







City of San Diego
2008 MSCP Rare Plant Monitoring Report

City of San Diego
City Planning & Community Investment Department
Multiple Species Conservation Program Section

July 2008

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Appendix A - City of San Diego MSCP Rare Plant Monitoring: 2008 Field Monitoring Dates and Staff

I. Introduction

The Biological Monitoring Plan for the Multiple Species Conservation Program (Ogden Environmental, Inc. 1996) and the Status Summary of MSCP Biological Monitoring Protocols (Conservation Biology Institute 2001) are important components of the City of San Diego's MSCP under its 1997 Implementing Agreement (R28455) with the U.S. Fish and Wildlife Service and the California Department of Fish and Game. The monitoring program includes plant, animal, and habitat monitoring requirements for each MSCP-participating jurisdiction; the City of San Diego began rare plant monitoring in 1999.In 2005, a grant-funded scientific panel reviewed the regional MSCP rare plant monitoring program; there report is available online at http://www.sandiego.gov/planning/mscp/rareplantmonitor.shtml. City staff revised field protocols in accordance to these recommendations and began implementing the advisors' recommendations during the 2006 monitoring season.

In 2008, the City continued this effort, and performed rare plant monitoring for the following species/sites:

Acanthomintha ilicifolia – Black Mountain, Mission Trails Regional Park, Otay Lakes, Penasquitos Canyon, Sabre Springs
Ambrosia pumila – Mission Trails Regional Park – Kumeyaay Lake
Arctostaphylos glandulosa spp. *crassifolia*- Carmel Mountain, Crest Canyon, Del Mar Mesa, Penasquitos Canyon, San Dieguito River Bluffs
Bloomeria clevelandii – Del Mar Mesa, East Elliot, Marron Valley, Mission Trails Regional Park, Otay Lakes
Brodiaea orcuttii - Del Mar Mesa, Carroll Canyon, General Dynamics, Nobel Drive, USIU/Scripps Miramar Ranch
Ceanothus verrocosus – Carmel Mountain, Crest Canyon
Cordylanthus orcuttianus – Otay River Valley
Cylindropunita californica var. *californica* – Balboa Park, Otay Mesa, Spring Canyon
Deinandra conjugens – Dennery Ranch, Proctor Valley
Dudleya blochmaniae ssp. *brevifolia* – Carmel Mountain, Crest Canyon, Skeleton Canyon
Dudleya variegata – Black Mountain, East Elliot, Spring Canyon, Goat Mesa (Spring Canyon), Lake Murray, Marron Valley, Mercy Road, Mission Trails Regional Park, Navajo/Mission Gorge, Otay Lakes, Ocean View Hills, Paradise Valley, Santa Luz
Eryngium aristulatum var. *parishii* – Del Mar Mesa, General Dynamics, Goat Mesa (Spring Canyon), Otay Lakes
Lessingina filaginifolia var. *linifolia* – Carmel Mountain, Crest Canyon, Del Mar Mesa, Overlook Park, Torrey Highlands
Lotus nuttallianus – Mission Bay
Monardella viminea – Lopez Canyon, Marron Valley, Otay Lakes, Sycamore Canyon
Navarretia fossalis – Carroll Canyon, Goat Mesa (Spring Canyon), Nobel Drive, Otay Lakes, Robinhood Ridge
Pinus torreyana ssp. *torreyana* – Crest Canyon
Pogogyne abramsii – Carroll Canyon, Del Mar Mesa, General Dynamics
Pogogyne nudiuscula – Robinhood Ridge
Rosa minutifolia – Dennery Ranch

In addition, the City has coordinated with the Center for Lands Management for their adaptive monitoring studies on Ambrosia pumila. They are testing multiple invasive control techniques at various populations, including the City's Mission Trails Park site, which was identified in the 2006 report as the MSCP's experimental A. pumila population.

City of San Diego MSCP Rare Plant Monitoring: 2008 Summary Results

Species	Site Name	Population				Native		Non-Native		Management Recommendation's	Field Data Sht (pg.#)	Photo (pg.#)
		Area (m^2)[1]	Area (ft^2)[1]	# Individuals	Precent Cover	Number of Species[2]	Percent Cover[2,3]	Number of Species	Percent Cover[3]			
Acanthomintha ilicifolia (San Diego Thorn-mint)	Black Mountain	0.5	5.0	9	0.5%	16	23%	4	83%	Control invasives (especially non-native grasses like *Brachypodium* sp.)	10	12
	Mission Trails Regional Park	3035.0	32670.0	250	1%	14	37%	7	36%	Invasive removal if possible without disturbing soils	14	16
	Otay Lakes	10.7	115.0	0	0%	8	53%	5	68%	Control invasives	18	19
	Penasquitos Canyon Obs. 1	59.1	636.1	0	0%	14	56%	2	51%	Control invasives	20	21
	Penasquitos Canyon Obs. 2	5.7	61.1	0	0%	6	47%	2	53%	Control invasives	22	23
	Penasquitos Canyon Obs. 3	118.3	1273.3	0	0%	6	47%	1	50%	Control invasives	24	25
	Sabre Springs East Subpopulation	54.8	589.6	100	3%	7	63%	10	43%	Control *Brassica nigra* , continue invasive removal efforts	26	27
	Sabre Springs South Subpopulation	225.0	2421.0	500	3%	14	91%	9	53%	Control invasives	30	32
	Sabre Springs West Subpopulation	150.0	1614.0	150.0	5%	5	71%	9	20%	Control invasives	28	29
		Note: Primary invasives at all *A. ilicifolia* sites are Black Mustard *(Brassica nigra)*, Tocolote *(Centaurea melitensis)* , and non-native grasses.										
Agave shawii (Shaw's Agave)		Note: Monitoring location appears to be on lands not owned by the City of San Diego.										
Ambrosia pumila (San Diego Ambrosia)	Mission Trails Regional Park Kumeyaay Lake	16809.0	180931.0	45000	3%	9	22%	11	101%	Invasive species removal/dethatch, if possible without damaging *Ambrosia pumila*	36	38
Arctostaphylos glandulosa* ssp. *Crassifolia (Del Mar Manzanita)	Carmel Mountain	800.0	8611.0	100	20%	10	83%	1	1%	Monitor trail use & install barriers if needed	42	43
	Crest Canyon #1 South	930.8	10018.8	10	1%	19	88%	2	3%	Limit recreational use to designated trails, install protective fencing near sensitive populations; remove invasive species (*Mesembryanthemum* sp. and *Cortaderia selloana*)	44	45
	Crest Canyon #2 North	12140.0	130673.0	100	2%	15	49%	2	2%	Control of *Ehrharta* sp., educational community outreach	46	47
	Del Mar Mesa Obs. 1	4451.0	47910.0	100	2%	11	72%	0	0%	Educational community outreach for bordering residential, control invasive populations	48	49
	Del Mar Mesa East Obs. 2	17609.0	189541.0	20	4%	10	96%	0	0%	None	50	51
	Penasquitos Canyon	12068.0	129898.0	10	1%	11	94%	0	0%	None	52	53
	San Dieguito River Bluffs Obs. 1	1173.0	12626.0	100	5%	13	53%	3	4%	Control pampas, fountain grass, and landscape plants (*Mesembryanthemum* sp. and *Acacia* sp.)	54	55
Baccharis vanessae (Encinitas Baccharis)	†	†	†	†	†	†	†	†	†	†	†	†

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Species	Site Name	Population				Native		Non-Native		Management Recommendation's	Field Data Sht (pg.#)	Photo (pg.#)
		Area (m^2)[1]	Area (ft^2)[1]	# Individuals	Precent Cover	Number of Species[2]	Percent Cover[2,3]	Number of Species	Percent Cover[3]			
Bloomeria clevelandii (San Diego Goldenstar)	Del Mar Mesa Obs. 1	62.2	669.9	36	1%	20	31%	3	4%	Control invasives	58	60
	Del Mar Mesa Obs. 2	586.3	6311.3	20	1%	26	53%	5	6%	Control invasives	62	64
	East Elliot Obs. 1	14141.0	152212.0	8,000-10,000	5%	19	58%	7	37%	Manage fire regime, continue to restrict vehicle access along abandoned roadway	66	68
	East Elliot Obs. 2	488.8	5261.6	400	1%	13	43%	4	15%	Control invasives	70	72
	East Elliot Obs. 3	3215.9	34615.2	55	0.5%	16	128%	3	4%	Control invasives	74	76
	East Elliot Obs. 4	11546.8	124289.0	2300	1%	20	53%	2	10%	Control invasives	78	80
	East Elliot Obs. 5	42486.6	457321.9	1000	2%	14	67%	4	8%	Manage fire regime, continue to restrict vehicle access along abandoned roadway	82	84
	Marron Valley Obs. 1	68512.4	737460.6	>20,000 (Est)	30%	16	97%	5	94%	Weeding, dethatching	86	88,89
	Marron Valley Obs. 2	68512.4	737460.6	>30,000 (Est)	30%	10	46%	4	65%	Control invasives	90	91
	Marron Valley Obs. 3	68512.4	737460.6	720,000	10%	11	33%	7	51%	Control invasives	92	94
	Marron Valley Obs. 4	68512.4	737460.6	>5,000 (Est)	5%	7	16%	7	102%	Control invasives	96	97
	Mission Trails Regional Park	1255.8	13516.2	0	0%	13	36%	4	27%	Control invasives	98	100
	Otay Lakes East Obs. 1	336875.2	3626094.9	>1000 (Est)	20%	9	83%	5	82%	Continue access restrictions, continue weed removal efforts	102	103
	Otay Lakes West Obs. 2	336871.0	3626049.9	5,000	20%	12	98%	4	53%	Continue access control and invasive species removal	104	105
Brodiaea orcuttii (Orcutt's Brodiaea)	Del Mar Mesa Obs. 1	135.5	1458.0	500	2%	12	56%	3	7%	Control invasives	110	111
	Del Mar Mesa Obs. 2	2301.7	24774.9	1000	3%	12	93%	3	3%	Control invasives	112	113
	Carroll Canyon	1046.5	11263.9	100	5%	11	122%	3	21%	Continue restricting access and maintain fences/signs	108	109
	General Dynamics East Obs. 1	3561.2	38332.5	2500	15%	15	116%	3	11%	Continue access restrictions/signage	114	115
	General Dynamics West Obs. 2	7028.4	75653.0	250	3%	10	116%	2	8%	Maintain access restrictions/signage	116	117
	Nobel Drive	9.9	106.6	10	1%	15	47%	11	46%	Continue invasive plant removal, maintain fence around vernal pools	118	120
	USIU/Scripps Miramar Ranch	1195.9	12871.8	0	0%	7	20%	10	125%	Control invasives (especially non native grasses and Centaurea sp.)	122	123
Ceanothus verrocosus (Wart-Stem Lilac)	Carmel Mountain	20270.6	218190.3	200	60%	7	73%	0	0%	None	126	127
	Crest Canyon	1529.0	16458.0	1	0.5%	8	42%	1	2%	None	128	129
Cordylanthus orcuttianus (Orcutt's Bird's Beak)	Otay River Valley	692.8	7456.8	500	7%	11	40%	4	4%	Trail construction per OVRP; fence installed as condition of project	132	133

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		Area (m^2)[1]	Area (ft^2)[1]	# Individuals	Precent Cover	Number of Species[2]	Percent Cover[2,3]	Number of Species	Percent Cover[3]			
Cylindropuntia californica (Snake Cholla)	Balboa Park	319.0	3433.7	3	1%	15	76%	1	5%	Control invasives	136	137
	Otay Mesa	1011.0	10882.0	15	1%	10	31%	4	8%	Hillside relatively undisturbed - prevent further road expansion	138	139
	Goat Mesa (Spring Canyon)	2428.0	26134.8	30	1%	11	49%	6	11%	Limit off-road vehicle use	140	141
Deinandra conjugens (Otay Tarplant)	Dennery Ranch	3623.6	39004.5	1	0.5%	10	38%	1	35%	None	144	145
	Proctor Valley	3347.3	36030.4	2000	10%	9	45%	6	30%	Off-road vehicle use limited by fences	146	147
Dudleya blochmaniae* ssp. *Brevifolia (Short-Leaved Dudleya)	Carmel Mountain Obs. 1	300.0	3229.0	500	0.5%	10	39%	3	3%	None	150	151
	Carmel Mountain Obs. 2	250.0	2691.0	400	0.5%	9	88%	1	<1%	Maintain existing fence	152	153
	Carmel Mountain Obs. 3	670.0	7211.8	4000	5.0%	13	51%	1	1%	None	154	155
	Crest Canyon North	158.0	1700.0	500	1%	12	31%	2	2%	Curtail use, if any, by adjacent land owners; remove *Mesembryanthemum* sp. at East edge of private property if possible	156	157
	Crest Canyon South	170.0	1829.0	4	0.5%	6	7%	0	0%	Install fencing along trail	158	159
	Skeleton Canyon	30.0	322.0	30	0.5%	12	62%	0	0%	Reroute trail	160	161
Dudleya variegata (Variegated Dudleya)	Black Mountain East	0.0	0.0	0	0%	10	22%	8	48%	Control invasives	164	166
	East Elliot - Creek	1725.2	18570.0	210	1%	13	17%	7	58%	Control invasives	168	170
	East Elliot - Hilltop	345.0	3713.5	180	1%	21	61%	3	8%	Control invasives	172	174
	East Elliot - Slope	1155.1	12434.0	130	0.5%	8	55%	6	47%	Control invasives	176	177
	Goat Mesa (Spring Canyon)	0.0	0.0	0	0%	9	37%	3	28%	Adjacent trail closed as part of 2006 TransNet vernal pool grant project	178	179
	Lake Murray	0.0	0.0	0	0%	9	18%	3	3%	None	180	181
	Marron Valley	149.6	1610.0	800	2%	10	25%	7	75%	Invasive removal if species appear to be in decline; continue stringent access restrictions	182	183
	Mercy Road	25.0	269.1	30	1%	12	32%	4	45%	Control invasives; Maintain access control	184	185
	Mission Trails #1	124.5	1340.0	0	0%	13	22%	8	28%	Control invasives	186	188
	Mission Trails #2	241.4	2598.0	70	1%	11	12%	5	26%	Control invasives	190	191
	Mission Trails #3	44.0	473.6	50	1%	10	11%	6	21%	Control invasives	192	193
	Navajo/Mission Gorge	500.0	5382.0	500	2%	12	16.0%	8	36%	Control invasives	194	196
	Otay Lakes	72702.0	782557.6	0	0%	8	72%	5	51%	Control invasives	198	199
	Ocean View Hills	0.0	0.0	0	†	†	†	†	†	None	200	†
	Paradise Valley	0.0	0.0	100 (Est)	†	†	†	†	†	None	201	†
	Santa Luz	70.0	753.0	70	1%	9	67%	11	13%	Population protected by chicken wire and non-native grasses have been removed, continue current efforts	202	204
		Note: Presence/absence only surveys conducted at Ocean View Hills and Paradise Valley.										

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Eryngium aristulatum* var. *parishii (San Diego Button Celery)	Del Mar Mesa #1	500.0	5382.0	500	3%	14	59%	2	5%	Control invasives	208	209
	Del Mar Mesa #2	3278.0	35284.0	300	1%	14	41%	2	2%	Area is fenced	210	211
	Del Mar Mesa #3	6351.2	68363.9	1000	3%	11	13%	1	1%	Control invasives	212	213
	General Dynamics	266.8	2872.1	2,500	10%	15	117%	2	3%	Continue access restrictions and signage	214	215
	Goat Mesa #1 (Spring Canyon)	1930.7	20778.4	350	3%	7	70%	2	2%	Non-native grass thatch removed and area fenced as part of the 2006 TransNet vernal pool grant project	216	217
	Goat Mesa #2 (Spring Canyon)	1930.7	20778.4	100	3%	9	15%	1	<1%	Non-native grasses thatch removed and area fenced as part of the 2006 TransNet vernal pool grant project	218	219
	Otay Lakes	12140.6	130680.0	100	3%	8	64%	6	40%	Continue access restrictions and invasive species/dethatch removal	220	221
Lessingia filaginifolia* var. *linifolia (Del Mar Sand Aster)	Carmel Mountain	1658.3	17849.4	7	1%	6	28%	5	6%	Erosion control/measures	224	225
	Crest Canyon #1	404.7	4356	250	30%	9	71%	2	2%	Monitor and remove Mesembryanthemum sp., and fence trails as necessary	226	227
	Crest Canyon #2	404.7	4356	25	3%	12%	47%	3	16%	None	228	229
	Del Mar Mesa	37.2	400	11	1%	12	28%	1	1%	Monitor trail; fence if impacted	230	231
	Overlook Park	3051.1	32842	150	5%	13	36%	2	4%	Maintain fence	232	233
	Torrey Highlands	397-1	421	400	15%	13	49%	4	4%	Monitor trail; fence if impacted	234	235
Lotus nuttallianus (Nuttall's Lotus)	Mission Bay Mariner's Point	0.0	0.0	< 50 (Est)	†	†	†	†	†	Area is fenced	238	†
	Mission Bay Dune Triangle	1000.0	10764.0	20	1%	6	16%	4	24%	Control invasives; expand current efforts	240	241
	Mission Bay Hospitality Point	5505.0	59258.0	350	4%	6	21%	3	23%	Control invasives, continue maintenance of signs/fences	242	243
	No Man's Land (Mission Bay Site #1)	35465.7	381762.0	100	3%	4	14%	9	34%	Prevent *Chrysanthemum* sp. infestation, remove *Brassica* sp. and non-native grasses	244	245
	SD River Rip Rap (Mission Bay Site #3)	107724.3	115973.5	< 100 (Est)	1%	9	18%	6	44%	None	246	247
	South Shores (Mission Bay Site #6)	27668.8	297834.0	500	1%	7	8%	8	88%	Control invasives	248	249
		Note: Presence/absence only surveys conducted at Mariner's Point.										

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Species	Site Name	Population				Native		Non-Native		Management Recommendation's	Field Data Sht (pg.#)	Photo (pg.#)
		Area (m^2)[1]	Area (ft^2)[1]	# Individuals	Precent Cover	Number of Species[2]	Percent Cover[2,3]	Number of Species	Percent Cover[3]			
Monardella stoneana (Jennifer's Monardella)		Note: Southern populations (including Marron Valley) of *Monardella viminea* re-classified as *M. stoneana* by Elvin and Sanders (2003)*										
Monardella viminea (Willowy Mondardella)	Lopez Canyon West Terrace #1	1459.0	15704.0	1	1%	6	15%	4	13%	Control invasive grasses (i.e. *Bromus* sp., *Vulpia* sp.) and prevent *Chrysanthemum* sp. population from expanding	252	253
	Lopez Canyon East of Bridge #2	40.0	430.0	4	1%	7	21%	4	14%	Control invasives	254	255
	Lopez Canyon East of Bridge #3	1659.0	17857.0	3	1%	6	6%	6	13%	Control invasives, prevent *Chrysanthemum* sp. population from expanding	256	257
	Marron Valley	13340.0	143590.0	95	1%	17	26%	8	15%	Fire management plan prepared	258	260
	Otay Lakes	0.0	0.0	0	0%	14	23%	11	30%	None	262	264
	Sycamore Canyon	15970.4	171899.0	29	3%	11	13%	5	26%	Control invasives, consider erosion control	266	268
Navarretia fossalis (Spreading Navarretia)	Carroll Canyon	1866.5	20090.3	0	0%	12	145%	1	2%	Continue to restrict access and maintain fences/signs	272	273
	Goat Mesa (Spring Canyon)	1930.0	20778.4	0	0%	9	15%	1	0.5%	Site has been fenced and non-native grass removed as part of the 2006 TransNet grant vernal pool project	274	275
	Nobel Drive	15781.0	169867.3	100	3%	14	41%	2	2%	Continue invasive plant removal/ keep vernal pools fenced	276	277
	Otay Lakes	2.7	30.0	32	0.5%	14	51%	3	25%	Continue invasive plant removal project, continue restricted access, evaluate post removal project data	278	280
	Robinhood Ridge	71.5	770.0	0	0%	13	44%	1	7%	Maintain existing fences/signs as necessary	282	283
Pinus torreyana* ssp. *torreyana (Torrey Pine)	Crest Canyon Obs. 1	364.2	3 920.4	3	10%	7	21%	1	1%	None	286	287
	Crest Canyon Obs. 2	562.5	6054.8	12	15%	10	25%	1	1%	None	288	289
Pogogyne abramsii (San Diego Mesa Mint)	Carroll Canyon	173.0	1865.9	500	25%	12	89%	1	1%	Continue to control access and maintain fencing	292	293
	Del Mar Mesa Obs. 1	32.4	348.6	50	1%	14	26%	2	4%	Area is fenced	294	295
	Del Mar Mesa Obs. 2	304.5	3278.0	1000	8%	14	41%	2	2%	Area is fenced	296	297
	General Dynamics West	42.0	452.5	250	25%	11	117%	1	1%	Maintain access restrictions/signage	298	299
Pogogyne nudiuscula (Otay Mesa Mint)	Robinhood Ridge	71.5	770.1	10	1%	13	44%	1	7%	Maintain existing fences/signs as necessary	302	303
Rosa minutifolia (Baja Rose)	Dennery Ranch	3623.6	39004.5	1	0.5%	10	36%	1	35%	None	306	307

1) Observation area only, not necessarily representative of entire site of comparable to previous quantitative analyses.
2) For 2008 number and percent cover of native species includes species of interest.
* Elvin M.A. and Sanders, S.C> (2003) A New Species of Monardella (Lamiaceae) from Baja California, Mexico, and Southern California, United States. Novon. 13:4. 425432.

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Acanthomintha ilicifolia
San Diego Thorn-Mint



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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia Common Name: San Diego Thornmint
Site Name: BLACK MOUNTAIN Management Unit #: TBD
Date: 5/22/2008 Management Regime: TBD
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX ENVIRONMENTAL
JENNIFER VAUGHAN - City of SD MSCP

Species Found? [X] Yes [ ] No

Total No. Individuals: 9 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 0.5 m^2 (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet
Observation Location: 10294l063.393 1946043.290 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-native grassland / Coastal Sage Scrub
Landowner/Manager: City of San Diego Parks & Rec.
Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [X] Poor [ ] Very Poor
Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Overwhelming dominance of non-native grasses

Management Recommendation/s:
Need to weed/control non-native grasses (i.e., Brachypodium)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Acanthomintha ilicifolia	<1		
Brachypodium distachyon *	80		
Avena sp. *	1		
Deinandra fasciculata	3		
Rhus integrifolia	1		
Quercus berberidifolia	<1		
Malosma laurina	1		
Adenostoma fasciculatum	<1		

Species	Cover	Coll?	Coll. #
Bloomeria crocea (dried)	2		
Isomeris arborea	1		
Calochortus sp. (dried)	<1		
Centaurea melitensis *	1		
Brassica sp. * (dried)	1		
Calystegia macrostegia	1		
Eriogonum fasciculatum	1		
Chlorogalum pomeridianum	1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
10294l063.393 1946043.290	N, NE, E, SE	1.1 m	level	274-277	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Individuals found senescing or dried, population may be larger - should come out earlier next year
Access trail from southwestern side of water reservoir

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Dichelostemma capitatum	5
Artemisia californica	1
Salvia mellifera	1
Nassella sp.	1

Photo 1. *Acanthomintha ilicifolia* (San Diego Thornmint) Black Mountain



Panorama from Southwestern edge of population, facing North, Northeast, East, Southeast.
Panorama location is 6284663.39 1946643.29 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thornmint
Site Name: Mission Trails Regional Park **Management Unit #:** TBS
Date: 5/7/08 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Ria Bruce City of San Diego MSCP

Species Found? ☑ Yes ☐ No — If not, why (if reason known or suspected)? see note

Total No. Individuals: 250 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .75 acres (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☑ meters ☐ feet

Observation Location: 6309619.848 1881117.522 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: non-native grasslands sparse CSS

Landowner/Manager: City of San Diego Park + Rec open space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space (including hiking/hiking trail)

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
non-native grasslands; human intrusion does not appear to be an issue	invasive removal IF possible without disturbing soils

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Ferocactus viridescens	1		
Malosthamnus fasciculatus	1		
Malosma laurina	3		
Lotus scoparius	1		
Isocoma menziesii	2		
Deinandra fasciculata	15		
Brassica nigra *	5		
Centaurea melitensis	3		
Rhus integrifolia	5		

Species	Cover	Coll?	Coll. #
Bromus madritensis ssp. rubens *	2		
Calocortus splendens	<1		
Isocoma arborea	1		
Opuntia spp.	<1		
Filago gallica *	1		
Acanthomintha ilicifolia	1		
Centaurium venustum	<1		
Dichelostemma capitatum	1		
Lepidium spp. *	1		
Avena barbata *	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6308619.848 1881117.522	N-NE-E-SE-S	1.6 m (52 in)	~10° down	174-178	c/mscp/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: abundant in NE corner - restoration area? marked with pin flags

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Form	Species	Cover
	Anagallis arvensis *	1%
	Brachypodium distachyon *	25%

Photo 2. *Acanthomintha ilicifolia* (San Diego Thornmint) Mission Trails Regional Park



Panorama from Western edge of population, facing North, Northeast, East, Southeast, South.
Panorama location is 6308619.848 1881117.522 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thornmint
Site Name: Otay Lakes **Management Unit #:** N/A
Date: 5/16/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Jasmine Walls - Helix Environmental
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☐ Yes ☒ No If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 10.68 m² (Units) ☐ Exact (based on GPS mapping) ☐ Estimate Based on 2003 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6356877.6154 1807531.397 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal pool / non-native grassland

Landowner/Manager: City of S.D.

Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grasses	Control non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	40			Pseudognaphalium biolettii	5		
Bromus hordeaceus *	25			Salsola tragus *	1		
Crassula truncata	1			Bloomeria clevelandii	2		
Cuscuta sp.	1			Isocoma menziesii	1		
Chlorogalum pomeridianum	1			Erodium sp. *	25		
Eryngium aristulatum	2						
Bromus madritensis *	15						
Avena barbata *	2						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6356877.6154 1807531.397	SE S SW W	0.85 m	10° up	196-201	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: GPS'd photo point 5/16/08; site surveyed multiple additional times Feb. - May by S. McMillan | B. Hanson (EDAW) as part of ongoing habitat enhancement project, species not located.

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 3. *Acanthomintha ilicifolia* (San Diego Thornmint) Otay Lakes



Panorama from Western edge of population, facing Southeast, South, Southwest, West.
Panorama location is 6356877.615 1807531.397 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thorn mint
Site Name: Penasquitos Canyon Obs 1 **Management Unit #:** N/A
Date: 5/10/09 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Jasmine Watts - Helix environmental
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☐ Yes ☒ No — Too early? Increase of NNG cover?
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 59.10 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously — Based on 2006 pop. data
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6276496.255 1918576.025 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS / NNG

Landowner/Manager: City of S.D Parks + Rec

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: Open Space - adj. trail

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grass dominance	Control non-native grass

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	40			Osmadenia tenella	1		
Calochortus splendens	2			Ericophyllum confertiflorum	1		
Adolphia californica	1			Quercus dumosa	1		
Avena barbata *	1			Rhus integrifolia	1		
Bacchris sarothroides	2			Salvia mellifera	1		
Nasella lepida	1			Dichelostemma capitatum	1		
Isocoma menziesii	2			Salvia aplana	1		
Centaurium venustum	1			Brachypodium distachyon *	50		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6276496.255 1918576.025	E, SE, S, SW	0.65m	flat	202-207	L:MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: South of trail subpopulation

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 4. *Acanthomintha ilicifolia* (San Diego Thornmint) Penasquitos Canyon Observation # 1



Panorama from North of population, facing East, Southeast, South, Southwest.
Panorama location is 6276496.255 1918576.025 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia *Common Name:* San Diego Thornmint

Site Name: Penasquitos Canyon Obs 2 *Management Unit #:* NA

Date: 5/16/08 *Management Regime:* NA

Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX Environmental
JENNIFER VAUGHAN - CITY OF S.D. - MSCP

Species Found? ☐ Yes ☒ No TOO EARLY? Increase of NNG Cover?
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 5.68 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2006 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☒ meters ☐ feet

Observation Location: 6276540.332 1918463.766 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS/NNG

Landowner/Manager: City of SD. Parks & Rec

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grass dominance	Control non-native grass

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	40			Lotus sp.	2		
Brachypodium distachyon *	50						
Adolphia californica	1						
Centaurea melitensis *	2						
Calochortus splendens	1						
Avena barbata *	1						
Salvia mellifera	1						
Isocoma menziesii	2						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERS A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6276540.332 1918463.766	SE, S, SW	0.65m	5° down	202-212	L:MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: NORTH OF TRAIL SUBPOPULATION

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 5. *Acanthomintha ilicifolia* (San Diego Thornmint) Penasquitos Canyon Observation # 2



Panorama from North of population, facing Southeast, South, Southwest.
Panorama location is 6276540.332 1918463.766 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thornmint
Site Name: Penasquitos Canyon Obs 3 **Management Unit #:** N/A
Date: 5/16/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX ENVIRONMENTAL
JENNIFER VAUGHAN - CITY OF S.D. MSCP

Species Found? ☐ Yes ☒ No TOO EARLY? INCREASE IN NNG COVER?
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 118.29 M2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate
Based on 2000 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 ☒ meters ☐ feet
Observation Location: 6276371.0127 1918517.833 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS / NNG
Landowner/Manager: City of S.D. Parks & Rec
Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor
Surrounding land use: Open Space / adjacent trail

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grasses	Control non-native grasses

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	40						
Adolphia californica	3						
Brachypodium distachyon *	50						
Calochortus splendens	1						
Isocoma menziesii	1						
Rhus integrifolia	1						
Nassella lepida	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6276371.021 1916597.833	E, SE, S, SW	0.85m	flat	213-218	L: MSCP\ monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: WESTERN SUBPOPULATION

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 6. *Acanthomintha ilicifolia* (San Diego Thornmint) Penasquitos Canyon Observation # 3



Panorama from Western edge of population, facing East, Southeast, South, Southwest.
Panorama location is 6276371.021 191857.833 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thornmint

Site Name: Sabre Springs - E Subpop **Management Unit #:** TBD

Date: 5/8/08 GPS 24 1 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Toby Miller City of San Diego MSCP
Nancy Bragado City of San Diego Planning

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 54.78 m² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2006 pop data

Collection (if not collected previously)? ☐ Yes ☐ No ☑ Collected Previously

If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☑ meters ☐ feet

Observation Location: 6303376.7 1923491.2 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: open areas within NNC and SMC

Landowner/Manager: City of San Diego Park + Rec Open Space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
mustard invasion	control mustard - continue invasive removal efforts

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	45		
H	Brassica nigra *	15		
H	Bromus madritensis ssp. r *	15		
S	Malosma laurina	5		
H	Acanthomintha ilicifolia	3		
S	Quercus dumosa	3		
S	Baccharis sarothroides	5		
H	Plantago erecta	1		
H	Bromus hordeaceus *	1		
H	Erodium spp. *	2		
H	Anagallis arvensis *	5		
H	Avena spp. *	1		
H	Centaurea melitensis *	1		
H	Melilotus officinalis *	<1		
H	Vulpia spp. *	<1		
H	Sonchus asper *	<1		
S	Adenostoma fasciculatum	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A76

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6303376.7 1923491.2	NW-N-NE-E	45 in	~5° down	182-185	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 7. *Acanthomintha ilicifolia* (San Diego Thornmint) Sabre Springs East Subpopulation # 1



Panorama from South edge of subpopulation, facing Northwest, North, Northeast, East.
Panorama location is 6303390.7 1923506.3 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego Thornmint
Site Name: Shire Springs - W Flat Subpop **Management Unit #:** TBD
Date: 5/8/08 GPS 2 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Nancy Bragado City of San Diego Planning

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 1650 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 15 x 10 m ☐ Exact (based on GPS mapping) ☑ Estimate
8000 m2 study site Units → 2005 pop data

Collection (if not collected previously)? ☐ Yes ☐ No ☑ Collected Previously
If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☑ meters ☐ feet
Observation Location: 6303277.454 1923560.6625 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Openings within MHC / SMC
Landowner/Manager: City of San Diego Park + Recreation Open Space
Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
invasives around plot; low #'s within plot	contain spread of invasives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #		Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	60			S	Atriplex californica	3		
H	Erodium spp. *	3			S	Cuscuta pulularis	2		
H	Brassica nigra *	5			H	Centaurea melitensis *	3		
H	Sonchus asper *	2			H	Astragalus arrensis *	1		
H	Acanthomintha ilicifolia	5			S	Artemisia californica	1		
H	Avena barbata *	1			H	Bromus diandrus *	1		
H	Bromus hordaceus *	1							
H	Bromus madritensis ssp. r. *	3							

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6303277.454 1923560.6625	S-SW-W	50"	slight Upward	B6-189	4/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 8. *Acanthomintha ilicifolia* (San Diego Thornmint) Sabre Springs West Flat Subpopulation # 2



Panorama from Northwestern edge of subpopulation, facing South, Southwest, West.
Panorama location is 6303277.454 1923560.662 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Acanthomintha ilicifolia **Common Name:** San Diego thornmint
Site Name: Sabre Springs - Southern Subpop **Management Unit #:** TBD
Date: 5/8/08 GPS Pt 3 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Nancy Brigada City of San Diego CPCI

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 500 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 8006 M² study site 15 x 15 2005 data — m (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☐ No ☑ Collected Previously

If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☑ meters ☐ feet

Observation Location: 6303165.84 1923485.4 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: non-native grasslands, scrub oak chaparral

Landowner/Manager: City of San Diego Park + Rec Open Space

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☑ Poor ☐ Very Poor

Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
high cover invasive species	invasive species removal

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
S	Rhus integrifolia	3		
S	Quercus dumosa	15		
H	Deinandra fasciculata	45		
H	Avena fatua *	80		
H	Sonchus oleraceus *	2		
S	Adelphia californica	5		
H	Calocortus splendens	1		
H	Bromus madritensis ssp. rubens *	8		
H	Asaga/hus arrensis *	5		
H	Nassella	1		
H	Vulpia spp. *	1		
H	Bromus berdaeus *	2		
H	Lolium multiflorum *	1		
H	Hplastemum auguslifolium	10		
H	Brassica nigra *	2		
H	Bloomeria crocea ssp crocea	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6303165.84 1923485.4	SE-S-SW	50 in	~5° down	179-181	L/mscp

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Form	Species	Cover
H	Centaurea melitensis *	2
H	Phalaris minor	3
H	Plantago erecta	1
H	Stachys ajugoides	1
H	Unk grass	1
H	Acanthomintha ilicifolia	3
H	Unk plant	1

Photo 9. *Acanthomintha ilicifolia* (San Diego Thornmint) Sabre Springs Southern Subpopulation # 3



Panorama from Southwestern edge of subpopulation, facing Southeast, South, Southwest.
Panorama location is 6303165.7 1923485.4 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Ambrosia pumila
San Diego Ambrosia



© M. Osboure, 2006

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Ambrosia pumilla **Common Name:** San Diego Ambrosia
Site Name: MTRP – Kumeyaay Lake **Management Unit #:** N/A
Date: 5/7/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Ria Bonen, City of San Diego MSCP

Species Found? ☑ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 45,000 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 16809.00 M2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
see existing GIS data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously in 2008 pop data
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6321443.021 1886016.476 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: non-native grasslands, disturbed CSS

Landowner/Manager: City of San Diego P+R Open Space

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☑ Poor ☐ Very Poor

Surrounding land use: open space, transportation, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
high cover non-native grasses; no evidence of volunteer trails, etc	invasive species removal/dethatch, if possible without damaging AmPu

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Brassica nigra*	3		
Centaurea melitensis*	3		
Isocoma menziesii	3		
Hypochaeris glabra*	4		
Eriogonum fasciculatum	7		
Erodium spp.*	3		
Daucus pusilla	2		
Ambrosia pumilla	3		

Species	Cover	Coll?	Coll. #
Hirschfeldia incana*	4		
Lessingia filaginifolia var. filaginifolia	1		
Lotus purshianus var. p.	1		
Holocarpha virgata	2		
Bromus hordeaceus*	15		
Bromus diandrus*	7		
Vulpia myuros var m.*	50		
Bromus madritensis (ssp m.)	10		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6321443.021 1886016.476	NW, N, NE, E	50 m	~5° down	168–171	L:MSCP/Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Form	Species	Cover
	Vasella pulchra	1
	Avena barbata	1
	Avena fatua	1
	Distichlis spicata	2

Photo 10. *Ambrosia pumila* (San Diego Ambrosia) Mission Trails Regional Park - Kumeyaay Lake



Panorama from Northeastern edge of population, facing Northwest, North, Northeast, East.
Panorama location is 6321443.021 1886016.476 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Arctostaphylos glandulosa ssp. *crassifolia*
Del Mar Manzanita



© Linda K. Hedlund, 2001

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa crassifolia Common Name: Del Mar Manzanita (ARMO)

Site Name: Carmel Mtn Pt 1 Management Unit #: N/A

Date: 14 April 2008 Management Regime: N/A

Surveyors and Affiliation/Agency: Kristy Forburger - City of SD MSCP, Jasmine Watts - HELIX Environmental

Species Found? ☒ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 800 m2 (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6265668.695 1922504.973 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Maritime Chaparral

Landowner/Manager: City of S.D.

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Active trail & horse use immediately east of observation area

Management Recommendation/s:
Monitor trail usage & install barriers if needed/impacts occur

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Arctostaphylos glandulosa crassifolia	20			Malosma laurina	1		
Adenostoma fasciculata	50			Xylococcus bicolor	1		
Mimulus aurantiacus	5			Ceanothus verrucosus	2		
Salvia mellifera	1						
Yucca schidigera	1						
Quercus dumosa	1						
Cryptantha sp.	1						
Bromus madritensis *	1						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6265668.695 1922504.973	W, NW, N	45"	slightly downward	174-176	L:MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: USPd photo point from 2004

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 11. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita) Carmel Mountain



Panorama from Northwestern edge of population, facing West, Northwest, North.
Panorama location is 6265668.69 1922504.97 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa ssp crassifolia **Common Name:** Del Mar Manzanita

Site Name: Crest Open S obs. point 1 **Management Unit #:** TBD

Date: 4/6/18 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Betsy Miller, Kristy Forburger City of SD MSCP Jasmine Watts Helix Env

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 10 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .23 acres (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☐ No ☑ Collected Previously

If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/0 <1 ☒ meters ☐ feet

Observation Location: 6253797.295 1928025.330 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Maritime Chaparral

Landowner/Manager: City of SD Park + Recreation Open Space

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space; residential surrounding S, E, W

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
canyon edges in excellent condition, canyon bottom higher occurance of non-natives; trails near Arcto gland. appear somewhat trampled	limit recreational use to designated trails, install protective fencing near sensitive populations; remove invasive species Cie plant + pampas grass

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species Arctostaphylos gland 1	Cover	Coll?	Coll. #	Species Eriogonum fasciculatum 1	Cover	Coll?	Coll. #
Adenostoma fasiculata	55			Solanum parishii	1		
Salvia mellifera	5			Ceanothus verrucosus	1		
Cneidium dumosum	5			Dudleya lanceolata	1		
Xylococcus bicolor	3			Bromus madritensis ssp rubens	1		
Mimulus aurantiacus	2			Lamarckia aurea	1		
Marah macrocarphus	2			Opuntia oricola	1		
Rhus integrifolia	2			Zigadenus fremontii	1		
Lonicera subspicata	1			Pinus torreyana	2		
				Eucalyptus spp *	2		
				Cromomilla ; Sanicolens	1		
				Artemisia californica	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253797.295 1928025.330	NE, N, NW, W	59"	down ~ 5°	153 - 156	L Monitoring

NE - 153
N - 154, 155
NW - 65
W - 64, 156

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 12. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita) Crest Canyon South Observation Area # 1



Panorama from Western edge of population, facing Northeast, North, Northwest, West.
Panorama location is 6253797.295 1928025.330 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa ssp. crassifolia Common Name: Del Mar Manzanita (DDM)

Site Name: Crest Cyn - Bb's Area 2 (N) Management Unit #: TBD

Date: 14 APRIL 2008 Management Regime: TBD

Surveyors and Affiliation/Agency: Kristy Forburger – City of SD MSCP, JASMINE WATTS – HELIX Environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 100 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: ~3acres Units ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☐ No ☒ Collected Previously (2006)

If yes: Collector Collection Number Museum/Herbarium

Plant Photo 64-68 (164-166)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6253841.04 1929942.65 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Maritime Chaparral

Landowner/Manager: City of San Diego Park & Rec Open Space

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Residences ~500' to South

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
random weed infestations (brome, veldt) erosion, pedestrian trails, invasive plantings in neighbors yards (Pampas)

Management Recommendation/s:
Control of veldt grass (Ehrharta) educational community outreach

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Pinus torreyana	10			Croptilon dumosum	1		
Adenostoma fasciculata	20			Ehrharta sp.*	1		
Eriogonum fasciculatum	4			Bromus madritensis rubens*	1		
Quercus sp. (scrub)	1			Antirrhinum sp.	1		
Mimulus aurantiacus	2			Salvia mellifera	1		
Rhus integrifolia	2			Crassula sp.	1		
Dendromecon rigida	1			Psilocarphus tenellus	1		
Eriophyllum confertiflorum	1			Dichelostemma capitatum	1		
				Xylococcus bicolor	2		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75 *(new photo point - old could not be accessed)

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253841.04 1929942.65	NE, E	42"	Flat	167–170	L:MSCP\ Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: DDM pop observed in canyon bluff adjacent to and beneath Torrey Pines

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 13. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita) Crest Canyon North Observation Area # 2



Panorama from Southwestern edge of population facing Northeast, East.
Panorama location is 6253841.04 1929942.65 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa crassifolia **Common Name:** Del Mar Manzanita

Site Name: Del Mar Mesa 1 **Management Unit #:** N/A

Date: 14 April 2008 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Kristy Forburger - City of SD MSCP
Jasmine Watts - Helix Environmental

Species Found? [X] Yes [ ] No

Total No. Individuals: 100 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

If not, why (if reason known or suspected)?

Population/Subpopulation Area: 1.1 acres (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6276448.518 1922053.776 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Maritime Chaparral

Landowner/Manager: City of San Diego

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Mtn bike / hiking trail / horse trail
residential to northwest of
habitat

Management Recommendation/s:
educational community outreach
for bordering residential,
review of landscape concept plans
(omit invasive species)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Adenostoma fasciculata	20		
Salvia mellifera	5		
Quercus dumosa	30		
Lotus scoparius	1		
Malosma laurina	2		
Mimulus guttatus	5		
Rhus integrifolia	3		
Arctostaphylos glandulosa crassifolia	2		

Species	Cover	Coll?	Coll. #
Eriophyllum confertiflorum	1		
Xylococcus bicolor	2		
Heteromeles arbutifolia	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6276448.518 1922053.776	N, NE, E	36"	flat / level	177-180	L: MSCP/monitoring

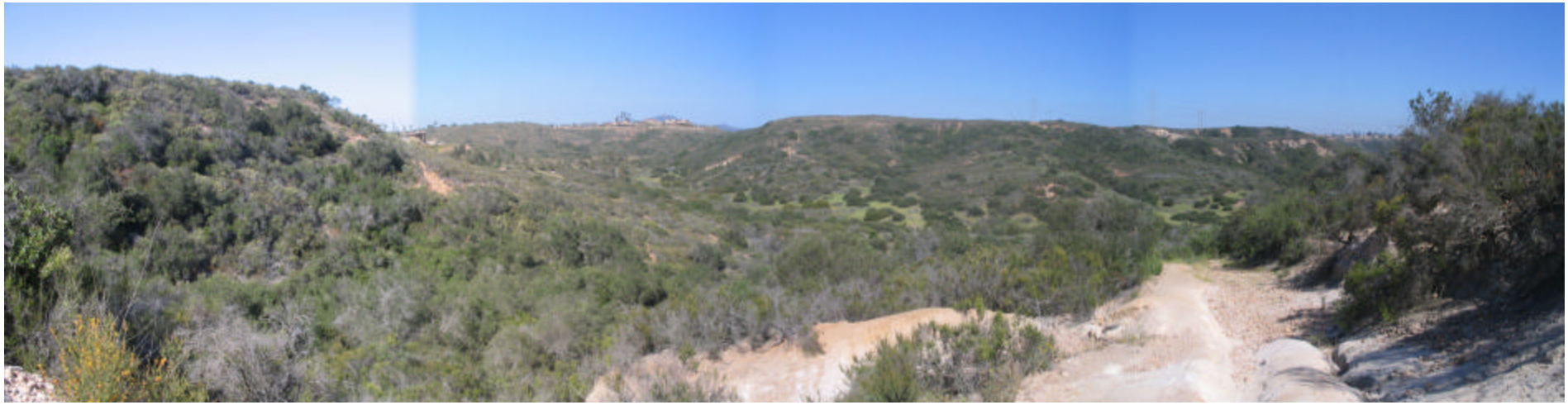
V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 14. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita) Del Mar Mesa Observation # 1



Panorama from Western edge of population, facing North, Northeast, East.
Panorama location is 6276448.518 1922053.776 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa ssp. crassifolia — Common Name: Del Mar Manzanita
Site Name: Del Mar Mesa - EAST — Management Unit #: TBD
Date: 6 JUNE 2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JENNIFER VAUGHAN - City of SD MSCP; JASMINE WATTS - HELIX Environmental

Species Found? [X] Yes [ ] No — If not, why (if reason known or suspected)?

Total No. Individuals: 20 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 17609.44 m2 (Units) [ ] Exact (based on GPS mapping) [X] Estimate Based on map est

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [ ] meters [ ] feet

Observation Location: 6278460.109 1922149.094 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Chamise chaparral

Landowner/Manager: City of SD Parks & Rec

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Trail (SDGE easement) and powerline to west and south of population

Management Recommendation/s:
NA - no weeds observed

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Adenostoma fasciculata	60			Lotus scoparius	1		
Arctostaphylos glandulosa crassifolia	4			Mimulus aurantiacus	25		
Nasella sp.	<1						
Chlorogalum pomeridianum	<1						
Quercus dumosa	1						
Xylococcus bicolor	1						
Peinandra fasciculata	<1						
Navarretia hamata	<1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6278460.109 1922149.094	NW, N, NE, E	1.1 m	10° down	340-343	L:MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 15. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita)

Del Mar Mesa Eastern Observation # 2



Panorama from Southwestern edge of population, facing Northwest, North, Northeast, East.
Panorama location is 6278460.109 1922149.69 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa ssp crassifolia Common Name: DEL MAR MANZANITA

Site Name: PEÑASQUITOS CANYON Management Unit #: TBD

Date: 6 JUNE 2008 Management Regime: TBD

Surveyors and Affiliation/Agency: JENNIFER VAUGHAN - CITY OF SD MSCP
JASMINE WAITS - HELIX Environmental

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 10 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 120608.73 M2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate
Based on 2002 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 0278665.510 192539.48 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Chamise chaparral / Scrub oak chaparral

Landowner/Manager: City of SD Parks + Rec

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
minimal disturbance, trail is closed

Management Recommendation/s:
NA

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Adenostoma fasciculata	60			Salvia mellifera	1		
Quercus dumosa	25			Rhus integrifolium	1		
Arctostaphylos glandulosa crassifolia	1			Xylococcus bicolor	1		
Chlorogalum parviflorum	1						
Calochortus weedii	<1						
Nassella sp.	<1						
Selaginella cinerascens	<1						
Mimulus aurantiacus	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0278665.56 192539.48	SE, S, SW	1.1m	15° down	352-354	L: MSCP/Monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: DENSE VEGETATION

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 16. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita)

Penasquitos Canyon



Panorama from Northern edge of population, facing Southeast, South, Southwest.
Panorama location is 6278665.56 1921539.48 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Arctostaphylos glandulosa ssp. crassifolia Common Name: Del Mar Manzanita (DDM)

Site Name: San Dieguito River Bluffs-obs1(s) Management Unit #: TBD

Date: 14 April 2008 Management Regime: TBD

Surveyors and Affiliation/Agency: Kristi Forburger - City of SD MSCP, Jasmine Wells - Helix Environmental

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 100 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .29 acres (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6257195.95 1930511.32 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Maritime Chaparral

Landowner/Manager: City of SD Parks + Rec Open Space

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: residential, open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Residential to southeast, I-5 to west, habitat restoration to north (open space), bluff erosion, invasive weeds + landscape plants

Management Recommendation/s:
control of pampas, fountain grass, + landscape plants (ice plants + acacia)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Arctostaphylos glandulosa crassifolia	5			Rhus integrifolia	2		
Lotus scoparius	2			Pennisetum setaceum *	2		
Salvia mellifera	6			Cortaderia selloana *	1		
Encelia dumosa	1			Bromus madritensis rubens *	1		
Ceanothus verrucosus	12	✓		Sambucus mexicana	1		
Helianthum scoparium				Marah macrocarpa	1		
Adenostoma fasciculatum	1			Dudleya edulis	1		
Malosma laurina	15			Xylococcus bicolor	1		
	5						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6257195.95 1930511.32	NE, E, SE	3'6"	flat, slight downward tilt	171-173	L: MSCP/Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: majority of DDM on top of bluff - small individuals, a few larger individuals in adjacent canyon

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 17. *Arctostaphylos glandulosa* ssp. *crassifolia* (Del Mar Manzanita) San Dieguito River Bluffs Observation Area # 1



Panorama from the Northern edge of population, facing Northeast, East, Southeast
Panorama location is 6257195.95 1930511.32 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Bloomeria clevelandii
San Diego Goldenstar



© City of San Diego, 2004

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar
Site Name: Del Mar Mesa Obs 1 **Management Unit #:** TBA
Date: 29 April 2008 **Management Regime:** TBA
Surveyors and Affiliation/Agency: Keli Balo - City of San Diego
Jasmine Watten - Helix Environmental

Species Found? ☒ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 36 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 102.24 M2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate see 2008 data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously "BLCL_DMM_2008".shp - polygon = "BLCL2008DM"
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6280351.97 1924986.55 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal Pool / Chamise Chaparral

Landowner/Manager: City of San Diego Parks & Rec Open Space (MHPA)

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
area is fenced	→ control invasives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1			Filago sp.	1		
Deinandra fasciculata	7			Brodiaea orcuttii	1		
Navarretia hamata	2			Centaurea melitensis *	1		
Crassula connata	2			Cryptantha dumosum	1		
Osmadenia tenella	1			Vulpia myuros *	2		
Centaurium venustum	1			Xylococcus bicolor	1		
Pogogyne abramsii	1			Yucca shidigera	1		
Bromus madritensis rubens*	3			Selaginella sp.	3		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280351.97 1924986.55	NW, W, SW, S, SE	1/m	downward 15°	122-126	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Some prtc pant for Pogogyne abramsii
(*NEW population polygon - smaller pop. than in 2008)

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

	Cover
Juncus butonius	1
Adonostema fasciculata	2
Crassula aquatic	1
Callitriche marginata	1
Lilaea scilloides	1
Pilularia americana	1
Plantago elongata	1

Photo 18. *Bloomeria clevelandii* (San Diego Goldenstar) Del Mar Mesa Observation # 1



Panorama from Northwestern edge of population, facing Northwest, West, Southwest, South, Southeast.
Panorama location is 6280351.97 1924986.55 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego golden star
Site Name: Del Mar Mesa Obs 2 **Management Unit #:** TBA
Date: 29 April 2008 **Management Regime:** TBA
Surveyors and Affiliation/Agency: Kelli Balo - City of San Diego
Jasmine Watts - HELIX Environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 20 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)
If not, why (if reason known or suspected)?

Population/Subpopulation Area: 5860.34 M2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate
2003 Bloomeria physon

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6280710.570 1924749.79 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal Pool, Southern mixed chaparral
Landowner/Manager: City of San Diego Parks & Rec Open Space (MHPA)
Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grasses	area is fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1			Adenostoma fasciculata	5		
Deinandra fasciculata	10			Vulpia myuros *	2		
Pogogyne abramsii	8			Bromus madritensis rubens *	1		
Eryngium aristulatum	4			Crassula aquatica	1		
Navarretia hamata	3			Eriogonum fasciculatum	2		
Crassula connata	1			Psilocarpus brevissimus	1		
Centaurium venustum	1			Deschampsia danthonioides	1		
Avena sp. *	1			Gallitriche marginata	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280710.57 1924749.79	SW, W, NW, N, NE	1.1 m	downward 10°	127-132	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Same photo point for Pogogyne abramsii Obs 2 & Eryngium aristulatum Obs 2

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

	cover
Malosma laurina	2
Pittaria americana	
Plantago elongata	
Juncus butentus	
Opuntia sp	
Bromus hordaceus *	
Lythrum hyssopifolium *	
Salvia mellifera	
Filago sp.	
Rhus integrifolia	
Xylococcus bicolor	
Osmodenia tenella	
Unknown grass (Polypogon sp.?)	
Selaginella sp.	
Chlorogallum pomeridianum	

Photo 19. *Bloomeria clevelandii* (San Diego Goldenstar) Del Mar Mesa Observation # 2



Panorama from Southern edge of population, facing Southwest, West, Northwest, North, Northeast.
Panorama location is 6280710.57 1924749.79 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii — Common Name: San Diego Goldenstar
Site Name: East Elliot #1 — Management Unit #: N/A
Date: 4/21/08 — Management Regime: N/A
Surveyors and Affiliation/Agency: Belsy Miller, City of San Diego, MSCP
Keli Balo, City of San Diego, Metro

Species Found? [X] Yes [ ] No

Total No. Individuals: 8,000-10,000 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 1414.38 — Units: M2 — [X] Exact (based on GPS mapping) [ ] Estimate — Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6319260.20 1891551.76 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-native annual grassland

Landowner/Manager: City of San Diego, Park and Recreation, open space

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Fire, non-native-type conversion
Bike trail at east end of population

Management Recommendation/s:
Manage fire regime
continue to restrict access along abandoned roadway for vehicles

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
H Bromus madritensis ssp rubens	10			H Bloomeria clevelandii	<5		
S Lotus scoparius	<1			S Isocoma menziesii	<1		
S Mimulus aurantiacus	<1			H Sisyrinchium bellum	<1		
H Avena fatua	10			H Eriophyllum confertiflorum	<1		
H Brachypodium distachyon	10			H Plantago erecta	<1		
H Centaurea melitensis	2			H Castilleja spp.	<1		
H Nassella	2			H Bromus hordeaceus	10		
H Erodium botrys	2			S Salvia apiana	<1		

IV. SITE PHOTOMONITORING

Camera type: Cannon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6319260.20 1891551.76	W, SW, S, SE, E	1.3M	+10°	18-27	L:\MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:
More associated species on back →

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

H	Dichelostemma capitatum	<2	S	Artemsia californica	<2
H	Lonicera ssp.	<2	H	Silene gallica	<2
H	Dienandra fasciculata	5		unk grass	10
H	Filago spp.	2		Bloomeria crocea	<1
S	Rhamnus crocea	5		↳ Flowers not open	
H	Malusma laurina	5		yet bud stalk up but not open	

Modified Traugen & Keighery Vegetation Condition Scale

Very Good-Excellent	50-100% Native Flora Composition Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 20. *Bloomeria clevelandii* (San Diego Goldenstar) East Elliot # 1



Panorama from Southwestern edge of population, facing West, Southwest, South, Southeast, East.
Panorama location is 6319260.20 1891551.76 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar

Site Name: East Elliot #2 **Management Unit #:** N/A

Date: 4/21/08 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Kell Bajo - City of San Diego - Metro

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 400 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 488.82 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6317389.879 1894565.895 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Chaparral (SMC) Disturbed

Landowner/Manager: City of San Diego, Park and Recreation Department Open Space

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [ ] Poor [X] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
roadway - edge effects (SDGE) recovering SMC - fire	remove invasive species

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lotus scoparius	10			S Adenostoma fasciculata	15		
H Navarretia hamata	<2			S Malosma laurina	1		
H Filago sp	2			S Eriogonum fasciculatum	<1		
H * Erodium botrys	<2			H * Hypochaeris glabra	1		
H Deinandra fasciculata	2			S Ceanothus sp	1		
H Osmadenia	<1			S Cylindropuntia californica	5		
H * Bromus madritensis S	7			H Bloomeria clevelandii	1		
H # Avena fatua	5			Bare Dirt - roadway	30		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6317389.879 1894565.895	N, W, S	1.1	+5	28-37	L MS(P) monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: lots bare areas, very sparse. Blocky - road in middle
sample branches

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

H Chlorogalum pomeridianum 1
S Xylococcus bicolor 1

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 21. *Bloomeria clevelandii* (San Diego Goldenstar) East Elliot # 2



Panorama from Southeastern edge of population, facing North, West, South.
Panorama location is 6319260.20 1891551.76 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar

Site Name: East Elliot #3 **Management Unit #:** NA

Date: 4/21/08 **Management Regime:** NA

Surveyors and Affiliation/Agency: Betsy Miller- City of San Diego- MSCP
Kelli Balo- City of San Diego- Metro

Species Found? [X] Yes [ ] No ____ If not, why (if reason known or suspected)?

Total No. Individuals: 55 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3215.86 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: ____ (Collector) ____ (Collection Number) ____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6316947.573 1895951.197 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Disturbed Southern Mixed Chaparral

Landowner/Manager: City of San Diego, Park and Recreation Department Open Space

Overall Site Quality** [X] Very Good Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Non-natives/Invasives along roadway
2003 Fire Scar

Management Recommendation/s:
remove invasive species

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Eastwoodia californica	40			Lotus scoparius	5		
Adenostoma fasciculata	15			Eriogonum fasciculatum	2		
Chlorogalum	1			Bloomeria clevelandii	<1		
Avena fatua *	2			unknown grass	1		
Plantago erecta	5			Navarretia hamata	<1		
crassula conata	2			Ceanothus sp	1		
Trifolium bolanderi *	1			Dichelostemma capitatum	<1		
Bromus madritensis *	1			Gutierrezia californica	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6316947.573 1895951.197	S SW -> NW	.9M	-5%	38-42	L:MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Intact soil crusts

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Hypochaeris glabra <1
Crepis hydaspis <1
Ashy spikemos 50% Selaginella

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 22. *Bloomeria clevelandii* (San Diego Goldenstar) East Elliot # 3



Panorama from Northwestern edge of population, facing South, Southwest, West, Northwest.
Panorama location is 6316947.57 1895951.19 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar
Site Name: East Elliot #4 **Management Unit #:** N/A
Date: 4/21/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Fell Bald - City of San Diego - METRO

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 2300 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 11546.89 M² Units [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 [X] meters [ ] feet
Observation Location: 6317550.10 1898385.22 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Disturbed Southern Mixed Chaparral
Landowner/Manager: City of San Diego, Park & Recreation Department, Open Space
Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: open space, military lands

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
roadway - grading outside roadway/ exotics

Management Recommendation/s:
remove invasive species

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Adenostoma fasciculata	15			Filago sp.	1		
Eriophyllum californica	4			Vulpia sp.*	8		
Lasthenia californica	10			Hypochaeris glabra*	1		
Yucca whipplei	1			Bromus madritensis ssp. rubens*	2		
Selaginella	3			Xylococcus bicolor	3		
Ceanothus sp.	2			Salvia spathacea	3		
Bloomeria clevelandii	1			Centaurea melitensis*	<1		
Navarretia hamata	1			Dichelostemma capitatum	<1		
				bare ground	20		

IV. SITE PHOTOMONITORING

Camera type: Canon PowerShot S5

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6317550.10 1898385.22	NE, N, NW, W, SW	1.05M	~10	43-49	L:MSCP Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

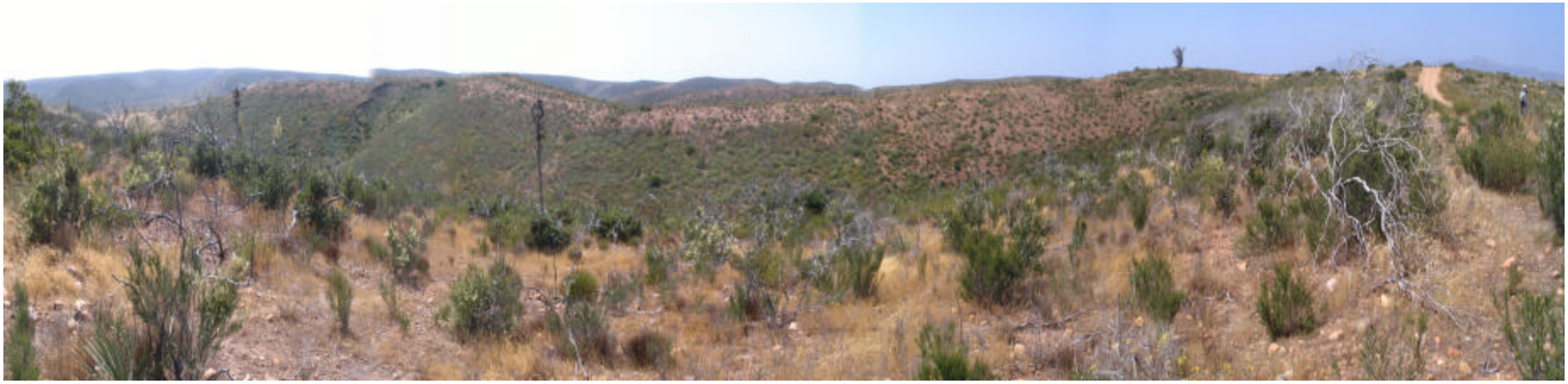
Linaria canadensis <1
Crassula connata 1
Osmadenia tenella <1
Salvia mellifera 1

Castilleja exserta <1
Gnaphalium spp. <1

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 23. *Bloomeria clevelandii* (San Diego Goldenstar) East Elliot # 4



Panorama from Northwestern edge population, facing Northeast, North, Northwest, West, Southwest.
Panorama location is 6317550.10 189385.22 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** SD Goldenstar

Site Name: East Elliot #5 **Management Unit #:** N/A

Date: 4/21/08 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Kell Bald - City of San Diego - METRO

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 1000 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 424869.04 M2 Units [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6316118.119 1894089.910 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Disturbed Southern Mixed Chaparral

Landowner/Manager: City of San Diego, Park and Recreation Open Space

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
roadway - abandoned non-natives fire	manage fire regime - continue to restrict access along abandoned roadway for vehicles

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lotus Scoparius	3			Avena fatua *	<1		
Adenostoma fasciculata	10			Mimulus aurenticulus	<1		
Dichelostemma capitatum	<1			Malosma laurina	<1		
Filago SD	1			Bromus madritensis *	1		
Ceanothus SD	5			Epiphyllum Confertiflorum	<1		
Guilleria californica	10			Bromus diandrus *	1		
Hypochaeris glabra *	5			Quercus berberidifolia	<1		
Erodium grass	1			Psilocarpus tenellus			

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6316118.119 1894089.910	SW→S→SE	1.1M	+30 or 40	53-56	L:MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Unknown grass 30%
Bloomeria clevelandi 2

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 24. *Bloomeria clevelandii* (San Diego Goldenstar) East Elliot # 5



Panorama from Western edge of population, facing Southwest, South, Southeast.
Panorama location is 6316118.12 1894089.91 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar
Site Name: Marron Valley #1 **Management Unit #:** N/A
Date: 4/18/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Kell Bajo – City of San Diego, Metro
Jennifer Vavanart – City of San Diego – MSCP

Species Found? ☒ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: ~20,000 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 68512.40 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2008 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 ☒ meters ☐ feet

Observation Location: 6406792.116 1788002.681 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS/NNG

Landowner/Manager: City of San Diego Water Department

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Invasive plant species Fire regime Grazing	Weeding/debatching

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species Herbs	Cover	Coll?	Coll. #	Species Shrubs	Cover	Coll?	Coll. #
*Avena fatua	10		H	Salvia mellifera	<2		S
Bloomeria clevelandii	30		H	Ant rolshamica	<2		S
Bromus madritensis S	30		H	Malosmo laurina	<2		S
Erodium botrys S	50		H	Gutierrezia californica	<2		S
Crassula connata	10		H	Herb Plantisorrida	<2		H
Juncus bufonius	<2		H	Herb Dichostema capitatum	2		H
*Gastridium ventricosum	<2		H	S - Isocoma menziesii	<2		S
*Centaurea melitensis	<2		H	S Yucca	<2		S

IV. SITE PHOTOMONITORING

See Back

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6406792.116 1788002.681	S W N	.9M	15° down	13-17	L: MSCP/monitering
6406792.116 1788002.681	N E SE	.9M	15° down	25-30	L: MSCP/monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: Some population dried

Data in Room

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Bromus hordeaus 30
Asclepiomass 5
Mdiego sp <2
Lamarkia sp <2
Lasthenia californica <1

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 25. *Bloomeria clevelandii* (San Diego Goldenstar) Marron Valley # 1a



Panorama from Western edge of population, facing South, West, North.
Panorama location is 6406792.12 1788002.68 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Photo 26. *Bloomeria clevelandii* (San Diego Goldenstar) Marron Valley # 1b



Panorama from Western edge of population, facing North, East, Southeast.
Panorama location is 6406792.12 1788002.68 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar

Site Name: Marron Valley #2 **Management Unit #:** N/A

Date: 4/18/08 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Kell Bajo City of San Diego – Metro
Jennifer Vaughan City of San Diego – MSCP

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: > 30,000 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 608512.40 m² Units [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 6407225.718 1787897.828 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-Native Annual Grassland / DCSS

Landowner/Manager: City of San Diego, Water Department

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [X] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
fire, grading, roadway
Weedcon

Management Recommendation/s:
remove invasive species (weeds)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
H Plantago erecta	5		H	S Isocoma menziesii	<1		5
H Salsola tragus *	5		H	Artemisia californica	<1		5
Erodium botrys *	40		H	Malosma laurina	<2		5
Bloomeria clevelandii	30		H	Eriogonum fasciculatum	<1		5
Avena fatua *	10		H	Salvia apiana	<1		5
Blennosperma nanum S *	10		H	Chaetopappa ericoides	<1		H
Tilaea sp.	<2		H				
Osmadenia tenella	<2		H				

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6407225.718 1787897.828	SW.S	.9m	15° down	18-22	L:MSCP/Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: dense 100/m² Rosette

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 27. *Bloomeria clevelandii* (San Diego Goldenstar) Marron Valley # 2



Panorama from Northeastern edge of population, facing North, East, Southeast.
Panorama location is 6407225.72 1787897.83 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii Common Name: San Diego Goldenstar

Site Name: Marion Valley #3 Management Unit #: N/A

Date: 4/18/2008 Management Regime: N/A

Surveyors and Affiliation/Agency: Keil Balo City of San Diego- MEMD
Jennifer Vaughan- City of San Diego - MSCP

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 720000 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 68512.40 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 6407990.151 1787523.484 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-Native Annual Grassland

Landowner/Manager: City of San Diego, Water Department

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [ ] Poor [X] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Fire regime
roadway
invasive (weed) species

Management Recommendation/s:
remove invasive species (weeds)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
* Bromus madritensis	5		H	Mimulus aurantiacus	<2		S
* Bromus diandrus	20		H	Artemisia californica	<2		S
Avena fatua	15		H	Malosma laurina	<2		S
Isolam multiflorum	<2		H	Salvia apiana	<2		S
Bistra negia	2		H	Eriogonum fasciculatum	<2		S
Distichlis spicata	<2		H	Erodium cicutarium	<2		H
Lasthenia glabrata	5		H	Calandrinia	<2		H
* Hordeum murinum	5		H	Bloomeria clevelandii	10		H

IV. SITE PHOTOMONITORING

Camera type: Canon PowerShot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6407990.151 1787523.484	NW NE E	9m	45° down	31-36	L:MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: hillside below road - majority of bloom
750 inflorescences

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Icons brabant
Plantgemeta 02

Modified Trueman & Keighery Vegetation Condition Scale

Very Good-Excellent	50-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 28. *Bloomeria clevelandii* (San Diego Goldenstar) Marron Valley # 3



Panorama from Eastern edge of population, facing Northwest, North, Northeast, East.
Panorama location is 6407990.151 1787523.484 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar

Site Name: Marron Valley #4 **Management Unit #:** N/A

Date: 4/18/08 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Kell Bald City of San Diego – Metro
Jennifer Vaughan – City of San Diego – MSCP

Species Found? ☒ Yes ☐ No — If not, why (if reason known or suspected)?

Total No. Individuals: >5,000 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 6985|2.40 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2008 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6407380.170 1787837.836 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-native grassland

Landowner/Manager: City of San Diego, Water Department

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☐ Poor ☒ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Invasive species Fire regime Grazing	remove invasive species (weeds)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
*Erodium cicutarium	70		H	Isocoma menziesii	<2		S
*Bromus madritensis	<2		H	Artemisia californica	<2		S
*Gastridium ventricosum	15		H	Bloomeria clevelandii	5		H
*Avena fatua	10		H	Cistanthe californica	<1		S
Distichlis rapiculata	<2		H	Ambrosia psilostachya	<2		H
*Silene gallica	<2		H	*Cynodon dactylon	<1		H
*Nasella pulchra	<2		H	*Bromus diandrus	<2		H

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6407380.170 1787837.836	SE, E, NE, N	.9M	0°	38-43	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: most Bloomeria on hillside below road
not in flat area

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 29. *Bloomeria clevelandii* (San Diego Goldenstar) Marron Valley # 4



Panorama from Northern edge of population, facing Southeast, East, Northeast, North.
Panorama location is 6407990.151 1787523.484 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii — **Common Name:** San Diego goldenstar

Site Name: Mission Trails regional park — **Management Unit #:** N/A

Date: 4/10/08 — **Management Regime:** N/A

Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☐ Yes ☒ No Fidelity of digitized data, or area burned 03, invaded by invasives
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1255.77 — Units: M2 ☒ Exact (based on GPS mapping) ☐ Estimate
see 2001 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector — Collection Number — Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☒ meters ☐ feet

Observation Location: 6307533.854 1887727.084 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Disturbed CSS/NG/remenant N.G

Landowner/Manager: City of San Diego park = Recreational open space

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor
see notes

Surrounding land use: Military lands, transportation corridor, open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Invasive species maybe due to fire regime.	experiment with invasive species removal

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
* Erodium spp.	75%		
Nassella spp	2%		
* Bromus madritensis spp rubens	4%		
Sisyrinchium bellum	1%		
Lotus scoparius	12%		
Eriophyllum confertiflorum	7%		
* Avena spp.	15%		
* Hypochaeris glabra	3%		

Species	Cover	Coll?	Coll. #
Pychelostemma capitatum	3%		
Artemesia californica	7%		
Acleanostma fasciculatum	5%		
Sanicula arguta	1%		
tarplant?	1%		
Grass?	5%		
Malacothamnus fasciculatus	1%		
Gutierrezia spp	71%		

IV. SITE PHOTOMONITORING

Camera type: Canon powershot A-75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6307533.854 1887727.084	SE → N	1.1 M	Flat	3-8	L: MSCP/monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: Notes for site quality - rating based on high invasive species but little or no disturbance due to Anthropogenic causes.

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Species	cover
Deinandra fasciculata	2%

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Photo 30. *Bloomeria clevelandii* (San Diego Goldenstar) Mission Trails Regional Park



Panorama from Northwestern edge of population, facing Southeast, South, Southwest, West, Northwest, North.
Panorama location is 6307533.854 1887727.084 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Bloomeria clevelandii **Common Name:** San Diego Goldenstar
Site Name: Otay Lakes East (Pt 1) **Management Unit #:** n/a
Date: 4/15/08 **Management Regime:** n/a
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego
Jasmine Watts Helix Env

Species Found? ☑ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: >1000 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3026094.92 ft² Units ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2005 data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0357208.4010 1807472.481 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: open CSS (burned 2003), vernal pool

Landowner/Manager: City of San Diego Water Department

Overall Site Quality** see notes below ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Ø offroad vehicle disturbance at this time; high cover erodium spp.

Management Recommendation/s:
continue access restrictions, continue weed/lethathing removal efforts

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
* erodium spp	70			Calochortus splendens	<1		
deinandra fasiculata	45			Nassella pulchra	<1		
* Bromus madritensis rubens	5			* Lolium multiflorum	<1		
* Bromus hordeaceus	5			Bloomeria clevelandii	20		
Lotus scoparius	2			Sisyrinchium bellum	<1		
* Vulpia spp	<1			Lepidium spp.	<1		
Isocoma menziesii	8						
Eriogonum fasiculatum	4						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75 photos reviewed 4/24/08

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0357208.466 1807472.481	NW, NW/W, N	1.1m	~5° down	88-90	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: notes from site quality: high cover of erodium spp, & other invasive species, low evidence of disturbance.

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 31. *Bloomeria clevelandii* (San Diego Goldenstar) Otay Lakes East Observation # 1



Panorama from Northeastern edge of population, facing Northwest, North.
Panorama location is 6357208.466 1807472.481 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Rhus ovata var. clevelandii **Common Name:** San Diego goldenbush

Site Name: Otay Lakes East (Pt 2) **Management Unit #:** n/a

Date: 4/15/08 **Management Regime:** n/a

Surveyors and Affiliation/Agency: Betsy Miller – City of San Diego – MSCP
Jasmine Walla – Helix Environmental

Species Found? ☑ Yes ☐ No _____
If not, why (if reason known or suspected)?

Total No. Individuals: ≤1000 (~5000) ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3626049.92 ft² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate
Based on 2005 data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- ≤1 ☑ meters ☐ feet

Observation Location: 6356421.867 1807483.77 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: open CSS (Kuchler 2003), vernal pool

Landowner/Manager: City of San Diego Water Dept

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to (Good) ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
erodium spp - high cover	continue access control and invasive species / dethatch removal

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Erodium spp.	40			Calochortus splendens	<1		
Deinandra fasciculata	45			Bloomeria clevelandii	20		
Bromus madritensis spp rubens	5			Sisyrinchium bellum	<1		
Bromus hordeaceus	3			Lepidium spp.	5		
Cressa truxillensis	2			Plantago erecta	3		
Lotus scoparius	2			Brodiaea jolonensis	<1		
Isocoma menziesii	3			Cuscuta spp.	15		
Eriogonum fasciculatum	4			Eryngium aristulatum	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75 photos retaken 4/24/08

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6356421.867 1807483.77	N, NE, E	1.1 m	~15° down	~~84-86~~ 98-102	L: MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 32. *Bloomeria clevelandii* (San Diego Goldenstar) Otay Lakes East Observation # 2



Panorama from Southeastern edge of population, facing North, Northeast, East.
Panorama location is 6356421.86 1807483.77 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Brodiaea orcuttii
Orcutt's Brodiaea



© Scott McMillan, 2001

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii **Common Name:** Orcutt's brodiaea
Site Name: Carroll Canyon **Management Unit #:** n/a
Date: 4/22/08 **Management Regime:** n/a
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego
Jasmine Watts Helix Environmental

Species Found? ☑ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1046.45 M2 Units ☒ Exact (based on GPS mapping) ☑ Estimate Based on 2005 pop data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet
Observation Location: 6282439.860 1907633.765 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal pool, openings in chamise chaparral
Landowner/Manager: City of San Diego Park and Recreation Open Space
Overall Site Quality** see note ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: residential, open space, quarry

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
illegal trespass + dumping have been recorded previously - none noted this survey	continue restricting access + maintaining fences/signs

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #		Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	60			H	Navarretia hamata	1		
H	Centaurium venustum	1			H	Erodium botrys*	5		
H	Brodiaea orcuttii	5			H	Chorizanthe fimbriata	1		
H	Vulpia spp.*	15			H	Pogogyne abramsii	1		
H	Crassula aquatica	15			H	Lythrum hyssopifolium *	1		
H	Selaginella spp.	2							
H	Crocea maritima	5							
H	Plantago elongata	30							

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6282439.860 1907633.765	E-SE-S-SW	1.2 m	40° down	63-66	MSCP monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: population extends south across abandoned roadway (see 2005 GPS data); much denser S of road than in N area (monitored area)
NOTE for Overall Site Quality: appears to be old bulldozer scrape (~1980) but low invasive % cover

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 35. *Brodiaea orcuttia* (Orcutt's Brodiaea) Carroll Canyon



Panorama from Southern edge of population, facing East, Southeast, South, Southwest.
Panorama location is 6282439.860 1907633.765 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii — Common Name: Orcutt's Brodiaea
Site Name: Del Mar Mesa obs. #1 — Management Unit #: N/A
Date: 4/24/08 — Management Regime: N/A
Surveyors and Affiliation/Agency: Kell Balo - City of San Diego, MEMO; Jasmine Watts - Helix Environmental

Species Found? [X] Yes [ ] No

Total No. Individuals: 500 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 135.45 — Units: m2 [X] Exact (based on GPS mapping) [ ] Estimate — Based on 2008 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet
Observation Location: 6280079.321 1925054.792 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool / chamise chaparral
Landowner/Manager: City of San Diego Park and Recreation Open Space MHPA
Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: Open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Area is fenced, non-native grass cover high

Management Recommendation/s:
control non-native grasses

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Brodiaea orcuttii	2		
H	Eryngium aristulatum	3		
H	Deinandra fasciculata	35		
H	Navarretia hamata	2		
H	Bromus madritensis ssp rubens*	2		
H	Vulpia myuros*	2		
H	Crassula conata	1		
H	Psilocarphus brevissimus	1		

	Species	Cover	Coll?	Coll. #
S	Adenostema fasciculatum	1		
H	Sisyrinchium bellum	5		
H	Selaginella ssp.	1		
H	Juncus bufonius	1		
S	Isocoma menziesii	3		
H	Hypochaeris glabra*	1		
H	Nassella pulchra	1		

IV. SITE PHOTOMONITORING

Camera type: Cannon Powershot A 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280079.321 1925054.79	NW, N, NE, E	1M	10° downward	117 - 121	L: MSCP/ Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: same photopoint for Eryngium aristulatum

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 33. *Brodiaea orcuttia* (Orcutt's Brodiaea) Del Mar Mesa Observation # 1



Panorama from Northeastern end of population, facing Northwest, North, Northeast, East.
Panorama location is 6280079.32 1925054.79 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiea orcuttii **Common Name:** orcutt's Brodiea

Site Name: Del Mar Mesa ODS. #2 **Management Unit #:** TBA

Date: 4/29/08 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Kell Bailo - City of San Diego - MHPD
Jasmine Wahls - Helix Environmental

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: ~1000 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 2301.67 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously Based on 2008 pop data

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 [X] meters [ ] feet

Observation Location: 6284195.62 1925670.321 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool / scrub oak chaparral

Landowner/Manager: City of San Diego, Park and Recreation, Open Space

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non- native grasses	area is fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Brodiaea orcuttii	3			Adenostoma fasciculata	1		
Eryngium aristulatum	2			Quercus berberidifolia	1		
Pentachaeta fasciculata	80			Crassula aquatica	1		
Sisyrinchium bellum	3			Hypochaeris glabra *	1		
Bromus madritensis ssp rubens *	1			Nassella sp.	1		
Brassica sp.	1			Polygonum sp	1		
Navarretia hamata	1			Gastridium ventricosum	1		
Vulpia myuros *	1						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6284195.62 1925670.321	W, NW, N, NE	1M	Flat	133-137	L: MSCP/ Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Need to GPS observation point
see field map

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 34. *Brodiaea orcuttia* (Orcutt's Brodiaea) Del Mar Mesa Observation # 2



Panorama from Northeastern end of population, facing West, Northwest, North, Northeast.
Panorama location is 6284195.62 1925670.321 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii **Common Name:** Orcutt's brodiaea
Site Name: General Dynamics EPT (1) **Management Unit #:** TBD
Date: 5/6/05 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Patty Miller City of San Diego MSCP
Randy Rodriguez CDFG

Species Found? ☑ Yes ☐ No _____
If not, why (if reason known or suspected)?

Total No. Individuals: 2500 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3501.2 M2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
see GPS mapping 2005

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6291939.00 1880820.84 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Grass, vernal pool

Landowner/Manager: Private ~ LNR Kearny Mesa Inc.

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: transportation, industrial/office park

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
well-traveled path on N side of site	continue access restrictions/signage

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Brodiaea orcuttii	15		
H	Dichondra occidentalis	50		
H	Eryngium aristulatum	10		
H	Psilocarphus brevissimus	1		
H	Popogyne abramsii	2		
H	Lythrum hyssopifolium*	2		
H	Vulpia spp.*	2		
S	Eriogonum fasciculatum	5		

	Species	Cover	Coll?	Coll. #
H	Erodium spp.*	7		
H	Navarretia hamata	1		
H	Eriophyllum confertiflorum	1		
S	Isocoma menziesii	1		
S	Baccharis sarothroides	5		
S	Artemisia californica	15		
S	Opuntia spp.	2		
S	Xylococcus bicolor	1		
H	Centaurea melitensis	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6291939.00 1880820.84	SE-S-SW-W	1.1 m	~10° down	153-158	L:MSCP\Monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: Site in excellent condition given isolated (developed) location

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 36. *Brodiaea orcuttia* (Orcutt's Brodiaea) General Dynamics Eastern Observation # 1



Panorama from Southwestern edge of population, facing Southeast, South, Southwest, West.
Panorama location is 6291939.00 1880820.84 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii **Common Name:** Orcutt's brodiaea

Site Name: General Dynamics lot (Pt 2) **Management Unit #:** TBD

Date: 5/16/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Beth Miller City of San Diego
Randy Rodrigues CDFG

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 250 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1028.404 m² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
see EIS data 2005

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 ☑ meters ☐ feet

Observation Location: 6291522.83 1880729.22 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS, vernal pools

Landowner/Manager: private, check parcel boundary

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: transportation, industrial/business park

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
minimal; volunteer trail on N side of property; small patch mustard SW of photo point

Management Recommendation/s:
maintain access restrictions/ signage

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #		Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	60			H	Psilocarphus brevissimus	5		
S	Eriogonum fasciculatum	5			H	Polypogon monspeliensis	10		
S	Isocoma menziesii	3			H	Unk grass - small	2		
H	Pogogyne abramsii	25			H	Cressa aquatica	2		
H	Brodiaea orcuttii	3							
H	Erodium spp.*	7							
H	Hypochaeris glabra*	1							
H	Deschampsia danthonioides	1							

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6291522.83 1880729.22	SW-W-NW-N	1.1	~10° down	159-166	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 37. *Brodiaea orcuttia* (Orcutt's Brodiaea) General Dynamics Western Observation # 2



Panorama from Southern edge of population, facing Southwest, West, Northwest, North.
Panorama location is 6291522.83 1880729.22 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii **Common Name:** Orcutt's brodiaea
Site Name: Nobel Drive **Management Unit #:** N/A
Date: 22 April 2002 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego MSCP
Jasmine Watts - HELIX Environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 10 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 9.9 m² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate 2005 Mapping

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6271105.37 1896318.934 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool NON-NATIVE grassland

Landowner/Manager: City of San Diego Park and Recreation

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: restoration

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
surrounded by on-going invasive plant removal project + grass thatching

Management Recommendation/s:
continue invasive plant removal, keep up fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Psilocarphus brevissimus	10			Erodium botrys *	25		
Downingia cuspidata	1			Navarretia fossalis	5		
Brodiaea orcuttii	1			Phalaris sp. *	1		
Navarretia fossalis	1			Juncus bufonius	2		
Lythrum hyssopifolia *	3			Bromus hordeaceus *	1		
Deschampsia danthonioides	2			Castilleja exserta (Acad)	1		
Cotula coronopifolia *	3			~~Navarretia fossalis~~			
Polypogon monspeliensis *	1			Eriogonum fasciculatum	15		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A-75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6271105.37 1896318.934	NW, W, SW, S	.9M	downward 20°	82-87	4: MSCP monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

SPECIES	Cover
*Bromus madritensis rubens	2
*Nassella pulchra	4
*Bromus diandrus	1
*Hypochaeris glabra	1
*Avena sp.	1

Photo 38. *Brodiaea orcuttia* (Orcutt's Brodiaea) Nobel Drive



Panorama from Northwestern end of population, facing Northwest, West, Southwest, South.
Panorama location is 6271105.37 1896318.834 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Brodiaea orcuttii **Common Name:** Orcutt's brodiaea

Site Name: USIU / Scripps Miramar Ranch **Management Unit #:** N/A

Date: 22 April 2008 **Management Regime:** N/A

Surveyors and Affiliation/Agency: Betsy Miller – City of San Diego
Jasmine Watts – Helix Environmental

Species Found? ☐ Yes ☒ No burned in 2003 fires inundated w/ weeds
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1195.89 m2 (Units) ☒ Exact (based on GPS mapping) 2003 data ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6302393.501 1905898.594 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-native grassland

Landowner/Manager:

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: Open space (educational institution / military)

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
burned in 2003

Management Recommendation/s:
weed invasive grasses and thistle patch

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Erodium botrys *	80		
Bromus madritensis rubens *	10		
Bromus hordeaceus *	80		
Vulpia sp. *	80		
Sisyrinchium bellum	5		
Carduus pycnocephalus *	2		
Sidalcea malvaeflora	1		
Dichelostemma capitatum	1		

Species	Cover	Coll?	Coll. #
Nassella pulchra	1		
Avena sp. *	2		
Hypochaeris glabra *	80		
Isocoma menziesii	1		
Vicia sp. (V. villosa) *	5		
Deinandra fasciculatus	10		
Bromus diandrus *	1		
Juncus dubius	1		
Centaurea melitensis *	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6302393.501 1905898.594	SW, S, SE, E NE	1.2 m	downward 10°	57-62	L MS(P)Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 39. *Brodiaea orcuttia* (Orcutt's Brodiaea) USIU/Scripps Miramar Ranch



Panorama from Southern end of population, facing Southwest, South, Southeast, East.
Panorama location is 6302393.50 1905898.59 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Ceanothus verrocosus
Wart – Stem Lilac



© Lawrence M. Kelly, 2008

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Ceanothus verrucosus — Common Name: Wart-stemmed Ceanothus
Site Name: Carmel Mountain — Management Unit #: TBD
Date: 6 JUNE 2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JENNIFER VAUGHAN - CITY OF SD MSCP; JASMINE WATTS - HELIX ENVIRONMENTAL

Species Found? [X] Yes [ ] No

Total No. Individuals: 200 + [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 20270.56 m2 (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 10205745.126 1919909.532 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Ceanothus chaparral / Southern mixed chaparral
Landowner/Manager: City of SD Parks + Rec
Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Hiking trail east of population, active construction to the southwest

Management Recommendation/s:
NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Ceanothus verrucosus	60						
Malosma laurina	5						
Xylococcus bicolor	2						
Adenostoma fasciculata	3						
Heinandia fasciculata	1						
Salvia mellifera	1						
Eriogonum fasciculatum	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
10205745.126 1919909.532	SW, W, NW, N	1.1m	10° down	344-347	L MSCP

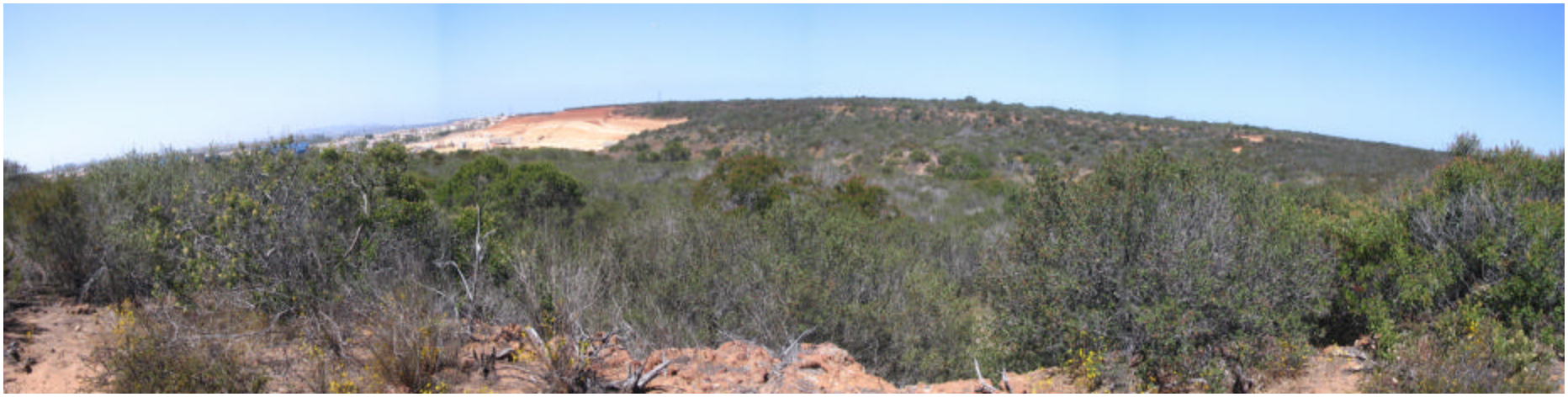
V. OTHER FIELD NOTES

Other Field Notes/Comments: protected vernal pool + dudleya brodiaea areas immediately surrounding of photo point
Will Digitize new POD for 2008

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 40. *Ceanothus verrucosus* (Wart-Stem Lilac) Carmel Mountain



Panorama from Southwestern edge of population, facing Southwest, West, Northwest, North.
Panorama location is 6265745.126 1919909.53 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Ceanothus verrucosus — Common Name: Wart-stemmed ceanothus
Site Name: Crest Canyon — Management Unit #: TBD
Date: 6 JUNE 2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JENNIFER VAUGHAN – CITY OF SD MSCP; JASMINE WATTS – HELIX Environmental

Species Found? [X] Yes [ ] No

Total No. Individuals: 1 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)
If not, why (if reason known or suspected)?

Population/Subpopulation Area: 1529.108 — M2 (Units) [ ] Exact (based on GPS mapping) [X] Estimate Based on map

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet
Observation Location: 0253649.02 1929700.50 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern Mixed Chaparral
Landowner/Manager: City of SD MSCP Parks + Rec.
Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Invasive species

Management Recommendation/s:
NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Adenostoma fasciculatum	25			Rhamnus crocea	1		
Arctostaphylos glandulosa crassifolia	5						
Eriogonum fasciculatum	3						
Piptatherum milliaceum *	2						
Pinus torreyana	5						
Salvia mellifera	<1						
Cardionema ramosissimum	<1						
Ceanothus verrucosus	<1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0253649.02 1929700.50	E, SE, S, SW	1.1m	10° up	378-351	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Good location for Red Mar Monitoring (~ 10 individuals)

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 41. *Ceanothus verrucosus* (Wart-Stem Lilac) Crest Canyon



Panorama from Southwestern end of population, facing East, Southeast, South, Southwest.
Panorama location is 6253649.02 1929700.56 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Cordylanthus orcuttianus
Orcutt's Bird's Beak



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Cordylanthus orcuttianus Common Name: Orcutt's Bird's Beak
Site Name: OTAY RIVER VALLEY Management Unit #: TBD
Date: 2 JUNE 2008 Management Regime: TBD
Surveyors and Affiliation/Agency: JENNIFER VAUGHAN - CITY OF SD MSCP
JASMINE WATTS - HELIX Environmental

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 500 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 692.76 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate See 2005 data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 6316914.067 1794310.964 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Diegan Coastal Sage Scrub

Landowner/Manager: City of SD Park's & Rec

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open Space - OTAY VALLEY REGIONAL PARK

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Trail has been widened and paved with gravel, fence installed on both sides

Management Recommendation/s:
Trail construction per OVPR plan; fence installed as condition of project.

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Cordylanthus orcuttii	7			Dudleya pulverulenta	<1		
Rhus integrifolia	20			Mimulus aurantiacus	<1		
Baccharis sarothroides	5			Gallium sp.	<1		
Heteromeles arbutifolia	1			Rhamnus crocea	<1		
Artemisia californica	1			Avena barbata *	<1		
Bromus madritensis *	1			Vulpia myuros *	<1		
Centaurea melitensis *	<1			Gnaphalium canescens	<1		
Gnaphalium sp.	<1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6316914.067 1794310.964	N, NE, E	1.1m	10-15° down	320-323	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 42. *Cordylanthus orcuttiianus* (Orcutt's Bird's Beak) Otay River Valley



Panorama from Southwestern end of population, facing North, Northeast, East.
Panorama location is 6316914.07 1794310.86 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Cylindropunita californica var. *californica*
Snake Cholla



© City of San Diego, 2002

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Cylindropuntia californica var. californica **Common Name:** Snake Cholla
Site Name: Balboa park **Management Unit #:** TBD
Date: 2 JUNE 2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: JENNIFER VAUGHAN - City of SD MSCP
JASMINE WATTS - HELIX Environmental

Species Found? ☒ Yes ☐ No GPS'd locations
If not, why (if reason known or suspected)?

Total No. Individuals: 3 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 319 M2 (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 10287976.429 1845150.870 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub / Chaparral transition

Landowner/Manager: City of SD Parks + Rec - Regional Developed Parks

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: GOLF COURSE, open space, developed park

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
fountain grass imd. east of photo acacia imd. west of photo	control invasive species

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
YUCCA - schidigera	10		
artemesia californica	40		
ISOMA menziesii	2		
Eriogonum fasciculatum	2		
salvia mellifera	4		
Dendra fasciata	1		
cylindropuntia californica	1		
Ferocactus viridescens	1		

Species	Cover	Coll?	Coll. #
Gnaphalium BICOLOR	<1		
Encelia californica	<1		
Hellanthemum scoparium	<1		
Ceanothus verrucosus	5		
adenostoma fasciculatum	5		
Nassella spp	1		
Antirrhinum nuttallianum	1		
Pennisetum setaceum *	5		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
10287976.429 1845150.870	NW, N, NE	5ft	5° down	314-327	L. MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: One individual located in center of photograph (east of Yucca) and two small individuals located in understory of chamise (seen in photo background) - PHOTOPOINT GPS'd

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 43. *Cylindropuntia californica* var. *californica* (Snake Cholla) Balboa Park



Panorama from Northern edge of population, facing Northwest, North, Northeast.
Panorama location is 6287976.43 1845150.87 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Cylindropuntia californica var. cal. Common Name: Snake Cholla
Site Name: Otay Mesa Management Unit #: TBD
Date: 5/30/08 Management Regime: TBD
Surveyors and Affiliation/Agency: Toby Miller City of San Diego MSCP
Jennifer Vaughan City of San

Species Found? ☑ Yes ☐ No
If not, why (if reason known or suspected)?

Total No. Individuals: 15 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 0.25 acres (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6323469.55 1779652.067 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: maritime succulent scrub

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
nearby dirt road, ORV use - including Border Patrol	hillside relatively undisturbed - do not let road expand

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	1			Euphorbia misera	5		
Bromus madritensis ssp. *	3			Lepidium latifolia	1		
Nassella (c.f. pulchra)	1			Erodium sp. *	3		
Eriogonum fasciculatum	1			Artemisia californica	1		
Simmondsia chinensis	15			Brassica sp. *	<1		
Cylindropuntia prolifera	2			Pennisetum setaceum *	<1		
Cylindropuntia californica var. cal.	1						
Viguiera laciniata	3						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6323469.55 1779652.067	E-NE-N	1.52 m	~5-10° up	317-319	L:MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Point established 2007; however, GPSed location 2008

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 44. *Cylindropuntia californica* var. *californica* (Snake Cholla) Otay Mesa



Panorama from Northern edge of population, facing East, Northeast, North.
Panorama location is 6323469.55 1779652.07 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Cylindropuntia californica var. californica **Common Name:** Snake Cholla

Site Name: Spring Canyon **Management Unit #:** TBD

Date: 5/30/06 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Toby Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 30 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 0.6 acres (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6330060.051 1781287.695 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Maritime Succulent Scrub

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
off road vehicles (incl. border patrol) invasive non-native grasses	limit ORV use

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
S	Simmondsia chinensis	7		
H	Bromus madritensis ssp. rubens *	5		
H	Erodium spp. (senesced)	25		
H	Deinandra fasciculata	3		
H	Centaurea melitensis *	1		
S	Artemisia californica	3		
S	Viguiera laciniata	1		
H	Avena sp. *	1		

	Species	Cover	Coll?	Coll. #
S	Ambrosia chenopodifolia	1		
H	Brassica sp.* (senesced)	2		
S	Cylindropuntia californica var. c.	1		
H	Gamochaeta sp.	<1		
H	Lamarckia aurea *	<1		
S	Euphorbia misera	5		
H	Muhlenbergia microsperma	<1		
H	Perezia/Acourtia viridescens	<1		
S	Salsola tragus *	<1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6330060.051 1781287.695	N-NE-E-SE	5 ft	~5° down	300-303	L/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: observed northern harrier (nested across canyon to south in 2005) and CAGN - 5 individuals believed to be family group with fledged young; GPS point not recorded for 2007 - used photo to find location

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 45. *Cylindropuntia californica* var. *californica* (Snake Cholla) Spring Canyon



Panorama from Northeastern edge of population, facing North, Northeast, East, Southeast.
Panorama location is 6330060.05 1781287.695 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Deinandra conjugens
Otay Tarplant



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Deinandra conjugens **Common Name:** otay tarplant

Site Name: Dennery Ranch **Management Unit #:** TBA

Date: 6/13/08 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Beth Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 1 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3023.04 M2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see 0001 GPS file

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6321404.87 1791630.28 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal sage scrub

Landowner/Manager: City of San Diego

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: residential/development, open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):

invasive species (Bromus sp)

Management Recommendation/s:

ϕ

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Artemesia californica	20			Rosa minutifolia	<1		
Deinandra fasciculata	10			Simmondsia chinensis	1		
Deinandra conjugens	<1			Baccharis sarothroides	<1		
Eriogonum fasciculatum	<1						
* Bromus madritensis sp. rubens	35						
Rhus integrifolia	1						
Viguiera laciniata	1						
Ericameria californica	1						

IV. SITE PHOTOMONITORING

Camera type: canon powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6321404.87 1791630.28	S-SE-E	1.1m	~5° up	336-339	L.MSCP

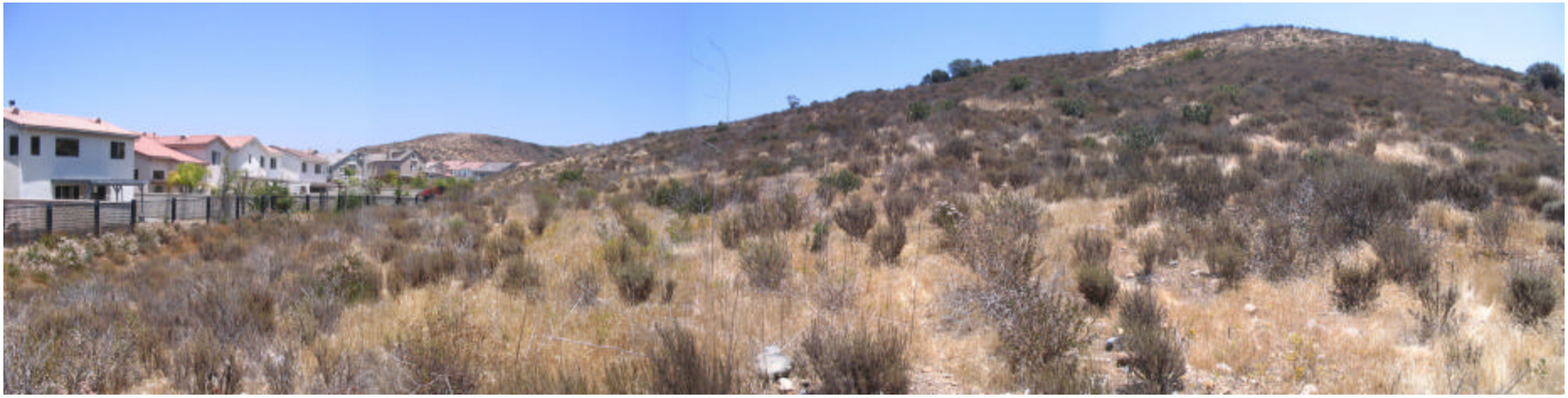
V. OTHER FIELD NOTES

Other Field Notes/Comments: 3 ind. CACN observed at photopoint

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 46. *Deinandra conjugens* (Otay Tarplant) Dennery Ranch



Panorama from Southern edge of population, facing South, Southeast, East.
Panorama location is 6321404.87 1791630.28 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Deinandra conjugens **Common Name:** Otay Tarplant
Site Name: Proctor Valley **Management Unit #:** TBD
Date: June 5, 2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Roxy Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No
If not, why (if reason known or suspected)?

Total No. Individuals: 2000 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3347.34 M2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see 2005 GPS data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet
Observation Location: 6353224.493 1825326.858 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Native/non-native grassland
Landowner/Manager: City of San Diego Water Dept
Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
non-native vegetation
too-frequent fire regime
ORV use

Management Recommendation/s:
ORV use limited by fences

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra conjugens	10			Nassella pulchra	5		
Deinandra fasciculata	20			* Brassica nigra (senesced)	3		
Lotus scoparius	<1			Calocortus splendens (senesced)	<1		
Isocoma menziesii	5			Dichelostemma capitatum (senesced)	1		
* Avena fatua	5			* Salsola tragus	1		
+ Cynara cardunculus	1			* Brachypodium distachyon	10		
Baccharis sarothroides	<1			Chloragalum sp.	<1		
* Lolium multiflorum	10						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6353224.493 1852532[illegible]	E, SE, S	53"	down ~ 5°	337-339	4/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 47. *Deinandra conjugens* (Otay Tarplant) Proctor Valley



Panorama from Southeastern edge of population, facing East, Southeast, South.
Panorama location is 6353224.49 18525326.86 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Dudleya blochmaniae ssp. *brevifolia*
Short-Leaved Dudleya



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp brevifolia Common Name: Short-leaved Dudleya
Site Name: Carmel Mtn Subpop #1 Management Unit #: TBD
Date: 5/16/08 Management Regime: TBD
Surveyors and Affiliation/Agency: Barbara Miller City of San Diego
Kirk Steer SANBAG

Species Found? ☑ Yes ☐ No

Total No. Individuals: 500 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 300 m² (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet
Observation Location: 6264028.673 1920613.917 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: opening within CSS, maritime scrub
Landowner/Manager: City of San Diego Park + Recreation Open Space
Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, trails

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
nearby trail; however does not appear to affect population	none

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #		Species	Cover	Coll?	Coll. #
H	Selaginella cinerascens	30			H	Crassula connata	<1		
H	Deinandra fasciculata	<1			H	Centaurea melitensis *	<1		
H	Dudleya blochmaniae ssp b.	<1			H	Antirrhinum nuttallianum	<1		
H	Perezia virideiscens	<1			H	Vulpia myuros *	<1		
S	Adenostoma fasciculata	<1				Chorizanthe fimbriata	<1		
S	Eriogonum fasciculatum	<1							
H	Osmadenia tenella	<1							
H	Bromus madritensis *	<1							

IV. SITE PHOTOMONITORING

Camera type: Olympus Stylus 1125 SW

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6264028.673 1920613.917	SW w/ NW.N	~50'	~10° down	76-81	L: MSCP/ Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 48. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Carmel Mountain Subpopulation # 1



Panorama from Northwestern edge of population, Southwest, West, Northwest, North.
Panorama location is 6264028.67 1920613.92 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp previfolia Common Name: Short-leaved Dudleya

Site Name: Carmel Mountain - Subpop #2 Management Unit #: TBD

Date: May 16 2008 Management Regime: TBD

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego; Keith Greer SANDAG

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 400 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 250 m² (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6265096.736 1920365.402 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: openings within chamise chaparral

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, nearby trail

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):

nearby trail, does not appear to be impacting site; broken beer bottles

Management Recommendation/s:

maintain existing fence

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
S	Adenostoma fasciculata	10		
S	Eriogonum fasciculatum	2		
H	Dudleya lanceolata	<1		
H	Deinandra fasciculata	1		
H	Selaginella cinerascens	70		
S	Xylococcus bicolor	<1		
H	Crassula connata	1		
H	Navarretia hamata	<1		

	Species	Cover	Coll?	Coll. #
H	Bromus madritensis *	<1		
H	Cardionema ramosissimum	<1		

IV. SITE PHOTOMONITORING

Camera type: Kodak disposible

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6265096.736 1920365.402	N, NE, E, SE	53"	~10° down	24-20	L:MSCP/Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Selaginella covered 1 cover

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 49. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Carmel Mountain Subpopulation # 2



Panorama from Northeastern edge of population, North, Northeast, East, Southeast.
Panorama location is 6265696.74 1920365.46 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp brevifolia **Common Name:** Short-leaved Dudleya

Site Name: Carmel Mountain - Subpop #3 **Management Unit #:** TBD

Date: May 16, 2008 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Robert Miller City of San Diego
Kelly Gear SANDAG

Species Found? ☑ Yes ☐ No

Total No. Individuals: 1500 W of trail 2500 E of trail ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 670 m² Units ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☑ meters ☐ feet

Observation Location: 0265528.098 1920724.110 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: opening in chamise chaparral

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, trail through center of population

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
trail through population - now closed	NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
H. Dudleya brevifolia	5			Ferocactus viridescens	1		
S. Eriogonum fasciculata	1			Crassula connata	1		
Artemisia californica	1			Chorizanthe fimbriata	1		
Hyptosma laurina	1			Juncus litoralis	1		
Selaginella cinerascens	35			Nassella pulchra	1		
Delmadria fasiculata	1			Nassella lepida	1		
Bromus madritensis *	1						
Plantago erecta	1						

IV. SITE PHOTOMONITORING

Camera type: Kodak disposable

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0265528.098 1920724.110	SE, S, SW, W, NW	50"	down ~ 10°	13-17	L: MSCP/ monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 50. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Carmel Mountain Subpopulation # 3



Panorama from Southwestern edge of population, Southeast, South, Southwest, West, Northwest.
Panorama location is 6265528.09 1920724.12 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp. brevifolia **Common Name:** Short-leaved Dudleya

Site Name: Crest Cut - Northern Subpop **Management Unit #:** TBD

Date: May 16, 2008 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Peter Miller City of San Diego MSCP
with Gen SANDAG

Species Found? ☑ Yes ☐ No

Total No. Individuals: 500 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 150 m2 Units ☐ Exact (based on GPS mapping) ☐ Estimate see previous GPS files 2005

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0253917.074 1928311.120 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: opening within maritime succulent scrub

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
adjacent property appears to be utilizing area as yard (electric dog fence visible) - Ø dog scat observed	curtail use, if any, by adjacent landowners; remove ice plant @ E edge on private prop if possible

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Dudleya edulis	1		
H	Dudleya lanceolata	1		
S	Malosma laurina	5		
S	Eriogonum fasciculatum	5		
S	Rhus integrifolia	3		
H	Nassella pulchra	<1		
H	Lasthenia glabrata	1		
H	Chlorogalum parviflorum	<1		
H	Carpobrotus edulis *	1		
S	Lotus scoparius	<1		
H	Selaginella cinerascens	10		
H	Bromus madritensis *	<1		
H	Dudleya pulverulenta	<1		
H	Cnaphalium stramineum	<1		

IV. SITE PHOTOMONITORING

Camera type: Kodak disposable

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0253917.074 1928311.120	W - N - E	52"	down ~10°	0-7	L MSCP monitoring
Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 51. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Crest Canyon – Northern Subpopulation



Panorama from Northeastern edge of population, West, North, East.
Panorama location is 6253917.07 1928311.12 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp brevifolia **Common Name:** Short-leaved Dudleya

Site Name: Crest Cyn - Southern Subpop **Management Unit #:** 730

Date: May 16 2008 **Management Regime:** 730

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Kelly Greer SANDAG

Species Found? ☑ Yes ☐ No

Total No. Individuals: 4 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 170 m² Units ☐ Exact (based on GPS mapping) - ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously See previous GPS file 2006 data

If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6253843.223 1927609.020 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: opening in Southern Mixed Chaparral

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, trail

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
trail through center of population	install fencing along trail

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
H Dudleya brevifolia	<1						
H Deinandra fasciculata	2						
H Chlorogalum parviflorum	<1						
S Adenostoma fasciculatum	1						
H Bromus tectorum	<1						
H Spergularia sp.	<1						

IV. SITE PHOTOMONITORING

Camera type: Kodak disposable

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253843.223 1927609.020	Mod. N, NE	50"	~down 5°	7-9	L: MSCP/monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: a cabbit found at southernmost polygon

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 52. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Crest Canyon – Southern Subpopulation



Panorama from Northern edge of population, Northwest, North, Northeast.
Panorama location is 6253843.22 1927609.02 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya blochmaniae ssp brevifolia **Common Name:** Short-leaved Dudleya
Site Name: Skeleton Canyon **Management Unit #:** TBD
Date: May 16 2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Pete Miller City of San Diego MSCP
Kelly Gaar SANDAG

Species Found? ☑ Yes ☐ No

Total No. Individuals: 30 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 17.95 m² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously see previous GPS mapping 2002
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0256047.21 1897399.084 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: CSS openings

Landowner/Manager: UCSD

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, trail through population

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
trail through population	reroute trail

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #		Species	Cover	Coll?	Coll. #
H	Dudleya brevifolia	<1			S	Lotus scoparius	<1		
S	Artemisia californica	1			S	Adenostoma fasciculata	1		
S	Eriogonum fasciculatum	2			H	Cryptantha californica	<1		
H	Allium spp.	2			H	Pectocarya linearis	5		
H	Deinandra fasciculata	10							
H	Dudleya edulis	1							
H	Crassula connata	7							
	Selaginella cinerascens	30							

IV. SITE PHOTOMONITORING

Camera type: Kodak disposable

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0256047.21 1897399.084	W, NW, N	5'2"	down ~5°	13-10	L. MSCP monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 53. *Dudleya blochmaniae* spp. *brevifolia* (Short-Leaved Dudleya) Skeleton Canyon



Panorama from Northern edge of population, West, Northwest, North.
Panorama location is 6256047.211 1987399.08 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Dudleya variegata
Variegated Dudleya



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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya
Site Name: Black Mtn East **Management Unit #:** TBD
Date: 5/22/2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Jasmine Woods - Helix Environmental
Jennifer Vaughan - City of SD MSCP

Species Found? ☐ Yes ☒ No If not, why (if reason known or suspected)?

Total No. Individuals: Ø ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: Ø Units ☐ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☐ meters ☐ feet
Observation Location: 6291943.74 1939635.453 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Non-native Grassland w/ patches of Native Grassland & CSS
Landowner/Manager: City of SD Parks & Rec
Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor
Surrounding land use: Carmel Vlly Rd to West, Powerline/Open Space to East

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Invasives: non-native grasses & artichoke thistle	Control non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Nassella pulchra	5			Calystegia macrostegia	4		
Brachypodium distachyon *	35			Erodium cicutarium *	1		
Bromus diandrus *	1			Crassula connata	<1		
Cynara cardunculus *	5			Isocoma menziesii	2		
Eriogonum fasciculatum	1			Bromus hordeaceus *	1		
Salvia apiana	3			Chlorogalum pomeridium	<1		
Artemisia californica	3			Rhus integrifolia	1		
Avena sp. *	1			Brassica sp. *	3		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6291943.74 1939635.453E	SES	1.1m	5° down	282-284	L:MSCP/Monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Chrysanthemum coronarium *	1
Hazardia squarrosa	<1

Photo 54. *Dudleya variegata* (Variegated Dudleya) Black Mountain East



Panorama from Southeastern edge of population, facing East, Southeast, South.
Panorama location is 6291943.74 1939635.45 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** variegated dudleya

Site Name: East Elliot - creek **Management Unit #:** TBD

Date: 5/21/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Jasmine Wahl - Helix Environmental
Jennifer Vaughan - City of San Diego, MSCP

Species Found? ☒ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 210 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1,725 m² (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6311394.856 1897093.542 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub / Non-native Grassland

Landowner/Manager: City of SD Parks + Rec

Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grass abundance	Control non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Dudleya variegata	1		
Calochortus splendens	1		
Avena sp. *	50		
Nassella pulchra	5		
Artemisia californica	<1		
Lepidium lasiocarpum *	1		
Erodium sp. *	1		
Eriogonum fasciculatum	1		

Species	Cover	Coll?	Coll. #
Isocoma menziesii	3		
Rhus integrifolia	<1		
Brassica sp. *	1		
Opuntia littoralis	1		
Bromus madritensis *	3		
Filago gallica *	1		
Calystegia macrostegia	<1		
Plantago sp.	<1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6311394.856 1897093.542	SW, W, NW, N	1.1m	level	258-261	L MSCP monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Stephanomeria exigua	<1
Centaureum venustum	<1
Lotus scoparius	2
Centaurea melitensis *	1

Photo 55. *Dudleya variegata* (Variegated Dudleya) East Elliot - Creek



Panorama from Northwestern edge of population, facing Southwest, West, Northwest, North.
Panorama location is 6316694.86 1897093.54 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya

Site Name: East Flank – Hilltop **Management Unit #:** TBD

Date: 5/21/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Jasmine Walls – Helix Environmental; Jennifer Vaughan – City of San Diego, MSCP

Species Found? ☒ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 180 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 345 m² (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6316264.1260 1897663.7101 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Chaparral / Coastal Sage Scrub Ecotone

Landowner/Manager: City of S.D. Parks & Rec.

Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native grasses	prevent expansion of non-native grasses

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Adenostoma fasciculata	15			Xylococcus bicolor	2		
Deinandra fasciculata	20			Salvia mellifera	1		
Lotus scoparius	2			Helianthemum scoparium	1		
Calochortus weedii	<1			Ferocactus viridescens	>1		
Avena sp. *	4			Porophyllum gracile	3		
Chlorogalum pomeridium	1			Eriogonum fasciculatum	1		
Nassella pulchra	3			Dichondra occidentalis	1		
Hesperoyucca whipplei	1			Artemisia californica	1		
				Dudleya variegata	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6316264.1260 1897663.7101	SE, S, SW	1.1 m	Flat	251-253	L:MSCP/monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Bromus madritensis *	3
Navarretia hamata	<1
Filago gallica *	<1
Crassula conata	<1
Stephanomeria exigua	<1
Rhus integrifolia	2
Gallium sp.	>1

*NOTE: Yucca whipplei is now Hesperoyucca whipplei

Photo 56. *Dudleya variegata* (Variegated Dudleya) East Elliot - Hilltop



Panorama from the Southwestern edge of population, facing Southeast, South, Southwest.
Panorama location is 6316264.13 1897663.71 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata | Common Name: variegated Dudleya
Site Name: East Elliot - slope | Management Unit #: TBD
Date: 5/21/08 | Management Regime: TBD
Surveyors and Affiliation/Agency: Jasmine Watts - Helix Environmental
Jennifer Vaughan - City of San Diego, MSCP

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 130 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1,155 m² (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6315780.586 1896406.988 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub NON-native grassland

Landowner/Manager: City Park and Rec

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [X] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NON-Native grasses (Avena sp.)	control invasives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*'Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	40			Lotus scoparius	4		
Avena sp. *	35			Nassella pulchra	1		
Ferocactus viridescens	<1			Erodium sp. *	1		
Dudleya variegata	<1			Salvia apiana	<1		
Isocoma menziesii	5			Centaurea melitensis *	5		
Eriogonum fasciculatum	2			Hypochaeris glabra *	1		
Bromus madritensis *	3						
Lepidium lasiocarpum *	2						

IV. SITE PHOTOMONITORING

Camera type: canon powershot A 77

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6315780.586 1896406.988	W. NW, N, NE	1.1M	FLAT	254-257	L:MSCP/Monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: Species difficult to locate amongst will be transplant

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 57. *Dudleya variegata* (Variegated Dudleya) East Elliot - Slope



Panorama from the Southern edge of population, facing West, Northwest, North, Northeast.
Panorama location is 6315780.58 1896466.98 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya

Site Name: Carl Mesa/Spring Canyon **Management Unit #:** TBD

Date: 5/30/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Bobby Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☐ Yes ☑ No large known populations is okay did not come up this yr
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 802.57 M2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see previous GPS files 2004

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6330814.789 1782236.1142 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Maritime Succulent Scrub

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
ORVs
illegal trespass/dumping/grazing (known historically)

Management Recommendation/s:
adjacent trail closed as part of 2006 TransNet vernal pool grant project

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Erodium sp.	20		
H	Selaginella cinerascens	15		
S	Eriogonum fasciculatum	5		
H	Nassella lepida	2		
H	Deinandra fasciculata	5		
S	Artemisia californica	1		
S	Simmondsia chinensis	7		
H	Bromus madritensis ssp rubens	7		

	Species	Cover	Coll?	Coll. #
H	Ferocactus viridescens	1		
S	Cylindropuntia prolifera	<1		
S	Ambrosia chenopodiifolia	<1		
H	Avena barbata	<1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A76

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6330814.789 1782236.1142	SE-S-SW	1.1m	0°	303-305	1/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: >100 Myrsaurus minimus in road pool (recently fenced) just west of photopoint

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 58. *Dudleya variegata* (Variegated Dudleya) Goat Mesa/Spring Canyon



Panorama looking towards the Southwestern edge of the population, facing Southeast, South, Southwest.
Panorama location is 6330814.78 1782263.11 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya

Site Name: LAKE MURRAY **Management Unit #:** TBD

Date: 5/22/2008 **Management Regime:** TBD

Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX Environmental
JENNIFER VAUGHAN - City of SD MSCP

Species Found? ☐ Yes ☒ No Too late? (MAJORITY OF ANNUAL SPECIES ARE DRY)
If not, why (if reason known or suspected)?

Total No. Individuals: Ø ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: Ø _____ Units ☐ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☐ meters ☐ feet

Observation Location: 6316360.348 1865115.090 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub

Landowner/Manager: City of SD Parks + Rec

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Open Space / Recreation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
No obvious threats	NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Eriogonum fasciculatum	3			Filago sp.	1		
Artemisia californica	5			Vulpia myuros	1		
Baccharis sarothroides	2			Crassula connata	1		
Viguiera laciniata	2			Lepidium lasiocarpum *	1		
Malosma laurina	<1			Deinandra fasciculata	<1		
Selaginella cinerascens	2						
Bromus madritensis *	1						
Brassica sp. *	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6316360.348 1865115.090	NE, E, SE	1.1 m	5° down	295-297	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 59. *Dudleya variegata* (Variegated Dudleya) Lake Murray



Panorama looking towards the Northeastern edge of the population, facing Northeast, East, Southeast.
Panorama location is 6316360.35 1865115.09 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya

Site Name: Mama Valley **Management Unit #:** TBD

Date: 4/24/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Keli Bale City of San Diego Metro

Species Found? ☑ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 800 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 150 m² Units ☑ Exact (based on GPS mapping) ☐ Estimate see GPS data 2003/2005

Collection (if not collected previously)? ☐ Yes ☐ No ☑ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6407136.242 1787954.48 ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Disturbed CSS (post-fire) + NNG

Landowner/Manager: City of San Diego Water Department

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
1 ORV track through base of upper population; gopher activity abated; NNE invasion (due to altered fire regime) greatest threat

Management Recommendation/s:
invasives removal if species appear to be in decline. continue stringent access restrictions

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Dudleya variegata	2		
H	Bloomeria clevelandii	2		
H	Gastridium ventricosum*	10		
H	Lamarkia aurea *	1		
H	Erodium (c.f. moschatum)*	40		
H	Avena spp. *	3		
H	Bromus madritensis ssp rubens*	5		
H	Isocoma menziesii	1		

	Species	Cover	Coll?	Coll. #
H	Crassula connata	7		
H	Silene gallica	1		
H	Bloomeria clevelandii	2		
H	Plantago erecta	3		
H	Selaginella cinerascens	5		
H	Vulpia myuros var. hirsuta*	15		
H	Osmadenia tenella	1		
H	Lepidium nitidum var. nitidum*	1		
H	Centaurium venustum	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6407136.242 1787954.48	SE S SW	27"	Hot	109-111	L:\MSCP\ monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Border Patrol 619 671 1800 - contact previous to site visit - request escort # from officer Espiritu 4/28 9:05

Photo 60. *Dudleya variegata* (Variegated Dudleya) Marron Valley



Panorama from Northern edge of population, facing Southeast, South, Southwest.
Panorama location is 6407136.24 1787954.48 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata — Common Name: Variegated Dudleya
Site Name: MERCY ROAD — Management Unit #: TBD
Date: 5/22/2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX ENVIR
JENNIFER VAUGHAN - City of SD MSCP

Species Found? [X] Yes [ ] No

Total No. Individuals: 30 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 25 m² (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet
Observation Location: 6294234.759 1924445.8530 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub
Landowner/Manager: City of SD Parks & Rec
Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: Open space, residential to the North

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Non-native grasses

Management Recommendation/s:
Control non-native grasses (i.e., Brachypodium)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Brachypodium distachyum *	40		
Deinandra fasciculata	10		
Isocoma menziesii	2		
Rhus integrifolia	2		
Eriogonum fasciculatum	2		
Nassella pulchra	5		
Ispensis arborea	1		
Adolphia californica	3		
Artemisia californica	3		
Centaurea melitensis *	2		
Brassica sp. *	2		
Lotus scoparius	1		
Chlorogallum pomeridianum	1		
Lepidium lasiocarpum *	<1		
Ferocactus viridescens	<1		
Plantago erecta	<1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6294234.759 1924445.8536	SW, W, NW	1.1m	C° down	291-293	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Photo # 294 of exant population.
located 57 m EAST of photo location (triangle polygon in 2003)
2008 population shapefile created -

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 61. *Dudleya variegata* (Variegated Dudleya) Mercy Road



Panorama from Northwestern edge of population, facing Southwest, West, Northwest.
Panorama location is 6294234.76 192445.85 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata — Common Name: Variegated Dudleya
Site Name: MTRP Subpop1 — Management Unit #: TBD
Date: 5/21/2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX Environmental
JENNIFER VAUGHAN - City of SD MSCP

Species Found? ☐ Yes ☒ No — May have already bloomed (senesced)? If not, why (if reason known or suspected)?

Total No. Individuals: Ø ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: Ø Units ☒ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☒ meters ☐ feet
Observation Location: 6309627.3055 1879705.9121 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub
Landowner/Manager: City of San Diego Parks & Rec.
Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: Open Space Preserve

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
high cover of non-native grasses	Control/Weed non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	8			Nassella lepida	1		
Eriogonum fasciculatum	2			Malosma laurina	1		
Avena sp. *	1			Bromus madritensis *	4		
Erodium sp. *	1			Carpobrotus edulis *	<1		
Lotus scoparius	3			Vulpia myuros *	1		
Isomeris arborea	1			Brachypodium distachyum *	20		
Ferocactus viridescens	1			Calochortus splendens	<1		
Artemisia californica	1			Lepidium lasiocarpum *	<1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6309627.3055 1879705.914	NW, N, NE	1.1m	5° down	248-270	L. MSCP | monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Plantago erecta	< 1
Filago gallica *	< 1
Selaginella cinerascens	1
Viguiera laciniata	< 1
Centaurea melitensis *	< 1

Photo 62. *Dudleya variegata* (Variegated Dudleya) Mission Trails Regional Park Subpopulation # 1



Panorama from the Southern edge of population, facing Northwest, North, Northeast.
Panorama location is 6309627.30 1879705.91 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata | Common Name: variegated dudleya
Site Name: Mission Trails subpop #2 | Management Unit #: TBA
Date: 5/21/08 | Management Regime: TBA
Surveyors and Affiliation/Agency: Jasmine Wahl, Helix environmental; Jennifer Vaughan, City of San Diego, MSCP

Species Found? [X] Yes [ ] No

Total No. Individuals: 70 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 241 m² (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet
Observation Location: 6309627.305 1879705.912 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal sage scrub / grassland
Landowner/Manager: City of SD Park & Rec
Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: open space preserve

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Dominance of non-native grasses	Control non-native grasses (i.e., Brachypodium)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Eriogonum fasciculatum	1			Ferocactus viridescens	<1		
Deinandra fasciculata	1			Erodium sp. *	1		
Avena sp. *	3			Bromus madritensis *	2		
Nassella pulchra				Dudleya variegata	<1		
Malosma laurina	1			Isocoma menziesii	1		
Lotus scoparius	2			Brassica sp. *	1		
Hazardia squarrosa	<1			Baccharis sarothroides	<1		
Lomatium sp.	<1			Brachypodium distachyon *	20		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A 75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6309627.305 1879705.912	W, NW, N	1.1 M	down 10-15°	262-264	L: MSCP/Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 63. *Dudleya variegata* (Variegated Dudleya) Mission Trails Regional Park Subpopulation # 2



Panorama from Northeastern edge of population, facing West, Northwest, North.
Panorama location is 6309627.31 1879705.91 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya
Site Name: MTRP Subarea 3 **Management Unit #:** TBD
Date: 5/21/2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX Environmental
JENNIFER VAUGHAN - City of SD MSCP

Species Found? ☒ Yes ☐ No

Total No. Individuals: 50 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 44 m2 (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6309578.77 1880426.963 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub
Landowner/Manager: City of SD Parks & Rec.
Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: Open Space Preserve

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Dominance of non-native grasses	Control non-native species (i.e., Vulpia)

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Dudleya variegata	1			Isocoma menziesii	<1		
Lotus scoparius	3			Erodium sp. *	1		
Malosma laurina	2			Vulpia myuros *	10		
Calochortus splendens	<1			Bromus madritensis *	1		
Eriogonum fasciculatum	1			Nassella pulchra	<1		
Opuntia littoralis	1			Osmadenia tenella	<1		
Avena sp. *	4			Lepidium lasiocarpum *	<1		
Brachypodium distachyon *	4			Plantago erecta	<1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6309578.77 1880426.963	SE, S, SW	1.1 m	5-10° down	265-267	L. MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 64. *Dudleya variegata* (Variegated Dudleya) Mission Trails Regional Park Subpopulation # 3



Panorama from Southwestern edge of population, facing Southeast, South, Southwest.
Panorama location is 6309578.77 1880426.96 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata — Common Name: Variegated Dudleya
Site Name: Navajo / Mission Gorge — Management Unit #: TBD
Date: 5/21/2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JASMINE WATTS - HELIX Environmental
JENNIFER VAUGHAN - City of SD MSCP

Species Found? ☒ Yes ☐ No — If not, why (if reason known or suspected)?

Total No. Individuals: 500 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 896.812 m² (Units) ☐ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously — Based on 2001 data
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 0313035.509 1873559.4184 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub

Landowner/Manager: City of SD Parks & Rec

Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Rancho Mission Canyon Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Non-native grasses

Management Recommendation/s:
Control non-native

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Kocoma menziesii	5		
Brassica sp. *	15		
Rhus integrifolia	1		
Artemisia californica	1		
Bromus hordeaceus *	1		
Brachypodium distachyon *	30		
Erodium sp. *	1		
Deinandra fasciculata	1		

Species	Cover	Coll?	Coll. #
Eriogonum fasciculatum	2		
Dudleya variegata	2		
Avena sp. *	1		
Filago gallica *	1		
Nassella sp.	<1		
Mimulus aurantiacus	<1		
Baccharis sarothroides	<1		
Sisyrinchium bellum	1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0313035.509 1873558.4184	NE, E, SE	1.1m	5-10° down	271-273	L: MSCP monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: GPS battery dead, See Aerial Map for hand drawn photo location

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

	Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair or Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Eriophyllum confertiflorum	<1
Bloomeria crocea	<1
Hypochaeris glabra *	1
Centaurea melitensis *	1

Photo 65. *Dudleya variegata* (Variegated Dudleya) Navajo/Mission Gorge



Panorama from Northeastern edge of population, facing Northeast, East, Southeast.
Panorama location is 6313035.51 1873558.42 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** variegated dudleya
Site Name: Otay Lakes **Management Unit #:** N/A
Date: 5/10/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Jasmine Watts - Helix Environmental
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☐ Yes ☒ No If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 72701.98 m2 (Units) ☐ Exact (based on GPS mapping) ☐ Estimate Based on 2004 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6356396.908 1807139.545 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal pools - Mima mounds / CSS
Landowner/Manager: City of S.D.
Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Non-native Erodium + Bromus	Control of non-native species

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	60			Bromus madritensis *	3		
Eriogonum fasciculatum	5			Avena barbata *	1		
Erodium sp. *	45			Isocoma menziesii	2		
Lepidium nitidium *	1			Cressa truxulensis	1		
Chlorogallum pomeridianum	1			Salvia mellifera	1		
Salsola tragus *	1						
Cuscuta sp.	1						
Bloomeria clevelandii	1						

IV. SITE PHOTOMONITORING

Camera type: canon powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6356396.908 1807139.545	N, NE, E, SE	0.85m	10° up	191-195	L MSCP\monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 66. *Dudleya variegata* (Variegated Dudleya) Otay Lakes



Panorama from Northeastern edge of the population, facing North, Northeast, East, Southeast.
Panorama location is 635639.91 1807139.55 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegata Dudleya

Site Name: Otay Mesa (Ocean View Hills) **Management Unit #:** TBD

Date: 5/23/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Toby Miller City of San Diego
Jasmine Watts Helix Env

Species Found? ☐ Yes ☑ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 4337.93 m2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see 2001 GPS data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- _____ ☐ meters ☐ feet

Observation Location: _____ _____ ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: CSS/MSS

Landowner/Manager: City of San Diego

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: _____

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #

IV. SITE PHOTOMONITORING

Camera type: _____

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s

V. OTHER FIELD NOTES

Other Field Notes/Comments: Presence/absence survey only (no habitat assessment/photomonitoring); Site NOT recommended for monitoring per CBI 2001

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata **Common Name:** Variegated Dudleya
Site Name: Paradise Valley **Management Unit #:** TBD
Date: 5/13/2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller - City of SD MSCP
Jasmine Watts - Helix Env

Species Found? ☑ Yes ☐ No _____
If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: _____ _____ Units ☑ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- _____ ☐ meters ☐ feet

Observation Location: _____ _____ ☐ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: CSS

Landowner/Manager: City of SD Park + Rec

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: adjacent area 10% non-native grasses

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species - Dominant	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Dichondra conjugens							
Nassella sp.							
Eriogonum fasciculatum							
Rhus integrifolia							

IV. SITE PHOTOMONITORING

Camera type: _____

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s

V. OTHER FIELD NOTES

Other Field Notes/Comments: Presence/absence survey only (no habitat assessment/photo monitoring); GPS'd population boundary. Site NOT recommended for monitoring per CBI 2001.

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Dudleya variegata — Common Name: Variegated Dudleya
Site Name: Santa Luz — Management Unit #: TBD
Date: 5/22/2008 — Management Regime: TBD
Surveyors and Affiliation/Agency: JASMINE WIANS - HELIX Environmental
JENNIFER VAUGHAN - City of SD MSCP

Species Found? ☒ Yes ☐ No

Total No. Individuals: 70 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 0.5 m² (Units) ☐ Exact (based on GPS mapping) ☒ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector — Collection Number — Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☐ meters ☐ feet

Observation Location: 4289735.9606 1940293.5605 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal Sage Scrub

Landowner/Manager: City of SD Parks & Rec

Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Non-native grasses
Actively weeded in immediate vicinity of existing population

Management Recommendation/s:
Population currently protected by chicken wire and non-native grasses have been removed
CONTINUE CURRENT EFFORTS

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Deinandra fasciculata	50		
Rhus integrifolia	1		
Eriogonum fasciculatum	2		
Brachypodium distachyon *	5		
Bromus madritensis *	1		
Vulpia myuros *	1		
Artemisia californica	5		
Isocoma menziesii	5		

Species	Cover	Coll?	Coll. #
Avena sp. *	1		
Brassica sp. *	1		
Calystegia macrostegia	1		
Cynara *	<1		
Conyza canadensis *	<1		
Nassella sp.	1		
Erodium sp. *	<1		
Dudleya variegata	<1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
4289735.9606 1940293.5605	SW, W, NW	1.1m	level	278-280	L MSCP monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Population located near small rock pile depicted in left half of photo

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

	Vegetation Structure intact or nearly so Cover/abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-70% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Sonchus asper *	<1
Chlorogellum pomeridium	1
Anagallis arvensis *	<1
Anthemis cotula *	1

Photo 67. *Dudleya variegata* (Variegated Dudleya) Santa Luz



Panorama from Northeastern edge of population, facing Southwest, West, Northwest.
Panorama location is 6289735.96 1940293.56 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Eryingium aristulatum var. *parishii*
San Diego Button Celery



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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum — Common Name: San Diego Button Celery
Site Name: Del Mar Mesa obs. 1 — Management Unit #: N/A
Date: 4/29/08 — Management Regime: N/A
Surveyors and Affiliation/Agency: Kali Balo - City of San Diego - Metro
Jasmine Watts - Helix Environmental

Species Found? [X] Yes [ ] No

Total No. Individuals: 500 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates) — If not, why (if reason known or suspected)?

Population/Subpopulation Area: 135.45 — Units: m2 [X] Exact (based on GPS mapping) [ ] Estimate — 2008 data BTOR

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 2 [X] meters [ ] feet
Observation Location: 10280079.137 1925055.17 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal pool, chamise chaparral
Landowner/Manager: City of San Diego Park and Recreation (MHPA)
Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Area is fenced
Non-native grass cover high

Management Recommendation/s:
control non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Brodiaea orcuttii	2		
Eryngium aristulatum	3		
Deinandra fasciculatum	35		
Navarretia hamata	2		
Crassula connata	1		
Bromus madritensis ssp rubens	4		
Vulpia myuros	2		
Psilocarphus brevissimus	1		

Species	Cover	Coll?	Coll. #
Adenostoma fasciculatum	1		
Gilia tricolor bellum	5		
Selaginella ssp	1		
Juncus butonius	1		
Isocoma menziesii	3		
Hypochaeris glabra	1		
Nassella pulchra	1		
Deschampsia danthonioides	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
10280079.137 1925055.17	NW, N, NE, E	1m	10° downward	117-121	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: same photopoint for Brodiaea orcuttii

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 68. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Del Mar Mesa Observation # 1



Panorama from Northeastern edge of population, facing Northwest, North, Northeast, East.
Panorama location is 6280079.13 1925055.17 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var. parishii **Common Name:** Button Celery

Site Name: Del Mar Mesa Obs 2 **Management Unit #:** TBA

Date: 29 April 2008 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Kelly Ruiz - City of San Diego
Jasmine Wahl - HELIX Environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 300 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 3277.99 Ft 2 Units ☒ Exact (based on GPS mapping) ☐ Estimate vernal pool shapefile (H1-15)

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6280710.349 1924749.96 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool, southern mixed chaparral

Landowner/Manager: City of San Diego Parks and Recreation Open Space (MHPA)

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NON- native species	area is fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1			Agenostema fasciculata	5		
Deinandra fasciculata	10			Vulpia myuros	2		
Pogogyne abramsii	8			Bromus madritensis rubens *	1		
Navarretia hamata	3			Crassula aquatica	1		
Crassula connata	1			Eriogonum fasciculatum	2		
Centaurium venustum	1			Psilocarphus brevissimus	1		
Eryngium aristulatum	4			Deschampsia danthonioides	1		
Avena spp. *	1			Calandrinia maritima	1		

IV. SITE PHOTOMONITORING

Camera type: Canon PowerShot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280710.349 1924749.96	SW, W, NW, N, NE	1.1m	downward 10°	127-132	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Same photo point for Bloomeria clevelandii Obs 2
Pogogyne abramsii Obs 2

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 69. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Del Mar Mesa Observation # 2



Panorama from Northern edge of population, facing Southwest, West, Northwest, North, Northeast.
Panorama location is 6280710.349 1924749.96 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var parishii Common Name: San Diego Button celery

Site Name: Del Mar Mesa ODS. #3 Management Unit #: N/A

Date: 4/29/2008 Management Regime: N/A

Surveyors and Affiliation/Agency: Kell Bajo - City of San Diego, Metro
Jasmine Watts - Helix environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 1000 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

If not, why (if reason known or suspected)?

Population/Subpopulation Area: 683639 ft2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate check vernal pool shapefile (H)

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☐ meters ☐ feet

Observation Location: 6283747.178 1925705.54 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool / scrub oak chaparral

Landowner/Manager: City of San Diego

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Area is fenced
NON-native grass cover high

Management Recommendation/s:
control NON-native grasses

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Brodiaea orcuttii	1		
H	Marah laevis	2		
H	Deinandra fasciculata	80		
H	Eryngium aristulatum	3		
S	Quercus dumosa	1		
H	Lotus spp.	1		
H	Navarretia hamata	1		
H	Crassula aquatica	1		

	Species	Cover	Coll?	Coll. #
H	Bromus madritensis ssp rubens*	1		
H	Vulpia myuros	1		
H	Centaurea melitensis	1		
H	Polypogon monspeliensis	1		

IV. SITE PHOTOMONITORING

Camera type: Cannon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6283747.178 1925705.54	E, SE, S, SW, W	1m	5° downward	138-142	L: MSCP/ monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:
Vernal pool ID H series

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 70. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Del Mar Mesa Observation # 3



Panorama looking at the Southwestern edge of the population, facing Southeast, South, Southwest, West.
Panorama location is 6283747.18 1925705.54 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var parishii **Common Name:** San Diego Button Celery
Site Name: General Dynamics E Pt (1) **Management Unit #:** TBD
Date: 5/6/08 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller, City of San Diego, MSCP
Randy Rodriguez CDFG

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 2,500 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 2872.08 ft2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate see vernal pool shapefile

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 6291938.04 1880820.13 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS, vernal pool

Landowner/Manager: private - LNR Kearny Mesa Inv

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: transportation, industrial/office park

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
well-travelled path on N side of site

Management Recommendation/s:
continue access restrictions/signage

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Brodiaea orcuttii	15		
H	Dichanthelium fasciculatum	50		
H	Eryngium aristulatum	10		
H	Psilocarphus brevissimus	7		
H	Pogogyne ambigens ssp.	2		
H	Lythrum hyssopifolium	2		
H	Vulpia spp. *	2		
S	Eriogonum fasciculatum	5		

	Species	Cover	Coll?	Coll. #
H	Erodium spp.	7		
H	Navarretia fossalis	1		
H	Eriophyllum confertiflorum	1		
S	Isocoma menziesii	1		
S	Baccharis salicifolia	5		
S	Artemisia californica	15		
S	Opuntia spp.	2		
S	Xylococcus bicolor	1		
H	Centaurea melitensis *	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6291938.04 1880820.13	SE-S-SW-W	1-1m	~10° down	153-158	L:MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: site in excellent condition given isolated (developed) location
same photo point as Brodiaea orcuttii, vernal pool ID N8

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 71. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) General Dynamics Eastern Observation



Panorama from Southwestern edge of population, facing Southeast, South, Southwest, West.
Panorama location is 6291938.04 1880820.13 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var parishii **Common Name:** San Diego button celery
Site Name: Goat Mesa/Spring Canyon #1 **Management Unit #:** TBD
Date: 5/30/08 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Toby Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No
If not, why (if reason known or suspected)?

Total No. Individuals: ~350 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 20778.30 ft² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see vernal pool shapefile (2008)

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously (J-16-18)
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet
Observation Location: 6330499.213 1781402.689 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool, non-native grasslands
Landowner/Manager: City of San Diego Park and Recreation Open Space
Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☑ Poor ☐ Very Poor
Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
ORV; non-native grass thatch; illegal trespass, dumping, grazing (historic occurrence)

Management Recommendation/s:
non-native grass thatch removed + area fenced as part of TransNet grant vernal pool project

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Deinandra fasciculata	30			Salsola tragus	<1		
Simmondsia chinensis	10						
Erodium sp.	20						
Lepidium sp. (perennial) *	1						
Bromus madritensis ssp. r. *	1						
Eryngium aristulatum	3						
Bilboaphus brevissimus	1						
Selaginella cinerascens	5						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6330499.213 1781402.689	N-E-S	1.1 m	slightly down	306-310	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: low species cover due to recent dethatch effort
vernal pools J16-18 vernes

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 72. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Goat Mesa/Spring Canyon Observation # 1



Panorama from Eastern edge of population, facing North, East, South.
Panorama location is 6330499.21 1781402.689 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var. parishii Common Name: San Diego button celery

Site Name: Goat Mesa / Spring Canyon Pt 2 Management Unit #: TBD

Date: 5/20/08 Management Regime: TBD

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP; Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 20778.38 ft² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate see 2005 vernal pools data (J 110-18)

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0329894.6090 178186.518 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool, maritime succulent scrub-adjacent

Landowner/Manager: City of San Diego Park + Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☑ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
ORVs; illegal trespass; non-native grass thatch

Management Recommendation/s:
Site has been fenced + non-native grass removed as part of the 2006 TransNet grant vernal pool project

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Simmondsia chinensis	5			plant	<1		
Deinandra fasciculata	3			Eriogonum fasciculatum	<1		
Eryngium aristulatum	3						
Rhus integrifolia	1						
Salsola tragus	<1						
Bromus sp. *	<1						
Cylindropuntia prolifera	<1						
Nassella sp.	<1						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0329894.6040 178186.518	S-W-N	1.1m	~10° down	311-315	4/mscp

V. OTHER FIELD NOTES

Other Field Notes/Comments: low species cover due to recent dethatch efforts vernal pools J 110-18) series

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 73. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Goat Mesa/Spring Canyon Observation # 2



Panorama from Northern edge of population, facing South, West, North.
Panorama location is 6329894.69 1781861.52 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Eryngium aristulatum var. parishii Common Name: San Diego button celery

Site Name: Otay Lakes Management Unit #: n/a

Date: 4/15/05 Management Regime: n/a

Surveyors and Affiliation/Agency: Toby Miller City of San Diego
Jasmine Watts Helix Env

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3 ac (Units) ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6356775.901 1807379.03 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool

Landowner/Manager: City of San Diego Water Dept

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space/watershed protection lands

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
1) some non-native grasses 2) 1 Border Patrol tracks, Ø damage as ground is already dry	continue access limitations and invasive species/dethatch removal

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
* Hordeum spp.	3		
* Bromus madritensis ssp rubens	7		
* Bromus hordeaceus	7		
* Avena spp.	8		
* Lolium multiflorum	10		
Deinandra fasciculata	45		
* Erodium spp.	8		
Croton wigginsii	1		

Species	Cover	Coll?	Coll. #
Cuscuta spp.	3		
Eryngium aristulatum	3		
Psilocarphus brevissimus	10		
Centaurea melitensis	<1		
Bloomeria clevelandii	<1		
Salsola tragus	<1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6356775.901 1807379.03	NE, E, SE	1.1 m	~10° down	~~90-92~~ 91-97	L:MSCP\Monitoring photos retaken 4/24/08

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 74. *Eryngium aristulatum* var. *parishii* (San Diego Button Celery) Otay Lakes



Panorama from Northeastern edge of population, facing Northeast, East, Southeast.
Panorama location is 6356775.91 1807379.03 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Lessingina filaginifolia
Del Mar Sand Aster



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lessingia filaginifolia var. lin. folia | Common Name: Del Mar sand Aster
Site Name: Carmel Mountain | Management Unit #: TBA
Date: July 11, 2008 | Management Regime: TBA
Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☑ Yes ☐ No

Total No. Individuals: 7 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates) | If not, why (if reason known or suspected)?

Population/Subpopulation Area: 11658.29 M2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2003 population data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6263325.45 1921294.23 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal sage scrub
Landowner/Manager: City of San Diego
Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☑ Poor * ☐ Very Poor
Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
erosion due to abandoned road, existing trails	erosion control measures

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.
*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lessingia filaginifolia var. lin.	1			Lepidium sp.*	<1		
Adenostoma fasciculata	20			Lasthenia gracilis*	<1		
Artemesia californica	3			Chaenactis glabriuscula (Senesced)	1		
Eriogonum fasciculatum	3						
Bromus madritensis ssp. rubens*	3						
Mesembryanthemum sp.*	1						
Stephanomeria sp.	<1						
Salsola tragus*	<1						

IV. SITE PHOTOMONITORING

Camera type: Canon Power Shot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6263325.45 1921294.23	SE-S-SW	1.1m	~50 down	409-413	L MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: Site quality note: low cover invasives, major erosion issues

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 76. *Lessingina filaginifolia* var. *linifolia* (Del Mar Sand Aster) Carmel Mountain



Panorama from Northwestern edge of population, facing Southeast, South, Southwest.
Panorama location is 626325.45 1921294.23NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lessingia filaginifolia var. linifolia Common Name: Del Mar sand ASTER
Site Name: CREST canyon #1 Management Unit #: TBA
Date: July 11, 2008 Management Regime: TBA
Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Jennifer Vaughan - City of San Diego - MSCP

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 250 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 464.108 m² ☒ Exact (based on GPS mapping) ☐ Estimate
Units Based on 2001 mapping

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6253253.09 1929139.26 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: open CSS (includes torrey pines)
Landowner/Manager: City of San Diego and Del Mar Park and Recreation
Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
ice plant invading portions of population, appears that removal methods used historically	monitor ice plant, trails. remove ice plant, fence trails as necessary

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Carpobrotus edulis	8			* Centaurea melitensis	1		
Isocoma menziesii	10			* Bromus madritensis ssp. rubens	1		
Lessingia filaginifolia var. lin.	30			Stephanomeria spp.	<1		
Hedeoma californica	10						
Eriogonum fasciculatum	3						
Lotus scoparius	1						
Pinus torreyana	3						
Encelia californica	5						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253253.09 1929139.26	S-SW-W	1.1 m	0°	395-398	L:MSCP

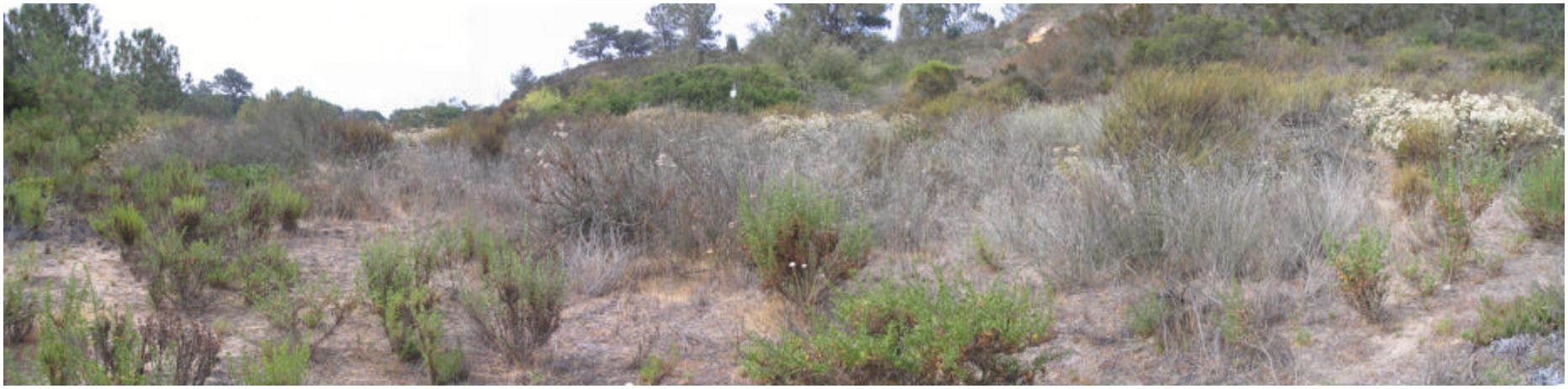
V. OTHER FIELD NOTES

Other Field Notes/Comments: population appears to be similar in size/shape as 2001 gps data

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 77. *Lessingina filaginifolia* var. *linifolia* (San Diego Sand Aster) Crest Canyon #1



Panorama from Southern edge of population, facing South, Southwest, West.
Panorama location is 6253253.09 1929139.26 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: lessingia filaginifolia var. lonifolia | Common Name: Del Mar Sand Aster
Site Name: Crest Canyon pt 2 | Management Unit #: TBA
Date: 7/11/08 | Management Regime: TBA
Surveyors and Affiliation/Agency: Betsy Miller – City of San Diego – MSCP
Jennifer Vaughan – City of San Diego – MSCP

Species Found? ☑ Yes ☐ No ____ If not, why (if reason known or suspected)?

Total No. Individuals: 25 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 404.68 M2 (Units) ☐ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☒ meters ☐ feet
Observation Location: 6253508.28 1930813.34 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub
Landowner/Manager: City of San Diego Parks + Recreation
Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
some invasive species – do not appear to impact Lefi	NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lessingia filaginifolia var. l.	3			Cuscuta spp.	<1		
Rhus integrifolia	3			Marah macrocarpas	<1		
Artemisia californica	5			Opuntia spp.	1		
Bromus diandrus *	10			Antirrhinum nuttallianum	<1		
Bromus madritensis ssp. rubens *	5			Ericameria californica	1		
Erigeron foliosus var. foliosus	15			Avena spp. *	<1		
Stephanomeria spp.	1			Croton californicus	1		
Chaenactis glabriuscula	15						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253508.28 1930813.34	S-SE-E	1.1M	5° up	399-402	L. MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 77. *Lessingina filaginifolia* var. *linifolia* (San Diego Sand Aster) Crest Canyon #2



Panorama from Eastern edge of population, facing South, Southeast, East.
Panorama location is 6253508.28 1930813.34 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lessingia filaginifolia var linifolia Common Name: Del Mar sand Aster

Site Name: Del Mar mesa Management Unit #: TBA

Date: July 11, 2008 Management Regime: TBA

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Jennifer Vaughan San Diego MSCP

Species Found? ☑ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 11 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 400 ft² ☐ Exact (based on GPS mapping) ☐ Estimate
Units

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector Collection Number Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 41 ☒ meters ☐ feet

Observation Location: 6276858.59 1922306.58 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: sparse chamise chaparral

Landowner/Manager: City of San Diego Park + Recreation

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
adjacent trail does not appear to impact site	monitor trail; fence if impacts

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Isocoma menziesii (senescent)	8			Eriogonum fasciculatum	3		
Adenostoma fasciculata	2			Artemisia californica	1		
Nassella sp.	1			Bromus madritensis ssp. rubens*	1		
Quercus sp.	3			Ornithostachys tenella	<1		
Lessingia filaginifolia	1			Mimulus aurantiacus	1		
Salvia mellifera	5						
Cordylanthus rigida	1						
Cuscuta sp. c.f.	1						

IV. SITE PHOTOMONITORING

Camera type: Canon PowerShot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6276858.59 1922306.58	W-NW-N	1.1m	~5° down	414-418	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: lots of bare ground

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 75. *Lessingina filaginifolia* var. *linifolia* (Del Mar Sand Aster) Del Mar Mesa



Panorama from Western edge of population, facing West, Northwest, North.
Panorama location is 6276858.59 1922306.58 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lessingia filaginifolia var. linifolia — Common Name: Del Mar sand aster
Site Name: Overlook Park — Management Unit #: TBA
Date: July 11, 2008 — Management Regime: TBA
Surveyors and Affiliation/Agency: Betsy Miller – City of San Diego – MSCP; Jennifer Vaughan – City of San Diego – MSCP

Species Found? ☑ Yes ☐ No — If not, why (if reason known or suspected)?

Total No. Individuals: 150 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3051.13 — Units: m2 — ☒ Exact (based on GPS mapping) ☐ Estimate — Based on

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4.1 ☒ meters ☐ feet

Observation Location: 6257740.59, 1930674.84 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: chaparral

Landowner/Manager: City of San Diego

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, recreation, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
none within population; nearby trail etc - edge effects	maintain fence

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

Species=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lessingia filaginifolia var. lin.	5			Stephanomeria spp.	<1		
Eriodictyon crassifolium	7			Bassica sp. *	<1		
Salvia mellifera	15			Marah macrocarpa	<1		
Rhus integrifolia	1			Yucca schidigera	<1		
Malosma laurina	1			Thaeliia distans c.f.	1		
* Bromus madritensis ssp. rubens	3			Cloton californicus	1		
Ceanothus glabrisepalus	1			Melica imperfecta	<1		
Adenostoma fasciculatum	1			Brosanthemum sp.	1		

IV. SITE PHOTOMONITORING

Camera type: Powershot A15

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6257740.59, 1930674.84	NE-E-SE	1.1m	~5° down	405-408	L MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 78. *Lessingina filaginifolia* var. *linifolia* (Del Mar Sand Aster) Overlook Park



Panorama from Southeastern edge of population, facing Northeast, East, Southeast.
Panorama location is 6257740.59 1930674.84 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lessingia filaginifolia var. linifolia Common Name: Del Mar sand Aster
Site Name: Torrey Highlands Management Unit #: TBA
Date: July 11, 2008 Management Regime: TBA
Surveyors and Affiliation/Agency: Betsy Miller- city of San Diego- MSCP
Jennifer Vaughan - city of San Diego- MSCP

Species Found? ☑ Yes ☐ No

Total No. Individuals: 400 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 391 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2005 mapping

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6263114.76 1932803.94 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Sparse coastal sage scrub
Landowner/Manager: City of San Diego
Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
trail does not appear to impact population	monitor trail - if impacts fence

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.
Species=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lessingia filaginifolia var. l.	15			Bromus diandrus *	1		
Lotus scoparius	8			Baccharis sarothroides	1		
Avena sp. *	4			Cardyloacthus rigida	4		
Opuntia sp.	1			Erigeron modestus segregabilis	1		
Salvia mellifera	1			Chaenactis glabriuscula	4		
Osmadenia tenella	2			Brassica sp. *	4		
Stephanomeria sp.	1			Croton californicus	10		
Artemisia californica	1			Hirschfeldia incana	2		
				Festuca rubra (cf.)	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6263114.76 1932803.94	W-NW-N	1.1m	0°	419-423	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: population area appears similar to 2005 GPS

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed

Photo 79. *Lessingina filaginifolia* var. *linifolia* (Del Mar Sand Aster) Torrey Highlands



Panorama from Northern edge of population, facing West, Northwest, North.
Panorama location is 6263114.76 1932803.94 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Lotus nuttallianus
Nuttall's Lotus



© City of San Diego, 2001

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus | Common Name: Nuttall's lotus
Site Name: Mariners point | Management Unit #: TBD
Date: June 2, 2008 | Management Regime: TBD
Surveyors and Affiliation/Agency: Jasmine Watts - Helix environmental
Jennifer Vaughan - City of San Diego, MSCP

Species Found? [X] Yes [ ] No — If not, why (if reason known or suspected)?

Total No. Individuals: <50? [ ] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 9090.6 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate
Based on 2002 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- _____ [ ] meters [ ] feet

Observation Location: _____ [ ] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Dune scrub

Landowner/Manager: City of San Diego

Overall Site Quality** [X] Very Good-Excellent [ ] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NONE	area fenced - NO new management

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Camissonia cheiranthifolia							
Ambrosia umbellata							
Bromus diandrus *							
Cakile maritima *							

IV. SITE PHOTOMONITORING

Camera type: _____

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s

V. OTHER FIELD NOTES

Other Field Notes/Comments: presence/absence survey
species population fenced in because of least tern nesting area

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus — Common Name: Nuttall's Lotus

Site Name: Mission Bay - Dune Triangle — Management Unit #: TBD

Date: 20 May 2008 — Management Regime: TBD

Surveyors and Affiliation/Agency: Betsy Miller + Jennifer Vaughn - City of SD MSCP; Jasmine Watts - HELIX Environmental

Species Found? [X] Yes [ ] No — If not, why (if reason known or suspected)?

Total No. Individuals: 20 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 50.74 — Units: M2 [X] Exact (based on GPS mapping) [ ] Estimate — see 2008 file

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 [X] meters [ ] feet

Observation Location: 6266528.3991 1858616.164 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Sand dunes, CSS species colonizing

Landowner/Manager: City of San Diego Parks + Rec.

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space, transportation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):

Abundance of non-natives

Management Recommendation/s:

Control non-native species, expand current efforts

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Mesembryanthemum crystallinum *	7		
Isocoma menziesii	7		
Eriogonum fasciculatum	4		
Chrysanthemum coronarium *	2		
Conyza canadensis *	1		
Encelia californica	3		
Heliotropium curassavicum	1		
Melilotus indicus *	10		

Species	Cover	Coll?	Coll. #
Lotus nuttallianus	1		
Iva hayesiana	1		
Brassica spp. * (suspected) unknown plant	1		
	1		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6266528.3991 1858616.164	NE, E, SE, S, W	1.1m	10°-15° down	236-242	L:\mscp

V. OTHER FIELD NOTES

Other Field Notes/Comments: Invasive removal effort occurring on western side of population

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 81. *Lotus nuttallianus (*Nuttall's Lotus*)*
Mission Bay – Dune Triangle



Panorama from the Southern edge of population, facing Northeast, East, Southeast, South, Southwest.
Panorama location is 6266528.38 1858616.164 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus **Common Name:** Nuttall's lotus

Site Name: Mission Bay - Hospitality Pt (Site 2) **Management Unit #:** TBD

Date: May 20, 2008 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Betsy Miller, Tom Vaughan City of San Diego
Jasmine Watts HELIX Environmental

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 350 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 5505.29 m² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate 2006 pop data

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6256896.06 1857539.66 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal dunes

Landowner/Manager: City of San Diego Park + Recreation

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: park, trail, bay

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
surrounded by developed areas but fencing/signs appear to be functioning

Management Recommendation/s:
continue maintainance of signs/fences; control Bromus diandrus

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
S	Lotus nuttallianus	4		
H	Ambrosia chamissonis	1		
H	Bromus diandrus *	15		
H	Camissonia cheiranthifolia	8		
T	Washingtonia filifera *	3		
H	Cynodon dactylon	1		
H	Melilotus indica	3		
H	Abronia umbellata	1		

	Species	Cover	Coll?	Coll. #
H	Erodium spp. *	5		
	UNKNOWN PLANT			

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6256896.06 1857539.06	SW-W-NW	1 m	~ down 5°	247-250	L/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 82. *Lotus nuttallianus* (Nuttall's Lotus) Mission Bay – Hospitality Point Site # 2



Panorama from Southern edge of population, facing Southwest, West, Northwest.
Panorama location is 6256896.06 1857539.66 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus **Common Name:** Nuttall's Lotus
Site Name: Mission Bay Site 1 **Management Unit #:** TBD
Date: 20 MAY 2008 **Management Regime:** TBD
Surveyors and Affiliation/Agency: BETSY MILLER + JENNIFER VAUGHN – City of SD MSCP, JASMINE WATTS - HELIX Environmental

Species Found? ☒ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 35467.01 m2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate see 2004 mapping

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6267668.046 1859784.459 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: SAND DUNES

Landowner/Manager: City of San Diego Parks + Rec.

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: Transportation Corridor, Open Space, Active Recreation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Dominance of non-natives (mustard, grasses) + approaching threat of chrysanthemum

Management Recommendation/s:
Prevent chrysanthemum infestation, remove mustard and grasses

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Heliotropium curassavicum	1			Bromus madritensis *	1		
Heterotheca grandiflora	1			Lotus nuttallianus	3		
Bromus diandrus *	3			Carpobrotus edulis *	21		
Camissonia chieranthifolia	8			Centaurea melitensis *	1		
Erodium botrys *	5			Baccharis sarothroides	1		
Brassica nigra *	20			Brassica sp. *	1		
Chrysanthemum coronarium *	1						
Acacia sp. *	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6267668.046 1854784.459	SE, S, SW, W	1m	5° down	221-225	L:MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Carpobrotus removal effort last year by Caltrans – minimal occurances this year / cover much reduced
Site aKa "No Man's Land"

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 83. *Lotus nuttallianus* (Nuttall's Lotus) Mission Bay – No Man's Land Site # 1



Panorama from Southwestern edge of population, facing Southeast, South, Southwest, West.
Panorama location is 6267668.04 1859784.45 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus	*Common Name:* Nuttall's Lotus
Site Name: Mission Bay - Site 3	*Management Unit #:* TBD
Date: 20 MAY 2008	*Management Regime:* TBD
Surveyors and Affiliation/Agency: BETSY MILLER + JENNIFER VAUGHN - City of SD MSCP; JASMINE WARTS - HELIX Environmental	

Species Found? ☒ Yes ☐ No — If not, why (if reason known or suspected)?

Total No. Individuals: < 100 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) from pt. shp

Population/Subpopulation Area: 10774.29 m² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously — see 2008 pop data for Rip Rap –

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6258823.558 1857305.759 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: River bank / rip rap

Landowner/Manager: City of San Diego

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☐ Poor ☒ Very Poor

Surrounding land use: S.D. River parking lot

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Fountain grass abundance, level of river?	NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Salicornia virginica	5			Chrysanthemum coronarium *	10		
Frankenia salina	5			Melilotus indicus *	1		
Distichlis spicata	2			Bromus diandrus *	1		
Pennisetum setaceum *	30			Heterotheca grandiflora	1		
Lotus nuttallianus	1			Avena sp. *	1		
Heliotropium curassavicum	1			Brassica sp. *	1		
Atriplex lentiformis	1			Jaumea carnosa	1		
Ambrosia psilostachya	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6258823.558 1857305.759	SW, W, NW	1m	flat	243-246	L: MSCP/ monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: aka S.D. River Rip Rap

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 84. *Lotus nuttallianus* (Nuttall's Lotus) Mission Bay – San Diego River Rip Rap Site # 3



Panorama from Southern edge of population, facing Southwest, West, Northwest.
Panorama location is 6258823.56 1857305.76 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Lotus nuttallianus | Common Name: Nuttall's Lotus
Site Name: Mission Bay - west of 6/5 shore | Management Unit #: TBD
Date: 20 MAY 2008 | Management Regime: TBD
Surveyors and Affiliation/Agency: Betsy Miller + Jennifer Vaughn - City of SD MSCP
Jasmine Watts - HELIX Environmental

Species Found? [X] Yes [ ] No
If not, why (if reason known or suspected)?

Total No. Individuals: 500 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)
Population/Subpopulation Area: 276069.79 M2 Units [X] Exact (based on GPS mapping) [ ] Estimate
Based on 2004 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet
Observation Location: 6260803.902 1859450.236 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: SAND DUNES / iceplant field
Landowner/Manager: City of San Diego Parks + Rec.
Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [ ] Poor [X] Very Poor
Surrounding land use: Transportation Corridor, Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Dominance of invasives (iceplant, chrysanthemum)	Control invasives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Chrysanthemum coronarium *	20			Camissonia sp.	1		
Carpobrotus edulis *	40			Lepidium lasiocarpum *	2		
Baccharis sarothroides	2			Erodium sp. *	2		
Brassica nigra *	20			Centaurea melitensis *	<1		
Avena sp. *	1			Crassula connata	1		
Isocoma menziesii	1			Melilotus indicus *	2		
Lotus scoparius	1			Camissonia chieranthifolia	1		
Heterotheca grandiflora	1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6260803.802 1859450.236	S, SW, W, NW	1.1m	10° down	226-232	L:MSCP\monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: Photos 233-235 (GPS'd) of extant population
*Lotus nuttallianus occurs in trails/openings between iceplant patches

**Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 85. *Lotus nuttallianus* (Nuttall's Lotus) Mission Bay – South Shores Site # 6



Panorama from Western edge of population, facing South, Southwest, West, Northwest.
Panorama location is 6266803.80 1859450.24 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Monardella viminea
Willowy Monardella



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea | Common Name: Willowy Monardella
Site Name: Lopez Canyon - West Terrace | Management Unit #: TBD
Date: 9 June 2008 #1 | Management Regime: TBD
Surveyors and Affiliation/Agency: Betsy Miller - City of SD MSCP; Jasmine Watts - Helix Environmental

Species Found? ☒ Yes ☐ No 17 CNPS planted seedlings - all dead
If not, why (if reason known or suspected)?

Total No. Individuals: 1 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1459.15 m² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Based on 2004 pop data

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 1 ☒ meters ☐ feet
Observation Location: 6275731.67 1913221.28 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Baccharis Scrub / coastal sage scrub
Landowner/Manager: City of SD Parks & Rec.
Overall Site Quality** ☐ Very Good-Excellent ☒ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
abundance of non-natives, some erosion

Management Recommendation/s:
Control non-native grasses (Bromus spp., Vulpia sp.) & prevent Chrysanthemum population from expanding

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Baccharis sarothroides	5			Vulpia myuros *	7		
Eriogonum fasciculatum	1			Bromus diandrus *	<1		
Brickellia californica	<1						
Brassica nigra *	3						
Monardella viminea	<1						
Amsinckia menziesii (dead)	5						
Cercocarpus minutiflorus	2						
Bromus madritensis rubens *	2						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6275731.67 1913221.28	S, SW, W	1.1m	5° down	355-358	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: 2nd + 3rd Monardella individuals located southwest of photo point towards sycamore grove (locations GPS'd) = Historic Populations

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 86. *Monardella viminea* (Willowy Monardella) Lopez Canyon – West Terrace Observation # 1



Panorama from Southern edge of population, facing South, Southwest, West.
Panorama location is 6275731.67 1913221.28 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea | Common Name: Willowy Monardella

Site Name: Lopez Canyon - East of Bridge #2 | Management Unit #: TBD

Date: 9 June 2008 | Management Regime: TBD

Surveyors and Affiliation/Agency: BETSY MILLER - City of SD MSCP
JASMINE WATTS - HELIX Environmental

Species Found? [X] Yes [ ] No — 9 individuals total, 4 within photo monitoring plot (If not, why (if reason known or suspected)?)

Total No. Individuals: 4 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .01 acres (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [ ] meters [ ] feet

Observation Location: 6278287.281 1913733.606 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Baccharis scrub / southern mixed chaparral

Landowner/Manager: City of SD Parks & Rec

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: Open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Non-native grasses & mustard

Management Recommendation/s:
Control non-natives

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Baccharis sarothroides	15			Vulpia myuros *	5		
Monardella viminea	1			Crassula connata	<1		
Brassica nigra *	5			Gnaphalium sp.	<1		
Bromus diandrus *	1						
Bromus madritensis rubens *	3						
Brickellia californica	<1						
Opuntia littoralis	<1						
Eriogonum fasciculatum	<1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6278287.281 1913733.606	NE, E, SE	1.1m	5° down	359-361	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: 2 of 4 plants growing adjacent to each other

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 87. *Monardella viminea* (Willowy Monardella) Lopez Canyon – East of Bridge Observation # 2



Panorama from Southeastern edge of population, facing Northeast, East, Southeast.
Panorama location is 6278287.28 1913733.66 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea — Common Name: Willowy Monardella

Site Name: Lopez Canyon – East of Bridge #3 — Management Unit #: TBD

Date: 9 June 2008 — Management Regime: TBD

Surveyors and Affiliation/Agency: BETSY MILLER – CITY OF SD MSCP; JASMINE WATTS – HELIX Environmental

Species Found? [X] Yes [ ] No — If not, why (if reason known or suspected)?

Total No. Individuals: 3 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .41 acres (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 41 [X] meters [ ] feet

Observation Location: 6279603.64 1914691.49 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Southern mixed chaparral / baccharis scrub

Landowner/Manager: City of SD Parks & Rec

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [X] Poor [ ] Very Poor

Surrounding land use: Open Space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Abundance of invasives

Management Recommendation/s:
Control invasives, prevent expansion of chrysanthemum

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Monardella viminea	1			Toxicodendron diversilobum	1		
Chrysanthemum coronarium *	1			Carpobrotus munitiflorus	1		
Vulpia myuros *	5			Na hayesiana	<1		
Bromus madritensis rubens *	2			Brassica nigra *	1		
Bromus diandrus *	3						
Centaurea melitensis	1						
Baccharis sarothroides	1						
Carduus pycnocephalus *	<1						

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6279603.64 1914691.49	SW, W, NW	1.1 m	5° down	362-365	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 88. *Monardella viminea* (Willowy Monardella) Lopez Canyon – East of Bridge Observation # 3



Panorama from Southwestern edge of population, facing Southwest, West, Northwest.
Panorama location is 6279603.64 1914641.49 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea **Common Name:** willowy monardella

Site Name: Mission Valley **Management Unit #:** TBD

Date: June 5 2006 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Toby Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 95 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates) based on 2006 GPS data / static habitat conditions

Population/Subpopulation Area: 13340.03 m2 (Units) ☐ Exact (based on GPS mapping) ☑ Estimate use GPS mapping to determine

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0409398.72 1790116.116 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: seasonal creekbed, disturbed CSS (Mm)

Landowner/Manager: City of San Diego Water Department

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space for watershed protection

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
frequent fire regime invasion exotic grasses/type conversion	fire management plan prepared

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
* Avena spp.	3		
* Bromus madritensis ssp. r.	3		
Artemisia californica	<1		
* Brassica incana	1		
* Lepidium spp.	<1		
* Lolium multiflorum	2		
Baccharis sarothroides	7		
Monardella viminea	1		
Brickellia californica	1		
* Erodium spp.	<1		
* Bromus hordaceus	2		
Stasinella bicknellii	<1		
Eriogonum fasciculatum	<1		
Viguiera laciniata	1		
Rhamnus crocea	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0409398.72 1790116.116	SE-S-SW	1.1 m	~5° up	328–330	4/mscp

V. OTHER FIELD NOTES

Other Field Notes/Comments: population stable past 10 years, habitat static, recommend GPSing population at 3 year intervals

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

species	cover
Cuscuta sp.	2
* Bromus diandrus	2
Ramnya coulteri	1
Marah macrocarpus	1
Lonicera subspicata var. denudata	1
Quercus spp.	3
Melica imperfecta	4
Ephedra californica	<1
Hedypnois cretica	<1

Photo 89. *Monardella viminea* (Willowy Monardella) Marron Valley



Panorama from Southeastern edge of population, facing Southeast, South, Southwest.
Panorama location is 6409398.72 1790116.116 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea **Common Name:** Willowy Monardella

Site Name: Otay Lakes **Management Unit #:** TBD

Date: June 6 2008 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego MSCP
Jennifer Vaughan City of San Diego MSCP

Species Found? ☐ Yes ☑ No impacted by 2007 fires? erosion?
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 0 ____ Units ☐ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: ____ Collector ____ Collection Number ____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4/ ☑ meters ☐ feet

Observation Location: 0357735.58 1805911.58 ☑ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: creekbed disturbed CSS

Landowner/Manager: City of San Diego Water Department

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
high frequency burn interval
high cover non native grasses

Management Recommendation/s:
NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
	Iva hayesiana	10		
*	Lolium multiflorum	2		
*	Hordeum leporinum	1		
*	Bromus diandrus	2		
*	Bromus madritensis ssp. r.	2		
	Gnaphalium canescens ssp.	1		
*	Avena barbata micrencephalum	7		
*	Polypogon monospeliensis	5		

Species	Cover	Coll?	Coll. #
Lonicera subspicata var. denudata	1		
Baccharis sarothroides	1		
Malosma laurina	1		
* Rumex crispus	<1		
* Sonchus asper	<1		
* Foeniculum vulgare	<1		
Cyperus eragrostis	1		
Lotus purshianus var. p.	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0357735.58 1805911.58	NE, E, SE	1.1m	~10° down	332-334	4/MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	cover
* Centaurea melitensis	7
Erigonum fasiculatum	1
Juncus effusus	1
Salix sp.	<1
Rumex salicifolius var. s.	<1
* Anagallis arvensis	<1
Eremocarpus setigerus	1
Oat grass	<1
Vulpia myuros	1

Photo 90. *Monardella viminea* (Willowy Monardella) Otay Lakes



Panorama from Northern edge of population, facing Northeast, East, Southeast.
Panorama location is 6357735.58 1805911.58 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Monardella viminea **Common Name:** willowy monardella

Site Name: Sycamore canyon **Management Unit #:** TBA

Date: 9 June 2008 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Betsy Miller- City of San Diego- MSCP
Jasmine Watts- Helix Environmental

Species Found? [X] Yes [ ] No — 9 North of creek, 20 south of creek
If not, why (if reason known or suspected)?

Total No. Individuals: 29 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 15970.42 m2 (Units) [X] Exact (based on GPS mapping) [ ] Estimate
Based on 2006 pop data

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +D 4 [X] meters [ ] feet

Observation Location: 0334297.64 1916600.963 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: canyon bottom (creek bank) transition between CSS & chaparral

Landowner/Manager: City of San Diego

Overall Site Quality** [ ] Very Good-Excellent [ ] Fair to Good [ ] Poor [X] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Dominance of NON-NAtive grasses (Bromus diandrus) and deeply incised channel (erosion)

Management Recommendation/s:
control weeds, consider erosion control

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Monardella viminea	3		
Brassica nigra *	2		
Bromus diandrus *	20		
Gallium angustifolium	<1		
Eriogonum fasciculatum	<1		
Salvia apiana	1		
Eschscholzia californica	<1		
Oxalis albicans	<1		

Species	Cover	Coll?	Coll. #
Bromus madritensis rubens *	7		
Deinandra fasciculata	<1		
Erigeron foliosus	1		
Prunus ilicifolia	1		
Centaurea melitensis *	1		
Avena barbata *	2		
Stephanomeria exigua	<1		
Bromus hordeaceus *	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0334297.64 1916600.963	SE, S, SW	11M	5° down	366-371	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trunigen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

species	cover
Lolium multiforum	1

Photo 91. *Monardella viminea* (Willowy Monardella) Sycamore Canyon



Panorama from Southern end of population, facing Southeast, South, Southwest.
Panorama location is 6334297.64 1916600.96 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

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Navarretia fossalis
Spreading Navarretia



© City of San Diego, 2003

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Navarretia fossalis **Common Name:** Spreading navarretia

Site Name: Carroll Canyon **Management Unit #:** n/a

Date: 4/22/08 **Management Regime:** n/a

Surveyors and Affiliation/Agency: Betsy Miller City of San Diego
Jasmine Watts Helix Environmental

Species Found? ☐ Yes ☑ No

If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☐ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 18660.45 ft² (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
see VP inventory. shp (2003)

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 6282852.814 1907472.268 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool (within chamise chaparral uplands)

Landowner/Manager: City of San Diego Park and Recreation Open Space

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: quarry, residential

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):

trespass/dumping - documented historically; none observed at this survey

Management Recommendation/s:

continue to restrict access + maintain fences/signs

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
H Deinandra fasciculata	60			H Crassula aquatica	2		
H Eryngium aristulatum	25			H Filago spp.	1		
H Brodiaea orcuttii	1			H Vulpia spp. *	2		
H Cuscuta spp.	25			H Selaginella spp.	1		
H Navarretia hamata	10			H Cephalium bicolor	1		
H Pogogyne abramsii	10						
H Deschampsia danthanoides	2						
H Bolboschoenus maritimus	7						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6282852.814 1907472.268	S-SW-W-NW	0.8 m	15° down	57-60	L: MSCP/Mon Hering

V. OTHER FIELD NOTES

Other Field Notes/Comments:

Vernal pool ID - D5-8

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 92. *Navarretia fossalis* (Spreading Navarretia) Carroll Canyon



Panorama from Northern edge of population, facing South, Southwest, West, Northwest.
Panorama location is 6282852.81 1907472.26 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Navarretia fossalis **Common Name:** Spreading Navarretia

Site Name: Sat Mesa/Spring Canyon Pt 1 **Management Unit #:** TBD

Date: 5/30/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego, MSCP
Jennifer Vaughan - City of San Diego, MSCP

Species Found? ☐ Yes ☒ No lower rainfall year
If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 20778.38 ft² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously see vernal pool shapefile (J16-18)
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 10330499.713 1751402.990 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool, maritime succulent scrub- adjacent

Landowner/Manager: City of San Diego, Park and Recreation Open Space

Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
ORVs; illegal trespass, non-native grass thatch

Management Recommendation/s:
site has been fenced + non-native grass removed as part of the 2004 Transnet grant vernal pool project

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Simmondsia chinensis	5			Unknown plant	4		
Dendromecon fasciculata	3			Eryngium aristulatum	4		
Eryngium aristulatum	3						
Rhus integrifolia	1						
Salsola tragus	4						
Bromus spp. *	4						
Cylindropuntia prolifera	4						
Nasella spp.	4						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
10330499.713 1751402.990	S-W-N	1.1M	~10° down	311-315	L MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 93. *Navarretia fossalis* (Spreading Navarretia) Goat Mesa/Spring Canyon



Panorama from Southeastern edge of population, facing South, West, North.
Panorama location is 6330499.71 1781402.49 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Navarretia fossalis **Common Name:** Spreading Navarretia
Site Name: Nobel Drive **Management Unit #:** N/A
Date: 4/22/08 **Management Regime:** N/A
Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Jasmine Watts - Helix Environmental

Species Found? ☒ Yes ☐ No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 100 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 169867.32 ft2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate see vernal pool shapefile

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet
Observation Location: 6271105.47 1896367.536 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pool, non-native grassland
Landowner/Manager: City of San Diego Park and Recreation
Overall Site Quality** ☐ Very Good-Excellent ☐ Fair to Good ☒ Poor ☐ Very Poor
Surrounding land use: open space, multi-family residential, transportation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
surrounded by on-going invasive plant species removal + grass thatching

Management Recommendation/s:
continue invasive plant removal
keep vernal pool fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1		
Delphinium fasciculata	10		
Pogogyne ambrarnsii	8		
Eryngium aristulatum	4		
Navarretia hamata	3		
Crassula connata	1		
Centaurium venustum	1		
Avena ssp. *	1		

Species	Cover	Coll?	Coll. #
Adenostema fasciculata	5		
Vulpia myuros	2		
Bromus madritensis ssp rubens *	1		
Crassula aquatica	1		
Eriogenum fasciculatum	2		
Plagiobothrys brevissimus	1		
Deschampsia danthonioides	1		
Callitriche marginata	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6271105.47 1896367.536	SW, S, SE	0.8m	downward 20°	76-79	L:MSCP\monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 94. *Navarretia fossalis* (Spreading Navarretia) Nobel Drive



Panorama from Southern edge of population, facing Southwest, South, Southeast.
Panorama location is 6271105.47 1896367.536 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Navarretia fossalis **Common Name:** Spreading navarretia

Site Name: Otay Lakes **Management Unit #:** TBD

Date: 4/24/08 **Management Regime:** TBD

Surveyors and Affiliation/Agency: Bobby Miller City of San Diego MSCP
Kili Zalo City of San Diego Metro

Species Found? ☑ Yes ☐ No _____
If not, why (if reason known or suspected)?

Total No. Individuals: 32 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 30 Ac Units ☐ Exact (based on GPS mapping) ☑ Estimate

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet

Observation Location: 0355504.70 1807021.28 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pools - upland habitat mima mounds ~ CSS/NVG

Landowner/Manager: City of San Diego Water Dept

Overall Site Quality** ☐ Very Good-Excellent ☑ Fair to Good ☐ Poor ☐ Very Poor
high cover invasives / no disturbance

Surrounding land use: reservior, open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
high cover non-native species
altered (increased) fire regime
Border Patrol ORV use - observed

Management Recommendation/s:
- continue non-native removal project
- continue restricted access
- evaluate past removal project data

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Lotus scoparius	2			Deinandra fasciculata	10		
Eriogonum fasciculatum	2			Nassella lepida	1		
Artemesia californica	1			Lepidium strictum	5		
Malosma laurina	1			Chlorogalum parviflorum	<1		
Erodium cicutarium	25			Lepidium spp.	<1		
Brodiaea jolonensis	1			Coreopsis aquatica	1		
Hypochaeris glabra	5			Navarretia fossalis	<1		
Bromus berdaeuous	20			Castilleja exserta	<1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
0355504.70 1807021.28	NW - W	1.0 m	10° down	105-107	L MSCP/ monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: speciation points GPSed · site currently 1 year into non-native/invasive removal/dethatch effort - very low cover on mounds due to this effort; Burrows & artificial burrows, Golden Eagle

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Modified Trudgen & Keighery Vegetation Condition Scale

Very Good-Excellent	80-100% Native Flora Composition Vegetation Structure intact or nearly so Cover /abundance of weeds < 5% No or minimal signs of disturbance
Fair to Good	50-80% Native Flora Composition Vegetation structure modified or somewhat modified Cover/abundance of weeds 5-20% any number of individuals Possible minor signs of disturbance
Poor	20-50% Native Flora Composition Vegetation structure modified Cover/abundance of weeds 20-60% any number of individuals Disturbance incidence high
Very Poor	0-20% Native Flora Composition Vegetation Structure disappeared Cover/abundance of weeds 60-80% any number of individuals Disturbance incidence very high

Species	Cover
Phalaris spp.	<1
Psilocarphus brevissimus	25
Vulpia spp.	1
Bromus spp.	3
Atriplex semibaccata	<1
Deschampsia danthonoides	1
Eleocharis macrostachya	1
Plagiobothrys acanthocarphus	1
Bromus madritensis	1
Castellium ventricosum	1

Photo 95. *Navarretia fossalis* (Spreading Navarretia) Otay Lakes



Panorama from Northwestern edge of population, facing Northwest, West.
Panorama location is 6355504.70 1807021.28 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Navarretia fossalis **Common Name:** spreading Navarretia
Site Name: Robinhood Ridge **Management Unit #:** TBA
Date: 6/13/08 **Management Regime:** TBA
Surveyors and Affiliation/Agency: Jennifer Vaughan - City of San Diego - MSCP
Betsy Miller - City of San Diego - MSCP

Species Found? ☐ Yes ☒ No If not, why (if reason known or suspected)?

Total No. Individuals: 0 ☒ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 770.13 ft² (Units) ☒ Exact (based on GPS mapping) ☐ Estimate vernal pool shapefile

Collection (if not collected previously)? ☐ Yes ☐ No ☐ Collected Previously
If yes: Collector | Collection Number | Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet
Observation Location: 6329438.23 1790979.92 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub, vernal pool restored
Landowner/Manager: City of San Diego / Helix Environmental
Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, industrial, residential, transportation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NONE	maintain existing fences/ signs as necessary

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Eryngium aristulatum	7		
Popogyne nudiuscula	1		
Deinandra fasciculata	20		
Artemisia californica	5		
Viguera laciniata	1		
Eriogonum fasciculatum	1		
Ferocactus viridescens	1		
* Bromus madritensis ssp r	7		

Species	Cover	Coll?	Coll. #
Avena sp	<1		
Mesembryanthemum nodiflorum	<1		
Psilocarphus brevissimus	3		
Pechampsia danthanoides	<1		
unknown grass	<1		
Erodium sp.	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6329438.23 1790979.02	S-SW-W	3"	Level	391-394	L: MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 96. *Navarretia fossalis* (Spreading Navarretia) Robinhood Ridge



Panorama from Northern edge of population, facing South, Southwest, West.
Panorama location is 6329438.23 1790979.82 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Pinus torreyana spp. *torreyana*
Torrey Pine



© Roger Isaacson, 2008

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pinus torreyana ssp. torreyana Common Name: Torrey Pine

Site Name: crest canyon obs. 1 Management Unit #: TBA

Date: 6/12/08 Management Regime: TBA

Surveyors and Affiliation/Agency: Jasmine Walls – Helix Environmental
Jennifer Vaughan – City of San Diego- MSCP

Species Found? [X] Yes [ ] No ____ If not, why (if reason known or suspected)?

Total No. Individuals: 3 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .09 acres (Units) [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously

If yes: ____ (Collector) ____ (Collection Number) ____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 [X] meters [ ] feet

Observation Location: 6253314.41 1929325.93 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub

Landowner/Manager: City of San Diego, City of Del Mar

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
MINOR invasive species	NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover"= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Pinus torreyana	10			Rhus integrifolia	1		
Eriogonum fasciculatum	5						
Isocoma menziesii	2						
Bromus madritensis *	1						
Navarretia hamata	1						
Artemisia californica	1						
Adenostema fasciculata	1						

IV. SITE PHOTOMONITORING

Camera type: Canon A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253314.41 1929325.93	NE, E, SE	5.5ft	5° up	376-378	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: ____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 97. *Pinus torreyana* ssp. *torreyana* (Torrey Pine) Crest Canyon Observation # 1



Panorama from Northern edge of population, facing Northwest, North, Northeast.
Panorama location is 6253722.81 1929622.66 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pinus torreyana ssp. torreyana **Common Name:** Torrey Pine
Site Name: Crest canyon obs. 2 **Management Unit #:** TBA
Date: 6/12/08 **Management Regime:** TBA
Surveyors and Affiliation/Agency: Jasmine Walty - Helix Environmental
Jennifer Vaughan - City of San Diego - MSCP

Species Found? [X] Yes [ ] No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 12 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: .139 acres Units [ ] Exact (based on GPS mapping) [X] Estimate

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: _____ Collector _____ Collection Number _____ Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +0 4 [X] meters [ ] feet

Observation Location: 6253722.81 1979622.66 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub surrounded on sand bluffs

Landowner/Manager: City of San Diego

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
Minor invasive species	NDNG

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Pinus torreyana	15			Adenostoma fasciculata	1		
Cordylanthus rigidus	1			Rhus integrifolia	1		
Arctostaphylos glandulosa	2			Bromus madritensis *	1		
Ceanothus verrucosus	1						
Eriogonum fasciculatum	1						
Navarretia hamata	1						
Rhamnus crocea	1						
Salvia mellifera	1						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6253722.81 1979622.66	NW, N, NE	5ft	5° down	379-381	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments: _____

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 98. *Pinus torreyana* ssp. *torreyana* (Torrey Pine) Crest Canyon Observation # 2



Panorama from Eastern edge of population, facing Northwest, North, Northeast.
Panorama location is 6253722.81 1929622.66 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Pogogyne abramsii
San Diego Mesa Mint



© City of San Diego, 2005

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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pogogyne abramsii **Common Name:** San Diego Mesa mint
Site Name: Carroll Canyon **Management Unit #:** n/a
Date: 4/22/08 **Management Regime:** n/a
Surveyors and Affiliation/Agency: Betsy Miller City of San Diego
Jasmine Watts Helix Environmental

Species Found? ☑ Yes ☐ No _____
If not, why (if reason known or suspected)?

Total No. Individuals: 500 ☐ Exact ☑ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 1865.85 ft2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
See vernal pool inventory shapefile (2003)

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously
If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☑ meters ☐ feet
Observation Location: 6282860.426 1907341.599 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: vernal pools (chamise chaparral/upland)
Landowner/Manager: City of San Diego Park + Recreation Open Space
Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor
Surrounding land use: open space, residential, swamp

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
trespass + dumping reported historically; none observed this survey	continue to control access + maintain fencing

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	10		
H	Bilocaphus barrissimus	7		
H	Navarretia hamata	5		
H	Eryngium aristulatum	30		
H	Vulpia spp.*	1		
H	Pogogyne abramsii	25		
H	Lythrum hyssopifolium	2		
H	Downingia cuspidata	2		

	Species	Cover	Coll?	Coll. #
H	Filago spp.	1		
H	Brodiaea orcuttii	1		
H	Juncus bufonius	3		
H	Crassula aquatica	2		
H	Deschampsia danthonioides	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6282860.426 1907341.599	N-NE-E	0.9	+15° down	61-63	L:MSCP/monitering

V. OTHER FIELD NOTES

Other Field Notes/Comments: CAGN observed @ 3:30 pm 4/22/08 @ this photopoint (not monitored) + much lower cover Deinandra than other CC pool VERNAL POOL ID D5-8

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 99. *Pogogyne abramsii* (San Diego Mesa Mint) Carroll Canyon



Panorama from Northern edge of population, facing North, Northeast, East.
Panorama location is 6282860.43 1907341.59 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pogogyne abramsii **Common Name:** San Diego mesa mint
Site Name: Del Mar Mesa Obs 1 **Management Unit #:** TBA
Date: 29 April 2008 **Management Regime:** TBA
Surveyors and Affiliation/Agency: Kali Rallo - City / San Diego
Jasmine Watts - ECORP Environmental

Species Found? ☒ Yes ☐ No If not, why (if reason known or suspected)?

Total No. Individuals: 50 ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 348.61 ft2 (Units) ☐ Exact (based on GPS mapping) ☐ Estimate see vernal pool shapefile (2003)

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously
If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 21 ☒ meters ☐ feet

Observation Location: 6280351.911 1924986.804 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal Pool / chamise chaparral

Landowner/Manager: City of San Diego Parks & Rec Open Space (MHPA)

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NON-Native species	area is fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1			Tilago ssp	1		
Deinandra fasciculatum	1			Bryophyta ssp	1		
Navarretia hamata	2			Centaurea melitensis *	1		
Crassula connata	2			Cressidium dumosum	1		
Osmadenia tenella	1			Vulpia myuros	2		
Centaurium venustum	1			Xylococcus bicolor	1		
Pogogyne abramsii	1			Yucca schidigera	1		
Bromus madritensis ssp rubens *	3			Selaginella ssp	3		

IV. SITE PHOTOMONITORING

Camera type: CANON POWERSHOT A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280351.911 1924986.804	NW, W, SW, SE	1.1m	downward 15°	122-126	L: MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Same photo point for Bloomeria clevelandii Obs 1
vernal pool ID H 1-15

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 100. *Pogogyne abramsii* (San Diego Mesa Mint) Del Mar Mesa Observation # 1



Panorama from Southeastern edge of population, facing Northwest, West, Southwest, Southeast.
Panorama location is 6280351.91 1924986.80 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pogogyne abramsii **Common Name:** San Diego mesa mint

Site Name: Del Mar Mesa Obs 2 **Management Unit #:** NT

Date: 29 April 2008 **Management Regime:** NT

Surveyors and Affiliation/Agency: Kelly Borchard - City of San Diego

Jaime Unate - Helix Environmental

Species Found? ☒ Yes ☐ No

Total No. Individuals: 1000+ ☐ Exact ☒ Estimate (use orders of 10, 100 and 1000 for estimates) If not, why (if reason known or suspected)?

Population/Subpopulation Area: 3277.99 ft2 (Units) ☒ Exact (based on GPS mapping) ☐ Estimate Vernal pool shapefile (2003)

Collection (if not collected previously)? ☐ Yes ☒ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 ☒ meters ☐ feet

Observation Location: 6280711.304 1924751.60 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Vernal pool, Southern mixed chaparral

Landowner/Manager: City of San Diego Parks and Recreation Open Space (MHPA)

Overall Site Quality** ☒ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NON-NATIVE species	area is fenced

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (scl. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Bloomeria clevelandii	1			Adenostoma fasciculata	5		
Deinandra fasciculata	10			Vulpia myuros	2		
Pogogyne abramsii	8			Bromus madritensis ssp. rubens*	1		
Eriogonum gracile var. gracile	4			Crassula aquatica	1		
Navarretia hamata	3			Eriogonum fasciculatum	2		
Crassula connata	1			Psilocarphus brevissimus	1		
Centaurium venustum	1			Deschampsia danthonioides	1		
Avena ssp.*	1			Calandrinia maritima	1		

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6280711.304 1924751.60	SW, W, NW, N, NE	1.1 m	downward 10°	127-132	L:\MSCP\Monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments: Same photo point for Bloomeria clevelandii. Obs 2

Vernal pool ID 1-15

Eriogonum gracile var. gracile Obs 2

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or Instructions)

Continue on back if needed.

Photo 101. *Pogogyne abramsii* (San Diego Mesa Mint) Del Mar Mesa Observation # 2



Panorama from Northern edge of population, facing Southwest, West, Northwest, North, Northeast.
Panorama location is 6280711.304 1924751.60 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pogogyne ambramsii **Common Name:** San Diego mesa mint
Site Name: General Dynamics N (Pt 2) **Management Unit #:** TBD
Date: 5/6/08 **Management Regime:** TBD
Surveyors and Affiliation/Agency: Betsy Miller, City of San Diego, MSCP
Randy Rodriguez CDFG

Species Found? [X] Yes [ ] No If not, why (if reason known or suspected)?

Total No. Individuals: 250 [ ] Exact [X] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 452.54 Units: ft2 [X] Exact (based on GPS mapping) [ ] Estimate see vernal pool shapefile

Collection (if not collected previously)? [ ] Yes [X] No [ ] Collected Previously
If yes: Collector ____ Collection Number ____ Museum/Herbarium ____

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet
Observation Location: 6291521.99 1880728.51 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: DCSS, vernal pools
Landowner/Manager: private, LNR Kearny Mesa Inc
Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor
Surrounding land use: transportation, industrial/business park

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
minimal, volunteer trail on N side of property. small patch of mustard sw of photopoint

Management Recommendation/s:
maintain access restrictions/ signage

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

	Species	Cover	Coll?	Coll. #
H	Deinandra fasciculata	60		
S	Eriogonum fasciculatum	5		
S	Isocoma menziesii	3		
H	Pogogyne abramsii	25		
H	Brodiaea orcuttii	3		
H	Erodium spp. *	7		
H	Hypochaeris glabra	1		
H	Deschampsia danthonioides	1		
H	Psilocarphus brevissimus	5		
H	Polypogon monspeliensis	10		
H	unk grass small	2		
H	Crassula aquatica	2		

IV. SITE PHOTOMONITORING

Camera type: canon powershot A75

Location [State Plane (ft)]		Direction (facing)	Height	Camera Angle	Photo #	File location/s
6291521.99	1880728.51	SW-W-NW-N	1.1	~10° down	159-160	L: MSCP/monitoring

V. OTHER FIELD NOTES

Other Field Notes/Comments:
same photo point as Brodiaea orcuttii
vernal pool ID N8

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 102. *Pogogyne abramsii* (San Diego Mesa Mint) General Dynamics Western Observation



Panorama from Southwestern edge of population, facing Southwest, West, Northwest, North.
Panorama location is 6291521.99 1880728.51 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Pogogyne nudiuscula
Otay Mesa Mint



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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Pogogyne nudiuscula **Common Name:** Otay Mesa mint

Site Name: Robinhood Ridge **Management Unit #:** TBA

Date: 6/13/08 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Jennifer Vaughan City of San Diego MSCP
Betsy Miller City of San Diego MSCP

Species Found? ☑ Yes ☐ No

If not, why (if reason known or suspected)?

Total No. Individuals: 10 ☑ Exact ☐ Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 770.13 ft2 (Units) ☑ Exact (based on GPS mapping) ☐ Estimate
see vernal pools.shp

Collection (if not collected previously)? ☐ Yes ☑ No ☐ Collected Previously

If yes: Collector / Collection Number / Museum/Herbarium

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- <1 ☒ meters ☐ feet

Observation Location: 6032938.23 1790979.82 ☒ State Plane (feet) ☐ UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: coastal sage scrub, vernal pool RESTORED

Landowner/Manager: City of San Diego / Helix Environmental

Overall Site Quality** ☑ Very Good-Excellent ☐ Fair to Good ☐ Poor ☐ Very Poor

Surrounding land use: open space, industrial, residential, transportation

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):	Management Recommendation/s:
NONE	maintain existing fences/ signs as necessary

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #	Species	Cover	Coll?	Coll. #
Eryngium aristulatum	7			Avena sp.	<1		
Pogogyne nudiuscula	1			Mesembryanthemum nodiflorum	<1		
Deinandra fasciculata	20			Psilocarphus brevissimus	3		
Artemisia californica	5			Deschampsia danthonioides	<1		
Viguiera laciniata	1			Mat grass	<1		
Eriogonum fasciculatum	1			Erodium sp.	1		
Ferocactus viridescens	1						
* Bromus madritensis ssp. r.	7						

IV. SITE PHOTOMONITORING

Camera type: Canon Powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6032938.23 1790979.82	S-SW-W	31"	level	391-394	L:MSCP

V. OTHER FIELD NOTES

Other Field Notes/Comments:

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 103. *Pogogyne nudiuscula* (Otay Mesa Mint) Robinhood Ridge



Panorama from Southwestern edge of population, facing South, Southwest, West.
Panorama location is 632938.23 1790979.82 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1

Rosa minutifolia
Baja Rose



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Multiple Species Conservation Program (MSCP) Rare Plant Field Survey Form

Scientific Name: Rosa minutifolia **Common Name:** Baja Rose

Site Name: Dennery Ranch **Management Unit #:** TBA

Date: 10/13/08 **Management Regime:** TBA

Surveyors and Affiliation/Agency: Betsy Miller - City of San Diego - MSCP
Jennifer Vaughan - City of San Diego - MSCP

Species Found? [X] Yes [ ] No _____ If not, why (if reason known or suspected)?

Total No. Individuals: 1 [X] Exact [ ] Estimate (use orders of 10, 100 and 1000 for estimates)

Population/Subpopulation Area: 3623.64 m2 (Units) [ ] Exact (based on GPS mapping) [ ] Estimate see Delnandra conjugens 2001 data

Collection (if not collected previously)? [ ] Yes [ ] No [X] Collected Previously

If yes: _____ (Collector) _____ (Collection Number) _____ (Museum/Herbarium)

I. OBSERVATION AREA/MANAGEMENT UNIT LOCATION

Accuracy of Coordinates/GPS Error: +/- 4 [X] meters [ ] feet

Observation Location: 6321404.87 1791630.20 [X] State Plane (feet) [ ] UTM

II. GENERAL HABITAT DESCRIPTION AND THREATS ASSESSMENT

Vegetation Community: Coastal sage scrub

Landowner/Manager: City of San Diego

Overall Site Quality** [ ] Very Good-Excellent [X] Fair to Good [ ] Poor [ ] Very Poor

Surrounding land use: residential/development, open space

Disturbances and/or threats (be specific, include extent of disturbance or percent cover of disturbance if possible):
Invasive species (Bromus sp.)

Management Recommendation/s:
NONE

III. ASSOCIATED SPECIES

List dominant, subdominant and invasive species in/near target species observation area/management unit.

*Species'=List all species (sci. name). Use * to indicate non-native species; 'Cover'= % cover of species; Note if collected by checking 'Coll.' column; if submitted to herbarium, note collection number (submit to SDNHM unless otherwise noted).*

Species	Cover	Coll?	Coll. #
Artemesia californica	20		
Delnandra fasciculata	10		
Eriogonum fasciculatum	<1		
* Bromus madritensis ssp rubens	35		
Rhus integrifolia	1		
Viguera laciniata	1		
Delnandra conjugens	<1		
Encelia californica	1		

Species	Cover	Coll?	Coll. #
Rosa minutifolia	<1		
Simmondsia chinensis	1		
Baccharis sarathroides	<1		

IV. SITE PHOTOMONITORING

Camera type: canon powershot A75

Location [State Plane (ft)]	Direction (facing)	Height	Camera Angle	Photo #	File location/s
6321404.87 1791630.20	S-SE-E	1.1M	~5° up	386-387	L:MSCP

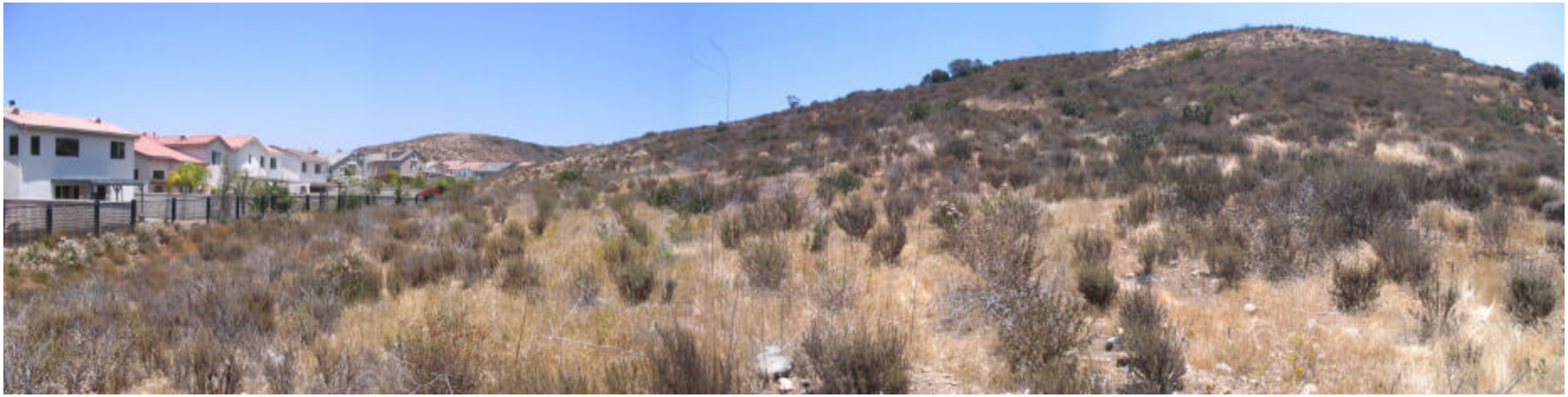
V. OTHER FIELD NOTES

Other Field Notes/Comments: 3 ind. CAGN observed at photopoint

** Use Trudgen & Keighery Vegetation Condition Scale Descriptions (see back of form or instructions)

Continue on back if needed.

Photo 104. *Rosa minutifolia* (Baja Rose) Dennery Ranch



Panorama from Southern edge of population, facing South, Southeast, East.
Panorama location is 6321404.87 1791630.28 NAD83 State Plane California Zone 6 (feet)
Photos merged using Canon PhotoStitch, v. 3.1.

Acknowledgments

The following staff assisted in the preparation of this report:

Betsy Miller, Biologist III (OCA)
Ria Boner, MSCP Intern
Jennifer Vaughan, MSCP Intern

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APPENDIX A

CITY OF SAN DIEGO RARE PLANT MONITORING: 2008 MONITORING DATES AND STAFF

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City of San Diego MSCP Plant Monitoring:
Priorities, Sites and Survey Dates

Species	Risk Group (SDSU '06)	Risk Group (Ogden '96)	Site	Survey Date	Staff	Methodology
Acanthomintha ilicifolia (San Diego Thorn-mint)	First	Second	Blk Mtn Park- West (BMR)	22-May	JV, JW	Photo, Habitat Assessment
			Mission Trails Regional Park	7-May	BYM, RB	Photo, Habitat Assessment
			Otay Lakes	16-May	JV, JW	Photo, Habitat Assessment
			Penasquitos Canyon	16-May	JV, JW	Photo, Habitat Assessment
			Sabre Springs/ Poway	8-May	BYM, NB	Photo, Habitat Assessment
Ambrosia pumila (San Diego Ambrosia)	First	Second	Mission Trails Regional Park	7-May	BYM, RB	Photo, Habitat Assessment
Arctostaphylos glandulosa ssp. *crassifolia* (Del Mar Manzanita)	First	Third	Carmel Mountain	14-Apr	KF, JW	Photo, Habitat Assessment
			Crest Canyon	8-Apr,14-Apr	BYM, KF, JW	Photo, Habitat Assessment
			Del Mar Mesa	14-Apr	KF, JW	Photo, Habitat Assessment
			Penasquitos Canyon	6-Jun	JW, JV	Photo, Habitat Assessment
			San Dieguito River Bluffs	14-Apr	KF, JW	Photo, Habitat Assessment
Agave shawii (Shaw's Agave)	Second	None	Sunset Cliffs	6-Jun	JW, JV	Survey location unknown, population not located
Bloomeria [Muilla] clevelandii (San Diego Goldenstar)	Second	Second	Del Mar Mesa	29-Apr	KB, JW	Photo, Habitat Assessment
			E. Elliot/Sycamore Canyon	21-Apr, 23-Apr, 25-Apr, 28-Apr	BYM, KB	GPS, Photo, Habitat Assessment
			Marron Valley	18-Apr	KB, JV	GPS, Photo, Habitat Assessment
			Mission Trails Regional Park	16-Apr	BYM, JV	Photo, Habitat Assessment
			Otay Lakes	15-Apr, 24-Apr	BYM, JW	GPS, Photo, Habitat Assessment
			USIU	22-Apr	BYM, JW	Survey location unknown, population not located

City of San Diego MSCP Plant Monitoring:
Priorities, Sites and Survey Dates

Species	Risk Group (SDSU '06)	Risk Group (Ogden '96)	Site	Survey Date	Staff	Methodology
Brodiaea orcuttii (Orcutt's Brodiaea)	Third	Second	Carmel Mountain	29-Apr	KB, JW	Photo, Habitat Assessment
			Del Mar Mesa	29-Apr	KB, JW	Photo, Habitat Assessment
			Carroll Canyon	22-Apr	BYM, JW	Photo, Habitat Assessment
			General Dynamics	5-May	BYM, RR	Photo, Habitat Assessment
			Nobel Drive	22-Apr	BYM, JW	Photo, Habitat Assessment
			Otay Lakes	15-Apr	BYM, JW	Survey location unknown, population not located
			USIU/Alliant/ Scripps Ranch	22-Apr	BYM, JW	Photo, Habitat Assessment
Ceanothus verrucosus (Wart-Stem Lilac)	Third	First	Carmel Mountain	6-Jun	JW, JV	Photo, Habitat Assessment
			Crest Canyon	6-Jun	JW, JV	Photo, Habitat Assessment
			Del Mar Mesa	6-Jun	JW, JV	Unable to access site due to construction
Cordylanthus orcuttianus (Orcutt's Bird's Beak)	First	First	Otay River Valley	2-Jun	JW, JV	Photo, Habitat Assessment
Cylindropuntia [Opuntia] californica [var. *serpentina]* (Snake Cholla)	Second	Third	Balboa Park	2-Jun	JW, JV	Photo, Habitat Assessment
			Otay Mesa	30-May	BYM, JV	Photo, Habitat Assessment
			Point Loma	6-Jun	JW, JV	Survey location unknown, population not located
			Spring Canyon	30-May	BYM, JV	Photo, Habitat Assessment
Deinandra [Hemizonia] conjugens (Otay Tarplant)	First	First	Dennery Ranch/ Oceanview	13-Jun	BYM, JV	Photo, Habitat Assessment
			Proctor Valley	5-Jun	BYM, JV	Photo, Habitat Assessment
Dudleya blochmaniae ssp. *brevifolia* (Short Leaf Dudleya)	First	First	Carmel Mountain	16-May	BYM, KG	Photo, Habitat Assessment
			Crest Canyon	16-May	BYM, KG	Photo, Habitat Assessment
			Skeleton Canyon	16-May	BYM, KG	Photo, Habitat Assessment

City of San Diego MSCP Plant Monitoring:
Priorities, Sites and Survey Dates

Species	Risk Group (SDSU '06)	Risk Group (Ogden '96)	Site	Survey Date	Staff	Methodology
Dudleya variegata (Variegated Dudleya)	Second	First	East Elliott	21-May	JW, JV	Photo, Habitat Assessment
			Blk Mtn Park-East (BMR)	22-May	JW, JV	Photo, Habitat Assessment
			Goat Mesa/Spring Canyon	30-May	BYM, JV	Photo, Habitat Assessment
			Lake Murray	22-May	JW, JV	Photo, Habitat Assessment
			Mission Trails Regional Park	21-May	JW, JV	Photo, Habitat Assessment
			Navajo/Margarum/ Mission Gorge	21-May	JW, JV	Photo, Habitat Assessment
			Otay Lakes	16-May	JV, JW	Photo, Habitat Assessment
			Otay Mesa	23-May	BYM, JW	Presence/Absence
			Paradise Valley	23-May	BYM, JW	GPS, Presence/Absence
			Santa Luz (BMR)	22-May	JW, JV	Presence/Absence
Eryngium aristulatum var. *parishii* (San Diego Button Celery)	Second	None	Del Mar Mesa	29-Apr	KB, JW	Photo, Habitat Assessment
			General Dynamics	5-May	BYM, RR	Photo, Habitat Assessment
			Goat Mesa/Spring Canyon (J16-18)	30-May	BYM, JV	Photo, Habitat Assessment
			Lopez Ridge	29-Apr	KB, JW	Photo, Habitat Assessment
			Otay Lakes	15-Apr	BYM, JW	Photo, Habitat Assessment
			Robinhood Ridge	13-Jun	BYM, JV	Photo, Habitat Assessment

City of San Diego MSCP Plant Monitoring:
Priorities, Sites and Survey Dates

Species	Risk Group (SDSU '06)	Risk Group (Ogden '96)	Site	Survey Date	Staff	Methodology
Lessingia filaginifolia var. *linifolia* (Del Mar Sand Aster)	None	Second	Del Mar Mesa	11-Jul	BYM, JV	Photo, Habitat Assessment
			Overlook Park/San Dieguito River	11-Jul	BYM, JV	Photo, Habitat Assessment
			Carmel Mountain	11-Jul	BYM, JV	Photo, Habitat Assessment
			Torrey Highlands	11-Jul	BYM, JV	Photo, Habitat Assessment
			Crest Canyon (Del Mar Highlands)	11-Jul	BYM, JV	Photo, Habitat Assessment
Lotus nuttallianus (Nuttall's lotus)	First	First	Dune Triangle	20-May	BYM, JW, JV	GPS, Photo, Habitat Assessment
			Hospitality Pt (Site 2)	20-May	BYM, JW, JV	GPS, Photo, Habitat Assessment
			Mariner's Point (Site 4)	2-Jun	JW, JV	Presence/Absence
			Mission Beach School (Site 5)	20-May	BYM, JV	Survey location unknown, population not located
			No Men's Land (Site 1)	20-May	BYM, JW, JV	GPS, Photo, Habitat Assessment
			SD Flood Control Riprap (Site 3)	20-May	BYM, JW, JV	GPS, Photo, Habitat Assessment
			South Shores (Site 6)	20-May	BYM, JW, JV	GPS, Photo, Habitat Assessment
Monardella viminea (Willowy Monardella) and *Monardella stoneana* (Jennifer's Monardella)	Second	First	Sycamore Canyon	9-Jun	BYM, JW	Photo, Habitat Assessment
			Lopez Canyon	9-Jun	BYM, JW	Photo, Habitat Assessment
			Marron Valley	5-Jun	BYM, JV	Photo, Habitat Assessment
			Otay Lakes	5-Jun	BYM, JV	Photo, Habitat Assessment

City of San Diego MSCP Plant Monitoring:
Priorities, Sites and Survey Dates

Species	Risk Group (SDSU '06)	Risk Group (Ogden '96)	Site	Survey Date	Staff	Methodology
Navarretia fossalis (Spreading Navarretia)	First	None	Carroll Canyon	22-Apr	BYM, JW	Photo, Habitat Assessment
			Goat Mesa/Spring Canyon (J16-18)	30-May	BYM, JV	Photo, Habitat Assessment
			Otay Lakes	24-Apr	BYM, KB	Photo, Habitat Assessment
			Robinhood Ridge	13-Jun	BYM, JV	Photo, Habitat Assessment
			Nobel Drive	22-Apr	BYM, JW	Photo, Habitat Assessment
Orcuttia californica (California Orcutt Grass)	First	None	Robinhood Ridge	13-Jun	BYM, JV	Photo, Habitat Assessment
Pinus torreyana ssp. *torreyana* (Torrey Pine)	First	None	Crest Canyon	6-Jun, 25-Jun, 27-Jun	JW, JV BYM, KG	Photo, Habitat Assessment, completed census begun 2007
Pogogyne abramsii (San Diego Mesa Mint)	Second	None	Del Mar Mesa	29-Apr	KB, JW	Photo, Habitat Assessment
			General Dynamics	6-May	BYM, RR	Photo, Habitat Assessment
			Mira Mesa/Carroll Canyon	22-Apr	BYM, JW	Photo, Habitat Assessment
			Lopez Ridge	29-Apr	KB, JW	Photo, Habitat Assessment
Pogogyne nudiuscula (Otay Mesa Mint)	First	None	Robinhood Ridge	13-Jun	BYM, JW	Photo, Habitat Assessment
Rosa minutifolia (Baja Rose)	First	Third	Dennery Ranch/ Oceanview	13-Jun	BYM, JV	Photo, Habitat Assessment

City Staff, City Planning & Community Investment

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JW = Jasmine Watts, Helix Environmental Planning, Inc.

RB = Ria Boner, City of San Diego, MSCP

JV = Jennifer Vaughan, City of San Diego, MSCP

KB = Keli Balo, City of San Diego, Metro Wasterwater

RR = Randy Rodriguez, California Department of Fish and Game

NB = Nancy Bragado, City of San Diego Planning Division