishop **State** CA **Zip** 93514

Project Location

County Inyo
City
Region
Lat / Long 35° 49' 37.8" N / 117° 23' 29.4" W
Cross Streets Trona Wildrose Rd and Valley Wells Rd
Parcel No. 38-280-02, 05, 06, 07, 38-300-12
Township 24S **Range** 43E **Section** 23,24, **Base** MDBM

Proximity to:

Highways
Airports
Railways
Waterways Indian Joe Canyon/Wilson Canyon (seasonal)
Schools
Land Use resource management

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Public Services; Population/Housing Balance; Recreation/Parks; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Caltrans, District 9; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 6 (Victorville); Native American Heritage Commission; State Lands Commission

Date Received 01/03/2018 **Start of Review** 01/03/2018 **End of Review** 02/14/2018

Note: Blanks in data fields result from insufficient information provided by lead agency.