Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Sonoma alopecurus Alopecurus aequalis var. sonomensis	FE//1B.1	Freshwater marshes and swamps, riparian scrub. 16 to 1,197 feet. (May to July)	<b>Not Expected.</b> A small amount of moderately suitable habitat is present along the portions of the project located in proximity to wetter streams, and ponds. No occurrences known within 5 miles.
Baker's goldfields Lasthenia californica ssp. bakeri (or L. macrantha ssp. bakeri)	//1B.2	Openings in closed to cone coniferous forest, coastal scrub, meadows and seeps, marshes and swamps. 197 to 1,706 feet. (April to October)	Not Expected. Small amounts of somewhat suitable habitat associated with larger/wetter seasonal wetlands, drainages, and open water. Believed to be extirpated in Sonoma County. Not known within 5 miles.
<b>Baker's larkspur</b> Delphinium bakeri	FE/SE/1B.1	Mesic areas on decomposed shale in coastal scrub, broadleaved upland forest, and valley and foothill grassland. 262 to 1,001 feet. (March to May).	Not Expected. Limited suitable habitat present in mesic areas on sedimentary soils (Dibble series). Not known within 5 miles. Current known range all south of project, and many occurrences extirpated.
<b>Baker's</b> manzanita Arctostaphylos bakeri ssp. Bakeri	/SR/1B.1	Broadleaved upland forest, chaparral, often on serpentine. 246 to 984 feet. (February to April)	Not Expected. No preferred serpentine habitat present, but plenty of broadleaved upland forest on volcanic soils. Not known within 5 miles.
Baker's navarretia Navarretia leucocephala ssp. bakeri	//1B.1	Vernal pools, meadows and seeps, and similar mesic areas in cismontane woodland, valley and foothill grassland, and lower montane coniferous forest. 16 to 5,709 feet. (April to July)	Moderate. Suitable habitat (seasonal wetlands, drainages) are present in the project study area. Known within 5 miles.
Bent-flowered fiddleneck Amsinckia lunaris	//1B.2	Cismontane woodland, valley and foothill grassland, coastal scrub. 10 to 1,640 feet. (March to June)	Moderate. Suitable habitat present in large portions of the project study area but no occurrence records are known within 5 miles.
<b>Big-scale</b> <b>balsamroot</b> Balsamorhiza macrolepis var. macrolepis	//1B.2	Valley and foothill grassland, chaparral, and cismontane woodland. Sometimes on serpentine. 295 to 5,102 feet. (March to June)	Low. Suitable vegetation types throughout large portions of project study area, but no preferred serpentine substrates. Not known within 5 miles, but range of the species is very scattered.
Boggs Lake hedge-hyssop Gratiola heterosepala	/SE/1B.2	Marshes and swamps (lake margins), vernal pools. 30 to 7,800. (April to August)	<b>Low</b> . Some low-quality habitat present. Known within 5 miles.

#### Table D-1 Special-Status Plants with Potential to Occur in the Project Study Area

APPENDIX D
BIOLOGICAL RESOURCES SUPPORTING INFORMATION

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Bristly sedge Carex comosa	//2.1	Mesic areas such as freshwater marshes and swamps, and areas in valley and foothill grassland, and coastal prairie. 0 to 2,050 feet. (May to September)	Not Expected. Small amounts of potentially suitable habitat are present in the project study area, located in proximity to streams, drainages, seasonal wetlands, and open water. Not known within 10 miles.
<b>Brownish beaked-rush</b> Rhynchospora capitellata	//2.2	Meadows and seeps, freshwater marshes and swamps, and similar mesic areas in lower montane coniferous forest and upper montane coniferous forest. 1,493 to 6,562 feet. (July to August)	Not Expected. Marginal habitat given limited extent of coniferous forest habitat. Project study area below known elevation range. Not known within 5 miles, but range widely scattered.
Burke's goldfields Lasthenia burkei	FE/SE/1B.1	Vernal pools, meadows and seeps. 49 to 1,968 feet. (April to June)	Moderate. Limited amounts of somewhat suitable habitat (seasonal wetlands and drainages) scattered throughout the project study area, particularly at north end. Most wetlands do not appear deep/wet enough for this species. Known within 5 miles.
<b>California</b> <b>beaked-rush</b> Rhynchospora californica	//1B.1	Bogs and fens, marshes and swamps, meadows and seeps, and similar mesic areas in lower montane coniferous forest. 148 to 3,314 feet. (May to July)	Not Expected. Marginal habitat given limited extent of coniferous forest habitat. Not known within 5 miles, but range widely scattered.
Calistoga ceanothus Ceanothus divergens	//1B.2	Rocky, serpentine, or volcanic sites, in chaparral or cismontane woodland. 558 to 3,117 feet. (February to April)	Low. Somewhat suitable vegetation type (cismontane woodland) and patches of suitable rocky habitat occasional in study area. No serpentine habitat present. Known within 5 miles.
Clara Hunt's milk-vetch Astragalus claranus	FE/ST/1B.1	Cismontane woodland, valley and foothill grassland, or chaparral. Usually found on serpentinite, volcanic, or rocky clay substrates. 246 to 902 feet. (March to May)	Not Expected. Suitable vegetation type, but only patches of suitable rocky/bare habitat occasional in project study area. Not known within 5 miles.
<b>Coastal</b> <b>triquetrella</b> Triquetrella californica	//1B.2	Soil in coastal bluff scrub and coastal scrub. 33 to 328 feet.	Not Expected. No suitable coastal scrub habitat present. Not known within 5 miles.
Cobb Mountain Iupine Lupinus sericatus	//1B.2	Chaparral, cismontane woodland, lower montane coniferous forest, and broadleaved upland forest. 902 to 5,003 feet. (March to June)	Not Expected. Suitable vegetation types extensive within the project study area. Project below known end of elevation range. Not known within 5 miles.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
<b>Colusa layia</b> Layia septentrionalis	//1B.2	Sandy, serpentinite to chaparral, cismontane woodland, valley and foothill grassland. 330 to 3,600 feet. (April to May)	Not Expected. Suitable habitat not present due to absence of sandy and serpentine habitats.
<b>Crystal Springs lessingia</b> Lessingia arachnoidea	//1B.2	Serpentine soils in coastal sage scrub, valley and foothill grassland, and cismontane woodland. 197 to 656 feet. (July to October).	<b>Not Expected</b> . Suitable vegetation is present, but no serpentine soils. Not known within 5 miles.
<b>Dwarf downingia</b> Downingia pusilla	//2.2	Vernal pools and similar mesic sites in valley and foothill grassland. 3 to 1,460 feet. (March to May)	High. Suitable habitat (seasonal wetlands in grassland) present in the project study area, particularly at the north end. Range widely scattered.
<b>Fragrant fritillary</b> Fritillaria liliacea	/-/1B.2	Coastal scrub, valley and foothill grassland, and coastal prairie. Often found on serpentine. 10 to 1,345 feet. (February to April)	Moderate. Grassland habitat is present in portions of the project study area. No serpentine present. Known within 5 miles.
Freed's jewel- flower Streptanthus brachiatus ssp. hoffmanii	//1B.2	Serpentine soils/rock in chaparral and cismontane woodland. 1,608 to 4,003 feet. (May to July)	Not Expected. No serpentine soils present. Project study area somewhat below known elevation range. Not known within 5 miles.
<b>Golden larkspur</b> Delphinium luteum	FE/SR/1B.1	Rocky areas in chaparral, coastal prairie, and coastal scrub. 0 to 328 feet. (March to May)	Not Expected. Limited rocky areas in somewhat suitable habitat (cismontane woodland) widely scattered in project study area. Project at high end of elevation range, and somewhat north of known range; range limited. Not known within 5 miles.
<b>Green jewel-</b> flower Streptanthus breweri var. hesperidis (= S. hesperidis)	//1B.2	Serpentine soils/rock in chaparral and cismontane woodland. 426 to 2,493 feet. (May to July)	Not Expected. No serpentine soils present. Not known within 5 miles.
<b>Green's narrow- leaved daisy</b> Erigeron greenei	//1B.2	Serpentine and volcanic soils in chaparral or cismontane woodland. 262 to 3,297 feet. (May to September)	Low. Somewhat suitable habitat (volcanic soils in cismontane woodland) scattered throughout the project study area. No serpentine present. Not known within 5 miles, but species range scattered.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Holly-leaved ceanothus Ceanothus purpureus	//1B.2	Chaparral or cismontane woodland with rocky volcanic soils. 394 to 2,100 feet. (February to June)	Not Expected. Somewhat suitable habitat (cismontane woodland), and patches of suitable rocky habitat occasional in study area. Not known within 5 miles.
<b>Jepson's milk- vetch</b> Astragalus rattanii var. jepsonianus	//1B.1	Often serpentine to chaparral, cismontane woodland, valley and foothill grassland. 970 to 2,300 feet. (March to June)	Not Expected. Project study area is below expected elevation range and serpentine habitat not present.
<b>Jepson's</b> <b>Ieptosiphon</b> Leptosiphon jepsonii	//1B.2	On volcanic soil or the periphery of serpentine substrates, in chaparral and cismontane woodland. 328 to 1,640 feet. (March to May)	Moderate. Suitable habitat (cismontane woodland on volcanic soil) is scattered throughout the project study area, but serpentine not present. Several occurrences known within 5 miles.
Kenwood Marsh checkerbloom Sidalcea oregana ssp. valida	FE/SE/1B.1	Freshwater marshes and swamps. 377 to 492 feet. (June to September)	Not Expected. Small amounts of somewhat suitable habitat present along the portions of the project study area located in proximity to streams, larger seasonal wetlands, drainages, and open water. Has very limited known range and is only known from two locations (neither of which is within 5 miles of study area).
Konocti manzanita Arctostaphylos manzanita ssp. elegans	//1B.3	Volcanic soils in chaparral, cismontane woodland, and lower montane coniferous forest. 1,296 to 5,300 feet. (March to May)	Not Expected. Suitable habitat present in much of the project corridor. However, not known within 5 miles, known range all north of project, and known elevation all higher than project.
Legenere Legenere limosa	//1B.1	Vernal pools. 3 to 2,887 feet. (April to June).	Low. No vernal pools present, but somewhat suitable habitat in larger seasonal wetlands, drainages, and edges of open water. Not known within 5 miles, but range is widely scattered around the project study area.
Many-flowered navarretia Navarretia leucocephala ssp. plieantha	FE/SE/1B.2	Vernal pools with volcanic ash flow substrates. 98 to 3,117 feet. (May to June)	Not Expected. Somewhat suitable habitat (seasonal wetlands, drainages) within the project study area, but these features do not appear to have ash flow substrates. Known within 5 miles.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Marsh checkerbloom Sidalcea oregana ssp. hydrophila	//1B.2	Freshwater marshes and swamps, and mesic areas in riparian forest. 3,609 to 7,546 feet. (July to August)	<b>Not Expected</b> . Project study area is well below known elevation range of taxon. Not known within 5 miles.
Marsh microseris Microseris paludosa	//1B.2	Closed to cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland. 16 to 984 feet. (April to July)	Moderate. Suitable habitat is common in the project study area. Not known within 5 miles.
<b>Methuselah's beard lichen</b> Usnea longissima	//4.2	On tree branches, usually old growth hardwoods and conifers. 16 to 4,800. (Lichen)	Not Expected. Marginal habitat given absence of old growth forests. Not known within five miles; known occurrences all to the west.
Mt. Saint Helena morning glory Calystegia collina ssp. oxyphylla	//4.2	Serpentinite to chaparral, lower montane coniferous forest, valley and foothill grassland. 900 to 3,300 feet. (April to June)	Not Expected. No serpentinite habitat is present in the project study area.
Napa false indigo Amorpha californica var. napensis	//1B.2	Chaparral, cismontane woodland, and openings in broadleaved upland forest. 394 to 6,562 feet. (April to July)	High. Suitable habitat is present in large portions of the project study area and occurrence records are known within 5 miles.
Narrow- anthered California brodiaea Brodiaea californica vor. leptandra	//1B.2	Volcanic soils in cismontane woodland, valley and foothill grassland, broadleaved upland forest, chaparral, and lower montane coniferous forest. 361 to 3,002 feet (May to July)	<b>High</b> . Suitable habitat is present in grassland, woodlands, and forest, and known within 5 miles.
North Coast semaphore grass Pleuropogon hooverianus	/ST/1B.1	Meadows and seeps, and similar mesic areas in broadleaved upland forest and north coast coniferous forest. 33 to 2,201 feet. (April to June)	Low. Small amounts of somewhat suitable habitat in a few locations in larger seasonal wetlands and open water. Not known within 5 miles, but range is widely scattered.
<b>Oval-leaved</b> <b>viburnum</b> Viburnum ellipticum	//2.3	Chaparral, cismontane woodland, and Lower montane coniferous forest. 705 to 4,593 feet. (May to June)	Moderate. Suitable habitat is present along most of the project corridor, although project study area at low end of known range. Known within 5 miles.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Pappose tarplant Centromadia parryi ssp. parryi	//1B.2	Usually alkaline or salty areas. These include coastal prairie, meadows and seeps, coastal salt marsh, and mesic areas in valley and foothill grassland. 7 to 1,378 feet. (May to November)	Not Expected. Somewhat suitable habitat present (wetlands within grassland) within the project study area, particularly at northern end. However, no alkaline or salty soils present. Known within 5 miles.
Pennell's bird's- beak Cordylanthus tenuis ssp. capillaris	FE/SR/1B.2	On serpentine soils in closed to cone coniferous forest and chaparral. 148 to 1,001 feet. (June to September)	<b>Not Expected</b> . No serpentine soils present. Not known within 5 miles.
<b>Peruvian dodder</b> Cuscuta obtusiflora var. glandulosa	//2B.2	Marshes and swamps (freshwater). 50 to 920 feet. (July to October)	Not Expected. Marginal habitat and not documented near project study area. Last seen in 1948 in Merced County.
Pitkin Marsh Indian paintbrush Castilleja uliginosa	/SE/1A	Freshwater marshes and swamps (June to July)	Not Expected. Small amounts of slightly suitable habitat are present along the portions of the project study area located in proximity to streams, drainages, seasonal wetlands, and open water. However, known from only two locations, but last remaining plants died in 1987. Believed extirpated in Sonoma County.
<b>Pitkin Marsh lily</b> Lilium pardalinum ssp. pitkinense	FE/SE/1B.1	Mesic areas with sandy soils in cismontane woodland, meadows and seeps, and freshwater marsh. 115 to 213 feet. (June to July)	Not Expected. Small amounts of somewhat suitable habitat in a few locations near larger seasonal wetlands and open water. However, the species is known only from marshes near Sonoma. Not known within 5 miles.
<b>Rincon Ridge ceanothus</b> Ceanothus confusus	//1B.1	Serpentine or volcanic soils in closed to cone coniferous forest, chaparral, and cismontane woodland. 246 to 3,494 feet. (February to June)	Moderate. Although serpentine substrates not present, generally suitable habitat (cismontane woodland with volcanic soil) is present throughout the project study area. Known within 5 miles.
Rincon Ridge manzanita Arctostaphylos stanfordiana ssp. decumbens	//1B.1	Chaparral and cismontane woodland, restricted to red rhyolites in Sonoma County. 246 to 1,214 feet. (February to May)	Moderate. Extensive suitable vegetation type, but only small amount of suitable rhyolite substrate present. Known within 5 miles.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Round-headed beaked-rush Rhynchospora globularis var. globularis	//2.1	Freshwater marshes and swamps. 148 to 197 feet. (July to August)	Not Expected. Small amounts of somewhat suitable habitat present along the portions of the project study area located in proximity to streams, larger seasonal wetlands, drainages, and open water. Has very limited known range. Not known within 5 miles.
<b>Saline clover</b> Trifolium hydrophilum	//1B.2	Marshes and swamps, vernal pools, and similar mesic areas in valley and foothill grassland. Alkaline areas. 0 to 984 feet. (April to June)	<b>Not Expected</b> . No alkaline wetlands present. Not known within 5 miles.
Seaside tarplant/pale yellow hayfield tarplant Hemizonia congesta ssp. congesta	//1B.2	Valley and foothill grassland, sometimes on roadsides. 66 to 1,827 feet. (April to November)	Moderate. Several CNDDB records within 5 miles. Suitable habitat present in portions of the project study area in grasslands.
Sebastopol meadowfoam Limnanthes vinculans	FE/SE/1B.1	Vernal pools and similar mesic areas in meadows and seeps, and valley and foothill grassland. 49 to 1,001 feet. (April to May)	Low. Limited amounts of somewhat suitable habitat (seasonal wetlands and drainages) scattered throughout the project study area, particularly at north end. Most wetlands do not appear deep/wet enough for this species. Known within 5 miles.
Serpentine cryptantha Cryptantha clevelandii var. dissita (= C. dissita)	//1B.1	On serpentine soils in chaparral. 1,296 to 1,903 feet. (April to June)	<b>Not Expected</b> . No serpentine soils present. Not known within 5 miles.
Serpentine daisy Erigeron serpentinus	//1B.3	Serpentine seeps in chaparral. 197 to 2,198 feet. (May to August)	<b>Not Expected</b> . No suitable habitat present within the project study area. No serpentine substrate present.
Showy rancheria clover/two- forked clover Trifolium amoenum	FE//1B.1	Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentinite. 16 to 1,361 feet. (April to June)	Not Expected. Somewhat suitable habitat present in grassland, but no preferred serpentine habitat present. Very limited range and presumed extirpated in Sonoma County.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
Slender silver moss Anomobryum julaceum	//4.2	Damp rock and soil on outcrops or roadcuts, in broadleaved upland forest, Lower montane coniferous forest, north coast coniferous forest. 328 to 3,280 feet.	<b>Not Expected</b> . Potentially suitable habitat only in a few limited areas of the project corridor. No occurrence records within 5 miles.
Slender-leaved pondweed Stuckenia filiformis	//2.2	Assorted shallow freshwater habitats such as marshes and swamps. 984 to 7,054 feet. (May to July)	Not Expected. Small amounts of somewhat suitable habitat present along the portions of the project study area located in proximity to streams and open water. Project study area below known range. Not known within 5 miles, but widely scattered range.
<b>Small groundcone</b> Kopsiopsis hookeri	//2B.3	North coast coniferous forest. 295 to 2,900 feet. (April to August)	<b>Not Expected</b> . Very limited area of coniferous forest present. Species not known within 5 miles.
Snowy Mountain buckwheat Eriogonum nervulosum	//1B.2	Serpentine chaparral. 984 to 6,906 feet. (June to September)	Not Expected. No serpentine habitat present. Not known within 5 miles. Project study area slightly Lower elevation than known range of species.
Sonoma beardtongue Penstemon newberryi var. sonomensis	//1B.3	Rocky areas in chaparral. 2,297 to 4,495 feet. (April to August)	Not Expected. Somewhat suitable vegetation community (cismontane woodland), but few rock outcrops and project study area well below known elevation range. Not known within 5 miles.
Sonoma canescent manzanita Arctostaphylos canescens ssp. sonomensis	//1B.2	Chaparral, Lower montane coniferous forest. Sometimes serpentine. 590 to 5,485 feet. (January to June)	Moderate. No preferred serpentine habitat or chaparral, and very limited conifer forest. However, mixed north slope cismontane woodland could provide habitat for the species. Known within 5 miles.
Sonoma ceanothus Ceanothus sonomensis	//1B.2	Chaparral with sandy, serpentine, or volcanic soils. 705 to 2,635 feet. (February to April)	Not Expected. Suitable chaparral habitat) is not present. No serpentine present. Project at low end of elevation range of species. Not known within 5 miles.
Sonoma spinefLower Chorizanthe valida	FE/SE/1B.1	Sandy areas in coastal prairie. 33 to 1,001 feet. (June to August)	No Expected. No coastal prairie habitats present. Not known within 5 miles. Many occurrences extirpated.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
<b>Sonoma sunshine</b> Blennosperma bakeri	FE/SE/1B.1	Vernal pools, and other mesic areas in valley and foothill grassland. 33 to 361 feet. (March to May)	Moderate. Suitable habitat in proximity to seasonal wetlands and drainages, particularly in grasslands at the north end of the project. Several occurrences known within 5 miles.
Swamp harebell Campanula californica	//1B.2	Bogs and fens, meadows and seeps, freshwater marsh, and other freshwater mesic habitats. Can include areas in closed to cone coniferous forest, coastal prairie, North Coast coniferous forest. 3 to 1,329 feet. (June to October)	Not Expected. Small amounts of suitable habitat are located in proximity to drainages, streams, and open water. No occurrences within 5 miles. Most known occurrences are west of project study area.
<b>The Cedars</b> <b>manzanita</b> Arctostaphylos bakeri ssp. Sublaevis	/SR/1B.2	Serpentine seeps in chaparral and closed to cone coniferous forest. 607 to 2,493 feet. (February to May)	Not Expected. No serpentine habitat present. Not known within 5 miles. Very restricted range, all to the west of the project.
<b>The Ceders fairy</b> <b>lantern</b> Calochortus raichei	//1B.2	Serpentinite to closed cone coniferous forest, chaparral. 650 to 1,600 feet. (May to August)	Not Expected. No serpentinite habitat is present in the project study area.
<b>Thin-lobed horkelia</b> Horkelia tenuiloba	//1B.2	Mesic openings with sandy soil in broadleaved upland forest, chaparral, and valley and foothill grassland. 164 to 1,640 feet. (May to July)	Not Expected. Vegetation communities generally suitable, but no mesic sandy soil openings noted. Not known within 5 miles.
<b>Thurber's reed grass</b> Calamagrostis crassiglumis	//2.1	Mesic areas in coastal scrub, and freshwater marsh. Usually found in marshy swales. 33 to 148 feet. (May to July)	Not Expected. Small amounts of slightly suitable habitat are present in the project study area located in proximity to drainages, seasonal wetlands, and open water. Known occurrences in valleys or coastal areas. Not known within 5 miles.
<b>Two-carpellate</b> western flax Hesperolinon bicarpellatum	//1B.2	Serpentine/serpentinite in chaparral. 197 to 3,297 feet. (May to July)	Not Expected. No serpentine/serpentinite soils present. Not known within 5 miles.
Vine Hill ceanothus Ceanothus foliosus var. vineatus	//1B.1	Chaparral or cismontane woodlandl. 148 to 1,001 feet. (March to May)	Moderate. Suitable habitat (cismontane woodland) is present throughout large portions of the project study area. Not known within 5 miles.

Common Name Scientific Name	Fed./State/ CRPR Status	Habitat/Blooming Period	Potential to Occur in the Project Study Area
<b>Vine Hill clarkia</b> Clarkia imbricata	FE/SE/1B.1	Acidic sandy loam in chaparral and valley and foothill grassland. 164 to 246 feet. (June to August)	Not Expected. Suitable vegetation type is scattered throughout of the project study area, although sandy soils not observed.
<b>Vine Hill manzanita</b> Arctostaphylos densiflora	/SE/1B.1	Chaparral, with acid marine sand substrate. 164 to 394 feet. (February to April).	Not Expected. Very restricted range, and not known within 5 miles. Sand substrate not present, but sedimentary substrate in somewhat suitable plant community present in portions of the project corridor.
White beaked- rush Rhynchospora alba	//2.2	Freshwater areas such as bogs and fens and marshes and swamps. 197 to 6,693 feet. (July to August)	Not Expected. Small amounts of somewhat suitable habitat present along the portions of the project study area located in proximity to streams, larger seasonal wetlands, drainages, and open water. Not known within 5 miles, but range widely scattered.
White sedge Carex albida	FE/SE/1B.1	Freshwater marsh, and bogs and fens. 49 to to 295 feet. (May to to July)	Not Expected. Small amounts of somewhat suitable habitat are present along the portions of the project located in proximity to streams, seasonal wetlands, drainages, and open water. However, only one extant occurrence is known from Pitkin Marsh, which is more than 5 miles from the project study area.
Notes:		California Rare	Plant Rank (CRPR) status
Federal status des	signations:	aesignations:	
FE = reaerally e FT = federally the	nuanyerea	1B = rare, threatened, or endangered in California	
State status design	nations:	and elsewhe	Pre
SE = State endo	angered	2 = rare, thre but more co	atened, or endangered in California, mmon elsewhere
ST = State three	atened	CRPR threat rar	nks:
SR = State rare		.1 = seriously	threatened
		.2 = fairly thre	eatened
		.3 = not very	threatened

Sources: (GANDA 2012, TRC 2015b, TRC 2016b, TRC 2016c, CNPS 2017, TRC 2017)

Common Name Scientific Name	Fed./State/ Other Status	Habitat	Potential to Occur in the Project Study Area
Invertebrates			
California freshwater shrimp Syncaris pacifica	FE/SE/	Shallow pools away from main streamflow. Must have perennial flows. Winters under exposed underwater roots; may be found in summer under leafy branches touching water.	Moderate. Potentially suitable habitat is present in low gradient streams that cross the project study area, including Pool, Wright, Windsor, and Mark West Creeks. Habitat is not present in any of the unnamed ephemeral streams. Based on the CNDDB, the closest documented occurrence of the species is approximately 6 miles from the project study area.
Fishes			
California Coast Chinook salmon Oncorhynchus tshawytscha	FT//	Anadromous; migrates through San Francisco Bay and spawns in coastal rivers and creeks. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen.	Moderate. The project study area is within the range of the California Coast ESU. The larger creeks that cross the project study area provide potential habitat, including Mark West Creek, Windsor Creek, and Pool Creek. In the project study area, Mark West Creek, Pool Creek, and an unnamed creek are designated critical habitat for the species.
Central California Coast coho salmon Oncorhynchus kisutch	FE/SE/	Anadromous; migrates through San Francisco Bay and spawns in coastal rivers and creeks. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen.	Moderate. The project study area is within the range of the Central California Coast ESU. The larger creeks that cross the project study area provide potential habitat, including Mark West Creek, Windsor Creek, and Pool Creek.
Central California Coast steelhead Oncorhynchus mykiss irideus	FT//	Anadromous, migrates through San Francisco Bay, spawns in coastal rivers and creeks. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water, and sufficient dissolved oxygen	Moderate. The project study area is within the range of the California Coast ESU. The larger creeks that cross the project study area provide potential habitat, including Mark West Creek, Windsor Creek, and Pool Creek. In the project study area, Mark West Creek, Pool Creek, and an unnamed creek are designated critical habitat for the species.
Hardhead Mylopharodon conocephalus	/CSC/	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand- gravel-boulder bottoms and slow water velocity.	Moderate. Potentially suitable habitat is present in creeks that cross the project study area. Based on the CNDDB, the closest documented occurrence of the species is approximately 1 mile from the project study area.

# Table D-2Special-Status Wildlife with Potential to Occur in the Project Study Area

Common Name Scientific Name	Fed./State/ Other Status	Habitat	Potential to Occur in the Project Study Area
Navarro roach Lavinia symmetricus navarroensis	/CSC/	Prefers pool habitats, with low water velocity. Found in warm intermittent streams as well as cold aerated streams. Confined to the Navarro River and its tributaries.	<b>Moderate</b> . Potentially suitable habitat is present in creeks that cross the project study area. Based on the CNDDB, the closest documented occurrence of the species is approximately 1 mile from the project study area.
Russian River tule perch Hysterocarpus traski pomo	/CSC	Low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover. They also require deep (> 1 meter) pool habitat.	Moderate. Potentially suitable habitat is present in creeks that cross the project study area that are tributaries to the Russian River.
Amphibians			
California giant salamander Dicamptodon ensatus	//	Primarily in humid coastal forests, especially in Douglas fir, redwood, red fir, and montane and valley-foothill riparian habitats. In or near streams in damp forests.	Not Expected. Potentially suitable habitat is limited to the small area of Douglas-fir forest in the project study area.
California red- legged frog Rana draytonii	FT/CSC/	Breeding sites include aquatic habitats including pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds, lagoons, and artificial impoundments, such as stock ponds. Upland habitats include downed woody vegetation, leaf litter, and small mammal burrows that provide protection from predators and prevent desiccation.	Low. Suitable aquatic and upland habitat is present in the project study area, but the species has not been observed within approximately 10 miles of the project study area (CNDDB) and the project study area is near the periphery of the species' range. Additionally, no California red- legged frog (CRLF) were observed during focused surveys of 34 aquatic sites within or near the project study area, and most of the surveyed sites contained factors that detract from habitat quality, such as introduced fish and bullfrogs, steep banks, and relatively little emergent vegetation.
California tiger salamander Ambystoma californiense	FT/ST/	Vernal pools, stock ponds and/or other seasonal water sources; requires underground refuge sites in accessible upland areas.	Low. Portions of the southern alignment study area are within the geographic range of the Sonoma County population, within areas identified by the Santa Rosa Plain Conservation Strategy (SRPCS) as having potential for presence of California tiger salamander (CTS), and within designated CTS critical habitat. However, these portions of the project study area are bordered by Highway 101, developed areas, paved roads, disked, and/or are vineyards, and are isolated from documented CTS occurrences. Portions of the northern

Common Name Scientific Name	Fed./State/ Other Status	Habitat	Potential to Occur in the Project Study Area
			alignment study area are within or bordering the SRPCS planning area, but these areas are described by the SRPCS as "CTS not likely". Based on the CNDDB, the closest documented occurrence of the species is approximately 2 miles south of the project study area.
Foothill yellow- legged frog Rana boylii	/CSC/	Partly-shaded shallow streams and riffles with a rock substrate in a variety of habitats. Sandy and rocky or gravelly banks at 6,000 ft. and below in elevation.	Moderate. Potentially suitable habitat is present in multiple creeks that cross the project study area. Based on the CNDDB, the closest documented occurrence of the species is approximately 4 miles from the project study area. Note: Foothill yellow-legged frog is currently proposed for state listing as
			Threatened.
Reptiles			
Western pond turtle Actinemys marmorata	/CSC/	Perennial ponds, deep low moving streams, marshes and lakes are habitat for this species at 6,000 ft. and below in elevation. However, eggs are laid in loose soil on land in oak woodlands, mixed coniferous forests, broadleaf forests and grasslands, usually within 400 ft. of ponds, lakes, low streams and marshes with vegetated borders, rocks, or logs. Logs, rocks, cattail mats, and exposed banks are required for basking.	Moderate. Suitable habitat is present in ponds and creeks in the project study area, and adjacent areas could be used as nest sites. Based on the CNDDB, the species is known to occur in multiple creeks that cross the project study area, including Mark West Creek, Pool Creek and its tributaries, and tributaries to the Russian River.
Birds			
<b>Burrowing owl</b> Athene cunicularia	BCC/CSC/	Nests in burrows (often constructed by ground squirrels) and forages in low- growing grasslands and other open, semi-arid habitats.	Not Expected. Areas of potentially suitable habitat are present in the grassland habitats, but GANDA (2015) reported these areas lack significant small mammal activity and few potentially suitable burrows were observed. Based on the CNDDB, there are few occurrences of burrowing owl in the project region, with the closest documented occurrence being over 5 miles from the project study area. The species has not been documented nesting in Sonoma County since the 1980's.

Common Name Scientific Name	Fed./State/ Other Status	Habitat	Potential to Occur in the Project Study Area
<b>Cooper's hawk</b> Accipiter cooperi	/WL/	Mature forests, open woodland, riparian forest. Nests in coast live oak and other forest habitats.	<b>Present</b> . Suitable nesting and foraging habitat is present in the project study area; observed during raptor survey (GANDA 2015).
<b>Golden eagle</b> Aquila chrysaetos	BCC/WL, CFP/	Frequents open woodlands and less populated areas.	<b>Present</b> . Suitable nesting and foraging habitat is present in the project study area; observed during raptor survey (GANDA 2015).
Northern Harrier Circus cyaneus	/CSC/	Nests on ground in swales and Low-lying grasslands	<b>Present</b> . Suitable nesting and foraging habitat is present in the project study area; observed during raptor survey (GANDA 2015).
<b>Oak titmouse</b> Baeolophus inornatus	BCC//	Nests in tree cavities in oak- woodlands.	<b>Present</b> . Suitable nesting and foraging habitat is present in the project study area; observed during raptor survey (GANDA 2015).
<b>Osprey</b> Pandion haliaetus	/WL/	Uses snags and large trees for nesting. Forages mainly in lakes and the ocean.	<b>Not Expected.</b> Given the distance to the ocean and to large lakes, this species is not expected to nest in the project study area.
<b>Tricolored</b> <b>blackbird</b> Agelaius tricolor	BCC/CSC/	Freshwater marshes and riparian habitats.	Not Expected. Only marginal nesting habitat present given absence of suitable marsh habitats and scarcity of developed riparian habitat. Not documented in the project study area.
White-tailed kite Elanus leucurus	/CFP/	Generally nests in trees near fields, open groves, grasslands, or marshes.	<b>Present</b> . Suitable nesting and foraging habitat is present in the project study area; observed during raptor survey (GANDA 2015).
Mammals			
<b>American badger</b> Taxidea taxus	/CSC/	Suitable habitat is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils.	Moderate. Suitable foraging and denning habitat is present in the grasslands and woodlands throughout the project study area.
Fisher (West Coast Distinct Population Segment) Pekania pennanti	PT/ST, CSC/ 	Late successional coniferous or mixed forest. Key habitat components include relatively large diameter trees, high canopy closure, large trees (hardwood and conifer) with cavities, and large down wood.	Not Expected. Suitable forest types are not present in or near the project study area.

Common Name Scientific Name	Fed./State/ Other Status	Habitat	Potential to Occur in the Project Study Area
Fringed myotis Myotis thysanodes	// WBWG H	Roosts in mines, caves, trees and buildings.	Moderate. Numerous trees and several structures in the project study area provide potential roosting habitat.
Hoary bat Lasiurus cinereus	// WBWG M	Forested habitat	Moderate. Numerous trees in the project study area provide potential roosting habitat.
Long-eared myotis Myotis evotis	// WBWG M	Variety of woodland and forest habitats, but prefers conifers. Roosts in crevices, buildings, snags, and under bark.	Moderate. Numerous trees and several structures in the project study area provide potential roosting habitat.
Pallid bat Antrozous pallidus	/CSC/ WBWG H	Variety of habitats; prefer open dry lands with rocky areas for roosting. Roosts in anthropogenic structures (buildings and bridges), cliff crevices of rock faces, and hollow trees.	Moderate. Numerous trees and several structures in the project study area provide potential roosting habitat
Sonoma tree vole Arborimus pomo	/CSC/	In Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock, or spruce.	Not Expected. Very limited conifers are present in the project study area and therefore habitat is extremely limited. Based on the CNDDB, the closest occurrence of this species is approximately 12 miles west of the project study area.
Townsend's big- eared bat Corynorhinus townsendii	/SE/ WBWG H	Variety of woodland and forest habitats, but prefers conifers. Roosts primarily in caves, mines, tunnels, and sometimes in buildings, bridges, or other human- made structures.	Moderate. Caves and mines not known from the project study area, but barns and outbuildings in the project study area represent potentially suitable roosting habitat.
Western red bat Lasiurus blossevillii	/CSC/ WBWG H	Edges of open to moderately dense deciduous foothill woodlands along streams. Roosts in moderately dense foliage.	Moderate. Numerous trees in the project study area provide potential roosting habitat.
<b>Yuma myotis</b> Myotis yumanensis	// WBWG ML	Woodland and open forest with freshwater sources over which to feed.	Moderate. Numerous trees and several structures in the project study area provide potential roosting habitat.

Common Name Fed./State/ Scientific Name Other Status	Potential to Occur Habitat Project Study Ar	in the ea
Notes:	State status designations, continued:	
Federal status designations:	CSC = California species of concern	
FE = federally endangered	CFP = California fully protected	
FT = federally threatened	WL = Watch List species	
BCC = bird of conservation concern	Western Bat Working Group status designations:	
State status designations:	WBWG H = high priority	
SE = State endangered	WBWG $M$ = medium priority	
ST = State threatened	WBWG ML = medium/low priority	

Sources: (GANDA 2012, TRC 2015b, TRC 2016b, TRC 2016c, GANDA 2015a, GANDA 2015b, Swaim Biological, Inc. 2016, USFWS 2011, TRC 2017)

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# PG&E Fulton-Fitch Mountain Reconductoring Project

Figure D-1: Biological Survey Areas (Overview)

# Legend

- Southern Segment
- Northern Segment
- Substation
- Roadway
- Park
- City
- Map Frame







PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (1 of 27)

#### Legend

# Existing Poles and Proposed Action

- TSP (Replace Insulators)
- Steel H-Frame/Dead-End (Replace Insulators)
- + Wood Monopole (Replace with LDSP)
- O Adjacent Pole (No Work)

#### Access Routes

- Existing Paved
- Existing Unpaved
- Overland

#### Anticipated Work Area Limits

- Staging Area/Landing Zone
- Pull Site (PS)
- Substation
- Project Study Area

- BRTR Addendum #1 (TRC
- BRTR Addendum #2 (TRC









PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (3 of 27)

### Legend

USGS Perennial Stream/Creek

USGS Intermittent Stream/Creek

#### **Existing Poles and Proposed Action**

- TSP (Replace Insulators)
- Adjacent Distribution Pole (Relocate)

# Access Routes

Overland

# Anticipated Work Area Limits

- Limited Staging Area
- Project Study
- Biological Survey Areas
  BRTR Addendum #1 (TRC







PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (4 of 27) Legend USGS Waterbody Existing Poles and Proposed Action TSP (Replace Insulators) + Wood Monopole (Replace with TSP) + Wood Monopole (Replace with LDSP) Access Routes Existing Paved

- Existing Unpaved
- Overland (Backup Only)

#### Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Null Site (PS)
- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- BRTR (GANDA 2012)
- BRTR Addendum #1 (TRC 2015)
- BRTR Addendum #2 (TRC 2016)





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (5 of 27)

#### Legend

### Existing Poles and Proposed Action

- + Wood Monopole (Replace with LDSP)
- + LDSP (Replace with LDSP)

### Access Routes

Existing Unpaved

Cverland

# Anticipated Work Area Limits

- Limited Staging Area (SA)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC 2016)
- BRTR Addendum #3 (TRC 2016)





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (6 of 27)

#### Legend

----- USGS Intermittent Stream/Creek

# **Existing Poles and Proposed Action**

+ Wood Monopole (Replace with LDSP)

### Access Routes

- Existing Paved
- Existing Unpaved

Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC 2016)
- BRTR Addendum #3 (TRC 2016)
- BRTR Addendum #4 (TRC 2017)





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (7 of 27)

#### Legend

USGS Waterbody

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with LDSP)
- X Wood Monopole (Completely Remove)

#### Access Routes

Existing Unpaved

Overland

#### Anticipated Work Area Limits

- Staging Area/Landing Zone
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (8 of 27)

#### Legend

- ----- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with LDSP)
- Wood 3-Pole Structure (Replace with TSP)

# Access Routes

Existing Unpaved

# Anticipated Work Area Limits

- N Pull Site (PS)
- Project Study Area
- Remotely Surveyed Areas

# Biological Survey Areas BRTR (GANDA 2012)

- BRTR Addendum #2 (TRC 2016)





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (9 of 27)

#### Legend

----- USGS Intermittent Stream/Creek

# Access Routes

- Existing Unpaved
- Project Study Area
- Remotely Surveyed Areas

- Biological Survey Areas
  BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC 2016)







#### Legend

- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with LDSP)
- X Wood Monopole (Completely Remove)
- + Wood A-Frame (Replace with

#### Access Routes

- Existing Unpaved
- Overland
- Potential Helicopter Touch Down and Overland Routes
- Project Study
- Remotely Surveyed Areas
- **Biological Survey Areas**
- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (11 of 27)

### Legend

USGS Intermittent Stream/Creek

# Existing Poles and Proposed Action

+ Wood Monopole (Replace with LDSP)

- + Wood 3-Pole Structure (Replace with LDSP)
- LDSP (Replace with LDSP)

# Access Routes

- Existing Paved
- Existing Unpaved

- Overland

#### Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Potential Helicopter Touch Down and Overland Routes

  - Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC 2016)





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (12 of 27)

#### Legend

- ----- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- ✦ Wood Monopole (Replace with LDSP)

### Access Routes

- Existing Unpaved
- Overland
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Biological Survey Areas
- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC







#### Legend

----- USGS Intermittent Stream/Creek USGS Waterbody

# Existing Poles and Proposed Action

- Wood Monopole (Replace with LDSP)
- + LDSP (Replace with TSP)
- LDSP (Utilize In Place)

### Access Routes

- Existing Unpaved

### Anticipated Work Area Limits

- Pull Site (PS)
- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC





PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (14 of 27)

#### Legend

----- USGS Intermittent Stream/Creek

# **Existing Poles and Proposed Action**

- + Wood Monopole (Replace with LDSP)
- + Wood 3-Pole Structure (Replace with TSP)

#### Access Routes

- Existing Paved
- Existing Unpaved
- Existing Unpaved (Backup Only)
- **—** Overland

### Anticipated Work Area Limits

- Staging Area/Landing Zone Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #1 (TRC
- BRTR Addendum #2 (TRC







PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (16 of 27)

#### Legend

----- USGS Intermittent Stream/Creek USGS Waterbody

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)
- + Wood 3-Pole Structure (Replace with LDSP)

### Access Routes

- Existing Unpaved
- Overland

#### Anticipated Work Area Limits

- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area
- Remotely Surveyed Areas

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC








PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (19 of 27)

Legend

- ----- USGS Intermittent Stream/Creek
- USGS Waterbody

# Access Routes

Existing Unpaved

Project Study

Biological Survey Areas
BRTR Addendum #2 (TRC







PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-1: Biological Survey Areas (21 of 27)

Legend

- ----- USGS Intermittent Stream/Creek
- USGS Waterbody

# Access Routes

- Existing Unpaved
- Project Study

Biological Survey Areas
BRTR Addendum #2 (TRC







- USGS Intermittent Stream/Creek
- Existing Poles and Proposed
- + Wood Monopole (Replace with LDSP)

### Access Routes

- Existing Paved
- Existing Unpaved
- Overland
- Overland (Backup Only)
- Anticipated Work Area Limits
- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study
- Remotely Surveyed Areas

### **Biological Survey Areas**

- BRTR (GANDA 2012)
- BRTR Addendum #2 (TRC
- BRTR Addendum #3 (TRC













Existing Poles and Proposed Action

- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)
- X Wood Monopole (Completely Remove)
- O Adjacent Pole (No Work)

# Access Routes

- Existing Unpaved
- Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone
- Limited Staging Area (SA)
- Pull Site (PS)
- Potential Helicopter Touch Down and Overland Routes

Project Study Area

Remotely Surveyed Areas

# Biological Survey Areas

- BRTR (GANDA 2012)
- BRTR Addendum #1 (TRC
- BRTR Addendum #2 (TRC BRTR Addendum #3 (TRC
  - BRTR Addendum #3 (TRC
- BRTR Addendum #4 (TRC







# PG&E Fulton-Fitch Mountain Reconductoring Project

Figure F-2: Vegetation Communities and Land Cover Types (Overview)

# Legend

- Southern Segment
- Northern Segment
- Substation
- Roadway
- Park
- City
- Map Frame











— USGS Perennial Stream/Creek

----- USGS Intermittent Stream/Creek

### Existing Poles and Proposed Action

- TSP (Replace Insulators)
- Adjacent Distribution Pole (Relocate)

Access Routes

Existing Paved

Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone
- Limited Staging Area (SA)
- Project Study Area

### Vegetation Communities/Land Cover Types

- Riparian Woodland
- Oak Woodland/Forest

Grassland

- Mixed Agricultural Land
- Developed









# Existing Poles and Proposed Action TSP (Replace Insulators)

- e ISP (Replace Insulator
- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)

# Access Routes

- Existing Paved
- Existing Unpaved
- Overland (Backup Only)

# Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Pull Site (PS)
- Vehicle Turnaround Areas (T)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

# Vegetation Communities/Land Cover Types

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land
- Developed

# Map Extent Indicator Image: A standard of the standard of the



PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-2: Vegetation Communities and Land Cover Types (5 of 27)

### Legend

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with LDSP)
- LDSP (Replace with LDSP)

# Access Routes

Existing Unpaved

Overland

# Anticipated Work Area Limits

- Limited Staging Area (SA)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
  - Grassland
  - Mixed Agricultural Land
- Developed







----- USGS Intermittent Stream/Creek

# Existing Poles and Proposed Action

+ Wood Monopole (Replace with LDSP)

# Access Routes

Existing Paved

Existing Unpaved

Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

### Vegetation Communities/Land Cover Types

- Riparian Woodland
- Oak Woodland/Forest

Grassland

Mixed Agricultural Land

Developed









- ----- USGS Intermittent Stream/Creek
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with LDSP)
- Wood 3-Pole Structure (Replace with TSP)

# Access Routes

Existing Unpaved

# Anticipated Work Area Limits

- N Pull Site (PS)
- Project Study Area

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land
- Developed





# PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-2: Vegetation Communities and Land Cover Types (9 of 27)

# Legend

----- USGS Intermittent Stream/Creek

# Access Routes

- Existing Unpaved
- Project Study Area

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land
- Developed







- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with LDSP)
- X Wood Monopole (Completely Remove)
- + Wood A-Frame (Replace with TSP)

### Access Routes

- Existing Unpaved
- Overland
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land
- Developed





Figure D-2: Vegetation Communities and Land Cover Types (11 of 27)



PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-2: Vegetation Communities and Land Cover Types (12 of 27)

### Legend

- ----- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- ✦ Wood Monopole (Replace with LDSP)

# Access Routes

- Existing Unpaved
- Overland
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
  - Grassland







----- USGS Intermittent Stream/Creek USGS Waterbody

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with LDSP)
- + LDSP (Replace with TSP)
- LDSP (Utilize In Place)

# Access Routes

- Existing Unpaved
- Cverland

### Anticipated Work Area Limits

- Pull Site (PS)
- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
- Eucalyptus
  - Grassland







# ----- USGS Intermittent Stream/Creek

# **Existing Poles and Proposed Action**

- + Wood Monopole (Replace with LDSP)
- + Wood 3-Pole Structure (Replace with TSP)

# Access Routes

- Existing Paved
- Existing Unpaved
- Existing Unpaved (Backup Only)
- Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
- Grassland
- Bare Soil/Heavily Disturbed
- Developed







- USGS Intermittent Stream/Creek
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)

### Access Routes

- Existing Paved
- Existing Unpaved
- Cverland

# Anticipated Work Area Limits

- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

### Vegetation Communities/Land Cover Types

- Oak Woodland/Forest
- Douglas-fir Forest
- Grassland
- Mixed Agricultural Land
- Developed

# Map Extent Indicator





----- USGS Intermittent Stream/Creek USGS Waterbody

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)
- Wood 3-Pole Structure (Replace with LDSP)

### Access Routes

Existing Unpaved

Overland

### Anticipated Work Area Limits

- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land

















- ----- USGS Intermittent Stream/Creek USGS Waterbody
- Existing Poles and Proposed Action
- + Wood Monopole (Replace with LDSP)

### Access Routes

- Existing Paved
- Existing Unpaved
- Overland
- Overland (Backup Only)

### Anticipated Work Area Limits

- Vehicle Turnaround Areas
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

# Vegetation Communities/Land Cover Types

- Oak Woodland/Forest
  - California Bay Forest
- Grassland
- Mixed Agricultural Land
- Developed

# Map Extent Indicator Scale = 1:3,000 100 200 Aerial Imagery: 6/11/2016 Date Created: 7/5/2017 PANORAMA





----- USGS Intermittent Stream/Creek

# Existing Poles and Proposed Action

+ Wood Monopole (Replace with LDSP)

# Access Routes

Existing Paved

Overland

- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
  - California Bay Forest
  - Grassland
  - Mixed Agricultural Land
- Developed





# PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-2: Vegetation Communities and Land Cover Types (24 of 27)

### Legend

# Existing Poles and Proposed Action

+ Wood Monopole (Replace with LDSP)

### Access Routes

Existing Unpaved

Overland

# Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Vehicle Turnaround Areas (T)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

- Oak Woodland/Forest
  - California Bay Forest
  - Grassland









— USGS Perennial Stream/Creek

# Existing Poles and Proposed Action

- + Wood Monopole (Replace with TSP)
- + Wood Monopole (Replace with LDSP)
- X Wood Monopole (Completely Remove)
- Adjacent Pole (No Work)

# Access Routes

- Existing Unpaved
- Cverland

# Anticipated Work Area Limits

- Staging Area/Landing Zone (LZ)
- Limited Staging Area (SA)
- Pull Site (PS)
- Potential Helicopter Touch Down and Overland Routes
- Project Study Area

### Vegetation Communities/Land Cover Types

- Oak Woodland/Forest
- Grassland
- Mixed Agricultural Land
- Developed



87


## PG&E Fulton-Fitch Mountain Reconductoring Project Figure D-2: Vegetation Communities and Land Cover Types (27 of 27)

### Legend

USGS Perennial Stream/Creek

### Access Routes

- Existing Unpaved
- Overland
- Substation
- Project Study Area

#### Vegetation Communities/Land Cover Types

- Mixed Agricultural Land
- Developed



# Nesting Birds: Species-Specific Buffers for PG&E Activities

Within PG&E's Avian Program, standard nest buffers were developed for all common and special-status birds present within its Service Territory. There are no standard nest buffers specified in the Migratory Bird Treaty Act (MBTA) or within California Fish and Game Code. Table 1 provides nest buffers based on the best available information, including relevant literature review and avian biology. Disturbance factors including *nest location, human activity, activity duration,* and *noise level* may influence nesting behavior and reproductive success, and were each considered in establishing standard buffer distances for individual species. Where regulatory agencies have provided information on nest buffer distances for special-status species, those buffer distances are primarily used as *standard buffers* in Table 1. *Standard buffers* are species-specific buffer distances between occupied nest sites and work activities where work will not occur while the nest is active (containing eggs or young). These standard buffers are intended to be applied to nests located in proximity to PG&E activities at a sufficient distance to provide suitable nest protection. For example, a nesting black-crowned night heron has a standard buffer distance of 400 feet (Table 1).

Because it is not always possible to apply the standard buffer, non-standard speciesspecific buffer distances have also been established. As part of the determination of these non-standard buffers, PG&E activities are assigned disturbance rankings (Low, Medium, or High) for each factor identified above. Evaluation of all disturbance factors combined produces an overall disturbance category by assessing each disturbance factor for one or more PG&E activities. If the overall disturbance category is high, the standard buffer will generally apply. If the evaluation results in low or medium overall disturbance categories, the standard buffer is applied as feasible or reduced buffers may be appropriate. For example, in some circumstances it may be necessary to perform certain types of work within the standard buffer. In these cases, biologists consider all relevant site-specific conditions, including the species' tolerance for disturbance, work activity type, noise levels, and distance to nest to determine if reducing the standard buffer is appropriate. Alternatively, the buffer may be increased beyond the standard buffer for certain exceptions. Helicopters are the main exception that may require increased buffers. Table 1 lists the standard buffers and non-standard buffer ranges for activities with lowmedium and medium-high disturbances. Nest buffers will be implemented and adjusted by the biologist<sup>1</sup>.

The following site-specific conditions are considered in determining if a reduced or increased buffer is appropriate:

- **Disturbance**. Evaluate nest disturbance, including consideration of activity intensity and duration, construction type, amount of habitat disturbance, level of human disturbance or acclimation, activity length, and the amount of noise generated by the activity.
- **Existing Conditions**. Assess site conditions to determine if there is acclimation to human disturbance.
- **Nest Concealment**. Evaluate surrounding habitat for its ability to provide visual and/or acoustic barriers between the nest and construction.
- **Species Natural History**. Consider individual species' natural history, nest stage (incubation, rearing, fledging), and known tolerances to disturbance.
- Habituation. Consider species habituation to new or ongoing activities.
- Environmental Conditions. Consider weather and other related factors.
- Helicopter Use. Consider helicopter type, flight plans, and duration.

Step/Task/Responsible	Outcome and Components
1. Desktop review	Assess habitat types and potential nesting bird species
Biologist	• Identify potentially appropriate buffers for the species that may nest
2. Preconstruction nesting bird	Conduct preconstruction surveys within the standard buffers
surveys	Document species detections including nests and active nests
Biologist	
3. Assign Buffers	Assess intensity/duration of activity
Biologist	Assess acclimation to human disturbance
	Assess site-specific conditions
	<ul> <li>Consider species' natural history, reproductive stage, tolerances to</li> </ul>
	disturbance, and observed behavior
	• Evaluate and assign standard, reduced, or increased buffers
4. Implement Buffers	Implement buffers when work activities are occurring
Biologist/Biological Monitor	<ul> <li>Conduct periodic biological monitoring where peeded</li> </ul>
Biologist, Biological Homeor	• Conduct periodic biological monitoring where needed
	Adjust buffers as appropriate

<sup>&</sup>lt;sup>1</sup> Biologist refers to an individual with a bachelor's degree or above in a field related to biological sciences and demonstrated field expertise in ornithology, in particular, nesting behavior; these qualified biologists may be PG&E employees or contractors.

# Species-Specific Buffers for PG&E Activities

## **Buffer Assignment Process – Quick Reference**



# **Other Biological Considerations in Determining Buffers**

- Provisioning frequency of hatchlings or older young
- Egg turning
- Egg incubation (female or male or combination)
- Egg hardiness
- Ambient Temperatures
- Heat tolerance (eggs or nestlings)
- Cold tolerance (eggs or nestlings)
- Unsheltered nest risk
- Premature fledging risk
- Unattended nests and predation risk

**Time on Nest is Important.** An egg initially requires a controlled heat input, but later in incubation the embryo may produce more heat and may need to be cooled rather than heated. Ambient temperatures need to be considered. Unattended unsheltered nests may experience temperature extremes (heat or cold). Egg turning during incubation is also a critical component for successful hatching; absence of turning during incubation will result in reduced and delayed hatching. During the nestling stage for altricial birds (i.e., birds that typically require feeding by adults), adults must provision food to nestlings. Provisioning rate is highly variable between species and is correlated to clutch size and body size, but most birds make frequent trips to attend nestlings. Collectively referred to as brooding, these forms of parental care are essential for reproductive success. Unattended nests also may experience increased rates of predation. Premature fledging is more likely to occur during later nest stages, when young are nearing fledging stage but not yet capable of flight.

### Table 1. Species-specific Nest Buffers for PG&E Work Activities

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Mallard	Anas platyrhynchos	Scrapes under overhanging cover or in dense vegetation in uplands near water.	Ground	March through June; single brood.	Clutch incubated for 26–29 days by female; young are precocial.	100	30-100	15–30
Cinnamon Teal	Anas cyanoptera	Scrapes under overhanging cover or in dense vegetation in uplands near water.	Ground	April through August; single brood.	Clutch incubated for 24–25 days by female; young are precocial.	100	30-100	15-30
Canada Goose	Branta canadensis	Scrapes on slightly elevated, firm ground in uplands near water.	Ground	February through June; single brood.	Clutch incubated for 27–28 days by female; young are precocial.	100	30-100	15-30
Wood Duck	Aix sponsa	Cavities in riparian woodlands and other woodland habitats near water.	Up to 60 feet	April through August; single or double brood.	Clutch incubated for 27–35 days by female; young are precocial.	100	30-100	15-30
Blue-winged Teal	Anas discors	Scrapes in dense grass or forbs in wetlands or grasslands near water.	Ground	June through July; single brood	Clutch incubated for 23–24 days by female; young are precocial.	100	30-100	15-30
Northern Shoveler	Anas clypeata	Scrapes in low grasses or forbs in uplands near water.	Ground	March through July; single brood.	Clutch incubated for 25–27 days by female; young are precocial.	100	30-100	15-30
Gadwall	Anas strepera	Scrapes in dense, low emergent vegetation or grasses in uplands near water.	Ground	April through July; single brood.	Clutch incubated for 22–29 days by female; young are precocial.	100	30-100	15-30
American Wigeon	Anas americana	Scrapes in dense vegetation cover in uplands near water.	Ground	May through July; single brood.	Clutch incubated for 24–25 days by female; young are precocial.	100	30-100	15-30

#### \*Atypically high-intensity activities, such as helicopter use usually require increased buffers beyond the standard buffer

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Redhead	Aythya americana	Platform nests over water in dense vegetation; occasionally nests in uplands near water.	Ground	April through June; single brood.	Clutch incubated for 24–26 days by both sexes; young are precocial.	100	30-100	15-30
Ring-necked Duck	Aythya collaris	Platform nests over water in dense emergent vegetation in wetlands.	Ground	May through August; single brood.	Clutch incubated for approximately 26 days by female; young are precocial.	100	30-100	15-30
Common Merganser	Mergus merganser	Cavities in trees, snags and stumps in riparian woodlands.	Up to 200 feet	March through September; single brood.	Clutch incubated for 28–32 days by female; young are precocial.	100	30-100	15-30
Ruddy Duck	Oxyura jamaicensis	Platform nests constructed on shallow water in dense, tall emergent vegetation.	Ground	April through October; single or double brood.	Clutch incubated for approximately 23 days by female; young are precocial.	100	30-100	15-30
Pied-billed Grebe	Podilymbus podiceps	Platform nests constructed in emergent vegetation bordering open water.	Ground	March through July; double brood.	Clutch incubated for approximately 23 days by both sexes; young are precocial.	100	30-100	15-30
Eared Grebe	Podiceps nigricollis	Platform nests in water on emergent wetland vegetation.	Ground	April through July; single brood.	Clutch incubated for approximately 21 days by both sexes by both sexes; young are precocial.	100	30-100	15-30
Western Grebe	Aechmophorus occidentalis	Platform nests in emergent vegetation or open water or, less frequently, on dry land near water.	Ground	May through August; single brood.	Clutch incubated for approximately 23 days by both sexes; young are precocial.	100	30-100	15-30

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Clark's Grebe	Aechmophorus clarkii	Platform nests constructed in emergent vegetation or open water or, less frequently, on dry land near water.	Ground	May through August; single brood.	Clutch incubated for approximately 23 days by both sexes; young are precocial.	100	30-100	15-30
Double- crested Cormorant	Phalacrocorax auritus	Platform nests on islands, on the ground or in trees; also in power poles and other artificial structures. Colonial nester.	Ground	March through August; single brood.	Clutch incubated for 25–29 days by both sexes; altricial young fledge at 37–44 days.	400	75-400	50-75
Pelagic Cormorant	Phalacrocorax pelagicus	Platform nests on steep cliffs along rocky and exposed shorelines along outer coasts, bays, inlets, estuaries, rapids, coves, surge narrows, harbors, lagoons, and coastal log-storage sites. Colonial nester.	Ground	April through August; single or double brood	Clutch incubated for 28–32 days by both sexes; altricial young fledge at approximately 47 days	400	75-400	50-75
American Bittern	Botaurus lentiginosus	Platform nests in shallow water or on ground near water.	Ground	April through July; single brood.	Clutch incubated for approximately 24 days by female; altricial young fledge at approximately 14 days.	100	50-100	25-50
Least Bittern	Ixobrychus exilis	Platform nests about a foot above the water in freshwater marshes.	Ground	March through July; double brood.	Clutch incubated for 16–19 days by both sexes; altricial young fledge at 13–15 days.	100	50-100	25-50

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Great Blue Heron	Ardea herodias	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	Up to 130 feet	January through July; single brood.	Clutch incubated for 25–29 days by both sexes; altricial young fledge at approximately 60 days.	400	75-400	50-75
Great Egret	Ardea alba	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	10-80 feet	March through July; single brood.	Clutch incubated for approximately 26 days; semi-altricial young fledge at approximately 35–42 days.	400	75-400	50–75
Snowy Egret	Egretta thula	Platform nests in tall trees or other types of vegetation near water. Colonial nester.	Up to 30 feet but usually 10–15 feet	March through July; single brood.	Clutch incubated for 20–24 days by both sexes; semi-altricial young fledge at 21–28 days.	400	75-400	50-75
Cattle Egret	Bubulcus ibis	Platform nests in tall shrubs and trees near water.	Up to 30 feet but usually 5– 15 feet	April to July; single brood.	Clutch incubated for 23–25 days; semi- altricial young fledge at about 40 days.	400	75-400	50-75
Green Heron	Butorides striatus	Platform nests in shrubs, trees, thickets, or other vegetation near water.	10–30 feet, sometimes higher	March through July; single or double brood.	Clutch incubated for 19–21 days by both sexes; semi-altricial young fledge at 21–23 days.	100	50-100	25-50
Black- crowned Night-Heron	Nycticorax	Platform nests in shrubs, trees, thickets, or other vegetation near water. Colonial nester.	Up to 150 feet	January through June; double brood.	Clutch incubated for approximately 24 days by female; semi- altricial young fledge at 42–49 days.	400	75-400	50-75
White-faced Ibis	Plegadis chihi	Platform nests of emergent wetland vegetation in extensive wetlands. Colonial nester.	Ground	May to July; single brood.	Clutch incubated for 20–26 days by both sexes; altricial young fledge at 10–12 days.	400	75-400	50-75

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Turkey Vulture	Cathartes aura	Caves, rock crevices, possibly abandoned buildings, or other dark, secluded sites.	Up to 20 feet	March through June; single brood.	Clutch incubated for 37–41 days by both sexes; semi-altricial young fledge at approximately 77 days.	300	100-300	50-100
California Condor	Gymnogyps californianus	Caves on high, remote cliff-faces or in hollow in large redwood snag.	Cliff	Year-round, with egg-laying usually occurring in January or February; single brood.	Clutch incubated for 42–50 days by both sexes; semi-altricial young fledge at 35–49 days.	3,960	CR <sup>a</sup>	CR
White-tailed Kite	Elanus caeruleus	Platform nests in tall trees near grasslands, oak savannah, or other open habitats.	12-60 feet	February through July; sometimes double brood.	Clutch incubated for 28–30 days by both sexes; semi-altricial young fledge at 34–40 days.	300	200-300	100-200
Osprey	Pandion haliaetus	Platform nests on treetops, rocky outcrops, or utility poles near water.	Up to 60 feet	Mid-March through August; single brood.	Clutch incubated for 32–33 days by both sexes; semi-altricial young fledge at 51–59 days.	300	100-300	50-100
Bald Eagle	Haliaeetus leucocephalus	Platform nests in large trees or rocky outcrops close to lakes and large rivers.	50-180 feet	January to August; single brood.	Clutch incubated for 35–46 days by both sexes; semi-altricial young fledge at 70–77 days.	2,640	CR	CR
Northern Harrier	Circus cyaneus	Platform nests on ground in grasslands and open marshland with vegetative cover.	Ground	March through August; single brood.	Clutch incubated for 29–39 days by both sexes; altricial young fledge at 37 days.	300	200-300	100-200
Sharp-shinned Hawk	Accipiter striatus	Platform nests in trees in riparian woodland or other forested habitat with thick cover.	10-60 feet	April through August; single brood.	Clutch incubated for 30–35 days by both sexes; semi-altricial young fledge at approximately 23 days.	300	100-300	50-100

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Cooper's Hawk	Accipiter cooperii	Platform nests in trees in riparian woodlands or other forested habitat.	20-60 feet	March through July; single brood.	Clutch incubated for 36 days by female while male provisions her; semi-altricial young fledge at 30–34 days.	300	100-300	50-100
Northern Goshawk	Accipiter gentilis	Platform nests in top of tall coniferous or deciduous trees in mature forest.	Up to 75 feet	April through August; single brood.	Clutch incubated for 36–41 days by female while male provisions her; semi-altricial young fledge at 45 days old	1,320	200-1,320	100-200
Red- shouldered Hawk	Buteo lineatus	Platform nests below canopy in a variety of tree species.	20-60 feet	March through June; single brood.	Clutch incubated for 23–25 days by both sexes; semi-altricial young fledge at 35–42 days.	300	100-300	50-100
Swainson's Hawk	Buteo swainsoni	Platform nests in isolated trees in grasslands and agricultural areas.	5–30 feet	April through late June; single brood.	Clutch incubated for approximately 28 days by both sexes; semi- altricial young fledge at 28–35 days.	1,320–2,640	CR	CR
Red-tailed Hawk	Buteo jamaicensis	Platform nests in tall trees and other structures in a variety of open habitats.	35-90 feet	February through September; single brood.	Clutch incubated for 28–32 days by both sexes; semi-altricial young fledge at approximately 42 days.	250	100-300	50-100
Ferruginous Hawk	Buteo regalis	Nest in substrates ranging from cliffs, trees, utility structures, and farm buildings to haystacks and relatively level ground.	Up to 70 feet	Early March through May; single brood	Clutch incubated for 32–33 days by both sexes; altricial and nidicolous young fledge at 38–50 days.	300	100-300	50-100

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Golden Eagle	Aquila chrysaetos	Platform nests on rock ledges of outcrops or cliffs, and occasionally trees, in proximity to grassland, farmland, oak savannah, and other foraging grounds.	10–100 feet or higher on cliffs	February through July; single brood.	Clutch incubated for 43–45 days by female and occasionally male; semi-altricial young fledge at 63–70 days.	2,640	CR	CR
American Kestrel	Falco sparverius	Cavities in trees or other structures near grasslands, agricultural areas, oak savannah, or other open areas.	7–80 feet	March through July; may double brood.	Clutch incubated for 29–30 days by female while male provisions her; semi-altricial young fledge at approximately 30 days.	200	50-200	25–50
Prairie Falcon	Falco mexicanus	Ledges under overhangs on rock outcrops or cliffs near grassland, farmland, oak savannah, or other foraging habitat.	30-40 feet	March to May; single brood.	Clutch incubated for 29–31 days by female while male provisions her; semi-altricial young fledge at 40 days.	300	100-300	50-100
American Peregrine Falcon	Falco peregrinus	Cliff ledges, tall buildings, high bridges, and other high locations near open habitats.	High on cliffs or tall structures	March through June; single brood.	Clutch incubated for 28–29 days by both sexes; semi-altricial young fledge at 35–42 days.	500	CR	CR
Mount Pinos Sooty Grouse	Dendragapus fuliginosus	Scrapes near logs, shrubs, or other cover in coniferous forests, shrub-steppe habitat, and subalpine forests.	Ground	April through August; single brood.	Clutch incubated for 26–28 days by female; young are precocial.	100	50-100	25–50
Ruffed Grouse	Bonasa umbellus	Scrapes near the base of stumps, trees, or logs in forested habitat.	Ground	February through August; single brood.	Clutch incubated for approximately 24 days by female; young are precocial.	100	50-100	25-50

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Wild Turkey	Meleagris gallopavo	Scrapes in thick, low vegetation in oak woodlands and forest edges and clearings.	Ground	March through August; single brood.	Clutch incubated for approximately 28 days by female; young are precocial.	100	30-100	15-30
Gambel's Quail	Callipepla gambellii	Scrapes under shrubs in desert habitats.	Ground	April through June; single or (rarely) double brood	Clutch incubated for 21–23 days by female while male guards; young are precocial.	100	50-100	25-50
California Quail	Callipepla californica	Scrapes under shrubs in riparian woodland, coastal scrub, chaparral, shrub- steppe, and mixed- hardwood forest.	Ground	March through July; single or double brood.	Clutch incubated for 21–23 days by female; young are precocial.	100	50-100	25–50
Mountain Quail	Oreortyx pictus	Scrapes under shrubs in mountain woodland and scrub habitats, usually near water.	Ground	April through June; single brood.	Clutch incubated for 24–25 days by female; young are precocial.	100	50-100	25-50
California Black Rail	Laterallus jamaicensis coturniculus	Cup nests on or near ground at upper edges of tidal marshes.	0–1 foot	March through July; single brood.	Clutch incubated for 17–20 days by both sexes; young are semi- precocial.	300-600	) CR	CR
Clapper Rail (California, Yuma, Light- footed)	Rallus longirostris obscurus/yuman ensis/levipes	Platform nests in dense tidal marsh vegetation dominated by cordgrass or gumplant.	0–1 foot	February through August; single or double brood.	Clutch incubated for 23–29 days by both sexes; young are semi- precocial.	700	CR	CR
Virginia Rail	Rallus limicola	Platform nests in dense emergent vegetation in freshwater or estuarine marshes.	0–1 foot	April through June; single or double brood.	Clutch incubated for 14–16 days by both sexes; young are precocial.	100	50-100	25-50
Sora	Porzana carolina	Cup nests secured to reeds and rushes in freshwater or estuarine marshes.	0–1 foot	April through August; single brood.	Clutch incubated for approximately 14 days by both sexes; young are precocial.	100	50-100	25-50

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Common Gallinule	Gallinula galeata	Platform nests in dense vegetation at edge of marshes and other freshwater habitats.	Ground or water level	April through June; single or double brood.	Clutch incubated for 19–22 days by both sexes; young are precocial.	100	50-100	25-50
American Coot	Fulica americana	Platform nests in dense vegetation at edge of marshes and other freshwater habitats.	Ground or water level	March through July; single or double brood.	Clutch incubated for 21–24 days by both sexes; young are precocial.	100	30-100	15-30
Greater Sandhill Crane	Grus canadensis tabida	Platform nests in wetland vegetation on dry ground or shallow water in extensive marsh systems or grasslands.	Ground	April through August; single brood.	Clutch incubated for approximately 30 days by both sexes; young are precocial.	500	CR	CR
Western Snowy Plover	Charadrius alexandrinus nivosus	Scrapes on sand beaches/bars, salt pannes, or dry river beds.	Ground	April through August; double or triple brood.	Clutch incubated for approximately 24 days by both sexes; young are precocial.	600 (coastal) 300 (interior)	CR (coastal) 200–300 (interior)	CR (coastal) 100–200 (interior)
Killdeer	Charadrius vociferus	Scrapes in open places usually in areas with short grass, sand, or gravel.	Ground	March through June; sometimes double brood.	Clutch incubated for 24–26 days by both sexes; young are precocial.	75	30–75	15-30
Black-necked Stilt	Himantopus mexicanus	Scrapes or plant tufts/ tussocks in fresh, brackish, or salt marshes.	Ground	April through June; single brood.	Clutch incubated for 25–26 days by both sexes; young are precocial.	150	50-150	25-50
American Avocet	Recurvirostra americana	Scrapes on salt pannes, dikes, levees, and bare islands.	Ground	April through June; single brood.	Clutch incubated for 22–24 days by both sexes; young are precocial.	150	50-150	25-50

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
Spotted Sandpiper	Actitis macularia	Scrapes in grasses among rocks, wrack, or driftwood.	Ground	April through August; single brood.	Clutch incubated for approximately 21 days by male; young are precocial.	75	30-75	15-30
Wilson's Snipe	Gallinago gallinago	Scrapes in dense, medium to tall marshy or wet meadow vegetation.	Ground	April to August; single brood.	Clutch incubated for 17–20 days by female; young are precocial.	75	30-75	15-30
Lesser Yellowlegs	Tringa flavipes	Scrapes on shallow wetlands, trees or shrubs, and open areas.	Ground	Late April to mid- May; single brood.	Clutch incubated for 22–23 days by both sexes; young are precocial.	75	30-75	15-30
Whimbrel	Numenius phaeopus	Hummocks or mounds near dwarfed shrub, flat heath tundra, in grass or sedge tussocks, and on gravel.	Ground	Early June to early July; single brood.	Clutch incubated 22– 28 days by both sexes; young are precocial.	75	30-75	15-30
Black Skimmer	Rynchops niger	Saucer-shaped depressions on beaches, bars, dredge deposition, salt marsh.	Ground	May through August; single brood.	Clutch incubated 21– 23 days by both sexes; young are semi- precocial.	300	100-300	50-100
Long-billed Curlew	Numenius americanus	Scrapes in short-grass or mixed-prairie habitat with flat to rolling topography.	Ground	Mid-late March to early July; single brood.	Clutch incubated for 27–29 days by both sexes; young are precocial.	75	30-75	15-30
Marbled Godwit	Limosa fedoa	Scrapes in short, sparsely to moderately vegetated landscapes that include native grassland and wetland complexes with a variety of wetland classes (ephemeral to semipermanent).	Ground	Mid-May to late June; single brood.	Clutch incubated for 23–26 days by both sexes; young are precocial	75	30-75	15-30

Common Name	Scientific Name	Nest Location, Substrate, and Habitat	Vertical Height	Peak Breeding Season/Number of Broods per Season	Incubation Duration/Chick- rearing Duration	Standard Buffer* (feet)	Medium to High Disturbance Category Buffer (feet)	Low to Medium Disturbance Category Buffer (feet)
California Gull	Larus californicus	Scrapes on islands in alkali or freshwater lakes and ponds or salt ponds.	Ground	April through August; single brood.	Clutch incubated for 23–27 days by both sexes; young are precocial.	150	50-150	25-50
Western Gull	Larus occidentalis	Ledges on cliffs, bluffs, bridges, buildings, and other areas inaccessible to nest predators.	Ground/cliff	April through August; single brood.	Clutch incubated for 30–32 days by both sexes; young are semi- precocial.	150	50-150	25-50
Caspian Tern	Sterna caspia	Scrapes on islands, beaches, and levees.	Ground	April through August; single brood.	Clutch incubated for approximately 20 days by both sexes; semi- precocial young fledge at approximately 14 days.	300	100-300	50-100
Forster's Tern	Sterna forsteri	Scrapes on open levees, islands, and occasionally reed beds.	, Ground	April through September; single brood.	Clutch incubated for approximately 23 days by both sexes; semi- altricial young fledge after approximately 7 days.	300	100-300	50-100
California Least Tern	Sterna antillarum	Scrapes on bare sandy or gravelly substrates in undisturbed areas.	Ground	May through June; single brood.	Clutch incubated for 20–25 days by both sexes; young are semi- precocial.	600	CR	CR
Black Tern	Chlidonias niger	Platform nests constructed of dead plant stems in freshwater wetlands and flooded rice fields.	Ground	May through August; single brood.	Clutch incubated for 20–22 days by both sexes; semi-precocial young fledge at approximately 14 days.	300	100-300	50-100

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Marbled Murrelet	Brachyramphus marmoratus	Horizontal limbs of large, old-growth conifers.	20–250 feet	March through September; likely a single brood.	Clutch incubated for approximately 30 days by both sexes; semi- precocial young fledge at approximately 21 days.	1,320 (high disturbance ) <sup>b</sup>	CR	CR
Cassin's Auklet	Ptychoramphus aleuticus	Excavates burrows in soft soil, sod or natural cavities such as rock crevices and under trees, cacti or logs. Colonial nester.	Ground/cliff	Varies within November through May; single and double brood.	Clutch incubated 37– 42 days by both sexes; altricial young confined to nest for 30 days.	400	75–400	50-75
Band-tailed Pigeon	Columba fasciata	Platform nests in trees or shrubs in oak woodlands, mixed hardwood forests, and mixed coniferous forests, usually in areas with oak trees.	5–180 feet	March through November; double or triple brood.	Clutch incubated for 18–20 days by both sexes; altricial young fledge at 25–30 days.	75	50-75	25-50
Mourning Dove	Zenaida macroura	Platform nests in a tree or shrub, but also on buildings or on ground, in a variety of habitats.	0–25 feet	February through September; several broods.	Clutch incubated for 14–15 days by both sexes; altricial young fledge at 13–15 days.	50	20-50	10-20
Western Yellow-billed Cuckoo	Coccyzus americanus	Platform nests in bushes or trees in dense, wide riparian woodlands.	2–20 feet	June through July; single brood.	Clutch incubated for 9– 11 days by both sexes; altricial young fledge at 21 days.	500	CR	CR
Greater Roadrunner	Geococcyx californianus	Cup nests in dense, brushy habitats in desert, sagebrush, and chaparral habitats.	3–15 feet	April through June; double brood.	Clutch incubated for 16–20 days by male; altricial young fledge at 18–30 days.	100	50-100	25–50

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Barn Owl	Tyto alba	Cavities in trees, buildings, crevices in rocks, outcrops, cliffs and quarries.	1-400 feet	January through May; often double broods.	Clutch incubated for 32–34 days by female while male provisions her; altricial young fledge at 60 days.	150	100-150	50-100
Flammulated Owl	Otus flammeolus	Cavities in trees, including aspens, oaks, pines, or other trees in forested areas.	10-40 feet	May through October; single brood.	Clutch incubated for 21–24 days by female while male provisions her; altricial young fledge at 20–26 days	200	100-200	50-100
Western Screech Owl	Otus kennicottii	Cavities in trees, particularly cottonwoods, in open woodlands.	10-30 feet	March through June; single brood.	Clutch incubated for 21–30 days by female while male provisions her; altricial young fledge at approximately 28 days.	200	100-200	50-100
Great Gray Owl	Strix nebulosa	Near high elevation meadows, on broken top trees or stick nests of other species.	30-50 feet	Late March through early July; single brood	Average clutch incubated for 29.7 days by female, with male provisioning her; semi- precocial young fledge at 21-28 days but can be dependent on nest site and male parent until fall.	1,320	CR	CR
Great Horned Owl	Bubo virginianus	Cavities or large nest platforms of other species in trees, rock ledges, or caves.	Uses existing platforms at various heights	January through May; single brood.	Clutch incubated for 26–35 days by female while male provisions her; altricial young fledge at 28–35 days.	300	100-300	50-100

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Northern Pygmy Owl	Glaucidium gnoma	Cavities in trees in oak woodlands and coniferous forests.	8–20 feet	April through August; number of broods unknown.	Clutch incubated for 25–30 days by female while male provisions her; semi-altricial young fledge at approximately 23 days.	200	50-200	25–50
Spotted Owl (Northern/Cal ifornia)	Strix occidentalis caurina/occident alis	Cavities or platforms (natural or old nests of other species) in coniferous or mixed hardwood forests.	30–165 feet	March through August; single brood.	Clutch incubated for 29–30 days by female while male provisions her; altricial young fledge at 34–36 days.	1,320 (high disturbance ) <sup>b</sup>	CR	CR
Burrowing Owl	Athene cunicularia	Small mammal burrows in open grasslands or at the edge of agricultural areas.	Ground	February through August; single brood.	Clutch incubated for 27–30 days by female while male provisions her; altricial young fledge at 40–45 days.	250	CR	CR
Long-eared Owl	Asio otus	Platform nests built by other species high in trees in coniferous forests or mixed woodlands.	10-30 feet	February through May; single brood.	Clutch incubated for 25–30 days by female while male provisions her; altricial young fledge at 23–24 days.	300	100-300	50-100
Short-eared Owl	Asio flammeus	Scrapes in tall, dense vegetation in grasslands and freshwater or brackish marshes.	Ground	March through July; single or possibly double brood.	Clutch incubated for 21–28 days by female while male provisions her; semi-altricial young leave nest at 31– 36 days.	300	100-300	50-100
Northern Saw- whet Owl	Aegolius acadicus	Cavities in trees in forested areas.	5–50 feet	March through August; single or double brood.	Clutch incubated for 21–28 days by female; semi-altricial young fledge at approximately 30 days.	200	100-200	50-100

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Lesser Nighthawk	Chordeiles acutipennis	Scrapes on bare gravelly or sandy ground in desert and sparsely vegetated habitats.	Ground	April through July; single or double brood.	Clutch incubated for 18–19 days by female; semi-precocial young fledge after 3 weeks.	75	30-75	20-30
Common Nighthawk	Chordeiles minor	Scrapes on bare gravelly or sandy ground in open areas within chaparral, grasslands, and forest openings.	Ground	June through July; double brood.	Clutch incubated for 18–20 days by female; semi-precocial young fledge after about 21 days.	75	30-75	20-30
Common Poorwill	Phalaenoptilus nuttallii	Scrapes on bare gravelly, sandy, or leaf- litter-covered ground in grasslands and desert habitats.	Ground	March through August; double brood.	Clutch incubated for 20–21 days by both sexes; young are precocial.	75	30-75	20-30
Black Swift	Cypseloides niger	Sheltered crevices or ledges on cliff faces on coast or under waterfall.	20–45 feet	May through September; single brood.	Clutch incubated for 21–27 days by both sexes; altricial young fledge at 45–49 days.	75	30-75	15-30
Vaux's Swift	Chaetura vauxi	Cavities in redwoods, other conifers, and occasionally sycamores, chimneys, and buildings.	Up to 50 feet	May through August; single brood.	Clutch incubated for 18–20 days; altricial young fledge at approximately 28 days.	75	30-75	15-30
White- throated Swift	Aeronautes saxatalis	Rock cracks and crevices on cliffs and tall bridges.	10-195 feet	May through July; single brood.	Clutch incubated for 20–27 days; altricial young fledge at 40–46 days.	75	30-75	15-30
Black-chinned Hummingbird	Arcgilochus alexandri	Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources.	4–10 feet	April through June; two or three broods.	Clutch incubated for 13–16 days by female; altricial young fledge at approximately 21 days.	50	20-50	15–20

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Anna's Hummingbird	Calypte anna	Cup nests in trees and shrubs in woodlands, urban areas, and other habitats with nectar sources.	1-30 feet	December through June; two or three broods.	Clutch incubated for 16–17 days by female; altricial young fledge at 25–26 days.	50	20-50	15-20
Costa's Hummingbird	Calypte costae	Cup nests in trees and shrubs in riparian scrub, urban areas, and other habitats with nectar sources.	4–5 feet	April through July; single or occasionally double brood.	Clutch incubated for 15–18 days by female; altricial young fledge at 20–23 days.	50	20-50	15-20
Calliope Hummingbird	Stellula calliope	Cup nests in montane or riparian woodlands.	2-70 feet	May through August; single brood.	Clutch incubated for 15–16 days by female; altricial young fledge at 21–23 days.	50	20-50	15-20
Allen's Hummingbird	Selasphorus sasin	Cup nests in shrubs, trees, or vines in a variety of forest and woodland types, as well as coastal scrub.	1–10 feet; occasionally as high as 90 feet	February through August; double brood.	Clutch incubated for 16–22 days by female; altricial young fledge at approximately 22 days.	50	20-50	15-20
Belted Kingfisher	Ceryle alcyon	Burrow in banks near fresh water.	Ground	April through July; single brood.	Clutch incubated for 23–24 days by both sexes; altricial young fledge at 30–35 days.	100	50-100	25–50
Lewis's Woodpecker	Melanerpes lewis	Cavities in snags or dead branches in oak woodlands and mixed hardwood forests.	5–80 feet	May through July; single brood.	Clutch incubated for 13–14 days by both sexes; altricial young fledge at 28–34 days.	50	15–50	10-15
Acorn Woodpecker	Melanerpes formicivorous	Cavities in trees or snags in open woodlands, partly wooded areas, or utility poles near a source of acorns.	5–25 feet	April through July; two or three broods.	Clutch incubated for approximately 11 days by both sexes; altricial young fledge at approximately 31 days.	50	15–50	10-15

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Red-breasted Sapsucker	Sphyrapicus ruber	Cavities in trees or snags in coniferous or mixed forest.	5–45 feet	May through June; single brood.	Clutch incubated for 12–14 days by both sexes; altricial young fledge at 23–28 days.	50	15-50	10-15
Williamson's Sapsucker	Sphyrapicus thyroideus	Tree cavities in conifer and mixed conifer- deciduous forests.	8–52 feet	Late April through late July; single brood.	Clutch incubated 12– 14 days by both sexes; altricial young fledge at 31–32 days.	50	15-50	10-15
Ladder- backed Woodpecker	Picoides scalaris	Cavities in trees and cactus.	4-20 feet	Unknown in CA; single brood.	Clutch incubated 14 days by both sexes; altricial young with unknown fledging period.	50	15-50	10-15
Nuttall's Woodpecker	Picoides nuttallii	Cavities in trees or snags in oak woodlands, or less frequently riparian or other woodlands.	2-60 feet	April through June; single brood.	Clutch incubated for approximately 14 days by both sexes; altricial young fledge at approximately 29 days.	50	15-50	10-15
Downy Woodpecker	Picoides pubescens	Cavities in trees or snags in riparian or other deciduous woodlands, or less frequently in coniferous forests.	3–44 feet	April through May; double brood.	Clutch incubated for approximately 12 days by both sexes; altricial young fledge at 20–22 days.	50	15-50	10-15
Hairy Woodpecker	Picoides villosus	Cavities in snags or dead branches in woodlands and coniferous forests.	3–102 feet	March through August; single brood.	Clutch incubated for 11–15 days by both sexes; altricial young fledge at 28–30 days.	50	15-50	10-15
White-headed Woodpecker	Picoides albolarvatus	Cavities in snags or stumps at least 2 feet in diameter in pine forests.	6–50 feet	April through August; single brood.	Both sexes incubate clutch for 13–15 days; altricial young fledge at approximately 26 days.	50	15-50	10-15

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Northern Flicker	Colaptes auratus	Cavities in tree trunks or snags in open or sparsely wooded areas; more often in live wood.	8–45 feet	April through June; single brood.	Clutch incubated for 11–13 days by both sexes; altricial young fledge at 25–28 days.	50	15-50	10-15
Pileated Woodpecker	Dryocopus pileatus	Cavities in snags or dead branches in mature forests.	15-70 feet	March to July; single brood	Clutch incubated for approximately 18 days by both sexes; altricial young fledge at 26–28 days.	50	15-50	10-15
Olive-sided Flycatcher	Contopus cooperi	Cup nest in trees in open conifer forest or mixed woodland.	5–70 feet	June through July; single brood.	Clutch incubated for 16–17 days by female; altricial young fledge at 15–19 days.	75	30-75	15-30
Western Wood-Pewee	Contopus sordidulus	Cup nests in trees, mainly coniferous but sometimes deciduous woodlands near watercourses.	15-30 feet	May through July; single brood.	Clutch incubated for approximately 12 days by female; altricial young fledge at 14–18 days.	75	30-75	15-30
Willow Flycatcher (Southwester n, Little, <i>adastus</i> )	Empidonax traillii extimus/brewste ri/adastus	Cup nests in densely vegetated riparian associations of cottonwoods and willows.	5–20 feet	May through July; single brood.	Clutch incubated for 12–13 days by female; altricial young fledge at 14 days.	300	CR	CR
Vermilion Flycatcher	Pyrocephalus rubinus	Loosely constructed nest in wooded riparian areas.	8-55 feet	Mid-March through mid-July; single or double brood.	Clutch incubated for 14-15 days by female; altricial young fledge at 14-16 days.	75	30-75	15-30
Hammond's Flycatcher	Empidonax hammondii	Cup nests in trees in forests and woodlands.	6–65 feet	May through July; single brood.	Clutch incubated for 12–15 days by female; altricial young fledge at 17–18 days.	75	30-75	15-30

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Dusky Flycatcher	Empidonax oberholseri	Cup nests in small trees or shrubs pine forests	3–20 feet	May through July; single brood.	Clutch incubated for 12–15 days by female; altricial young fledge at approximately 18 days.	75	30-75	15-30
Western (Pacific-slope and Cordilleran) Flycatcher	Empidonax difficilis/occident alis	Cup nests in cavities or tree stumps or on ledges or crevices in woodlands and forests often in riparian areas.	0-30 feet	April through July; sometimes double brood.	Clutch incubated for 14–15 days by female; altricial young fledge at 15–18 days.	75	30-75	15-30
Black Phoebe	Sayornis nigricans	Cup nests of mud cemented to vertical structures, often under an overhang.	3-10 feet	March through June; double brood.	Clutch incubated for 15–18 days by female; altricial young fledge at approximately 21 days.	75	30-75	15-30
Say's Phoebe	Sayornis saya	Cup nests on ledges with overhang or under a bridge; nest not made of mud like black phoebe.	0-79 feet	March through June; double brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 14–18 days.	75	30-75	15-30
Ash-throated Flycatcher	Myiarchus cinerascens	Cavities in trees and other structures in open deciduous woodland.	2-70 feet	May through July; single brood.	Clutch incubated for approximately 15 days by female; altricial young fledge at 16–17 days.	50	15–50	10-15
Cassin's Kingbird	Tyrannus vociferans	Cup nests in trees in savannahs and other open habitats.	25-74 feet	April through June; double brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 14 days.	75	30-75	15-30
Western Kingbird	Tyrannus verticalis	Cup nests in trees and artificial structures (e.g., power poles) in variety of open habitats.	13–55 feet	April through June; double brood.	Clutch incubated for 12–14 days by both sexes; altricial young fledge at 13–19 days.	75	30-75	15-30

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Loggerhead Shrike	Lanius ludovicianus	Cup nests in dense shrubs near grasslands and other open habitats.	3–8 feet	February through June; two or three broods.	Clutch incubated for 14–16 days by female while male provisions her; altricial young fledge at 17–21 days.	75	30-75	15-30
Least Bell's Vireo	Vireo bellii pusillus	Cup nests in dense shrubs and small trees in dense riparian areas.	1–3 feet	April through August; double brood.	Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 10–12 days.	500	CR	CR
Arizona Bell's Vireo	Vireo bellii arizonae	Cup nests in dense shrubs and small trees in dense riparian areas.	1–3 feet	April through August; double brood.	Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 10–12 days.	500	CR	CR
Cassin's Vireo	Vireo cassinii	Cup nests in a trees or shrubs in oak or oak- coniferous or mixed riparian woodland.	5–35 feet	April through July; single brood.	Clutch incubated for approximately 15 days by both sexes; altricial young fledge at 13 days.	75	30-75	15–30
Hutton's Vireo	Vireo huttoni	Cup nests on a twig forks in oaks and other trees along streams and canyons.	3–45 feet	March thorugh June; single or double brood.	Clutch incubated for 14–16 days by both sexes; altricial young fledge at approximately 14 days.	75	30-75	15-30
Warbling Vireo	Vireo gilvus	Cut nests high in trees in mature oak woodlands and mixed deciduous forests.	20-60 feet	May through July; double brood.	Clutch incubated for 12–13 days by both sexes; altricial young fledge at approximately 14 days.	75	30-75	15-30
Gray Vireo	Vireo vicinior	Nests in thorn scrub or pinyon-juniper woodland, low in thorny or twiggy shrub or tree.	2–8 feet	Mid-April through mid-August	Clutch incubated 13-14 days by both sexes; altricial young fledge at 13-14 days.	75	30-75	15-30

Species-specific Buffers for PG&E Activities

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Gray Jay	Perisoreus canadensis	Cup nests in shrubs or trees in coniferous forests and sometimes oak woodlands.	5–30 feet	March through July; single brood.	Clutch is incubated for 16–18 days; altricial young fledge at approximately 15 days.	75	30-75	15-30
Steller's Jay	Cyanocitta stelleri	Cup nests in trees or shrubs in coniferous or mixed hardwood forests or other woodlands.	7–16 feet	April through June; likely single brood.	Clutch incubated for approximately 16 days by female while male provisions her; altricial young fledge at 18 days.	75	30-75	15-30
Western Scrub-jay	Aphelocoma californica	Platform nests in shrubs, trees, bushes or vine tangles in a wide variety of habitats, including oak woodlands, savannah, agricultural, and suburban.	2-50 feet	March through June; single brood.	Clutch incubated for 15–17 days by female while male provisions her; altricial young fledge at 18 days.	75	30-75	15-30
Pinyon Jay	Gymnorhinus cyanocephalus	Cup nests in trees in ponderosa-pine forest.	3–115 feet	Mid-March through late June; single brood.	Clutch incubated 17 days by female, male provisions female; altricial young fledge at 21–22 days.	75	30-75	15-30
Clark's Nutcracker	Nucifraga columbiana	Cup nests in pines, junipers, and firs in mountain coniferous forests.	8–45 feet	February through August; single brood.	Clutch incubated for 16–18 days by both sexes; altricial young fledge at approximately 22 days.	75	30-75	15-30
Yellow-billed Magpie	Pica nuttallii	Platform nests in oak trees and occasionally other trees in savannah.	30-80 feet	February through July; single brood.	Clutch incubated for 16–18 days by female while male provisions her; altricial young fledge at approximately 30 days.	75	30-75	15-30

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American Crow	Corvus brachyrhynchos	Platform nests in variety of large trees, usually near the trunk, and artificial structures in a wide variety of habitats.	10-70 feet	February through July; single brood.	Clutch incubated for approximately 18 days by female and possibly helpers; altricial young fledge at 35 days.	50	30-50	15-30
Common Raven	Corvus corax	Platform nests on sheltered rock ledges or in forks of large trees and artificial structures in a wide variety of habitats.	45-80 feet	February through July; single brood.	Clutch incubated for 20–21 days by female while male provisions her; altricial young fledge at 35–42 days.	50	30-50	15-30
Western Bluebird	Sialia mexicana	Cavities in woodland clearings, savannahs, and other open habitats.	4–48 feet	April through June; double brood.	Clutch incubated for 13–14 days by female; altricial young fledge at approximately 20 days.	50	15-50	10-15
Townsend's Solitaire	Myadestes townsendi	Cup nests on ground usually on cutbanks and other slopes in mountain coniferous forests.	0-12 feet	April through June; single or double brood.	Clutch incubated for 11–14 days by female; altricial young fledge at 10–14 days.	75	30-75	15-30
Swainson's Thrush	Catharus ustulatus	Cup nests in dense shrubs, often in riparian woodlands and mixed coniferous forests.	2–20 feet	April through August; single or (rarely) double brood.	Clutch incubated for 10–13 days by female; altricial young fledge after 10–12 days.	75	30-75	15-30
Hermit Thrush	Catharus guttatus	Cup nests in dense shrubs variety of forests and woodlands.	2-10 feet	June through July; single or double brood.	Clutch incubated for 12–13 days by female; altricial young fledge at 12–13 days.	75	30-75	15-30
American Robin	Turdus migratorius	Cup nests in trees or shrubs, ledges of buildings, or in a tree forks in variety of open habitats.	3–25 feet	May through July; two or three broods.	Clutch incubated for 11–14 days by female; altricial young fledge at 14–16 days.	75	30-75	15-30

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Varied Thrush	Ixoreus maevius	Cup nests on horizontal branches of trees in moist coniferous forests.	5–20 feet	April through August; double brood.	Clutch incubated for approximately 14 days by female; altricial young fledge at 13–15 days.	75	30-75	15-30
Horned Lark	Eremophila alpestris	Scrapes in a small hollow usually sheltered by plant tufts in grasslands and other open habitats.	Ground	February through August; two or three broods.	Clutch incubated for 10–14 days by female; altricial young fledge at 9–12 days.	75	30-75	15-30
Purple Martin	Progne subis	Cavities in trees in mountain forests, particularly burned areas with snags.	10-34 feet	April through August; single brood	Clutch incubated for 15–18 days by the female; altricial young fledge at 24–31 days.	75	30-75	15-30
Tree Swallow	Tachycineta bicolor	Cavities in open habitats, such as grasslands or wetlands with dead standing trees; usually near water.	10–16 feet	April through August; double brood.	Clutch is incubated for 13–16 days; altricial young fledge at 16–20 days.	50	30-50	15-30
Violet-green Swallow	Tachycineta thalassina	Cavities or occasionally on cliffs or banks in deciduous, coniferous, and mixed woodlands.	9–17 feet	April through August; single brood.	Clutch is incubated for 13–15 days; altricial young fledge at 16–24 days.	50	30-50	15-30
Northern Rough-winged Swallow	Stelgidopteryx serripennis	Cavities on a steep slope or use crevices and holes in bridges and buildings.	Ground/cliff	April through June; single brood.	Clutch incubated for 15–16 days by female; altricial young fledge at 18–21 days.	75	30-75	15-30
Bank Swallow	Riparia riparia	Cavities in sandy banks or cliffs along rivers.	Ground/cliff	May through July; single brood.	Clutch incubated for 12–16 days by both sexes; altricial young fledge at 18–24 days.	100	CR	CR

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Barn Swallow	Hirundo rustica	Cup nests often on buildings and bridges in open habitats near water.	6-40 feet	April through July; double brood.	Clutch incubated for 14–16 days by both sexes; altricial young fledge at 17–24 days.	50	30-50	15-30
Cliff Swallow	Petrochelidon pyrrhonota	Closed mud nests often on cliff faces, buildings, or bridges in open habitats near water.	5 feet and higher	April through June; double brood.	Clutch incubated for 12–14 days by both sexes; altricial young fledge at approximately 23 days.	50	30-50	15-30
Mountain Chickadee	Poecile gambeli	Cavities in trees in coniferous mountain forests.	16-50 feet	April through August; single or double brood.	Clutch is incubated for 14 days; altricial young fledge at 20 days.	50	15-50	10-15
Chestnut- backed Chickadee	Poecile rufescens	Cavities trees in coniferous forests and deciduous woodlands.	0-80 feet	March through July; single or (rarely) double brood.	Clutch is incubated for 12–14 days by female; altricial young fledge at 18–21 days.	50	15-50	10-15
Oak Titmouse	Baeolophus inornatus	Cavities in trees in oak woodlands.	2-40 feet	March through June; single brood.	Clutch incubated for 14–16 days by female; altricial young fledge at 17 days.	50	15-50	10-15
Bushtit	Psaltriparus minimus	Pendulous nests in trees and shrubs in a variety of habitats.	3–98 feet	February through June; double brood.	Clutch incubated for 12–13 days by both sexes; altricial young fledge at 14–15 days.	50	30-50	15-30
Red-breasted Nuthatch	Sitta canadensis	Cavities in trees in coniferous forests and mixed woodlands.	5–40 feet	April through July; single or (rarely) double brood.	Clutch incubated for approximately 12 days by female while male provisions her; altricial young fledge at 18–21 days.	75	30-75	15-30
White- breasted Nuthatch	Sitta carolinensis	Cavities in trees in deciduous woodlands and mixed coniferous forests.	1–50 feet	March through June; single brood.	Clutch incubated for 12–14 days by female while male provisions her; altricial young fledge at 14–16 days.	50	15-50	10-15

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Pygmy Nuthatch	Sitta pygmaea	Cavities in dead trees or dead portions of trees in long-needled pine forests.	20–70 feet	May through July; single or double brood.	Clutch incubated for 15–16 days by female while male provisions her; altricial young fledge at 20–21 days.	75	30-75	15-30
Brown Creeper	Certhia americana	Cup nests concealed behind loose bark, in crevices on a trees in coniferous forests and mixed coniferous forests	5–15 feet	May through July; single brood.	Clutch incubated for 15–18 days by female while male provisions her; altricial young fledge at 21 days.	75	30-75	15-30
Rock Wren	Salpinctes obsoletus	Cavities on rocky slopes	Ground/cliff	March through June; double or triple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 14–16 days.	75	30-75	15-30
Canyon Wren	Catherpes mexicanus	Cup nests in rock crevices or ledges in rocy habitats.	Ground/cliff	March through July; double brood.	Clutch incubated for 12–18 days by female; altricial young fledge at approximately 15 days.	75	30-75	15-30
Bewick's Wren	Thryomanes bewickii	Cavities in trees, brush, or between rocks in open woodlands and shrubby areas.	0–20 feet	March through July; double or triple brood.	Clutch incubated for approximately 14 days by female while male provisions her; altricial young fledge at approximately 14 days.	75	30-75	15-30
House Wren	Troglodytes aedon	Cavities in shrubby cover and thickets in open woodlands and hedgerows.	0-20 feet	April through July; double brood.	Clutch incubated for 13–15 days by female; altricial young fledge at 12–18 days.	50	30-50	15-30
Pacific Wren	Troglodytes pacificus	Cavities or crevices in logs, stumps, root balls, or trees in variety of forests.	0-10 feet	March through August; single or double brood.	Clutch is incubated for 14–17 days by female; altricial young fledge at approximately 19 days.	75	30-75	15-30

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Marsh Wren	Cistothorus palustris	Domed nests over the water in tall rushes and marsh grasses in wetland habitats.	1–5 feet	March through July; double or triple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 13–15 days.	75	30-75	15-30
American Dipper	Cinclus mexicanus	Domed nests in crevices in rocks, logs, bridges, or other protected areas immediately adjacent to water.	0-30 feet	March through August; single or double brood.	Clutch is incubated for approximately 16 days by female; altricial young fledge at 18–25 days.	75	30-75	15-30
Golden- crowned Kinglet	Regulus satrapa	Hanging nests woven onto conifer twigs in coniferous forests and mixed woodlands.	6-50 feet	May through August; single or double brood.	Clutch is incubated for 14–15 days by female; altricial young fledge at 16–19 days.	75	30-75	15-30
Ruby-crowned Kinglet	Regulus calendula	Cup nests in trees in coniferous woodlands.	4-100 feet	May through July; single brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 16 days.	75	30-75	15-30
Blue-gray Gnatcatcher	Polioptila caerulea	Cup nests in trees or shrubs in a variety of habitats from shrublands to mature forests.	3-80 feet	April through July; double brood.	Clutch incubated for approximately 15 days by both sexes; altricial young fledge at 12–13 days.	75	30-75	15-30
Coastal California Gnatcatcher	Polioptila californica californica	Cup nests in coastal sage scrub and chaparral.	2–3 feet	February through August; double brood.	Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 15–16 days.	500	CR	CR
Wrentit	Chamaea fasciata	Cup nests in coastal sage scrub and chaparral.	1–4 feet	March through July; double brood.	Clutch incubated for 15–16 days by both sexes; altricial young fledge at 15–16 days.	75	30-75	15-30

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Northern Mockingbird	Mimus polyglottos	Cup nests in shrubs and trees in variety of habitats, including woodlands and in developed areas.	3-10 feet	March through July; double or triple brood.	Clutch incubated for 11–14 days by female; altricial young fledge at 12–14 days.	75	30-75	15-30
Sage Thrasher	Oreoscoptes montanus	Cup nests in low shrubs in sagebrush habitat.	2-3 feet	April through August; single or double brood.	Clutch is incubated for 13–17 days; altricial young fledge at approximately 11 days.	75	30-75	15-30
Le Conte's Thrasher	Toxostoma lecontei	Cup nests in cholla or a low tree, in desert areas with shrubby growth.	2–8 feet	February through June; double or triple brood.	Clutch incubated for 14–20 days by both sexes; altricial young fledge at 14–17 days.	75	30-75	15-30
California Thrasher	Toxostoma redivivum	Cup nests in low trees or shrubs in sage scrub and chaparral.	2–4 feet	February through July; double brood.	Clutch incubated for approximately 14 days by both sexes; altricial young fledge at 12–14 days.	75	30-75	15-30
Bendire's Thrasher	Toxostoma bendirei	Cup nests in shrubs, cacti, or trees.	2-5 feet	Late February through April; single, double, or triple brood.	Clutch incubated 12– 14 days by both parents; altricial young fledge at 12–13 days.	75	30-75	15-30
Cedar Waxwing	Bombycilla cedrorum	Cup nests in forks of trees in riparian or redwood forests.	5–50 feet	June through August; single or double brood.	Clutch is incubated for 12–14 days; altricial young fledge at 16–18 days	75	30-75	15-30
Phainopepla	Phainopepla nitens	Cup nests in trees in desert scrub and coastal chaparral.	6–11 feet	Late February— desert; April through June— coastal; double brood.	Clutch incubated for 14–15 days by both sexes; altricial young fledge at 18–19 days.	75	30-75	15-30

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Orange- crowned Warbler	Oreothlypis celata	Cup nests on the ground or in crevices near ground in a variety of habitats, often where woodland and chaparral habitats meet.	Ground	April through July; single or double brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 12–13 days.	75	30-75	15-30
Nashville Warbler	Oreothlypis ruficapilla	Cup nests on ground concealed in bushes or small trees in woodland edges or shrubby areas.	Ground	May through July; single brood.	Clutch incubated for 11–12 days by female; altricial young fledge at 11 days.	75	30-75	15-30
Yellow Warbler	Setophaga petechia	Cup nests in trees or shrubs in shrubby growth in riparian areas.	2–12 feet	April through July; single brood.	Clutch incubated for 11–12 days by female; altricial young fledge at days.	75	30-75	15-30
Yellow- rumped Warbler	Setophaga coronata	Cup nests in trees in coniferous woodlands.	4–50 feet	April through July; single or (rarely) double brood.	Clutch incubated for 12–13 days by female; altricial young fledge at 12–14 days.	75	30-75	15-30
Black- throated Gray Warbler	Setophaga nigrescens	Cup nests in trees or shrubs in open woodlands in mountainous areas.	8–35 feet	May through July; single or double brood.	Clutch incubated by female; young are altricial. Length of incubation period and age at fledging undocumented.	75	30-75	15-30
Hermit Warbler	Setophaga occidentalis	Cup nests high in trees in coniferous forests	20-40 feet	May through July; single brood.	Clutch incubated for approximately 12 days by both sexes; altricial young fledge at 8–10 days.	75	30-75	15-30

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MacGillivray's Warbler	Geothlypis tolmiei	Cup nests in low thick shrub in riparian woodlands and coniferous or mixed forests.	1–5 feet	May through July; single brood.	Clutch incubated for 11–13 days by female; altricial young fledge at 8–10 days.	75	30-75	15-30
Common Yellowthroat	Geothlypis trichas	Cup nests in reeds and other wetland vegetation over water or near water.	1–3 feet	April through July; single brood.	Clutch incubated for approximately 12 days by female; altricial young fledge at 9–10 days.	75	30-75	15-30
Wilson's Warbler	Cardellina pusilla	Cup nests on ground, hidden by vegetation in shrub habitats in forests and chaparral.	Ground	April through June; single or (rarely) double brood.	Clutch incubated for 11–13 days by female; altricial young fledge at 10–11 days.	75	30-75	15-30
Yellow- breasted Chat	Icteria virens	Cup nests in a dense shrub or tangle in thick riparian vegetation.	1–8 feet	April through July; single or (rarely) brood.	Clutch incubated for 11–12 days by female; altricial young fledge at 8–11 days.	75	30-75	15-30
Western Tanager	Piranga ludoviciana	Cup nests high in trees on outer branches in coniferous and mixed hardwood forests.	8–75 feet	May through July; single brood.	Clutch incubated for approximately 13 days by female; altricial young fledge at 10–11 days.	75	30-75	15-30
Green-tailed Towhee	Pipilo chlorulus	Cup nests in or at base of low shrubs in chaparral and disturbed (low growth) forest habitats.	0-2 feet	April through August; single or double brood.	Clutch incubated for 11–13 days by female; altricial young fledge at 11–14 days.	75	30-75	15-30
Spotted Towhee	Pipilo maculatus	Cup nests usually on the ground or very low in bushes shrubby habitats.	2–12 feet	April through July; single or double brood.	Clutch incubated for 12–13 days by female; altricial young fledge at approximately 9 days.	75	30-75	15-30

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California Towhee	Melozone crissalis	Cup nests in shrubs or small trees in brushy habitats.	4–12 feet	March through July; double or triple brood.	Clutch incubated for approximately 14 days by female; altricial young fledge at approximately 10 days.	75	30-75	15-30
Rufous- crowned Sparrow	Aimophila ruficeps	Cup nests at the base of a grass clumps, in dry rocky areas with sparse undergrowth.	0–2 feet	April through June; single or double brood.	Clutch incubated for 11–13 days by female; altricial young fledge at 9 days.	75	30-75	15-30
Chipping Sparrow	Spizella passerina	Cup nests in trees or shrubs in open woodlands.	3-20 feet	April through July; double brood.	Clutch incubated for 11–14 days by female; altricial young fledge at 9–12 days.	75	30-75	15-30
Black-chinned Sparrow	Spizella atrogularis	Cup nests in shrubs in chaparral habitat.	1–3 feet	April through August; single brood.	Clutch incubated for 12–13 days by female; altricial young fledge at approximately 10 days.	75	30-75	15-30
Lark Sparrow	Chondestes grammacus	Cup nests usually in scrapes on ground in open grasslands, or cup nests in herbaceous or woody shrubs.	0-9 feet	April through July; double brood.	Clutch incubated for 11–13 days by female; altricial young fledge at 9–10 days.	75	30-75	15-30
Black- throated Sparrow	Amphispiza bilineata	Cup nests in thorny shrubs or cactus in chaparral or desert habitats.	1 foot	April through June; single or double brood.	Clutch incubated for 12–13 days by female; altricial young fledge at approximately 9.5 days.	75	30-75	15-30
Sage Sparrow	Artemisiospiza belli	Cup nests in thick bushes in chaparral and desert habitats.	1 foot	March through June; double brood.	Clutch incubated for 10–16 days by female; altricial young fledge at 9–10 days.	75	30-75	15-30

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Bryant's Savannah Sparrow	Passerculus sandwichensis alaudinus	Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation.	Ground	April through July; single or double brood.	Clutch incubated for 10–13 days; altricial young fledge at 7–14 days.	75	30-75	15-30
Belding's Savannah Sparrow	Passerculus sandwichensis beldingi	Cup nests on ground in dense, moist grasslands, ruderal vegetation, or saltmarsh vegetation.	Ground	April through July; single or double brood.	Clutch incubated for 10–13 days; altricial young fledge at 7–14 days.	75	CR	CR
Grasshopper Sparrow	Ammodramus savannarum	Ground nest at the base of bunchgrass or other vegetation in grasslands.	Ground	April through July; double or triple brood.	Clutch incubated for 11–12 days by female; altricial young fledge after 9 days.	75	30-75	15-30
Song Sparrow	Melospiza melodia	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3 feet	March through July; double, triple, or quadruple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 10 days.	75	30-75	15-30
Suisun Song Sparrow	Melospiza melodia maxillaris	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3 feet	March through July; double, triple, or quadruple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 10 days.	75	30-75	15-30
Alameda Song Sparrow	Melospiza melodia pusillula	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3 feet	March through July; double, triple, or quadruple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 10 days.	75	30-75	15-30
Pacific Gas and Electric Company

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San Pablo Song Sparrow	Melospiza melodia samuelis	Cup nests in low grass and shrubs or thickets in a variety of forest, shrub, grassland, marsh, and riparian habitats.	1–3 feet	March through July; double, triple, or quadruple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 10 days.	75	30-75	15-30
Lincoln's Sparrow	Melospiza lincolnii	Cup nests in depressions on the ground in shrubby growth at forest edges, clearings; often near wet areas	Ground	May through July; double brood.	Clutch incubated for 13–14 days by female; altricial young fledge at 10–12 days.	75	30-75	15–30
White- crowned Sparrow	Zonotrichia leucophrys	Cup nests on ground or in shrubs or small trees in coastal or mountain chaparral and mountain forests.	0–5 feet	May through September; double or triple brood.	Clutch incubated for 9– 15 days; altricial young fledge at 9–11 days	50	30-50	15-30
Dark-eyed Junco	Junco hyemalis	Cup nests in depressions on the ground among tree roots or brush in variety of woodland habitats; also on building ledges or in trees.	Ground, but up to 8 feet on ledges or trees	April through July; double or triple brood.	Clutch incubated for 12–13 days by female; altricial young fledge at 10–13 days.	50	30–50	15-30
Black-headed Grosbeak	Pheucticus melanocephalus	Cup nests in trees or shrubs in thickets, under trees along streams in riparian woodlands or coniferous or mixed forests near edges.	6–12 feet	April through July; single brood.	Clutch incubated for 12–13 days by both sexes; altricial young fledge at 12 days.	75	30-75	15-30

Pacific Gas and Electric Company

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Blue Grosbeak	Guiraca caerulea	Cup nests small trees, shrubs, or other low vegetation, usually near open areas in desert, chaparral, savannah, and forest edge habitats.	<1-16 feet	April through August; single or double brood.	Clutch incubated for 11–12 days by female; altricial young fledge at 9–13 days.	75	30-75	15-30
Lazuli Bunting	Passerina amoena	Cup nests in low thick shrubby riparian or chaparral habitat.	1–10 feet	May through July; double brood.	Clutch incubated for approximately 12 days by female; altricial young fledge at 10–15 days.	75	30-75	15-30
Red-winged Blackbird	Agelaius phoeniceus	Cup nests in cattails, bulrushes, and other marsh vegetation or in shrubs in grasslands and shrubby habitats.	1–13 feet	March through June; double brood.	Clutch incubated for 10–12 days by female; altricial young fledge at 10–11 days.	75 350 (Kern Red-winged Blackbird)	30–75 200–350 (Kern Red-winged Blackbird)	15–30 100–200 (Kern Red-winged Blackbird)
Tricolored Blackbird	Agelaius tricolor	Cup nests in cattails and bulrushes in marshes and shrubby areas in uplands and agricultural areas. Colonial nester.	1–5 feet	April through June; double brood.	Clutch incubated for approximately 11 days by female; altricial young fledge at 13 days.	350	CR	CR
Yellow- headed Blackbird	Xanthocephalus xanthocephalus	Cup nests cattails or other emergent vegetation over water in marshes with thick vegetative growth. Colonial nester.	2–3 feet	May through June; single brood.	Clutch incubated for 10–13 days by female; altricial young fledge at 9–12 days old	350	200-350	100-200
Brewer's Blackbird	Euphagus cyanocephalus	Cup nests high in trees or shrubs near water in agricultural or suburban/urban areas.	8-43 feet	March through July; single or double brood.	Clutch incubated for 12–13 days by female; altricial young fledge at approximately 13 days.	50	30-50	15-30

Pacific Gas and Electric Company

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Western Meadowlark	Sturnella neglecta	Domed nests on ground in open grasslands.	Ground	March through June; double brood.	Clutch incubated for 13–15 days by female; altricial young fledge at 10–12 days.	75	30-75	15-30
Hooded Oriole	Icterus cucullatus	Closed cup nests high in trees (often palm treets) or shrubs, often in riparian habitat and in suburban areas.	10-45 feet	April through August; double or triple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at approximately 14 days.	75	30-75	15-30
Bullock's Oriole	Icterus bullockii	Pensile cup nests in twig fork of trees in riparian and oak woodlands.	6–15 feet	April through July; single brood.	Clutch incubated for approximately 14 days by female; altricial young fledge at approximately 14 days.	75	30-75	15-30
Pine Grosbeak	Pinicola enucleator	Cup nests near the end of horizontal tree branches in coniferous forests.	16–35 feet	May through August; single brood.	Clutch incubated for 13–14 days by female; altricial young fledge at approximately 14 days.	75	30-75	15-30
Purple Finch	Haemorhous purpureus	Cup nests high in trees well hidden by foliage, in coniferous forests and woodlands.	5–60 feet	April through June; double brood.	Clutch incubated for approximately 13 days by female; altricial young fledge at approximately 14 days.	75	30-75	15-30
House Finch	Haemorhous mexicanus	Cup nests in trees, building ledges, and other locations in urban/suburban, agriculture, woodlands, desert, and chaparral habitats.	5–7 feet	March through July; double or triple brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 14–16 days.	50	15-30	10-15
Red Crossbill	Loxia curvirostra	Loose cup constructed near the end of horizontal branch in coniferous forests.	6-60 feet	February through June; single brood.	Clutch incubated for 12–16 days by female; altricial young fledge at 17–22 days.	75	30-75	15-30

Species-specific Buffers for PG&E Activities

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Pine Siskin	Spinus pinus	Cup nest constructed on conifer or hardwood in coniferous or mixed hardwood forests.	3-50 feet	April through July; single or double brood.	Clutch incubated for approximately 13 days; altricial young fledge at 14–15 days.	75	30-75	15-30
Lesser Goldfinch	Spinus psaltria	Cup nests in trees and shrubs in a variety of open habitats including oak woodlands, mixed coniferous forests, riparian woodlands, chaparral, agricultural and suburban habitats.	3–36 feet	April through July; single or double brood.	Clutch incubated for approximately 12 days by female; altricial young fledge at 11 days.	75	30-75	15-30
Lawrence's Goldfinch	Spinus lawrencei	Cup nests in scattered trees in oak woodlands and savannahs.	3-40 feet	April through July; single or (rarely) double brood	Clutch incubated for 12–13 days by female; altricial young fledge at approximately 11 days.	75	30-75	15-30
American Goldfinch	Spinus tristis	Cup nests in a variety of shrubs in variety of open habitats including ruderal fields and grasslands with shrub component nearby.	3-10 feet	April through August; single or double brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 11–17 days.	75	30-75	15-30
Evening Grosbeak	Coccothraustes vespertinus	Cup nests in fir or other conifers in coniferous forests.	30-60 feet	June through August; single or (rarely) double brood.	Clutch incubated for 12–14 days by female; altricial young fledge at 13–14 days.	75	30-75	15-30

<sup>a</sup> Consultation recommended to perform work within the standard buffer. Confer internally on avoidance and minimization approach.

<sup>b</sup> The 1,320-foot (0.25-mile) buffer applies to the highest noise level category (90 dB or greater measured at 50 feet). Smaller buffers may be appropriate based on the noise levels of the project. Biologists should follow the methodology found in *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (U.S. Fish and Wildlife Service 2006) to determine the noise level and appropriate buffer for their specific project.