Appendix F. Biological Resources Information

This appendix contains background information on sensitive biological resources at five recreation areas (RAs) around Lake Berryessa: Putah Canyon, Monticello Shores, Berryessa Point, Spanish Flat, and Steele Canyon. The purpose of this appendix is to provide supporting information for the analysis of environmental consequences in the Environmental Assessment (EA) for the development of the five RAs. This appendix focuses on species protected under the federal Endangered Species Act, including species that are proposed or candidates for listing; and on wetlands and other waters of the United States. The following information and lists are contained in this appendix:

- a discussion of the methods used for the field review and investigation;
- a list of special-status species evaluated for analysis;
- species accounts for special-status species with potential to occur at the RAs;
- results of a botanical survey of the RAs;
- results of an inventory of elderberry shrubs (habitat for the valley elderberry longhorn beetle);
- descriptions of delineation-level and determination-level surveys of potential waters of the United States;
- maps of the study areas and habitat communities at each RA; and
- database search results from the California Natural Diversity Database (CNDDB), California Native Plant Society Online Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service (Service) database of federally protected species.

Field Review and Investigation

North State Resources, Inc. (NSR) conducted a comprehensive resource inventory for all seven RAs at Lake Berryessa on behalf of the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) in 2007–2008 (Reclamation 2008). The inventory of biological resources included field surveys and background research to characterize the habitat communities and plant and wildlife species that occur or could occur at each RA. Field surveys were conducted during April and May 2007 and included habitat mapping and reconnaissance-level surveys for potential habitat for special-status species and potential waters of the United States. No focused or protocol-level surveys for special-status species were conducted during the field reconnaissance.

In support of proposed recreational developments at six of the RAs, NSR conducted additional surveys during August 2011 in all or portions of the RAs, including a California red-legged frog site assessment encompassing the entirety of each RA, a formal delineation of waters of the United States in a portion of the RAs, a determination of potential waters of the United States in the remainder of the RAs, and a protocol-level valley elderberry longhorn beetle survey in a portion of the RAs. Incidental sightings of special-status species or other biological resources of interest (e.g., osprey nests) were also recorded.

In support of the current EA for recreational development at five of the RAs, supplemental surveys were conducted to update information on biological conditions from the prior two surveys, as appropriate, and to survey additional areas currently proposed for development under the conceptual site plans. The field assessment sites for both the California red-legged frog and delineation of waters of the United States initially assessed in August 2011 were re-visited between April and May 2014 to field validate current hydrologic and habitat conditions, and additional areas potentially subject to development under the current plans were delineated for waters of the United States and surveyed for elderberry shrubs at each RA. In addition, focused botanical surveys for two federally listed plant species were conducted within suitable habitat in portions of the RAs between April and May 2014. Incidental sightings of special-status species or other biological resources of interest (e.g., osprey nests) were also recorded. An overview of the specific studies and their study boundaries is presented below, and the results of each study are incorporated into this appendix or summarized in the EA, as noted below.

The **California red-legged frog site assessment** was conducted at the five RAs, focusing on potential breeding habitat within the RA boundaries. The assessment was conducted between August 1 and 19, 2011, and April 29 and May 2, 2014. The field assessment was performed in accordance with *Revised Guidance on Site Assessment and Field Surveys for California Red-Legged Frog* (USFWS 2005), although the assessment was limited to the RA boundaries and did not include the USFS standard 1 mile buffer. Results and conclusions of this assessment are presented in *Lake Berryessa Recreation Areas Development California Red-Legged Frog Site Assessment* (North State Resources 2014a) and summarized in the EA.

A **delineation of waters of the United States** was conducted in a portion of the five RAs (study areas), and a determination-level survey of potential waters of the United States was conducted outside the study area and within the RA boundaries. The study areas for the delineation-level surveys encompassed the infrastructure plan footprints at each RA. Determination-level surveys encompassed the footprints for the conceptual site plans. Surveys for waters of the United States were conducted between August 1 and 19, 2011, and April 29 and May 2, 2014. The delineation was performed according to methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (version 2.0)* (U.S. Army Corps of Engineers 2008). Results of the delineations are presented in the delineation reports for each RA (North State Resources 2014b-f) and are summarized in the EA. Results of the determination-level survey are summarized in the EA.

Focused botanical surveys were conducted for two California endemic plant species federally listed as endangered: Clara Hunt's milk-vetch (*Astragalus claranus*) and Keck's checker-mallow (*Sidalcea keckii*). Focused surveys were conducted in target areas identified as suitable habitat

for these two plant species (i.e., undisturbed blue oak and foothill pine woodlands and other cismontane areas on serpentine soil) in the study areas at Putah Canyon, Monticello Shores, Berryessa Point, and Spanish Flat RAs between April 29 and May 2, 2014. The study areas were the same as those defined for the delineation. Serpentine soils are not present at Steele Canyon, and botanical surveys were not conducted at that RA. The results of these surveys are presented in this appendix and summarized in the EA.

Protocol-level **valley elderberry longhorn beetle surveys** were conducted between August 1 and 19, 2011, and between April 29 and May 2, 2014, within the study areas at the five RAs (the same as those defined for the delineation), and incidental observations of elderberry shrubs outside the study areas were also recorded. Surveys were conducted in accordance with *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999). Results of this survey are presented in this appendix and summarized in the EA.

Habitat Communities

The five RAs range in elevation between 440 and 640 feet above mean sea level. The climate of the region is characterized as Mediterranean, with cool, wet winters and hot, dry summers. Precipitation primarily occurs as rain, and the average annual rainfall is approximately 28 inches (Western Regional Climate Center 2014). Upland habitat communities at the RAs include blue oak, foothill pine, interior live oak, chamise, fresh emergent wetland, and urban. Lacustrine is the dominant habitat type. These habitats were classified based on descriptions provided in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995) and the California Wildlife Habitat Relationship system (Mayer and Laudenslayer 1988). Figures F-3 through F-7 at the end of this appendix depict the habitat communities mapped within each RA.

Analysis of Special-Status Species Potential

For the purpose of this evaluation, special-status plant species include plants that are (1) designated as rare by the California Department of Fish and Wildlife or are listed as threatened or endangered under the California Endangered Species Act or federal Endangered Species Act; (2) proposed for designation as rare or for listing as threatened or endangered; and/or (3) state or federal candidate species for listing as threatened or endangered. Special-status wildlife species include species that are (1) listed as threatened or endangered under the California Endangered Species Act or the federal Endangered Species Act; (2) proposed or petitioned for federal listing as threatened or endangered; (3) state or federal candidates for listing as threatened or endangered; or (4) protected under the federal Migratory Bird Treaty Act (71 FR 65844);

Special-status species with potential to occur at the RAs were determined through review of the following sources:

- Service list of endangered and threatened species that may occur in the *Lake Berryessa, Walter Springs, Chiles Valley,* and *Brooks, California* 7.5-minute quadrangles and the 12 surrounding quadrangles and in Napa County;

- CNDDB occurrence list from the *Lake Berryessa, Walter Springs, Chiles Valley,* and *Brooks, California* U.S. Geological Survey 7.5-minute quadrangles and the 12 surrounding quadrangles;

- California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants list;

- California Wildlife Habitat Relationships system (California Department of Fish and Game 2008);

- chronological aerial photographs of the RAs and results of surveys of habitats, plants, and wetland resources at the RAs from 2007–2008, 2011, and 2014; and

- pertinent environmental documents and technical studies.

The Service, CNDDB, and CNPS database queries are included following the figures at the end of this appendix.

Special-status species with potential to occur in the five RAs are discussed in Tables F-1 and F-2, which provides a general comparison of habitat requirements for each species and the general habitats present in the study area. Some of the special-status plants and wildlife occurring in the region are found in habitat that are not present at Lake Berryessa; these species are classified as "absent" and are not considered further in the EA. "Habitat Present" means habitat for the species is present and the species may occur. An additional discussion of species protected by the Migratory Bird Treaty Act is included in the Species Accounts section.

Table F-1. Special-Status Plant Species Evaluation

Common Name Scientific Name	Status[1] (Fed/State)	General Habitat Description	Potential for Occurrence[2]
Clara Hunt's milk-vetch *Astragalus claranus*	FE/ST	Chaparral (openings), cismontane woodland, valley and foothill grassland. Restricted to serpentinite or volcanic, rocky clay soils. 245 to 900 feet in elevation. Blooms March–May.	**Habitat Present.** Known from only four occurrences in Napa and Sonoma counties. Serpentine soils and pine or oak woodland habitats are present at four of the RAs, but the plant was not observed during focused surveys. Nearest CNDDB record is approximately 9.3 miles west of Spanish Flat. No critical habitat has been proposed or finalized.
Contra Costa goldfields *Lasthenia conjugens*	FE/—	Mesic sites and vernal pools in cismontane woodland, alkaline playas, and valley and foothill grassland. 0 to 1,545 feet in elevation. Blooms March–June.	**Absent.** Vernal pools and mesic sites that could provide habitat for this species are absent from the RAs. Critical habitat does not occur in the RAs.
Sebastopol meadowfoam *Limnanthes vinculans*	FE/SE	Meadows and seeps, vernal pools, and valley and foothill grassland. Restricted to vernally mesic areas. 49 to 1,001 feet in elevation. Blooms April–May.	**Absent.** Vernal pools that could provide habitat for this species are absent from the RAs. No critical habitat has been proposed or finalized.
Few-flowered navarretia *Navarretia leucocephala* ssp. *pauciflora*	FE/ST	Vernal pools in volcanic ash flow. 1,300 to 2,800 feet in elevation. Blooms April–July.	**Absent.** The RA occurs outside the elevation range for this species; further, no vernal pool habitat is present in the RAs. No critical habitat has been proposed or finalized.
Keck's checker-mallow *Sidalcea keckii*	FE/—	Serpentinite, clay soils in cismontane woodlands and annual grasslands. 240 to 2,135 feet in elevation. Blooms April–June.	**Habitat Present.** Questions remain regarding species identity for Napa and Yolo counties for six records. Serpentine soils and pine or oak woodland habitats are present at four of the RAs, but the plant was not observed during focused surveys. Nearest CNDDB record is approximately 2.8 miles south of Steele Canyon RA. Critical habitat does not occur in the RAs.

Sources: California Dept. of Fish & Wildlife 2014; California Native Plant Society 2014; U.S. Fish & Wildlife Service 2014b

1 Status Codes:

FE = Federal Endangered; SE = State Endangered; ST = State Threatened

2 **Absent** means no suitable habitat present (no further work needed). **Habitat Present** means general habitat is present and species may be present, unless otherwise noted.

Table F-2. Special-Status Wildlife Species Evaluation

Common Name Scientific Name	Status[1] (Fed/State)	General Habitat Description	Potential for Occurrence[2]
Conservancy fairy shrimp *Branchinecta conservation*	FE/—	Highly turbid, large vernal pools.	**Absent.** Based on surveys conducted for California red-legged frog and waters of the United States, vernal pools that could provide habitat for this species are absent from the RAs. Critical habitat does not occur in the RAs.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT/—	Vernal pool crustaceans live in vernal pools, swales, and ephemeral freshwater habitats. None are known to occur in riverine waters or marine waters.	**Absent.** Based on surveys conducted for California red-legged frog and waters of the United States, vernal pools that could provide habitat for this species are absent from the RAs. Critical habitat does not occur in the RAs.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT/—	Elderberry shrubs associated with riparian forests, which occur along rivers and streams.	**Habitat Present**. Elderberry shrubs occur at Putah Canyon, Monticello Shores, Berryessa Point, and Steele Canyon RAs. Critical habitat does not occur in the RAs. Nearest CNDDB occurrence is approximately 5.5 miles east of Steele Canyon RA. The five RAs fall outside of the historic range of the beetle (USFWS 2017).
Vernal pool tadpole shrimp *Lepidurus packardi*	FE/—	Vernal pool crustaceans live in vernal pools, swales, and ephemeral freshwater habitats. None are known to occur in riverine waters or marine waters.	**Absent.** Based on surveys conducted for California red-legged frog and waters of the United States, vernal pools that could provide habitat for this species are absent from the RAs. Critical habitat does not occur in the RAs.
California freshwater shrimp *Syncaris pacifica*	FE/SE	Occurs in the low-elevation perennial freshwater streams of Marin, Sonoma and Napa counties. Prefers perennial streams with submerged undercut banks, overhanging plants such as blackberry, woody debris, and the exposed live root systems of willow or alder.	**Absent.** Suitable perennial streams are absent from the RAs. Critical habitat does not occur in the RAs.
Delta smelt *Hypomesus transpacificus*	FT/ST	Estuarine systems in the Sacramento-San Joaquin Delta.	**Absent.** RAs are located outside the Sacramento-San Joaquin Delta. Critical habitat does not occur in the RAs.

Table F-2. Special-Status Wildlife Species Evaluation

Common Name Scientific Name	Status[1] (Fed/State)	General Habitat Description	Potential for Occurrence[2]
Central California Coastal Distinct Population Segment (DPS) steelhead *Oncorhynchus mykiss*	FT/—	Spawns in cool, moderately fast flowing water with gravel bottom.	**Absent.** RAs are located outside watersheds in which this species occurs. Critical habitat does not occur in the RAs.
Central Valley steelhead DPS *Oncorhynchus mykiss*	FT/—	Spawns in cool, moderately fast flowing water with gravel bottom.	**Absent.** The Monticello Dam, which impounds Lake Berryessa, prevents this species from accessing the upper reaches of Putah Creek. Critical habitat does not occur in the RAs.
Central Valley spring-run Chinook salmon Evolutionary Significant Unit (ESU) *Oncorhynchus tshawytscha*	FT/ST	Spawn and rear in main-stem Sacramento River and suitable perennial tributaries. Require cool year-round water temperatures and deep pools for over-summering habitat. Spawn in riffles with gravel and cobble substrate.	**Absent.** The Monticello Dam, which impounds Lake Berryessa, prevents this species from accessing the upper reaches of Putah Creek. Critical habitat does not occur in the RAs.
Winter-run Chinook salmon ESU *Oncorhynchus tshawytscha*	FE/SE	Cool streams that reach the ocean and that have shallow, partly shaded pools and clear-water sandstone depression pools.	**Absent.** The Monticello Dam, which impounds Lake Berryessa, prevents this species from accessing the upper reaches of Putah Creek. Critical habitat does not occur in the RAs.
California tiger salamander Central DPS *Ambystoma californiense*	FT/ST	Vernal or temporary pools in annual grasslands, or open stages of woodlands.	**Absent.** Based on surveys conducted for California red-legged frog and waters of the United States, vernal pools that could provide habitat for this species are absent from the RAs. Critical habitat does not occur in the RAs.

Table F-2. Special-Status Wildlife Species Evaluation

Common Name Scientific Name	Status[1] (Fed/State)	General Habitat Description	Potential for Occurrence[2]
California red-legged frog *Rana draytonii*	FT/—	Requires aquatic habitat for breeding, also uses a variety of other habitat types including riparian and upland areas. Adults utilize dense, shrubby or emergent vegetation associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation.	**Habitat Present.** The California red-legged frog assessment found two locations providing potential breeding habitat (North State Resources 2014a). Capell Valley 4 miles south of the Steele Canyon RA is the closest known population. Critical habitat does not occur in the RAs.
Giant garter snake *Thamnophis gigas*	FT/ST	Freshwater marshes and low gradient streams with emergent vegetation; adapted to drainage canals and irrigation ditches with mud substrate.	**Absent**. Suitable marsh and contiguous fresh emergent wetlands to support this species are absent from the RAs. Critical habitat does not occur in the RAs.
Northern spotted owl *Strix occidentalis caurina*	MBTA, FT/SC	Dense, multi-layered mixed conifer, redwood, and Douglas-fir habitats with large overstory trees.	**Absent.** Suitable coniferous forest habitat is absent from the RAs. Critical habitat does not occur in the RAs.
Swainson's hawk *Buteo swainsoni*	MBTA, —/ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah; forages in adjacent pasture, grassland or agricultural fields.	**Absent**. Suitable nesting and foraging habitat to support this species is absent from the RAs.
Bald eagle *Haliaeetus leucocephalus*	MBTA, D/SE, FP	Forages on live and dead fish and nests in large trees or snags. Requires large bodies of water, including ocean shorelines, lake margins, and large, open river courses for foraging, nesting, and wintering habitat.	**Habitat Present.** Suitable nesting and foraging habitat to support this species is present along the margins of Lake Berryessa in the RAs. No bald eagles were observed during biological surveys in August 2011 or April-May 2014. Nearest CNDDB occurrence is approximately 3.2 miles east of Berryessa Point RA on the east slope of the lake.
Bank swallow *Riparia*	MBTA, —/ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	**Absent**. Suitable nesting and foraging habitat to support this species is absent from the RAs.

Table F-2. Special-Status Wildlife Species Evaluation

Common Name Scientific Name	Status[1] (Fed/State)	General Habitat Description	Potential for Occurrence[2]

Sources: California Dept. of Fish & Wildlife 2014; California Native Plant Society 2014; U.S. Fish & Wildlife Service 2014b

[1] Status Codes:

FE = Federal Endangered; FT = Federal Threatened; D = Delisted; MBTA = Migratory Bird Treaty Act

SE = State Endangered; ST = State Threatened; SC = State Candidate; FP = Fully Protected species (California)

[2] **Absent** means no suitable habitat present (no further work needed). **Habitat Present** means general habitat is present and species may be present, unless otherwise noted

Species Accounts

Species accounts for the special-status plant and wildlife species with potential to occur at the RAs are provided below. This information was used to evaluate the potential for impacts on each species and determine the need for mitigation measures to reduce or eliminate impacts in the EA. Additionally, a description of the Migratory Bird Treaty Act and relevance to the RAs is provided below.

Plants

Clara Hunt's Milk-Vetch. Federal Status: Endangered; State Status: Threatened.
The Service listed the Clara Hunt's milk-vetch as endangered on October 22, 1997 (62 FR 54791), and the state of California listed it as threatened in January 1990 (Ruygt 1994). No critical habitat has been designated for this species.

Clara Hunt's milk-vetch is a low-growing annual herb in the Fabaceae family. This species has a highly restricted distribution (Ruygt 1994) and is known from four locations in Napa and Sonoma counties across an elevation range from 245 to 735 feet above mean sea level. It is known to occur with a variety of plant associations across valley and foothill grasslands and in openings in chaparral and cismontane woodlands. Amongst these vegetation communities, Clara Hunt's milk-vetch associates with rocky, clay soils derived from volcanic and serpentine soils (U.S. Fish and Wildlife Service 2009). This species blooms from March through May (California Native Plant Society 2014). Dispersal distance of seeds can also be limited in this species (Ruygt 1994). When fall or winter rains come, seeds either germinate or remain dormant in the seed bank (Hunter 1989), depending on local conditions. The largest threats to this species are habitat modification or destruction associated with urbanization and competition from invasive species (U.S. Fish and Wildlife Service 1997).

The type locality occurs approximately 14 miles west of Spanish Flat RA near St. Helena, where two specimens were collected in 1909 and 1922 (Occurrence No. 1). The nearest CNDDB occurrence of Clara Hunt's milk-vetch is located approximately 9.2 miles west of Spanish Flat RA, between Conn Valley Road and Lake Hennessey and approximately 4 miles east of St. Helena. At this location the population of several hundred individuals declined from the 1980s to tens of individuals in the 2000s, presumably by disturbance (Occurrence No. 11). The largest known population of this species is located approximately 11.2 miles west of Spanish Flat RA and includes several colonies in Spring Valley along Lewelling Lane, approximately 1.5 miles west of the northwest corner of Lake Hennessey, studied in the 1990s (Occurrence No. 13). Another record occurs approximately 13.8 miles (Occurrence No. 12) from Spanish Flat RA. This species was not detected at the RAs during focused surveys conducted between April 29 and May 2, 2014. The methods and results of the botanical survey are described below under "Focused Botanical Surveys."

Keck's Checker-Mallow. Federal Status: Endangered; State Status: None.
The Service listed Keck's checker-mallow as endangered on February 16, 2000 (65 FR 7757). Critical habitat for this species was proposed June 19, 2002 (67 FR 41669) and finalized March 18, 2003 for three critical habitat units in Fresno and Tulare counties (68 FR 12863).

Keck's checker-mallow is an annual herb in the Malvaceae family. This species shows a strong association with serpentinite and/or clay soils with low nutrients (Cypher 1998) in Sierra Nevada and Coast Range foothills. It occurs across various plant communities in pine, oak, and other cismontane woodlands and annual grasslands across an elevation range of approximately 240 to 2,135 feet above mean sea level. This species was originally described from three occurrences in Tulare and Fresno counties (U.S. Fish and Wildlife Service 2000). This species blooms from April through June (California Native Plant Society 2014). Specimens recently found since 2007 in Merced, Yolo, El Dorado, Solano, Napa, and Colusa counties require more study to verify the species, as several morphological characteristics overlap with those of a similar species, *Sidalcea diploscypha* (U.S. Fish and Wildlife Service 2012). Seed dispersal and pollination mechanisms are not well understood, but seeds that do not germinate have the potential to remain viable in the seed bank for years (S. Hill, pers. comm. as cited by U.S. Fish and Wildlife Service 2012). This species is threatened by various factors, including urban development, conversion to agricultural use, competition with non-native grasses, and stochastic events (U.S. Fish and Wildlife Service 2000).

Records of putative Keck's checker-mallow (as questions remain for distinguishing these populations in Yolo and Napa counties as *S. keckii* or *S. diploscypha*) are geographically more widespread surrounding Lake Berryessa than those records of Clara Hunt's milk-vetch in the Napa region. The nearest CNDDB occurrence of Keck's checker-mallow is of a 1957 collection approximately 3.9 miles south of Steele Canyon RA, along State Route 121 near the junction with State Route 128, associated with a serpentine rock outcrop (Occurrence No. 19). Individuals were recorded in 1977 by a private plant collector approximately 8.9 miles from Steele Canyon RA, at an approximated location 1.2 miles northwest of the junction of State Route 128 and Pleasant Valley Road in Yolo County (Occurrence No. 10). Four other records of this species are 9.9 miles to 11.3 miles north and northwest of Putah Canyon RA on lands managed by California Department of Fish and Wildlife and Bureau of Land Management (California Department of Fish and Wildlife 2014). This species was not detected at the RAs during focused surveys conducted between April 29 and May 2, 2014. The methods and results of the botanical survey are described below under "Focused Botanical Surveys."

Wildlife

Valley Elderberry Longhorn Beetle. Federal Status: Threatened; State Status: None.
The Service listed the valley elderberry longhorn beetle (beetle) as threatened on August 8, 1980 (45 Federal Register [FR] 52803). Critical habitat was also designated at this time (45 FR 52803). On February 14, 2007, the Service completed a five-year review that recommended the species be delisted (72 FR 7064-7084) as a result of the increased number of sightings throughout the Central Valley and the reduction of the primary threats to the species (primarily riparian habitat loss). A delisting proposal was issued October 2, 2012 (77 FR 60237) with the comment period reopening November 4, 2013.

Based on the results of the information received from peer reviewers and the public, the Service concluded that some species distribution information in the delisting proposal was incorrectly presented. As a result the Service reexamined existing information, and reevaluated and revised descriptions of the valley elderberry longhorn beetle's life history, and its population distribution, range, and occupancy. The Service withdrew its delisting proposal on September 17, 2014 (79 FR 55874). In its September 17 withdrawal notice the Service re-defined the presumed historical range of the beetle such that the Putah Canyon, Monticello Shores, Berryessa Point, Spanish Flat, and Steele Canyon Recreation Areas are excluded.

The beetle's life cycle is intimately connected to its habitat, the elderberry shrub (*Sambucus nigra* or *Sambucus racemosa* var. *microbotrys*). Following mating, the female lays her eggs in crevices in the elderberry bark. Upon hatching (after about 10 days), the larvae bore into the pith of the shrub and feed inside stems for 1–2 years until they mature. They emerge as adults during the spring, via exit holes chewed through the bark. Exit holes are slightly oval and are approximately 0.3–0.4 inches in diameter (Barr 1991). Although other insects burrow in wood, none of the others are known to inhabit live elderberry wood or make exit holes of a similar size and shape in the Central Valley (Nagano 1989 as cited in Barr 1991). Adult beetles feed on the elderberry foliage until they mate, completing the cycle. Adults are active from March to June (U.S. Fish and Wildlife Service 1984; Barr 1991; U.S. Fish and Wildlife Service 1999).

An assortment of elderberry branch sizes are used for larval development and pupation (0.5–7.8 inches diameter) (Lang et al. 1989; Halstead 1991 as cited in Barr 1991). Based on the presence of exit holes, beetles seem to prefer stems greater than one inch in diameter for larval development and pupation (Barr 1991). However, small stems may be under-represented because of insufficient time for larval development, pupation, and adult emergence (i.e., stems that are small when initially occupied grow to over 1 inch in diameter before the larva emerges as an adult 1–2 years later, creating the visible exit hole used as an indicator of occupation) (Barr 1991). Lang et al. (1989) and Barr (1991) reported that approximately 70 percent of the exit holes they found were located at a stem height of 4 feet or less, but exit holes have been reported as high as 25 feet (Halstead 1991 as cited in Barr 1991).

The CNDDB contains three valley elderberry longhorn beetle records within 10 miles of the Lake Berryessa RAs in Solano County. The closest record occurs approximately 5.4 miles east of Steele Canyon RA along Putah Creek at Stebbins Cold Canyon Reserve, where one adult was observed in 1982 (Occurrence No. 3). Another nearby record approximately 8.7 miles east of Steele Canyon RA describes adult beetles observed on elderberry shrubs along riparian habitat in Putah Creek between 1975 and 1985, but the beetles were not observed subsequently (Occurrence No. 12). Approximately 8.9 miles east-southeast of Steel Canyon RA, possible exit holes were observed on elderberry shrubs between 1991 and 1995 along Pleasants Creek near the Pleasants Valley Road bridge (Occurrence No. 95).

Designated critical habitat for the valley elderberry longhorn beetle does not occur in or adjacent to the RAs. The nearest critical habitat unit is Unit 3 – Putah Creek Zone, located approximately 7 miles east of Steele Canyon RA along Putah Creek (45 FR 52803). Elderberry shrubs were found in the study areas of four of the five RAs (all except Spanish Flat). Detailed results of the elderberry shrub surveys are described below under "Valley Elderberry Longhorn Beetle Survey."

California Red-legged Frog. Federal Status: Threatened; State Status: None.
The Service formally listed the California red-legged frog (*Rana draytonii*) as threatened on May 23, 1996 (61 FR 25813). Critical habitat was initially designated in 2006, but was revised on March 17, 2010 (75 FR 12816).

Historically, the California red-legged frog ranged from Point Reyes National Seashore in Marin County inland to the Central Valley and the Redding vicinity and south to northwestern Baja California, Mexico. Presently, that range has been reduced to approximately 30 counties, with more recent records from Mendocino County to Riverside County along the Coast Range and from Butte County to El Dorado County in the Sierra Nevada (U.S. Fish and Wildlife Service 2010). Populations outside of the San Francisco Bay area and central coast areas are isolated, and the species is predominantly extirpated from the southern Transverse and Peninsular ranges in California although some populations persist.

Adult red-legged frogs have prominent dorsolateral folds, a bright red dorsum, and a well-defined stripe running along the upper lip (Jennings and Hayes 1994). They breed from late November through early May after the onset of warm rains (Storer 1925; Jennings and Hayes 1994). Females attach an egg mass of 2,000 to 6,000 moderate-sized (0.08 to 0.11 inch diameter) eggs to an emergent vegetation such as tule stalks (*Scirpus* spp.), annual grasses (Poaceae), or willow (*Salix* spp.) roots just below the water surface (Storer 1925; Livezey and Wright 1947). Embryos hatch 6 to 14 days after fertilization. Larvae require 3.5 to 7 months to attain metamorphosis at a total length of 2.6 to 3.4 inches (Storer 1925). Most larvae metamorphose into juvenile frogs between July and September.

Aquatic habitats throughout the California red-legged frog's historic range provide suitable habitat for the frog. Key elements that make these habitats suitable are the presence of perennial, or near perennial, water and the general lack of introduced aquatic predators such as crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs (*Rana catesbeiana*), bluegill (*Lepomis macrochirus*), and other centrarchid fishes such as largemouth bass (*Micropterus salmoides*) (Jennings and Hayes 1994). Adults need dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2.3 feet deep) still or slow-moving water (U.S. Fish and Wildlife Service 2008). In addition to aquatic habitats, juvenile and adult California red-legged frogs use areas of riparian vegetation within a few yards of water.

The CNDDB contains three California red-legged frog records within 10 miles of the Lake Berryessa RAs. In April of 1979, two juvenile California red-legged frogs were observed in a roadside spring channel located on the western edge of Pope Valley approximately 7.7 miles west of the Putah Canyon RA (Occurrence No. 738). The spring was found to be dry by April during subsequent visits, and no frogs were found (California Department of Fish and Wildlife 2014). One adult California red-legged frog was observed along Wragg Creek approximately 4.6 miles south of Steele Canyon in April of 1983 (Occurrence No. 401). In January of 2003, a population of California red-legged frogs was heard chorusing from constructed ponds in Capell Valley near the intersection of State Highway 121 and 128 approximately 4.6 miles south of Steele Canyon RA. Previously in this location, two adult frogs were observed in May 1983 (Occurrence No. 739). Further occurrences occur in the south end of Napa County (California Department of Fish and Wildlife 2014). No other red-legged frog occurrences have been reported within 10 miles of the RAs.

Designated critical habitat for the California red-legged frog does not occur in or adjacent to the RAs. The nearest critical habitat unit, NAP-1 Wragg Creek, is located to the south of Lake Berryessa in Capell Valley. The northern boundary of the unit is located approximately 3.6 miles south-southwest of Steele Canyon (75 FR 12815).

No California red-legged frogs were detected during the site assessment. Based on the assessment results, two constructed impoundments (PC_CRLF_02 and SC_CRLF_06) provide potential California red-legged frog breeding habitat. Detailed results of the California red-legged frog site assessment are described in *Lake Berryessa Recreation Areas Development California Red-Legged Frog Assessment* (North State Resources 2014a).

Bald Eagle (Haliaeetus leucocephalus). Federal Status: Delisted; State Status: Endangered.

The bald eagle first gained federal protection in 1940 when Congress passed the Bald Eagle Protection Act. It was later amended to include golden eagles and renamed the Bald and Golden Eagle Protection Act. It was first listed under the ESA on February 14, 1978, when it was designated as endangered throughout the lower 48 states except in Michigan, Minnesota, Wisconsin, and Oregon, where it was designated as threatened (43 FR 6233). The bald eagle was reclassified as threatened in all of the lower 48 states on July 12, 1995 (60 FR 36000). The Service proposed to remove the species from the List of Endangered and Threatened Wildlife (delist) on July 6, 1999 (64 FR 36454). It was delisted on August 8, 2007 (72 FR 37346). The bald eagle continues to be protected under the Bald and Golden Eagle Protection Act and is considered as State endangered and fully protected.

Most of the annual food requirements of a bald eagle are obtained from aquatic habitats. The foods most often consumed include fish, water birds, and small to medium-sized mammals. Because of the dietary association, nesting territories are usually found near water. Perches are used primarily during the day for resting, preening, and hunting and may include human-made structures such as power poles. Roosting areas contain a night communal roosting tree that is easily accessible to the large birds and tall enough to provide safety from threats from the ground. Bald eagle nests and roosts are usually found where human activity is infrequent or muted. In California, breeding pairs are found mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties (California Department of Fish and Game 2008).

Past catastrophic declines in bald eagle populations have been attributed primarily to organochlorine pesticide use after World War II that lowered their productivity (Grier 1974). Other contributory factors to bald eagle decline include loss of habitat, human disturbance, severe weather, logging, shooting, industrial pollution, and sedimentation of rivers and streams.

The CNDDB contains three bald eagle records within 10 miles of the Lake Berryessa RAs. In 1990, a pair of eagles nested and wintered in the northeast corner of Lake Berryessa in habitat consisting of grazed annual grassland and live oak (Occurrence no. 176), approximately 3.5 miles northeast of Putah Canyon. Upslope along the east side of Lake Berryessa, a pair of eagles built a nest in 1992 but it was subsequently abandoned (Occurrence No. 241) (California Department of Fish and Wildlife 2014). This location is approximately 3.2 miles east of Berryessa Point RA across the lake.

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). This prohibition includes direct and indirect acts, although harassment and habitat modifications are not included unless they result in direct loss of birds, nests, or eggs. The current list of species protected by the MBTA can be found in 78 FR 65844 or the USFWS Migratory Bird Program Data Portal (USFWS 2017) and includes several hundred species; essentially all native birds. Loss of nonnative species, such as house sparrows (*Passer domesticus*), European starlings (*Sturnus vulgaris*), and rock pigeons (*Columba livia*) is not covered by this statute.

MBTA compliance issues most commonly arise in instances where habitat modifications or other activities will potentially result in direct loss of birds, nests, or eggs; typically occurring during the local avian breeding season. Over 160 avian species potentially occur in the Lake Berryessa RAs during the local breeding season based on geographic location and general habitats present, including various wading birds, waterfowl, raptors, shorebirds, and passerines.

Focused Botanical Surveys

Focused botanical surveys were conducted at Putah Canyon, Monticello Shores, Berryessa Point and Spanish Flat RAs for the two plant species federally listed as endangered: Clara Hunt's milk-vetch and Keck's checker-mallow. Desktop review and field survey methods for these two species generally followed *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (U.S. Fish and Wildlife Service 1996) with the exception that a floristic inventory of all plants present in the study area at each RA was not conducted. Rather, surveys focused on suitable habitats within the study areas with potential to support Clara Hunt's milk-vetch and Keck's checker-mallow exclusively. The methods and results of surveys are provided below.

Desktop Methods

Several information sources were reviewed prior to commencement of focused surveys for the two plant species. Past biological inventory information, such as the *Lake Berryessa Resource Inventory* (Reclamation 2008) and previous survey results from 2011; aerial photographs; topographic maps; and habitat community maps were used to review each study area. Species occurrence records were reviewed through the CNDDB to identify the types of habitats the species have been found in. Blue oak and foothill pine woodlands with undisturbed understory were considered to have the greatest potential to support Clara Hunt's milk-vetch and Keck's checker-mallow of the habitats mapped at the RAs. Because these two plants are strongly associated with serpentine soils (U.S. Fish and Wildlife Service 2009, 2010), soils data from the web soil survey for Napa County (Natural Resources Conservation Service 2014) were evaluated to identify soils with serpentine inclusions at the RAs. The Montara clay loam series (unit 167) was the only soil type mapped for four of the RAs (excluding Steele Canyon RA) that is formed in material weathered from serpentine. Serpentine soils information was combined with habitat communities mapped within each RA study area to establish target areas where focused surveys would be conducted (i.e., suitable habitat where the two plants could occur). These areas

included undisturbed blue oak and foothill pine woodlands and other cismontane areas on serpentine soil.

Because regional CNDDB occurrences of Clara Hunt's milk-vetch and Keck's checker-mallow represent records that are decades old or are located on private land, accessing such locations to observe representative populations (reference sites) of plants prior to focused surveys was not possible. To obtain a visual search image for these two species and their target habitats, the desktop review involved examination of photographs and drawings of all vegetative forms of growth (fruiting vs. non-fruiting) for each species. The following databases were reviewed for photos, drawings, and habitat community associations: CalFlora (2014), Inventory of Rare and Endangered Plants (California Native Plant Society 2014), CalPhotos (2014), and pertinent literature identified for each species was carefully reviewed.

Field Methods

Focused botanical surveys were conducted by NSR Biologists, Brandon Amrhein and Ona Alminas during the late spring when the plants would have been visible and flowering. Surveys were timed to capture the overlapping blooming periods for both species (March through May for Clara Hunt's milk-vetch and April through June for Keck's checker-mallow). Target areas identified as suitable habitat for these two plant species (i.e., undisturbed blue oak and foothill pine woodlands and other cismontane areas on serpentine soil) were surveyed on foot on April 29, 2014 (Putah Canyon), April 30 (Monticello Shores), and May 1 (Berryessa Point and Spanish Flat). Pedestrian surveys involved systematically walking the extent of potential suitable habitat (i.e., target areas).

Results

NSR surveyed suitable habitat at Putah Canyon, Monticello Shores, Berryessa Point and Spanish Flat for Clara Hunt's milk-vetch and Keck's checker-mallow. Neither of these species was observed during the focused surveys.

Valley Elderberry Longhorn Beetle Survey

Protocol-level surveys for valley elderberry longhorn beetle and its host shrub (the elderberry shrub), were conducted at the five RAs. Desktop review and field survey methods followed *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 1999). The methods and results of surveys are provided below.

Methods

Protocol-level valley elderberry longhorn beetle surveys were conducted between August 1 and 19, 2011, and April 29 and May 2, 2014, at each RA (Figures F-1 and F-2). The study area at each RA was systematically traversed to search for elderberry shrubs. Individual shrubs or groups of clustered elderberry shrubs occurring within the study areas with one or more stems measuring one inch or greater in diameter at ground level were mapped, inventoried, and examined for beetle exit holes. Incidental observations of shrubs encountered outside the study area were also mapped and inventoried, as time permitted. Single shrubs were mapped as individual points, and the dripline of multiple shrubs clustered together was mapped using a Trimble Pathfinder Pro Global Positioning Systems unit capable of sub-meter accuracy. The

data were imported into geographic information systems format and overlain onto a digital orthorectified aerial photograph.

Each measured elderberry stem was classified into one of four categories: less than 1 inch, 1-3 inches, 3-5 inches, and greater than 5 inches. The average height of each elderberry shrub patch or individual shrub and a count of exit holes were also recorded.

Results

A total of 22 elderberry shrubs or shrub patches were documented in or near the study areas at the Putah Canyon, Monticello Shore, Berryessa Point, and Steele Canyon RAs. Locations of the shrubs identified at these RAs are depicted on Figures F-3 through F-7. No elderberry shrubs were observed in or near the study area at Spanish Flat RA. The map labels for these shrubs correspond to the data recorded at each location, as depicted in Tables F-4 through F-7. Potential beetle exit holes were found on nine elderberry shrubs (three at Putah Canyon, six at Monticello Shores, and two at Berryessa Point). Additional surveys may be required if development is proposed outside the study area.

Ten elderberry shrubs or shrub patches were documented in or near the study area at the Putah Canyon RA (Figure F-3). Shrubs PC_EB_01 and 02 are located approximately 250 feet and 170 feet outside the study area boundary (respectively), and no potential exit holes were observed on these shrubs. Shrub PC_EB_09 is located approximately 20 feet outside the study area boundary in the middle of the RA, west of Berryessa Knoxville Road. Shrubs PC_EB_03 through 08 and 10 through 11 occur within the study area in formerly disturbed (e.g., urban) areas or along foothill pine habitat. Potential beetle exit holes were found in three shrubs: PC_EB_05, PC_EB_08, and PC_EB_09.

Seven elderberry shrubs or shrub patches were documented in or near the study area at the Monticello Shores RA (Figure F-4). Shrubs MS_EB_01-04 occur near the northern edge of the study area boundary in formerly disturbed (e.g., urban) areas or along foothill pine habitat. Shrub MS_EB_05 occurs in the middle of the study area in primarily urban habitat. Potential beetle exit holes were found in the four shrubs comprising the MS_EB_01-04 and 05 shrub patches. Shrub MS_EB_07 is located within 100 feet of the study area boundary towards the south end of the RA. No potential exit holes were observed on this shrub. Shrub MS_EB_06 is located approximately 300 feet outside the study area, and no potential exit holes were observed on this shrub.

Three elderberry shrubs or shrub patches were documented in or near the study area at the Berryessa Point RA (Figure F-5). Shrubs BP_EB_01 and 02 are located within 100 feet outside the northern study area boundary in foothill pine habitat; potential exit holes were observed on two stems in each of these shrubs. Shrub BP_EB_03 occurs within the study area towards the south end of the RA along an urban area associated with past disturbance. No potential beetle exit holes were found on this shrub.

One elderberry shrub was documented in the study area at the Steele Canyon RA (Figure F-7). Shrub SC_EB_01 is located in urban habitat, and no potential exit holes were observed on this shrub. This shrub occurs in an area heavily utilized for recreation and is surrounded by paved roads or parking areas.

Table F-3. Putah Canyon Elderberry Shrub Survey Results

Loc. No. PC_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
01	1	1	0	0	0	0	6	Foothill pine, manzanita	Located approximately 250 feet outside the northern boundary of the study area, west of access road.
02	5	0	0	0	0	0	12	Foothill pine, live oak, manzanita	Located approximately 170 feet outside the northern boundary of the study area, west of access road. Two shrubs at this location, sprouting from a dead elderberry.
03	2	4	1	0	0	0	20	Urban with oleander, fig, foothill pine and periwinkle	Shrub located just above Lake Berryessa high water mark within study area.
04	5	1	0	0	0	0	18	Urban with *Ceanothus* sp., cottonwood and various grasses and weeds	Two shrubs below concrete abutment above high water mark within study area; one shrub dead; the live one has some dead branches.
05	25	0	0	7	0	0	8	Urban with western redbud and various grasses and weeds	Within a shrub patch of locations 5-6, along east side of Berryessa Knoxville Road within study area. Some 3-4 inch stems were cut years ago.
06	9	0	0	0	0	0	7	Urban with western redbud and various grasses and weeds	Within a shrub patch of locations 5-6, along east side of Berryessa Knoxville Road within study area.
07	2	3	2	0	0	0	18	Urban with toyon, oleander, willow and various grasses and weeds	Shrub located in day use area driving loop within study area near Lake Berryessa.
08	10	2	0	2	2	0	14	Foothill pine, manzanita, coyotebush	Shrub located in between decommissioned water treatment ponds within study area.
09	3	7	2	1	6	1	15	Urban habitat, various grasses and weeds	Located approximately 20 feet outside the study area along west side of Berryessa Knoxville Road.

Table F-3. Putah Canyon Elderberry Shrub Survey Results

Loc. No. PC_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
10	14	0	0	0	0	0	10	Urban habitat, mulberry, wild fennel, redbud and pampas grass	Shrub located within study area along east side of Berryessa Knoxville Road.
11	3	0	0	0	0	0	9	Chamise edge, blue oak, foothill pine, manzanita and various grasses and weeds	Shrub located in south end of study area.

Table F-4. Monticello Shores Elderberry Shrub Survey Results

Loc. No. MS_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
01	2	1	3	0	1	0	15	Foothill pine, blue oak, coyotebush	Located along the edge of the middle boundary of the study area, within a shrub patch of locations 1-4 near the decommissioned water treatment ponds.
02	0	0	2	0	0	1	21	Foothill pine, blue oak, coyotebush	Within a shrub patch of locations 1-4.
03	7	5	1	3	0	0	13	Foothill pine, blue oak, coyotebush	Within a shrub patch of locations 1-4; main trunk lies horizontal.
04	4	0	0	1	0	0	7	Foothill pine, blue oak, coyotebush	Within a shrub patch of locations 1-4.
05	0	2	1	0	2	1	13	Urban with oleander, foothill pine and live oak	Within previously disturbed habitat in the study area.
06	2	0	0	0	0	0	7	Urban with live oak, toyon, California bay	Located approximately 300 feet outside the study area boundary near water storage tanks.

Table F-4. Monticello Shores Elderberry Shrub Survey Results

Loc. No. MS_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
07	1	0	2	0	0	0	24	Urban with tree of heaven, oleander, bottlebrush and privet	Located within 100 feet outside of the south study area boundary near paved road above high water mark of Lake Berryessa.

Table F-5. Berryessa Point Elderberry Shrub Survey Results

Loc. No. BP_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
01	0	0	2	0	1	1	9	Canyon live oak, foothill pine	Located within 100 feet outside of the northern boundary of the study area near decommissioned water treatment ponds.
02	0	2	2	0	1	1	20	Canyon live oak, foothill pine, toyon	Located within 100 feet outside of the northern boundary of the study area near decommissioned water treatment ponds.
03	0	0	0	0	0	0	4	Blue oak, scotch broom, starthistle and other various grasses and weeds	All stems <1 inch at time of survey; on west side of access road within study area.

Table F-6. Steele Canyon Elderberry Shrub Survey Results

Loc. No. SC_EB	No. Stems >1-inch Basal Diameter						Height (ft)	Associated Species/ Habitat	Comments
	No Exit Holes			w/ Exit Holes					
	1-3	3-5	>5	1-3	3-5	>5			
01	5	0	0	0	0	0	9	Black walnut, in open, disturbed habitat	Along boat access/ramp to Lake Berryessa.

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MAPS

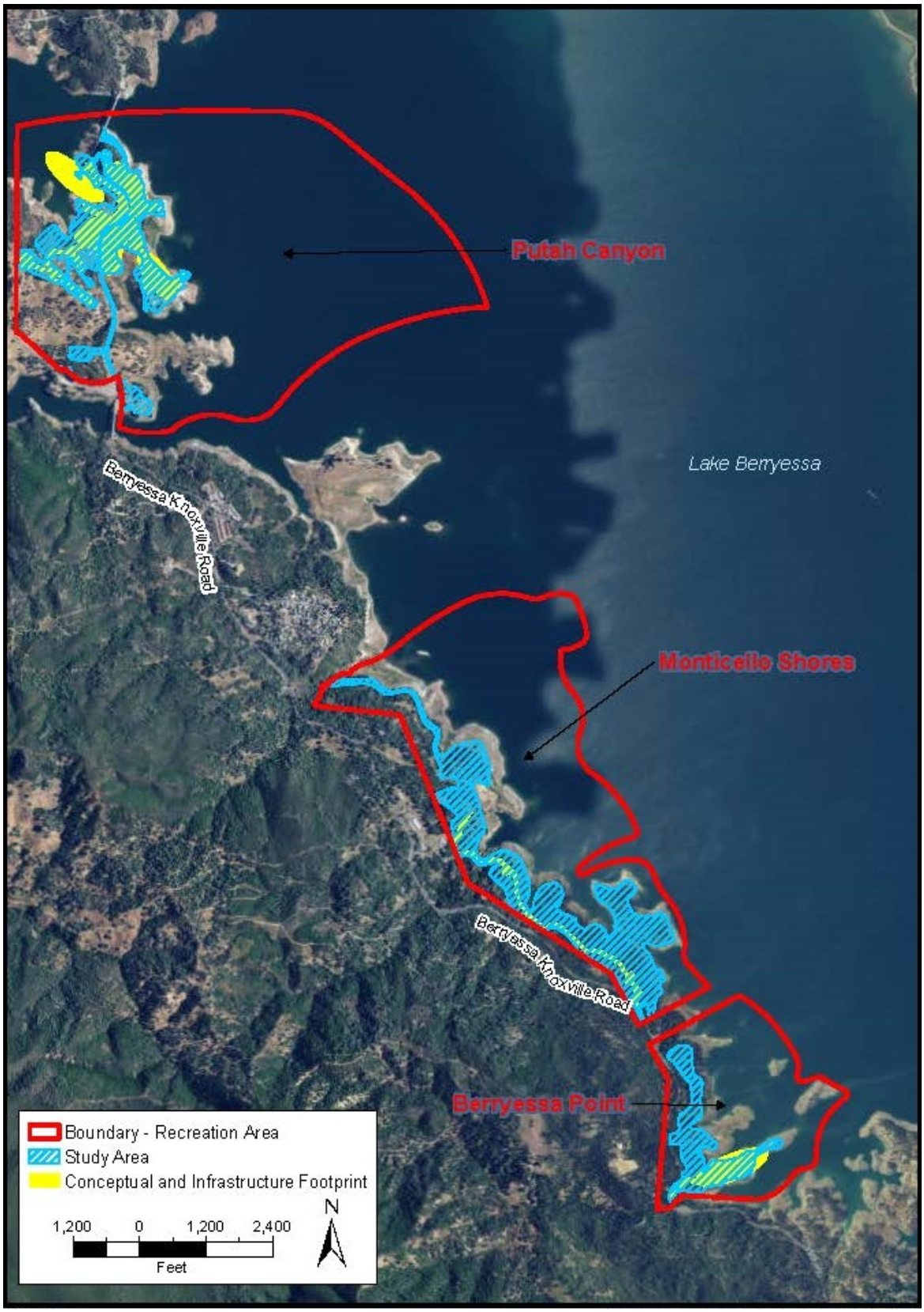

Figure F-1. Putah Canyon, Monticello Shores, and Berryessa Point Study Areas

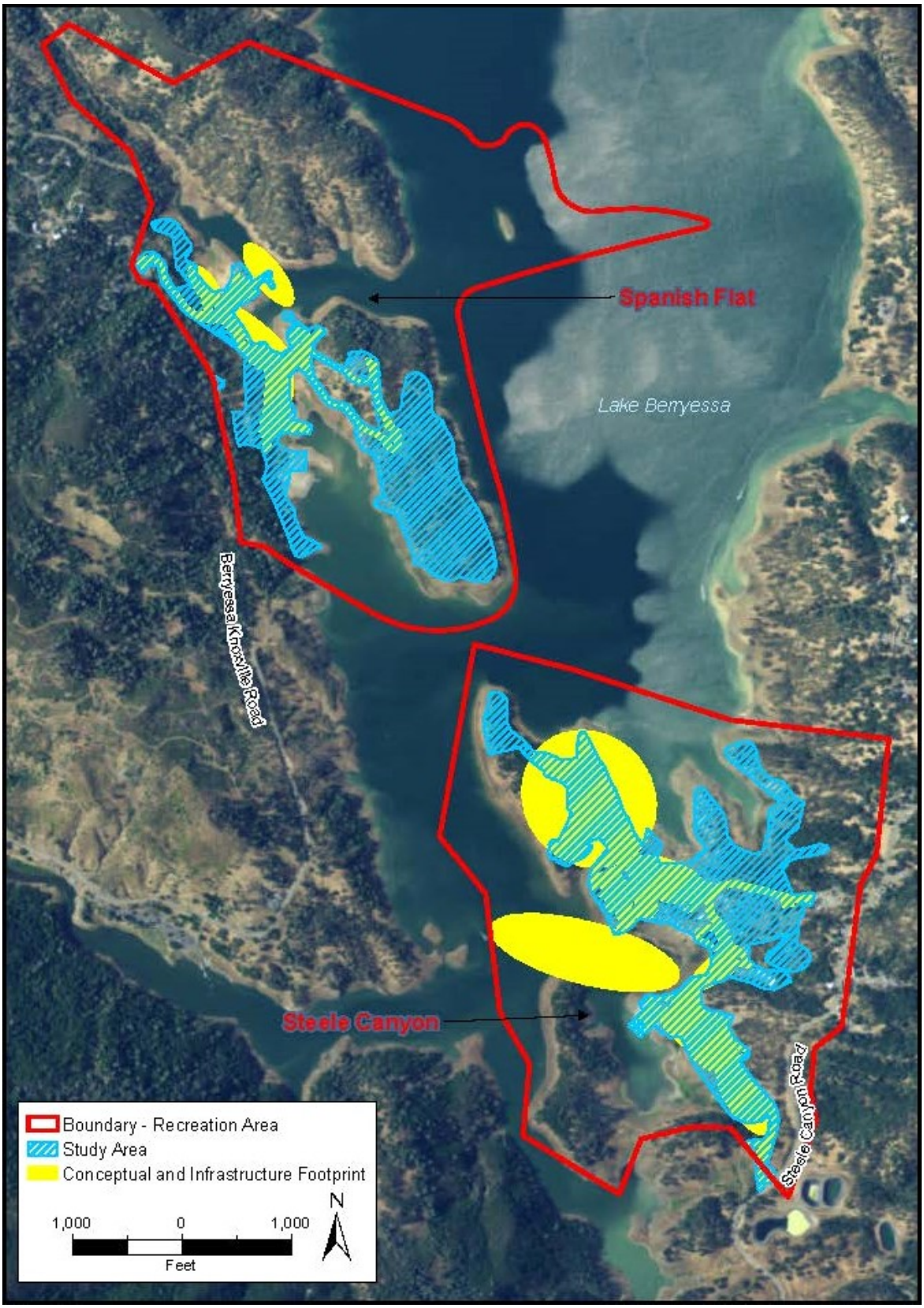

Figure F-2. Spanish Flat and Steele Canyon Study Areas

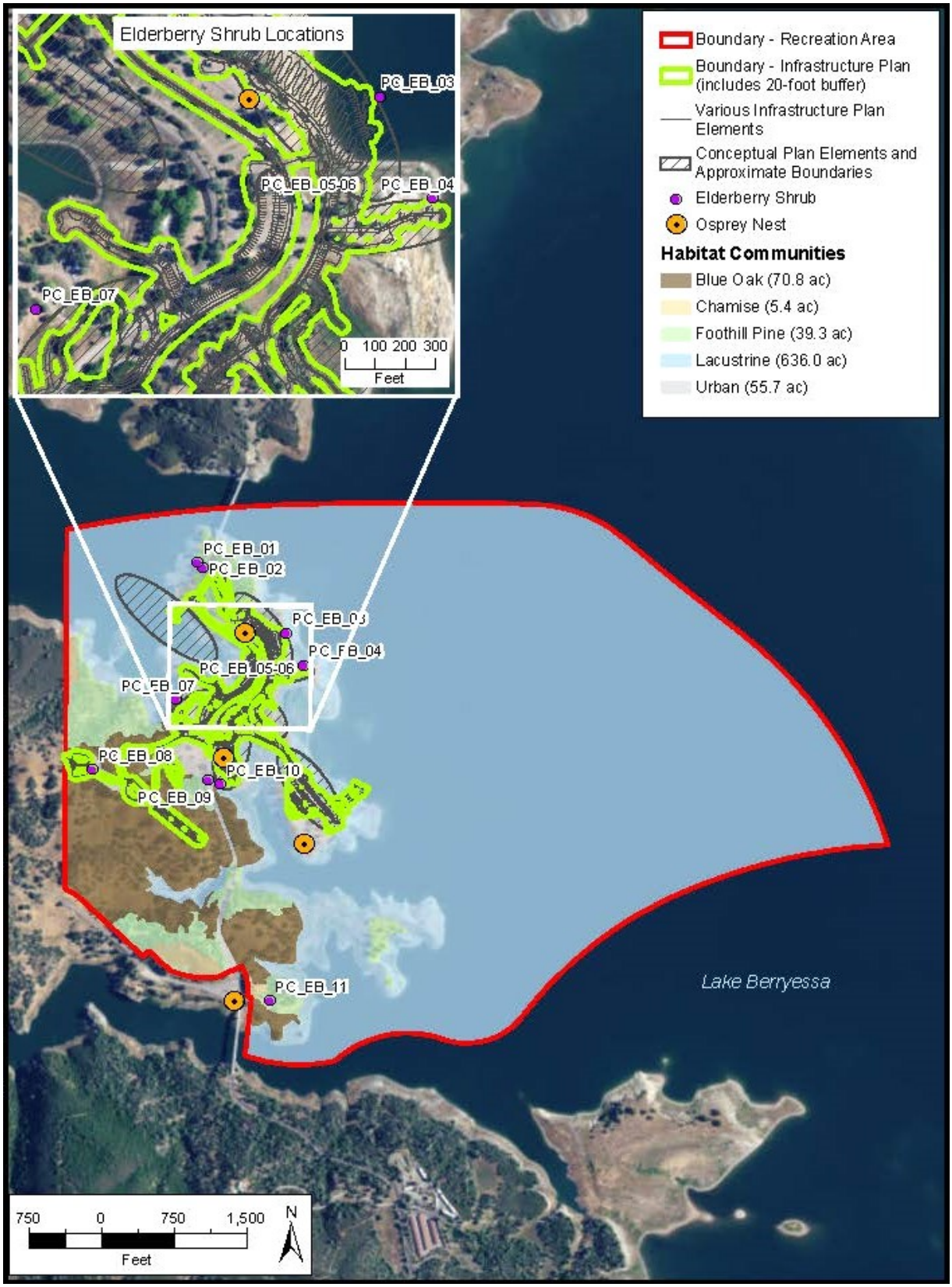

Figure F-3. Habitat Communities at Putah Canyon

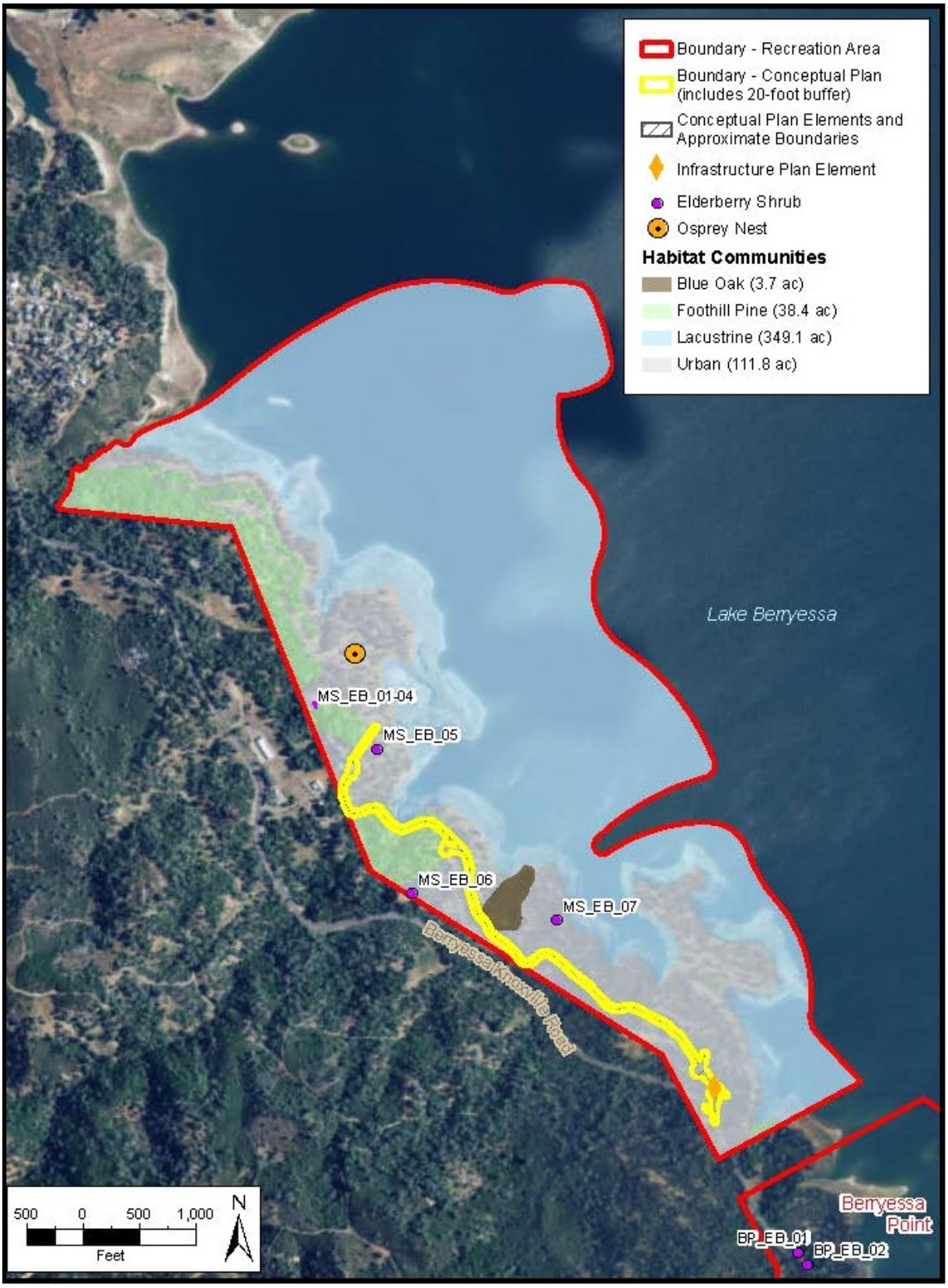

Figure F-4. Habitat Communities at Monticello Shores

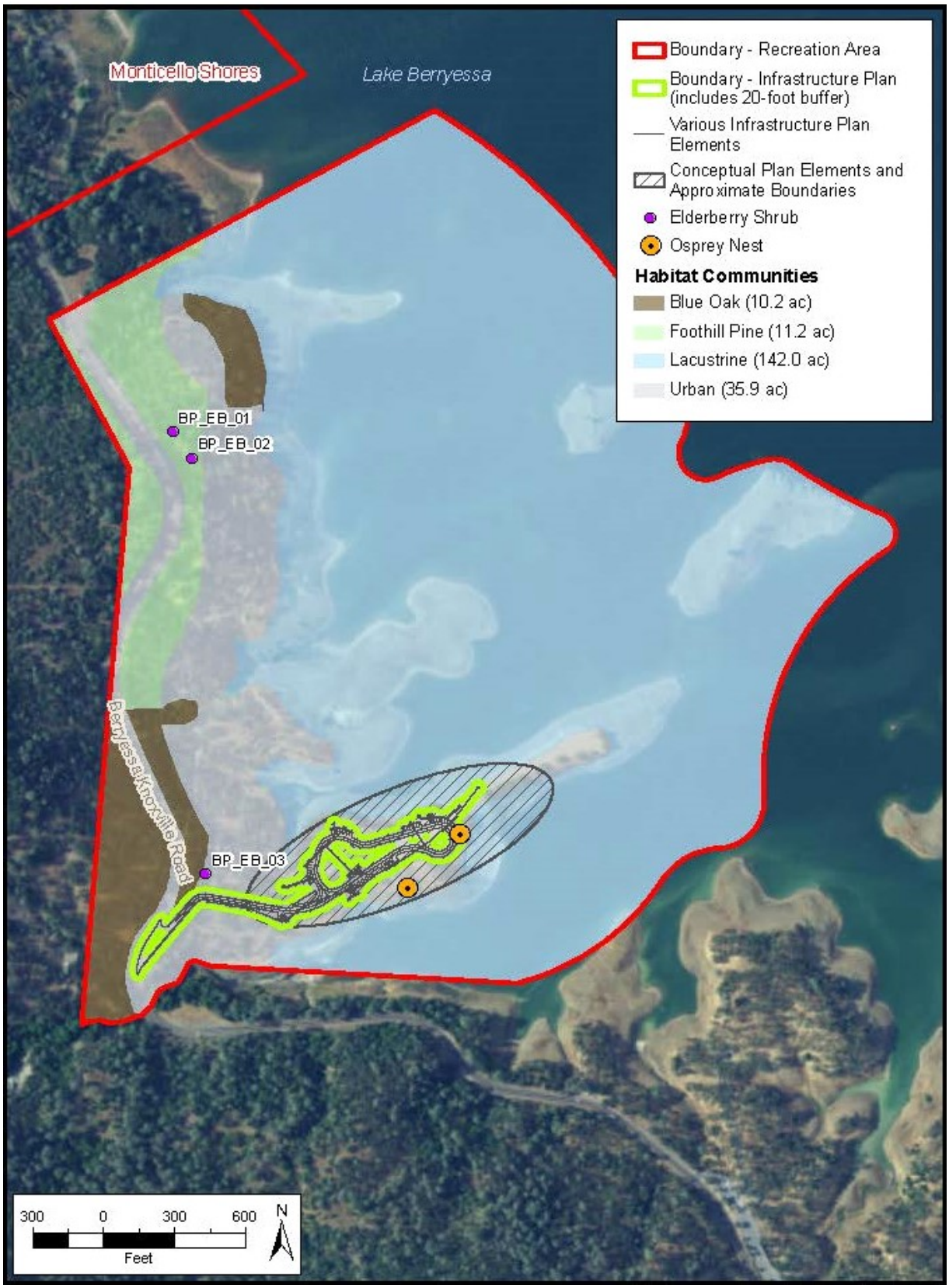

Figure F-5. Habitat Communities at Berryessa Point

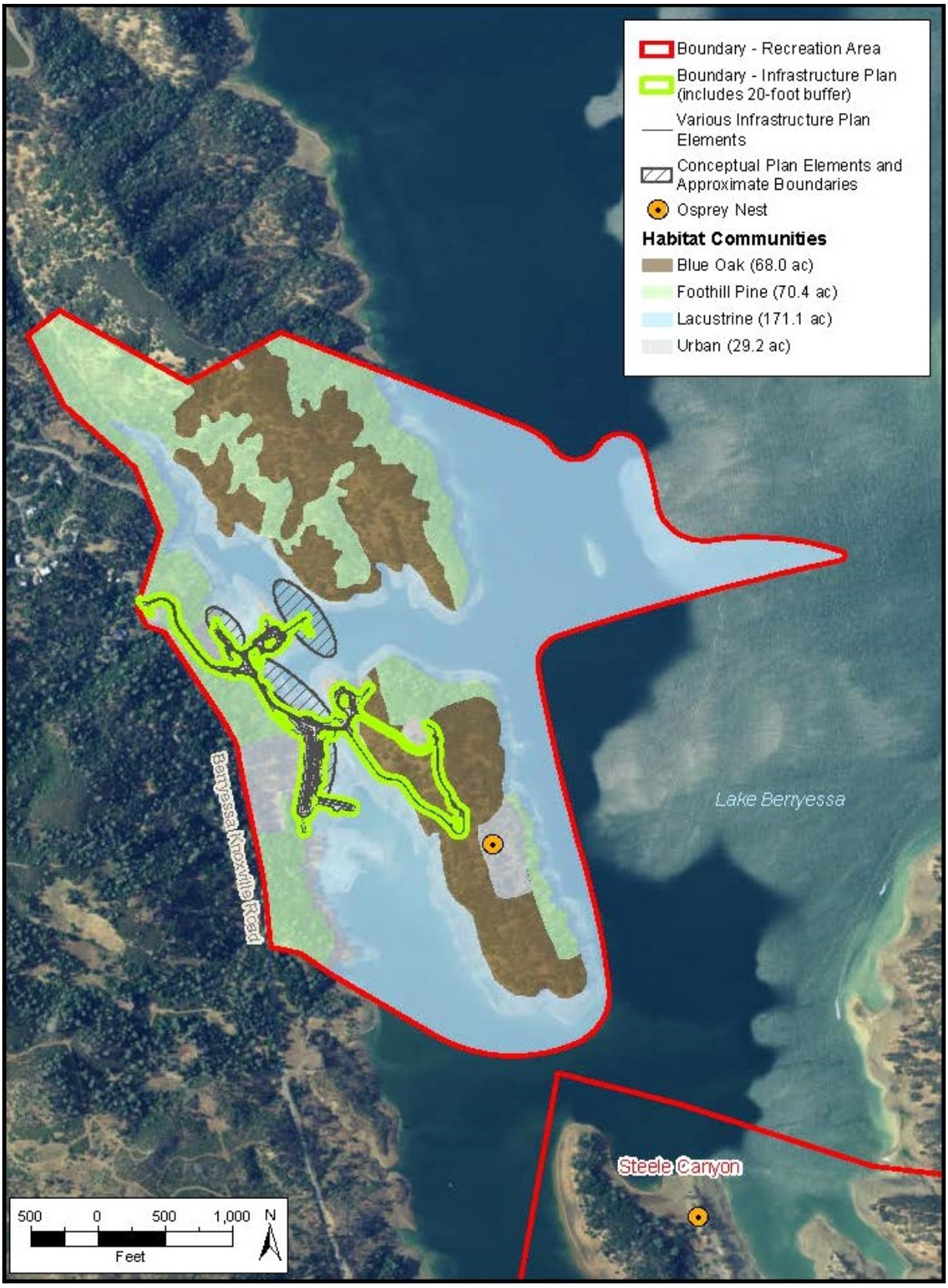

Figure F-6. Habitat Communities at Spanish Flat

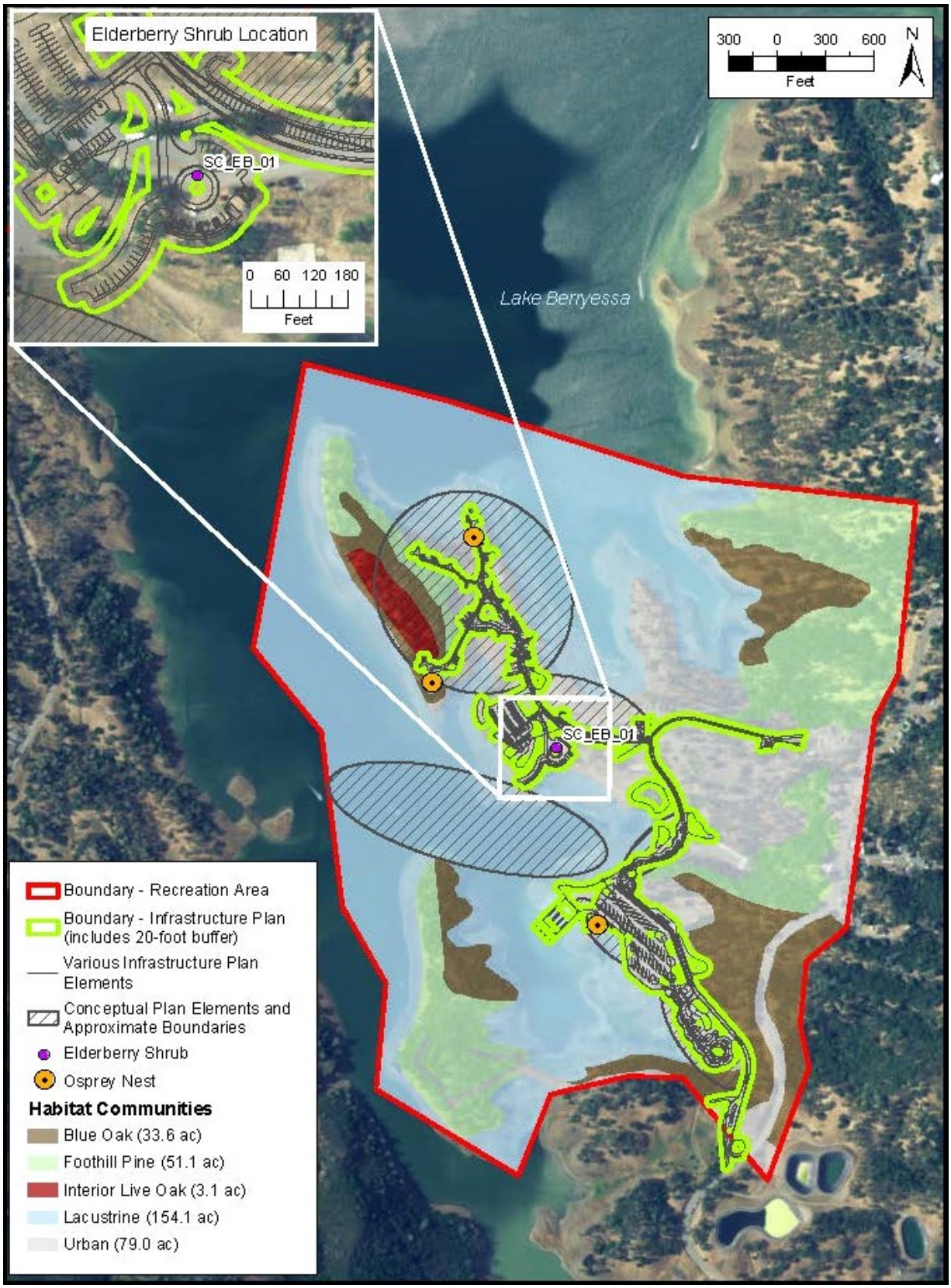

Figure F-7. Habitat Communities at Steele Canyon

SPECIES LISTS

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 140806064040

Current as of: August 6, 2014

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Strix occidentalis caurina
northern spotted owl (T)

Plants

Astragalus clarianus
Clara Hunt's milk-vetch (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Limnanthes vinculans
Sebastopol meadowfoam (E)

Navarretia leucocephala ssp. pauciflora
few-flowered navarretia (E)

Sidalcea keckii
Keck's checker-mallow (=checkerbloom) (E)

Quads Containing Listed, Proposed or Candidate Species:

MT. VACA (499A)

CAPELL VALLEY (499B)

YOUNTVILLE (500A)
RUTHERFORD (500B)
ESPARTO (515A)
BROOKS (515B)
LAKE BERRYESSA (515C)
MONTICELLO DAM (515D)
WALTER SPRINGS (516A)
AETNA SPRINGS (516B)
ST. HELENA (516C)
CHILES VALLEY (516D)
GUINDA (531C)
BIRD VALLEY (531D)
JERICHO VALLEY (532C)
KNOXVILLE (532D)

County Lists

Napa County

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Speyeria zerene myrtleae
Myrtle's silverspot butterfly (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
California coastal chinook salmon (T) (NMFS)
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Strix occidentalis caurina
northern spotted owl (T)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Alopecurus aequalis var. sonomensis
Sonoma alopecurus (E)

Astragalus clarianus
Clara Hunt's milk-vetch (E)

Blennosperma bakeri
Baker's stickyseed [=Sonoma Sunshine] (E)

Castilleja affinis ssp. neglecta
Tiburon paintbrush (E)

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Eryngium constancei
Loch Lomond coyote-thistle (=button-celery) (E)

Lasthenia burkei

Burke's goldfields (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Limnanthes vinculans
Sebastopol meadowfoam (E)

Navarretia leucocephala ssp. pauciflora
few-flowered navarretia (E)

Navarretia leucocephala ssp. plieantha
many-flowered navarretia (E)

Plagiobothrys strictus
Calistoga allocarya (popcorn-flower) (E)

Poa napensis
Napa bluegrass (E)

Sidalcea keckii
Keck's checker-mallow (=checkerbloom) (E)

Sidalcea oregana ssp. valida
Kenwood Marsh checkermallow (=checkerbloom) (E)

Trifolium amoenum
showy Indian clover (E)

Proposed Species

Plants

Cordylanthus mollis ssp. mollis
Critical habitat, soft bird's-beak (PX)

Key:

(E) *Endangered* - Listed as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.

- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. More info

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 04, 2014.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Walter Springs (3812263) or Brooks (3812262) or Lake Berryessa (3812252) or Chiles Valley (3812253) or Aetna Springs (3812264) or Jericho Valley (3812274) or Knoxville (3812273) or Guinda (3812272) or Bird Valley (3812271) or Esparto (3812261) or Monticello Dam (3812251) or Mt. Vaca (3812241) or Capell Valley (3812242) or Yountville (3812243) or Rutherford (3812244) or Mount St. Helena (3812266))

Lake Berryessa Recreation Areas Development

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos canescens ssp. sonomensis Sonoma canescent manzanita	PDERI04066	None	None	G3G4T2	S2	1B.2
Arctostaphylos manzanita ssp. elegans Konocti manzanita	PDERI04271	None	None	G5T3	S3	1B.3
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus claranus Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
Astragalus rattanii var. jepsonianus Jepson's milk-vetch	PDFAB0F7E1	None	None	G4T3	S3	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Brodiaea leptandra narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Calycadenia micrantha small-flowered calycadenia	PDAST1P0C0	None	None	G2	S2	1B.2
Calystegia collina ssp. oxyphylla Mt. Saint Helena morning-glory	PDCON04032	None	None	G4T3	S3.2	4.2
Castilleja ambigua var. meadii Mead's owls-clover	PDSCR0D404	None	None	G4T1	S1	1B.1
Castilleja rubicundula var. rubicundula pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Ceanothus confusus Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
Ceanothus divergens Calistoga ceanothus	PDRHA04240	None	None	G2	S2	1B.2
Ceanothus purpureus holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
Ceanothus sonomensis Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T1	S1	1B.2
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2?	SSC
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2S3	SSC
Cryptantha dissita serpentine cryptantha	PDBOR0A0H2	None	None	G2	S2	1B.2
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erigeron greenei Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G2	S2	1B.2
Eriogonum nervulosum Snow Mountain buckwheat	PDPGN08440	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G3	S3	1B.2
Grimmia torenii Toren's grimmia	NBMUS32330	None	None	G2	S2	1B.3
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	FP
Harmonia hallii Hall's harmonia	PDAST650A0	None	None	G2	S2?	1B.2
Hesperolinon bicarpellatum two-carpellate western flax	PDLIN01020	None	None	G3	S3	1B.2
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hesperolinon drymarioides drymaria-like western flax	PDLIN01090	None	None	G2	S2	1B.2
Hesperolinon sharsmithiae Sharsmith's western flax	PDLIN010E0	None	None	G2Q	S2	1B.2
Hysterocarpus traski pomo Russian River tule perch	AFCQK02011	None	None	G5T2	S2	SSC
Icteria virens yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
Juglans hindsii Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3?	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4?	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Layia septentrionalis Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
Leptosiphon jepsonii Jepson's leptosiphon	PDPLM09140	None	None	G2	S2	1B.2
Limnanthes vinculans Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
Lupinus sericatus Cobb Mountain lupine	PDFAB2B3J0	None	None	G2	S2	1B.2
Myotis evotis long-eared myotis	AMACC01070	None	None	G5	S4?	
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4?	
Navarretia leucocephala ssp. pauciflora few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Navarretia rosulata Marin County navarretia	PDPLM0C0Z0	None	None	G2?	S2?	1B.2
Northern Interior Cypress Forest Northern Interior Cypress Forest	CTT83220CA	None	None	G2	S2.2	
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
Oncorhynchus mykiss irideus steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2Q	S2	
Pekania pennanti fisher - West Coast DPS	AMAJF01021	Candidate	Candidate Threatened	G5T2T3Q	S2S3	SSC
Penstemon newberryi var. sonomensis Sonoma beardtongue	PDSCR1L483	None	None	G4T1	S2	1B.3
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S3	WL
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2S3	
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G1	S1	1B.1
Sidalcea oregana ssp. hydrophila marsh checkerbloom	PDMAL110K2	None	None	G5T3	S3	1B.2
Sidalcea oregana ssp. valida Kenwood Marsh checkerbloom	PDMAL110K5	Endangered	Endangered	G5T1	S1	1B.1
Streptanthus brachiatus ssp. hoffmanii Freed's jewelflower	PDBRA2G071	None	None	G2T2	S2	1B.2
Streptanthus hesperidis green jewelflower	PDBRA2G510	None	None	G2	S2	1B.2
Streptanthus morrisonii Morrison's jewelflower	PDBRA2G0S0	None	None	G2	S2	
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2
Stygobromus cherylae Barr's amphipod	ICMAL05D60	None	None	G1	S1	
Trachykele hartmani serpentine cypress wood-boring beetle	IICOLX6010	None	None	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Trichostema ruygtii Napa bluecurls	PDLAM220H0	None	None	G2	S2	1B.2
Vandykea tuberculata serpentine cypress long-horned beetle	IICOLX7010	None	None	G1	S1	
Wildflower Field Wildflower Field	CTT42300CA	None	None	G2	S2.2	

Record Count: 85

CNPS Inventory of Rare and Endangered Plants

Status: Plant Press Manager window with 35 items - Wed, Apr. 23, 2014 16:32 ET c

• During each visit, we provide you with an empty "Plant Press" for collecting items of interest.

• Several report formats are available. Use the CSV or XML options to download raw data.

Reformat list as: Standard List - with Plant Press controls

Napa County AND
Chiles Valley, Aetna Springs, Walter Springs, Brooks, Lake Berryessa, Capell Valley, Yountville, Rutherford and St. Helena 7.5 minute topographic quadrangles

DELETE unchecked items | check all | check none

open	save	scientific	common	family	CNPS
		Amorpha californica var. napensis	Napa false indigo	Fabaceae	List 1B.2
		Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	List 1B.2
		Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	Ericaceae	List 1B.1
		Astragalus claranus	Clara Hunt's milk-vetch	Fabaceae	List 1B.1
		Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Fabaceae	List 1B.2
		Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	List 1B.2
		Calycadenia micrantha	small-flowered calycadenia	Asteraceae	List 1B.2
		Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	List 1B.1
		Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	List 1B.2
		Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	List 1B.2
		Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	List 1B.2
		Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	List 1B.2
		Downingia pusilla	dwarf downingia	Campanulaceae	List 2B.2
		Erigeron biolettii	streamside daisy	Asteraceae	List 3
		Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	List 1B.2
		Fritillaria pluriflora	adobe-lily	Liliaceae	List 1B.2
		Harmonia hallii	Hall's harmonia	Asteraceae	List 1B.2
		Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	List 1B.2
		Hesperolinon breweri	Brewer's western flax	Linaceae	List 1B.2
		Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	List 1B.2
		Hesperolinon tehamense	Tehama County western flax	Linaceae	List 1B.3
		Juglans hindsii	Northern California black walnut	Juglandaceae	List 1B.1

		Lasthenia conjugens	Contra Costa goldfields	Asteraceae	List 1B.1
		Layia septentrionalis	Colusa layia	Asteraceae	List 1B.2
		Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	List 1B.2
		Limnanthes vinculans	Sebastopol meadowfoam	Limnanthaceae	List 1B.1
		Lupinus sericatus	Cobb Mountain lupine	Fabaceae	List 1B.2
		Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	List 3.2
		Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	List 1B.1
		Navarretia rosulata	Marin County navarretia	Polemoniaceae	List 1B.2
		Penstemon newberryi var. sonomensis	Sonoma beardtongue	Plantaginaceae	List 1B.3
		Sidalcea keckii	Keck's checkerbloom	Malvaceae	List 1B.1
		Streptanthus hesperidis	green jewel-flower	Brassicaceae	List 1B.2
		Streptanthus morrisonii ssp. elatus	Three Peaks jewel-flower	Brassicaceae	List 1B.2
		Trichostema ruygtii	Napa bluecurls	Lamiaceae	List 1B.2

DELETE unchecked items | check all | check none