Biological Study

Bear Mountain Telecom Site

Prepared for:

Indian Springs Telecom LLC
477-01

August 2009

Prepared by:

ENPLAN
Environmental Scientists and Planners
www.enplan.com

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ENPLAN has completed a biological study addressing the proposed construction of a cell tower atop Bear Mountain, which is located approximately 10 miles northeast of the City of Redding in Shasta County. The project site is situated between approximately 1,100 and 2,600 feet in elevation above sea level. The proposed cell tower site is adjacent to an existing Forest Service lookout. As shown in Figure 1c, the study area is located in Township 33 North, Range 3 West, Section 7 (U.S. Geological Survey's Project City 7.5-minute quadrangle). A site plan is shown in Figure 2c.

Records Review

Records reviewed for this evaluation consisted of California Natural Diversity Data Base (CNDDB) records, in-house biological records, soils records maintained by the U.S. Department of Agriculture's Natural Resources Conservation Service, and National Wetlands Inventory (NWI) maps (U.S. Fish and Wildlife Service, no date). The CNDDB records search covered a 10-mile radius around the study area (consisting of portions of the Clough Gulch, Palo Cedro, Redding, Bohemotash Mountain, O'Brien, Minnesota Mountain, Devils Rock, Shasta Dam, Project City, Bella Vista, Oak Run, and Enterprise quadrangles. Soil records maintained by the Natural Resources Conservation Service were reviewed to determine the soil types in the study area and their potential to support wetlands. The NWI map for the Project City quadrangle was reviewed to determine if wetlands features have been previously mapped in the study area or surrounding vicinity.

Field Reconnaissance

ENPLAN conducted a field evaluation of the study area on June 26 and July 24, 2009. Most of the special-status species potentially occurring in the study area would have been evident at the time the fieldwork was conducted. The potential presence of species not readily identifiable during the field studies was determined on the basis of observed habitat characteristics.

Plant Communities/Wildlife Habitats

The project site occurs in a mixed coniferous forest. The canopy layer is composed predominantly of ponderosa pine, grey pine, Douglas-fir, canyon live oak, blue oak, California black oak, interior live oak, and big-leaved maple. Shrubs present include poison oak, snowberry, buckbrush, California buckeye, and deerbrush. The herbaceous layer is typically sparse, and includes various clovers, vetch, lupine, grasses and many other species.

Special-Status Species

Special-Status Plant Species

Review of CNDDB records showed that no special-status plant species have been previously reported on the project site. As shown in Table 1, nine special-status plant species are known to occur in the project vicinity: Bellinger's meadowfoam, Henderson's bent grass, northern clarkia, oval-leaved viburnum, Shasta ageratina, Shasta clarkia, Shasta snow-wreath, silky cryptantha, and woolly meadowfoam. The potential for these species to utilize the tower and powerline sites is discussed in

Table 2. A checklist of vascular plant species observed during the botanical surveys is enclosed.

Potentially suitable habitat occurs on the site for northern clarkia, Shasta clarkia, and oval-leaved viburnum. Although these species would have been identifiable at the time the botanical surveys were conducted, none of these or other special-status plant species were observed on the project site during the botanical surveys, nor are they expected to be present. Project implementation would thus not affect special-status plant species.

Special-Status Wildlife Species

Review of CNDDB records showed that no special-status animal species have been previously reported on the project site. As shown in Table 1, nine special-status wildlife species are known to occur in the project vicinity: American peregrine falcon, bald eagle, foothill yellow-legged frog, northwestern pond turtle, Pacific fisher, purple martin, Shasta salamander, silver-haired bat, and Townsend's big-eared bat. The CNDDB records search also identified five non-status wildlife species in the search radius: Klamath sideband, kneecap lanx, Oregon shoulderband, Shasta sideband, and Yuma myotis. The potential for each of these species to utilize the project site is addressed in Table 2.

No special-status wildlife species were observed during the wildlife field surveys. However, based on habitat evaluation, two special-status bat species could potentially be present: silver-haired bat and Townsend's big-eared bat. The non-status Yuma myotis could also be present.

Silver-haired bats primarily roost in hollow trees, snags, rock crevices, caves, and under bark. Townsend's big-eared bats and Yuma myotis bats often roost in man-made structures, but also utilize caves and rock crevices. Tree removal could result in the minor loss of roosting habitat for silver-haired bats; no structures are proposed to be removed. Because of the vast amount of suitable roosting habitat for bats elsewhere in the immediate vicinity, the minor loss of bat habitat would have a minimal impact on bats.

Indirect impacts to special-status species which utilize aquatic habitats could occur if substantial quantities of sediment were to wash into downslope drainages. Implementation of Best Management Practices for erosion control and spill prevention would be required during project construction. Such measures may include limiting construction to the dry season; use of straw wattles, sediment fencing, and/or gravel berms to prevent sediments from entering downslope drainages; and revegetating disturbed sites upon completion of construction. Periodic monitoring of the erosion controls is required, and they must be maintained as needed. Given these existing requirements for erosion control, no indirect impacts on special-status species which utilize aquatic habitats are expected.

Table 1. Rarefind (CNDDB) Report Summary

Rarefind (CNDDB) Report Summary (August 2009 Data)										
Listed Element	Quadrangle[1]									Status[2]
	BM	OB	MM	DR	PC	SD	BV	OR	EN	
Animals										
American peregrine falcon	●			●						FD, SE
Bald eagle		●	●	●	●		●			FD, SE
Foothill yellow-legged frog		●	●	●		●				SSC
Klamath sideband	●	●								None
Kneecap lanx		●								None
Northwestern pond turtle		●	●	●	●			●	●	SSC
Oregon shoulderband	●	●	●		●					None
Pacific fisher	●	●			●	●	●			FC, SSC
Purple martin			●	●			●			SSC
Shasta salamander	●	●	●	●	●	●	●			ST
Shasta sideband		●	●	●	●					None
Silver-haired bat		●							●	SSC
Townsend's big-eared bat			●	●						SSC
Yuma myotis	●	●								None
Plants										
Bellinger's meadowfoam								●		1B.2
Henderson's bent grass								●		3.2
Northern clarkia		●			●					1B.3
Oval-leaved viburnum							●			2.3
Shasta ageratina		●								1B.2
Shasta clarkia								●		1B.1
Shasta snow-wreath		●	●		●					1B.2
Silky cryptantha					●				●	1B.2
Woolly meadowfoam							●	●		4.2

Highlighting denotes the quadrangle in which the project site is located. No occurrences were reported inside the study radius in the Clough Gulch, Palo Cedro, and Redding quadrangles.

[1]Quadrangle Code

BM = Bohemotash Mountain
OB = O'Brien
MM = Minnesota Mountain
DR = Devils Rock
SD = Shasta Dam
PC = Project City
BV = Bella Vista
OR = Oak Run
EN = Enterprise

[2]Status Codes

Federal/State

FE = Federally Listed – Endangered
FT = Federally Listed – Threatened
FC = Federal Candidate Species
FD = Federally Delisted
SE = State Listed – Endangered
ST = State Listed – Threatened
SSC = State Species of Concern (CDFG)

California Native Plant Society

1B.1 = Plants Rare, Threatened or Endangered in California and Elsewhere; Seriously Threatened in California
1B.2 = Plants Rare, Threatened or Endangered in California and Elsewhere; Fairly Threatened in California
1B.3 = Plants Rare, Threatened, or Endangered in California and Elsewhere; Not Very Endangered in California
2.3 = Plants Rare, Threatened or Endangered in California Only; Not Very Threatened in California
3.2 = More Information is Needed; Fairly Threatened in California
4.2 = Plants of Limited Distribution – A Watch List; Fairly Threatened in California

Table 2.
Evaluation of the Potential for Special-Status Species and Other Species Identified by the CNDDB to Occur on the Project Site (*Bear Mountain)*

	Habitat Requirements	Potential to Occur on the Project Site
Wildlife		
American peregrine falcon *Falco peregrinus anatum*	American peregrine falcons frequent water bodies in open areas with cliffs and canyons nearby for nesting. This falcon feeds and breeds near water. In Shasta County, this raptor is reported in forested areas to the east and north of Lake Shasta.	No large water bodies occur on or adjacent to the project site. No American peregrine falcons or their nests were observed during the wildlife survey, nor is the species expected to nest on or adjacent to the project site.
Bald eagle *Haliaeetus leucocephalus*	The bald eagle requires large, old-growth trees or snags in mixed stands near open bodies of water. Adults tend to use the same breeding areas year after year and often use the same nest, though a breeding area may include one or more alternate nests. Bald eagles usually do not begin nesting if human disturbance is evident.	No large, permanent, fish-bearing water bodies occur in or adjacent to the project site (bald eagles are known to nest around the shore of Lake Shasta, two miles north of the project site). No bald eagles or their nests were observed during the wildlife survey, nor are bald eagles expected to nest in or adjacent to the project site.
Foothill yellow-legged frog *Rana boylii*	Foothill yellow-legged frogs are typically found in partly-shaded, shallow streams and riffles with a rocky substrate in a variety of aquatic habitats. This frog needs at least some cobble-sized substrate for egg-laying. Foothill yellow-legged frogs generally prefer low to moderate gradient streams, especially for breeding and egg-laying, although juvenile and adult frogs may utilize moderate- to steep-gradient streams during summer and early fall.	The project site lacks aquatic habitat. The foothill yellow-legged frog would thus not be present.
Klamath sideband *Monadenia churchi*	Klamath sideband is a terrestrial snail that generally inhabits talus slopes, but may also be found under forest debris in heavy shade on forested hillsides.	No talus slopes or suitable heavily shaded forested habitats occur in the project site. The Klamath sideband would thus not be present.
Kneecap lanx *Lanx petteloides*	The kneecap lanx is an aquatic snail, endemic to perennial streams and rivers in the upper Sacramento River drainage. This snail associates with fast, cold, well-oxygenated water in cobble and boulder substrates.	The project site lacks aquatic habitat. The kneecap lanx would thus not be present.
Northwestern pond turtle *Actinemys marmorata marmorata*	The northwestern pond turtle associates with permanent or nearly permanent water in a variety of habitats. This turtle is typically found in quiet water environments. Pond turtles require basking sites such as partially submerged logs, rocks, or open mud banks, and suitable (sandy banks or grassy open fields) upland habitat for egg-laying. In cold weather, pond turtles hibernate underwater in bottom mud.	The project site lacks aquatic habitat. The northwestern pond turtle would thus not be present.

Table 2.
Evaluation of the Potential for Special-Status Species and Other Species Identified by the CNDDB to Occur on the Project Site (*Bear Mountain)*

	Habitat Requirements	Potential to Occur on the Project Site
Oregon shoulderband *Helminthoglypta hertleini*	The Oregon shoulderband inhabits basaltic talus slopes in riparian areas.	The project site lacks basaltic talus slopes and riparian habitat. The Oregon shoulderband would thus not be present.
Pacific fisher *Martes pennanti pacificus*	In California, Pacific fishers primarily inhabit mixed conifer forests composed of Douglas-fir and associated conifers, although they also are encountered frequently in higher elevation fir and pine forests, and mixed evergreen/broadleaf forests. Suitable habitat for Pacific fishers consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure.	The project site occurs within a mixed coniferous forest and has suitable foraging habitat for Pacific fishers. However, no fishers or dens were observed on the project site, nor is the species expected to den on the site.
Purple martin *Progne subis*	Purple martins inhabit woodlands and low elevation coniferous forests of Douglas-fir, ponderosa pine, and Monterey pine. Purple martins nest in old woodpecker cavities or in man-made structures such as culverts, bridges, or nest boxes.	The on-site woodlands and an adjacent Forest Service lookout may provide suitable nesting habitat for the purple martin. However, no purple martins, or their nests were observed during the wildlife surveys. The purple martin is thus not expected to nest in the study site.
Shasta salamander *Hydromantes shastae*	The Shasta salamander is primarily restricted to limestone outcrops near Lake Shasta. Habitat consists of moist limestone fissures and caves, in volcanic or other rock outcroppings, and under woody debris on the surface during wet weather. Shasta salamanders may be found in all successional stages of valley foothill hardwood-conifer, ponderosa pine, and mixed conifer habitats.	Limestone-derived soils do not occur on the project site. The Shasta salamander would thus not be present.
Shasta sideband *Monadenia troglodytes troglodytes*	The Shasta sideband inhabits limestone-derived soils in Shasta County.	Limestone-derived soils do not occur on the project site. The Shasta sideband would thus not be present.
Silver-haired bat *Lasionycteris noctivagans*	Silver-haired bats occur in coastal and montane forests. Silver-haired bats roost in hollow trees, snags, rock crevices, caves, and under bark.	Although the silver-haired bat was not observed during the wildlife surveys, trees and shrubs on the project site provide suitable roosting habitat for the bat.
Townsend's big-eared bat *Corynorhinus townsendii pallescens*	Townsend's big-eared bat is found throughout California except in subalpine and alpine habitats, and may be found at any season throughout its range. The species is most abundant in mesic habitats. The bat requires caves, mines, tunnels, buildings, or other human-made structures for roosting.	The project site lacks suitable roosting habitat for Townsend's big-eared bat. However, an adjacent Forest Service lookout may provide suitable roosting habitat for the bat.

Table 2.
Evaluation of the Potential for Special-Status Species and Other Species Identified by the CNDDB to Occur on the Project Site (*Bear Mountain)*

	Habitat Requirements	Potential to Occur on the Project Site
Yuma myotis *Myotis yumanensis*	The Yuma myotis occurs in a variety of habitats from sea level to 13,000 feet. Preferred habitats include open forests and woodlands near a water source. The Yuma myotis roosts in buildings, mines, caves, or crevices.	The project site lacks suitable roosting habitat for the Yuma myotis. However, an adjacent Forest Service lookout may provide suitable roosting habitat for the bat.
Plants		
Bellingers' meadowfoam *Limnanthes floccosa* var. *bellingeriana*	Bellinger's meadowfoam occurs around meadows, seeps, and damp stony flats below 3,300 feet in elevation in Shasta County.	The project site lacks suitable habitat for Bellinger's meadowfoam. Bellinger's meadowfoam was not observed during the botanical surveys and is not expected to be present.
Henderson's bent grass *Agrostis hendersonii*	Henderson's bent grass occurs along the edges of vernal pools and swales, typically on thin soils overlying a hard pan. Henderson's bent-grass is usually found in sparsely vegetated habitats.	Vernal pool and swales do not occur on the project site. Henderson's bent grass was not observed during the botanical surveys and is not expected to be present.
Northern clarkia *Clarkia borealis* ssp. *borealis*	Northern clarkia inhabits chaparral, cis-montane woodland, and coniferous forests between 1,200 and 2,400 feet in elevation. The species often occurs in dry, rocky substrates along roads.	The project site has suitable habitat for northern clarkia. However, northern clarkia was not observed during the botanical surveys and is not expected to be present.
Oval-leaved viburnum *Viburnum ellipticum*	Oval-leaved viburnum inhabits chaparral, cismontane woodland, and lower montane coniferous forests. The species generally occurs on north-facing slopes covered with dense brush.	The project site has suitable habitat for oval-leaved viburnum. However, oval-leaved viburnum was not observed during the botanical surveys and is not expected to be present.
Shasta ageratina (Shasta eupatory) *Ageratina shastensis*	Shasta ageratina (Shasta eupatory) occurs on limestone outcrops within chaparral or lower montane coniferous forest around Shasta Lake.	Limestone outcrops do not occur on the project site. Shasta ageratina was not observed during the botanical surveys and is not expected to be present.
Shasta clarkia *Clarkia borealis* spp. *arida*	Shasta clarkia occurs in openings in gray pine and black oak woodlands on south and west-facing slopes in Shasta and Tehama counties, at elevations between 1,600 and 1,700 feet.	The project site has suitable habitat for Shasta clarkia. However, Shasta clarkia was not observed during the botanical surveys and is not expected to be present.
Shasta snow-wreath *Neviusia cliftonii*	The Shasta snow-wreath is generally limited to limestone-derived soils in shady stream canyons.	Limestone-derived soils do not occur on the project site. Shasta snow-wreath was not observed during the botanical surveys and is not expected to be present.

Table 2.
Evaluation of the Potential for Special-Status Species and Other Species Identified by the CNDDB to Occur on the Project Site (*Bear Mountain)*

	Habitat Requirements	Potential to Occur on the Project Site
Silky cryptantha *Cryptantha crinita*	Silky cryptantha occurs along low-gradient seasonal streams with broad floodplains, usually on the valley floor, where it is found on gravelly or cobbly substrates. The species also occurs in sparsely vegetated, vernally moist uplands. Less frequently, it occurs along perennial streams, including the Sacramento River.	The project site lacks streams, vernally moist uplands, and other suitable habitat for silky cryptantha. Silky cryptantha was not observed during the botanical surveys and is not expected to be present.
Woolly meadowfoam *Limnanthes floccosa* ssp. *floccosa*	Woolly meadowfoam generally occurs in vernal pools, ditches, and ponds in valley foothill and grasslands, cismontane woodland, and chaparral.	The project site does not include any suitable vernally moist habitats for woolly meadowfoam. Woolly meadowfoam was not observed during the botanical surveys and is not expected to be present.

Sensitive Natural Communities
CNDDB records show that no sensitive natural communities have been reported in the study vicinity. As a result of the biological field survey, it was determined that no sensitive natural communities, including aquatic habitats and riparian habitats, occur on the subject site, nor would such habitats be impacted by project implementation.

Soils
According to the U.S. Department of Agriculture, Natural Resources Conservation Service, one soil unit, rockland, is present at the proposed cell tower site[1]. Five other soil units are present in the proposed powerline corridor: Millsholm family, 20-60% slopes; Holland family, deep-Holland family complex, 40-60% slopes; Marpa-Goulding families association, 40-60% slopes; Marpa gravelly loam, 30-50% slopes; Millsholm very rocky loam, 30-50% slopes, eroded. These soil units are not hydric, nor do they contain inclusions of hydric soils[2].

Wetlands and Other Waters of the State/United States
Review of the NWI map for the project City quadrangle found that no wetlands or other waters of the State/United States have been mapped on the project site. ENPLAN inspected the site to document the presence of wetlands or other waters of the subject to the jurisdiction of the State/United States. The field inspection found no wetlands or other waters on the project site. Project implementation would have no adverse effects on federally protected wetlands.

Resource-Agency Permit Requirements
As the project site does not have wetlands or other waters subject to the jurisdiction of the State/United States, a Department of the Army permit from the Corps of Engineers, Water Quality Certification and/or a waiver of Waste Discharge Requirements from the Central Valley Regional Water Quality Control Board, and a Streambed Alteration Agreement from the California Department of Fish and Game are not required. As for all projects resulting in disturbance of more than one acre, a Notice of Intent/General Construction Activity Storm Water Permit (and Storm Water Pollution Prevention Plan) will be required prior to construction. Various other permits and approvals may also be required by other agencies.

Woodlands/Timberlands
Project implementation would include the removal of oaks and conifers from within the proposed tower site and its access point, as well as along the cross-country portion of the planned powerline corridor. The remainder of the powerline corridor would be sited within the existing site access road; tree removal from this portion of the corridor is unlikely to be needed. Removal of native oaks is regulated by the Oak Woodland Conservation Act. Although the study area is not zoned as "timberland," the proposed project may be subject to the Forest Practice Act because conifers would be removed. Accordingly, a Timber Harvest Plan (or exemption) must be prepared by a Registered Professional Forester, and must be reviewed by and accepted by the California

[1] 2007. Natural Resources Conservation Service, Web Soil Survey. http://www.websoilsurvey.nrcs.usda.gov/app/
[2] 2007. Natural Resources Conservation Service, Hydric Soil List. http://www.soils.usda.gov/use/hydric/

Department of Forestry and Fire Protection. Oak woodlands are generally defined as lands supporting native oaks, with the oaks providing at least ten percent canopy closure. Based on aerial photograph review and field inspection, at least portions of the study area appear to meet this canopy coverage threshold.

The loss of native oaks and conifers with a diameter at breast height (dbh) of five inches or greater shall be avoided to the extent feasible, as determined by a qualified botanist in consultation with the construction project manager. Measures may include minimizing the width of the construction corridor to avoid mature trees, installing temporary construction fencing to protect trees, limiting staging areas to lands that do not support mature trees, and other actions deemed appropriate during pre-construction field evaluation.

Given the small number of mature trees to be removed, the limited amount of permanent impact, and implementation of mitigation measures to avoid/minimize the loss of trees, the residual impact on oaks and conifers would not be less than significant.

Nesting Migratory Birds

The project site has a moderate potential to support nesting by raptors and migratory birds. Potential nesting habitat for these birds occurs in trees and shrubs, which are abundant in the study area. If present, active nests could be lost during vegetation removal or could be disturbed by on-site construction activities, potentially resulting in nest abandonment and mortality of chicks and eggs. While no nests were observed during the field survey, they could be present in the future. To ensure that active nests of raptors and migratory birds are not disturbed, vegetation removal shall be avoided during the nesting season (generally March 1 to July 31), to the extent possible. If vegetation removal must occur during the nesting season, a focused survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the project site. The survey shall be conducted no more than 30 days prior to the beginning of construction or tree removal. If nesting birds are found during the focused survey, the nest tree(s) shall not be removed until after the young have fledged. Further, to prevent nest abandonment and mortality of chicks and eggs, no construction shall occur within 500 feet of an active nest, unless a smaller buffer zone is authorized by the Department of Fish and Game (the size of the construction buffer zone may vary depending on the species of nesting birds present).

Figures

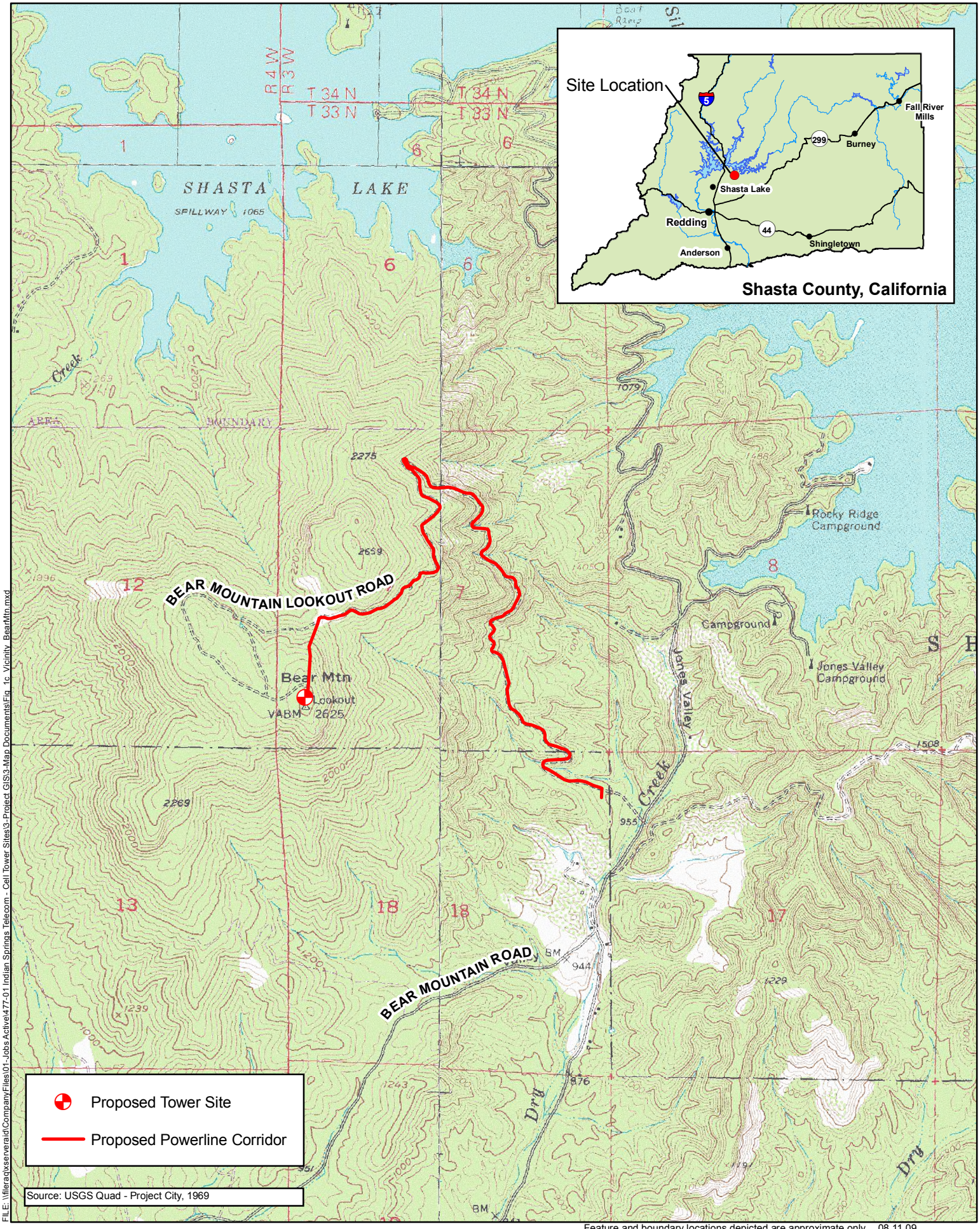
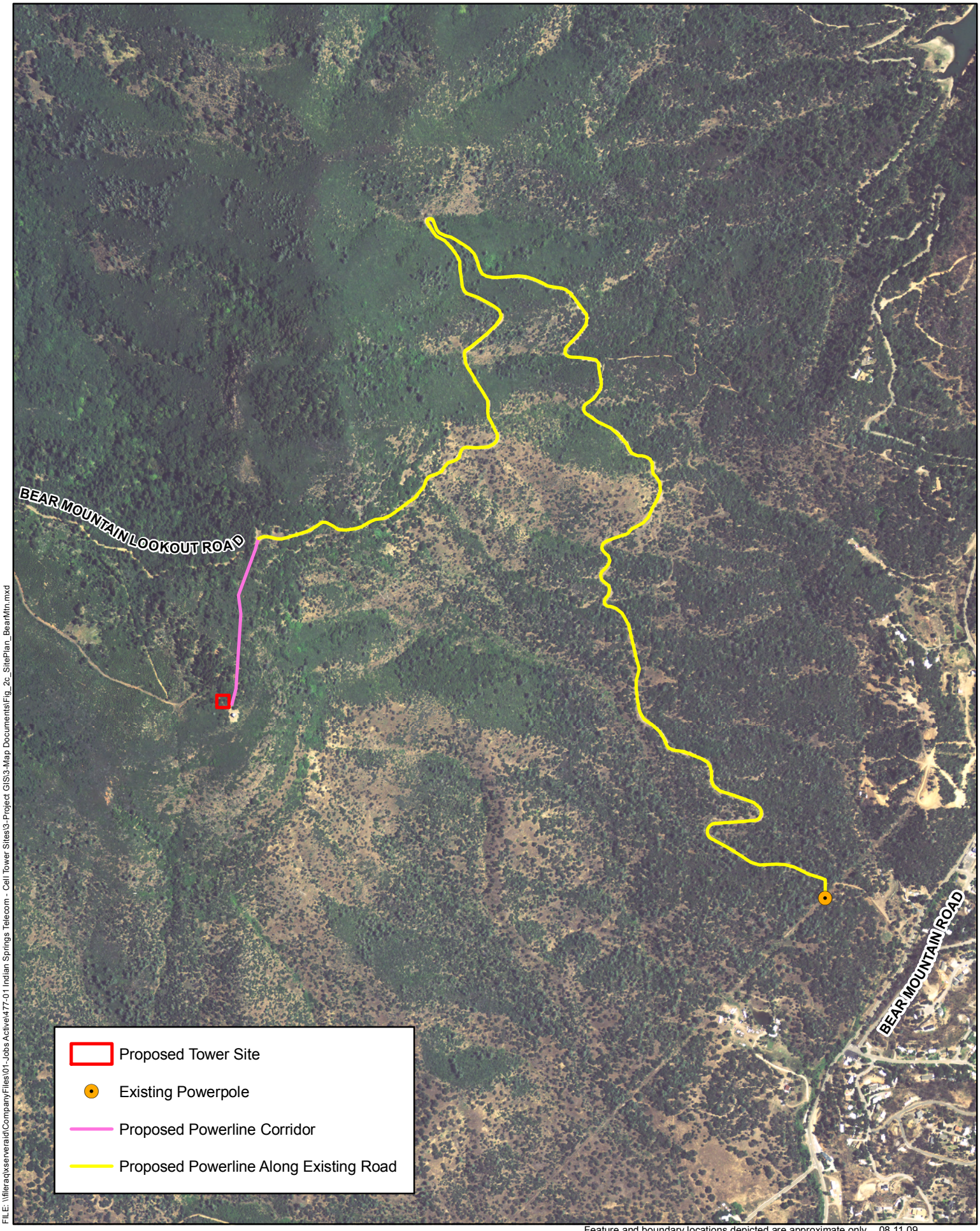


Figure 1c

Vicinity Map - Bear Mountain



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Feature and boundary locations depicted are approximate only. 08.11.09

0 1,000 Feet

Figure 2c

Site Plan - Bear Mountain

ENPLAN

Checklist of Vascular Plant Species Observed

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Bear Mountain

June 26 and July 24, 2009

Aceraceae	**Maple Family**
Acer macrophyllum	Big-leaved maple
Anacardiaceae	**Sumac Family**
Rhus tribolata	Squaw bush
Toxicodendron diversilobum	Poison-oak
Apiaceae	**Carrot Family**
Lomatium spp.	Lomatium
Perideridia sp.	Yampah
Sanicula bipinnatifida	Purple sanicle
Torilis arvensis	Field hedge-parsley
Asteraceae	**Sunflower Family**
Achillea millefolium	Common yarrow
Agoseris grandiflora	Large-flowered Agoseris
Anaphalis margaritacea	Western pearly everlasting
Arnica discoidea (?)	Rayless arnica
Brickellia californica	California brickellbush
Calycadenia truncata	Oregon western rosinweed
Centaurea solstitialis	Yellow star thistle
Cirsium occidentale var. *venustum*	Venus thistle
Eriophyllum lanatum	Woolly sunflower
Grindelia hirsutula var. *davyi*	Hairy gumweed
Helianthella californica	California helianthella
Hemizonia congesta ssp. *luzulifolia*	Hayfield tarweed
Hieraceum sp.	Hawkweed
Lactuca sp.	Prickly lettuce
Madia spp.	Tarweed
Stephanomeria virgata ssp. pleurocarpa	Wand wirelettuce
Tragopogon sp.	Goat's beard
Wyethia glabra	Mule ears
Berberidaceae	**Barberry Family**
Berberis aquifolium var. *dictyota*	Jepson's barberry
Boraginaceae	**Borage Family**
Plagiobothrys fulvus	Fulvous popcorn-flower
Calycanthaceae	**Calycanthus Family**
Calycanthus occidentalis	Western spicebush
Caprifoliaceae	**Honeysuckle Family**
Lonicera interrupta	Chaparral honeysuckle
Symphoricarpos sp.	Snowberry
Caryophyllaceae	**Pink Family**
Petrorhagia dubia	Grass pink
Scleranthus annuus ssp. *annuus*	German knotgrass
Silene sp.	Pink
Convolvulaceae	**Morning Glory Family**
Calystegia occidentalis	Western morning-glory
Cyperaceae	**Sedge Family**
Carex multicaulis	Many-stemmed sedge
Datiscaceae	**Datisca Family**
Datisca glomerata	Durango root

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Bear Mountain

Dennstaedtiaceae	**Bracken Family**
Pteridium aquilinum var. *pubescens*	Bracken fern
Ericaceae	**Heath Family**
Arctostaphylos viscida ssp. *viscida*	White-leaf manzanita
Fabaceae	**Legume Family**
Cercis occidentalis	Western redbud
Lathyrus sulphureus	Snub pea
Lotus sp. *(nevadensis?)*	Lotus
Lotus purshianus	Spanish lotus
Lupinus albifrons	Silver bush lupine
Lupinus bicolor	Bicolored lupine
Thermopsis macrophylla var. *venosa*	False-lupine
Trifolium sp.	Clover
Trifolium hirtum	Rose clover
Trifolium willdenovii	Tomcat clover
Vicia villosa	Winter vetch
Fagaceae	**Oak Family**
Quercus chrysolepis	Canyon live oak
Quercus douglasii	Blue oak
Quercus garryana var. *fruticosa (*syn: var. *breweri*)	Oregon white oak (Brewer oak)
Quercus kelloggii	California black oak
Quercus wislizenii	Interior live oak
Garryaceae	**Silk Tassel family**
Garrya fremontii	Bearbrush
Gentianaceae	**Gentian Family**
Swertia albicaulis	White-stemmed swertia
Geraniaceae	**Geranium Family**
Erodium cicutarium	Red-stemmed filaree
Grossulariaceae	**Gooseberry Family**
Ribes roezlii var. *roezlii*	Sierra gooseberry
Hippocastanaceae	**Buckeye Family**
Aesculus californica	California buckeye
Hydrophyllaceae	**Waterleaf Family**
Eriodictyon californicum	Yerba santa
Phacelia sp.	Phacelia
Hypericaceae	**St. John's-wort Family**
Hypericum concinnum	Gold-wire
Hypericum perforatum	Klamath weed
Juncaceae	**Rush Family**
Luzula comosa var. *subsessilis*	Hairy wood rush
Lamiaceae	**Mint Family**
Monardella sp.	Monardella
Scutellaria siphocampyloides	Gray-leaved skullcap
Lauraceae	**Laurel Family**
Umbellularia californica	California bay

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Bear Mountain

Liliaceae	**Lily Family**
Allium peninsulare var. peninsulare	Mexican onion
Calochortus tolmiei (?)	Pussy-ears
Chlorogalum pomeridianum var. *pomeridianum*	Wavy-leaved soap plant
Dichelostemma sp.	Ookow
Oleaceae	**Olive Family**
Fraxinus dipetala	California ash
Philadelphaceae	**Mock Orange family**
Philadelphus lewisii	Wild mock orange
Pinaceae	**Pine Family**
Pinus ponderosa	Ponderosa pine
Pinus sabiniana	Grey pine
Pseudotsuga menziesii var. *menziesii*	Douglas-fir
Plantaginaceae	**Plantain Family**
Plantago lanceolata	English plantain
Poaceae	**Grass Family**
Achnatherum lemmonii	Lemmon's needlegrass
Aira caryophyllea	Silver hairgrass
Avena sp.	Wild oats
Briza maxima	Big quaking grass
Bromus carinatus var. *carinatus*	California brome
Bromus diandrus	Ripgut grass
Bromus madritensis ssp. *rubens*	Red brome
Cynosurus echinatus	Hedgehog dogtail
Elymus glaucus ssp. *glaucus*	Blue wild rye
Elymus multisetus	Big squirreltail
Hordeum marinum ssp. *gussoneanum*	Mediterranean barley
Melica sp.	Melic
Vulpia bromoides	Six-weeks fescue
Vulpia microstachys var. *pauciflora*	Few-flowered fescue
Vulpia myuros var. *myuros*	Rattail fescue
Polemoniaceae	**Phlox Family**
Gilia capitata	Blue-headed gilia
Polygalaceae	**Milkwort Family**
Polygala californica	California milkwort
Polygonaceae	**Buckwheat Family**
Eriogonum nudum	Buckwheat
Polygonum arenastrum	Common knotweed
Rumex acetosella	Sheep sorrel
Rumex salicifolius	Willow dock
Polypodiaceae	**Fern Family**
Polystichum imbricans ssp. *imbricans*	Narrowleaf swordfern
Primulaceae	**Primrose Family**
Dodecatheon hendersonii	Henderson's shooting star
Trientalis latifolia	Pacific starflower
Pteridaceae	**Brake Family**
Adiantum jordanii	California maiden-hair
Pellaea mucronata	Bird's-foot fern
Pentagramma triangularis ssp. *triangularis*	Goldback fern
Ranunculaceae	**Buttercup Family**
Clematis lasiantha	Pipestem

CHECKLIST OF VASCULAR PLANT SPECIES OBSERVED

Bear Mountain

Rhamnaceae	**Buckthorn Family**
Ceanothus cuneatus var. *cuneatus*	Buckbrush
Ceanothus integerrimus	Deer brush
Ceanothus lemmonii	Lemmon's ceanothus
Rhamnus tomentella ssp. *tomentella*	Hoary coffeeberry
Rosaceae	**Rose Family**
Cercocarpus betuloides var. *betuloides*	Birch-leaved mountain-mahogany
Rubiaceae	**Madder Family**
Crucianella angustifolia	Cross-wort
Galium bolanderi	Bolander's bedstraw
Galium parisiense	Wall bedstraw
Galium porrigens var. *tenue*	Climbing bedstraw
Rutaceae	**Rue Family**
Ptelea crenulata	Hoptree
Scrophulariaceae	**Snapdragon Family**
Keckiella breviflora	Short-flowered keckiella
Mimulus guttatus	Common monkey-flower
Penstemon azureus var. *azureus*	Azure penstemon
Verbascum thapsus	Woolly mullein
Verbenaceae	**Vervain Famiy**
Verbena lasiostachys	Western verbena
Violaceae	**Violet Family**
Viola sp.	Violet
Viscaceae	**Mistletoe Family**
Arceuthobium campylopodum	Western dwarf-mistletoe
Phoradendron villosum	Oak mistletoe
Vitaceae	**Grape Family**
Vitis californica	Wild grape