

Table V1.2-4. Rationale for each species management categorization and the key factors thought to be most important in determining the risk of loss.

The information in Table V1.2-4 has not been updated since the 2013 MSP.

Common Name	Latin Name	Management Category	Management Categorization Rationale	Status				Trend		Threats		Biological Considerations		Other Considerations	
				Overall Distrib. (Source: Species Accounts)	Current Distrib. on CLs in MSPA since 2000 (Source: MO-Matrix)	Num. Occurr. on CLs Doc. Since 2000 at Distinct Sites in MSPA (Source: MO-Matrix)	Max* Num. Indivs. Documented on CLs in MSPA Since 2000 (Source: MO-Matrix)	Potential Loss of Occurr. on CLs since 2000 (Source: MO-Matrix)	Est. Change in Status Since 2000 (Source: SDMMMP or Specified)	Threats Specific to Conserved Occurr. (Source: MO-Matrix)	Est. Potential for Loss of Species or Signif. Occurr. from CLs in MSPA (Source: SDMMMP)	Life History/ Ecology (Source: Species Accounts)	Genetics (Source: Species Accounts)	Comments (Source: Various)	Signif. Occurr. Since 2000 on Military Land or East of MSPA or Not Conserved (Source: MO-Matrix)
Shaw's agave	<i>Agave shawii</i>	SL	Restricted distrib., small num. of isolated occurr. w/low num. of indivs., declining status, multiple threats & high potential for loss from CLs in MSPA	SW San Diego Co.; NW Baja CA, Mexico	MUs 1 & 7 (Limited suitable habitat on coastal bluffs)	4 Occurr. at 4 sites (1 natural w/single clone, others small & include transplanted indivs.)	C1		Decline (reduction of Border Field occurrence)	Limited number of isolated small occurr. with no connectivity & potential for loss of individuals from stochastic events & loss of genetic diversity. Limited sexual reproduction & seedling recruitment, trampling & instability of ocean bluffs.	High for loss from CLs in MSPA (Vulnerable over longer term)	Perennial monocot shrub, 20-40 years to flower & produce seeds, can reproduce vegetatively through rosettes.		Only in extreme SW of MSPA, easily cultivated. Gaps in knowledge of reproductive biology, origin of transplanted pops & genetic structure. Potentially pollinated by bats & diurnal pollinators.	1 small natural & transplanted occurr. at Point Loma Naval Base
Aphanisma	<i>Aphanisma blitoides</i>	SL	Only 1 occurr., limited habitat, annual life cycle & high potential for loss from CLs in MSPA	W SD, ORA, LA, SB & VEN Cos.; Anacapa, Santa Barbara, San Clemente, Santa Catalina, Santa Cruz, San Nicolas & Santa Rosa Islas; Baja CA, Mexico	MU1 (Limited suitable habitat on coastal bluffs & dunes)	1 Occurr.	C1?		Increase w/newly discovered occurr.	Single occurr. vulnerable to demogr. & environ. Stochasticity, loss of genetic diversity.	High potential for loss from CL in MSPA (1 occurr.)	Annual dicot herb		Single occurr. is at Cabrillo National Monument, not technically in MSP	Recently discovered 2 occurr. at Point Loma Naval Base, 1 at San Onofre State Beach & 1 unconserved in La Jolla
Salt marsh bird's-beak	<i>Chloropyron maritimum ssp. maritimum</i>	SL	Restricted distrib. w/small num. of occurr., multiple	SLO Co. south to NW Baja CA, Mexico	MU1 (Restricted to coastal salt marshes)	8 Occurr. at 5 Sites				Invasive nonnative plants, climate change (sea level rise &	Moderate for loss from CLs in MSPA (Esp. w/projected	Annual dicot herb, facultative hemiparasite.	Low genetic diversity	Need higher popn. levels to counteract genetic drift. Pollinator	

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			threats, annual life cycle, low genetic diversity & moderate potential for loss from CLs in MSPA							drought), altered hydrology & sediment dynamics, loss of connectivity, low genetic diversity & herbivory	future sea level rise)			connectivity could be issue. Invasive plants replacing suitable host plants could affect survival & reproduction. Sweetwater Marsh occur. extirpated 1987 was transplanted in 1990's & has low genetic diversity, current status unknown. Status Paradise Marsh occur. is unknown.	
Orcutt's spineflower	<i>Chorizanthe orcuttiana</i>	SL	Entire range in MSPA w/only 1 conserved occur., low num. of indivs., recent potential loss of occur., multiple threats, annual life cycle, low genetic diversity & high potential for loss from CLs in MSPA	W SD Co.	MU7 (Entire range is sandy soils on coast from Pt. Loma to Torrey Pines)	1 Occurr.	C2	1? (Oakcrest Park not detected since 2005)	Newly discovered occur.; loss of 1 occur.	Invasive nonnative plants, overgrown native veg., trampling, small isolated occur. w/no connectivity to Point Loma, potential loss of genetic diversity & vulnerable to demogr. & environ. stochasticity.	High for Loss from CLs in MSPA (Single small occur.)	Annual dicot herb	Low genetic diversity (pops similar, high degree of selfing & limited seed dispersal)	Oak Park may reappear if long-lived seeds germinate in future. 3 Navy pops responding well to mgmt.	4 Occurr. on Point Loma Naval Base
San Miguel savory	<i>Clinopodium chandleri</i>	SL	Restricted distrib., few occur. w/low num. indivs. & moderate potential for loss from CLs in MSPA	ORA, RIV & SD Cos.; N Baja CA, Mexico	MUs 3 & 4 (Restricted to gabbroic or metavolcanic soils?)	2 Occurr. at 2 Sites	C1		Decline? (No Recent obs. at 3 historic loc. on CLs)	Altered fire regime? Boulder Oaks & San Miguel Mtn both burned in 2007. Isolated occur. w/small num. of indivs. vulnerable to demogr. &	Moderate for loss from CLs in MSPA (Too frequent fires?)	Perennial dicot herb		Extremely rare, does not occur far south into Baja CA. No recent reports from McGinty, Jamul & Otay mtns.	1 Occurr. not conserved near Sandia Creek

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										environ. stochasticity.					
Orcutt's birds-beak	<i>Dicranostegia orcuttiana</i>	SL	Very restricted distrib., limited occurr. w/only 1 large pop, recent loss of occurr., annual life cycle & moderate potential for loss from CLs in MSPA	SW SD co.; Baja CA, Mexico	MU3 (Small range w/limited habitat in seasonal drainages & adjacent upland)	5 Occurr. at 5 Sites (only 1 large pop)	C4	1 (Tijuana River Valley occurr. not detected in 2004, 2005 & 2009)		Invasive, nonnative plants, off-highway vehicles, small isolated occurr. w/low num. indivs. vulnerable to demogr. & environ. stochasticity.	Moderate for loss from CLs in MSPA (Small range & annual life cycle)	Annual dicot herb, hemiparasite		Response to fire unknown.	
Short-leaved dudleya	<i>Dudleya brevifolia</i>	SL	Entire range in MSPA, limited suitable habitat, several occurr. w/low num. indivs. & moderate potential for loss from CLs in MSPA	CW SD Co.	MUs 6 & 7 (Limited habitat on sandstone bluffs Del Mar to La Jolla)	5 Occurr. at 5 Sites	C4		Large occurr. appear stable	Small num. occurr. in very restricted range, trampling, moderate threat of invasive nonnative plants & smaller occurr. vulnerable to demogr. & environ. stochasticity.	Moderate for loss from CLs in MSPA (very small range & prolonged drought)	Perennial dicot herb, succulent geophyte (responds to moisture).	May hybridize with <i>D. variegata</i>	Very little suitable habitat within range.	
Coast wallflower	<i>Erysimum ammophilum</i>	SL	Only 2 occurr. w/limited suitable habitat & high potential for loss from CLs in MSPA	W MON, SCR, SB & SD Cos.; Santa Rosa Isla., Mexico	MUs 6 & 7 (Limited habitat in eroded coastal dunes & sandy openings)	2 Conserved Occurr. at 2 Sites in Close Proximity	C1		2 Occurr. recently discovered	2 Small occurr. vulnerable to demogr. & environ. Stochasticity.	High potential for loss from CLs in MSPA (only 2 small occurr.)	Perennial dicot herb		No loc. in MSPA until found in 2004 at Overlook Park and 2009 at Crest Canyon. Occurr. and threat status unknown.	
Mexican flannelbush	<i>Fremontodendron mexicanum</i>	SL	Very restricted distrib., small number occurr. in close proximity, moderate threat risk & high potential for loss from CLs in MSPA	S SD Co.; Baja CA, Mexico	MU3	4 Conserved Occurr. at 4 Sites (1 Occurr. Transplanted)	C3		Increased	Altered fire regime, invasive nonnative plants, particularly tamarisk & off-highway vehicle activity (Border Patrol)	High potential for loss from CLs in MSPA (3 natural occurr. in very close proximity)	Perennial dicot shrub		In US natural occurr. found in 3 adjacent canyons on Otay Mtn. Area occupied is 4.8 km by 5.6 km with ~6,000 plants.	In Mexico, single occurr. at Arroyo Hediondo w/20 plants. Other location in Mexico is extirpated.

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Orcutt's hazardia	<i>Hazardia orcuttii</i>	SL	Very restricted distrib., several occurr. w/only 1 known natural pop, moderate threat risk & moderate potential for loss from CLs in MSPA	NW SD Co.; Baja CA, Mexico	MUs 6 & 7 (Restricted to coast & clay soils)	6 Occurr. at 5 Sites (4 known to be transplanted)	C3		Increase (Transplant & discovery of new pop)	Single natural occurr. vulnerable to catastrophic disturbance such as fire & loss genetic diversity. One occurr. invaded by <i>Brachypodium distachyon</i> .	High for loss from CLs in MSPA (Small range & low num. occurr.)	Perennial dicot shrub	In progress (CNLM)	One new occurr. at Torrey Pines State Reserve in 2011, no information on status.	9 Extant occurrences in Baja CA, Mexico (6 w/<25 plants and 5 other northern occurrences are extirpated)
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	Restricted distrib., only 2 occurr. w/small num. of individs. & high potential for loss from CLs in MSPA	SD, ORA & RIV Cos.; Baja CA, Mexico	MU8 (Chaparral & cismontane woodlands)	2 Occurr. at 2 Sites	C1		2 Occurr. recently discovered	Small isolated occurr. vulnerable to loss of genetic diversity & demogr. & environ. stochasticity.	High for loss from CLs in MSPA (2 small occurr.)	Dicot shrub	5 CA species share traits indicating derived from repeated instances of range expansion with contact and hybridization followed by contraction & isolation with differentiation from genetic drift & natural selection.	Fire follower.	
Willow monardella	<i>Monardella viminea</i>	SL	Entire range in MSPA, several occurr. with low num. of indivs., 1 occurr. recently lost from CL, high threat risk & high potential for loss from CLs in MSPA	Central San Diego County	MUs 4 & 6 (Entire range restricted to small area of MSPA w/seasonally dry washes w/sandy soils)	4 Occurr. at 4 Sites	C1	1? (Lopez Canyon occurr. not detected 2010-2012)		Altered hydrology & erosion, altered fire regime, invasive nonnative plants, inviable seeds & poor recruitment, small occurr. vulnerable to demogr. & environ. stochasticity.	High for loss from CLs in MSPA (1 intense flood)	Perennial dicot herb			6 Occurr. at 5 Sites on MCB Miramar

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Chaparral nolina	<i>Nolina cismontana</i>	SL	Only 1 occurr. may no longer be extant, high threat risk & high potential for loss from CL in MSPA.	SD, ORA & VEN Cos.	MU5 (Xeric Diegan sage scrub & open chaparral)	1 Occurr.	C1?	? Unsure if pop still extant		Altered fire regime? Pop burned in 2003 & 2007. Isolated occurr. vulnerable to demogr. & environ. stochasticity.	High for loss from CL in MSPA (1 occurr. whose status is uncertain)	Perennial monocot		Hellhole Cyn occurr. detected in 2005 after 2003 fire but not in 2008 following 2007 fire.	3 Occurr. on USFS lands at Viejas Mtn. 3 Occurr. not conserved in Pala.
California orcutt grass	<i>Orcuttia californica</i>	SL (& VF)	Very restricted distribution w/small isolated occurr., high threat risk, loss of genetic diversity & high potential for loss from CLs in MSPA	RIV & SD Cos.; Baja CA, Mexico	MU3 (Restricted to vernal pools)	5 Sites	58 basins		Negligible Decline (USFWS 2011)	Invasive nonnative plants, altered hydrology, foot traffic, trash dumping & off-highway vehicles. Small, scattered distribution in a few vernal pool complexes makes vulnerable to demogr. & environ. stochasticity & loss of genetic diversity. Changing climate w/unpredictable precipitation & more frequent, protracted drought could decrease stability & increase risk of extinction.	High potential for loss of occurr. from CLs in MSPA (small occurr. & prolonged drought could lead to extirpation)	Annual monocot herb. Protrandrous & an outcrosser, wind pollinated.	Species may already be genetically limited given small pop size making it difficult for plant to persist long term. Gene flow between pools important to maintain genetic variability within isolated pool complexes	Dependent on fungus & anaerobic conditions to stimulate germination in years with sufficient rainfall. Seed production highly variable & dependent on rainfall & temperature.	Occurs on Camp Pendleton

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Otay mesa mint	<i>Pogogyne nudiuscula</i>	SL (& VF)	Very restricted distrib. w/small isolated occurr., recent loss of occurr., high threat risk & high potential for loss from CLs in MSPA (= extinction)	SW SD Co.; Extirpated from Baja CA, Mexico?	MU3 (Restricted to vernal pools on Otay Mesa)	8 Sites	379 basins	1 (Otay Mesa South)	Decline (USFWS 2010)	Invasive nonnative plants, altered hydrology, foot traffic, trash dumping & off-highway vehicles. Changing climate w/protracted & more frequent drought could decrease stability & increase risk of extinction (Bauder 2005).	High potential for loss of occurr. from CLs in MSPA (small occurr. & prolonged drought could lead to extinction)	Annual dicot herb. Insect pollinated although little known. Rabbit & floating in water may be vectors for dispersal.		Distribution & abundance varies annually, dependent on timing/amount of precipitation & inundation/drying time of vernal pool.	
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	SL	Restricted in distribution, small num. occurr., num. of indivs. fluctuate widely, high risk of loss from threats	San Diego Co., Riverside Co., Baja CA, Mexico	MUs 3 & 4	MU3: 7 occurr. complexes; MU4: 8 occurr. Complexes	unknown (pops generally not censused) but highly variable and dependent on weather	?	"Long-term downward abundance trend" (FWS 2009); but new occurrences have been detected in SD since 2003	Invasive plant species, human use of preserve resulting in trampling or compaction of soils, roads (direct mortality), and altered fire regime. Prolonged drought. Isolation of populations	High (prolonged drought and isolation of pops could eventually lead to extirpation)	Insect w/ 4 life stages; can diapause for multiple years prior to maturation; Plantago erecta important host plant.	70% of variation btwn pops explained by the geographic distance btwn them (Wee 2004)	Susceptible to habitat fragmentation; loss of nearby occurrences can result in loss of recolonization of suitable habitat; Nectar sources greater than 656 feet (200 meters) from larval host plants are not likely used; occurrences at lower elevations being lost; high detection years often followed by very low detections (boom-bust).	Occurrences found to the east of MSPA in San Diego County.

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Hermes copper	<i>Lycaena hermes</i>	SL	Very restricted distrib., small num. occurr. w/low num. of individuals, declining status, recent loss of occurr. on CLs in MSPA, high risk of loss from threats	S SD Co.; Baja CA, Mexico	MUs 3 & 4	17 total	134 across 15 sites in 2011	5	Decline	Invasive plant species, roads (direct mortality), altered fire regime, limited num. of occurr. in small area vulnerable to catastrophic disturbance, argentine ants.	High: indivs. detected at each location is very small and highly variable and weather dependent	Insect, larvae dependent on redberry	Genetic studies indicate some barriers to dispersal & gene flow for populations within 1 km	Movement of individuals rarely exceeds 100m, extant occurr. only found in southeast San Diego that did not burn in 2003 or 2007, difficult to raise in captivity.	Occurrences found to the east of MSPA in San Diego County.
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	Restricted distrib., small number of occurr./w low num. of individuals & high risk of loss from CLs in MSPA	San Francisco Bay to N Baja CA, Mexico	MUs 3, 4, 5, 6 & 8	9 (Sycuan Peak is only significant occurrence)	38 at Sycuan Peak in 2002-2003, other occurr. much smaller	1 (Lusardi Creek occurr. likely lost)	?	Invasive aquatic species (bass, bullfrogs, sunfish), invasive plant species, invasive upland species (feral pigs), human use of preserves.	High (most occurr. are few indivs., males & mostly adults)	Found in ponded habitats, uses upland habitats to nest	Recent genetic studies by USGS indicate differences in indivs. btwn watersheds	Not found in areas with high human access and low naturalness. Non-native invasive aquatic species are thought to outcompete the native pond turtle.	Occurrences found to the east of MSPA (on USFS lands) in San Diego County.
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	SL	Restricted distrib., small number of occurr./w low num. of individuals & high risk of loss from CLs in MSPA	N America	MUs 3 & 5 (Breeding pairs)	13	unknown (pops on CL not censused); Countywide = 46 prs. in 2007; thought to be few prs. on CL	?	?	Invasive plant species (reduces suitable habitat), lack of fossorial mammals to create burrows, predation (coyotes, raptors), rodenticides, potential electrocution at Otay Mesa State Prison.	High (no self-sustaining pops on CL)	Year round resident (plus wintering indivs.), altricial young, relies on burrows year-round, thought to need fossorial mammals to create burrows and manage habitat.		Most occurrences in SD Co on Otay Mesa on private land to be developed; occurrences on CL associated with artificial burrows, most placed within vernal pool restoration projects which limits maintenance options.	North Island occurs. has reportedly dwindled due to lack of management.
Western snowy plover	<i>Charadrius nivosus</i>	SL	Very restricted distribution, lack of suitable habitat, high threat risk,	Pacific Coast	MUs 1 & 7 (Limited habitat on coastal beaches, dunes & salt	Occurs at 6 Sites	C1	2	Decline	Predation, trampling, human disturbance, small occurr. vulnerable to	High potential for loss from CLs in MSPA (Small num. indivs. &	Year round resident, have precocial young, nest on ground		Species is disappearing from sites accessible to public & pairs have lower productivity than	Other pops on North Island, Silver Strand & Camp Pendleton

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			small occurr. & high potential for loss from CLs in MSPA		flats)					demogr. & environ. Stochasticity.	high threat risk)			populations to north in less urbanized areas. Requires active mgmt.	
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	SL	Extremely restricted distrib. w/only 1 occurr, high threat risk, lack of high quality habitat & very high potential for loss from CLs in MSPA	SW US	MU8 (Limited to riparian, usually w/standing water)	1 Occurr.	C1 (1 pair)	Yes	Decline	Small num. indivs., biased sex ratios, poor habitat quality, potentially low over-winter survival & low num. indiv. make extremely vulnerable to demogr. & environ, stochasticity.	Very high potential for loss from CLs in MSPA (Only 1 breeding pair?)	Breeding resident, altricial young, cup nests in riparian habitats		1 pair nesting along the San Luis Rey River in Bonsall. No longer reliably occurring on San Diego River or in San Pasqual Valley.	Small declining pop on MCB Camp Pendleton & pop on upper San Luis Rey River east of MSPA.
Pallid bat	<i>Antrozous pallidus</i>	SL	Very restricted distrib., small num. occurr. w/low num. of individuals, decling status, high risk of loss from threats	N America	MU3, MU8	10 occurr. (most foraging only 2 nocturnal roosts doc.)	unknown but likely small (max of 6 obs at 1 site in 2002-2003)	?	Decline	Human use of preserves , non-native plants, isolation and fragmentation of populations , lack of roost sites	High potential for loss from CLs in MSPA (Small num. indivs.)	Roosts in rock crevices, caves, tree hollows, mines, bldgs, and bridges; main habitat: oak woodland/ grassland; eats terrestrial insects (Jerusalem crickets, grasshoppers, beetles, etc); crawls on the ground.		May depend on bare dirt for foraging and be adversely affected by non-native grasses (D Stokes pers. Comm.); avoids bright light and loud noises	

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American badger	<i>Taxidea taxus</i>	SL	Limited occurr. w/low num. indiv & potential loss of connectivity, high threat risk & declining status make vulnerable to loss of occurr. from CLs in MSPA	N America	MUs 3, 5 & 6	Present at 6 preserves	C1?	?	Decline	Roads (mortality & loss of connectivity between populations), rodenticides, invasive plant species (affecting suitable habitat & prey base), human use of preserves (direct mortality, disturbance to burrows & daily activities). Isolated small occurr. make vulnerable to demogr. & environ. stochasticity. Trapped as agricultural pest and for the fur trade.	High potential for loss of occurr. From CLs in MSPA (Isolated small occurr.)	Year round resident in grasslands, digs burrows			
San Diego thorn-mint	<i>Acanthomintha ilicifolia</i>	SO	Annual species faces high threat risk from invasive plants, occurr. have been lost from CLs in MSPA & others are declining & high potential for loss of occurr. from CLs in MSPA	NC SD Co.; N Baja CA, Mexico	MUs 3, 4, 5 & 6 (Restricted to grabboic or calacerous clay soils)	~30 Sites (Still compiling data)	C4	2? (Otay Lakes & larger pop at Crestridge Ecological Reserve)	Decline? (In 1998 est. 32 occurr. w/150,000-170,000 indivs, 2010 35 occurr. in SD Co w/50,635. Uncertainty: High annual fluctuations & differences in methods.)	Invasive nonnative plants, direct impacts & disturbance, habitat fragmentation w/loss of pollinators, prolonged drought & small occurr. vulnerable to demogr. And environ. stochasticity.	High potential for loss of occurr. from CLs in MSPA (Occurr. declining & threats increasing)	Annual dicot herb	In progress (CNLM)	Many small occurr. Black Mountain & Sabre Springs close to extirpation? Pop abundance correlated with rainfall.	

2.0 Approach and Rationale

Common Name	Latin Name	Management Category	Management Categorization Rationale	Status				Trend		Threats		Biological Considerations		Other Considerations	
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Nuttall's acmispon	<i>Acmispon prostratus</i>	SO	Annual life cycle, limited habitat, high threat risk, some occurr. declining, & high potential for loss of occurr. from CLs in MSPA	W SD Co.; N Baja CA, Mexico	MUs 1 & 7 (Restricted to beach dunes)	23 Occurr. at 23 Sites (Many in Close Proximity in Mission Bay)	C4		More occurr. found, not much info on trends except in Mission Bay	Limited suitable habitat, invasive nonnative plants & trampling.	High potential for loss of occurr. from CLs in MSPA (Some pops declining & threats increasing)	Annual dicot herb		Species declined by 1990s & only 2 very large occurr. left in MSPA (1 not cons). 4 pops ≤ 100 individuals during recent surveys.	Silver Strand Elementary occurr. est 17,000 indivs. in 2011, California State lands, but not CL. 2 other occurr. North Island Naval Air Station & MCB Camp Pendleton.
San Diego ambrosia	<i>Ambrosia pumila</i>	SO	Many occurr. are small & isolated, potential loss of 1 occurr. & decline or another, low genetic diversity in 1 larger occurr. & potentially other small occurr., moderate threat risk for some occurr. & moderate potential for loss of occurr. from CLs in MSPA	W SD & RIV Cos.; W Baja CA, Mexico	MUs 3, 4, 6 & 8	12 Occurr. at 7 Sites (3 are Transplanted)	C4	1? (San Luis Rey River Park near Calle de la Vuelta)	Decline? (Large pop at MTRP has declined in area & abundance, although methods differ, status of 2 other occurr. unknown)	Invasive annual plants, small occurr. w/limited connectivity & low genetic diversity in MTRP & potentially low levels of sexual reproduction.	Moderate potential for loss of occurr. from CLs in MSPA (Threats & small occurr.)	Perennial herbaceous herb, rhizomes, sexual reproduction & clonal	Pops 400m away genetically differentiated, genetic structure w/in pops indicates sexual reproduction. MTRP has lower genetic diversity than SDNWR. Habitat quality impacting diversity?	Most pops are small, only 3 with more than > 1,000 genetically distinct individuals. Recommendations from genetic analysis are to maintain multiple large pops throughout species range.	Groves Open Space (Caltrans) & near Jeffrey Ranch (?) - not yet in CLs and no info on status.
Encinitas baccharis	<i>Baccharis vanessae</i>	SO	Entire range in MSPA, dioecious life cycle w/limited num. isolated occurr. & low num. indivs. & high potential for loss of occurr. from CLs in MSPA	SD Co.	MUs 3, 4 & 6 (Restricted to certain soils within limited range)	8 Occurr. at 8 Sites	C2 (1 occurr. ~300 individuals, other occurr. are <50)			Altered fire regime, low seedling recruitment, low seed viability, reduced reproductive potential at older age classes, fuel modification,	High potential for loss of occurr. from CLs in MSPA	Dicot shrub, dioecious		No seedling recruitment reported since 1991. Thought to require opening in canopy followed by late spring or summer rains for seedlings to establish. Fire plays an	

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										trampling, and invasive nonnative plant species. Small isolated occurr. w/little connectivity & dioecious trait make vulnerable to demogr. & environ. stochasticity.				important role in opening up canopy and stimulating flowering and seedling establishment.	
Orcutt's brodiaea	<i>Brodiaea orcuttii</i>	SO	Recent loss of occurr., many small occurr. & those w/monitoring indicate decline, moderate threats & high potential for loss of occurr. from CLs in MSPA	SW RIV & SD Cos.; NW Baja CA, Mexico	MUs 2, 3, 4, 6 & 8 (Restricted to clay soils often in native grasslands or near vernal pools)	18 Occurr. at 18 Sites	C4	1 extirpated (USIU)	Decline (3 occurr. declining & 8 others ≤200 indivs.)	Invasive, nonnative plants, altered hydrology, off-highway vehicles & small occurr. vulnerable to demogr. & environ. Stochasticity	High potential for loss of occurr. from CLs in MSPA (Many small occurr. & recent loss of 3 occurr.)	Perennial monocot herb, corm		General Dynamics only large (30,000) stable pop. All pop fluctuate widely in abundance on annual basis, likely to rainfall & temperature & difficult to determine pop trends. Some occurr. may benefit from mgmt for V1 vernal pool species.	3 Occurr. on USFS lands outside MSPA
Dehesa nolina	<i>Nolina interrata</i>	SO	Very restricted distrib., dioecious w/potentially skewed sex ratio & altered fire regime may reduce reproduction & recruitment, moderate threat risk & moderate potential for loss of occurr. from CLs in	S SD Co.; Baja CA, Mexico	MU3 (Very restricted range where limited to gabbroic or metavolcanic soils)	6 Occurr. at 6 Sites	C3			Altered fire regime (too little to stimulate reproduction & too frequent increases nonnative plants). Dioecious w/potential for skewed sex ratio & nonviable seeds reducing successful reproduction &	Moderate potential for loss of occurr. from CLs in MSPA (esp. South Crest)	Perennial monocot herb, dioecious		Fire important to stimulate seeding.	

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			MSPA.							recruitment. Invasive nonnative plants (esp. <i>Brachypodium distachyon</i> at South Crest).					
Gander's butterweed	<i>Packera ganderi</i>	SO	3 small occurr. w/1 potentially declining & moderate potential for loss of occurr. from CLs in MSPA	SD & RIV Cos., Baja CA, Mexico	MU3 (Gabbroic soils under chamise chaparral)	3 Occurr. at 3 Sites	C2		Declining? (Pop at Sycuan Peak 1,000 in 1988 & 100 in 2004, unsure of survey methods)	Isolated occurr. may be delining & are vulnerable to demogr. & environ. Stochasticity.	Moderate potential for loss of occurr. from CLs MSPA (2 isolated occurr.)	Perennial dicot herb		Pre-2000 reports from Magee Ridge, status unknown.	8 Occurr. conserved on USFS lands in east Co & outside MSPA.
San Diego fairy shrimp	<i>Branchinecta sandiegonensis</i>	SO (& VF)	Species very restricted distrib. in MSPA & threatened by invasive plants. Mgmt should focus on enhancing habitat.	S CA; Baja CA, Mexico	MUs 2, 3, 4, 5 & 6 (Restricted to vernal pools)	20 Sites	428 basins			Altered hydrology, pesticides (e.g., spraying to control west Nile virus), drought, dumping/trash, foot traffic & off-highway vehicles. Human activities can transmit cysts between complexes and potentially lead to homogenization of genetic composition or introduce <i>B. lindahli</i> & increase potential for hybridization. Also may be affected adversely by Wolbachia bacteria.	Moderate for loss of occurr.	Crustacean, lives in ephermal pools, dormant cysts when pools dry	Two distinct genetic clades indicating isolation for tens of thousands or millions of years, although geographically intermixed. Gene flow between complexes low but human activity could result in homogenization. Can hybridize in lab with <i>B. lindahli</i> .		Occurs on Miramar and Camp Pendleton

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Arroyo toad	<i>Anaxyrus californicus</i>	SO	Small num. isolated occurr., potential loss of occurr., high threat & moderate potential for loss of occurr. from CLs in MSPA.	SW US; Baja CA, Mexico	MUs 3, 4, 5 & 6 (Restricted to slow moving rivers & streams w/sandy soils)	6 Drainages in 3 Watersheds		1 (Otay Watershed)	Decline?	Invasive nonnative species, roads, grazing, agriculture, recreational activities, non-seasonal dam releases & drought.	Moderate potential for loss of occurr. from CLs in MSPA (pop isolation & high threat risk)	Amphibian, dependent on slow moving streams/rivers with sandy substrate	?		
Golden eagle	<i>Aquila chrysaetos canadensis</i>	SO	Loss of occurr. from CLs, small num. territories, high threat risk & high potential for loss of territories from CLs in MSPA.	N America	MUs 3, 4, 5 & 8	11 active territories	22 breeding adults	2 inactive territories	Decline	Human use of preserves - disturbing nest sites & nesting pairs, predation (ravens on young), altered fire regime, powerline & windpower facilities and habitat loss	High potential for loss of nesting territory (high degree of threat)	Year round territory, altricial young, long-lived	?		
Coastal cactus wren	<i>Campylorhynchus brunneicapillus sandiegensis</i>	SO	Isolated small pops w/loss of connectivity, limited habitat, high threat risk & high potential for loss of occurr. from CLs in MSPA	W SD, ORA, RIV, VEN, LA & SB Cos.; NW Baja CA, Mexico	MUs 1, 2, 3, 4, 5 & 6 (Restricted to cactus scrub)	3 genetic clusters	Effective pop sizes: San Pasqual-85, San Diego-46 & Otay River-33	?	Decline	Altered fire regime decreasing habitat & direct mortality, lack of suitable habitat, invasive plant species, predation & small populations vulnerable to extirpation from demogr. & environ. stochasticity. Loss of connectivity between genetic clusters and low effective popn sizes.	High potential for loss of genetic cluster from CLs in MSPA (esp. Otay)	Year round resident, altricial young, dependent on cactus	3 genetic clusters with limited dispersal between Otay & SD/EI Cajon clusters & high connectivity pre-fire within Lake Hodges & San Pasqual	Small pops vulnerable to extirpation from combination of low productivity, high mortality & poor dispersal.	

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Northern harrier	<i>Circus cyaneus</i>	SO	Moderate potential for loss of occurr. (nests) due to threats. Large number of pairs (up to 13 pairs at Border Field SP in 2002) still persist in Tijuana River Valley	N America	MUs 1, 2, 3, 4, 5, 6, 7 & 8	6+ (nesting)	25-75 pairs est. by SDNHM	? (several occurr. obs just before 2000 lost by 2000)	Long-term declining trend	Human use of preserves, predator control to protect LETE & CLRA, non-native plants	Moderate - continued human disturbance to ground nests	Year round resident (also winter only), altricial young, nests on ground	?	Numbers vary greatly with rainfall	Widespread on Camp Pendleton
Light-footed clapper rail	<i>Rallus longirostris levipes</i>	SO	Very restricted distrib., limited habitat, small pops, previous loss of occurr., high degree of threat & high potential for loss of occurr. from CLs in MSPA	SW CA; NW Baja CA, Mexico	MUs 1 & 7 (Salt marshes)	14 Occurr.	C2	8	Fluctuates (Most occurr. w/low num. indivs.)	Lack of suitable nesting habitat, habitat degradation (fluctuating water levels, siltation & conversion to high marsh & upland), insufficient habitat, predation, loss of genetic diversity & small pops vulnerable to demogr. & environ. Stochasticity.	High potential for loss of occurr. From CLs in MSPA (esp. Otay)	Year round residents with high site fidelity, precocial young, floating nests	?	Species may be better off in overall range now than in 1990s-2002 as captive breeding and release and numbers statewide have increased	
Townsend's big-eared bat	<i>Plecotus townsendii pallescens</i>	SO	Restricted range, small num. occurr., high potential for loss from threats	W. North America	MU3	11 Occurr. (Most foraging obs., only 3 nocturnal roosts & 1 diurnal roost doc.)	over 100 doc. at 1 roost in 2002-2003	?	Decline	Human use of preserves. Very sensitive to human disturbance at roost sites and will abandon roosts.	Moderate potential for loss (due to human disturbance at cave and mine roost sites)	Obligate cave-roosting bat - uses natural caves and/or artificial cave-like structures such as mines; winter roosts differ from summer roosts	?	Prefers oak woodland, ironwood forests, and riparian woodland while avoiding grazed grasslands. Considered to be declining substantially.	

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San Diego goldenstar	<i>Bloomeria clevelandii</i>	SS	High rate of loss of occurr. in recent yrs, at least 2 sites declining w/high potential for loss of smaller occurr. from CLs in MSPA. However, 5 occurr. ≥2,000 & some smaller occurr. will likely benefit from vernal pool mgmt.	SW SD Co.; NW Baja CA, Mexico	MUs 3, 4 & 6 (Restricted to clay soils or cobbly loams often at vernal pools or mima mounds)	21 occurr. at 21 Sites	C4	3 (MTRP, Carlsbad Oaks North, Del Mar Mesa)	? (3 losses & 2 small occurr. but still have 5 occurr. ≥ 2,000)	Invasive annual plants & altered fire regime increasing invasion	High potential for loss of smaller occurr. from CLs in MSPA (Otay Lakes & Lopez Ridge)	Perennial monocot herb, corm		Marron Valley occurr. esp. large & stable, no info. on size of 8 occurr. Some occurr. may benefit from management for V1 vernal pool species.	
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	SS	Relatively restricted distrib. w/most occurr. facing threats & 3 largest occurr. facing high threat risk & little mgmt. However, 50% of occurr. have ≥1,000 indivs. & potential for loss of occurr. over short term is low.	SD, RIV, LA, & SB Cos.	MUs 6 & 8 (Restricted near coast to clay soils in grasslands, vernal pools & alkali flats)	15 Occurr.at 15 Sites	C5?		Stable?	Invasive, nonnative plants, drought, altered hydrology & erosion, off-highway vehicles, herbivory & fragmentation reducing pollinator connectivity	Low potential for loss of occurr. from CLs in MSPA (over short term)	Perennial monocot herb, corm. Self-incompatible.		3 largest occurr. in MSPA have high threat risk & little/no mgmt. Maintaining connectivity important as pollinators essential for reproduction. Seeds from same individual likely to be dispersed in close proximity creating patches of self-incompatible plants & pollinators must travel between small patches for viable seed production.	

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Santa Rosa brodiaea	<i>Brodiaea santarosae</i>	SS	Very restricted distribution, no info. on threat or occurr. size. Need more info. before prioritize for mgmt.	SD & RIV Cos.	MU8 (Santa Rosa basalt soils)	3 occurr. at 2 Sites	?		?	No Information	Moderate potential for loss from CL in MSPA (1 site)	Perennial dicot herb (corm)		Recently described as different species from other so CA brodiaea. New species accepted by Jepson. Has been seen in disturbed area, may tolerate some disturbance.	Occurs outside of MSPA on Santa Rosa Plateau
Otay tarplant	<i>Deinandra conjugens</i>	SS	Limited distribution, annual life cycle, self infertile, high threat & moderate potential for loss of occurr. from CLs in MSPA. However, many conserved occurr. & risk of significant losses is low over short term.	5 SD Co.; Baja CA, Mexico	MUs 2 & 3 (Restricted to clay soils in small area of SW SD Co.)	23 Occurr. at 23 Sites	C5?		Unknown	Invasive, nonnative plants, off-highway vehicles, illegal trails, utility/road maintenance, habitat fragmentation & loss of pollinator connectivity.	Moderate potential for loss of occurr. from CLS in MSPA (Annual life cycle & threats)	Annual dicot herb, self-incompatible	Preliminary evaluation at three locations indicates fairly high level of genetic diversity	Self incompatible and require pollinators for successful reproduction.	
Variegated dudleya	<i>Dudleya variegata</i>	SS	Recent loss of occurr., many small occurr. & those w/monitoring appear declining, moderate threats & high potential for loss of small occurr. from CLs in MSPA. However, still relatively	SD Co.; Baja CA, Mexico	MUs 3, 4 & 6 (Restricted to small openings in shrublands, rocky outcrops in grasslands & near vernal pools)	18 Occurr. at 18 Sites	C3 (5 occurr. ≤200 indivs.)	4 (Black Mtn, Lake Murray, Otay Mesa, Santa Luz)	Decline (small occurr. & recent loss of occurr.)	Invasive nonnative plants, illegal trails, off-highway vehicle activity, illegal goat grazing & small occurr. vulnerable to demogr. & environ. stochasticity.	High potential for loss of occurr. from CLs in MSPA (Recent loss of occurr. & many small occurr.)	Perennial dicot herb, succulent, corm			

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			abundant w/25% of occurr. have ≥1,500 indivs. & some occurr. may benefit from vernal pool mgmt.												
Sticky dudleya	<i>Dudleya viscida</i>	SS	2 managed occurr. have low threat risk & appear stable over short term. Need more info. on other 2 conserved occurr. & whether there are other occurr. in MSPA.	NW SD, ORA & RIV Cos.	MU6	4 Occurr. at 4 Sites	C3 (1 occurr. 50 indivs., 2nd is 6,200 & 3rd unk.)		Stable?	Low risk of threat from trampling & invasive plant species. Small occurr. vulnerable to demogr. & environ. stochasticity.	Low potential for loss of occurr. from CLs in MSPA (over short term)	Perennial dicot herb, succulent		2 of 3 occurr. are managed. Unsure status of Caltrans occurr. along SR-76. Historic record from Santa Fe Valley. Species at so. edge of range in N SD Co.	5 occurr. at 5 sites on MCB Camp Pendleton
Small-leaved rose	<i>Rosa minutifolia</i>	SS	2 managed occurr. have low threat risk & appear stable over short term. Need more info. on possible 3rd occurr.	SW SD Co.; Baja CA, Mexico	MU3	2 Occurr. at 2 Sites	C2		Stable	Threat risk is low over short term. However, increasing shrub cover is encroaching on transplanted population at Cal Terraces.	Moderate	Dicot shrub, long lived & can reproduce vegetatively		Fire important to stimulate seeding. Plants at 2 occurr. are clones produced from cuttings from single indiv. & transplanted. 3rd occurr. reported in 2009 from 2 loc. at Otay Ranch Preserve (San Ysidro parcel) have not been found in follow up surveys.	

Common Name	Latin Name	Management Category	Management Categorization Rationale	Status				Trend		Threats		Biological Considerations		Other Considerations	
				Overall Distrib. (Source: Species Accounts)	Current Distrib. on CLs in MSPA since 2000 (Source: MO-Matrix)	Num. Occurr. on CLs Doc. Since 2000 at Distinct Sites in MSPA (Source: MO-Matrix)	Max* Num. Indivs. Documented on CLs in MSPA Since 2000 (Source: MO-Matrix)	Potential Loss of Occurr. on CLs since 2000 (Source: MO-Matrix)	Est. Change in Status Since 2000 (Source: SDMMMP or Specified)	Threats Specific to Conserved Occurr. (Source: MO-Matrix)	Est. Potential for Loss of Species or Signif. Occurr. from CLs in MSPA (Source: SDMMMP)	Life History/ Ecology (Source: Species Accounts)	Genetics (Source: Species Accounts)	Comments (Source: Various)	Signif. Occurr. Since 2000 on Military Land or East of MSPA or Not Conserved (Source: MO-Matrix)
Parry's tetracoccus	<i>Tetracoccus dioicus</i>	SS	Not enough info. to asses threats. Occurr. w/abundance info. have 200-400 indivs. & appear stable for short term.	SD & RIV Cos.; Baja CA, Mexico	MUs 3 & 8 (Found in xeric chamise chaparral on Las Posas soils under shrubs)	7 Occurr. at 6 Sites	C3 (2 occurr. have 200-400 indivs., 1 has 6,800)		Unknown	Unknown		Dicot shrub		Rare shrub.	5 occurr. at 5 sites not conserved (Private & Reservation in Pala/Rainbow & San Vicente)
California least tern	<i>Sternula antillarum browni</i>	SS	Requires human management of nest sites and predators	SW CA, San Francisco Bay & extreme N Mexico	MUs 1 & 7	8 Sites	C2-C3 (Varies annually)	?	Increase and decrease	Human use of preserves, predators, non-native plants, argentine ants, climate change affecting food source	Moderate - lack of predator control can result in loss of reproductive year for entire colony	Breeding resident, altricial young, nests on ground	?	Numbers have increased greatly since 1970's and 1980's; high rates of nest abandonment; reasons for recent declines are unknown but may be due to changes in food source or increase in predation risk; this species is highly dependent on human management of nest sites	MCAB Camp Pendleton has 3 sites, NAS North Island has 1 site. Site at Lindberg Field is not in CLs.

* Maximum number of individuals are in categories of C1 = 0-99; C2 = 100-999; C3 = 1,000 - 9,999; C4 = 10,000 - 99,999; C5 = ≥ 100,000.

Cells highlighted in purple indicate risk factors important in determining management category for a species.