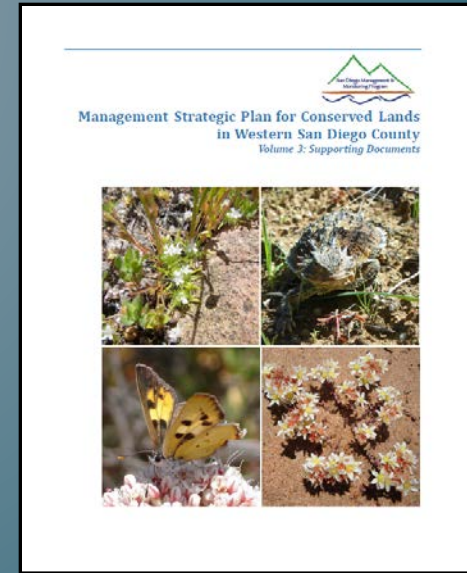
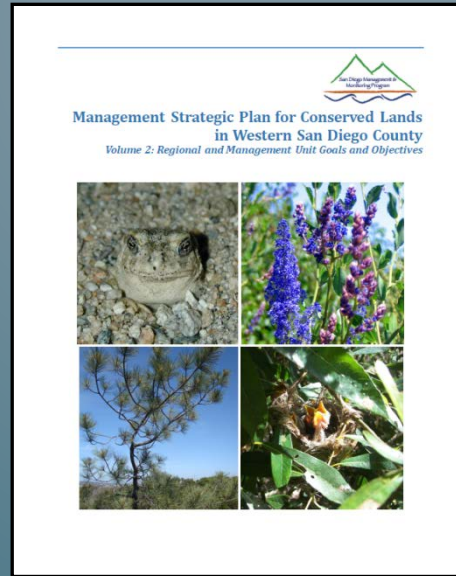
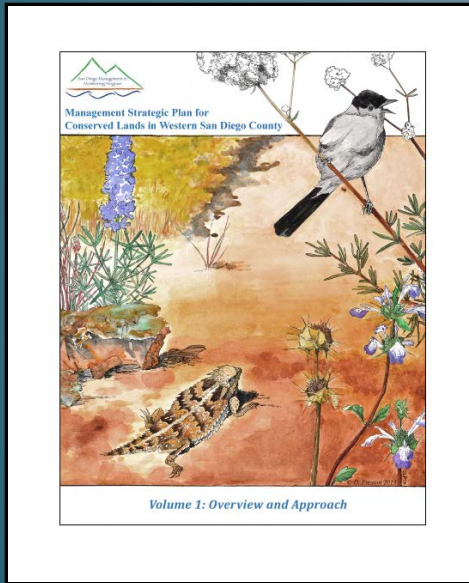


Management Strategic Plan (MSP) Workshop



Hosted by the SDMMMP at USGS on April 23, 2014

Ron Rempel, Administrator
Yvonne Moore, Coordinator
Kris Preston, Ecologist



Emily Perkins, GIS Manager
Sharon Coe, Data Manager

Format & Purpose of Workshop

- *Format*
 - *April 23, 2014 12:00pm - 3:30pm, with WebEx*
 - *Three hour classroom session*
- *Purpose*
 - *Highlight main sections of document*
 - *Show how to use the MSP*
 - *Demonstrate implementation tools*
 - *Describe implementation process*
 - *Answer questions*



Photo City of San Diego PRD



Photo John Martin USFWS

Background

- *TransNet Ordinance (2004)*
- *Needs Assessment (2005 - 2006)*
- *ITOC audit report (2012)*
 - *Program headed in the right direction*
 - *A “road map” with measurable objectives to guide future expenditures efficiently is needed*
 - *Future budgets should be based on the “road map”*
- *Strategic Plans serve as the “road map”*



Photo John Martin USFWS

Purpose of the Strategic Plans

*Identify Actions that are needed to:
ensure the persistence of identified
species; maintain ecosystem process; and
maintain healthy natural communities in
an efficient and integrated manner across
the MSPA preserve system*



Photo John Martin

Relationship of Strategic Plans

- *Management Strategic Plan*
 - *Species*
 - *Vegetation Communities*
 - *Threats/Stressors*
 - *Fire Planning*
 - *Invasive Plant Strategic Plan*
- *Connectivity Strategic Plan*
- *Monitoring Strategic Plan*

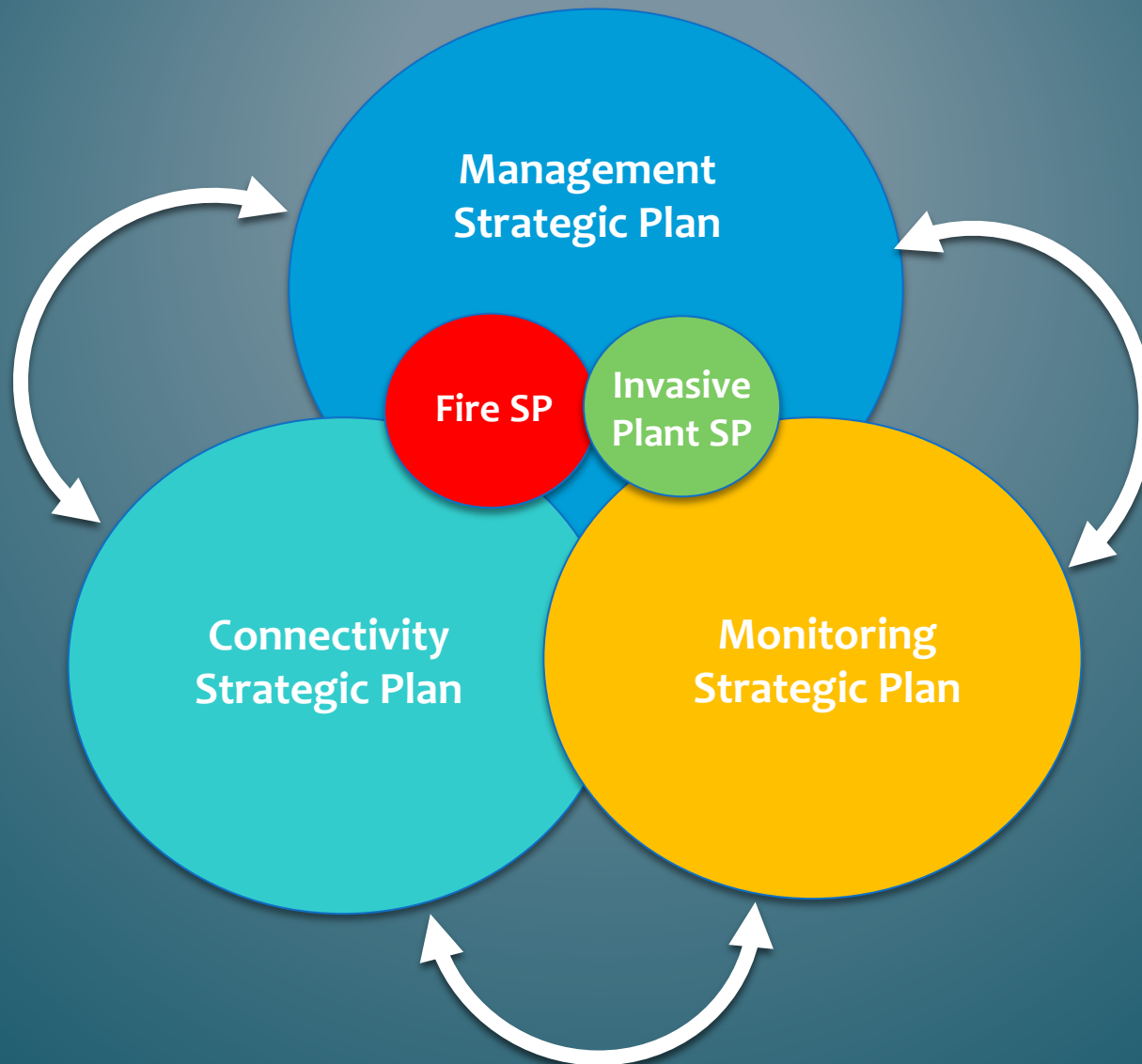


Connectivity Monitoring Strategic Plan For the San Diego Preserve System



Prepared for the San Diego Environmental Mitigation Program Working Group
January 11, 2011

Relationship of Strategic Plans



MSP Process

- *Input received from wildlife agencies, land owners, land managers, environmental groups, jurisdictions, SANDAG EMPWG, academic institutions, biological consultants, species experts*
- *1st version out for review 1-7-13*
- *Many comments received & document revised*
- *2nd version posted 8-27-13*



Photo by Steve Brad

Management Strategic Plan Approach

1. *Defined species list, management focus groups, significant species locations, biology, threats, etc.*
2. *Defined MSP area & divided into Management Units (MUs) and characterized - species, vegetation, preserves, linkages, fire history, stressors, land owners and managers, etc.*
3. *Developed management goals and objectives for species, vegetation communities and threats/stressors*
4. *Prioritized implementation*





MSP Key Definitions

Goal – “descriptive, open-ended & often broad statement of desired future conditions that conveys a purpose but does not define measurable units”

Objective – “concise statement of what we want to achieve, how much we want to achieve, when & where we want to achieve it & who is responsible for the work”

Action – activity undertaken to achieve mgmt. objective

USFWS. 2004. Writing Refuge Management Goals and Objectives: A Handbook.

MSP Key Definitions

Regional Objectives – Regional objectives generally apply to objectives where the species or vegetation community in question occurs in multiple MUs or preserves and/or where the activity benefits the entire species or region.

Local Objectives – Local objectives generally apply to objectives where the species or vegetation community in question occurs within a restricted area at a specific preserve and/or where the activity only benefits the local landowner/land manager.



Photo John Martin

MSP Key Definitions

Conserved Lands

Lands that are legally conserved to:

- (1) *Protect natural habitats, species, and open space (including agricultural lands that are important components of the regional habitat preserve design)*
- (2) *Contribute to the existing and planned regional habitat preserve system; and*
- (3) *Managed to protect the open space or natural resources into the future*

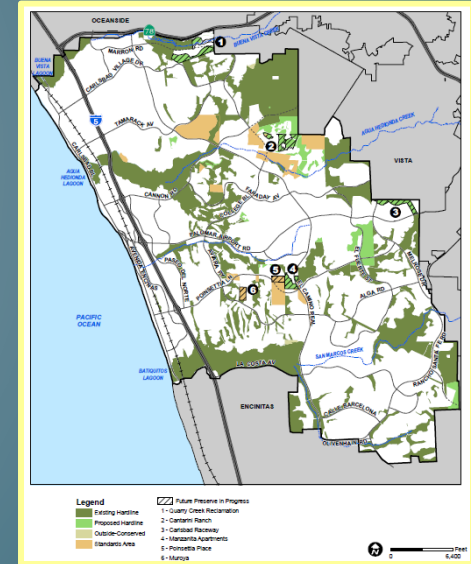


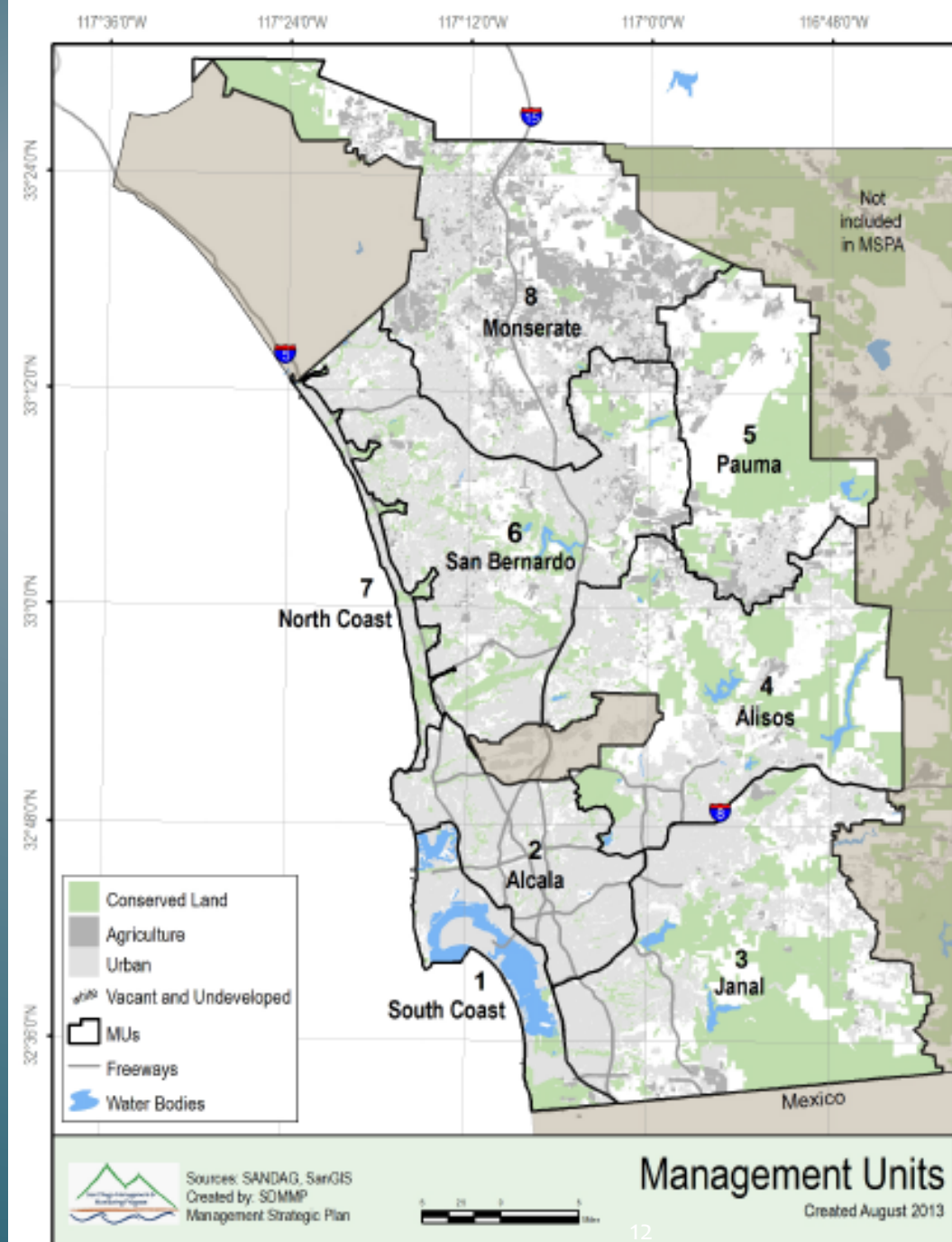
Photo by David Hogan, Chaparral Lands Conservancy

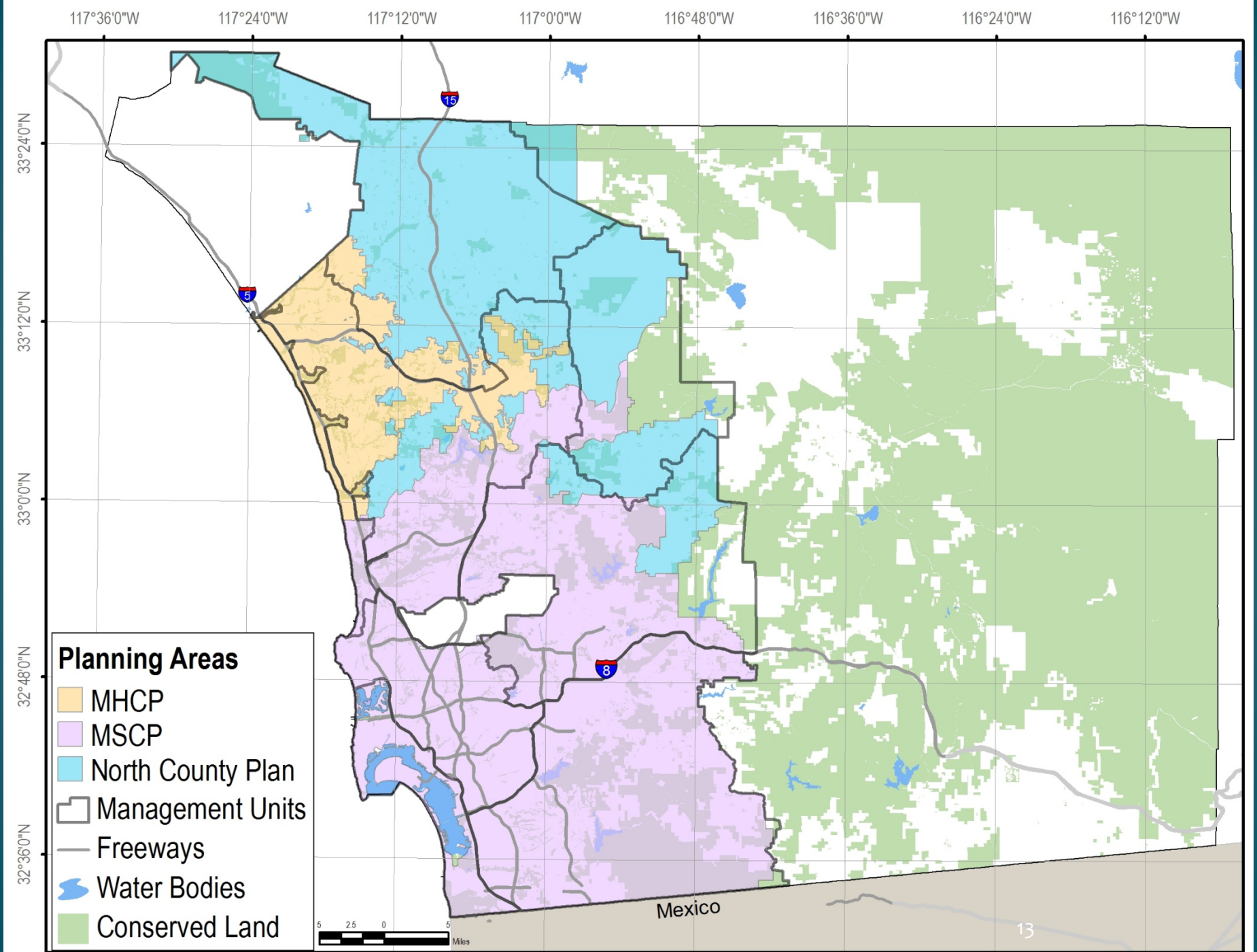
MSPA aka “MSP Area”

- Management Strategic Plan Area
- Western San Diego County
- 3 NCCP Plan areas, plus additional San Diego PUD lands
- Includes Conserved Lands only

MUs

- Management Units – facilitate coordinated management
- Eight (8) MUs - aggregate similar geographic features, vegetation communities, and major threats/stressors





MSP Key Definitions

MSP Species

- 110 species included in the MSP
 - 57 plants, 30 birds, 8 mammals, 6 invertebrates, 5 reptiles, 3 amphibians, 1 fish
 - 108 species are Covered Species under MSCP, MHCP, and proposed North County Plan
 - 10 additional species evaluated but not included
 - 2 species added



MSP Key Definitions



Occurrence - Unit of Management; Similar to “population” without regard to interbreeding. Follows CNDDDB Element Occurrence.

Significant Occurrence – defined by one of the following criteria:

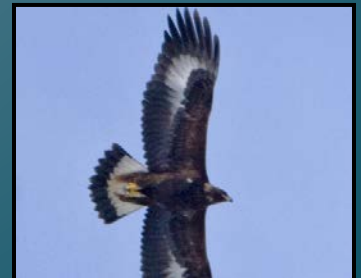
- relatively abundant at a distinct location or site; OR
- sustainable, as indicated by repeated observations over time or evidence of reproduction; OR
- important for ensuring connectivity; OR
- representing the only occurrence or one of only few occurrences remaining in the MSPA.

Implementation Plans (IP's) for Objectives

See Vol. 1, Sec. 5 and Vol. 2, Sec. 4.0

- *Outlines who, what, where, when, and why, and the funding amount and source for the objective*
- *Can be very simple and short (e.g. seed bank IP)*
- *May be fairly complex (e.g. golden eagle research study). This latter case will involve developing scopes of work, lists of deliverables, and cost estimates*

Photo USFWS



Section 4.0 Implementation Plan Format

4.1. OVERVIEW

The Implementation Plan (IP) format provided in this section is meant to be an example of the types of information that should be included to inform the stakeholders of the actions to be implemented for the objective in question, for use in contracting with other entities, if necessary, and for tracking the completion of objectives and actions. Other information not presented below may be included if needed. A separate IP should be developed for each objective; an IP may include numerous actions. Data and reports should be sent to SC-MTX.

An IP includes four sections:

- Section I. Contact Information – This section provides contact information for the IP developer, provides names of the stakeholders involved and meeting dates.
- Section II. MSP Goal and Objectives Addressed– This section provides the goal and objective being addressed. A separate IP should be developed for each objective.
- Section III. Overview of Actions – This section provides an overview of the actions to be implemented.
- Section IV. Detailed Actions – This section provides the details for each action and is completed for each action to be implemented. The scope of work, budget, and schedule sections may be used in contracts needed to implement actions.
- Attachment 1 is included as an example of select sections of the current 2013 SANDAG grant application form for a *TransNet* land management grant. Only the scope of work, budget, and schedule sections are provided as an example of information needed by SANDAG for contracting purposes.
- Attachment 2 is included as an example of select sections from a completed grant application for a *TransNet* land management grant. Only the scope of work, budget, and schedule sections are provided as an example of information needed by SANDAG for contracting purposes. Note that this example follows the 2010 grant application form.



SAN DIEGO MANAGEMENT & MONITORING PROGRAM



Upcoming Events

[MSP Workshop- North County](#)

april 16, 2014

[Mgmt/Monit Coord Mtg - Apr 2014](#)

april 23, 2014

[MSP Workshop- South County](#)

april 23, 2014

[EMP Working Group May 2014 Meeting](#)

may 13, 2014

[2014 Fire Summit](#)

may 14, 2014

[Mgmt/Monit Coord Mtg - May 2014](#)

may 28, 2014

[Mgmt/Monit Coord Mtg - June 2014](#)

june 25, 2014

[EMP Working Group July 2014 Meeting](#)

july 08, 2014

[Mgmt/Monit Coord Mtg - July 2014](#)

july 23, 2014

[Mgmt/Monit Coord Mtg - Aug 2014](#)

august 27, 2014

1 [2](#) [»](#)



Monitoring



Management



Reports & Products



www.SDMMP.COM

Welcome to the San Diego Management & Monitoring Program (SDMMP)

The SDMMP is a science based program seeking to provide a coordinated approach to management and biological monitoring of lands in San Diego that have been conserved through various programs including the Multiple Species Conservation Program, the Multiple Habitats Conservation Program, the TransNet Environmental Mitigation Program and various other conservation and mitigation efforts.

[View Regional Announcements](#)

Available: **Management Strategic Plan for Conserved Lands in Western San Diego County** ([go to webpage](#))

Note: You may need to upgrade your browser to IE8 to open links and download documents. Please report problems with this website to Emily Perkins at eperkins@usgs.gov.



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august 27, 2014

1 [2](#) [»](#)

[Management Strategic Plan for Conserved Lands in Western San Diego County, version 08.27.2013](#)

[Volume 1: Overview and Approach](#)

Section 1.0. Introduction ([3.6MB](#))

Section 2.0. Approach to Developing Goals and Objectives ([384KB](#))

Section 3.0. Characterization of MSPA and MUs Part 1 ([23MB](#)), Part 2 ([22MB](#))

Section 4.0. Databases ([231KB](#))

Section 5.0. Process for MSP Implementation ([189KB](#))

Section 6.0. Recommendations and Next Steps ([193KB](#))

Acronyms, Definitions, Acknowledgements ([166KB](#))

Appendix 1A. Species Included in the MSP ([314KB](#))

Appendix 1B. Management Focus Groups and Categories ([290KB](#))

Appendix 1C. Species Management Categorization Table ([269KB](#)) (Page size 11x17, updated 9/18/2013)

Appendix 1D. MSP Species Management Prioritization over a 5-Year Planning Horizon ([633KB](#))

Appendix 1E. MSP References for Volumes 1, 2, and 3 ([227KB](#))

[Volume 2: Regional and Management Unit Goals and Objectives](#)

Section 1.0. Introduction ([2MB](#))

Section 2.0. Goals and Objectives for Species Management Focus Species ([25MB](#))

Section 3.0. Goals and Objectives for Vegetation Management Focus Species ([309KB](#))

Section 4.0. Goals and Objectives for Threat and Stressor Management ([4.62MB](#))

Organization of the MSP

- *Sec. 1.0 – Introduction*
- *Sec. 2.0 – Approach to Developing the MSP*
- *Sec. 3.0 – Characterization of the MSPA and MUs*
- *Sec. 4.0 – Databases*
- *Sec. 5.0 – Process for MSP Implementation*
- *Sec. 6.0 – Recommendations and Next Steps*
- *Acronyms, Definitions, Acknowledgements*
- *Appendices*
 - *1A – MSP Species (by taxon)*
 - *1B – Mgmt Focus Groups and Categories*
 - *1C – Spp. Mgmt Categorization Table*
 - *1D – Spp. & Veg. Mgmt Prioritization over 5 years*
 - *1E – References*



Vol. 1

App 1A

Scientific Name	Synonym	Common Name	Plans Covered By ¹	Fed/State Designation ²	MSP Mgmt Category ³
PLANTS					
<i>Acanthomintha ilicifolia</i>		San Diego thorn-mint	MSCP, MHCP, NCP	FT/CE	SO
<i>Acmispon prostratus</i>	<i>Lotus nuttallianus</i>	Nuttall's acmispon (Nuttall's lotus)	MSCP, MHCP	--/--	SO
<i>Adolphia californica</i>		California adolphia (Spineshrub)	NCP	--/--	VG
<i>Agave shawii</i> var <i>shawii</i>	<i>Agave shawii</i>	Shaw's agave	MSCP	--/--	SL
<i>Ambrosia pumila</i>		San Diego ambrosia	MSCP, MHCP, NCP	FE/--	SO
<i>Aphanisma blitoides</i>		Aphanisma	MSCP	--/--	SL
<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>		Del Mar manzanita	MSCP, MHCP, NCP	FE/--	VF
<i>Arctostaphylos otayensis</i>		Otay manzanita	MSCP	--/--	VF
<i>Arctostaphylos rainbowensis</i>		Rainbow manzanita	NCP	--/--	VG
<i>Atriplex coulteri</i>		Coulter's saltbush	NCP	--/--	VF
<i>Atriplex parishii</i>	<i>Atriplex parishii</i> var. <i>parishii</i>	Parish brittlebush	NCP	--/--	VF
<i>Baccharis vanessae</i>		Encinitas baccharis	MSCP, MHCP, NCP	FT/CE	SO
<i>Bloomeria clevelandii</i>		San Diego goldenstar	MSCP, NCP	--/--	SS
<i>Brodiaea filifolia</i>		Thread-leaved brodiaea	MSCP, NCP	FT/CE	SS
<i>Brodiaea orcutti</i>		Orcutt's brodiaea	MSCP, NCP	--/--	SO
<i>Brodiaea santarosae</i>		Santa Rosa brodiaea (Santa Rosa basalt brodiaea)	NCP	--/--	SS
<i>Calochortus dunnii</i>		Dunn's mariposa lily	MSCP	--/--	VG
<i>Ceanothus cyaneus</i>		Lakeside ceanothus	MSCP	--/--	VF

Vol. 1

App. 1B

Taxa	Scientific Name	Synonym	Common Name	MSP Mgmt Category ¹	Vol. 2 Page # ²	MU ³
SPECIES MANAGEMENT FOCUS GROUP - CATEGORY SL SPECIES						
Plant	<i>Agave shawii</i> var <i>shawii</i>	<i>Agave shawii</i>	Shaw's agave	SL	2-2	1, 7
Plant	<i>Aphanisma blifoides</i>		Aphanisma	SL	2-9	1
Plant	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	Salt marsh bird's-beak	SL	2-13	1
Plant	<i>Chorizanthe orcuttiana</i>		Orcutt's spinnelower	SL	2-21	6, 7
Plant	<i>Clinopodium chandleri</i>	<i>Satureja chandleri</i>	San Miguel savory	SL	2-28	3, 4
Plant	<i>Dicranostegia orcuttiana</i>	<i>Cordylanthus orcuttianus</i>	Orcutt's birds-beak	SL	2-33	3
Plant	<i>Dudleya blochmaniae</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Blochman's dudleya	SL	2-38	N/A
Plant	<i>Dudleya brevifolia</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Short-leaved dudleya	SL	2-39	6, 7
Plant	<i>Erysimum ammophilum</i>		Coast wallflower (Sand-loving wallflower)	SL	2-45	6, 7
Plant	<i>Fremontodendron mexicanum</i>		Mexican flannelbush	SL	2-49	3
Plant	<i>Hazardia orcutti</i>		Orcutt's hazardia	SL	2-54	6, 7
Plant	<i>Lepechinia cardiophylla</i>		Heart-leaved pitcher sage	SL	2-61	8
Plant	<i>Monardella stoneana</i>	<i>Monardella linoides</i> ssp. <i>viminea</i>	Jennifer's monardella (Willow monardella)	SL	2-65	N/A
Plant	<i>Monardella viminea</i>	<i>Monardella linoides</i> ssp. <i>viminea</i>	Willow monardella	SL	2-66	4, 6

Vol. 1, App. 1D – Priority Mgmt. Actions Timeline

Priority Management Actions Timeline												
Common Name	Scientific Name	Species Mgmt. Cat.	Activity Code*	Lead Entity (Regional or Local)	Management Objectives (Abbreviated for Table, refer to Vol. 2, Sec. 2.0 for full description)	MUs	Year 1 (2014)	Year 2 (2015)	Year 3 (2016)	Year 4 (2017)	Year 5 (2018)	Year 6+
Regional Management Goal for Heart-leaved Pitcher Sage: Enhance and expand conserved heart-leaved pitcher sage occurrences to increase resilience to environmental and demographic stochasticity, enhance genetic diversity, and improve chances of persistence over the long term (>100 years) in chaparral and oak woodland habitats.												
MUs 4 and 8 Management Goals for Heart-leaved Pitcher Sage: Same as regional management goal.												
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	IMG	L	Inspect 2 occurrences and conduct routine management	8	X	X	X	X	X	X
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	ISV	R	Survey historic occurrences and potentially suitable habitat	4, 8	X	X				
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	PIP	R	Prepare implementation plan	4, 8			X			
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	IIP	R	Implement high priority management actions identified in the implementation plan	4, 8				X	X	X
Jennifer's monardella	<i>Monardella stoneana</i>	SO	Specific goals and objectives for northern harrier will be developed by September 2014									
Regional Management Goal for Willow Monardella: Expand and maintain small occurrences and establish new occurrences of willow monardella to increase resilience to environmental and demographic stochasticity, maintain genetic diversity, and ensure persistence over the long term (>100 years) in native plant communities.												
MUs 4 and 6 Management Goals for Willow Monardella: Same as regional management goals and objectives.												
Willow monardella	<i>Monardella viminea</i>	SL	IMG	L	Inspect 9 sites with willow monardella and conduct routine management	4, 6	X	X	X	X	X	X
Willow monardella	<i>Monardella viminea</i>	SL	FWP	L	Implement applicable pre-fire strategic plan actions	4, 6	X	X**				
Willow monardella	<i>Monardella viminea</i>	SL	GN	R	Conduct genetic study	4, 6	X	X				
Willow monardella	<i>Monardella viminea</i>	SL	SB	R	Establish a seed bank and bulk seed as necessary for population expansion and establishment	4, 6		X	X**			
Willow monardella	<i>Monardella viminea</i>	SL	ISV	R	Assess the feasibility of expanding existing occurrences, conduct a hydrological evaluation and threat assessment, document occurrence status, and delineate suitable habitat for population expansion and establishment	4, 6		X	X			
Willow monardella	<i>Monardella viminea</i>	SL	PIP	R	Prepare implementation plan including identification of suitable habitat for expanding existing populations and establishing new populations	4, 6			X			
Willow monardella	<i>Monardella viminea</i>	SL	IEX	R or L	Expand existing occurrences as feasible	4, 6				X	X	X
Willow monardella	<i>Monardella viminea</i>	SL	ITR	R or L	Establish 2 new occurrences and implement high priority management actions identified in the implementation plan	4, 6						X

Organization of the MSP

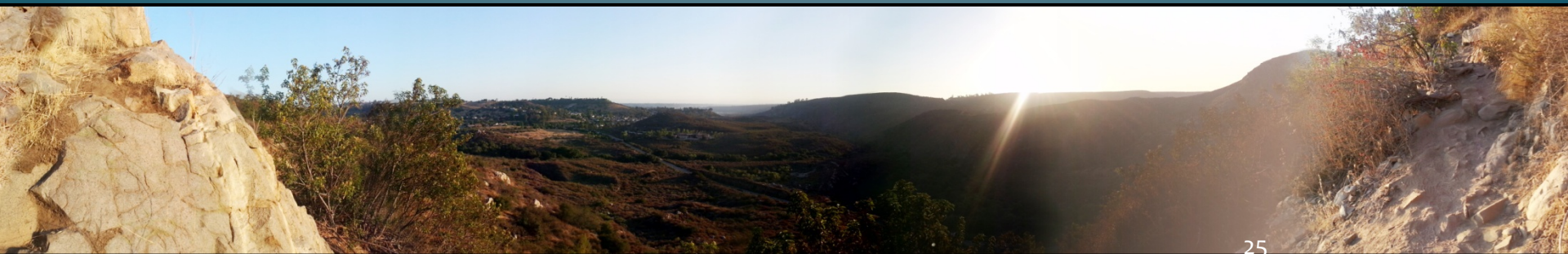
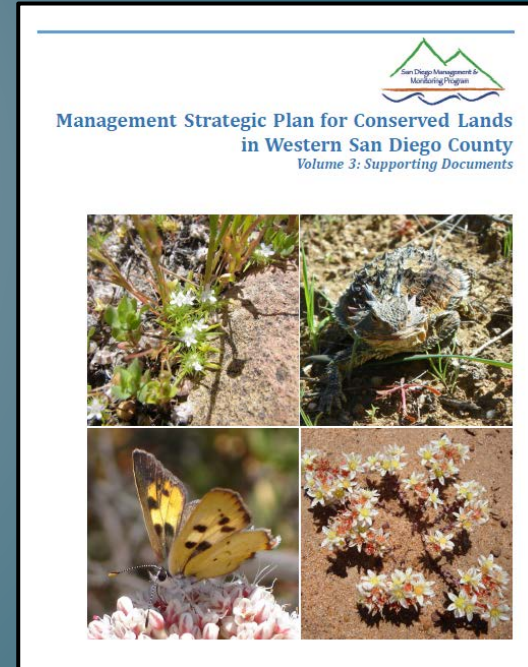
- *Species Mgmt Focus Quick Reference Index*
- *Sec. 1.0 – Introduction*
- *Sec. 2.0 – GO's for Spp. Mgmt Focus Group Spp.*
- *Sec. 3.0 – GO's for Vegetation Mgmt Focus Spp.*
- *Sec. 4.0 – GO's for Threats/Stressor Mgmt*
- *Sec. 5.0 – GO's listed by MU*
- *Appendices*
 - *2A – Spp. & Veg. Mgmt Prioritization over 5 years*
 - *2B – Threat/Stressor Categorization*
 - *2C – References*



Organization of the MSP

- *Sec. 1.0 – Introduction*
- *Sec. 2.0 – Species Profiles*
- *Sec. 3.0 – BMPs*
- *Sec. 4.0 – Implementation Plan Format*
- *Sec. 5.0 – Detailed Definitions*
- *Appendix*
 - *3A – References*

Vol 3: Supporting Documents



How to Use the MSP

Main Concepts

- *All species are not equal – categories of mgmt*
- *Implementation strategy = Goals, objectives, actions*
- *Species Objectives - IMG, ISV, IEX, SB, etc.*
 - *Ex. willowy monardella*
- *Vegetation Objectives*
 - *Ex. coastal sage scrub*
- *Threats/Stressors Objectives*
 - *Ex. Argentine ants*

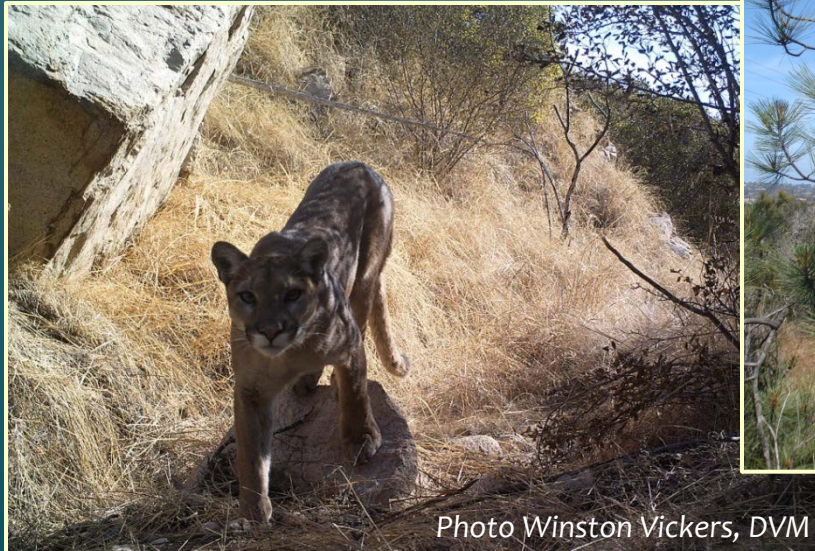


Photo David Hogan

All Species Are Not Equal – Assigning Species to Mgmt Focus Groups

Compiled info. for each species:

- *Status*
- *Population trend*
- *Threats*
- *Biological considerations*
- *Other considerations*



Orcutt's spineflower (*Chorizanthe orcuttiana*)

Current Distribution Rangewide	List Status	Habitat Affinities	Taxonomy and Genetics	Life History/ Demography	Seasonal Phenology	Pollination/ Seed Dispersal	Threats
Coastal San Diego County from Torrey Pines south to Point Loma ^{1,2,3} . Within the MSPA, Orcutt's spineflower occurs at Torrey Pines Extension in MU7 and previously was extant at Oakcrest Park in Encinitas. There are also four occurrences outside the MSPA at Point Loma Naval Base.	FE/CE	Sandy soils in openings in southern maritime chaparral on coastal bluffs within 5 km of the Pacific Ocean ^{1,2,4,5} .	Overall low genetic diversity among Point Loma populations, which exhibit some within patch diversity, a high degree of selfing, and limited seed dispersal ⁶ .	Annual dicot herb. Large annual fluctuations in population size attributed to pattern and amount of rainfall and number of viable seeds banked in the soil ⁶ . Removal of ice plant and duff has led to the appearance of Orcutt's spineflower, indicating seeds may live in soil for decades. Capable of selfing, the importance of outcrossing to maximizing seed set is unknown ⁵ .	The phenology of germination and seedling establishment of this annual plant depends on the timing and amount of rainfall ⁶ .	Little known about pollination or seed dispersal. Potential for Argentine ants to out-compete native insect pollinators ⁵ ? Unknown whether genes disperse by pollen, seeds or both.	Invasive non-native plants, especially ice plant (<i>Carpobrotus</i> spp.). Loss of sandy openings due to native plant encroachment in the absence of a natural fire regime ^{1,2,6} . Trampling, irrigation runoff, and drainage outflow from culverts causing erosion. Low genetic diversity ⁶ . Small number of occurrences with large annual fluctuations in population size makes species vulnerable to demographic and environmental stochasticity and to loss from a catastrophic disturbance ^{2,6} .
Special considerations: This species is considered to have reduced potential for recovery given that there are few populations, little remaining suitable habitat and a high risk of threats². BMPs have been developed by the U.S. Navy to effectively expand populations and to establish new populations^{5,6}. Recommendations are to eliminate non-native invasive plants and duff from areas with suitable habitat to see if there may be re-emergence of this species in new locations, given that seeds are likely to be long-lived^{1,5,6}. Before seed supplementation is used for restoration, invasive non-native plants should be managed for at least two years of suitable growing conditions to determine if there are viable seeds remaining in soil.							

Orcutt's Spineflower Sources

1. Bauder, Ellen. 2000. *Recovery and Management of Orcutt's Spineflower (Chorizanthe orcuttiana) Final Report*. Prepared for the California Department of Fish and Game.
2. USFWS. 2007. *Chorizanthe orcuttiana (Orcutt's spineflower) Five-Year Review: Summary and Evaluation*. Prepared by U.S. Fish and Wildlife Service Carlsbad Fish and Wildlife Office.
3. MSP-MOM. 2013. *Management Strategic Plan Master Occurrence Matrix*. <http://www.sdmmp.com/Home.aspx>
4. Reiser, C. 1994. *Rare Plants of San Diego County*. <http://sandiego.sierraclub.org/rareplants/> Accessed 2012 and 2013.
5. Bauder, Ellen T., Juda Sakrison and Jonathan Snapp-Cook. 2010b. *Chorizanthe orcuttiana (Orcutt's Spineflower) Final Report (2010)*. Prepared for Coastal IPT NAVFACSW and Naval Facilities Engineering Command, Southwest. Contract #: N68711-02-LT-00041, Department of the Navy.
6. Bauder, Ellen T., Juda Sakrison and H. David Truesdale. 2010a. *Chorizanthe orcuttiana (Orcutt's Spineflower) Final Report*. Prepared for Coastal IPT NAVFACSW and Naval Facilities Engineering Command, Southwest. Contract #: N68711-02-LT-00041, Department of the Navy.
7. Thomas Oberbauer. 2013. *Comment on Draft Management Strategic Plan version 01-07-13*.

Vol. 1, App. 1C – MSP Species Mgmt Categories, Criteria & Rationale

Common Name	Latin Name	Mgmt. Category	Mgmt. Categorization Rationale	Status				Trend		Threats
				Overall Distrib. (Source: Species Accounts)	Current Distrib. on CLs in MSPA since 2000 (Source: MO-Matrix)	Num. Occurr. on CLs Doc. Since 2000 at Distinct Sites in MSPA (Source: MO-Matrix)	Max* Num. Indivs. Documented on CLs in MSPA Since 2000 (Source: MO-Matrix)	Potential Loss of Occurr. on CLs since 2000 (Source: MO-Matrix)	Est. Change in Status Since 2000 (Source: SDMMMP or Specified)	Threats Specific to Conserved Occurr. (Source: MO-Matrix)
Shaw's agave	<i>Agave shawii</i>	SL	Restricted distrib., small num. of isolated occurr. w/low num. of indivs., declining status, multiple threats & high potential for loss from CLs in MSPA	SW San Diego Co.; NW Baja CA, Mexico	MUs 1 & 7 (Limited suitable habitat on coastal bluffs)	4 Occurr. at 4 sites (1 natural w/single clone, others small & include transplanted indivs.)	C1		Decline (reduction of Border Field occurrence)	Limited number of isolated small occur. with no connectivity & potential for loss of individuals from stochastic events & loss of genetic diversity. Limited sexual reproduction & seedling recruitment, trampling & instability of ocean bluffs.
Aphanisma	<i>Aphanisma blitoides</i>	SL	Only 1 occurr., limited habitat, annual life cycle & high potential for loss from CLs in MSPA	W SD, ORA, LA, SB & VEN Cos.; Anacapa, Santa Barbara, San Clemente, Santa Catalina, Santa Cruz, San Nicolas & Santa Rosa Islas; Baja CA, Mexico	MU1 (Limited suitable habitat on coastal bluffs & dunes)	1 Occurr.	C1?		Increase w/newly discovered occurr.	Single occurr. vulnerable to demogr. & environ. Stochasticity, loss of genetic diversity.
Salt marsh bird's-beak	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	SL	Restricted distrib. w/small num. of occurr., multiple threats, annual life cycle, low genetic diversity & moderate potential for loss from CLs in MSPA	SLO Co. south to NW Baja CA, Mexico	MU1 (Restricted to coastal salt marshes)	8 Occurr. at 5 Sites				Invasive nonnative plants, climate change (sea level rise & drought), altered hydrology & sediment dynamics, loss of connectivity, low genetic diversity & herbivory
Orcutt's spineflower	<i>Chorizanthe orcuttiana</i>	SL	Entire range in MSPA w/only 1 conserved occurr., low num. of indivs., recent potential loss of occurr., multiple threats, annual life cycle, low genetic diversity & high potential for loss from CLs in MSPA	W SD Co.	MU7 (Entire range is sandy soils on coast from Pt. Loma to Torrey Pines)	1 Occurr.	C2	1? (Oakcrest Park not detected since 2005)	Newly discovered occurr.; loss of 1 occurr.	Invasive nonnative plants, overgrown native veg., trampling, small isolated occurr. w/no connectivity to Point Loma, potential loss of genetic diversity & vulnerable to demogr. & environ. stochasticity.

Vol. 1, Table 2-3

Factors, data sources, & threshold values used to determine risk of loss from the MSPA for Species Mgmt Focus Group species



Photo Wildlife Research Institute

Factor	Source	Threshold Values Indicating Higher Risk of Loss from MSPA
Species Status		
Overall Distribution	Species Profiles	Species occurs only in San Diego County or has a narrow overall distribution outside of San Diego County (into Baja California or one neighboring county)
Current Distribution on Conserved Lands in MSPA since 2000*	MSP-MOM	Species occurs only within a narrow range (≤ 2 MUs) within the MSPA
Number of Occurrences Documented Since 2000 on Conserved Lands in MSPA	MSP-MOM	Species has < 5 documented occurrences on Conserved Lands since 2000
Maximum Number of Individuals Documented on Conserved Lands in MSPA Since 2000	MSP-MOM	Species has $< 1,000$ individuals on Conserved Lands since 2000
Trend		
Potential Loss of Occurrences on Conserved Lands Since 2000	MSP-MOM	Species has lost 1 or more occurrences since 2000.
Estimated Change in Status Since 2000	SDMMP Opinion or Other Specified Data Source	Species appears to show a declining trend since 2000.
Threats		
Threats Specific to Conserved Occurrences	MSP-MOM	Species has high degree of threat(s) that put species or significant occurrence(s)** at risk of loss from Conserved Lands in the MSPA over the near term (< 10 years).
Species Biology		
Life History/Ecology	Species Profiles	Species has life history or demographic traits that increase risk of loss (e.g., annual versus shrub, poor reproduction, skewed sex ratio, etc.)
Genetics	Species Profiles	Data indicates species has low genetic diversity, inbreeding, small effective population size, or isolation.
Other Considerations		
Comments	Various	Various other reasons may put a species at higher risk of loss (see Vol. 1, App. B).
Significant Occurrences Since 2000 on Military Land or East of MSPA or	MSP-MOM	Species has no significant occurrences outside the MSPA that could be conserved or that are on

**MSP Species
110 species**

MSP Species includes covered species from the MSCP, MHCP, and proposed NCP, plus 2 additional species of concern.

Species Management Focus
Species are unlikely to persist over the long-term on Conserved Lands in the MSPA by managing the vegetation community alone.

**Species Management Focus
48 species**

**Category SL
25 species**

Category SL Species are at risk of loss entirely on Conserved Lands in the MSPA area.

**Category SO
14 species**

Category SO Species have one or more significant occurrences at risk of loss on Conserved Lands in the MSPA area.

**Category SS
9 species**

Category SS Species are at lower risk of loss on Conserved Lands in the MSPA area (compared to SL and SO species).

**Vegetation Management Focus
62 species**

Vegetation Management Focus
Species are likely to persist on Conserved Lands in the MSPA with appropriate management of the vegetation community. This assumption needs to be confirmed through monitoring. "Appropriate management" is defined by individual species requirements to be addressed in goals and objectives for each vegetation community.

**Category VF
28 species**

Category VF Species are restricted in distribution in the MSPA and/or have specific vegetation characteristics that need to be managed for persistence of the species on Conserved Lands in the MSPA area.

**Category VG
34 species**

Category VG Species are less restricted in distribution (compared to VF species), and/or do not have specific vegetation characteristics that need to be managed for persistence of the species on Conserved Lands in the MSPA area.

Examples of MSP Species by Mgmt Category



- *SL* – Salt marsh bird's-beak, Mexican flannelbush, Quino checkerspot, southwestern pond turtle, western burrowing owl
- *SO* – *Dehesa nolina*, golden eagle, coastal cactus wren
- *SS* – Thread-leaved brodiaea, Otay tarplant
- *VF* – California gnatcatcher, black-tailed jackrabbit
- *VG* – San Diego barrel cactus, orange-throated whiptail



Implementation Strategy

- *MSP goals have >100 year time horizon*
- *Multiple objectives to achieve goals*
 - *mgmt. activities incrementally applied*
 - *prioritized over 5-year planning horizons*
- *Objectives change over time*
 - *increase in info. on status & trend of species or habitat*
 - *effectiveness of mgmt. actions*



Photo John Martin

Types of Mgmt. Objectives (Vol. 1, Sec. 2.6.1)

Gathering information to inform mgmt:

- **IMG** – Inspect & manage occurr. as necessary (rare plants 2014-15)
- **ISV** – Conduct surveys to collect baseline data on occurr. locations, status & habitat/threat covariates
- **RS** – Conduct research studies



Photo AECOM



Photo Drew Stokes

[Home](#) | [Monitoring](#) | [Management](#) | [Partners](#) | [Reports & Products](#) | [Calendar](#) | [FAQ](#) | [Contact Us](#)

 **SAN DIEGO MANAGEMENT & MONITORING PROGRAM** 

Upcoming Events

[MSP Workshop- North County](#)
april 16, 2014

[Mgmt/Monit Coord Mtg - Apr 2014](#)
april 23, 2014

[MSP Workshop- South County](#)
april 23, 2014

[EMP Working Group May 2014](#)
may 13, 2014

[2014 Fire Summit](#)
may 14, 2014

[Mgmt/Monit Coord Mtg - May 2014](#)
may 28, 2014

[Mgmt/Monit Coord Mtg - June 2014](#)
june 25, 2014

[EMP Working Group July 2014](#)
july 08, 2014

[Mgmt/Monit Coord Mtg - July 2014](#)
july 23, 2014

[Mgmt/Monit Coord Mtg - Aug 2014](#)
august 27, 2014

1
2
3

MSP Rare Plant Monitoring 2014-2015

In 2014 and 2015, a MSP objective is to inspect rare plant occurrences and to conduct routine management (IMG). The objective is to survey existing occurrences for seventeen species (See Appendix A of protocol) to document their status and assess threats in order to develop specific management recommendations. Surveys for these species will be implemented by a combination of land managers and contracted biologists in coordination with SDMMP. Fourteen additional species are also scheduled for 2014-15 to be monitoring as part of regionally funded projects to establish baseline data, develop monitoring protocols, and to conduct management (see Appendix A of protocol).

[Arc-GIS Viewer with MOM](#)
MOM downloads (on [Reports and Products main page](#) - first listed under Maps and GIS)

Draft: Rare Plant Protocol [[278KB](#)] and Field Form [[215KB](#)]
Timelines for 2014-2015 Plants [[93KB](#)]
Excel Form [[182KB](#)]*
Excel Database
Ant Baiting Protocol [[1.2MB](#)]
Plant Information

*This file is in .xlsx format. If you have trouble opening or using the drop down items in this file, please contact SDMMP (Sharon Coe, scoe@usgs.gov) for assistance.

Reference Documents

CNDDb. 2009. *California Natural Diversity Database (CNDDb) Data Use Guidelines*. <http://www.dfg.ca.gov/biogeodata/cdnrb/>

McEachern, K., B. Pavlik, J. Rebman, and R. Sutter. 2007. *San Diego Multiple Species Conservation Program (MSCP) Rare Plant Monitoring Review and Revision*. U.S. Geological Survey Scientific Investigations Report 2007-5016, 86 p.

McEachern, K. and R. Sutter. 2010a. *Assessment of Eleven Years of Rare Plant Monitoring Data from the San Diego Multiple Species Conservation Plan*. USGS-WERC-Channel Islands Field Station. Administrative Report 2010-01. Ventura, California, 146 p.

McEachern, K. and R. Sutter. 2010b. *San Diego MSCP Rare Plant Monitoring Data*

Types of Mgmt. Objectives (Vol. 1, Sec. 2.6.1)

Complete tasks necessary for enhancing/establishing occur:

- **BMP** – Develop & test BMPs
- **GN** – Conduct genetic studies
- **NU** – Maintain a nursery (plants for restoration)
- **SB** – Establish & maintain seed bank &/or bulk seed

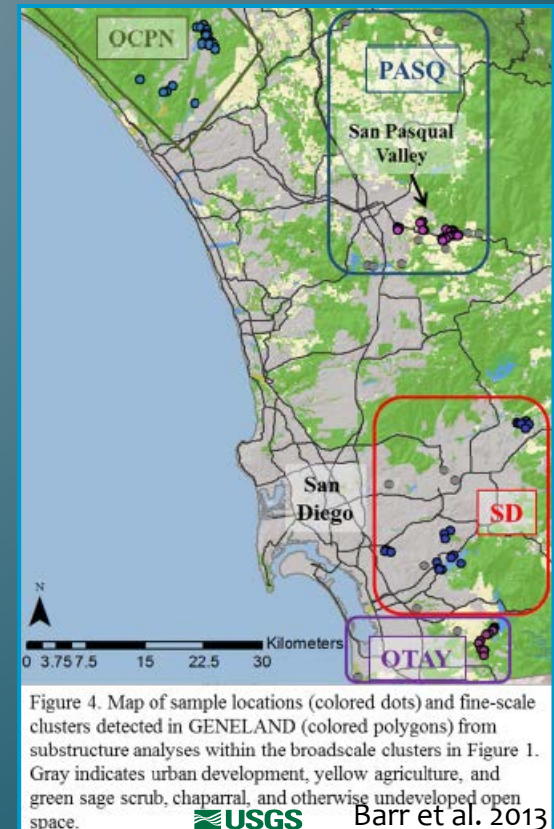
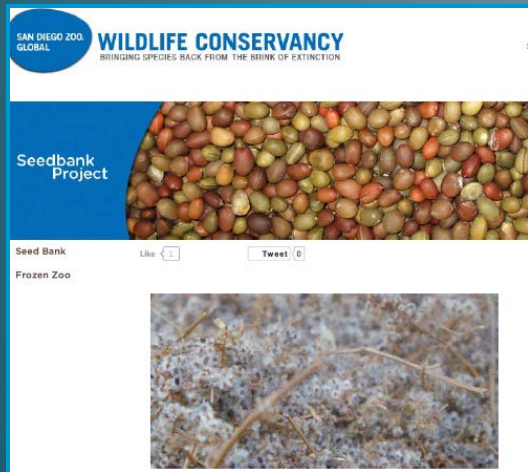


Figure 4. Map of sample locations (colored dots) and fine-scale clusters detected in GENELAND (colored polygons) from substructure analyses within the broadscale clusters in Figure 1. Gray indicates urban development, yellow agriculture, and green sage scrub, chaparral, and otherwise undeveloped open space. USGS Barr et al. 2013

Types of Mgmt. Objectives (Vol. 1, Sec. 2.6.1)

Mgmt. actions to protect & enhance existing occurr. & establish new occurr.

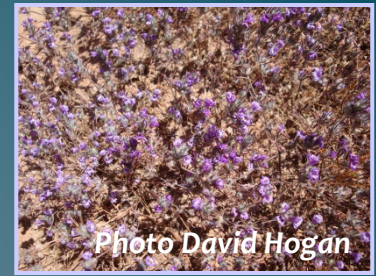
- *FWP – Implement applicable pre-fire actions from the Fire & Wildlife Strategic Plan*
- *IEX – Enhance/expand existing populations*
- *ITR – Translocate or establish new populations*



Coffee Break



How to Use the MSP



1. *Familiarize yourself with the MSP.*
2. *Find where MSP Species Mgmt Focus species are prioritized on your lands. Contact the SDMMP for assistance if needed.*
3. *Review the goals, objectives & actions for those species.*
4. *Identify regional vs local objectives & associated management actions*
5. *Other resources to assist you: **SDMMP staff & databases, land mgr. coordination mtgs, implementation plans, grants***
6. *Coordinate, implement & submit data to SDMMP*

Regional/Local Objectives

Not a designation of who should fund implementation rather a categorization of the scale for implementation/coordination

Examples -

- **Willowy Monardella**
 - *Inspect and conduct routine management- Local*
 - *Hydrologic evaluations - Regional*
- **Golden Eagle**
 - *Nest site disturbance - Local*
 - *Nesting success monitoring - Regional*
- **Cactus wren**
 - *Cactus habitat restoration San Pasqual Valley - Local*
 - *Cactus nursery - Regional*

Ex. SL Species - Willowy Monardella

1. http://www.sdmmp.com/Management_Strategic_Plan.aspx/

Go to **Vol. 1, App. 1A & ArcViewer**

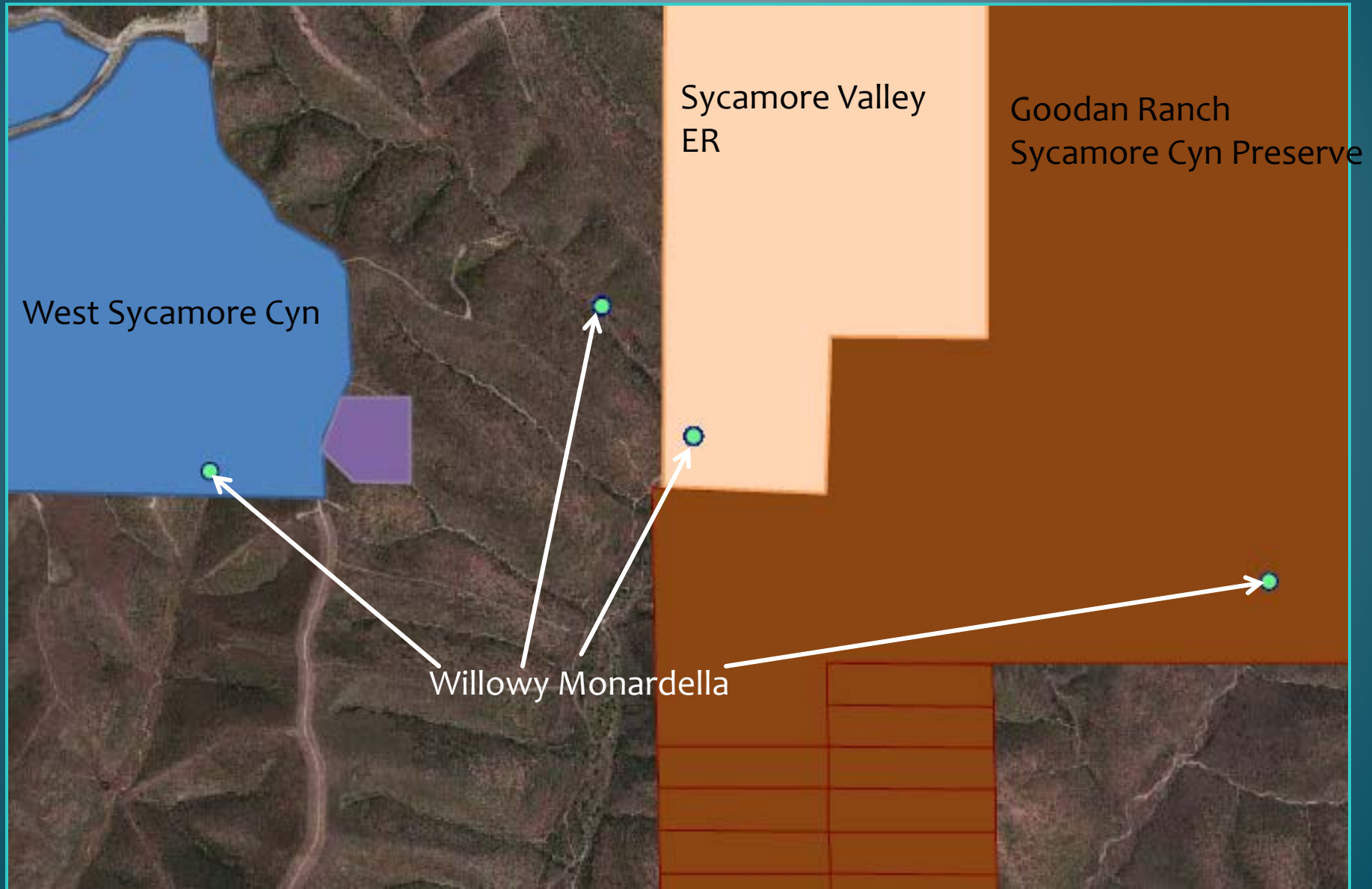
Probably know if this species is on your land but check ArcViewer with MSP-MOM to verify the location & other info.



Photo City of San Diego

Scientific Name	Synonym	Common Name	Plans Covered By ¹	Fed/State Designation ²	MSP Mgmt Category ³
<i>diversifolia</i>					
<i>Cylindropuntia californica</i> var. <i>californica</i>		Snake cholla	MSCP	—/—	VG
<i>Deinandra conjugens</i>		Olay tarplant	MSCP	FE/CE	SS
<i>Dicranostegia orcutiana</i>	<i>Cordylanthus orcutianus</i>	Orcutt's birds-beak	MSCP	—/—	SL
<i>Dudleya blochmaniae</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Blochman's dudleya	MHCP	—/—	SL
<i>Dudleya brevifolia</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Short-leaved dudleya	MSCP, NCP	—/CE	SL
<i>Dudleya variegata</i>		Variegated dudleya	MSCP	—/—	SS
<i>Dudleya viscidula</i>		Sticky dudleya	MSCP, NCP	—/—	SS
<i>Ericameria palmeri</i> ssp. <i>palmeri</i>		Palmer's goldenbush	MSCP	—/—	VF
<i>Eryngium aristulatum</i> var. <i>parishii</i>		San Diego button-celery	MSCP, NCP	FE/CE	VF
<i>Erysimum ammodictyon</i>		Coast wallflower (Sand-loving wallflower)	MSCP	—/—	SL
<i>Euphorbia misera</i>		Cliff spurge	MHCP	—/—	VF
<i>Ferocactus viridescens</i>		San Diego barrel cactus	MSCP, MHCP, NCP	—/—	VG
<i>Fremontodendron mexicanum</i>		Mexican flannelbush	None	FE/—	SL
<i>Hazardia orcuttii</i>		Orcutt's hazardia	MHCP	—/CT	SL
<i>Hesperocypripis forbesii</i>	<i>Cupressus forbesii</i>	Tecate cypress	MSCP	—/—	VF
<i>Iva hayesiana</i>		San Diego marsh-elder	MHCP	—/—	VG
<i>Lepechinia cardiophylla</i>		Heart-leaved pitcher sage	MSCP	—/—	SL
<i>Lepechinia ganderi</i>		Gander's pitcher sage	MSCP	—/—	VG
<i>Monardella hypoleuca</i> ssp. <i>lanata</i>		Felt-leaved monardella	MSCP, NCP	—/—	VF
<i>Monardella stoneana</i>	<i>Monardella linoidea</i> ssp. <i>stoneana</i>	Jennifer's monardella (Monardella stoneana)	None	—/—	SL
<i>Monardella villosa</i>	<i>Monardella linoidea</i> ssp. <i>villosa</i>	Willow monardella	MSCP	FE/CE	SL

Willowy Monardella ArcViewer & MSP-MOM



Ex. SL Species Willowy Monardella

Find goals &
objectives for
Species Mgmt.
Focus species in
Vol. 2, Sec. 2.0

Species Management Focus Quick Reference Index

Taxa	Scientific Name	Synonym	Common Name	MSP Mgmt Category ¹	Vol. 2 Page # ²	MU ³
SPECIES MANAGEMENT FOCUS GROUP - CATEGORY SL SPECIES						
Plant	<i>Agave shawii</i> var <i>shawii</i>	<i>Agave shawii</i>	Shaw's agave	SL	2-2	1, 7
Plant	<i>Aphanisma bitoides</i>		Aphanisma	SL	2-9	1
Plant	<i>Chloropyron maritimum</i> ssp. <i>maritimum</i>	<i>Cordylanthus maritimus</i> ssp. <i>maritimus</i>	Salt marsh bird's-beak	SL	2-13	1
Plant	<i>Chorizanthe orcuttiana</i>		Orcutt's spineflower	SL	2-21	6, 7
Plant	<i>Clinopodium chandleri</i>	<i>Satureja chandleri</i>	San Miguel savory	SL	2-28	3, 4
Plant	<i>Dicranostegia orcuttiana</i>	<i>Cordylanthus orcuttianus</i>	Orcutt's birds-beak	SL	2-33	3
Plant	<i>Dudleya blochmaniae</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Blochman's dudleya	SL	2-38	N/A
Plant	<i>Dudleya brevifolia</i>	<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>	Short-leaved dudleya	SL	2-39	6, 7
Plant	<i>Erysimum ammophilum</i>		Coast wallflower (Sand-loving wallflower)	SL	2-45	6, 7
Plant	<i>Fremontodendron mexicanum</i>		Mexican flannelbush	SL	2-49	3
Plant	<i>Hazardia orcuttii</i>		Orcutt's hazardia	SL	2-54	6, 7
Plant	<i>Lepechinia cardiophylla</i>		Heart-leaved pitcher sage	SL	2-61	8
Plant	<i>Monardella stoneana</i>	<i>Monardella inoides</i> ssp. <i>vineana</i>	Jennifer's monardella (Willowy monardella)	SL	2-65	N/A
Plant	<i>Monardella vineana</i>	<i>Monardella inoides</i> ssp. <i>vineana</i>	Willowy monardella	SL	2-66	4, 6
Plant	<i>Nolina cismontana</i>		Chaparral nolina (Chaparral beargrass)	SL	2-75	5
Plant	<i>Orcuttia californica</i>		California orcutt grass	SL & VF	N/A	N/A
Plant	<i>Pogogyne nudiuscula</i>		Otay mesa mint	SL & VF	N/A	N/A



Photo City of San Diego

Vol 2., Sec. 2.1 - Species Mgmt. Focus Goals & Objectives

– Willowy Monardella

Info. on occur.
also in figures &
table (next slide)

Vol. 1, App. 1C has
details of mgmt.
categorization



Photo City of San Diego

Vol. 2, Section 2.0

2.1.13. Willowy Monardella (*Monardella viminea*) – FE/CE

Management Units with Known Occurrences

Willow monardella is a narrow endemic in central San Diego County (USFWS 2012b).

It is found in coastal sage scrub and riparian scrub in sandy washes and on adjacent banks with ephemeral water flow where water only flows for 24 to 48 hours following rain events (Elvin and Sanders 2003). This species has only eight known occurrences and occurrences are small and declining with several recent extirpations (USFWS 2012b). Within the MSPA, willow monardella is found on Conserved Lands in Sycamore, West Sycamore, Spring, and Lopez Canyons in MUs 4 and 6 (Table 2-1.23 and Figures 2-1.14 and 2-1.15). It occurs at nine sites supporting small occurrences (<500 individuals; Vol 3, Section 5) with multiple sites within the same drainage (i.e., Lopez and Sycamore Canyons) considered part of the same occurrence (CNDDB 2013).



Outside the MSPA, willow monardella is found on Marine Corps Air Station Miramar in Sycamore, San Clemente, West Sycamore, Spring, Elanus and Murphy Canyons and their tributaries (USFWS 2012c). There is also a transplanted occurrence on private lands in Carroll Canyon (USFWS 2011, 2012c). Native occurrences of this species have been extirpated from Carroll and Cemetery Canyons (USFWS 2012b).

Management Categorization Rationale

Willow monardella should be managed as a Species Management Focus Category SL Species due to a high risk of loss from Conserved Lands in the MSPA and because managing the general vegetation community alone will not ensure persistence of the species (Categorization Table, Vol 1, App. 1C). It is at a high risk of loss as there are only eight occurrences in a restricted distribution, limited suitable habitat, and isolated occurrences with a small number of plants vulnerable to loss of genetic diversity and extirpation as a result of environmental and demographic stochasticity or catastrophic disturbance (see Vol 3 Sec. 2.0, Species Profiles). Willow monardella occurrences also face a high degree of threat and have declined significantly since 2002 (USFWS 2012b).

Category
SL Species
Determined
to be at risk
of loss
entirely on
Conserved
Lands in the
MSPA

An important threat to willow monardella is altered hydrology as a result of urbanization causing severe erosion and undercutting and washing away plants (Kelly and Burrascano 2007, City San Diego 2000-2003, 2005-2012). Invasive non-native plant species and erosion are impacting all occurrences in the MSPA for which there is information on threats (Table 2-1.23). Five of the six occurrences on Conserved Lands burned during the 2003 Cedar wildfire. An altered fire regime could affect occurrence demographics and exacerbate threats posed by invasive plant species and erosion. There is also potential for impacts from feral pigs that have recently invaded the San Diego

Vol. 2, P. 2-66

Vol 2., Sec. 2.1 - Species Mgmt. Focus Goals & Objectives

– Willowy Monardella

Tables & Figures with info. on location, land owner/manager & threats for each conserved occur.

Table 2-1.23. Conserved willowy monardella occurrences identified for management in MUs 4 and 6.

Occur. Name	MUs	Preserve	Land Ownr.	Land Mgr.	Max. # Locat. ¹ Doc. Since 2000	Year	Threats	Sources
Sycamore Canyon #1	4	Sycamore Canyon	Sycamore Canyon Estates LCC	City San Diego PRD	43	2009	Burned in 2003 and number of clumps reported has declined by 75%. Threatened by invasive non-native grasses and stream erosion. Potential for genetic bottleneck and low genetic diversity.	City San Diego 2000-2003, 2006-2012, USFWS 2011b, 2012b,c
Sycamore Canyon #2	4	Sycamore Canyon/Goodan Ranch Preserve	CDFW	County San Diego DPR/ Friends of Sycamore Canyon/ Goodan Ranch	93	2004	Burned in 2003 and number of locations has declined by half since 2004. Threatened by invasive non-native grasses and erosion. Potential for genetic bottleneck and low genetic diversity.	CNDDDB 2000-2009, County San Diego 2007, USFWS 2012b
Sycamore Canyon #3	4	Sycamore Canyon/Goodan Ranch Preserve	County San Diego	County San Diego DPR	7	2008	Burned in 2003. No other information on threats.	ICF Jones and Stokes 2008b, USFWS 2008b, 2012b, SANBIOS 2013
West Sycamore Canyon	4	Sycamore Estates	City San Diego	City San Diego PRD	4	2009	Burned in 2003. No other information on threats.	CNDDDB 2013
Spring Canyon/ West Sycamore Canyon	4	East Elliott	City San Diego	City San Diego PRD/ CNPS	Present	2000	Burned in 2003. No other information on threats.	City San Diego 2000, USFWS 2001b, 2012b,c, CNDDDB 2013
Lopez Canyon	6	Los Penasquitos Canyon Preserve	City San Diego	City San Diego PRD	4 (4 sites in Lopez Canyon are considered one occurrence)	2012	Invasive non-native plants and altered hydrology leading to severe erosion.	City of San Diego 2000-2002, 2005-2006, 2008-2012; USFWS 2011b, 2012b,c

¹ Locat.¹ refers to spatially distinct locations reported with one or more plants or clumps of willowy monardella. There may be differences between sites in how this species was mapped and counted so there is uncertainty associated with the number of locations.

Management Strategic Plan, Version 08.27.2013

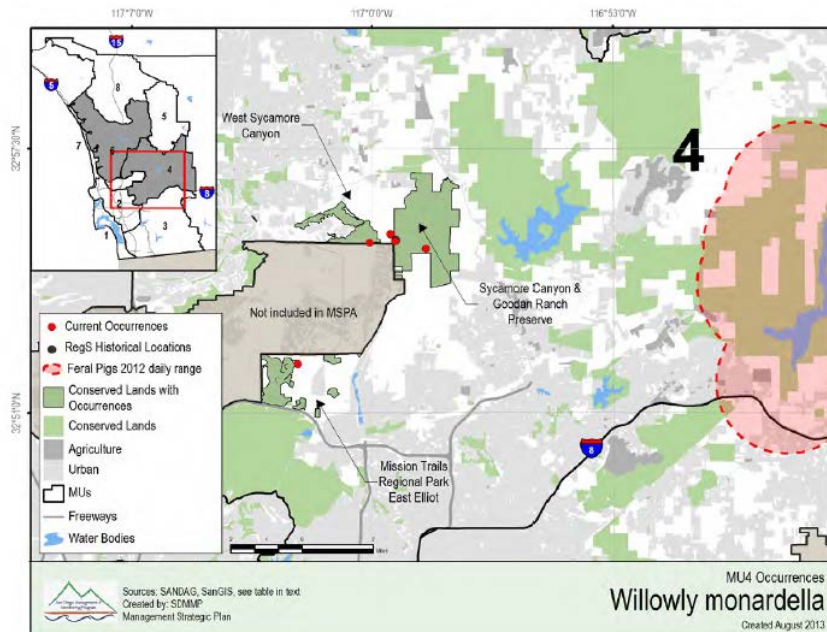


Figure 2-1.14: Distribution of willowy monardella occurrences and potential daily ranges of feral pigs in 2012 on Conserved Lands in MU4.

Vol 2., Sec. 2.1 - Species Mgmt. Focus Goals & Objectives – Willowy Monardella

Background info.
& rationale for
mgmt. objectives



Photo City of San Diego

Management Approach

For long-term persistence, it is important to expand as feasible and then maintain willow monardella occurrences at the six sites within MUs 4 and 6 in the MSPA (Table 2-1.23) and to establish at least two new spatially distinct occurrences. Fire protective measures should be prepared and implemented to protect this species from repeated burning over the next 25 years. The Fire Strategic Plan should also include recommendations for fire suppression and post-fire management in the event that willow monardella occurrences are burned.

Recent morphological and genetic studies have reclassified as a new species, Jennifer's monardella (*Monardella stoneana*) those occurrences in southern San Diego County that were previously considered to be willow monardella (Elvin and Sanders 2003, Prince 2009). The genetic study found indications of limited genetic diversity in the two willow monardella occurrences that were sampled. The recent 2003 fires may have caused a genetic bottleneck as the number of individuals declined in burned occurrences (USFWS 2012b). A genetic study is needed to sample across all extant occurrences and determine occurrence genetic structure. The goal of this study would be to identify whether there is gene flow among occurrences, assess whether there have been genetic bottlenecks and the risk of inbreeding, to characterize genetic diversity at each occurrence, and to determine the overall genetic trajectory for the species (Prince 2009). This information will be important in expanding existing occurrences, establishing new occurrences, and maintaining genetic diversity.

There is currently a seed bank for willow monardella at Rancho Santa Ana Botanic Garden (RSABG 2013), which should be maintained and expanded with viable seed (USFWS 2012b). This seed bank is important for preserving genetic diversity and providing propagules to rescue occurrences in case of local extinctions. Seed bulking should be initiated to provide seed for expanding occurrences and establishing new occurrences.

An implementation plan for willow monardella should be prepared that identifies priority management actions for the next five years. This plan should incorporate information on current status and threats at existing occurrences, suitable habitat delineations at existing and potential new occurrences, and a hydrological study identifying potential risks to occurrences from erosion and flooding. The implementation plan should identify occurrence expansion and establishment BMPs based upon lessons learned from previous erosion control and transplantations in Lopez Canyon (Kelly and

Vol 2., Sec. 2.1 - Species Mgmt. Focus Goals & Objectives – Willowy Monardella

Regional & MU goals

Mgmt. objectives & actions



Photo City of San Diego

Table 2-1.24. Management goals and objectives for willowy monardella.

Regional Management Goal: Expand and maintain small occurrences and establish new occurrences of willowy monardella to increase resilience to environmental and demographic stochasticity, maintain genetic diversity, and ensure persistence over the long-term (>100 years) in native plant communities.

MUs 4 and 6 Management Goals and Objectives: Same as regional management goals and objectives.

Type	Objectives	MUs	Actions
IMG; Local	Beginning in 2014, inspect on an annual basis willowy monardella at the nine sites on Conserved Lands in MUs 4 and 6 (Table 2-1.23), map and census the number of plants/clumps, collect covariate data on threats, determine management needs, conduct routine management as necessary, and submit monitoring and management data to SC-MTX.	4,6	- Conduct regional monitoring protocol surveys to map occurrences, count number of individuals, and categorize the risk of threats, such as invasive plants and erosion. - Based upon occurrence status and threats, determine if routine management or more intensive management is warranted. - Perform routine management activities such as protecting occurrences from disturbance through fencing, signage, and enforcement and invasive plant control. - Submit monitoring and management data to the SC-MTX website portal.
FWP; Local	Beginning in 2014, implement pre-fire management actions identified in the Strategic Fire Plan to reduce the effects of catastrophic fire at the nine willowy monardella sites on Conserved Lands in MUs 4 and 6 (Table 2-1.23).	4,6	- Perform pre-fire actions applicable for willowy monardella in the Strategic Fire Plan, including actions to try and prevent a catastrophic fire from causing the loss of an occurrence. - This plan should include fire suppression and post-fire recovery measures to reduce impacts to the occurrence if a fire should occur. In particular, impacts from invasive plant species and from altered hydrology and erosion should be addressed in post-fire planning. - Submit management data to the SC-MTX website
GN; Regional	Beginning in 2014, conduct a study of willowy monardella to determine the occurrence genetic structure for occurrences on Conserved Lands in MUs 4 and 6 (Table 2-1.23) and as feasible for occurrences outside the MSPA, evaluate if there have been recent genetic bottlenecks, assess the risk of inbreeding, and develop management recommendations for maintaining and/or enhancing genetic diversity. Submit genetic results to SC-MTX for use in informing development of an implementation plan.	4,6	- Use BMPs to collect plant material for genetic samples at the nine willowy monardella sites in the MSPA. - Collaborate as feasible with the Marine Corps to collect samples from willowy monardella at Marine Corps Station Miramar and analyze genetic structure of all known occurrences. - Determine occurrence genetic structure and whether there is gene flow among willowy monardella occurrences. - Determine if there are signs of recent genetic bottlenecks or risks of inbreeding at extant occurrences. - Evaluate the overall genetic trajectory for willowy monardella. - Prepare management recommendations for enhancing and/or maintaining genetic diversity at conserved occurrences.

Vol 2., Sec. 2.1- Species Mgmt. Focus Goals & Objectives – Willowy Monardella

Mgmt. objectives & actions



Photo City of San Diego

Type	Objectives	MUs	Actions
SB; Regional	In 2015, develop and begin implementing a plan to collect seeds from the nine willowy monardella sites (Table 2-1.23) on Conserved Lands in MUs 4 and 6, store seeds at the permanent seed bank at Rancho Santa Ana Botanic Gardens to preserve genetic diversity and rescue occurrences from extirpation, and bulk seeds to provide a source of propagules for enhancing existing occurrences and establishing two new occurrences.	4,6	- Develop a plan to collect willowy monardella seed over multiple years (e.g., Kew 2001, Wall 2009). - Collect seed from willowy monardella occurrences using BMPs, including collecting seed only during suitable growing conditions and in a manner that avoids impacts to genetic diversity and maintains a sufficient onsite seed bank. Measures should be taken to ensure occurrence soil seed banks either through collecting and bulking seed and by redistributing seed back to the occurrences or by restricting collection to a very small percentage of available seed collected over multiple years. - Keep detailed records for all collected seed to document donor and receptor sites, collection dates, amounts collected, etc. and provide data to SC-MTX and to Rancho Santa Ana Botanic Garden. - Store seeds in the existing willowy monardella seed bank at Rancho Santa Ana Botanic Garden (RSABG 2013) to preserve genetic diversity and provide a source of propagules in case of catastrophic disturbance at existing occurrences. Seeds should be separated by occurrence along maternal lines and regularly tested for viability. - Beginning in 2016, grow seeds using BMPs for seed evaluation and bulking (e.g., Wall 2009) to use in enhancing and expanding existing occurrences in 2017 and for establishing two new spatially distinct occurrence in the 2019-2023 management planning cycle.
ISV; Regional	Beginning in 2015, determine the logistical feasibility of expanding existing willowy monardella occurrences in MUs 4 and 6 (Table 2-1.23) and delineate any suitable habitat, evaluate spatially distinct sites in MUs 4 and 6 with potential for establishing new occurrences and map suitable habitat, assess threats, conduct a hydrological study to determine risk of erosion and flooding, and recommend management actions needed to reduce threats to existing and potential new occurrences.	4,6	- Determine if it is logistically feasible and if there is sufficient suitable habitat to expand the nine existing willowy monardella sites on Conserved Lands in MUs 4 and 6. For those sites where occurrences can be increased, delineate suitable habitat for expansion. - Identify sites and map suitable habitat to potentially establish new occurrences on Conserved Lands in MUs 4 and 6. - Suitable habitat can be characterized based on models incorporating environmental characteristics at locations where the species occurs. - Evaluate the level of threats and management needs at each existing occurrence and at sites with potential for establishing new occurrences. - A qualified hydrologist should conduct a study at each existing occurrence and any sites with potential for new occurrence establishment to determine what is causing the erosion and flooding, potential remedies and the risk to willow monardella if no actions is taken, and develop management recommendations to mitigate potential impacts. - Submit the habitat delineations, threat assessments, hydrological study, and management recommendations to the SC-MTX website portal.

Vol. 1, App. 1D – Priority Mgmt. Actions Timeline

Priority Management Actions Timeline

Common Name	Scientific Name	Species Mgmt. Cat.	Activity Code*	Lead Entity (Regional or Local)	Management Objectives (Abbreviated for Table, refer to Vol. 2, Sec. 2.0 for full description)	MUs	Year 1 (2014)	Year 2 (2015)	Year 3 (2016)	Year 4 (2017)	Year 5 (2018)	Year 6+
Regional Management Goal for Heart-leaved Pitcher Sage: Enhance and expand conserved heart-leaved pitcher sage occurrences to increase resilience to environmental and demographic stochasticity, enhance genetic diversity, and improve chances of persistence over the long term (>100 years) in chaparral and oak woodland habitats.												
MUs 4 and 8 Management Goals for Heart-leaved Pitcher Sage: Same as regional management goal.												
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	IMG	L	Inspect 2 occurrences and conduct routine management	8	X	X	X	X	X	X
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	ISV	R	Survey historic occurrences and potentially suitable habitat	4, 8	X	X				
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	PIP	R	Prepare implementation plan	4, 8			X			
Heart-leaved pitcher sage	<i>Lepechinia cardiophylla</i>	SL	IIP	R	Implement high priority management actions identified in the implementation plan	4, 8				X	X	X
Jennifer's monardella	<i>Monardella stoneana</i>	SO			Specific goals and objectives for northern harrier will be developed by September 2014							
Regional Management Goal for Willowy Monardella: Expand and maintain small occurrences and establish new occurrences of willowy monardella to increase resilience to environmental and demographic stochasticity, maintain genetic diversity, and ensure persistence over the long term (>100 years) in native plant communities.												
MUs 4 and 6 Management Goals for Willowy Monardella: Same as regional management goals and objectives.												
Willowy monardella	<i>Monardella viminea</i>	SL	IMG	L	Inspect 9 sites with willowy monardella and conduct routine management	4, 6	X	X	X	X	X	X
Willowy monardella	<i>Monardella viminea</i>	SL	FWP	L	Implement applicable pre-fire strategic plan actions	4, 6	X	X**				
Willowy monardella	<i>Monardella viminea</i>	SL	GN	R	Conduct genetic study	4, 6	X	X				
Willowy monardella	<i>Monardella viminea</i>	SL	SB	R	Establish a seed bank and bulk seed as necessary for population expansion and establishment	4, 6		X	X**			
Willowy monardella	<i>Monardella viminea</i>	SL	ISV	R	Assess the feasibility of expanding existing occurrences, conduct a hydrological evaluation and threat assessment, document occurrence status, and delineate suitable habitat for population expansion and establishment	4, 6		X	X			
Willowy monardella	<i>Monardella viminea</i>	SL	PIP	R	Prepare implementation plan including identification of suitable habitat for expanding existing populations and establishing new populations	4, 6			X			
Willowy monardella	<i>Monardella viminea</i>	SL	IEX	R or L	Expand existing occurrences as feasible	4, 6				X	X	X
Willowy monardella	<i>Monardella viminea</i>	SL	ITR	R or L	Establish 2 new occurrences and implement high priority management actions identified in the implementation plan	4, 6						X

Vol 2., Sec. 3.0- Vegetation Mgmt. Focus Goals & Objectives

– VF Species Ex. Coastal Sage Scrub



Vol 2., Sec. 3.0- Vegetation Mgmt. Focus Goals & Objectives – VF Species Ex. Coastal Sage Scrub

Table 3-1. Vegetation management goals for coastal sage scrub VF species.

Regional Management Goal: Enhance and restore coastal sage scrub on Conserved Lands in the MSPA that supports or has the potential to support VF species (cliff spurge, Blaineville's horned lizard, California gnatcatcher, black-tailed jackrabbit) so that these species are resilient to environmental stochasticity and catastrophic disturbances such as fire and will be likely to persist over the long term (>100 years).			
Type	Objectives	MUs	Actions
BMP; Regional	Beginning in 2014, conduct at least a three year experimental study to develop and test grazing as a BMP for controlling invasive non-native annual grasses at a landscape scale in coastal sage scrub at multiple sites on Conserved Lands, monitor annually to determine effectiveness and any impacts to plant and animal species, develop management recommendations, and submit monitoring and management data to SC-MTX.	3,4,5,6	• Initiate adaptive management at three or more selected sites with extensive areas of coastal sage scrub with a large annual grass component in one of the following MUs: 3, 4, 5, 6 • Select livestock species to use in the grazing study that are most feasible to manage, be effective at controlling invasive non-native annual grasses, and that are least likely to impact native plant and animal species. • Conduct experimental trials at multiple sites with sufficient replicates to evaluate the timing and duration of grazing, stocking rates, and frequency of grazing over at least three years with varying amounts and timing of precipitation. • Monitor plant community composition and cover to determine if grazing effectively controls non-native annual grasses, forbs and alters native plant community composition, structure, and cover. • Collect covariates to evaluate impacts of grazing to native plant and animal species. • If utilizing grazing to manage annual grass in coastal sage scrub achieves the desired outcomes and does not have unintended consequences (introduction and or expansion of invasive species, change in shrub structure, etc.) on the coastal sage scrub vegetation community and it is cost effective, develop a BMP for utilizing grazing as a management tool. If a BMP is developed it should include specific guidelines on how to use grazing as a management tool and the costs to utilize it. • Submit monitoring and management data to the SC-MTX website portal.
FWP; Local	Beginning in 2015, implement pre-fire management actions identified in the Strategic Fire Plan in order to reduce the effects of an altered fire regime on coastal sage scrub on Conserved Lands in the MSPA.	1,2,3,4,5,6,7,8	• Perform pre-fire actions identified in the Strategic Fire Plan that would benefit coastal sage scrub, including actions to promote a natural fire return interval. • Submit management data to the SC-MTX website portal.
ISV; Regional	In 2015, survey burned and unburned coastal sage scrub across the MSPA in conjunction with the California gnatcatcher monitoring, measure vegetation and collect covariate data on threats, combine with previously collected	1,2,3,4,5,6,7,8	• Use previously collected data coastal sage scrub vegetation data (e.g., USGS, USFWS, SDSU vegetation transects) and landscape-scale tools (e.g., AECOM 2012 vegetation map, imagery analysis) to identify points to survey

Vol 2., Sec. 4.0- Threat/Stressor Mgmt. Ex. Argentine Ants



Photo City of San Diego

Vol 2., Sec. 4.0- Threat/Stressor Mgmt. Ex. Argentine Ants

Table 4-7. Goals and Objectives for Urban Edge.

Regional Goal: Reduce urban edge effects where they are negatively affecting (directly or indirectly) the long-term viability of MSP species on conserved lands or markedly increasing the costs of species and or vegetation community management to meet MSP goals and objectives.			
Threat/ Stressor	Objectives	MUs	Actions
Urban Edge	Argentine Ants- In 2014, develop and implement a study to assess the level of invasion of preserves by Argentine ants, their potential impacts to MSP species, and identify areas where their impacts are greatest.	3,4,5,6,8 ¹	• Develop and test an Argentine ant rapid assessment protocol for conserved lands • Implement the rapid assessment methodology and analyze the data and identify the areas where Argentine ants may be having the highest impact on natural communities occupied by MSP SL, SO, SS and VF species • In 2015, survey the high Argentine ant impact areas to determine what factors are creating the conditions supporting the Argentine ant populations and develop potential measures to make the site less or unsuitable for Argentine ants • Submit data to the SC-MTX website portal • Reevaluate the need to implement measures to reduce the impacts to MSP species from Argentine ants
Urban Edge	Argentine Ants- In 2016, develop and implement the identified measures at 10 sites utilizing an adaptive management approach if the analyzes in 2015 support the implementation of Argentine ant control measures	TBD	• Develop the monitoring protocol for evaluating the effects of the control measures • Implement control measures and evaluate their effectiveness and cost. • Submit data to the SC-MTX website portal

Vol 2., Sec. 4.0- Threat/Stressor Mgmt. Ex. Argentine Ants



Assessing Presence of Argentine Ants Using the Bait Method

Survey Protocol

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
WESTERN ECOLOGICAL RESEARCH CENTER

Tools on SDMMP.com

- *SDMMP Library*
- *Databases*
- *Plant Monitoring Webpage*
- *Reports & Products*

[Home](#) | [Monitoring](#) | [Management](#) | [Partners](#) | [Reports & Products](#) | [Calendar](#) | [FAQ](#) | [Contact](#)



Upcoming Events

[Mgmt/Monit Coord Mtg - Apr 2014](#)
april 23, 2014

[MSP Workshop- South County](#)
april 23, 2014

[EMP Working Group May 2014 Meeting](#)
may 13, 2014

[2014 Fire Summit](#)
may 14, 2014

[Mgmt/Monit Coord Mtg - May 2014](#)
may 28, 2014

[Mgmt/Monit Coord Mtg - June 2014](#)
june 25, 2014

[EMP Working Group July 2014 Meeting](#)
july 08, 2014

[Mgmt/Monit Coord Mtg - July 2014](#)
july 23, 2014

[Mgmt/Monit Coord Mtg - Aug 2014](#)
august 27, 2014

[Mgmt/Monit Coord Mtg - Sept 2014](#)
september 24, 2014



Monitoring



Management



Reports & Products



Databases

Welcome to the San Diego Management & Monitoring Program (SDMMP)

The SDMMP is a science based program seeking to provide a coordinated approach to management and biological monitoring of lands in San Diego that have been conserved through various programs including the Multiple Species Conservation Program, the Multiple Habitats Conservation Program, the TransNet Environmental Mitigation Program and various other conservation and mitigation efforts.

[View Regional Announcements](#)

Available: Management Strategic Plan for Conserved Lands in Western San Diego County ([go to webpage](#))

Note: You may need to upgrade your browser to IE8 to open links and download documents. Please report problems with this website to Emily Perkins at eperkins@usgs.gov.

Mapping Tools

ArcGIS **MOM and Conserved Lands SD MMP**

NEW MAP Emily ▾

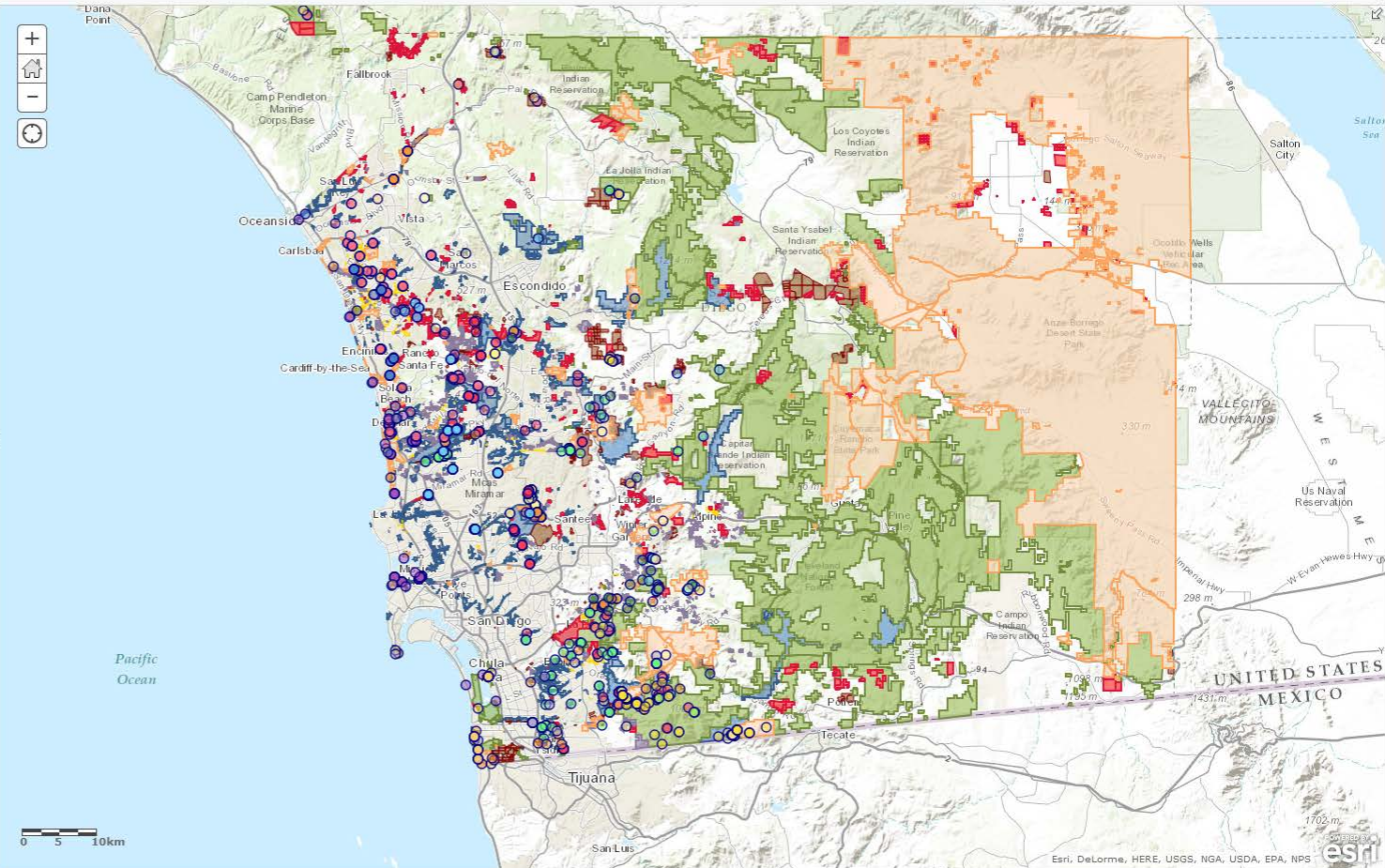
Details Add Basemap

Save Share Print Measure Bookmarks Find address or place

About Content Legend

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- ☒ State Owned CL
- ☒ Privately Owned CL
- ☒ Water District and Non-profit Owned CL
- ☒ HOA Owned CL
- ☒ Federally Owned CL
- ☒ County Owned CL
- ☒ City Owned CL
- ☒ Topographic



Database Tools



Photo Emily Perkins

Strategic Plan Tracking Database - “SP-Tracker”

- *A database (MS Access) of strategic plan goals, objectives, actions, dates, implementation*
- *Uses:*
 - *Inform priorities at multiple spatial scales (preserves, MUs, etc.)*
 - *Track progress of work in support of Strategic Plans*
 - *Queries can be exported (Excel, Access Reports) for agencies, managers, etc.*

MSP Regional Goals for each species

qry_Goals_Regional				
Common_name	Goal_type	Goal_statement		
American badger	regional	Enhance, and expand the area occupied by the existing occurrence of American badger in San Diego County in large (>1,000 acres of interconnected habitat) areas of suitable natural vegetation surrounded by limited number of high use roads, and increase connectivity (and reduce potential road mortality) between occupied and suitable habitat areas to allow expansion and movement of the occurrence and to ensure persistence in the MSPA over the long-term (>100 years).		
Aphanisma	regional	Enhance and expand conserved aphanisma occurrences to increase resilience to environmental and demographic stochasticity, enhance genetic diversity, and improve chances of persistence over the long term (>100 years) in coastal bluff and foredune habitats.		
Arroyo toad	regional	Protect and enhance existing populations of breeding arroyo toads in areas that meet the conditions for long-term management (low human access; high naturalness) to ensure persistence over the long-term (>100 years).		
Blochman's dudleya	regional	Specific goals and objectives for Blochman's dudleya will be developed by September 2014		

MSP MU Goals sorted by MU

qry_Goals_MU

Common_name	Site_name	Goal_statement
Aphanisma	MU1	Same as regional management goal.
Salt marsh bird's-beak	MU1	Same as regional management goal.
Orcutt's birds-beak	MU1	If determined to be feasible, re-establish a new population of Orcutt's bird's-beak in MU1 to increase the species' resilience to environmental stochasticity, to decrease risks from a single catastrophic disturbance, and to improve chances of persistence over the long term (>100 years) in native plant communities within the MSPA.
Coast wallflower	MU1	Same as regional management goal.
Nuttall's acmispon	MU1	Maintain large occurrences and enhance small occurrences of Nuttall's acmispon to increase resilience to environmental stochasticity, maintain genetic diversity, and ensure persistence over the long term (>100 years) in native plant communities in MU1.
Shaw's agave	MU1	Maintain and as suitable habitat allows, expand the three extant Shaw's agave occurrences and establish a new occurrence on Conserved Lands in MU1.
Orcutt's birds-beak	MU2	Maintain the small occurrence to preserve genetic variability and for seed banking.

MSP Goals and Objectives with Years

rpt_Goals_subrpt_Obj_Years

Common_name

Region

Goal_statement

Enhance, and expand the area occupied by the existing occurrence of American badger in San Diego County in large (>1,000 acres of interconnected habitat) areas of suitable natural vegetation surrounded by limited number of high use roads, and increase connectivity (and reduce potential road mortality) between occupied and suitable habitat areas to allow expansion and movement of the occurrence and to ensure persistence in the MSPA over the long-term (>100 years).

MU3

Goal_statement

Enhance, and expand the area occupied by the existing occurrence of American badger in MU3 east of SR-25 in large (>1,000 acres) areas of suitable natural vegetation surrounded by limited number of high use roads.

ActivityCode

Lead entity

objective

Region

Years

ActivityCode

Lead entity

objective

MU3

Years

MSP Actions (support Objectives)

Salt marsh bird's-beak

Activity Code:
GN

Lead entity:
regional

OBJECTIVE:

Beginning in 2014, conduct a study of salt marsh bird's-beak to determine occurrence genetic structure including genetic diversity within and among the seven occurrences (Table 2-1.5), identify occurrences to serve as seed sources for expanding existing occurrences and establishing new occurrences, and determine whether pollen transfer is necessary to increase genetic diversity. Submit genetic results to SC-MTX for use in informing development of an implementation plan.

ACTIONS:

GN_1

Use BMPs to collect plant material for genetic samples at seven conserved salt marsh bird's-beak occurrences in the MSPA.

GN_2

Determine genetic diversity and structure within and among salt marsh bird's-beak occurrences on Conserved Lands. Evaluate whether genetic diversity has declined relative to 1995 levels in the Tijuana Estuary and Sweetwater Marsh occurrences.

GN_3

Based on the genetic results, select occurrences to serve as seed sources for expanding existing occurrences and establishing new occurrences with a goal of enhancing genetic diversity.

GN_4

Determine if there are occurrences with so little genetic diversity that pollen transfer may be necessary to increase genetic diversity (USFWS 2009a).

MU

	1	
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Plant species with known occurrences

qry_MOMplants_landowner_all			
LandOwner	LandMgr	Common_name	Preserve
CDPR	CDPR	Salt marsh bird's-beak	Border Field State Park
CDPR	CDPR	Shaw's agave	Border Field State Park
CDPR	CDPR	Shaw's agave	Torrey Pines State Natural Reserve
CDPR	CDPR	Short-leaved dudleya	Torrey Pines Extension
CDPR	CDPR	Short-leaved dudleya	Torrey Pines State Natural Reserve
CDPR/NRG Energy	CDPR/Unknown	Nuttall's acmispon	Torrey Pines State Natural Reserve
City Carlsbad	City Carlsbad	Del Mar manzanita	City of Carlsbad Municiple Golf Course
City Carlsbad	City Carlsbad	Sticky dudleya	La Costa Canyon Park
City Carlsbad	CNLM	Thread-leaved brodiaea	Lake Calavera Mitigation Bank
City Chula Vista	City Chula Vista	Cliff spurge	Chula Vista Central City Preserve
City Chula Vista	City Chula Vista	Orcutt's birds-beak	Chula Vista Central City Preserve
City Chula Vista	City Chula Vista	Otay tarplant	Chula Vista Central City Preserve
City Encinitas	City Encinitas	Del Mar manzanita	Oakcrest Park
City Encinitas	City Encinitas	Encinitas baccharis	Oakcrest Park
City Encinitas	City Encinitas	Orcutt's spineflower	Oakcrest Park
City Escondido	City Escondido	Orcutt's brodiaea	Daley Ranch Open Space Preserve
City Escondido	City Escondido	Parry's tetraococcus	City of Escondido Open Space
City Oceanside	City Oceanside	Nuttall's acmispon	San Luis Rey River Park
City Poway	City Poway	Encinitas baccharis	Iron Mountain
City Poway	City Poway	Encinitas baccharis	Mount Woodson
City Poway	City Poway	Felt-leaved monardella	Iron Mountain
City Poway	City Poway	Variegated dudleya	South Poway Cornerstone
City San Diego	City San Diego	Orcutt's brodiaea	United States International University

Preserves with known occurrences of selected animal species covered in the MSP

qry_MOM_animals			
	Species	Preserve	MU
	Arroyo toad	Boden Canyon	5
	Arroyo toad	City San Diego OS	5
	Arroyo toad	Cleveland NF	5
	Arroyo toad	Helix Water District, Cleveland NF	4
	Arroyo toad	Marron Valley Mitigation Bank	3
	Arroyo toad	Pamo Valley	5
	Arroyo toad	Ramona Grasslands	5
	Arroyo toad	San Dieguito River Park	5
	Arroyo toad	San Pasqual Valley	5
	Arroyo toad	San Pasqual Valley	6
	Arroyo toad	San Vicente Reservoir	4
	Arroyo toad	Sutherland Reservoir Open Space	5

MSP Goals & plant species with known occurrences

qry_MOMplants_landowner_Goals						
LandOwner ▾	LandMgr ▾	Preserve ▾	Common_name ▾	Goal_Statement ▾	Goal_type ▾	MU ▾
CNLM	CNLM	Rancho La Costa Habitat Conservation Area	San Diego goldenstar	Same as for regional management goal.	MU	6
CNLM	CNLM	Rancho La Costa Habitat Conservation Area	San Diego goldenstar	Maintain large populations and enhance and expand small populations of San Diego goldenstar to increase resilience to environmental stochasticity, maintain genetic diversity and ensure persistence over the long term (>100 years) in native plant communities.	regional	6
CNLM	CNLM	Rancho La Costa Habitat Conservation Area	Sticky dudleya	Same as for regional management goal.	MU	6
CNLM	CNLM	Rancho La Costa Habitat Conservation Area	Sticky dudleya	Maintain large populations, expand small populations, and potentially establish new sticky dudleya populations to increase resilience to environmental and demographic stochasticity, maintain genetic diversity and ensure persistence over the long term (>100 years) in native plant	regional	6

Implementation

Funding

— Sources

- *TRANSNET*
- *LAG, SWG*
- *Section 6*
- *Land management budgets/endowments*
- *Other*



Photo Patricia Gordon-Reedy

Implementation

- *EMP Funding*
 - *EMP Budget*
 - *\$4 million annually*
 - *Management*
 - *Monitoring*
 - *Contracting Challenges*
 - *Grants (time lines, specificity/adaptability, etc.)*
 - *Direct funding*
 - *Government/educational entities*
 - *Sole source contracts (no longer an option)*
 - *Requests for Proposals*
 - *On call contractor list*
 - *Project specific (expensive & time consuming)*



SANDAG

Through EMPWG, requested MSP development, reviews recommendations regarding modifications to goals, objectives, and/or the implementation process, and administers *TransNet* EMP as potential source of funds for MSP implementation

SDMMP

Develops MSP, manages databases, serves as facilitator for MSP process, implements actions identified in IPs (as needed), synthesizes data, makes recommendations to SANDAG, and updates MSP every 4-5 years

Stakeholders and Funding Providers
Develop IPs and identify appropriate Implementation Entities/Organizations, and fund sources. IPs are revised as needed. Funding Providers provide funds, as needed

Contractors, Scientists, Land Managers
Complete management actions as identified in IPs and provide project status reports and data to Implementation Entities/Organizations and SC-MTX, as requested

Implementation Entities/Organizations
Directly implement or coordinate the implementation of management actions identified in the IPs, serve as point of contact for objectives, and ensure reports and data are submitted to SC-MTX



MSP Implementation Support

- *SDMMP is a resource for implementing the MSP*
 - *Equipment*
 - *Data analysis and modeling*
 - *GIS maps*
 - *SDMMP website*
 - *SC-MTX web portal*
 - *Tracking implementation*
 - *IP development*
 - *Meetings and partnering*
 - *Funding identification*



Photo Jessie Vinje

Reporting and Tracking

- *Data Submittal & Retrieval*
 - *Interim:*
 - *Excel forms on SC-MTX Web Portal*
 - *Rare plant Excel forms also available on SDMMP.COM*
 - *Email GIS shapefiles, existing database exports, support files (pictures, protocols, reports, maps, literature, etc)*
 - *Near Future:*
 - *Online data entry system*
 - *Ability to upload support files*
 - *Ability to download data and reports*
 - *Data in spreadsheets, CNDDB Survey Forms, USFWS 45-Day Report, Species Coordinates, Project Summaries*



Photo Patricia Gordon-Reedy

Interim Guidelines for Submitting Data to SC-MTX

The SC-MTX is still in development. Future enhancements will include online data entry and report output capabilities and an updated data dictionary that includes definitions for management fields. In the interim, data can be submitted to the SC-MTX using the MS Excel templates provided below. Templates with sample data added are included as examples of how to format the data.

Additionally:

- All coordinates need to be in Decimal Degrees WGS 84
- All areas need to be in hectares and distances in meters
- Required fields are shown in Bold, optional fields are indicated as "OPT"

Project type	Data entry template	Template with sample data
Habitat restoration	HabitatRestoration.xls [66KB]	HabitatRestorationSample.xls [82KB]
Species removal (includes both invasive and native species)	SpeciesRemoval.xls [71KB]	SpeciesRemovalSample.xls [79KB]
General maintenance	GeneralMaintenance.xls [77KB]	GeneralMaintenanceSample.xls [78KB]
Monitoring/surveys	MonitoringSurveys.xls [53KB]	MonitoringSurveysSample.xls [47KB]

For project managers who are already using a database or who maintain data in GIS shapefiles, you may also submit data using your existing format but should include the required fields from the templates. Please contact the SDMMP Coordinator for further assistance.

The draft MTX data dictionary and SC-MTX database structure are included below for reference.

- Draft MTX Data Dictionary [DRAFT MTX DATA DICTIONARY.pdf](#)* [1099KB]
- SC-MTX Database Structure [WERCMTX_Aug30-2012.pdf](#)* [316KB]

Where and When to Submit Templates

Data should be sent at the end of the project and should be checked for errors prior to submitting to SC-MTX. For TransNet EMP land management grant projects, filled-in templates should be sent to the SANDAG contract manager. For non-TransNet EMP projects, data can be sent to:

Sharon Coe, Ph.D., Biologist, data manager
Western Ecological Research Center

Reporting and Tracking

- *Project Tracking Short Form (in development)*
 - Purpose:
 - *To begin recording the implementation of objectives & actions in SP-Tracker*
 - *To assist in preparation of reports*
 - *To inform funding needs, priorities, accomplishments*
 - Examples of Fields:
 - *Name of implementing entity*
 - *Objective/actions being implemented*
 - *Location of activity*
 - *Begin date, anticipated end date*
 - *How being implemented (contract, in-house staff, volunteers, etc)*
 - *Mgmt methods used*
 - *Form to be submitted to SDMMP to enter into SP-Tracker. SDMMP to contact lead for more info as needed.*



Photo David Hogan

QUESTIONS?

