RECLAMATION
Managing Water in the West

Environmental Assessment

Recreational Improvements at East Park Reservoir - Orland Project

EA-16-02-NCAO

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region

June 2016

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms and Abbreviations

BIOS	Biographic Information and Observation System
BMPs	Best Management Practices
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Colusa County
DGC	Disc Golf Course
Delta	Sacramento San Joaquin Delta
EA	Environmental Assessment
EPR	East Park Reservoir
ESA	Endangered Species Act
IPaC	Information for Planning and Conservation
ITA	Indian Trust Assets
LZ	Landing Zone
MBTA	Migratory Bird Treaty Act
NCAO	Northern California Area Office
NHPA	National Historic Preservation Act
NRSC	Natural Resource Conservation Service
Reclamation	Bureau of Reclamation
RMP	Resource Management Plan
Service	US Fish and Wildlife Service
USDA	US Department of Agriculture
USGS	United States Geological Survey
NRCD	Natural Resources Conservation District

Section 1 Introduction

1.1 Background

East Park Dam, which forms East Park Reservoir (EPR), is part of the Orland Project located in Colusa County, California (Figure 1-1). Completed in 1910, the dam stores irrigation waters diverted and impounded from Little Stony Creek, Squaw Creek, and Little Indian Creek. East Park Reservoir is 2.7 miles long and encompasses 1,820 acres. The reservoir has a total capacity of 52,000 acre-feet. There are 25 miles of shoreline, 10 miles of which are available for public use.

In 2004, the Bureau of Reclamation prepared a Resource Management Plan (RMP) for EPR (Tetra Tech 2004). This document was created in accordance with the Reclamation Management Act of 1992 and Reclamation's 2000-2005 Strategic Plan to manage, develop, and protect water and related resources in an environmentally and economically-sound manner in the interest of the American public. In addition, the RMP was crafted to be compatible with authorized project purposes of irrigation water storage.

In late 2013, Colusa County (County) entered into a reservoir-area specific Management Agreement (No 13-LC-20-0442) consistent with the goals and objectives of the RMP to serve as a cost share partner for recreational development at EPR. In this role, the County would assist Reclamation (and the Orland Unit Water Users' Association) in the administration, operation, and maintenance of recreation and related improvements and facilities at EPR.

To this end, and in accordance with the Management Agreement and associated goals and objectives of the RMP, the County and Reclamation are proposing to enhance the land-based recreational activities at EPR. Specifically, the enhancements would include an 18-hole disc golf course (DGC) on the eastern side of EPR and a non-motorized aircraft landing zone (LZ) on the western side of EPR. This Environmental Assessment (EA) has been prepared to examine the potential direct, indirect, and cumulative impacts of allowing these activities at EPR.

1.2 Need for the Proposal

The purpose of the Proposed Action is to create the opportunity for a higher quality experience for the average user at EPR. It is intended to draw people to EPR to share in the natural resources and increase the value of the user experience at EPR. This is particularly true since 2014, when entry fees to EPR were initiated, whereas in prior years there was no entry fee.

1.3 Scope

The Proposed Action would allow development of an 18-hole DGC and a non-motorized aircraft LZ at EPR (Figure 1). This EA analyzes the direct, indirect, and cumulative effects to the environment from the Proposed Action and No Action Alternative. The geographical extent of the Proposed Action includes two separate parcels of land at EPR where the proposed recreational enhancements would occur. The temporal extent of the Proposed Action is primarily limited to the construction phase scheduled to occur in the summer of 2016.

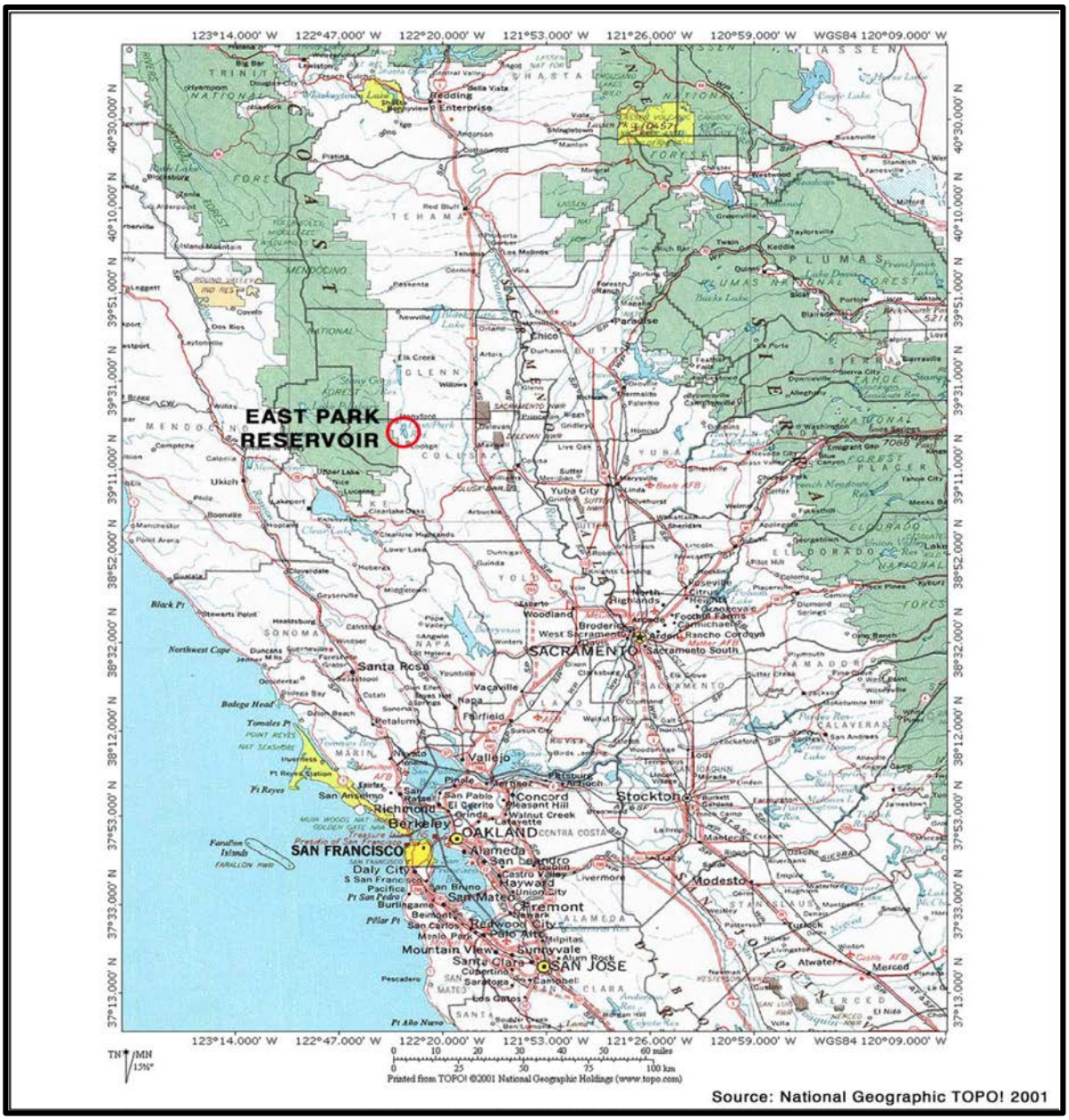

Figure 1. Regional Map of EPR Area

Section 2 Alternatives Including Proposed Action

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation not allowing the development of a DGC or non-motorized aircraft LZ at EPR.

2.2 Proposed Action Alternative

The Proposed Action would allow development of an 18-hole DGC and a non-motorized aircraft LZ at EPR (Figure 2). Development of these areas would occur during the summer of 2016; details of each are provided below.

2.2.1 Disc Golf

The 18-hole DGC would be established on a 50-acre parcel along the east side of EPR (Figure 2). At this time, the course layout has not been defined; however, considerations in the layout will include positioning of tees, baskets (pins), and main trails (or fairways) to minimize interaction with other course participants, vehicle traffic, and unique natural resources of the area. (Also see Section 3.3.)

Once the course layout has been determined, construction would begin. This would entail installing a tee pad and a metal basket for each of the 18 holes. Each tee pad would be comprised of cement or recycled rubber with dimensions recommended for the terrain available; the minimum rectangular size is 4 feet wide by 10 feet long (PDGA 2014). Small gas/diesel powered equipment (backhoe or similar equipment) would be used to contour/ level each tee prior to covering the tee with the chosen overlay material, as well as other duties. If cement is chosen as the overlay material, temporary form boards would be installed and the cement hauled or pumped to the tees. In contrast, if rubber pads are used, they would be anchored with spikes spaced adequately to ensure a durable and secure surface.

Installation of the metal baskets would entail hand-boring a 2-foot deep hole and concreting the 2-inch basket support tube. Signage posts would also be installed at each tee to direct players to the layout of the hole and the course. As with the baskets, the signage post holes could be created with a backhoe or hand tools and they would be cemented to a depth of 2 feet.

No formal adjustments to the landscape are anticipated for each fairway, which represents an intermediary area of play between the tee and the pin. Vegetation maintenance of the fairways and around tees and baskets is anticipated to occur infrequently. Historical grazing practices of this area would continue and would help reduce vegetation within and outside the area to assist in fire fuels management. In addition, mechanical control of vegetation in the fairways could be used to help direct foot traffic to designated areas in certain years or seasons, depending on vegetation growth patterns. Mechanical vegetation control would be limited to times when the park was open for use, typically from April through September, unless directed otherwise by annual course maintenance inspections that could suggest other times are more appropriate.

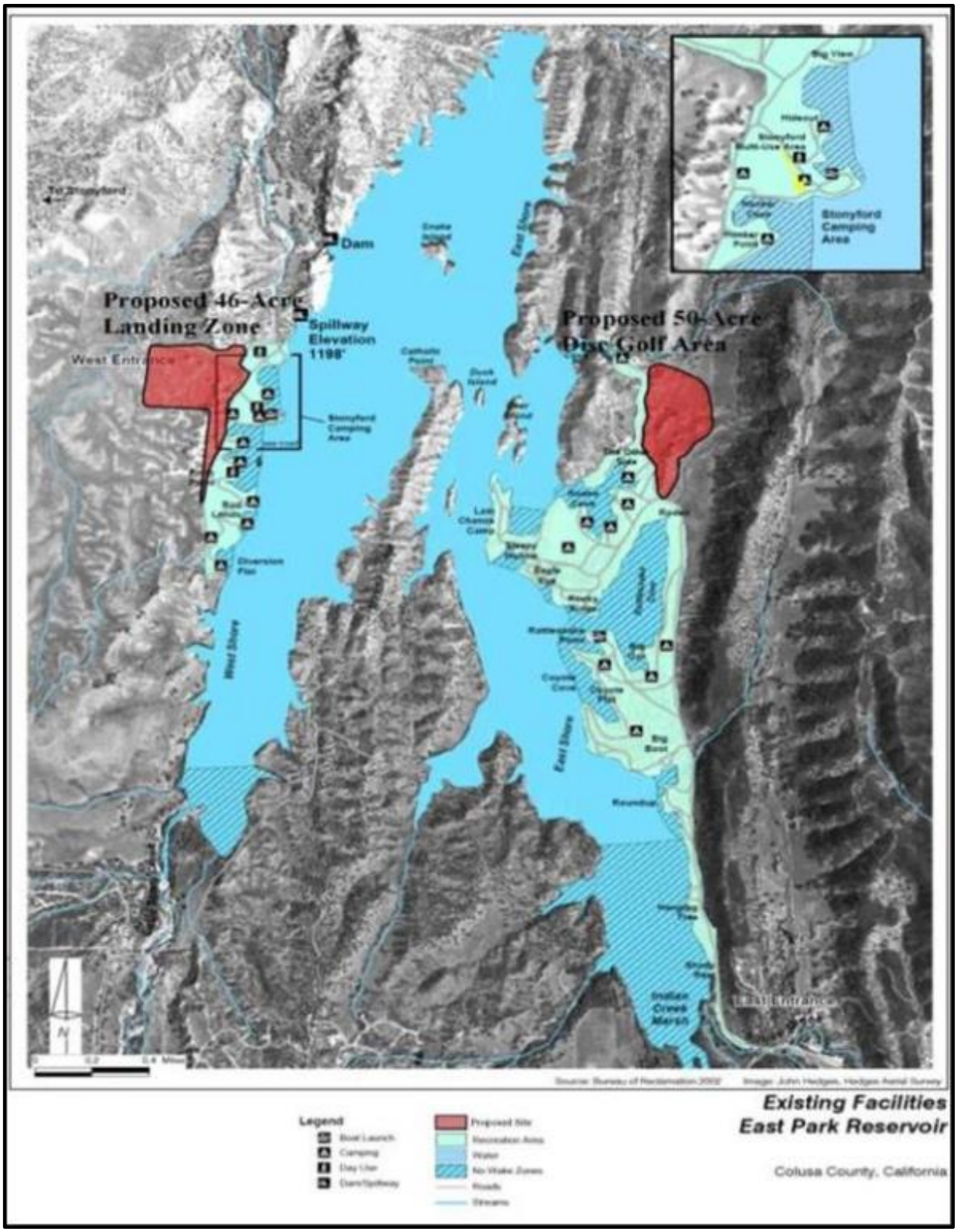

Figure 2. Existing Facilities and Proposed Recreational Development Areas at EPR (image adapted from Tetra Tech 2004)

2.2.2 Landing Zone

The LZ for non-motorized aircraft would be established on a 46-acre parcel on the west side of EPR (Figure 2). This site was selected because it provides good access for aerial enthusiasts who fly from the mountain range to the immediate west of EPR (e.g. Potato Hill). In addition this site has the following attributes:

1. It provides a relatively large, flat, open space landing zone for safe landings;

2. It is adjacent to East Park Road, providing close and convenient parking access in an area already disturbed; and

3. It is adequately distant from camping and picnic areas to avoid potential conflicts between different user groups.

Development of this site would primarily entail formal establishment of a rock-based parking lot (approx. dimensions 95 feet by 140 feet or 0.3 acres) in the northwest corner of the parcel, adjacent to East Park Road (Figure 2). The parking lot area is presently delineated by posts and cables and receives moderate vehicular traffic throughout the year. No excavation of the existing terrain is anticipated. Heavy equipment would be used to perform minor grading and to spread and compact up to 250 cubic yards of road base or equivalent materials that would serve to create the 4-inch to 8-inch base and surface of the parking area. These materials would be transported to the work site by transfer load dump trucks traveling on existing, paved county roads and gravel roads within the EPR area. An earth-tone colored sign would be cemented in place in the parking area to reflect the area's designated use and any rules and regulations.

Maintenance of the LZ is expected to be minor with periodic mechanical vegetation control of the preferred landing area within this parcel, which is mainly comprised of annual grasses. As with the DGC, historic cattle grazing would continue on this parcel for fire fuels management purposes, and mechanical vegetation control would be limited to times when the park was open for use, typically from April through September, unless directed otherwise by annual course maintenance inspections that could suggest other times are more appropriate.

2.2.3 Environmental Commitments

Implementing the Proposed Action would also include a variety of environmental commitments to limit the impacts these additional recreational developments may have on the natural environment at EPR.

- Surveys of the DGC and LZ areas, to inventory special status plant species and their locations in proximity to the proposed recreational areas, were completed on March 1, 2015 with the intent of identifying opportunities to avoid and protect these species and their habitats, if present. Additional spring surveys were conducted in May 2015 for the purpose of identifying late-blooming special status plant species. The results of the surveys are presented in Section 3.3.1. No plant species protected under the Federal Endangered Species Act (ESA) were observed during the surveys. Protections for rare plant species that were recorded will include avoidance and isolation of areas with large populations, as identified in the surveys, in course layout and construction, to the extent practical, and demarcation with wood stakes, or other visual indicators, and educational signage to educate users on these

species and encourage additional avoidance and minimization of potential impacts from recreational activities.

- Best Management Practices (BMPs) will be instituted during the construction activities at each parcel (Appendix A).

- Annual maintenance monitoring will be conducted at each of the recreational areas to inspect land conditions and identify any areas of unexpected natural resources impacts (e.g. unforeseen erosion, impacts to trees and recorded large populations of rare plants, litter, etc). Corrective measures would be implemented, as needed, to maintain the site for its intended use while protecting the natural resources at EPR.

Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternative. Resource areas potentially influenced by the Proposed Action follow.

3.1.1 Resource Areas Not Analyzed in Detail

Reclamation analyzed the affected environment and determined that the Proposed Action does not have the potential to cause direct, indirect or cumulative adverse effects to the following resource areas:

- **Water Resources:** Water resources would not be affected by the Proposed Action. Only minor quantities of water may be used to temporarily treat fugitive dust to maintain air quality during gravel placement for the LZ.
- **Cultural Resources:** The Proposed Action would not involve physical changes to the environment or construction activities that could impact cultural resources. As a consequence, Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). (See Appendix B for Reclamation's determination.)
- **Indian Sacred Sites:** The Proposed Action would not limit access to ceremonial use of Indian Sacred Sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites; therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
- **Indian Trust Assets:** The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area. (See Appendix C for Reclamation's determination.)
- **Socioeconomic Resources:** The Proposed Action would have beneficial impacts on socioeconomic resources because it would provide two unique recreational developments that are likely to draw additional visitors to EPR.
- **Environmental Justice:** The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease, nor would it disproportionately impact economically disadvantaged or minority populations. The Proposed Action would provide greater recreational potential at EPR for no additional costs for entry.
- **Air Quality:** Construction activities of the Proposed Action would not cause significant air quality impacts because fugitive dust associated with the parking lot development for the LZ would be limited to a short period of time (a few weeks at the most) and minimized by applying water to deter fugitive dust.

3.2 Land and Recreational Use

3.2.1 Affected Environment

The total land area around EPR, defined as being within Reclamation's jurisdiction but not including the reservoir, totals 2,468 acres (Figure 3). Rural housing and sparse community related development are on the south side of the reservoir. Public use of the land is generally confined to areas near the water; there is little to no upland use (Tetra Tech 2004). The majority of use occurs during the formal opening of the park to vehicular traffic, which is from approximately April 15 through September 30, though these dates can vary depending on weather.

The parcels being considered for the DGC and LZ are presently used for cattle grazing under lease agreements between Reclamation and ranchers. These lease agreements allow cattle grazing from November 1 through April 14. The purpose of allowing grazing on these parcels is to continue a permitted historic use, consistent with the RMP, to provide wildfire fuels management benefits.

Both areas are adjacent to gravel/dirt road systems at EPR, allowing for easy access and limiting unnecessary disturbance. The entire outside boundary of the DGC parcel is defined by a campground access road. The LZ area is bounded to the north by East Park Road, to the east by reservoir access roads and camping/day use areas, and to the south and west by private land that is also used for cattle grazing.

The parcel for the proposed DGC is located at elevations of approximately 1,200 feet (in a lower lying area in the center of the parcel) to 1,250 feet (along the perimeter) above mean sea level. The parcel for the proposed LZ is located at elevations of approximately 1,150 feet (in lower-lying areas in the western portion of the parcel) to 1,250 feet (along a ridge at the southeast peninsula).

Based on information obtained from the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey, soils on the parcels on which the proposed projects would be constructed consist of: Contra Costa loam, 9 to 15 percent slopes soils; Saltcanyon loam, 5 to 9 percent slopes soils; Millsholm-Contra Costa association, 30 to 75 percent slopes soils, and; Millsholm-Contra Costa complex, 15 to 30 percent slopes soils. All of the classifications represent well-drained, non-saline to slightly saline loams, underlain by clay loam or gravelly-sandy clay loam (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm).

3.2.2 Environmental Consequences

No Action: Under the No action alternative, the LZ and DGC developments would not occur; the existing land use practices would continue. The EPR would continue to be used as in the existing condition.

Proposed Action: Under the Proposed Action, portions of the site would be developed as a DCG and LZ. The existing primary land use activity of cattle grazing would continue alongside the new uses on the same parcels. Allowing the new activities to co-occur would provide unique recreational opportunities in areas that are not presently used for recreation. Furthermore, it is believed that providing these new facilities would improve the value in visiting EPR. This change would not substantially affect the grazing lease contract acreage; however, there would be a minor reduction in range area available at the LZ (0.3 acres) and a very minor amount of the DGC (approximately 0.02 acres). As a result, any existing or new contracts may need to be changed to reflect any acreage reductions.

No conflicts with cattle grazing and proposed recreational activities are anticipated. This is mainly because the permitted cattle grazing period is from mid-November to mid-April, which represents a time when the park is formally closed to vehicular traffic and thus a low to walk into use the DGC there is a low probability of conflict because the new development areas are quite small compared to the total area available for grazing.

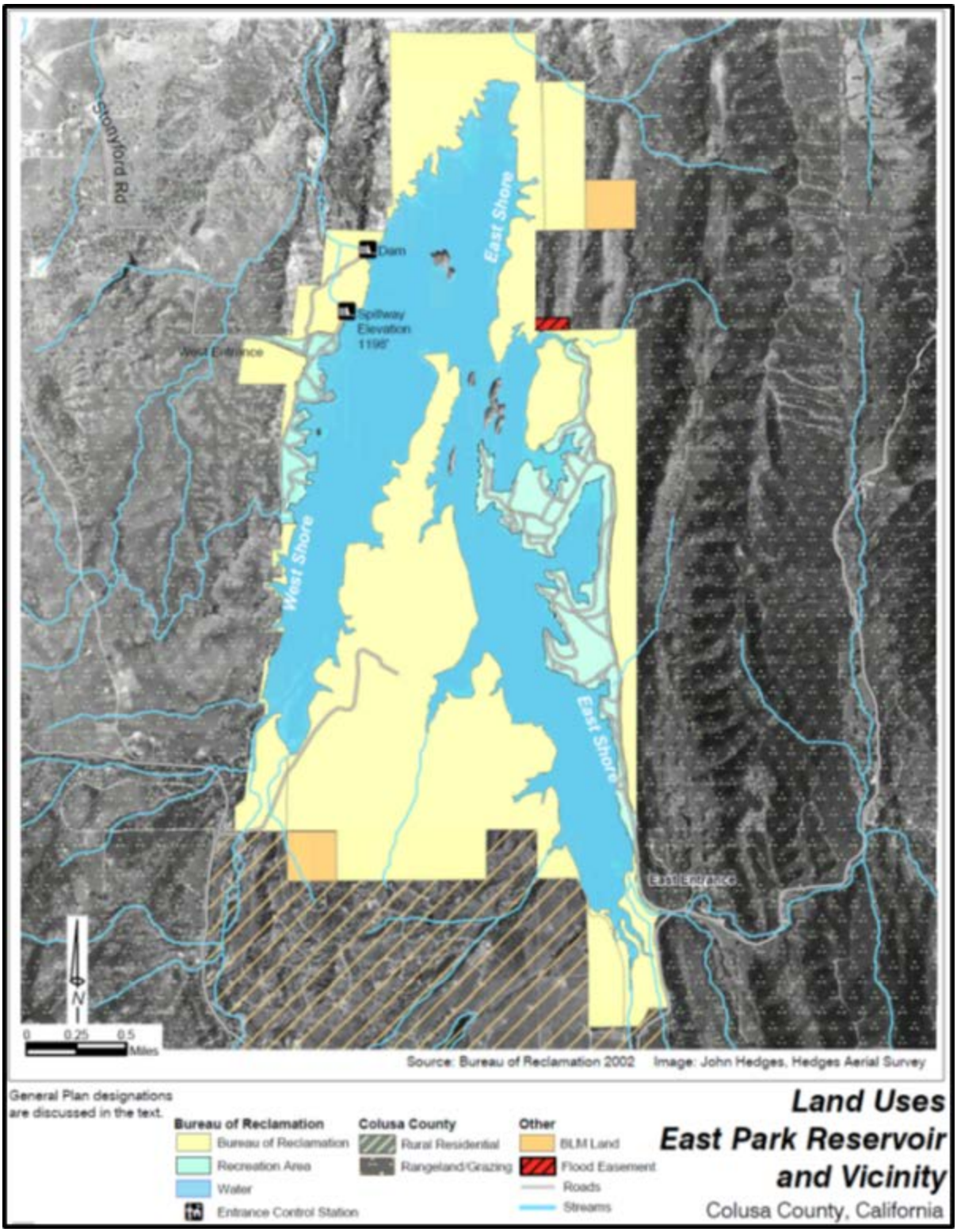

Figure 3. Land Ownership and Uses at EPR (image adapted from Tetra Tech 2004)

3.3 Biological Resources

3.3.1 Affected Environment

Both land parcels considered for recreational development are comprised of mainly grassland with clusters of mature valley oaks scattered throughout (Figure 4). Tetra Tech (2004) classified the area considered for the DGC to represent both chaparral and distributed woodland type habitats. Although Tetra Tech did not classify the LZ area, based on aerial photos, it appears to also be primarily grassland with distributed woodland type habitat. Extensive cattle and sheep grazing over the past century has reduced the quantity and diversity of native grasses, allowed the spread of introduced weedy varieties, and limited the regeneration of native valley oak (in many areas at EPR [Tetra Tech 2004]). Under the Proposed Action, cattle grazing would continue to be allowed at each of the recreational developmental areas.

Special Status and Rare Plants

The elevation, soil types and sunlight exposure at the site promote the potential for rare, native plant species to occur. Despite past management and land use at EPR, vegetation surveys conducted by the California Native Plant Society (CNPS) in 2003 suggested that several species of rare native plants are likely to occur on both the east and west sides of EPR (Tetra Tech 2004).

Reclamation performed a spring survey on March 1, 2015 with the goal of identifying locations of rare plant species relayed by the CNPS as potentially present in the project areas (Table 1.). Reclamation also conducted two additional surveys on May 7 and 18, 2015 to identify locations of any late-blooming species not observed during the March survey. The survey field methods and results, including photographs, are in the memorandum included as Appendix D. Numerous occurrences of rare plants were reported, though diversity was limited. Species observed within the parcels for the proposed DGC and LZ were Adobe lily (*Fritillaria pluriflora*), Brandegee's eriastrum (*Eriastrum brandegeae*) and Jepson's navarretia (*Navarretia jepsonii*). No Federally-listed species were observed.

Species Descriptions

Adobe Lily *(Fritillaria pluriflora)*
Adobe lily is an early-blooming, flowering perennial that grows to a height of 10 to 50 centimeters and displays a nodding flower with bright pink petals, a pinkish to yellowish nectary and bright yellow anthers that blooms in February to April.
(http://eol.org/pages/1088556/details)

Adobe lily is endemic to the interior foothills of the North Coast and north-central Sierra Nevada ranges, and edges of the Sacramento Valley of northern California where it typically occurs at elevations of 200 to 2,300 feet. The species appears to occur exclusively in "open" habitat with deep, heavy clay soils of high water-holding capacity. Over one-third of the extant populations are in Colusa County, where nearly all occurrences experience some extent of cattle grazing and browsing by deer.

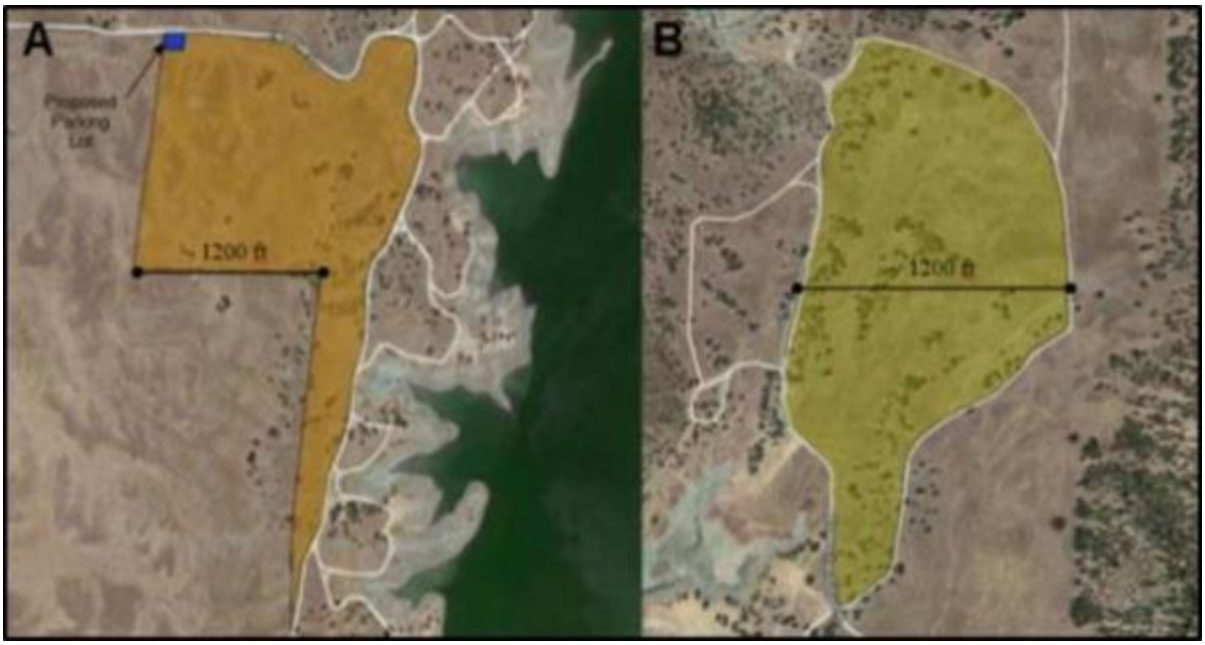

Figure 4. Roadways and Distribution of Vegetation in Parcels for LZ (A) and DGC (B) (scales differ between images)

Occurrences have also been observed in Glenn, Tehama, Butte, Yolo, Lake and Napa Counties. In the vicinity of EPR, adobe lily occurs "in foothill valley grasslands and on sloping openings in blue oak woodland and chaparral in heavy clays, Maxwell series and East Park gravelly clay, and serpentine-derived Heneke series clays (180 - 640 m elevation, with one occurrence at 820 m)." (http://eol.org/pages/1088556/details)

About half of the approximate 65 extant and 32 historical occurrences, believed to number less than 30,000 individuals, are on private land. Numbers of individuals in an occurrences can fluctuate dramatically between years, based on rainfall amount and timing, with rainfalls in the fall and early winter generating preferential growing conditions. Blooms last for one to two weeks, depending on humidity. The last visual recognition of the adobe lily in the season is typically the seed capsules which are found into May and somewhat dispersed by gophers. Cattle hooves may provide an additional, but very localized, method of seed dispersal. Recruitment has been observed on the east side of the Sacramento Valley, although a significant portion of new flowers were determined infertile. (http://eol.org/pages/1088556/details)

Adobe lily is highly fire and drought tolerant and shade intolerant. Bulbs can remain dormant for years awaiting favorable conditions. It is believed that cattle grazing and/or prescribed burns are necessary for some populations to regain sunlight, suppressed largely by overlying residual plant material from the previous year. These management practices have also been noted to restore significantly diminished populations. (http://eol.org/pages/1088556/details)

Threats to the adobe lily species' survival include development, over-competition and shading from exotic invasive species, inundation of soils, herbicide use on road edges, land use conversion, off-road vehicle traffic, deposition of mine tailings, collecting and long-term overgrazing on habitat. (http://eol.org/pages/1088556/details) This species is ranked "vulnerable" to "imperiled", though neither state nor Federally-listed. (http://www.rareplants.cnps.org/detail/826.html)

Brandegee's eriastrum (*Eriastrum brandegeae*)
Brandegee's eriastrum (*Eriastrum brandegeae*), is an annual species of flowering herb in the phlox family, that is also known as Brandegee's woollystar, due to its woolly cluster of narrow, leaf-like bracts laced with webby fibers, and thin, usually woolly stem. The plant grows from about 5 to 30 centimeters in height and has small flowers with white to light blue corollas (http://www.blm.gov/ca/st/en/prog/ssp/plants/eriastrum_brandegeae.html) that bloom from April through August (http://www.rareplants.cnps.org/detail/602.html).

Brandegee's eriastrum is endemic to the chaparral and woodlands of the North and Interior Coast ranges of California, where it generally grows at elevations of 1,500 to 2,600 feet. The species prefers dry, sandy soils derived from outcrops of shale, sandstones, conglomerates and volcanic substrates on gentle slopes of ridge tops, benches and along toe of slopes in small, often disturbed areas containing little to no vegetation, such as wind-blown hill and ridge tops and deposits along slope toes and along trail and road edges. http://www.blm.gov/ca/st/en/prog/ssp/plants/eriastrum_brandegeae.html

Threats to the Brandegee's eriastrum species' survival include development, recreational activity, grazing, competition, off-road vehicle traffic and road maintenance. (http://eol.org/pages/580772/details) The species is ranked "critically imperiled", though neither state nor Federally-listed. http://www.rareplants.cnps.org/detail/602.html Six populations are considered extant, predominantly in Lake County.

Jepson's navarretia (*Navarretia jepsonii***)**
Jepson's navarretia (*Navarretia jepsonii*), also known as Jepson's pincushion plant, is also an uncommon species of annual flowering herb in the phlox family. It has a slender, reddish stem coated in white hairs. The plant grows from about 10 to 15 centimeters in height and has a head of centimeter-long flowers, lined with glandular red bracts, a white tubular throat and a five-lobed purple-blue corolla, that bloom from April through June. http://calscape.org/Navarretia-jepsonii-(Jepson's-Navarretia)?srchcr=sc56f87ebe42b0

Jepson's navarretia is endemic to the valley and foothill grassland and chaparral and oak woodland habitat of the Inner North Coast Range west of the Sacramento Valley, where it often grows on serpentine soils at elevations of 575 to 2,800 feet, predominantly in wetlands. http://www.calflora.org/cgi-bin/species_query.cgi?where-taxon=Navarretia+jepsonii Extant populations have been observed in Colusa, Tehama, Glenn, Placer, Lake and Napa counties.

Threats to the Jepson's navarretia species' survival may include competition from invasive species. However, its populations are ranked overall "apparently secure" within the state. http://www.rareplants.cnps.org/detail/1164.html

Site Observations

Occurrences of Adobe lily (*Fritillaria pluriflora*) were reported in the March survey, predominantly along the northern perimeter and in the southern portion of the proposed parcel for the DGC. Five of the eight occurrences of Adobe lily on the DGC parcel consisted of three individuals or less, though the April survey was conducted in the typical blooming period. Of the three remaining adobe lily occurrences, two in the northern portion of the proposed DCG parcel consisted of approximately 50 individuals; the remaining occurrence in the southern portion of the DGC consisted of approximately 25 individuals.

Clusters of Brandegee's eriastrum (*Eriastrum brandegeae*) and Jepson's navarretia (*Navarretia jepsonii*), some numbering thousands of individuals, were reported within the parcel for the proposed LZ in the May surveys, although Brandegee's eriastrum typically occurs in sandy soils at higher elevations and Jepson's navarretia typically occurs in wetlands. A few clusters of Brandegee's eriastrum, numbering several hundred individuals, were also reported within the parcel for the proposed DGC in the May surveys. The majority of the species identified as of concern for the site by the CNPS following the issuance of the draft EA were not observed (Table 1) in the March or May surveys.

Consistent with the species description, Brandegee's eriastrum *(Eriastrum brandegeae)* was observed predominantly on otherwise barren hilltops of five percent or greater slopes with thin soils and full sun conditions. Jepson's navarretia (*Navarretia jepsonii)* was more evenly distributed across the upland areas within the proposed LZ parcel, in both full sun and partial shade conditions. All of the rare and sensitive plant species occurrences were outside the limits of the parking lot associated with the proposed LZ. Map depictions of the locations of observed rare and sensitive plant species within the parcels of the proposed DGC and LZ are included as Figures 5 and 6, respectively.

Other species of species of flowering native plants observed within the boundaries of the proposed DGC and LZ during the spring 2015 surveys were limited to a single occurrence of Pale Western larkspur *(Delphinium hesperium ssp. Pallescens*), also known as foothill larkspur, observed near the north-central perimeter of the LZ, and purple navarretia *(Navarretia pubescens)*, which was sometimes interspersed with the Jepson's navarretia (*Navarretia jepsonii)*. Neither Pale Western larkspur, nor purple navarretia, is ranked as rare by the CNPS.

Table 1. Rare Native and Special Status Plant Species Reported to Occur in Vicinity of EPR

Common Name	Scientific Name	Status (CNPS)	Location Observed during 2015 Reclamation Surveys
Adobe lily	*Fritillaria pluriflora*	1B	**DGC**
Brandegee's eriastrum	*Eriastrum brandegeae*	1B	**DGC, LZ**
Colusa layia	*Layia septentrionalis*	1B	NO
Green monardella	*Monardella viridis ssp. Viridis*	4	NO
Hogwallow starfish	*Hesperevax caulescens*	4	NO
Hoover's lomatium	*Lomatium hooveri*	4	NO
Jepson's navarretia	*Navarretia jepsonii*	1B	**LZ**
red-flowered bird's-foot-trefoil (formerly Red-flowered lotus)	*Acmispon rubriflorus*	1B	NO
Tracy's eriastrum	*Eriastrum tracyi*	3.2	NO
Keck's checker mallow	*Sidalcea keckii*	1B, E	NO

Source: WRE and GANDA 2003 (as cited in Tetra Tech 2004 and supplemented by information received in EA public comment period)
CNPS = California Native Plant Society
Key:
1B = Rare, Threatened or Endangered in California and elsewhere, 3 = Insufficient data for ranking, 4 = Plant of limited distribution
E = Federally-listed as Endangered
DGC = Species observed at proposed Disc Golf Course location, LZ = Spp. observed at proposed Landing Zone location, NO = Species not observed

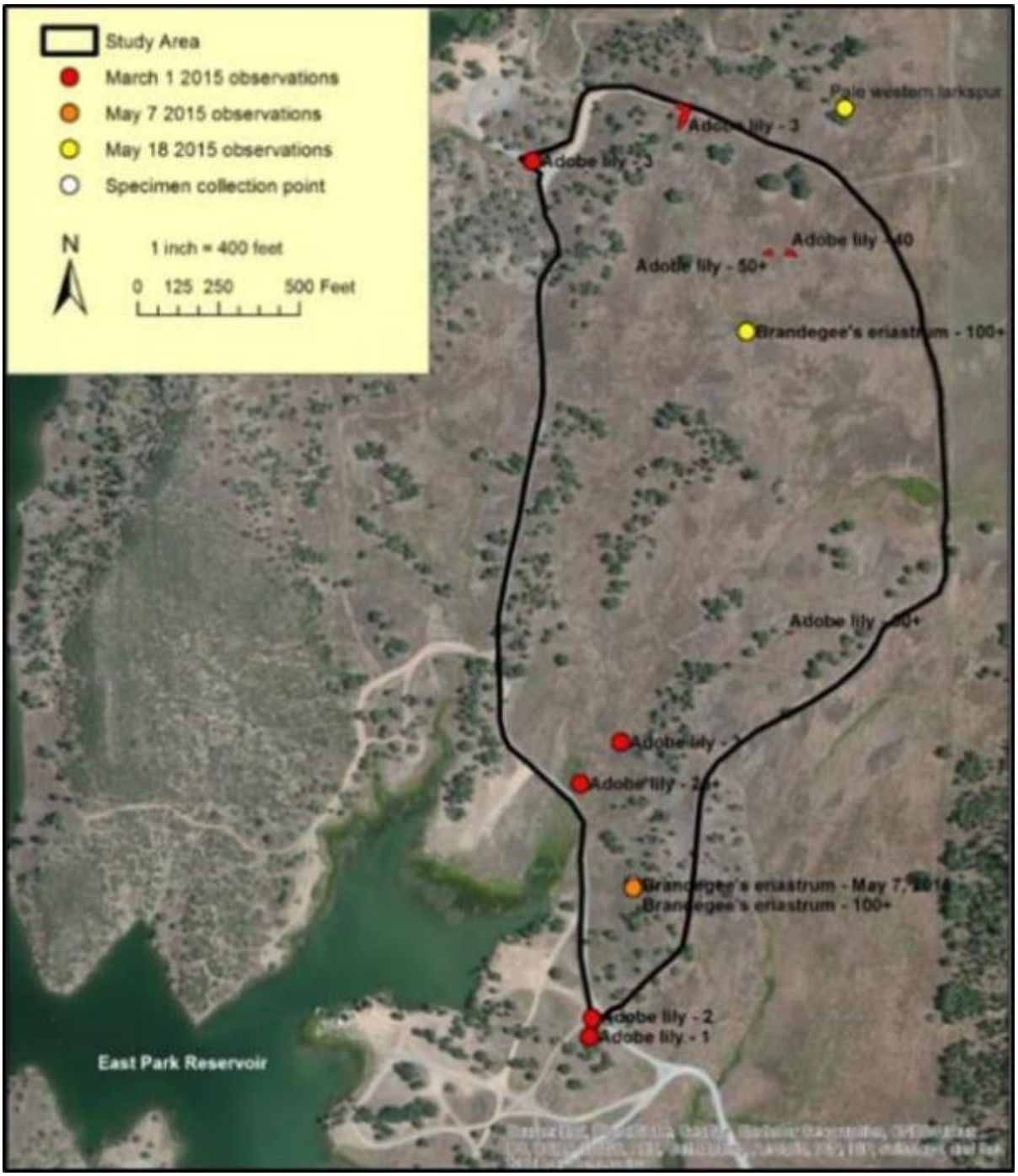

Figure 5. Spring 2015 Survey Results - Rare Plant Species - DGC.

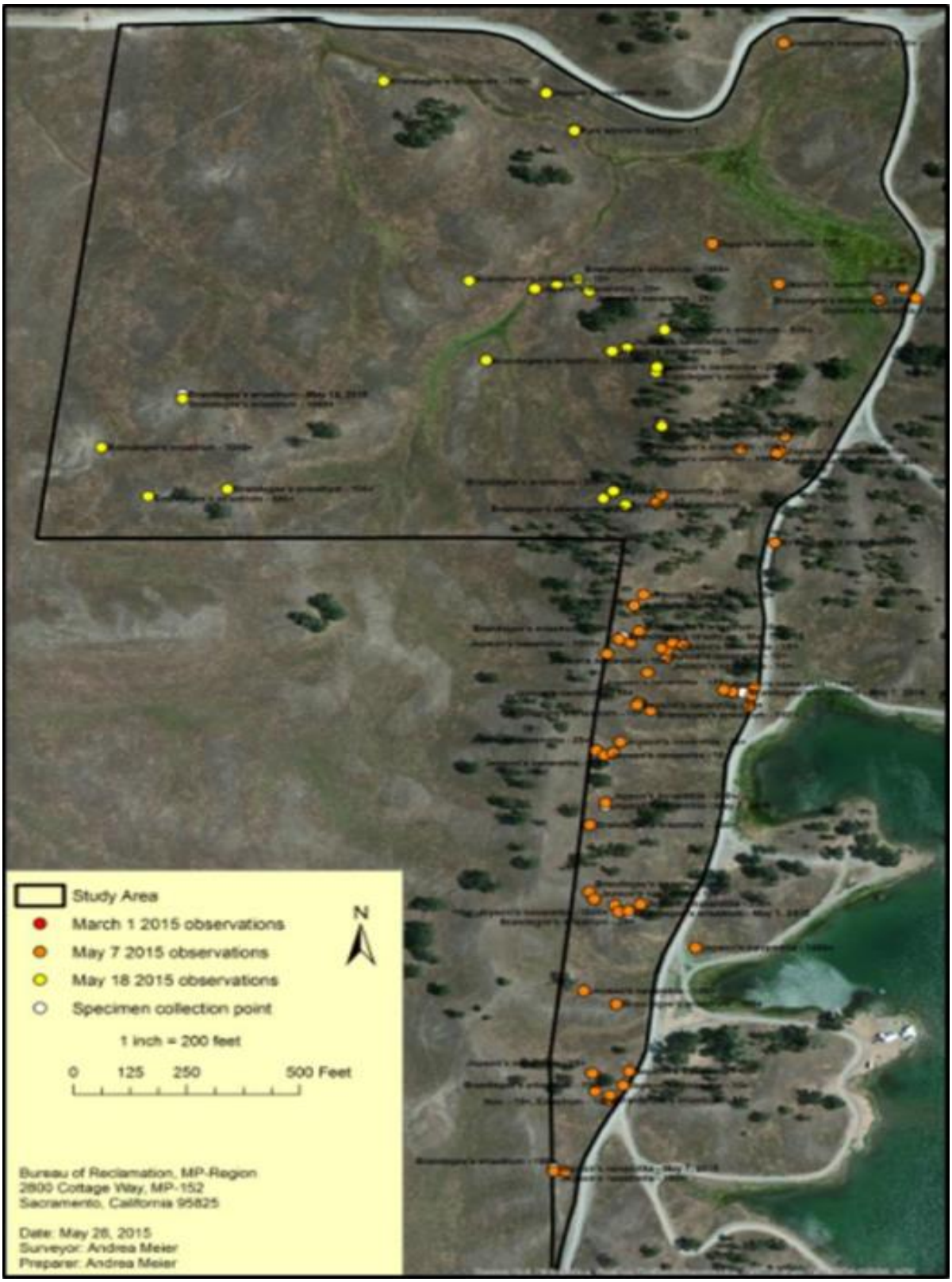

Figure 6. Spring 2015 Survey Results - Rare Plant Species - LZ

Other Special Status Plant Recordings

Reclamation researched the California Natural Diversity Database (CNDDB) for special status plant species recorded as occurring in the Project area using the Biographic Information and Observation System (BIOS) mapping application. All locations of all species recorded in BIOS within the Project area were mapped to the west side of EPR, near the LZ. The species mapped are limited to the red-flowered bird's-foot-trefoil (*Acmispon rubriflorus*), Colusa layia (*Layia septentrionalis*), Tracy's eriastrum (*Eriastrum tracyi*), Keck's checker mallow (*Sidalcea keckii*), and the adobe lily (*Fritillaria pluriflora*), as listed in Table 1, as well as pink creamsacs (*Castilleja rubicundula var. rubicundula*), which is not ranked as rare by the CNPS.

The nearest occurrence of the only reported Federally-listed species in the Project vicinity, Keck's checker mallow (*Sidalcea keckii*), was reported in BIOS as between 0.75 and one-mile west of the LZ. However, Keck's checker mallow was dismissed as Federally-listed in the affected area, based on a previous conversation with the US Fish and Wildlife Service (Service) in which the Service clarified that the listing of the species as Endangered was specific to a population located in the Yosemite Valley. Tracy's eriastrum (*Eriastrum tracyi)* is the only species listed under the California ESA and identified to potentially occur in the Project area. Tracy's eriastrum is state-listed as Rare and was not observed on-site during the Spring 2015 surveys.

Comments received on the draft EA, relaying the findings of the 2003 EPR area survey, confirmed the BIOS reportings of red-flowered bird's-foot-trefoil (*Acmispon rubriflorus*), Colusa layia (*Layia septentrionalis*), Hoover's Lomatium (*Lomatium hooveri*) and Hogwallow starfish (*Hesperevax caulescen*), in addition to other species observed on the Project sites during the spring 2015 surveys.

The spring 2015 surveys identified the distribution of rare native plant species to exhibit sparse and concentrated distribution in the project areas.

Potential Federally-Listed Species in the Proposed Action Area

A list of Federally-listed Candidate, Threatened, and Endangered species that may occur within the Project Area and /or may be affected as a result of the Proposed Action was originally obtained on June 10, 2014, by accessing the CNDDB and the Service's online database (http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm). The database searches were repeated to identify database updates on May 27, 2016 and supplemented with queries of the BIOS mapping complement to the CNDDB and a resource report from the Service's Information for Planning and Conservation (IPaC) application to refine the results.

Table 2 provides an updated list of species from the database searches, their status, the determination of effects from the Proposed Action, and a summary of the rationale

supporting the determination. As previously indicated, Keck's checker mallow (*Sidalcea keckii*) was dismissed as a listed species in the affected area. Additionally, none of the species listed in Table 2 have designated Critical Habitat within the project area.

Table 2. Federally-Listed Species Reported to Occur in Vicinity of EPR

Species	USGS Quad [3]	Status[1]	Effects[2]	Summary Basis for ESA Determination
AMPHIBIANS				
California red-legged frog (*Rana draytonii*)	G, L	T	NE	The Proposed Action area does not constitute habitat for this species. No change to wetland or riparian habitat would occur. Species has not been observed in the affected quads.
BIRDS				
Northern Spotted Owl (*Strix occidentalis caurina*)	G, L	F(T)	NE	The Proposed Action area does not constitute habitat for this species. No land use changes would occur to habitat for this species. Species has not been observed in the affected area.
FISH				
Central Valley steelhead (*Oncorhynchus mykiss*)	G, L	T, X	NE	No natural water ways within the species' range will be affected by the Proposed Action.
Chinook salmon - Central Valley spring-run (*O. tshawytscha*)	L	T, X	NE	No natural water ways within the species' range will be affected by the Proposed Action.
Chinook salmon - Sacramento River winter-run (*O. tshawytscha*)	L	E, X	NE	No natural water ways within the species' range will be affected by the Proposed Action.
Delta smelt (*Hypomesus transpacificus*)	G, L	T	NE	No natural water ways within the species' range will be affected by the Proposed Action.

INVERTEBRATES				
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	G, L	T	NE	No land use changes would occur to habitat for this species.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	G, L	T, X	NE	No land use changes would occur to habitat for this species.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	L	E	NE	No land use changes would occur to habitat for this species.
PLANTS				
Keck's checker mallow (*Sidalcea keckii)*	G, L	E	NE	Absent: protected population of species is limited to Fresno/Tulare Counties, which are located south of the Delta (Daniel Russell, USFWS email, June 9, 2014)
REPTILES				
Giant garter snake (*Thamnophis gigas*)	L	T	NE	No land use changes would occur to habitat for this species. Species not observed at any locations within the affected quads.

1 Status= Listing of Federal special status species, unless otherwise indicated.
E: Listed as Endangered.
T: Listed as Threatened.
X: Critical habitat designated
2 Effects =
NE = No Effect determination.
3. USGS Quads where this species could be present (G – Gilmore Peak, L – Lodoga)
Sources: CNDDB, BIOS and US Fish and Wildlife IPaC websites.

As a Federal agency, Reclamation's formal obligations to listed species under the Federal Endangered Species Act (ESA) are to analyze, avoid and/or mitigate impacts to those species listed as Endangered, Threatened - or Candidate species for listing as Endangered or Threatened, as well as those species' habitats - and Critical Habitat, in particular. None of these species or habitat were identified as potentially present in the area of the Proposed Action.

3.3.2 Environmental Consequences

- **No Action:** Under the No Action, biological resources would not change from their current condition.

- **Proposed Action:** There would be no Federally-listed flora or fauna affected by the implementation of the Proposed Action because the development areas do not constitute habitat for these species and/or these species were not observed or reported in these areas (Table 2).

  The available acreage of land on the parcels proposed for the recreational development is adequate to allow for avoidance of most areas of known concentrations of rare, native plants in the project design. Information from field surveys conducted in spring 2015 will be used to guide the layouts of the DGC and LZ to avoid and minimize the potential for impacts to rare, native plant species from the construction and recreational activities to the extent practical. Wood stakes, or other visual indicators, and educational signage will be placed in areas of high concentration of these species that fall within the final project footprint with the intent of drawing the users' attention to the sensitive nature of these species without limiting the potential for species recruitment.

  Construction activities associated with development of the DGC and LZ would be guided by BMPs (Appendix A) prepared by the County to minimized impacts to all non-listed species of the biological community. The construction activities would only impact native wildlife on a temporary basis because they are in short duration and would occur during the summer months. In addition, the construction crew will be educated in the presence and ecological importance and sensitivity of rare and sensitive plants prior to construction.

  It is anticipated that seasonal soil compaction at the DGC would be most pronounced at tee and pin areas where players would most predictably travel; however, this impact is not anticipated to be significant as there would be several months of the year where these areas would only receive light use or none at all, allowing these areas to recover toward the pre-Project condition. In addition, adobe lily, the species observed most frequently on the parcel for the proposed DGC during the special status plant surveys, benefits from light to moderate disturbance from cattle grazing. The foot traffic from disc golf play and course maintenance is also anticipated to provide a similar light disturbance. Similarly, no significant impacts to the natural resources are anticipated for the LZ. The types of aircraft that will use this area are light enough to maneuver by hand. These non-motorized aircraft do not present a risk for fuel or oil spillage. Therefore, only minor and temporary impacts to the ground surface are anticipated.

  Although no significant long-term impacts are anticipated from implementing the Proposed Action, maintenance monitoring of the DGC, LZ and course and environmental conditions at these locations will be implemented to identify and correct any

unanticipated environmental issues, in particular if the popularity of these developments increases rapidly. Annual monitoring will help in discerning these impacts.

3.4 Visual Resources

3.4.1 Affected Environment

East Park Reservoir is located between the Coastal Range Mountains to the west and the foothill range of the Sacramento Valley to the east. Small, quaint towns are found nearby and add to the relatively undeveloped visual character of the area.

The area within the boundaries of East Park is a matrix of rolling grasslands, oak and pine woodland, and the reservoir itself. Gravel and dirt roadways branch out from both the east and west side entries with those comprised of a gravel base leading to the campground areas that are in close proximity to the water. Dirt roadways are present throughout the areas, largely a result of unconfined and non-regulated vehicle movements. These areas also include restroom facilities, vehicle control barriers, cement picnic benches, and signs throughout the area. In all, the structures and signage is typical of park-like settings, blending into the surroundings reasonably well.

The uplands areas outside of the existing recreational areas are used for bird watching, wildflower viewing, nature hikes, wildlife watching and photography (Tetra Tech 2004). These areas are for the most part free of man-made objects except for fence lines exposing property line delineations.

The proposed recreational developments would occur in a transition area between the reservoir-side camping areas and the upland habitats along roadways that would afford easy access to the amenities of the new developments.

3.4.2 Environmental Consequences

- **No Action:** Under the No Action Alternative the LZ and DGC would not be developed and visual resources would remain the same as in the existing conditions.

- **Proposed Action:** Under the Proposed Action, the visual resources would not be impacted significantly. The addition of the parking lot and signage for the LZ would be adjacent to the existing main entrance road from the Stonyford side of the EPR. In addition, the LZ would be outside of the typical recreational area and would not likely be seen from the reservoir camping areas.

  As with the LZ development, the impacts to visual resources at the DGC area would not be significant. This development would be in close proximity to existing roads and the new facilities (e.g. tee pads, baskets and signage) would be close to the ground and not be highly visible; these structures would be of adequate size to meet their intended purpose but small enough and of appropriate color to not be seen from a distance. Additionally,

no large trees would be removed and only minor mechanical vegetation control would be used when EPR is opened, typically April 15 through September 30.

3.5 Federal Migratory Bird Treaty Act (MBTA) (16 USC §§ 703 – 712)

The Migratory Bird Treaty Act (MTBA) prohibits the take, harm, or trade of any migratory bird species and requires that all agencies have a policy in place to prevent harm to such species as a result of that agency's actions. For Federal agencies, this policy is covered by completion of a Memorandum of Understanding (MOU) with the Service, which is the agency charged with administering and enforcing the MBTA.

In addition to species listed under the ESA, the IPaC report listed 17 avian species protected by the MBTA that could potentially occur in the Project area. The construction activities would fall outside of the breeding season for most migratory bird species. In addition, the proposed areas of increased recreational activity are disturbed by traffic during the core summer months, which would preclude their use by migratory birds during the period of high recreational use. The aircraft to utilize the LZ are non-motorized, relatively slow-moving and easily maneuverable and would not present a flight hazard to migratory birds. Therefore, there are no anticipated impacts to species protected under the MBTA from the Proposed Action or No Action Alternative.

3.6 Cumulative Impacts

There are no other known past, present, or reasonably foreseeable actions that would cumulatively result in significant impacts to the human environment when taking into consideration the actions analyzed in this EA. However, as in other parts of California, the rural area that surrounds EPR will become increasingly vulnerable to development pressures over time.

Section 4 Consultation and Coordination

4.1 Endangered Species Act (16 U.S.C. 1521 et seq.)

Reclamation determined that the Proposed Action would have no effect on Federally proposed or listed Threatened and Rndangered species or their proposed or designated Critical Habitat. Therefore, no consultation was required under Section 7 of the ESA.

Section 5 References

PDGA 2014. Professional Disc Golf Association Disc Golf Course Design Recommendations, March 2014, 4 pp. (http://www.pdga.com/files/PDGA%20Course%20Design%20Guides%20March%202014.pdf)

Tetra Tech 2004. Final East Park Reservoir Resource Management Plan and Environmental Assessment. Prepared for U.S Department of Interior, Bureau of Reclamation, Northern California Area Office, Shasta Lake, California 96019

Water Resources Engineering, INC. (WRE) and GARCIA and Associates (GANDA). 2003. Final Report Special Status Species Surveys for the East Park Reservoir in Colusa County, CA.

Appendix A. BMPS for Construction Activities

Colusa County Heavy Equipment Operations
Best Management Practices

General Operations

- Schedule excavation and grading work during dry weather
- Use as little water as possible for dust control.

Vehicle and Equipment Maintenance

- Maintain all vehicles and heavy equipment.
- **Inspect frequently for leaks.**
- Conduct all vehicle/equipment maintenance and refueling at one location - away from storm drains.
- Perform major maintenance, repair jobs and vehicle/equipment washing off-site.
- Use gravel approaches where truck traffic is frequent to reduce soil compaction and limit the tracking of sediment into streets.
- Use drip pans or drop cloths to catch drips and spills. Do not use diesel oil to lubricate equipment or parts

Clean Up

- Sweep up dry spilled materials immediately. Never attempt to bury them or "wash them away" with water.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- Report significant spills to the appropriate spill response agencies immediately.
- Clean up leaks, drips, and other spills immediately.
- Never hose down "dirty" pavement or surfaces where materials have spilled.

Appendix B. Cultural Resource Review

CULTURAL RESOURCE COMPLIANCE
Mid-Pacific Region
Division of Environmental Affairs
Cultural Resources Branch

MP-153 Tracking Number: 15-NCAO-064

Project Name: Recreational Improvements at East Park Reservoir

NEPA Document: EA-14-04-NCAO

MP 153 Cultural Resources Reviewer: Mark Carper

NEPA Contact: Paul Zedonis

Determination: No Historic Properties Affected

Date: 5 May 2015

This proposed undertaking by Reclamation to approve the proposed recreational development at East Park Reservoir. Reclamation owns East Park Dam and Reservoir with Colusa County under agreement for recreation management. Reclamation and Colusa County propose to enhance land-based recreational activities through the creation of an 18-hole disc golf course (DGC) on the eastern side of the reservoir and a non-motorized aircraft landing zone (LZ) on the western side.). Reclamation determined that approval of the proposed project, to be conducted on Federal lands owned by Reclamation, is an undertaking as defined in 36 CFR § 800.16(y) and a type of activity that has the potential to cause effects on historic properties under 36 CFR § 800.3(a).

The DGC layout has yet to be determined. However, the design will entail for each of the eighteen holes a tee pad and a metal basket. The tee pads will be 4 feet x10 feet in size and constructed of concrete or recycled rubber. Hand tools will be used to level and contour the tee pad locations. The metal baskets will be installed by hand-boring a 2-foot deep hole and concreting a 2-inch basket support tube. No further alteration to the landscape will be conducted for the DGC. For the proposed LZ, from the only ground disturbing construction activity will be preparing a parking area that will not exceed 95 feet x140 feet in the northwestern corner of the LZ area. The parking area will be adjacent to the existing East Park Road and construction will consist of minor grading followed by spreading and compacting road base or equivalent materials to create a 4 to 8-inch base for the parking area.

CULTURAL RESOURCE COMPLIANCE
Mid-Pacific Region
Division of Environmental Affairs
Cultural Resources Branch

In an effort to identify historic properties, Reclamation conducted a records search through the Northwest Information Center (NWIC File No. 14-0070), an internal archival search, and an intensive pedestrian survey of the APE. These efforts identified no historic properties within the APE.

Reclamation identified the Paskenta Band of Nomlaki Indians, the Enterprise Rancheria of Maidu Indians, the Cortina Band of Indians, and the Colusa Indian Community Council as potentially having interests in the project area. Pursuant to 36 CFR § 800.4(a)(4), Reclamation contacted these tribes and invited their participation in the Section 106 process. The tribes were contacted via letter on February 23, 2015. Reclamation received no responses from the notified tribes.

No historic properties were identified in the APE and, pursuant to 36 CFR § 800.4(d), Reclamation found no historic properties affected for the undertaking.

Reclamation initiated consultation with California the State Historic Preservation Officer (SHPO) on March 17, 2015 with a determination of No Historic Properties Affected for the proposed project. SHPO concurred with the determination in a letter dated April 30, 2015.

This memorandum is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

STATE OF CALIFORNIA – THE RESOURCES AGENCY EDMUND G. BROWN, JR., Governor

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April 30, 2015 Reply in Reference To: BUR_2015_0326_001

Anastasia T. Leigh
Regional Environmental Officer
Bureau of Reclamation, Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825-1898

RE: Recreational Improvements at East Park Reservoir, Colusa County, California; (15-NCAO-064).

Dear Ms. Leigh:

Thank you for seeking my consultation regarding the above noted undertaking. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (Reclamation) is seeking my comments regarding the effects that the above named project will have on historic properties.

Reclamation owns East Park Dam and Reservoir; recreation management is handled by Colusa County through a management agreement. Reclamation and Colusa County propose to enhance land-based recreational activities through the creation of an 18-hole disc golf course on the east side of the reservoir and a non-motorized aircraft (hang-glider) landing zone on the western side. Each hole of the golf course will require hand-boring a hole, two-foot deep, and concreting in a basket support tube. A four-foot by ten-foot square tee pad will be constructed of concrete or rubber at each of the eighteen holes. No other landscape alterations will be conducted. The landing zone will only require a 95-foot by 140-foot parking lot in the northeast corner of the landing zone area; adjacent to the existing East Park Road. This will require minor grading and compacting road base materials for a four to eight inch thick base.

The Area of Potential Effects (APE) includes the two discontiguous project locations encompassing 54.5 acres for the golf course and 61 acres for the landing zone. The vertical APE is two feet deep at each golf-hole location and less than a foot for the remainder of the project components.

In addition to your letter received March 26, 2015, you have submitted the *MP-153 Cultural Resources and Post Field Summary Record for the Recreational Improvements Project at East Park Reservoir (15-NCAO-064)*, (Carper 2015) as evidence of your efforts to identify and evaluate historic properties in the project APE.

Archival research included a records search at the Northwest Information Center followed by a pedestrian surface survey on January 21, 2015. No cultural resources were identified in the Area of Potential Effects (APE) for the project.

Reclamation consulted with Native American tribes and individuals (February 2015) likely to have knowledge of sites of religious or cultural significance to them in the project area. No such properties were identified through consultation efforts.

Pursuant to 36 CFR §800.4(d)(1) Reclamation has determined there will be *No Historic Properties Affected* by the proposed project. Based on your identification efforts, I concur with the *Finding of No Historic Properties Affected*. Identification efforts are sufficient and I also have no objections to the delineation of the APE, as depicted in the supporting documentation.

Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, Reclamation may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and considering historic properties as part of your project planning. If you have any questions or concerns regarding archaeological resources, please contact Associate State Archaeologist, Kim Tanksley at (916) 445-7035 or by email at kim.tanksley@parks.ca.gov.

Sincerely,

Carol Roland-Nawi, Ph.D.

Carol Roland-Nawi, PhD
State Historic Preservation Officer

Appendix C. Indian Trust Assets Determination

Simon, Megan <msimon@usbr.gov>

East Park Recreation - ITA Review for LZ and DGC

Simon, Megan <msimon@usbr.gov> Tue, Jan 5, 2016 at 11:35 AM
To: Paul Zedonis <pzedonis@usbr.gov>

I have examined the proposal for the project "Recreational Improvements at East Park Reservoir - Orland Project" and have determined that these facilities are at least three (3) miles from the closest Indian Trust Asset.

I have determined that there is no likelihood that this project will adversely impact Indian Trust Assets.

Megan K. Simon

Natural Resources Specialist
U.S. Bureau of Reclamation
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Appendix D. Interoffice Memo - Special Status Plant Survey Results (see also Figures 6 and 7)

May 29, 2015

To: Paul Zedonis, Natural Resources Specialist, Northern California Area Office

From: Andrea Meier, Natural Resources Specialist, Mid-Pacific Region

Subject: Late spring season special status plant survey results for the proposed landing zone and disc golf course at East Park Reservoir

I conducted a special status plant survey on Friday, May 7, 2015 and Monday, May 18, 2015, at East Park Reservoir at the proposed landing zone on the west side of the reservoir and disc golf course on the east side of the reservoir. These two surveys were conducted as a follow-up to the survey conducted on March 1, 2015, to determine if late blooming special status plants listed in Table 3-1 of the Environmental Assessment are present. I found several thousand Brandegee's eriastrum (*Eriastrum brandegeae*) and Jepson's navarretia (*Navarretia jepsonii*) on the west site. I found several hundred Brandegee's eriastrum on the east site. The attached maps show the location and number of individuals of the two species observed. I photographed and collected data points of plant groupings with a handheld Trimble global positioning system (GPS) unit.

Eriastrum was common in areas that were more barren than the surrounding grassland with little competing vegetative growth. Soils in these areas are thin which often reduces competition for natives. Eriastrum also tended to be on hillslopes or hilltops with 5 percent slopes or more and was not found in the lowland areas of the sites. Eriastrum was found only in areas receiving full sun.

Jepson's navarretia was distributed throughout the upland portions of the west site and was sometimes interspersed with purple navarretia (*Navarretia pubescens*). The two species can be distinguished easily in the field by leaf coloration. Jepson's navarretia has a reddish or purple coloration on its leaves. Jepson's navarretia was found growing in full sun and partial shade conditions.

Voucher specimens were collected of the eriastrum and navarretia on May 7 and May 18 and are currently being pressed. Jamie Lefevre, a Natural Resources Specialist in MP-152 will be completing the process of submitting the plants to the Chico Herbarium at CSU Chico. No specimens of Adobe lily were not collected during the March 1 survey because of the endangered status of the species under the Endangered Species Act.

I will submit information on the occurrence of Adobe lily on the east site to the CNDDB. I will also submit my observations of the eriastrum and navarretia to Calflora.

Photos from May 7, 2015

Eriastrum brandegeae flowering

Example of sparsely vegetated areas where eriastrum was found

Eriastrum

Eriastrum

Eriastrum

Photos from May 18, 2015

Navarretia jepsonii

Navarretia jepsonii

Navarretia jepsonii