

San Diego Management & Monitoring Program

Management Strategic Plan for Conserved Lands in Western San Diego County

Goals-
Five
year
horizon

M
S
P

Version 08.27.2013

© D. Preston 2013

Upcoming Events

Mgmt/Monit Coord Mtg - Sep 2013

september 25, 2013

Mgmt/Monit Coord Mtg - Oct 2013

october 23, 2013

Mgmt/Monit Coord Mtg - Dec 2013

december 11, 2013

Mgmt/Monit Coord Mtg - Jan 2014

january 22, 2014



Monitoring



Management



Reports & Products



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.

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 Yvonne C. Moore, ymoores@usgs.gov

SDMMP.COM

The purpose of the MSP is to provide a biologically-based foundation to support decision making and funding priorities for managing species, and vegetation communities on Conserved Lands in western San Diego County



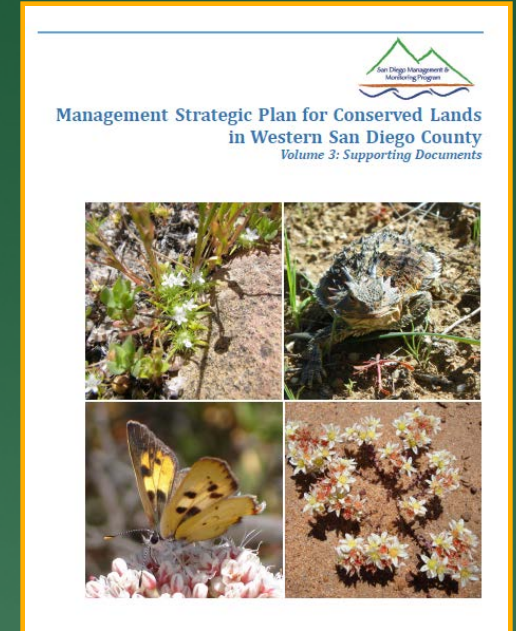
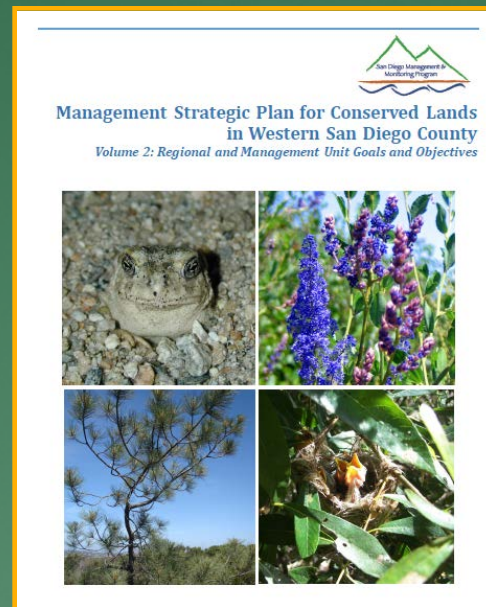
Volume 2- Goals and Objectives

- Species
- Vegetation
- Threats/Stressors
- Next Steps
- Definitions



Volume 1

- Introduction
- Approach
- MSPA and MUs
- Data
- Implementation
- Next Steps
- Definitions

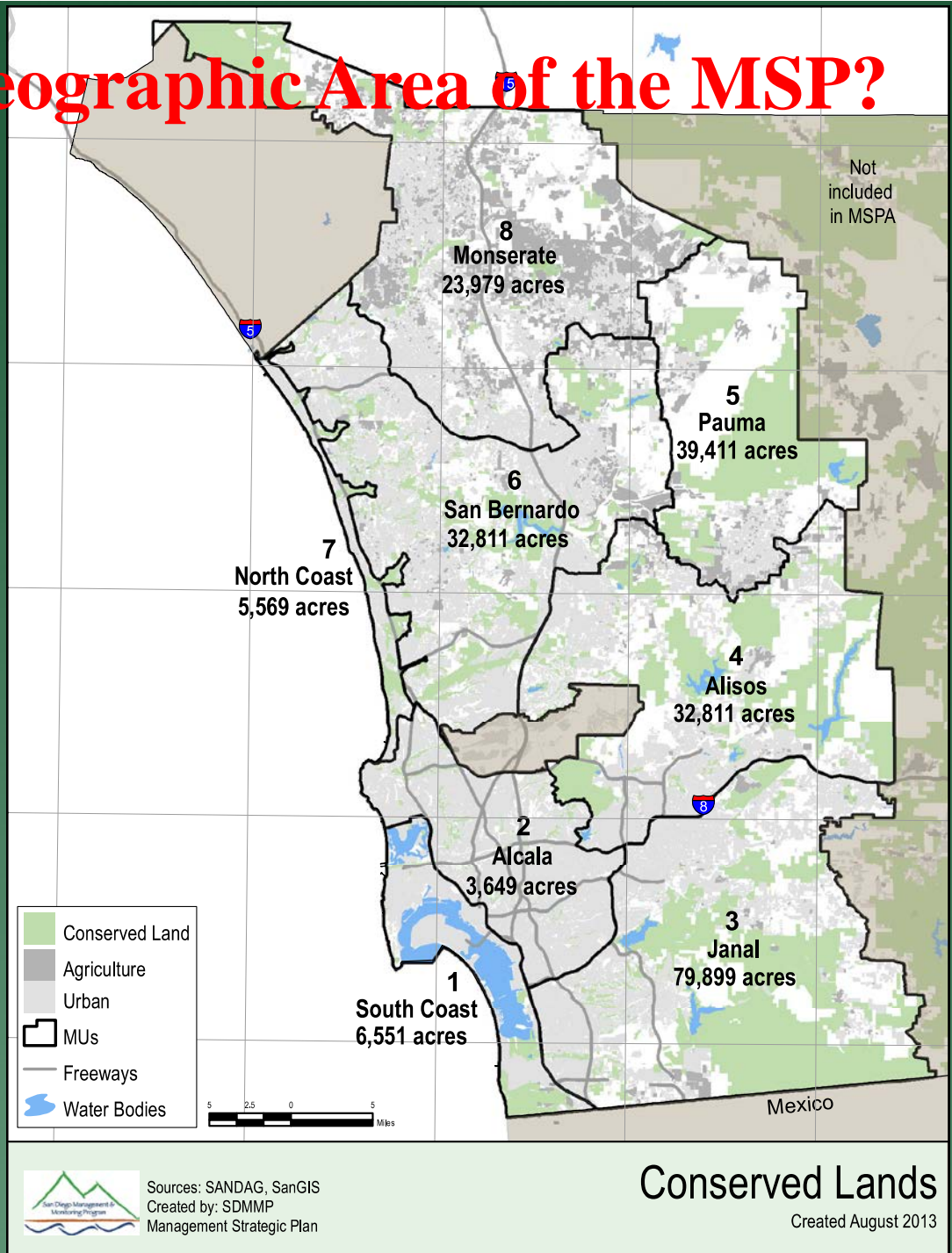


Volume 3

- Species Profiles
- BMPs
- IPs
- Gs and Os from Draft MSP

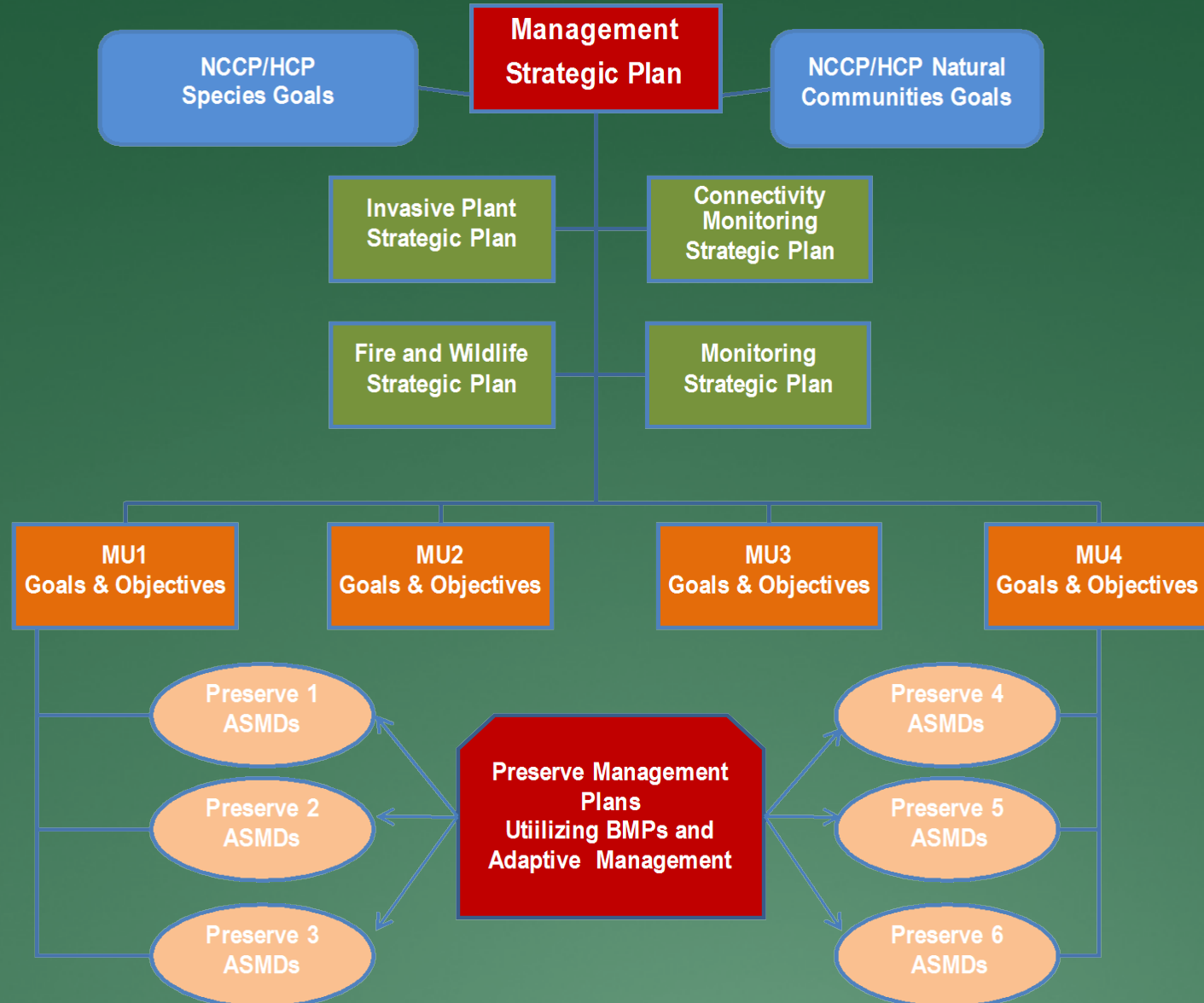
What is the Geographic Area of the MSP?

- MSPA
- Management Units
- Conserved Lands (260,000+ acres)



Conserved Lands
Created August 2013

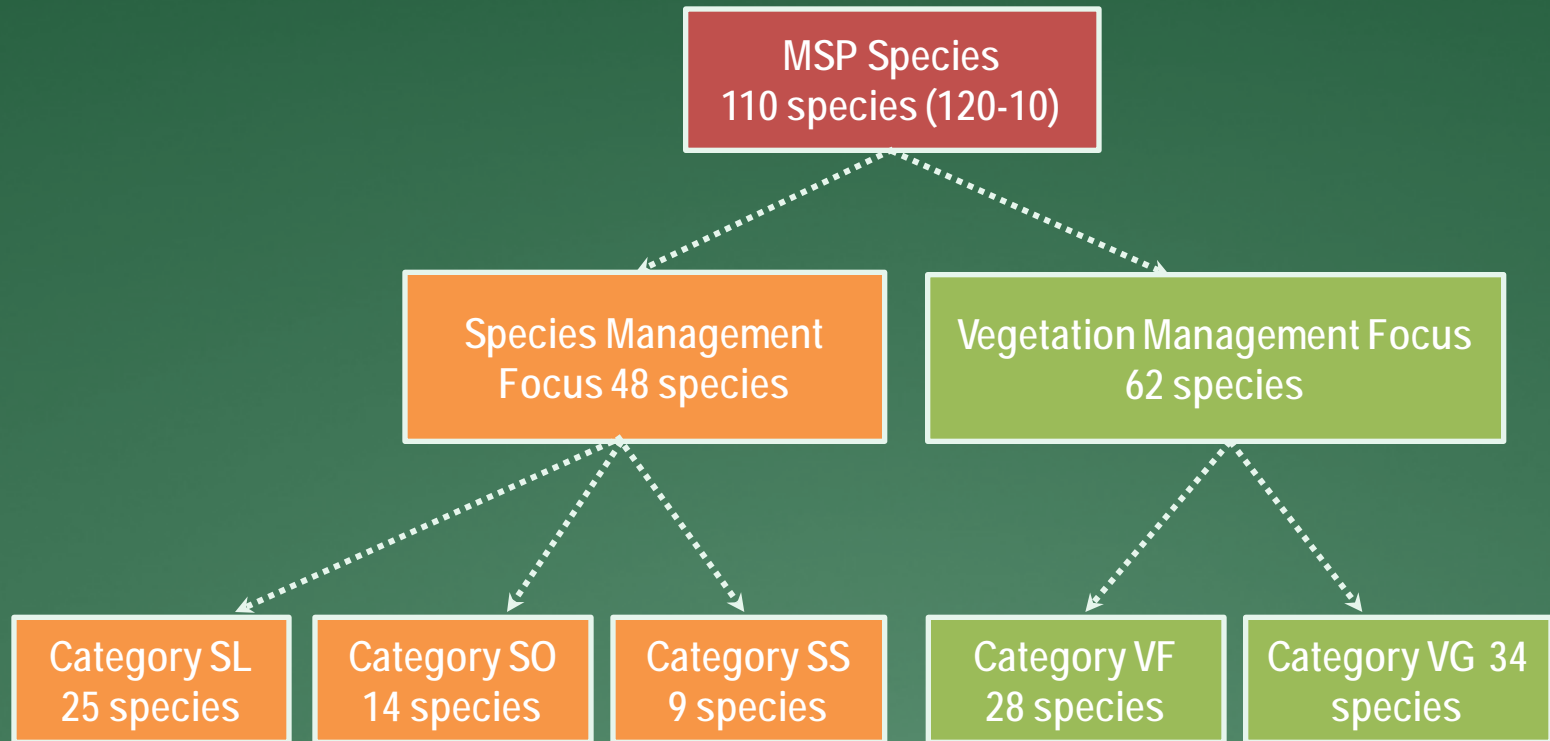
MSP and Other Strategic Plans



Approach

- **MSPA**
- **MUs**
- **Species list**
- **Assignment of species to groups**
- **Goals and Objectives**
- **Are we accomplishing our objectives?**
- **Next Steps**

What Species are Included?



Species Management Categories

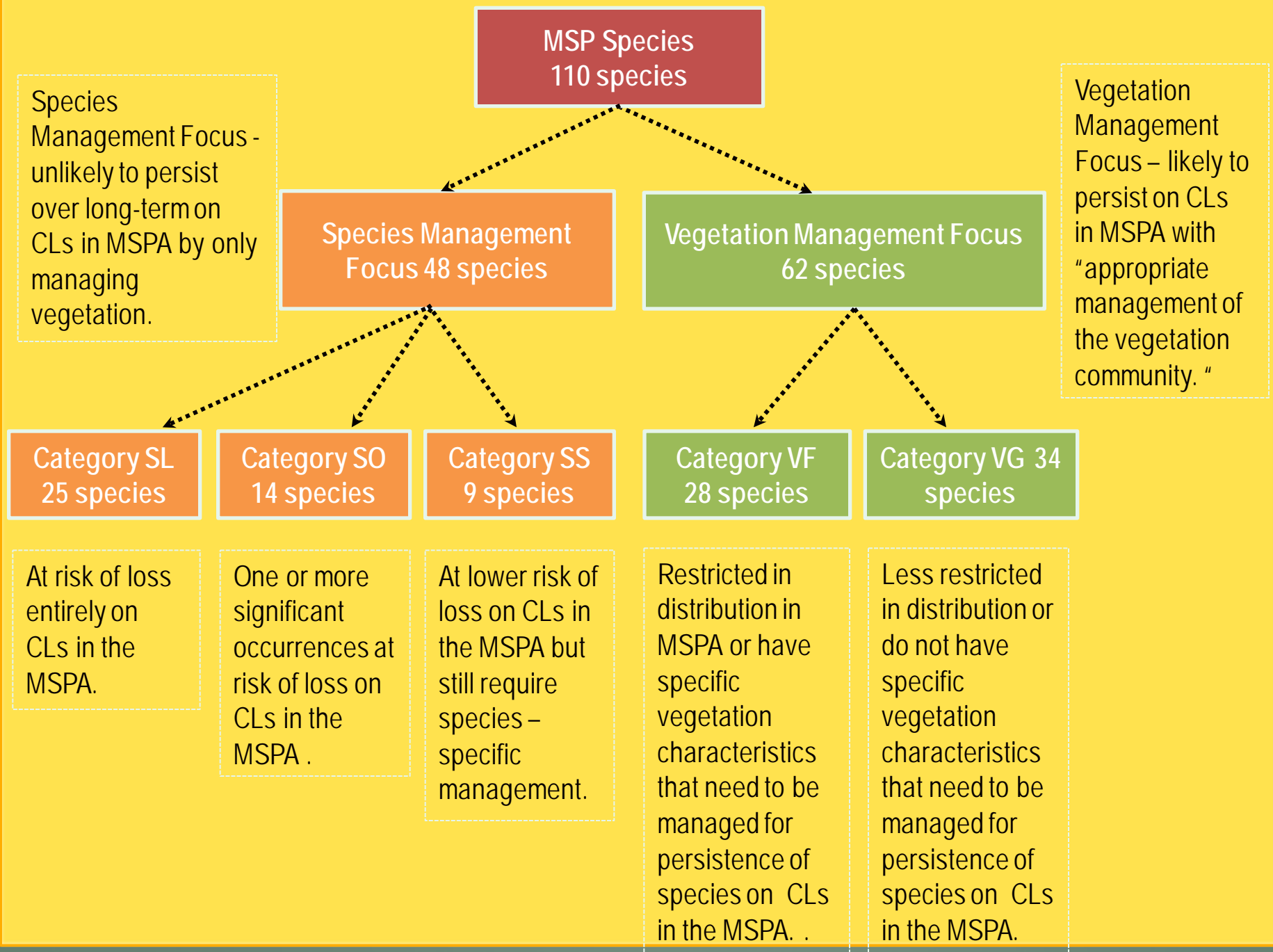
Compiled information for each species:

- Distribution
- Status
- Trend
- Threats
- Biological & other considerations



Species Management Categorization Matrix

Common Name	Latin Name	Mgmt. Category	Mgmt. Categorization Rationale	Status				Trend		Threats		Biological Considerations		Other Considerations
				Overall Distrib. (Source: Species Accounts)	Current Distrib. on CLs in MSPA since 2000 (Source: MO-Matrix)	Num. Occurr. on CLs Doc. Since 2000 at Distinct Sites in MSPA (Source: MO-Matrix)	Max* Num. Indivs. Documented on CLs in MSPA Since 2000 (Source: MO-Matrix)	Potential Loss of Occurr. on CLs since 2000 (Source: MO-Matrix)	Est. Change in Status Since 2000 (Source: SDMMP or Specified)	Threats Specific to Conserved Occurr. (Source: MO-Matrix)	Est. Potential for Loss of Species or Signif. Occurr. from CLs in MSPA (Source: SDMMP)	Life History/ Ecology (Source: Species Accounts)	Genetics (Source: Species Accounts)	Comments (Source: Various)
Shaw's agave	<i>Agave shawii</i>	SL	Restricted distrib., small num. of isolated occurr. w/low num. of indivs., declining status, multiple threats & high potential for loss from CLs in MSPA	SW San Diego Co.; NW Baja CA, Mexico	MUS 1 & 7 (Limited suitable habitat on coastal bluffs)	4 Occurr. at 4 sites (1 natural w/single clone, others small & include transplanted indivs.)	C1		Decline (reduction of Border Field occurrence)	Limited number of isolated small occurr. with no connectivity & potential for loss of individuals from stochastic events & loss of genetic diversity. Limited sexual reproduction & seedling recruitment, trampling & instability of ocean bluffs.	High for loss from CLs in MSPA (Vulnerable over longer term)	Perennial monocot shrub, 20-40 years to flower & produce seeds, can reproduce vegetatively through rosettes.		Only in extreme SW of MSPA, easily cultivated. Gaps in knowledge of reproductive biology, origin of transplanted pops & genetic structure. Potentially pollinated by bats & diurnal pollinators.
Aphanisma	<i>Aphanisma blitoides</i>	SL	Only 1 occurr., limited habitat, annual life cycle & high potential for loss from CLs in MSPA	W SD, ORA, LA, SB & VEN Cos.; Anacapa, Santa Barbara, San Clemente, Santa Catalina, Santa Cruz, San Nicolas & Santa Rosa Islas; Baja CA, Mexico	MU1 (Limited suitable habitat on coastal bluffs & dunes)	1 Occurr.	C1?		Increase w/newly discovered occurr.	Single occurr. vulnerable to demogr. & environ. Stochasticity, loss of genetic diversity.	High potential for loss from CL in MSPA (1 occurr.)	Annual dicot herb		Single occurr. is at Cabrillo National Monument, not technically in MSP
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	Moderate for loss from CLs in MSPA (Esp. w/projected future sea level rise)	Annual dicot herb, facultative hemiparasite.	Low genetic diversity	Need higher popn. levels to counteract genetic drift. Pollinator connectivity could be issue. Invasive plants replacing suitable host plants could affect survival & reproduction. Sweetwater Marsh occurr. extirpated 1987 was transplanted in 1990's & has low genetic diversity, current status unknown. Status Paradise Marsh occurr. is unknown.



Management Goals & Objectives

- Goals & objectives - species, vegetation & threats/stressors
- Goals - desired outcomes into future (>100 yrs)
- Goals - entire MSPA & MUs
- Objectives = **SMART** (Specific, Measurable, Achievable, Results-oriented, Time-fixed)
- Objectives - 5-year planning horizon
- Objectives - regional vs local
- Actions - implement objectives





Gerald & Buff Corsi © California Academy of Sciences

Table 2-1.2. Management goals and objectives for Shaw's agave.

Regional Management Goal: Expand four extant Shaw's agave occurrences on Conserved Lands in the MSPA and establish a new occurrence to increase resilience to environmental and demographic stochasticity, enhance genetic diversity, and improve chances of persistence over the long-term (>100 years) in maritime succulent scrub vegetation.

MU1 Management Goal: Maintain and as suitable habitat allows, expand the three extant Shaw's agave occurrences and establish a new occurrence on Conserved Lands in MU1.

MU7 Management Goal: Maintain and as suitable habitat allows, expand the existing Shaw's agave occurrence at Torrey Pines State Reserve in MU7.

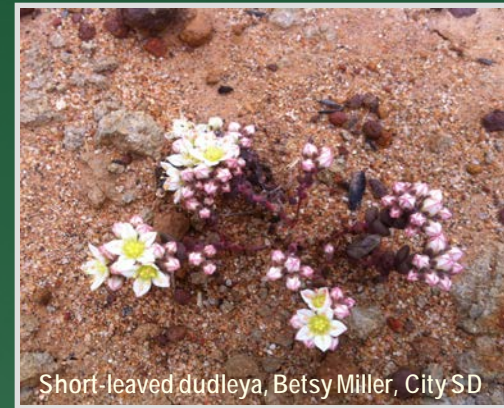
Type	Objectives	MUs	Actions
IMG; Local	Beginning in 2014, annually inspect the occurrences of Shaw's agave on Conserved Lands in MUs 1 and 7 (Table 2-1.1) using a regional monitoring protocol to record abundance and collect covariate data to determine management needs, conduct routine management actions as necessary, and submit monitoring and management data to SC-MTX.	1, 7	<ul style="list-style-type: none"> • Conduct regional monitoring protocol surveys to assess occurrence status, including sexual reproduction and seedling establishment, and quantify potential threats. • 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 or enforcement, by using BMPs to reduce invasive non-native plants to <10% absolute cover within the occurrence's occupied extent, and by trimming encroaching native plants to provide openings for Shaw's agave seedling establishment (Vanderplank 2012). • All management actions should be monitored to assess their effectiveness and applicability for establishing new occurrences in the future. • Submit monitoring and management data to the SC-MTX website portal.
GN; Regional	Beginning in 2014, conduct a study of Shaw's agave to determine genetic diversity within and among occurrences including the proportion of clonal individuals, and to identify source occurrences for transplanted individuals	1, 7	<ul style="list-style-type: none"> • Use BMPs to collect plant material for genetic samples at four conserved Shaw's agave occurrences in the MSPA and for comparison purposes from other wild and cultivated occurrences. • As feasible, collaborate with Mexican

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 Southwestern Pond Turtle: Protect and enhance existing populations of southwestern pond turtle to self-sustaining levels (i.e. 200+ individuals, even sex ratio, evidence of recruitment) in areas that meet the conditions for long-term management (low human access; high naturalness) and create new self-sustaining populations to ensure persistence over the long-term (>100 years).												
MU3 Management Goal for Southwestern Pond Turtle: Maintain and expand the only known southwestern pond turtle population at Sweetwater River at Sycuan Peak Ecological Reserve, establish two populations at ponds at Rancho Jamul Ecological Reserve, Hollenbeck Canyon Wildlife Area or San Diego National Wildlife Refuge or other location for use as source populations, and evaluate natural locations in nearby Jamul and Dulzura Creeks for establishing three additional populations in the future.												
MUs 4, 5, 6, and 8 Management Goals for Southwestern Pond Turtle: Same as regional management goal.												
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	IMG, IEX	R	Inspect existing significant occurrence at Sycuan Peak Ecological Reserve and manage to expand to a self-sustaining population (≥200 individuals, even sex ratio, evidence of recruitment) by head starting turtles and removing exotic species.	3	X	X	X	X	X	X
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	ISV	R	Continue pond turtles surveys of Conserved Lands in north San Diego County in MU8 at San Mateo Creek and Santa Margarita River	8	X	X				
Southwestern pond turtle	<i>Emys marmorata</i>	SL	PIP	R	Prepare an implementation plan for introducing and establishing turtles in two protected ponds in MU3	3	X					
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	ITR	R and/or L	Establish two new pond turtle populations in MU3 and implement high priority management actions identified in the implementation plan	3	X	X	X	X	X	X
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	PIP	R	Prepare an implementation plan to establish self sustaining turtle populations in central and/or north San Diego County	4, 5, 6, 8			X			
Southwestern pond turtle	<i>Emys marmorata pallida</i>	SL	ITR	R and/or L	Implement high priority management actions identified in implementation plan to establish self-sustaining pond turtle populations in central and/or north San Diego County	4, 5, 6, 8				X	X	X



Southwestern pond turtle, USGS

Status of Goals & Objectives for 14 Species



Short-leaved dudleya, Betsy Miller, City SD

Species	Mgmt. Category	Goals/ Objectives	Species Profile	Occurrence (≥2000) Database
San Diego thornmint	SO	In Progress	In Progress	Nearly Completed for MOM
San Diego ambrosia	SO	X	X	MSP-MOM
Lakeside ceanothus	VF	Next 5-Yr Planning Horizon	Draft	MSP-MOM
Orcutt's spineflower	SL	X	X	MSP-MOM
Short-leaved dudleya	SL	X	X	MSP-MOM
Sticky dudleya	SS	X	X	MSP-MOM
Small-leaved rose	SS	X	X	MSP-MOM
Southwestern pond turtle	SL	X	X	SC-MTX
Golden eagle	SO	X	X	SC-MTX
Western burrowing owl	SL	X	X	SC-MTX
Coastal cactus wren	SO	X	X	SC-MTX
Coastal California gnatcatcher	VF	X	X	SC-MTX
Western bluebird	VG	Deferred to Future Planning Horizon	Deferred	Deferred
Southern mule deer	VG	Connectivity Plan & Vegetation Mgmt	X	SC-MTX

Ex. Mgmt. Objectives for 2 SL Species: Orcutt's Spineflower & Western Burrowing Owl



Orcutt's spineflower, Dawn Lawson, U.S. Navy



Western Burrowing Owl, USFWS

- **2014:**
 - ✓ Prepare implementation plan - 3 new occurrences (Regional)
 - ✓ Inspect Oak Park & manage (Regional)
 - ✓ Collect, bank & bulk seeds (Regional)
 - ✓ Expand Torrey Pines (Regional)
- **2015:**
 - ✓ Establish 3 new occurrences (Regional)
- **2014:**
 - ✓ Survey breeding prs (Regional)
 - ✓ Reproduction, survival & dispersal (Regional)
 - ✓ Genetics (Regional)
 - ✓ Prepare burrow mgmt. plan (Regional)
- **2016:**
 - ✓ Implement high priority actions (Regional &/or Local)

Ex. Mgmt. Objectives for 2 SO Species:

San Diego Ambrosia & Golden Eagle



- **2014:**
 - ✓ Inspect 12 occurrences & manage (Regional &/or Local)
 - ✓ Test BMPs (Regional & Local)
- **2016:** Collect, bank & bulk seeds (Regional)
- **2017:** Prepare implementation plan – expand 5 occurrences (Regional)
- **2018:** Expand 5 occurrences (Regional & Local)



- **2014:**
 - ✓ Reproduction, foraging & recruitment study (Regional)
 - ✓ Implement pre-fire actions (Regional &/or Local)
 - ✓ Prepare nest mgmt. plan (Regional)
- **2015:** Implement nest mgmt. (Regional & Local)
- **2017:** Prepare foraging mgmt. plan (Regional)
- **2018:** Implement foraging mgmt. (Regional &/or Local)

Ex. Mgmt. Objectives for 1 SS Species: Small-leaved Rose

- **2014:**
 - ✓ Check San Ysidro status (Local)
 - ✓ Inspect & routine mgmt. (Local)
 - ✓ Implement pre-fire actions (Local)
- **2018:**
 - ✓ Collect & bank seeds/cuttings (Regional)
 - ✓ Prepare implementation plan – 2 new occurrences (Regional)
- **>2018:** Establish 2 new occurrences (Regional &/or Local)



Ex. Mgmt. Objectives for 2 VF Species: Lakeside Ceanothus & California Gnatcatcher



Photo: Lakeside
ceanothus,
Patricia Gordon-
Reedy, CBI



Photo: California
gnatcatcher,
Marci Koski & Gjon
Hazard, USFWS

Chaparral Management

- **2014:** Implement pre-fire actions
- **2018:** Test landscape-scale BMPs
- **>2018:**
 - ✓ Survey chaparral
 - ✓ Prepare implementation plan
 - ✓ Implement high priority actions

Coastal Sage Scrub (CSS) Management

- **2014:**
 - ✓ Test landscape-scale BMPs
 - ✓ Implement pre-fire actions
- **2015:** Survey burned & unburned CSS
- **2017:** As needed, prepare implementation plan for landscape-scale CSS mgmt.
- **2018:** Implement high priority actions

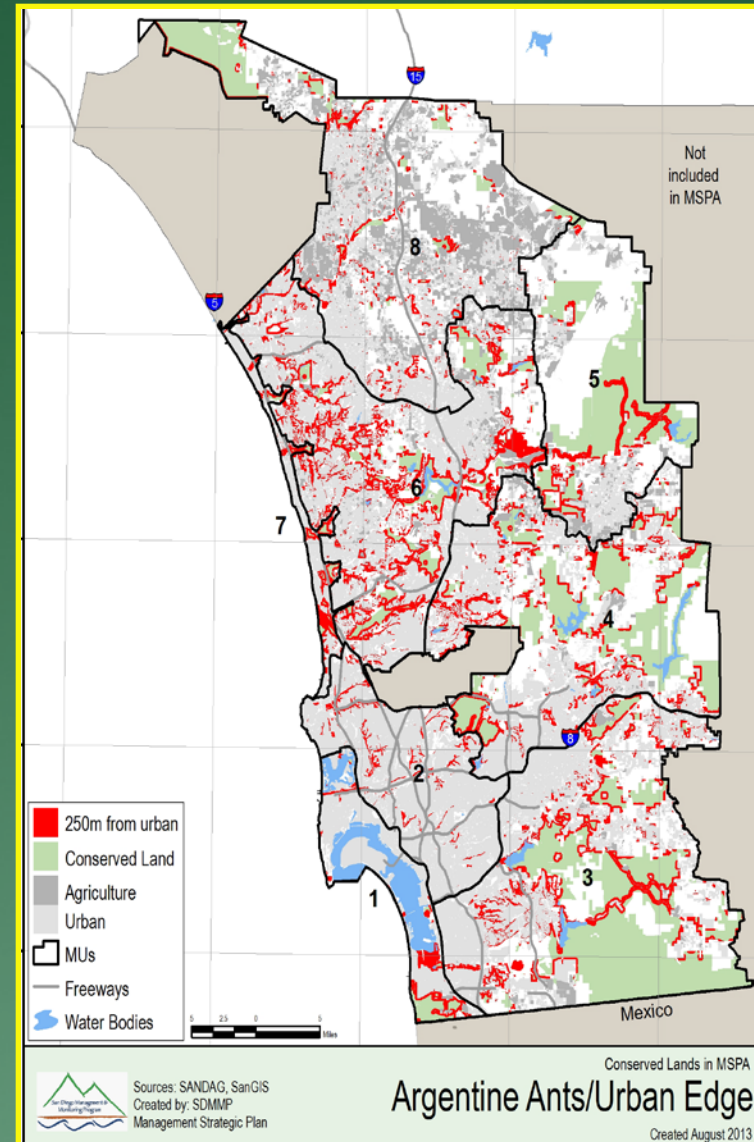
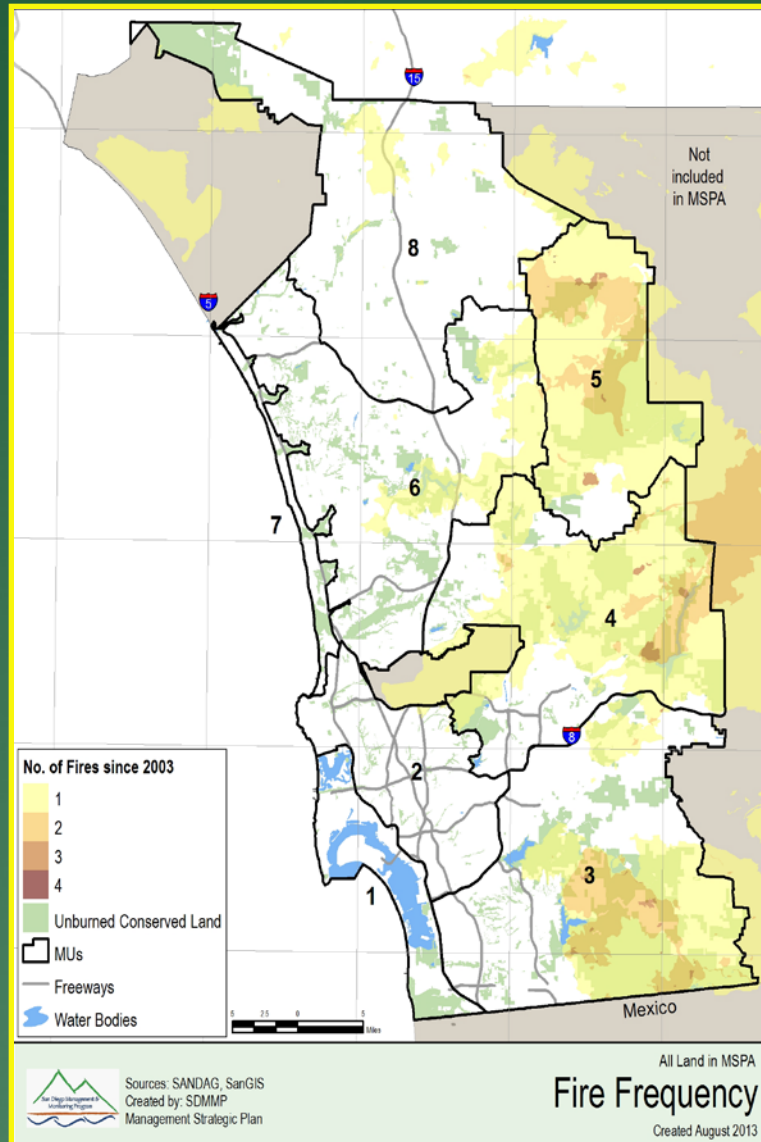
Ex. Goals & Objectives for 1 VG Species: Mule Deer

- **No specific goals & objectives**
- **Benefits from vegetation management at locations where co-occurs**
- **Focus of connectivity monitoring & management**



Dr. Lloyd Glenn Ingles © California Academy of Sciences

Goals & Objectives for Managing Threats & Stressors



Fire Threat Management

- 2014:
 - ✓ Complete Fire and Wildlife Strategic Plan – at risk resources & pre-suppression actions
 - ✓ Implement pre-fire actions



2003 Cedar Fire Burning Through Crest, Mathew LaRochelle

Urban Edge & Argentine Ant Management

Argentine ant management objectives:

- 2014: Assess Argentine ant invasion of preserves & impacts to MSP species
- 2016:
 - ✓ Prepare implementation plan if mgmt. needed
 - ✓ Implement high priority actions at 10 sites

Urban drool management objectives:

- 2014: Identify where urban drool results in wet/moist areas or pooling water during normally dry times of the year
- 2016: Develop & implement program to eliminate urban drool at priority locations



MSP Implementation Process

Key Organizations:

- SANDAG (EMPWG)
- SDMMMP
- Stakeholders
- Funding Providers
- Implementation Entities/Organizations
- Contractors/Land Managers/Scientists



MSP Implementation Process

Key Pieces:

- **MSP Goals and Objectives**
- **Implementation Plans (IPs)**
- **Project Status Reports and Data**
- **Databases — CLD, MOM, SP-Tracker, SC-MTX**
- **Data Synthesis and Recommendations**



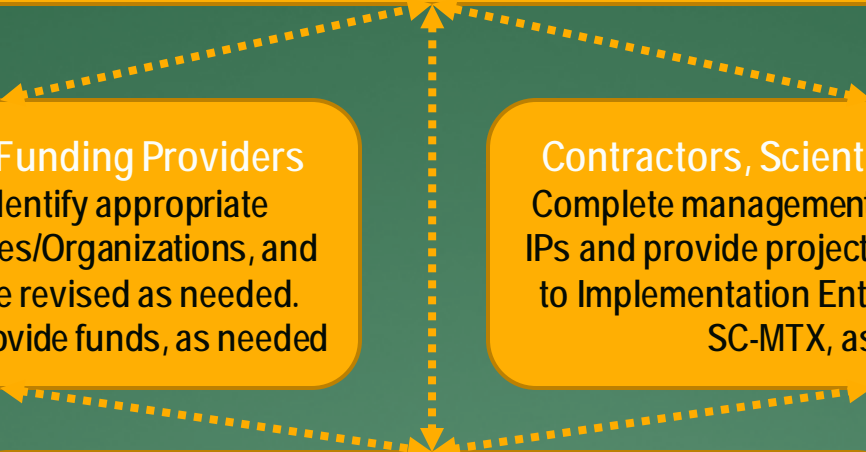
SANDAG

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

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.

Implementation Plans (IPs)

- Section I – contact information, stakeholders, meeting dates
- Section II – goal and objective addressed
- Section III – overview of actions, funding, implementers
- Section IV – Detailed scope of work, budget, schedule

MSP Databases

- Conserved Lands Database (CLD)
- South Coast Multi-Taxa Database (SC-MTX)
- **Master Occurrence Matrix (MSP-MOM)**
- **Strategic Plan Tracking Database (SP-Tracker)**
- **SC-MTX Web Portal**



Master Occurrence Matrix (MSP-MOM)

Purpose – to track status, distribution, and management of MSP species over time.

Contents - MSP species occurrences verified as extant since 2000 or likely to be extant after the year 2000.

Fields Include-

- landowner and manager
- conservation and management status
- spatial coordinates, number of individual and areal extent
- survey methods
- natural or translocated
- threats, recommended and implemented management actions
- data sources

Strategic Plan Tracking Database (SP-Tracker)

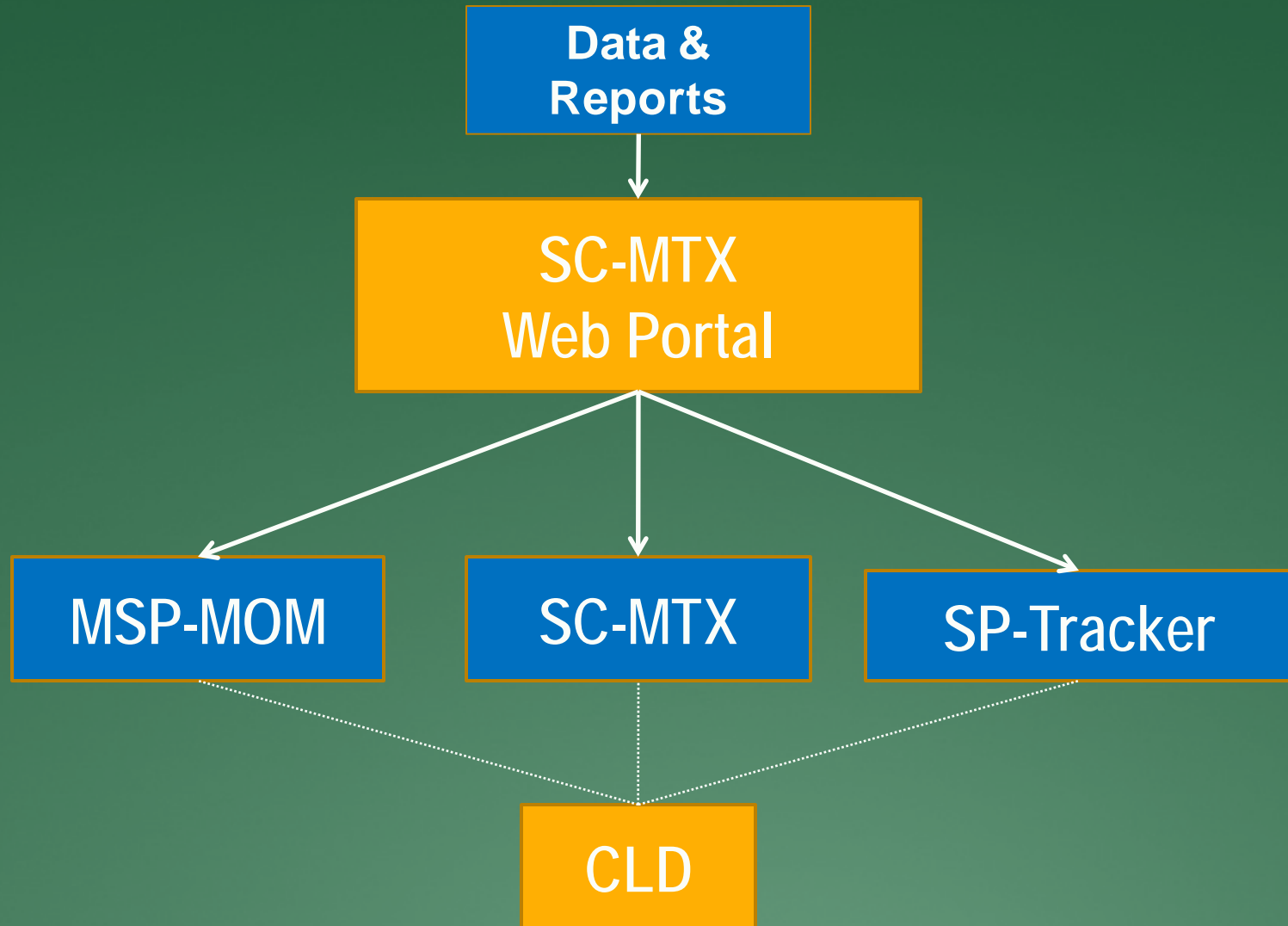
Purpose – to track the status and completion of goals, objectives and actions from the various strategic plans developed for the San Diego region.

Contents - Goals, Objectives and Actions

- Timelines
- Funding sources
- Implementation entities/organizations
- IP information



MSP Databases



Recommendations

Improve Data Sets

- Electronic and georeferenced species data
- Systematic data collection
- Covariate data collection
- Threat/stressor data

Other

- Develop BMPs using an adaptive management approach
- Evaluate importance of HOA , etc. lands in regards to Gs and Os
- Complete accuracy assessment of veg. mapping

Next Steps

- Identify leads for IPs
- Data & Analysis - species, vegetation community and threats/stressors
- Develop real-life preserve-level management plans
- Develop a program to encourage and assist data SC-MTX portal
- Create an incentive program for collaborative development and use of BMPs
- Annually recognize preserves that are leaders in collaboratively implementing MSP goals and objectives

Next Steps

Appendix 1D MSP Species Management Prioritization over a 5-Year Planning Horizon

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+
American badger	<i>Taxidea taxus</i>	SL	RS	R	Conduct a study to determine badger locations, assess suitable habitat to evaluate threats, and record movement patterns to determine ways to improve connectivity between core areas and reduce mortality	3, 4, 5, 6, 8	X	X	X	X		
American badger	<i>Taxidea taxus</i>	SL	GN	R	Conduct a genetic study	3, 4, 5, 6, 8	X	X	X	X		
American badger	<i>Taxidea taxus</i>	SL	IIP	R and/or L	Implement high priority management actions indicated in the implementation plan	3, 4, 5, 6, 8		X	X	X	X	
San Diego thornmint	<i>Acanthomintha ilicifolia</i>	SO	CBI will prepare goals and objectives for San Diego thornmint once a site-by-site review of known populations and habitat modeling is completed.									
Regional Management Goal for Nuttall's Acmispon: 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.												
MU1 Management Goal for Nuttall's Acmispon: 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.												
MU7 Management Goal for Nuttall's Acmispon: 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 MU7.												
Nuttall's acmispon	<i>Acmispon prostratus</i>	SO	IMG	L	Inspect occurrences and conduct routine management	1, 7	X	X	X	X	X	X
Nuttall's acmispon	<i>Acmispon prostratus</i>	SO	BMP	L	Support dune and beach habitat restoration projects that develop and test BMPs for maintaining and enhancing populations	1, 7	X	X**				
Nuttall's acmispon	<i>Acmispon prostratus</i>	SO	PIP	R	Prepare implementation plan including identifying 3 occurrences for enhancement and delineating suitable habitat for expansion	1, 7				X		
Nuttall's acmispon	<i>Acmispon prostratus</i>	SO	IIP	R and/or L	Implement implementation plan including enhancing 3 occurrences	1, 7					X	X

MSP Updates

- As new data becomes available- generally species, vegetation communities and threats/stressor
- Every 4-5 years- Updated and new objectives and actions and timeframes

