

# **Appendix B**

## **GGNRA Special Status Species**



Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern not on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrences known in FMPU/Project Unit				Potential Effect that Could Result from FMP Actions			County Distribution	Species Distribution / Range	Comments	
		Federal	CNPS	State						None	Marl Woods	WUI	Interior	Beneficial	Negative	No affect				Unknown
<i>Arctostaphylos hookeri</i> <i>spp. ravenni</i>	Presidio (Raven's) manzanita	FE	IB	E	X	Chaparral, coastal prairie, coastal scrub.	Formerly endemic to s.f. area; only one wild plant plus clones remain, open, rocky serpentine slopes. 20-215m.	X			X			X				The USFWS Recovery Plan suggests that seed germination could be stimulated by burns (Kelley, 1987). The limited population would also be enhanced by invasive species control and management (Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula, USFWS, 2005). The fire reduction actions for San Francisco lands may need further USFWS consultation to reduce direct effects during vegetation removal and to maximize long-term benefits.		
<i>Arctostaphylos imbricata</i>	San Bruno Mountain manzanita	? CA	IB	E		Chaparral, coastal scrub.	Known from a handful of occurrences near San Bruno Mtn., San Mateo County; mostly known from a few sandstone outcrops in chaparral. 275-365m.							X				w San Francisco Bay Area (San Bruno Mtn)		
<i>Arctostaphylos montaraensis</i>	Montara manzanita	FSC	IB		X	Chaparral, coastal scrub.	Endemic to San Mateo County; slopes and ridges. 150-500m.											w San Francisco Bay Area (San Bruno, Montara mtns)	Only occurs in the SFWD. Special Status Vascular Plant Species Monitoring Report GGNRA 2001.	
<i>Arctostaphylos regismontana</i>	King's Mountain manzanita	FSLC	IB			Broadleaved upland forest, chaparral, north coast coniferous forest.	Endemic to Sacramento and San Mateo counties; granitic or sandstone outcrops. 305-730m.							X				w San Francisco Bay Area (in Santa Cruz Mtns)		
<i>Arctostaphylos virgata</i>	Marin manzanita	FSLC			X	Broadleaved upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest.	Only known from about 20 sites in Marin County. On sandstone or granitic soil. 60-700m.	X		X									Known populations occur along Bolinas Ridge. Threatened by fire suppression. GGNRA fire managers should be made aware of this potential threat from fire suppressions and include this with any future FMP. Special Status Vascular Plant Species Monitoring Report GGNRA 2001.	
<i>Arenaria pallidicola</i>	Marsh sandwort	FE	IB	E		Marshes and swamps.	Hist. From scattered coll. In ca and in wa; now known from one site in slo & appar. Also in mesco growing up through dense mats of typha, juncus, scirpus, etc. In freshwater marsh. 10-170m.												s. Central Coast (Nipomo Mesa, San Luis Obispo Co.), South Coast (Santa Ana River)	
<i>Astragalus nuttallii</i> var. <i>virgatus</i>	Nuttall's milk-vech	FSLC	4			Coastal bluff scrub, coastal dunes.	3-70m.	X		X				X					Occurs in the Presidio coastal bluffs (pers. comm. Michael Chasse (NPS) 2004)	
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Marsh milkvech	FSLC	IB			Coastal dunes, coastal salt marshes.	Mesic sites in dunes or along streams or coastal salt marshes. 0-30m.							X						
<i>Astragalus tener</i> var. <i>tener</i>	Alkali milk-vech	FSC	IB			Alkali playa, valley and foothill grassland, vernal pools.	Low ground, alkali flats, and flooded lands; in annual grassland, playes, and vernal pools. 1-170m.												s. Sacramento Valley, n. San Joaquin Valley, east SF Bay Area	
<i>Atriplex californica</i>	California saltbush	FSLC				Coastal strand, coastal salt marsh, coastal sage scrub, sea bluffs.	North of Monterey this species generally occurs on the upper edges of sandy salt marshes and on coastal sandstone bluffs.	X			X									Occurs in the Presidio (pers. comm. Ling He (NPS), 2004). It is anticipated that edges of the coastal salt marsh and sandstone bluff habitat would not be unaffected by FMP actions

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No effect	Unknown			
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes stickseed	FSC	IB	IB			Coastal prairie, coastal scrub.	Endemic to Marin and Mendocino Counties. On open coastal hills in sandy soil. 10-145m.								X	Central North Coast (Fort Bragg, Mendocino Co.), North Central Coast (Point Reyes peninsula, Marin Co.). Fls late spring. Some populations on Point Reyes peninsula are intermediate to var. <i>nanum</i> in fruit length, pollen color.			
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	FSC	2				Coastal scrub, freshwater marsh.	Usually in marshy swales surrounded by grassland or coastal scrub. 10-45m.								X	Central Coast			
<i>Calochortis tiburonensis</i>	Tiburon mariposa lily	FT	IB	T			Valley and foothill grassland.	Narrowly endemic to riving mountain, Marin County. On open, rocky slopes in serpentine grassland. 50-150m.								X	nw San Francisco Bay Area (Range Mt., Marin Co.)	Per communication with Marin CNPS (2004), no populations occur within GNRA. CNDDDB (2004): Marin occurrence in Pt. Reyes, San Mateo-Franklin Pt. Quad		
<i>Calystegia purpurata</i> ssp. <i>Saxicola</i>	Coastal bluff morning-glory	FSLC	IB				Coastal dunes, coastal scrub.	15-105m.	X							X	nec North Coast, n Central Coast (Brooks Island, Contra Costa Co.), n San Francisco Bay Area	Per communication with Marin CNPS, No populations exist within GNRA. CNDDDB: Marin occurrence in Pt. Reyes.		
<i>Campanula californica</i>	Swamp harebell	FSC	IB				Bogs and marshes in a variety of habitats; uncommon where it occurs. 1-405m.									X	s North Coast, n Central Coast			
<i>Castilleja affinis</i> ssp. <i>neglecta</i>	Tiburon paintbrush	FE	IB		X		Valley and foothill grassland.	Known only from Marin, Napa, and Santa Clara Counties. Rocky serpentine sites. 75-400m.								X	s Inner North Coast Ranges (Napa Co.), San Francisco Bay Area (Marin, Santa Clara cos.)	Occurs on Nicasio Ridge only. Special Status. Vascular Plant Species Monitoring Report (GNRA 2001).		
<i>Castilleja affinis</i> var. <i>affinis</i>	Coast Indian paintbrush	FSLC					Chaparral, coastal scrub.	Sandy soils. <1200m.	X							X	c North Coast (Mendocino Co.), n Outer North Coast Ranges (Humboldt Co.), s Outer North Coast Ranges, n Cascade Range, Foothills, Sierra Nevada Foothills, Central Western California, Southwestern California	Castilleja sp. (weight) or affinis ssp. affinis occur in the Presidio coastal bluffs (pers. comm. Michael Chase (NPS), 2004).		
<i>Castilleja ambigua</i> ssp. <i>ambigua</i>	Salt marsh owl's-clover	FSLC					Coastal bluffs, grassland.	<100m.	X							X	North Coast, s North Coast Ranges, nec Central Coast.	Occurred in 2002 at Crissy Field, but has not been observed since (pers. comm. Ling He (NPS) 2004).		
<i>Castilleja ambigua</i> ssp. <i>Humboldtensis</i>	Humboldt Bay owl's-clover	FSC	IB				Coastal salt marsh.	Known only from Humboldt and Marin counties. In coastal saltmarsh with spartina, distichlis, salicornia, jaumea. 0-3m.								X	n North Coast (Humboldt Bay), n Central Coast (Point Reyes)	Species is not documented in GNRA. Special Status. Vascular Plant Species Monitoring Report (GNRA 2001).		
<i>Castilleja exserta</i> ssp. <i>Latifolia</i>	Purple owl's-clover	FSLC					Coastal bluffs, dunes.	<200m.	X							X	North Coast, nec Central Coast	Per communication with Marin CNPS (2004), no populations occur within GNRA. In San Francisco, it is apparently either rare, intermittent (emerging only some years), or extirpated in coastal bluffs and dunes (Recovery Plan For Coastal Plants of the Northern San Francisco Peninsula, USFWS 2003).		
<i>Castilleja subnucula</i> ssp. <i>franciscana</i>	Indian paintbrush		4		X		Coastal scrub	<100m.	X		X						South North Coast (s Mendocino, Sonoma cos.) n Central Coast (for Santa Cruz Co.), w San Francisco Bay Area	Per communication with Marin CNPS (2004), populations occur within Marin Headlands (including Wolfback Ridge)		

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		Federal	CNPS	State					None	Muir Woods	WUI	Interior	Beneficial	Negative	No affect	Unknown	San Francisco	San Mateo		
<i>Ceanothus gloriosus</i> var. <i>porticus</i>	Mount Vision ceanothus	FSC	IB			Closed some coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland.	Low shrub in a variety of habitats on Pt. Reyes; sandy soils. 25-305m.									X			San Francisco Bay Area (Point Reyes)	
<i>Ceanothus masonii</i>	Mason's ceanothus	FSC	IB	R	X	Chaparral.	Endemic to Marin County. Serpentine Ridges Or Slopes in Chaparral Or Transition Zone. 180-460m.	X		X						X			San Francisco Bay Area (Bolinas Ridge, sw Marin Co.). Closely related to <i>C. gloriosus</i> .	Species is documented on southern Bolinas Ridge (Special Status Vascular Plant Species Monitoring Report, GGNRA 2002).
<i>Chenopodium californicum</i>	California goosefoot	FSLC				Occurs in a wide range of plant communities in relatively dry and open conditions. In San Francisco it typically occurs in stabilized rear dune systems.	Sandy to clay soils. Dryish plains and slopes below 3000'.	X								X			North Coast, Outer North Coast Ranges, eck's Sierra Nevada Foothills Tehachapi Mountain Area, Great Central Valley, Central Western California, Southwestern California, East of Sierra Nevada, w Mojave Desert	Occurs in the Presidio (Area B - interior) (pers. comm. Michael Chase (NFS), 2004)
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spinneflower	FSC	IB		X	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub.	Closely related to <i>C. pungens</i> . Coastal strand & coastal scrub communities. Sandy soil on terraces and slopes. 5-550m.	X		X						X			not found in Jepson	Occurs within rear dune systems at the Presidio and Fort Funston. Special Status Vascular Plant Species Monitoring Report, GGNRA 2001. Colonies areas that have been recently disturbed, and spreads in dynamic dune systems.
<i>Chorizanthe cuspidata</i> var. <i>villosa</i>	Woolly-headed spinneflower	FSC	IB			Coastal scrub, coastal dunes, coastal prairie.	Endemic to coastline from Bolinas Bay to Pt. Reyes; sandy places near the beach. 3-60m.												not found in Jepson	
<i>Chorizanthe robusta</i> var. <i>robusta</i>	Robust spinneflower	FE	IB			Cismontane woodland, coastal dunes, coastal scrub.	Sandy terraces and bluffs or in loose sand. 3-120m.								X				Bay region, south to Monterey	
<i>Chorizanthe valida</i>	Sonoma spinneflower	FE	IB	E		Coastal prairie.	Known only from Marin and Sonoma Counties; extinct in Sonoma County; sandy soil. 10-50m.									X			Central Coast (Point Reyes Peninsula, Marin Co.) One extant population known; threatened by cattle. Closely related to <i>C. pungens</i>	
<i>Cirsium andrewsii</i>	Franciscan thistle	FSC	IB		X	Coastal bluff scrub, broad-leaved upland forest, coastal scrub.	Sometimes serpentine seeps. 0-135m.	X		X						X			North Coast, n Central Coast	Occurs in the Marin, Headlands, and Fort Funston. Special Status Vascular Plant Species Monitoring Report, GGNRA 2001. It is not affected by FMP actions as populations occur primarily in steep and wetland habitat
<i>Cirsium fontinale</i> var. <i>fontinale</i>	Fountain thistle	FE	IB	E	X	Valley and foothill grassland, chaparral.	Endemic to San Mateo County. Serpentine seeps and grassland. 90-180m.									X			sw San Francisco Bay Area (San Mateo Co.)	Only occurs in the SFWD. Special Status Vascular Plant Species Monitoring Report, GGNRA 2001.
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>	Mount Tamalpais thistle	FSC	IB			Broadleaved upland forest, chaparral.	Endemic to Marin County. Serpentine seeps and soil in chaparral and woodland. 265-620m.									X			in San Francisco Bay Area (Mount Tamalpais)	
<i>Cirsium occidentale</i> var. <i>compactum</i>	Compact cobweb thistle	FSC	IB			Chaparral, coastal dunes, coastal prairie, coastal scrub.	On dunes and on clay in chaparral; also in grassland. 5-155m.										X		Central Coast (in San Luis Obispo Monterey coast, formerly San Francisco). Some inland plants suggest weak separation from var. <i>occidentale</i>	
<i>Clarkia concinna</i> ssp. <i>ritchii</i>	Tomales clarkia	FSC	IB			Coastal bluff scrub.	Known only from one occurrence near Tomales, Marin County. Highly exposed rocky bluffs with a near-vertical slope. 15m.										X		Central Coast (known only from types locality near Tomales, Marin Co.)	



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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Erythronium amurens</i>	Coast wallflower	FSC	IB			Chaparral (maritime), coastal dunes, coastal scrub.	Soils, sandy openings in coastal habitats. 0-130m.								X	Central Coast (Monterey Bay), Channel Islands (Santa Rosa Island). Threatened by development. Plants intermediate to <i>E. capitatum</i> formerly in SCo.		
<i>Erythronium franciscanum</i>	San Francisco wallflower	FSC	4		X	Coastal dunes, coastal scrub, valley and foothill grassland. Occasionally on grassy, rocky slopes. 0-500m.	Endemic to the greater S.F. bay area. Often occurs on serpentine soils or outcrops; sometimes granite. Occasionally on grassy, rocky slopes. 0-500m.	X		X					X	North Coast, n.e. Central Coast, San Francisco Bay Area. Fleishy, coastal plants have been called <i>var. crassifolium</i> Rossbach; inland plants approach <i>E. capitatum</i> .	Occurs in the Marin Headlands, Sweeney Ridge, Fort Funston, and the SPWD. Special Status: Vascular Plant Species Monitoring Report, GGNRA 2001.	
<i>Fissidens pauperulus</i>	Fissidens moss	FSLC	IB			North coast coniferous forest.	Moss growing on damp soil along the coast. 10-100m.								X			
<i>Fritillaria agrestis</i>	Stinkbells	FSLC	4			Cismontane woodland, chaparral, valley and foothill grassland.	Sometimes on serpentine; mostly found in nonserpentine grassland or in grassy openings in clay soil. 10-1555m.								X	Outer North Coast Ranges (Mendocino Co.), Sierra Nevada Foothills, Great Central Valley, Central Western California		
<i>Fritillaria biflora var. incana</i>	Hillsborough chocolate lily	FSC	IB			Cismontane woodland, valley and foothill grassland.	Endemic to San Mateo County. Probably on serpentine; most recent site is in serpentine grassland. 90-160m.								X	San Francisco Bay Area (Hillsborough, San Mateo Co.).		
<i>Fritillaria lanceolata var. tristis</i>	Marin checker lily	FSC	IB		X	Coastal bluff scrub, coastal scrub, coastal prairie.	Endemic to Marin County. Occurrences reported from canyons and riparian areas as well as rock outcrops; often on serpentine. 30-300m.	X							X	Endemic to Marin County	** Referenced as <i>Fritillaria affinis var. tristis</i> . One population located in the GGNRA Northern District (Special Status: Vascular Plant Species Monitoring Report, GGNRA 2001).	
<i>Fritillaria liliacea</i>	Fragrant fritillary	FSC	IB		X	Coastal scrub, valley and foothill grassland, coastal prairie.	Often on serpentine; various soils reported though usually clay, in grassland. 3-410m.								X	Sacramento Valley (Solano Co.), Central Western California.	Occurs at Nicasio Ridge and in the SPWD (Special Status: Vascular Plant Species Monitoring Report, GGNRA 2001).	
<i>Gilia capitata ssp. Chamissonis</i>	San Francisco dune gilia	FSC	IB		X	Coastal dunes, coastal scrub.	2-200m.	X							X	Located in rear dune habitat on the Presidio (Special Status: Vascular Plant Species Monitoring Report, GGNRA 2001). Colonies areas that have been recently disturbed, and spreads in dynamic dune systems.		
<i>Gilia capitata ssp. Tomentosa</i>	Woolly-headed gilia	FSC	IB			Coastal bluff scrub.	Rocky outcrops on the coast. 15-155m.								X	North Coast, intergrades with <i>subsp. capitata</i> in ne Subtrib.		
<i>Gilia millefoliata</i>	Yarrow-leaf gilia	FSLC	IB			Coastal dunes.	2-20m.								X	North Coast, n Central Coast		
<i>Grielandia hirsutula</i>	San Francisco gumplant	FSC	IB		X	Coastal scrub, coastal bluff scrub, valley and foothill grassland.	Ocean bluffs and coastal hillsides, sandy or serpentine slopes, sea bluffs. 15-400m.	X							X	North Coast Ranges, n.e. Sierra Nevada Foothills, Sacramento Valley, Central Western California, Western Transverse Ranges, Peninsular Ranges, Sonoran Desert	Occurs on Presidio coastal area. **Special Status: Vascular Plant Species Monitoring Report, GGNRA 2001. Forest Service indicates that <i>G. squarrosa</i> although it may be top-killed by fire, it may resprout and seedlings colonize and increase after a fire (www.fs.fed.us/database/feis)	
<i>Helianthella castanea</i>	Diablo helianthella	FSC				Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley & foothill grassland.	Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 25-1150m.								X	San Francisco Bay Area		

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No Effect	Unknown			
<i>Hesperaloe parviflora</i>	Marin dwarf-flax "Marin Western Flax"	FT	IB	T	X		Chaparral, valley and foothill grassland.	Known only from Marin, S.F., and San Mateo Counties. In serpentine barrens and in serpentine grassland and chaparral. 30-365m.	X				X			X	San Francisco Bay Area, Occurs on Presidio coastal area. *Special Status - Vascular Plant Species Monitoring Report (GNRA 2001). Requires openings in grassland habitat with limited flitch and vegetation cover and open soil/outcrops.	Its decline is attributable to invasive non-native vegetation; the population would be enhanced by invasive species control and management. The fuel reduction actions for San Francisco lands may need further USFWS consultation to reduce direct effects during vegetation removal and to maximize long-term benefits.		
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	FT	IB	E			Coastal prairie, valley and foothill grassland.	Light, sandy soil or sandy clay; often with nomatives. 10-260m.								X	Central Coast (n.e. Monterey Bay), sw San Francisco Bay Area. Threatened by development, agriculture.			
<i>Horkelia cinctata</i> var. <i>sericea</i>	Kellogg's horkelia	FSLC	IB		X		Closed-cone coniferous forest, coastal scrub, chaparral.	Old dunes, coastal sandhills; openings. 10-200m.	X				X				Central Coast. Remaining plants less distinct from <i>subsp. canicola</i> than those formerly near San Francisco. Threatened by coastal development.	Re-introduced into Presidio dune habitat (pers. comm. Peter Bratow (NPS) 2004)		
<i>Horkelia marinensis</i>	Point Reyes horkelia	FSC	IB				Coastal dunes, coastal prairie, coastal scrub.	Sandy flats and dunes near coast; in grassland or scrub-plant communities. 5-20m.								X	North Coast (Fort Bragg), n Central Coast (Point Reyes to Santa Cruz)			
<i>Horkelia tenuiloba</i>	Thin-lobed horkelia	FSLC	IB				Coastal scrub, chaparral.	Sandy soils; mesic openings. 45-500m.								X	North Coast, c.e.s. Outer North Coast Ranges, nw San Francisco Bay Area			
<i>Lasthenia macrantha</i> ssp. <i>bakeri</i>	Baker's goldfields	FSLC	IB				Closed-cone coniferous forest, coastal scrub.	Grasslands, woods, near coast. Openings in forests and scrublands. 60-520m.								X	c.e.s. North Coast (Mendocino, Sonoma cos.)			
<i>Lasthenia macrantha</i> ssp. <i>macrantha</i>	Perennial goldfields	FSLC	IB				Coastal bluff scrub, coastal dunes, coastal scrub.	Most of distribution restricted to the Sacramento/San Joaquin River Delta. Often found w/ <i>Typha</i> , <i>Aster lentius</i> , <i>Rosa calif.</i> , <i>Juncus</i> spp., <i>Scirpus</i> , etc. Usually on marsh and slough edges.	X							X	North Coast, Central Coast (2 stations)	CNDDDB (2004): Occurrences in Marin are all Pt. Reyes, San Mateo is at Pigeon Point. Per communication with Marin-CNPS (2004) Marin populations located in Point Reyes only		
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Delta tulle-pea	FSC	IB				Freshwater and brackish marshes.	On sparsely vegetated semi-stabilized dunes, usually behind foredunes. 0-75m.									Great Central Valley, especially San Francisco Bay Area.			
<i>Layia canosa</i>	Beach layia	FE	IB	E			Coastal dunes.	Many historical occurrences are extirpated. In beds of vernal pools. 1-880m.	X							X	n North Coast, Central Coast	No occurrences present in GNRA (1 pers. Comm. Ling He (NPS), 2004). Seeds of species was re-introduced to Crissy Field in 1998-99, however did not establish.		
<i>Legeneire limosa</i>	Legeneire	FSC	IB				Vernal pools.									X	s North Coast Ranges, s Sacramento Valley, n San Joaquin Valley, San Francisco Bay Area (Santa Cruz Mtns, Mount Hamilton Range)			
<i>Leptosiphon parviflorus</i> var. <i>rosaceus</i> ( <i>Linanthus rosaceus</i> )	Rose linanthus	FSC	IB				Coastal bluff scrub.	0-100m.	X							X	California Floristic Province	Per communication with Marin-CNPS (2004), no populations have been observed outside of PORE & near Dillon Beach.		

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		Federal	CNPS	State						None	WUI	Mitig Woods	Interior	Beneficial	Negative	No affect			
<i>Lesvingia anachnidia</i>	Crystal Springs lessingia	FSC	IB		X		Coastal sage scrub, valley and foothill grassland, clasmontane woodland.	Known only from Santa Clara & Sonoma Counties. Grassy slopes on serpentine; sometimes on roadsides. 60-200m.							X			Occurs only in San Mateo Co. near Crystal Springs Reservoir. Special Status Vascular Plant Species Monitoring Report, GGNRA 2001	
<i>Lesvingia germanorum</i>	San Francisco lessingia	FE	IB	E	X		Coastal scrub.	Known only from San Francisco and San Mateo counties. From remnant dunes. Open sandy soils relatively free of competing plants. 20-125m.	X			X						It is anticipated that the near dune population located at Crissy Field would be unaffected by FMP actions. Species colonizes areas that have been recently disturbed, resulting in the coastal habitat region of possible long-term benefit. The limited population would also be enhanced by the Presidio (Special Status Vascular Plant Species Monitoring Report, GGNRA 2001). The fuel reduction actions for San Francisco lands may need further USFWS consultation to reduce direct effects during vegetation removal and to maximize long-term benefits.	
<i>Lesvingia micradenia</i> var: <i>micradenia</i>	Tamalpais lessingia	FSC	IB				Chaparral, valley and foothill grassland.	Endemic to Marin County. Usually on serpentine, in serpentine grassland or serpentine chaparral. Often on roadsides. 100-305m.							X			in San Francisco Bay Area (Mount Tamalpais, Marin Co.)	
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	FSC	IB	R			Freshwater and brackish marshes, riparian scrub.	Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10m.										CNDDDB (2004) - Closest occurrence in Marin Bay Area. Locally abundant. Inverness. Populations unknown to central and southern Marin, pers. comm, with Marin CNPS (2004).	
<i>Lilium martimum</i>	Coast lily	FSC	IB				Closed-cone coniferous forest, coastal prairie, coastal scrub, broadleaved upland forest, north coast coniferous forest.	Historically in sandy soil, often on raised hummocks or bogs; today mostly in roadside ditches. 10-355m.	X						X			North Coast (estirpated in n Central Coast) Hybridizes with <i>L. pardalinum</i> .	
<i>Limnanthes douglasii</i> ssp. <i>stuppea</i>	Point Reyes meadowfoam		IB	E			Fresh, Marsh, vernal pools, coastal prairie, meadows & seeps, clasmontane woodland.	Only known from San Mateo and Marin Counties. Vernal wet depressions in open rolling coastal prairies & meadows; typically in dark clay soil. 10-120m.							X			North Coast (Marin Co.), Central Coast (San Mateo Co.)	
<i>Linanthus grandiflorus</i>	Large-flowered linanthus	FSC					Open, grassy flats, generally in sandy soil.								X			North Coast, Central Coast, San Francisco Bay Area	
<i>Lupinus arboreus</i> var: <i>eximius</i>	San Mateo tree lupine	FSLC			X		Coastal bluffs, dunes, or more inland.	<100m.							X			Occurs in the SPWD. Special Status Vascular Plant Species Monitoring Report, GGNRA 2001.	
<i>Lupinus taylorii</i>	Tidestrom's lupine	FE	IB	E			Coastal dunes	Includes lupinus tidesstromii var tidesstromii, state-listed endangered. Partially stabilized dunes, immediately near the ocean. 0-35m.							X			Known from San Mateo County and Sonoma County. North Coast (Sonoma Co.), n.d.c. Central Coast (Marin, Monterey cos.) Shaggy plants from n NCo have been called var. <i>lupinus</i> (Eastw.) Munz Point Reyes lupine.	
<i>Malacothamnus arcanus</i>	Arcuate bush mallow	FSLC	IB				Coastal sage scrub, chaparral	Prefers rocky soils, openings in scrub, gravelly alluvium. 80-355m.	X						X			INNER No. Coast range, Mendocino County, interior SF Bay Area Report, GGNRA 2001. Seeds respond to fire.	
<i>Microseris pallidosa</i> (silverpuff)	Marsh microseris	FSLC	IB				Closed-cone coniferous forest, clasmontane woodland, coastal scrub, valley and foothill grassland.	5-30m.							X			CNDDDB: SF occurrence estimated. Several Marin occurrences in San Rafael, Mt Tamalpais and Point Reyes (communication with Marin-CNPS 2/04).	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Need in GNRA Records	GNRA management concern noted on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/Project Unit			Potential Effect that Could Result from FMP Actions*			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Monardella undulata</i>	Curley-leaved monardella	FSC	4			Chaparral, coastal dunes, coastal scrub, lower montane coniferous forest.	Ponderosa pine sandhills, sandy soils, 0-300m.								X	Central Coast, San Francisco Bay Area		
<i>Monardella villosa</i> ssp. <i>globosa</i>	Robust monardella	FSLC	1B			Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland.	Openings, 30-300m.								X	Outer North Coast Ranges, San Francisco Bay Area		
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Baker's navarretia	FSC	1B			Cismontane woodland, meadows and seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest.	Vernal pools and swales; adobe or alkaline soils, 5-950m.								X	Inner North Coast Ranges, Sacramento Valley, Intermediate between subsp. <i>leucocephala</i> and <i>pleiantha</i>		
<i>Navarretia rosulata</i>	Main County navarretia	FSLC	1B			Closed-cone coniferous forest, chaparral.	Known only from Marin and Napa counties. Dry, open rocky places; can occur on serpentine, 200-650m.								X	Inner North Coast Ranges (Napa Co.), in San Francisco Bay Area (Marin Co.)		
<i>Navarretia squarrosa</i>	Skunkbush	FSLC				Sandy alluvium, roadsides, dryer winter pools, open wet gravelly flats, slopes.	Dunes, sandy soils	X								North Coast Ranges, n Sierra Nevada foothills (Sacramento, Amador cos.)	Rare in San Francisco area, with one site located in the interior of the Presidio (Area B) (Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula, USFWS 2003).	
<i>Orobanchae californica</i> ssp. <i>californica</i>	California broomrape	FSLC				Coastal bluff grassland, and occasionally in dunes.	Numerous forested habitats, californica floristic province sandy or heavy soils, locally on serpentine substrate. Plant is root parasite generally on grindedia species. <150m	X							X	North Coast, ncc Central Coast	Per communication with Marin-CNPS (2004), "not known except on PORE growing in association with Grindedia". NO CNDDB occurrences	
<i>Pedicularis dudleyi</i>	Dudley's housewort	FSC	1B	R		Chaparral, north coast coniferous forest, valley and foothill grassland, coast redwood forests.	Deep shady woods of older coast redwood forests; also in maritime chaparral, 100-490m.								X	Central Western California (except Outer South Coast Ranges). Widely scattered. Plants from c CCo (Arroyo de la Cruz, San Luis Obispo Co.) warrant further study (smaller, leaves < inflorescence, anthers often exerted with bases somewhat acuminate); also like <i>P. semibarbata</i> but filaments glabrous		
<i>Pentstemon belliflorus</i>	White-rayed pentstemon	FE	1B	E	X	Valley and foothill grassland.	Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock, 35-620m								X	San Francisco Bay Area	Occurs in the SPWD. Special Status Vascular Plant Species Monitoring Report GNRA 2001.	
<i>Perideridia gardneri</i> ssp. <i>gardneri</i>	Gardner's yampah	FSC				Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools.	Adobe flats or grasslands, wet meadows and vernal pools, under pines radiata along the coast, mesic sites, 0-350m.								X	s North Coast (Sonoma Co.), Central Coast (scarce s of Monterey Co.), South Coast		
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	FSC	1B			Coastal bluff scrub, coastal dunes.	Known only from Mendocino and Marin counties. Open maritime bluffs, sandy soil, 10-160m.	X							X	North Coast	Per communication with Marin-CNPS (2004), Marin populations found in PORE only CNDDB (2004) - Closest occurrence in Marin: Pt. Reyes & Inverness.	
<i>Piperia elegans</i>	Coast rein-orchid	FSLC				Coniferous forests, scrub, coastal bluffs, headlands.	Numerous habitats, prefers moist soils, shade in forested and scrub habitat.	X			X					North Coast, w Klamath Ranges, Outer North Coast Ranges, Central Coast, San Francisco Bay Area	It is uncommon and local on sandy coastal bluff grassland and scrub in the Presidio, and under blue gum eucalyptus groves in remnant dunes near Baker Beach (GNRA sample data)	

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/Project Unit				Potential Effect that Could Result from EMP Actions?				County Distribution			Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No affect	Unknown	San Francisco	San Mateo	Marin		
<i>Piperia elegans ssp. Decurata</i>	Point Reyes rein orchid	FSC	IB				Coastal bluff scrub.	15-185m.									X			known only from two small populations at the tip of the Pt. Reyes peninsula, California, and separated from <i>P. elegans</i> ssp. <i>elegans</i> by only 14 km.		
<i>Platigobothrys chorisianus var. chorisianus</i>	Chorist's popcornflower	FSLC	IB	X		Chaparral, coastal scrub, coastal prairie.	Mesic sites. 15-100m.	X		X									Central Coast, sw San Francisco Bay Area	Occurs at Sweeney Ridge and on SFWD Special Status Vascular Plant Species Monitoring Report, GGNRA, 2001. The 2001 draft USFWS recovery plan for rough popcornflower ( <i>P. hirtus</i> ) states that fire suppression is a threat to the species, resulting in encroaching native oaks and ash trees which shade the popcorn flower.		
<i>Platigobothrys diffusus**</i>	San Francisco popcornflower		IB	E		Valley and foothill grassland, coastal prairie.	Historically from grassy slopes with marine influence. 60-485m.	X												** The treatment of <i>Platigobothrys</i> in the Jepson manual interpreted the endemic San Francisco (Presidio) population of Greene's popcornflower ( <i>Platigobothrys diffusus</i> ) as a variant with <i>Platigobothrys reticulatus var. rostratorum</i> .		
<i>Platigobothrys glaber</i>	Hairless allocarya	FSC	1A			Meadows and seeps, marshes and swamps.	Coastal salt marshes and alkaline meadows. 5-180m.												X	Central Coast, s San Francisco Bay Area (especially near Hollister) Perhaps a var. of <i>P. stipitatus</i> .		
<i>Platigobothrys reticulatus var. rostratorum</i>	Greene's popcorn flower	FSC				Forests, grasslands.	gen <300m.	X												Northwestern California. Has been extirpated from San Francisco Bay Area. (Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula, USFWS, 2003)	Per communication with Marin-CNPS (2004). Marin occurrences known only in PORE. NO CNDDDB occurrences.	
<i>Platigobothrys hooverianus</i>	North Coast semaphore grass	FSC	IB	T		Broadleaved upland forest, meadows and seeps, north coast coniferous forest.	Wet grassy, usually shady areas, sometimes freshwater marsh, associated with forest environments. 10-1150m.													s North Coast, n Central Coast.		
<i>Polygonum marinense</i>	Marin knotweed	FSLC	3			Marshes and swamps.	Coastal salt marshes and brackish marshes. 0-10m.													San Francisco Bay Area (especially Marin Co.) Related to <i>P. aviculare</i> taxonomic status uncertain; possibly = <i>P. robustifolius</i> ; if so, alien, native to w. Medit. Endangered by salt marsh development. Merits immediate study.	Per comm. With Marin CNPS. Possible weevil And exists on Tomales Bay. CNDDDB Occurrences in Marin: Pt. Reyes and San Rafael.	
<i>Potentilla hickmanii</i>	Hickman's potentilla = Hickman's cinquefoil	FE	IB	E		Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps.	Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125m.											X		n&c; Central Coast. Greene's popcornflower is extirpated in San Francisco.	Per communication w/ Marin-CNPS, no Marin pops known. CNDDDB - Occurrences in San Mateo County - Montara Mountain Quad	
<i>Rhynchospora californica</i>	California beaked-rush	FSC	IB			Bogs and fens, marshes and swamps, lower montane coniferous forest, meadows and seeps.	Freshwater seeps and open marshy areas. 45-1000m.													s Northwestern California (Sonoma Co.), n&c; Sierra Nevada Foothills (Butte, Mariposa? cos.), n San Francisco Bay Area, Mariposa Co. plants not recently collected, may be undescribed.		
<i>Rosa pitetorum</i>	Pine rose	FSLC				Closed-cone coniferous forest.	2-300m.												X	west-central California. Possibly hybrids of <i>R. sylvestris</i> , <i>R. gymnocarpa</i> , or others; further study essential		

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Need in GGNRA Records	GNRA management concern noted on LSPWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FEMU/ Project Unit				Potential Effect that Could Result from FMP Actions				County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Injurious	Beneficial	Negative	No Effect	Unknown			
<i>Sagittaria sanfordii</i>	Valley sagittaria (Sanford's arrowhead)	FSC	1B				Marshes and swamps	In standing or slow-moving freshwater ponds, marshes, and ditches. 0-610m.								X	North Coast (Del Norte Co.), Great Central Valley (where mostly extirpated), n South Coast (Ventura Co.)			
<i>Samolus maritima</i>	Aulobe samole	FSC	1B	R			Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie.	Coastal grassy areas, wet meadows, plays, prefers moist clay or ultramafic soils. 30-240m.							X	SF Bay Area, Central Coast, San Luis Obispo	Per communication with Marin/CNPS, no known Marin pops. CNDDB-SF occurrence: Pratero Hills, possibly extirpated. Next closest occurrence in Monterey.			
<i>Sidalcea calycosa</i> ssp. <i>Rhicomata</i>	Point Reyes checkerbloom	FSLC	1B				Marshes and swamps	Freshwater marshes near the coast. 5-75(245)m.							X	akes North Coast (Mendocino, Sonoma cos.), n Central Coast (Marin Co.)				
<i>Sidalcea hickamii</i> ssp. <i>viridis</i>	Marin checkerbloom (checkerbloom)	FSLC	1B				Chaparral	Serpentine Or Volcanic Soils; Sometimes Appears After Burns. 0-430m.						X	North Coast (Sonoma Co.) n Central Coast (Marin, San Francisco, San Mateo cos.)					
<i>Sidalcea multivflora</i> ssp. <i>Purpurea</i>	Purple-stemmed checkerbloom	FSLC	1B				Broadleaved upland forest, coastal prairie.	15-65m.		X					X	North Coast (n Sonoma, s Mendocino cos.), n Central Coast (San Mateo Co.)				
<i>Stilene verucunda</i> ssp. <i>verucunda</i>	Mission Delores (San Francisco) campion	FSC	1B		X		Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie.	Often on mudstone or shale; one site on serpentine. 30-645m.	X					X	X	Population located on the coastal section Presidio (pers. comm. Peter Brastow (NPS) 2005).				
<i>Spartina foliosa</i>	Pacific cordgrass	FSLC					Coastal salt marsh	Baja to northern California	X					X	X	North Coast, Central Coast, South Coast	It is anticipated that this coastal salt marsh habitat would be unaffected by FMP actions.			
<i>Strobiloseris decipiens</i> (silverpuffs)	Santa Cruz microseris (silverpuffs)	FSC	1B		X		Broadleaved upland forest, closed-coniferous forest, chaparral, coastal prairie, coastal scrub.	Open areas in loose or disturbed soil. Derived from sandstone, shale or serp. on seaward slopes. 10-500m.	X							North Coast	Past occurrences found at Sisson Ranch however not found in 2001 survey. Special Status. Vascular. Plant Species Monitoring Report, GGNRA 2001.			
<i>Stellaria littoralis</i>	Seashore starwort	FSC	4				Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps.	5-40m.						X		North Coast, Central Coast				
<i>Streptanthus glandulosus</i>	Tamalpais jewel-flower	FSC	1B		X		Closed-coniferous forest, chaparral.	Endemic to Marin County. Talus serpentine outcrops. 410-650m.	X							North Coast Ranges, San Francisco Bay Area, n/s South Coast Range	Occurs at Mill Valley Air Force Base on Mount Tamalpais, and Nicasio Ridge. Special Status. Vascular. Plant Species Monitoring Report, GGNRA 2001.			
<i>Streptanthus glandulosus</i> ssp. <i>Patchellii</i>	Mount Tamalpais jewel-flower	FSC	1B				Chaparral, valley and foothill grassland.	Endemic to Marin County. Serpentine slopes. 150-800m.							X	n/w San Francisco Bay Area (Marin Co.)				
<i>Streptanthus niger</i>	Tiburon jewel-flower	FE	1B	E			Valley and foothill grassland.	Endemic to Marin County. Serpentine outcrops in grassland/shallow, rocky serpentine slopes. 30-150m.							X	n Central Coast (Tiburon Peninsula Marin Co.)				
<i>Suaeda californica</i>	California seabite	FT			X		Coastal salt marshes.								X	Central Coast.	Species was re-introduced into Grassy Field marsh (1999) however no transplants survived (pers. comm. Ling He (NPS) 2004).			
<i>Tanacetum campoloratum</i>	Dune tansy	FSC			X		Coastal dunes.	Prefers sandy soils, brackish water. Oregon to northern Central Coast of California. <30m	X						X	North Coast, n Central Coast	Occurs at Fort Funston and the Presidio in the GGNRA. Special Status. Vascular. Plant Species Monitoring Report, GGNRA 2001. It is anticipated that this coastal foredune habitat would be unaffected by FMP actions			

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		Federal	CNPS	State						None	Muir Woods	Will	Injurious	Beneficial	Negative			
<i>Trifolium amoenum</i>	Showy Indian clover	FE	1B				Valley and foothill grassland, coastal bluff scrub.	Moist heavy soils and disturbed areas sometimes on serpentine soil, open sunny sites, swales. Most recently sited on roadside and eroding cliff face. 5-560m.	X						X	North Coast Ranges, n Central Coast San Francisco Bay Area. Probably only Marin population located on private land near Dillon Beach. CNDDB (2004) Occurrences in Marin, Valley Ford Quad.		
<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>	Saline clover	FSC	1B				Mushes and swamps, valley and foothill grassland, vernal pools.	Mesic, alkaline sites. 0-300m.						X		Sacramento Valley, Central Western California		
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	FSC	1B	X			Coastal prairie, valley and foothill grassland.	On serpentine and nonserpentine substrate (such as at Pt. Reyes). 10-160m.	X					X	X	Central Coast, w San Francisco Bay Area	Populations occur in the Fort Scott and the serpentine bluff/grassland habitat east of Lincoln Blvd (NPS, 2004).	
<i>Triquetrella californica</i>	California triquetrella moss	FSLC	1B				Coastal bluff scrub, coastal scrub.	Known in Calif. From about 10 small occs, and in Oregon from one occurrence. Moss growing on soil. 10-100m.						X		Occurs in San Diego, Contra Costa, San Francisco, Marin, Mendocino, & Del Norte Counties.		
<b>INVERTEBRATES</b>																		
<i>Azela apterella</i>	Opler's longhorn moth	FSC	n/a		X		Coastal grassland and serpentine grasslands.	All but Santa Cruz site is on serpentine grassland. Larvae feed on <i>Platystemon californicus</i> .	X						X	Marin County & the Oakland area on the inner coast ranges south to Santa Clara Co. One record from Santa Cruz Co.	CNDDB.	
<i>Calicina dimina</i>	Marin blind harvestman	FSC	n/a				Serpentine rock outcrops, serpentine grasslands.	Found on the underside of moist serpentine rocks near permanent springs.	X					X		Known only from Bundeil Mountain in Marin County		
<i>Calicina minor</i>	Edgewood blind harvestman	FSC	n/a				Open grassland in areas of serpentine bedrock.	Found on the underside of moist serpentine rocks near permanent springs.	X					X		San Mateo & Santa Clara Counties (occurrences).	CNDDB	
<i>Calophrys mossii boyensis</i>	San Bruno elfin butterfly	FE	n/a		X		Rocky outcrops and cliffs in coastal scrub habitat.	The larval host plant for san bruno elfins is <i>Stelotm spathulifolium</i> , a succulent which grows on rocky, north-facing slopes along the coast.		X	X					Found in coastal mountains near San Francisco Bay, in the fog-belt or steep north facing slopes that receive little direct sunlight.	Species occurrences at Milagra Ridge and Sweeney Ridge (NPS, 2004)(USFWS). Potential temporary impacts would be minimized to be insignificant.	
<i>Carterocephalus palaemon magnus</i>	Sonoma arctic skipper	FSC	n/a				Redwood forest.	Most specimens collected in deep shade or at the edge of forested clearings.	X					X		Sonoma County (occurrences).	CNDDB	
<i>Cicindela hirticollis gravida</i>	Sandy beach tiger beetle	FSC	n/a		X		Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.						X		Ventura, Santa Barbara, San Diego, & Los Angeles Counties (occurrences).	CNDDB. It is anticipated that this species would be unaffected by FMP actions as habitat will not be affected.	
<i>Cicindela ohlome</i>	Ohtone tiger beetle	FE	n/a				Coastal terraces supporting remnant patches of native grasslands.		X					X		Santa Cruz County (occurrences).		
<i>Coelus globosus</i>	Globose dune beetle	FSC	n/a		X		Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico.	Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.						X		Monterey, Santa Cruz, Ventura, Santa Barbara, San Diego, Los Angeles, & surrounding this species would be unaffected by FMP actions.	CNDDB. It is anticipated that the habitat supporting this species would be unaffected by FMP actions.	
<i>Euphydryas editha boyensis</i>	Bay checkerspot butterfly	FT, CH	n/a		X		Serpentine soil grasslands that support larval host plants: <i>Orthocarpus densiflorus</i> and <i>Plantago erecta</i> .	Serpentine soil grasslands that support larval host plants: <i>Orthocarpus densiflorus</i> and <i>Plantago erecta</i> .						X		Known only from San Mateo and Santa Clara counties.	Not observed in GGNRA, not likely to be present in study area (NPS, 2004)	
<i>Haliotis cracherodii</i>	Black abalone	FC	n/a				Inertial to subtidal marine habitat		X					X		Santa Barbara & Ventura Counties (occurrences).	It is anticipated that the habitat supporting this species would be unaffected by FMP actions.	

APPENDIX B  
SPECIES OF CONCERN

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No affect	Unknown			
<i>Halictus sorsseani</i>	White abalone	FE	n/a	n/a			Subtidal marine habitat		X	X				X	X	X		Southern California especially near Channel Islands (occurrences). Historic distribution from Point Conception, CA to Baja California, Mexico.	San Mateo and Santa Clara. It is anticipated that the habitat supporting this species would be unaffected by FMP actions.	
<i>Helminthoglypta arrosa williamsi</i>	William's bronze shoulderband snail	FSC	n/a	n/a			Known only from Hog Island, a small islet in Tomales Bay, Marin County.			X								Hog Island, a small islet in Tomales Bay, Marin County (occurrences)	CNDDDB	
<i>Helminthoglypta nickliniana rosalia</i>	Nicklin's Peninsula Coast Range snail	FSC	n/a	n/a			Known only from exposed granitic headlands of the Point Reyes Peninsula, Marin County.	Inhabits coastal scrub habitat & weedy pastures, uniquely adapted to high winds, salt fogs, and variable precipitation.	X	X				X				Dorles Bay Quad in Marin County (Point Reyes) (occurrences)	CNDDDB	
<i>Hydrochara rickseckeri</i>	Ricksecker's water scavenger beetle	FSC	n/a	n/a	X		Various water bodies.	Aquatic; known from the San Francisco Bay area.	X					X				Marin, San Mateo, Sonoma & Solano County (occurrences)	CNDDDB. It is anticipated that the habitat supporting this species would be unaffected by FMP actions.	
<i>Hydroponus leechi</i>	Leech's skyline diving beetle	FSC	n/a	n/a			Aquatic.	Known to inhabit permanent ponds in northern San Mateo County.	X	X				X				Known to inhabit permanent ponds in the North end of San Mateo County (occurrences)	CNDDDB. It is anticipated that the habitat supporting this species would be unaffected by FMP actions.	

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern not on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FMU/ Project Unit				Potential Effect that Could Result from FMP Actions <sup>6</sup>			County Distribution			Species Distribution / Range	Comments
		Federal	CNPS	State						None	WUI	Interior	Beneficial	Negative	No affect	Unknown	San Francisco	San Mateo	Marin		
<i>Icaricia icarioides sp. missionensis</i>	Mission blue butterfly	FE	n/a		X		Mission blue butterflies are closely tied to three lupine larval host plants— <i>Lupinus albifrons</i> , <i>L. varicolor</i> , and <i>L. formosus</i> . These host plants tend to occur on grasslands on thin, rocky soils within broader coastal- scrub habitats.		X								X			Marin Headlands, the coastal ridges in Marin County, San Bruno Mountain, and possibly Twin Peaks in San Francisco	Found in Tennessee Valley, Marin Headlands, Mt. Diablo, and Sweeney Ridges (NPS, 2004). Potential temporary impacts would be minimized to be insignificant and long-term effects would be beneficial.
<i>Icaricia icarioides sp. Parapheres</i>	Point Reyes blue butterfly	FSC	n/a				Coastal Dunes	X					X				X			Confined to the Pt. Reyes Peninsula from Pt. Reyes proper north to Tomales Pt.	Not observed in GGNRA, not likely to be present in study area (NPS, 2004)
<i>Inaciata mossii marthensis</i>	Marin elfin butterfly	FSC	n/a		X		Coastal grassland, coastal scrub.		X								X			San Bruno mtn., Mountain mtn., Mt. Diablo, and Alpine lake, Sleep North facing slopes, and coastal mountains of SF Bay Area.	Not observed in GGNRA, not likely to be present in study area (NPS, 2004)
<i>Lichuanthe ursina</i>	Bumblebee scarab beetle	FSC	n/a		X		Inhabits coastal sand dunes from Sonoma County south to San Mateo County.		X								X			Sonoma, San Francisco, Marin & Pacific Ocean counties. (occurrences)	CNDDDB. It is anticipated that the habitat supporting this species would be unaffected by FMP actions as habitat
<i>Microcina edgewoodensis</i>	Edgewood microblind harvestman	FSC	n/a				Serpentine grassland, serpentine scrub.		X								X			Edgewood County Park and a site west of Interstate Highway 280 in San Mateo County, California	
<i>Microcina thurona</i>	Tiburon microblind harvestman	FSC	n/a				Openly hilly grassland habitat in areas of serpentine bedrock.		X								X			Marin County (occurrences).	CNDDDB.
<i>Speyeria adriatae adriatae</i>	Unsilvered fritillary butterfly	FSC	n/a				Openings in redwood and coniferous forests, oak woodlands, chaparral.		X											Santa Cruz & Sann Clara counties	CNDDDB
<i>Speyeria callippe sp. callippe</i>	Callippe silverspot butterfly	FE	n/a				Coastal grasslands, opening in coastal scrub.		X								X			Sonoma, Alameda, Solano & San Mateo counties	Not observed in GGNRA, not likely to be present in study area (NPS, 2004)
<i>Speyeria zerene myrtilae</i>	Myrtle's silverspot butterfly	FE	n/a				Coastal dunes, scrub, and grassland.		X								X			Western Marin & southwest Sonoma Counties	Not observed in GGNRA, not likely to be present in study area (NPS, 2004)
<i>Syncarts pacifica</i>	Californian fresh water shrimp	FE	n/a	SE	X		Streams of 12-36 inches in depth with exposed live roots of trees along under cut banks >6' with over hanging woody debris		X								X			Tributary streams in the lower Russian River drainage westward to the Pacific Ocean	Found in Lagunitas Creek watershed. Surveys outside watershed have not identified other localities, although potential habitat present (NPS, 2004).
<b>FISH</b> <i>Acipenser medirostris</i>	Green sturgeon	FC	n/a		X		Spawn in the Sacramento River and the Klamath River.		X								X			Alaskan Islands and the Gulf of Alaska to Escondido, Mexico. Considered vulnerable in Canada, (Sacramento and Klamath)	A mostly marine-estuarine species that is only known to spawn in large CA rivers

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Need in GGNRA Records	GNRA management concern noted on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FMU/Project Unit				Potential Effect that Could Result from EMP Actions <sup>1</sup>				County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	Unknown	San Francisco			
<i>Encylogobius newberryi</i>	Tidewater goby	FE	n/a		X		Brackish water habitats along the CA coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River.	X		X			X				Eastern Pacific: Del Norte County in northern California, USA to Del Mar in southern California.	Found in Rodeo Lagoon. Additional suitable habitat in GGNRA-managed areas unlikely. It is anticipated that this tidewater goby habitat would be unaffected by FMP actions. Potential impacts would be minimized to be insignificant.		
<i>Hypomesus transpacificus</i>	Delta smelt	FT	n/a				Brackish water in the Sacramento-San Joaquin Delta.										North America: Sacramento-San Joaquin Delta region in central California, USA.			
<i>Lampetra ayresii</i>	River lamprey	FSC	n/a				Adults need clean, gravelly riffles, ammocoetes need sandy backwaters or stream edges, good water quality & temps < 25 c										Eastern Pacific: Tee Harbor, Alaska to California, USA. Freshwater resident population in Morrison Creek, Vancouver Island, British Columbia	Uncertain whether in park		
<i>Lampetra tridenata</i>	Pacific lamprey	FSC	n/a		X		Freshwater streams.	X									Range in California, Oregon, Washington and Idaho with the most precipitous documented declines in the upper Columbia, Snake and North Umpqua River basins.	No occurrences of this anadromous species have been observed in GGNRA-managed streams, however likely exists in Lagunitas Watershed (NPS, 2004)		
<i>Oncorhynchus kisutch</i>	Coho salmon—Central California coast	FT, SE, CH	n/a	SE	X		Coastal streams draining to ocean (including those to S.F. Bay) with spawning, juvenile rearing habitat, and migratory corridor	X		X			X				Point Hope, Alaska south to Chamale Bay, Baja California, Mexico.	Present in Muir Woods, Redwood Creek (NPS, 2004)		
<i>Oncorhynchus mykiss</i>	Steelhead — Central California Coast	FT	n/a		X		Coastal streams draining to ocean (including those to s.f. bay) with spawning, juvenile rearing habitat, and migratory corridor	X		X							California streams from the Russian River to Aptos Creek, and the drainages of San Francisco and San Pablo Bays eastward to the Napa River (inclusive).	Present in Muir Woods, Redwood Creek (NPS, 2004)		
<i>Oncorhynchus mykiss</i>	Steelhead — Central Valley	FT	n/a		X		Spawning and juvenile rearing habitat in Sacramento and San Joaquin Rivers and their tributaries	X*					X				Sacramento and San Joaquin Rivers and their tributaries.	* Adult and juvenile migratory corridor along S.F. Bay portion of GGNRA lands. It is anticipated that the habitat supporting this species would be unaffected by FMP actions (Darren Fong (NPS), pers. comm. 2004). Potential temporary impacts would be minimized to be insignificant and long-term effects would be beneficial.		
<i>Oncorhynchus tshawytscha</i>	Chinook salmon — Sacramento River winter run	FE, CH	n/a	SE	X		Spawning and juvenile rearing habitat in Sacramento River and tributaries	X*					X				Arctic and Pacific: drainages from Point Hope, Alaska to Ventura River, California, USA; occasionally strays south to San Diego in California, USA	* Adult and juvenile migratory corridor along S.F. Bay portion of GGNRA lands. Critical habitat includes Bay waters to the Golden Gate Bridge. It is anticipated that the habitat supporting this species would be unaffected by FMP actions (Darren Fong (NPS), pers. comm. 2004). Potential temporary impacts would be minimized to be insignificant and long-term effects would be beneficial.		
<i>Oncorhynchus tshawytscha</i>	Chinook salmon — California coastal	FT	n/a				Spawning and juvenile rearing in large coastal stream and rivers draining to ocean.										Arctic and Pacific: drainages from Point Hope, Alaska to Ventura River, California, USA; occasionally strays south to San Diego in California, USA	Spawning, juvenile rearing habitat, and migratory corridor only in Lagunitas Creek (managed by PRNS)		

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GGNRA management concern (USFWS list)	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FEMU/ Project Unit				Potential Effect that Could Result from FMP Actions				County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No Effect	Unknown			
<i>Oncorhynchus tshawytscha</i>	Chinook salmon — Central Valley fall/late run	FT	n/a	ST	X		Adult nos. depend on pool depth & volume, amount of cover, & proximity to gravel. Water temps >27 c lethal to adults	Federal listing refers to perps spawning in Sacramento River & tributaries.	X*				X			X	San Mateo	Aretic and Pacific: drainages from Point Hope, Alaska to Ventura River (PRSS). It is anticipated that the habitat in California, USA; occasionally strays south to San Diego in California, USA by FMP actions (Darren Fong (NPS, pers. comm., 2004). Potential temporary impacts would be minimized to be insignificant and long-term effects would be beneficial.	* Adult and juvenile migratory corridor along S.F. Bay portion of GGNRA lands. Spawning in juvenile rearing habitat, and migratory corridor only in Lagunitas Creek (managed by PRSS).	
<i>Oncorhynchus tshawytscha</i>	Chinook salmon — Central Valley fall/late run	CH, FC	n/a		X		Populations spawning in the Sacramento & San Joaquin Rivers and their tributaries.						X			X	San Mateo	Aretic and Pacific: drainages from Point Hope, Alaska to Ventura River (managed by PRSS).	Spawning, juvenile rearing habitat, and migratory corridor only in Lagunitas Creek (managed by PRSS)	
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	FT	n/a				Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay & associated marshes.							X		X	San Francisco	North America: formerly known throughout the Sacramento-San Joaquin River drainage in California, USA; now restricted to San Francisco Bay Delta and lower Sacramento River.		
<i>Spirinchthys flaccidicollis</i>	longfin smelt	FSC	n/a				Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.									X		North Pacific: Prince William Sound, Alaska to Monterey Bay, California, USA. Landlocked in Washington and Union Lakes in Washington, USA		
<b>REPTILES/AMPHIBIANS</b>																				
<i>Ambystoma californense</i>	California tiger salamander	FPT	n/a				Vernal pool grasslands.	Use stock ponds, vernal pools, & swales for breeding. Upland grasslands (rodent burrows) for estivations.	X							X		Foothills & valleys, Central Valley and Coast Ranges. Santa Barbara Co. & the Santa Rosa plains in Sonoma Co.		
<i>Caretta caretta</i>	Loggerhead turtle	FT	n/a				Offshore marine	Continental shelves, bays, estuaries, and lagoons in temperate, tropical, and subtropical climates.	X				X			X		Circum global. Alaska to Chile. Marine migratory species, unlikely to be affected by FMP actions (NPS, 2004)		
<i>Chelonia mydas</i>	Green turtle	FT	n/a				Offshore marine	Continental shelves, bays, estuaries, and lagoons in temperate, tropical, and subtropical climates.	X				X			X		Alaska to Baja	Marine migratory species, unlikely to be affected by FMP actions (NPS, 2004)	
<i>Chrysemys marmorata marmorata</i>	Northwestern pond turtle	FSC	n/a		X		Slow moving waterways, lakes and ponds.	Aquatic turtle: requires ponds, slow-moving waterways, such as creeks and irrigation ditches, where water ponds. Prefers habitats with thick, aquatic vegetation and suitable upland habitats for egg-laying.	X				X			X		North of the San Francisco Bay Delta secondary (the eastern portion north of the Delta) aquatic habitats throughout California west of the Sierra Nevada and in parts of Oregon and Washington.	Limited numbers found at Rodeo Lake, Temi Valley and Muir Beach (Redwood Creek). It is anticipated that the wetland and riparian habitats supporting populations would be unaffected by FMP actions (NPS, 2004)	
<i>Chrysemys marmorata pallida</i>	Southwestern pond turtle	FSC	n/a		X		Slow moving waterways, lakes and ponds.	Aquatic turtle: requires ponds, slow-moving waterways, such as creeks and irrigation ditches where water ponds. Prefers habitats with thick, aquatic vegetation, and suitable upland habitats for egg-laying.	X				X			X		North of the San Francisco Bay Delta secondary (the eastern portion north of the Delta) aquatic habitats throughout California west of the Sierra Nevada and in parts of Oregon and Washington.	No occurrences have been observed in Project California near of the Sierra Nevada Study Area (Darren Fong, pers. comm., 2004)	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			GNRA management concern not on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/Project Unit			Potential Effect that Could Result from FMP Actions			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State					None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Dermochelys coriacea</i>	Leatherback turtle	FE	n/a			Offshore marine		X	X					X		Marine migratory species, unlikely to be affected by FMP actions (NPS, 2004)	
<i>Lepidochelys olivacea</i>	Olive ridley sea turtle	FT	n/a			Offshore marine		X	X					X		Marine migratory species, unlikely to be affected by FMP actions (NPS, 2004)	
<i>Phrynosoma coronatum frontale</i>	California horned lizard	FSC	n/a		X	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	X	X							Shasta County, Southwest along the Sacramento valley south Coast Ranges, San Joaquin Valleys, and Sierra Nevada foothills.	
<i>Rana aurora aurota</i>	Northern red-legged frog	FSC	n/a		X	Found in humid forests, woodlands, grasslands, and streambeds in northwestern California.	Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	X	X					X		Mendocino Co., Oregon, and Washington. Range overlaps with R. a. draytonii in Pt. Arena, Mendocino Co.	
<i>Rana aurora draytonii</i>	California red-legged frog	FT	n/a		X	Ponds and other permanent slow-moving waterbodies, lakes, reservoirs, slow streams, marshes, and bogs.	Adult require a dense, shrubby or emergent riparian vegetation closely associated with deep (>0.7 meters) still or slow-moving water.	X	X					X		California red-legged frogs are still locally abundant within portions of the San Francisco Bay area (including Marin County) and the central coast within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse ranges.	
<i>Rana boylei</i>	Foothill yellow-legged frog	FSC	n/a		X	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats.	Egg clusters attached to downstream sides of submerged rocks. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	X	X					X		West of crest of Cascade mts., Ore. south in coastal mts. Of CA to San Gabriel River, Los Angeles County, Sierra Nevada foothills to about 6000' Baja California.	
<i>Spea hammondi</i>	Western spadefoot toad	FSC	n/a			Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands.	Vernal pools are essential for breeding and egg-laying.	X	X					X		North-central California, Central Valley, and foothills south to Baja, S.P. Bay coastal areas.	
<i>Thamnophis sirtalis tarratensis</i>	San Francisco garter snake	FE	n/a	SE	X	Freshwater habitats are primary foraging sites. Adjacent uplands for basking and hibernaculae.	Prefer densely vegetated ponds with adjacent plants for basking. Preferred prey species is red-legged frogs. Estivates in burrow holes.	X	X					X		Historically San Francisco peninsula currently known from South San Francisco near shore and Mori Point near Pacific. Known occurrence at Mori Pt.	
<b>BIRDS</b>																	
<i>Agelaius tricolor</i>	Tricolored blackbird	FSC	n/a		X	(Nesting colony) highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California.	Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	X	X					X		Gregarious; found year-round in large flocks in open country and dairy farms; nests in large colonies in marshes.	
																Mechanical removal and other FMP actions would occur outside of nesting season, and limited number of acres burned each year therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern listed on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FMC/Project Unit				Potential Effect from FMP Actions			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No affect			
<i>Amphispiza belli belli</i>	Bell's sage sparrow	FSC	n/a	n/a	X		(Nesting) nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range.	Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.	X				X					Western U.S. to n. Mexico	Mechanical removal and other FMP actions would occur outside of nesting season, and limited number of acres burned each year therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.
<i>Arenaria melanocephala</i>	Black turnstone	FSC	n/a	n/a			Breeds in coastal Alaska. Winters on rocky coasts.	Strictly coastal species.	X				X					Breeds in western Alaska and winters along the entire stretch of Pacific Coast from southern Alaska to British Columbia.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions
<i>Athene cucularia hypugaea</i>	Western burrowing owl	FSC	n/a	n/a	X		(Burrow sites) open, dry annual or perennial grasslands, deserts, & scrublands characterized by low-growing vegetation.	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	X				X					Western U.S. into northern Mexico. In (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000).	
<i>Butorides lentiginosus</i>	American bittern	FSC	n/a	n/a	X		Freshwater and slightly brackish marshes. Also in coastal saltmarshes.	Dense reed beds.	X				X					Breeds from southeastern Alaska, Manitoba, and Newfoundland south to California, New Mexico, Arkansas, and Carolinas.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions
<i>Brachyramphus marmoratus marmoratus</i>	Marbled murrelet	FT, CH	n/a	SE	X		Old growth forest for breeding and sheltered waters/open coast for foraging.		X				X					Nests inland, usually in trees. Fairly common in breeding range; rare in Southern California.	Habitat present in Muir Woods, but no detections in 2 years of surveys (NPS, 2004). Potential temporary habitat impacts would be minimized to be insignificant and long-term effects would be beneficial to habitat.
<i>Buteo regalis</i>	Ferruginous hawk	FSC	n/a	n/a	X		(Wintering) open grasslands, sagebrush flats, desert scrub, low foothills & fringes of piñon-juniper habitats.	Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	X				X					Sw. Canada, Western U.S., Winters SW. U.S., N. Mexico	Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000).
<i>Callidris canutus</i>	Red knot	FSC	n/a	n/a			Breeds on tundra, during migration, on tidal flats, rocky shores, and sandy beaches.	Often breeds with dowitchers.	X				X					Breeds on islands in High Arctic of Canada. Winters along coasts from California and Massachusetts southward to southern South America. Also in Eurasia.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions

APPENDIX B  
SPECIES OF CONCERN

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		Federal	CNPS	State						None	Mt Woods	WUI	Interior	Beneficial	Negative			
<i>Calypte costae</i>	Costa's hummingbird	FSC	n/a	n/a			Fairly common in desert washes, dry chaparral, and successional scrub.		X				X				Occurs mainly in Southern California, Arizona, Baja California, and western Mexico, but also extends into Nevada and southeastern Utah, and populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	
<i>Carduelis lawrencei</i>	Lawrence's goldfinch	FSC	n/a	n/a			(Nesting) nests in open oak or other arid woodland & chaparral, near water. Nearby herbaceous habitats used for feeding		X					X			Mechanical removal and other FMP actions would occur outside of nesting season, and limited number of acres burned each year therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	
<i>Chaetura vauxi</i>	Vaux's swift	FSC	n/a	n/a			(Nesting) redwood, douglas fir, & other coniferous forests. Nests in large hollow trees & snags. Often nests in flocks.		X						X		Breeds n. California to n. Baja California, Winters sw. U.S.	
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover	FT, CH	n/a	n/a	X		Coastal beaches, sand spits, dune-backed beaches, beaches at river mouths, salt pans at lagoons and estuaries, mud flats, and man-made salt ponds.		X						X		Per comm. With PRBO (Tom Gardali), potential habitat exists in Marin County Breeds in Bolinas. Does not occur in MUWO.	
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	FC	n/a	SE			(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems.		X								Overwintering population on Ocean Beach. Periodically sighted at other beaches. It is anticipated that forest and beach habitat supporting this species would be unaffected by actions defined under the FMP. Potential temporary impacts from suppression activities would be minimized to be insignificant; other activities are not anticipated in plover habitat.	
<i>Contopus cooperi</i>	Olive-sided flycatcher	FSC	n/a	n/a			(Nesting) riparian forest nester, along the broad, lower flood-bottoms of larger river systems.		X								S. Canada to Mexico, W. Indies Winters in Argentina	
<i>Cypseloides niger</i>	Black swift	FSC	n/a	n/a			(Nesting) coastal belt of Santa Cruz & Monterey Co; central & southern Sierra Nevada; San Bernardino & San Jacinto Mtns.		X								Per comm. with PRBO, species does not occur in the GGNRA & does not breed on coast.	

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		Federal	CNPS	State						None	Muir Woods	WUI	Inlet	Beneficial	Negative	No effect			
<i>Diomedea albatrus</i>	Short-tailed albatross	FE	n/a				Marine and near shore habitats for foraging. Breeds in south Pacific		X	X					X	X	Breeds on Bonin Island off Japan. Formerly ranged from Bering Sea to Baja California, may again do so.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions. Near extinction in 1966, now over 250 birds. Per comm. With PRBO species needs to be monitored.	
<i>Diomedea nigripes</i>	Black-footed albatross	FSC	n/a			Seen year-round off west coast; most common in spring-summer. Chiefly breeds on Hawaiian Islands									X	X	Ranges west offshore from Bering Sea and Aleutians to Baja California.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions. Per comm. with PRBO (Tom Gardali), species rarely comes on shore.	
<i>Elanus leucurus</i>	White-tailed kite	FSC	n/a		X	(Nesting) rolling foothills/valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	X				X			X	X	Resident in coastal and southern California, Arizona and southern Texas. Also in American tropics.	White-tailed kites could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000). However, white-tailed kites, and other canopy nesters could be subject to short-term negatives affects as a result of crown fires.	
<i>Empidonax traillii brewsteri</i>	Little willow flycatcher	n/a	SE		X	Breeds in shrubby vegetation in meadow and riparian woodlands, typically where there are mature, dense stands of willows, cottonwoods, or alders.		X							X	X	Breeds in wet meadows & montane riparian habitats from 2,000 -8,000 feet in elevation.	It is anticipated that the riparian and other habitat supporting this species would not be affected by FMP actions	
<i>Falco peregrinus anatum</i>	American peregrine falcon	DM	n/a	SE		(Nesting) near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape on a depression or ledge in an open site.	X		X					X	X	breeds from non-Arctic portions of Alaska and Canada south to Baja California (except on the coast of southern Alaska and in British Columbia), central Arizona and Mexico (locally)	The endangered American peregrine falcon ( <i>Falco peregrinus anatum</i> ) has historically nested at three sites in GGNRA (Walton pers. comm. 1991). It has been released from hatcheries at Muir Beach from 1983 to 1987 and in 1998. (GGNRA, RMP 1999). It is anticipated that the wetland coastal habitat supporting this species would not be affected by FMP actions	
<i>Geothlypis trichas swainsona</i>	Saltmarsh common yellowthroat	FSC	n/a		X	Resident of the San Francisco Bay region, in fresh and salt water marshes.	Requires thick, continuous cover down to water surface for foraging; tall grasses, tide patches, willows for nesting.	X							X	X	Canada to s. Mexico. Winters s. U.S. to W. Indies, Panama.	It is anticipated that the salt marsh and coastal habitat supporting this species would not be affected by FMP actions	
<i>Haematopus bachmani</i>	Black oystercatcher	FSC	n/a		X	Resident on rocky shores and islands along the Pacific Coast from the Aleutians to Baja California		X							X	X	Resident from w. Aleutians - east and south along coast to Morro Bay, CA. Gerdali, species occurs in the Presidio along on offshore islands to Baja California Island each year.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions. Per comm. with PRBO, Tom Gardali, species occurs in the Presidio along rocky beaches. A few pairs breed on Alcatraz Island each year.	
<i>Haliaeetus leucocephalus</i>	Bald eagle	FT	n/a	SE	X	Large trees near lakes, rivers, or estuaries for foraging. Disturbance intolerant.		X							X	X	Has been observed to over-winter in the San Francisco Watershed. An occasional bald eagle is observed during the fall migration by the Golden Gate Region Observatory. It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions. Per comm. with PRBO, Tom Gardali, species occurs in the Presidio along rocky beaches. A few pairs breed on Alcatraz Island each year.	
<i>Histrionicus histrionicus</i>	Harlequin duck	FSC	n/a		X	(Nesting) breeds on west slope of the Sierra Nevada, nesting along shores of swift, shallow rivers.	Nest often built in a recess, sheltered overhead by stream bank, rocks, woody debris, usually within 7 ft of water	X							X	X	Ne. Asia, Alaska, Canada, w. U.S., Greenland, Iceland	It is anticipated that the wetland habitat supporting this species would not be affected by FMP actions	

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		Federal	CNPS	State					None	Muir Woods	WLU	Interior	Beneficial	Negative	No Effect	Unknown		
<i>Lanius ludovicianus</i>	Loggerhead shrike	FSC	n/a	n/a	X	(Nesting) broken woodlands, savannah, piñon-juniper, Joshua tree, & riparian woodlands, desert oases, scrub & washes.	Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	X					X	X	X	S. Canada to s. Mexico	Per comm. with PRBO, species occurs within the GGNRA.	
<i>Lanius ludovicianus excubitorides</i>	Black rail		n/a	ST	X	Mainly inhabits salt-marshes bordering larger bays.	Occurs in tidal salt marsh heavily grown to pickleweed; also in fresh-water and brackish marshes, all at low elevation.	X					X	X	X	Ne. and central U.S. and central California south locally to W. Indies Chile	It is anticipated that the salt marsh and coastal habitat supporting this species would be relatively unaffected by FMP actions.	
<i>Limosa fedoa</i>	Marbled godwit	FSC	n/a	n/a		Common on west coast in winter, fairly common on Texas Gulf coast and in Florida; rare but regular in the east.		X					X	X	X	N. Great Plains; locally sw. Alaska Winters s. U.S. to north South America.	It is anticipated that the salt marsh and coastal habitat supporting this species would be relatively unaffected by FMP actions. Per comm. with PRBO, species occurs at Crissy Field in the GGNRA. Fairly common on annual GGNRA beaches during winter.	
<i>Melospiza melodia pusilla</i>	Alameda (South Bay) song sparrow	FSC	n/a	n/a		Resident of salt marshes bordering south arm of San Francisco Bay.	Inhabits salt-marshes; nests low in graminoid bushes (high enough to escape high tides) and in salicornia.	X						X			Alaska, Canada to cen. Mexico.	It is anticipated that the salt marsh habitat supporting this species would be relatively unaffected by FMP actions. Per comm. with PRBO, species is only specific to the localized Alameda/South Bay area.
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	FSC	n/a	n/a		Resident of salt marshes along the north side of San Francisco and San Pablo Bays.	Inhabits tidal sloughs in the salt-marshes; nests in graminoid bordering slough channels.	X						X			Alaska, Canada to cen. Mexico.	It is anticipated that the salt marsh habitat supporting this species would be relatively unaffected by FMP actions. Per comm. with PRBO species only occurs in the localized San Pablo Bay area.
<i>Namnetus americanus</i>	Long-billed curlew	FSC	n/a	n/a	X	(Nesting) breeds in upland shrub-grass prairies & wet meadows in northeastern California.	Habitats on gravelly soils and gently rolling terrain are favored over others.	X						X	X	X	Sw. Canada, W. U.S., Winters s. U.S. to Guatemala.	It is anticipated that the salt marsh habitat supporting this species would be relatively unaffected by FMP actions. Per comm. with PRBO, species occurs in the GGNRA particularly Crissy Field.
<i>Namnetus phaeopus</i>	Whimbrel	FSC	n/a	n/a		Breeds on arctic tundra, especially near coasts; coastal salt meadows, mudflats, and grassy shoreline slopes during migration.		X						X	X		Arctic, circum-polar. Winters to s. S. America	It is anticipated that the salt marsh habitat supporting this species would be relatively unaffected by FMP actions. Per comm. with PRBO, species occurs at Crissy Field in the GGNRA.
<i>Oenanthe himalayensis</i>	Ashy storm-petrel	FSC	n/a	n/a		(Roosting site) colonial nester on offshore islands. Usually nests on dunes part of islands. Forages over open ocean.	Nest sites on islands are in crevices beneath loosely piled rocks or driftwood, or in caves.	X						X	X	X	At sea from n. California (Pt. Reyes) to Baja California.	It is anticipated that the coastal habitat supporting this species would not be affected by FMP actions.
<i>Otus flammeolus</i>	Flammulated owl	FSC	n/a	n/a		Common in oak and pine woodlands, especially ponderosa. Sometimes nests in loose colonies. Highly migratory. Accidental east to Louisiana and Florida.		X						X	X		Southern British Columbia, w. U.S. to Guatemala.	Mechanical removal and other FMP actions would occur outside much of nesting season and limited number of acres burned each year therefore it is anticipated that the effects on populations of these species would be minor, with potential for localized losses from translocation activities.

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Pelecanus occidentalis californicus</i>	California Brown pelican	FE	n/a	SE	X		Forage over near shore marine areas including open coast, San Francisco Bay, and radeo lagoon. Utilize islands, rocks, cliffs, and some protected beach areas for roosting.		X				X	X	X		The endangered California brown pelican has significant roost areas in GGNRA (NPS 1982). Pelicans have been observed roosting at Seal Rocks, Alcatraz Island, the Hyde Street Pier, Bird Island, and Kent Island in Bolinas Lagoon (GGNRA, RMP, 1999). This species does not breed within the Study Area and it is anticipated that coastal habitats used for roosting would not be affected by EMP actions. Potential impacts would be either be discountable or minimized to be insignificant.	
<i>Psychoromphus aleuticus</i>	Cassin's auklet	FSC	n/a				Nests in colonies on islands and not isolated coastal cliffs and headlands.		X				X	X			It is anticipated that the coastal habitat supporting this species would not be affected by EMP actions.	
<i>Rallus longirostris obsolatus</i>	California clapper rail	FE	n/a	SE			Salt marsh with tidal channels.		X				X	X			It is anticipated that the salt marsh supporting this species would not be affected by EMP actions.	
<i>Alphea riparia</i>	Bank swallow	CA	n/a		X		(Nesting) colonial nester; nests primarily in riparian and other lowland habitats west of the desert.		X				X	X			Species nest in the Fort Funston cliffs. It is anticipated that this bluff habitat would not be affected by EMP actions.	
<i>Bonaparteus niger</i>	Black skimmer	FSC	n/a				Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.		X				X	X			It is anticipated that the habitats supporting this species would not be affected by EMP actions.	
<i>Selasphorus rufus</i>	Rufous hummingbird	FSC	n/a		X		Nests in berry tangles, shrubs, and conifers. Favors habitats rich in nectar-producing flowers.		X				X	X			Per communication with PRBO, species passes through the GGNRA during migration.	
<i>Selasphorus sasin</i>	Allen's hummingbird	FSC	n/a		X		Mixed evergreen, riparian woodlands, eucalyptus and cypress groves, oak woodlands, and coastal scrub areas in breeding season.		X				X	X			Per communication with PRBO, species may be affected by	
<i>Sphyrapicus ruber</i>	Red-breasted sapsucker	FSC	n/a				Common in coniferous or mixed forests in coastal ranges, usually at lower elevations and in moister forests than Williamson's sapsucker. Most migrate south or move to lower elevations in winter.		X				X	X			Mechanical removal and other EMP actions would occur outside of nesting season and limited number of acres burned each year therefore it is anticipated that the effects on populations of these species would be minor with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Need in GGNRA Records	GNRA management concern on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FMU/ Project Unit				Potential Effect that Could Result from FMP Actions <sup>1</sup>			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Marl Woods	WUI	Interior	Beneficial	Negative	No affect			
<i>Sterna antillarum brownii</i>	California least tern	FE	n/a	SE	X		Diked ponds or ditches along shorelines.		X	X	X	X	X				Temperate and tropical oceans. Winters south of U.S.	The endangered California least tern does not nest in the park, but uses abandoned terns for roosting and nearshore waters for foraging (GENRA RMP, 1999). It is anticipated that shoreline habitat supporting this species would not be affected by FMP actions.	
<i>Sterna elegans</i>	Elegant tern	FSC	n/a		X		(Nesting colony) only known breeding colony in n.s. located in the salt work dikes at the south end of San Diego Bay.		X								Breeds on islands off Baja California. Winters, Peru to Chile. Wanders irregularly (Aug-Oct.) north to San Francisco Bay; recently even to Washington. Breeds near San Diego.	Per communication with PRBO, species exists in estuaries throughout the GGNRA. Habitat unlikely to be affected by FMP actions.	
<i>Strix occidentalis caurina</i>	Northern spotted owl	FT	n/a		X		Utilizes coniferous and mixed-hardwood forest areas for breeding in the project area, often in drainages.		X	X							The range encompasses an area from southwestern British Columbia south through the coastal mountains and Cascade Range (both west and east sides) of Washington and Oregon, south into southwestern Oregon and northwestern California north of San Francisco	Potential temporary impacts would be minimized to be insignificant and long-term effects would be beneficial.	
<i>Synalbiatoromphus hypoleucus</i>	Xantú's murrelet	FSC	n/a	ST			Forges over most terrain & habitats but shows a preference for foraging over rivers and lakes.		X								Breeds s. California (Anacapa and Santa Barbara Is.) to central Baja California. Some winter north to Monterey; usually to Washington.	It is anticipated that the habitats supporting this species would not be affected by FMP actions.	
<i>Taxostoma redivivum</i>	California thrasher	FSC	n/a		X		The thrasher breeds from sea level to the higher parts of the montane chaparral. It will breed in adjacent oak woodlands and pine-juniper scrub as well as occasionally in parks and gardens, but only if dense cover is available. Its dispersal is very limited.		X								California, n. Baja California	Per communication with PRBO, species may be affected by the FMP plan. It is known to breed in Marin County, including the GGNRA.	
<b>MAMMALS<sup>2</sup></b>																			
<i>Aplodontia rufa phaea</i>	Point Reyes Mountain Beaver	FSC	n/a				Coastal area of Point Reyes in areas of springs or seepages.		X								110 square miles in the Point Reyes area of Marin County		
<i>Arctocephalus townsendi</i>	Guadalupe fur seal	FT	n/a	ST			Protected haul out sites.		X								Breeds along the eastern coast of Guadalupe Island, approximately 200 km west of Baja California. In addition, individuals have been sighted in the southern California Channel Islands, including two males who established territories on San Nicolas Island.	Offshore marine species (e.g. whales, pelagic birds) are expected to receive little to no impact from fire management activities	

Scientific Name	Common Name	Legal Status			Needed in GGNRA Records	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/ Project Unit			Potential Effect that Could Result from FMP Actions <sup>5</sup>			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State					None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Balaenoptera borealis</i>	Sei whale	FE	n/a			Offshore marine		X				X	X	X	Worldwide, but favors warm waters.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Balaenoptera musculus</i>	Blue whale	FE	n/a			Offshore marine		X				X	X	X	Worldwide and highly migratory. Summers in North Pacific. Not common in coastal waters when in our latitudes.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Balaenoptera physalus</i>	Finback whale	FE	n/a			Offshore marine		X				X	X	X	Worldwide. Migrates to Bering Sea in summer and winters south to the Gulf of California.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Corynorhinus townsendii townsendii</i>	Pacific western big-eared bat	FSC	n/a		X	Humid coastal regions of northern & central California. Roost in limestone caves, lava tubes, mines, buildings etc.	Will only roost in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to disturbance	X		X		X	X	X	Washington, Oregon, California, Nevada, Idaho, and possibly southwestern Montana and northwestern Utah	Minor short-term impacts could be both beneficial (creates food sources) and adverse (some mortality may occur in roosting sites).	
<i>Enhydra lutris nereis</i>	Southern sea otter	FT	n/a		X	Near shore marine		X				X	X	X	Central Californian coast from Pigeon Point near Santa Cruz in San Mateo County, south to Purisima Point north of Point Año. Observed at Fitzgerald Marine Reserve in Contra Costa County. Individuals sometimes observed farther north (e.g. Tomales Bay).	No large kelp forests present in Project Study Area. Observed at Fitzgerald Marine Reserve. Marine habitat unlikely to be affected by FMP actions.	
<i>Eschrichtius robustus</i>	Gray whale	DM	n/a			Offshore marine		X				X	X	X	North Pacific: summers far north to Bering Sea and Arctic Ocean, breeds in winter in Gulf of California, Baja.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Eubalaena glacialis</i>	Right whale	FE	n/a			Offshore marine		X				X	X	X	Summers in Gulf of Alaska and Aleutians. Winter ranges not well known, but observations in Baja and Hawaiian Islands. Right whales prefer coastlines and sometimes large bays, but may spend a lot of time on the open sea. Northern and Southern hemisphere right whale sub-species are separated by the "tropical belt" roughly between the latitudes of 20°N and 20°S.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Eumetopias jubatus</i>	Steller sea lion	FT, CH	n/a		X	Protected haul out sites.		X				X	X	X	Breeds from northern Chumel Islands north to Aleutians and Pribilof. Affect habitat supporting Steller's sea-lions. Breeding colony on Ano Nuevo Island, they are more likely to use rocky shorelines as haul outs.	Historic haul-out at Seal Rock, San Francisco. It is anticipated that FMP actions would not affect habitat supporting Steller's sea-lions. Breeding colony on Ano Nuevo Island, they are more likely to use rocky shorelines as haul outs.	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Noted in GNRA Records	GNRA management concern noted on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in FMU/ Project Unit			Potential Effect that Could Result from FMP Actions			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative			
<i>Eumops perotis californicus</i>	Greater western mastiff-bat	FSC	n/a	n/a	X		Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc	Roosts in crevices in cliff faces, high buildings, trees & tunnels.	X				X			central California, southward to central Mexico. In California, they have been recorded from Butte County southward in the western lowlands through the southern California coastal basins and the western portions of the southeastern desert region	Available records indicate that Mastiff Bats were widespread in the San Joaquin Valley, Salinas Valley, and Coastal lowlands from the San Francisco Bay area southward to San Diego	
<i>Megaptera novaeangliae</i>	Humpback whale	FE	n/a	n/a	X		Offshore marine		X				X			Worldwide. Migrates to Bering Sea and Gulf of Alaska in summer and winters south to California and Hawaii.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Myotis evotis</i>	Long-eared myotis	FSC	n/a	n/a	X		Found in all brush, woodland & forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands & forests.	Nursery colonies in buildings, crevices, species under bark, & snags. Caves used primarily as night roosts.	X				X			Southwestern Canada, south through California into Baja, eastward through northern Arizona and New Mexico and north into the Dakotas.	Minor short-term impacts could be both beneficial (creates food sources) and adverse (some mortality may occur in roosting sites).	
<i>Myotis thysanodes</i>	Fringed myotis bat	FSC	n/a	n/a	X		In a wide variety of habitats, optimal habitats are riparian-jumper, valley foothill hardwood & hardwood-conifer.	Uses caves, mines, buildings or crevices for maternity colonies and roosts.	X				X			western North America from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota.	Minor short-term impacts could be both beneficial (creates food sources) and adverse (some mortality may occur in roosting sites).	
<i>Myotis volans</i>	Long-legged myotis bat	FSC	n/a	n/a	X		Most common in woodland & forest habitats above 4000 ft. Trees are important day roosts, caves, & mines are night roosts.	Nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	X				X			found from the Tongass National Forest in Alaska, south, through all of the western U.S., and into the Baja California peninsula, and also along the Sierra Madre Occidental in Mexico.	Minor short-term impacts could be both beneficial (creates food sources) and adverse (some mortality may occur in roosting sites).	
<i>Myotis yumanensis</i>	Yuma myotis bat	FSC	n/a	n/a	X		Optimal habitats are open forests and woodlands with sources of water over which to feed.	Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	X				X			Throughout western North America, from British Columbia through Washington, Idaho, and western Montana, southern Wyoming, Colorado, New Mexico, West Texas and into Mexico.		
<i>Neotoma fasciipes annexans</i>	San Francisco dusky-footed woodrat	FSC	n/a	n/a	X		Forest habitats of moderate canopy & moderate to dense understory. Also in chaparral habitats.	Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	X				X			Inhabits forest and chaparral throughout the S.F. Bay Area. Prefers a moderate canopy and bushy understory.		
<i>Physeter catodon</i>	Sperm whale	FE	n/a	n/a			Offshore marine						X			Worldwide, but favors warm waters. Females avoid polar waters.	Offshore marine species (e.g., whales, pelagic birds) are expected to receive little to no impact from fire management activities	
<i>Reithrodontomys raviventris</i>	Salt marsh harvest mouse	FE	n/a	SE	X		Salt marsh, wetland.		X				X			There are two known subspecies divided in two ranges: Northern: found in Marin, Sonoma, Napa, Solano and northern Contra Costa counties; Southern: Found in San Mateo, Alameda and Santa Clara counties. Some isolated populations occur in Marin and Contra Costa.	Found in inventory at Rodeo Lagoon (USGS) although this identification is in question. Not captured in Big Lagoon Study Area (NPS 2004). It is anticipated that the salt marsh habitat supporting this species would not be affected by FMP actions. Potential impacts would be discountable or minimized to be insignificant; some activities would not occur in harvest mouse habitat.	

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SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern not on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/Project Unit				Potential Effect that Could Result from FMP Actions <sup>1</sup>				County Distribution	Species Distribution / Range	Comments		
		Federal	CNPS	State						None	Mud Woods	WUI	Interior	Beneficial	Negative	No affect	Unknown				San Francisco	San Mateo
<i>Sorex vagrans halictoides</i>	Salt marsh vagrant shrew	FSC	n/a	n/a			Salt marshes of the south arm of San Francisco Bay.	Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among salicornia.	X					X						Limited to the salt marshes of the south arm of San Francisco Bay	It is anticipated that the salt marsh habitat supporting this species would be relatively unaffected by FMP actions.	
<i>Zapus trinotatus orarius</i>	Point Reyes Jumping Mouse	FSC	n/a		X		Bunch grass marshes on the uplands of Point Reyes in areas safe from continuous inundation.	Eats mainly grass seeds w/ some insects & fruit taken. Builds grassy nests on ground under vegetation, burrows in winter.	X						X				X		Confined to a small area on the Point Reyes Peninsula.	
<p><b>KEY: FF (federally endangered), FT (federally threatened), FC (federal candidate), FSC (federal species of concern), CH (designated critical habitat)</b></p> <p><sup>1</sup> "Potential Affect" was determined considering the full implementation of all proposed conservation measures. Although habitat may be present in vicinity of project actions for certain species, marine and estuarine species were considered to have "No effect" from fire management activities as the proposed activities are not planned adjacent to coastal resources.</p> <p><sup>2</sup> For bird and mammal species found within the GGNRA, EMU/Project Unit Occurrence were not notated. Birds and mammals occurring in the GGNRA are assumed to migrate throughout the EMU/Project Units.</p>																						

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative			
<b>GGNRA (not FWS)</b>																		
<b>BIRDS</b>																		
<i>Accipiter cooperi</i>	Cooper's hawk		n/a	SC	X	X	(Nesting) Woodland, Chiefly of oak, riparian deciduous, mixed conifer & Jeffrey pine habitats. Prefers riparian areas.	Nest site mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	X		X	X	X				All California	Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000). However, canopy nesters such as great egrets, red-tailed hawks, white-tailed kites, sparrow hawks, and ravens could be subject to short-term negative effects as a result of crown fires.
<i>Accipiter striatus</i>	Sharp-shinned hawk			SC	X	X	(Nesting) ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitats. Prefers riparian areas.	North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	X		X	X					All California	Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000). However, canopy nesters such as great egrets, red-tailed hawks, white-tailed kites, sparrow hawks, and ravens could be subject to short-term negative effects as a result of crown fires.
<i>Aquila chrysaetos</i>	Golden Eagle		n/a	SC	X	X	(Nesting & wintering) Rolling foothills, mountain areas, sage-juniper flats, desert.	Cliff-walled canyons provide nesting habitat in most parts of range. Also, large trees in open areas.	X				X				All California	Canopy-nesters such as great egrets, red-tailed hawks, white-tailed kites, sparrow hawks, and ravens - could be subject to short-term negative effects as a result of crown fires.
<i>Ardea alba</i>	Great egret (rookery)		n/a	n/a	X	X	(Rookery) Colonial nester in large trees.	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.					X				Western half of California including Mexico.	Canopy-nesters such as great egrets, red-tailed hawks, white-tailed kites, sparrow hawks, and ravens - could be subject to short-term negative effects as a result of crown fires.
<i>Buteo swainsoni</i>	Swainson's hawk			T	X	X	Breeds in riparian systems adjacent to suitable foraging habitats, mainly open grasslands and agricultural fields. Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Winters in Mexico and South America.		X								Currently, Swainson's hawks in California are restricted to portions of the Central Valley and Great Basin regions where suitable nesting and foraging habitat is still available. Central Valley populations are centered in Sacramento, San Joaquin, and Yolo counties.	Current breeding range is outside of FMP project area.

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		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No Effect	Unknown			
<i>Callipepla californica</i>	California quail				X	X	Primarily inhabits chaparral, coastal scrub, and grassland oak habitats; however, adaptable to riparian, woodland, and some agricultural lands. Often forage on open or disturbed lands.		X	X	X	X						Much of California.	A common breeder in Marin and San Mateo Counties that will be protected by breeding season restrictions on FMP actions. The Presidio supports the largest known remaining breeding population in San Francisco County; currently estimated to be 20 or so individuals.	
<i>Cathartes ustulatus</i>	Swainson's thrush		n/a		X	X	In western mountains and along Pacific coast, often in dense riparian willows or alders. They may be found in both undisturbed or disturbed woodlands with dense understory, often near canopy gaps produced by fallen trees or other disturbances.		X	X	X	X						Breeding range is from Alaska through central Canada and portions of the northern U.S. Breeding range extends south into the Rocky Mountains into Utah, Colorado, and New Mexico. Distinct population on Pacific slope from British Columbia to southern California. Neotropical migrant.	Some species, such as California quail and Swainson's thrush are known to decline in the first few years after shrubland and forest fires (Lawrence, 1966; Lyon and Marzluff, 1985).	
<i>Chamaea fasciata</i>	Wren-tit		n/a		X	X	Varied habitat types in California that provide low, dense cover.	X	X	X	X							Pacific coast from Oregon through California to northern Baja California. Birds in the northern part of the range (Oregon) were recently described as defining a distinct subspecies.	Definite concern about this species in San Francisco County, where remaining birds in Golden Gate Park are thought to be declining or extirpated.	
<i>Chondestes grammacus</i>	Lark Sparrow		n/a		X	X	Grasslands.											Grasslands and sagebrush areas in western U.S.		
<i>Circus cyaneus</i>	Northern harrier		SC		X	X	(Nesting) coastal salt & fresh-water marsh; Nest & forage in grasslands, from salt grass in desert sink to mini estuaries.	X						X				All California	It is not anticipated that the habitat utilized by this species would be affected by FMP actions	
<i>Columba fasciata</i>	Band-tailed pigeon		n/a		X	X	Hardwood and coniferous forests.	X		X	X							Forested habitat in California.		
<i>Contopus borealis</i>	Olive-sided flycatcher		n/a		X	X	Hardwood and coniferous forests.			X	X							Forested habitat in California.	The olive-sided flycatcher and Pacific-slope flycatcher could be beneficially affected because studies have shown flycatchers (Witz, 1977) increased the first year after a burn.	
<i>Dendroica nigrescens</i>	Black-throated gray warbler		n/a		X	X	Forested habitat.			X	X							Forested habitat in California.	It is anticipated that riparian habitats supporting this species would be relatively unaffected by FMP actions, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	
<i>Dendroica occidentalis</i>	Hermits Warbler		n/a		X	X	(Nesting) coast redwood forests & interior mixed deciduous & coniferous forests farther inland.	X		X	X							Forested areas of California.	It is anticipated that riparian habitats supporting this species would be relatively unaffected by FMP actions, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern based on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrences Known in FMP/Project Unit			Potential Effect that Could Result from FMP Actions			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WLU	Interior	Beneficial	Negative			
<i>Dendroica petechia brewsteri</i>	Yellow warbler		n/a	SC	X	X	(Nesting) riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, & alders for nesting & foraging.	Also nests in montane shrubbery in open conifer forests.	X				X			Neotropical migrant. Breeds in riparian habitat and wet meadows in California.	It is anticipated that riparian habitats supporting this species would be relatively unaffected by FMP actions, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher		n/a		X	X	Coniferous and hardwood forests.				X					Neotropical migrant. Breeds in forested habitat in California.	The olive-backed flycatcher and Pacific-slope flycatcher could be beneficially affected because studies have shown flycatchers (Witzel, 1977) increased the first year after a burn.	
<i>Eremophila alpestris actia</i>	California horned lark			SC	X	X	Coastal regions, chiefly from Sonoma Co. to San Diego co. Also mountain meadows, open coastal plains, main part of San Joaquin valley & fallow grain fields, alkali flats.	Short-grass prairie, "bad" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	X				X			Found in short grass and disturbed lands.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of	
<i>Falco columbarius</i>	Merlin			SC	X	X	(Wintering) seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches.	Clumps of trees or windbreaks are required for roosting in open country.	X							Breeds in Canada and northern Rocky Mountains. Often in California coastal areas in winter.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of	
<i>Larus occidentalis</i>	Western Gull		n/a		X	X	Nests on rocky cliffs and nearshore and offshore islands.		X							Coastal areas of California. Large breeding colony on Farallones Islands, and colony on Alcatraz is about 1,000 breeding pairs.	Offshore marine species (e.g. whales, pelagic birds) are expected to receive little to no impact from fire management activities.	
<i>Oporornis tolmiei</i>	MacGillivray's warbler		n/a		X	X	Riparian habitats and wet meadows.		X							Throughout state in riparian and wet meadow habitat.	It is anticipated that riparian habitats supporting this species would be relatively unaffected by FMP actions, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	
<i>Otus kennicottii</i>	Western screech owl				X	X	Hardwood and coniferous forests.		X							Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000).	Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000).	
<i>Pandion haliaetus</i>	Osprey			SC	X	X	(Nesting) ocean stone, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops within 15 miles of good fish-producing body of water.	X							California coast, Pacific NW, etc.	Species such as raptors and some owl species (burrowing, western screech) have been shown to increase in numbers after fires (USDA, 2000), and could be beneficially affected because raptors in general are unaffected or respond favorably to burned habitat (Smith, 2000).	
<i>Phalacrocorax penicillatus</i>	Brandt's cormorant		n/a		X	X	Rocky cliffs on outer coast and into S.F. Bay.		X							Coastal areas of California. Large breeding colony on Farallones Islands, and colony on Alcatraz is about 700 breeding pairs.	Offshore marine species (e.g. whales, pelagic birds) are expected to receive little to no impact from fire management activities.	

Scientific Name	Common Name	Legal Status			Noted in GGNRA Records	GNRA management concern not on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/Project Unit				Potential Effect that Could Result from FMP Actions				County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No affect	Unknown			
<i>Phainopepla melanoccephalus</i>	Black-headed grosbeak		n/a		X	X	Riparian habitat and some forests.	X						X	X	X	Riparian and forested areas of California.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year.		
<i>Picoides nuttalli</i>	Nuttall's woodpecker		n/a		X	X	Forested habitat.	X									Forested areas of California.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes. Rare in San Francisco.		
<i>Poecetes griseus</i>	Chestnut-backed chickadee		n/a		X	X	Forested habitat.	X									Forests habitats in northwestern portion of California, up into Northwest U.S.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes. Rare in San Francisco.		
<i>Progne subis</i>	Purple martin		n/a	SC	X	X	(Nesting) inhabits woodlands, low elevation coniferous forest of Douglas fir, ponderosa pine, & Monterey pine.	X									Low elevation forested habitat in California.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.		
<i>Vireo gilvus</i>	Warbling vireo		n/a		X	X	Shows a strong association with mature mixed deciduous woodlands especially along riparian corridors throughout range. Found at edges or openings (both natural and human-made) as well as forest interiors. In general, overall habitat structure consists of large trees with a semi-open canopy; apparently indifferent to density of undergrowth. Other habitats include urban parks and gardens; orchards; farm fences; campgrounds; deciduous patches in pine forests; mixed hardwood forests; and, rarely, pure coniferous forests.	X										Currently, the breeding range extends from the Canadian border south to the Santa Ana mountains (Orange County), San Bernardino mountains (San Bernardino County), Tehachapi mountains (Kern County), and east-central White and Inyo mountains (Inyo County), exclusive of the entire Central Valley.	Mechanical removal and other FMP actions would occur outside much of nesting season, and limited number of acres burned each year, therefore it is anticipated that the effects on populations of these species would be minor, with potential beneficial impacts from invasive species control and restoration of ecosystem processes.	

APPENDIX B  
SPECIES OF CONCERN

Scientific Name	Common Name	Legal Status			Need in GNRA Records	GNRA management concern noted on USFWS list	Habitat requirement and/or association	Micro habitat	Habitat Present in Planning Area	Occurrence known in EMU/ Project Unit				Potential Effect that Could Result from FMP Actions*			County Distribution	Species Distribution / Range	Comments
		Federal	CNPS	State						None	Muir Woods	WUI	Interior	Beneficial	Negative	No effect			
<b>MAMMALS</b>																			
<i>Antrozous pallidus</i>	Pallid bat				X	X	Pallid bats roost in rock crevices, buildings, and bridges in arid regions. The pallid bat is known for its unique habit of feeding almost entirely from the ground. Its most common prey include crickets, beetles, grasshoppers, and even scorpions		X					X				They are found from Mexico and the southwestern United States north through Oregon, Washington, and western Canada.  Minor short-term impacts could be both beneficial (creates food sources) and adverse (some mortality may occur in roosting sites).	
<b>FISH</b>																			
<i>Lavinia symmetricus</i> sp. 2	Tomales roach				X	X		X					X						
<b>INVERTEBRATES</b>																			
<i>Anodonta californiensis</i>	California floater (musssel)		n/a		X	X	Freshwater lakes and slow moving streams and rivers.	X										It is anticipated that the habitat supporting this species would be unaffected by FMP actions as habitat	
<i>Caecidotea tomalensis</i>	Tomales asellid		n/a		X	X	Inhabits localized freshwater ponds or streams with still or near-still water in several bay area counties.	X										It is anticipated that the habitat supporting this species would be unaffected by FMP actions as habitat	
<i>Danaus plexippus</i>	Monarch butterfly				X	X	Utilize eucalyptus and Monterey cypress and pine trees for clustering sites during winter.											Mitigations would reduce impacts to monarchs to less than significant.	
<b>PLANTS</b>																			
<i>Catalochorus umbellatus</i>	Oakland star tulip		4		X	X	Chaparral, lower montane coniferous forest, broadleafed upland forest, valley and foothill grassland.											Occurs in the SFWD, MVAFB, & Nicolside Ridge. Special Status Vascular Plant Species Monitoring Report GNRA 2001. Recently discovered in the vicinity of Muir Woods in non-serpentine grasslands (NPS, 2004)	
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	Glory Bush		4		X	X	Chaparral.	X										Occurs on south Bolinas Ridge only. Special Status Vascular Plant Species Monitoring Report GNRA 2002.	
<i>Ceanothus gloriosus</i> var. <i>gloriosus</i>	Point Reyes ceanothus		4		X	X	Closed-zone coniferous forest, coastal dunes, coastal scrub, coastal bluff scrub.	X										Occurs in the GGNRA, Muir Woods, and SFWD Special Status Vascular Plant Species Monitoring Report GNRA 2001.	
<i>Elymus californicus</i>	California bottle-brush grass		4		X	X	North coast coniferous forest, cismontane woodland, riparian woodland.	X										Occurs in SFWD, no occurrences in Project Outer Coast Ranges Study Area. Special Status Vascular Plant Species Monitoring Report GNRA 2001	
<i>Malacothamnus fasciculatus</i> var. <i>nevadensis</i>	Santa Cruz island bush mallow		1B	SE	X	X	Coastal scrub, chaparral.	X										Occurs in SFWD, no occurrences in Project Outer Coast Ranges Study Area. Special Status Vascular Plant Species Monitoring Report GNRA 2001 Mojave Desert	