

# STRATEGIC PLAN IMPLEMENTATION 2011 - 2015

*SDMMP Monthly Management & Monitoring  
Coordination Meeting  
January 28, 2015*

Paul Fromer, Administrator  
Yvonne Moore, Coordinator  
Kris Preston, Ecologist



Emily Perkins, GIS Manager  
Sharon Coe, Data Manager

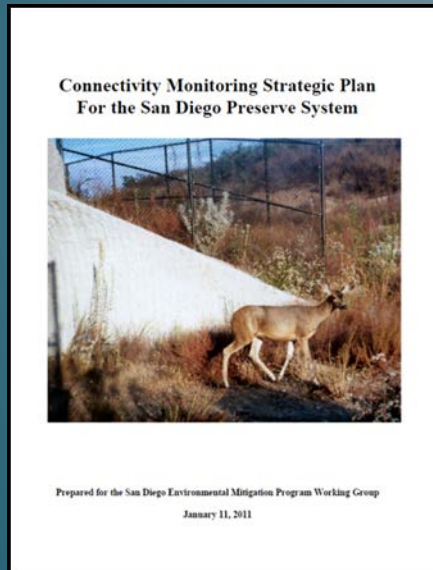


# SDMMP Administrator's Goals for 2015

- *Complete/Update SDMMP Base Documents*
  - *Management Strategic Plan (update)*
  - *Connectivity Strategic Plan (update)*
  - *Wildfire Strategic Plan (to be completed)*
  - *Invasive Plant Species Strategic Plan (status update)*
  - *Monitoring Strategic Plan (to be completed)*
- *Update SDMMP Website and Develop an Integrated Web Portal Tool*
- *Complete Incorporation of Existing Data*

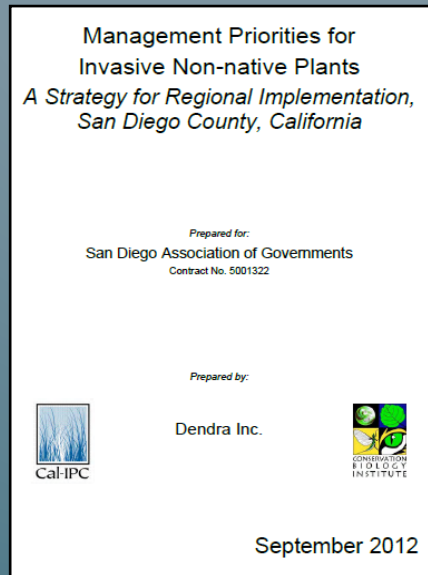
# Completed Strategic Plans Documents

## Connectivity Strategic Plan (CSP) Jan 2011



**Implementation  
well underway;  
Workshop held in  
July 2014 to update  
objectives**

## Invasive Plant Strategic Plan (IPSP) Sept 2012



**Implementation to  
start 2015 ; No plans  
for revision at this  
time**

## Management Strategic Plan (MSP) Aug 2013



**Implementation  
started 2014;  
Revisions planned  
for 2015**

# Additional Strategic Plans

2015 Goal: Complete Draft Components for

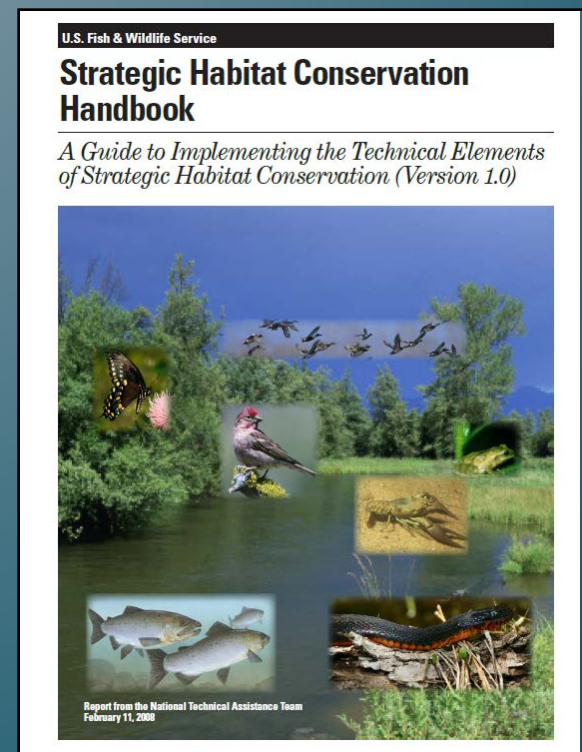
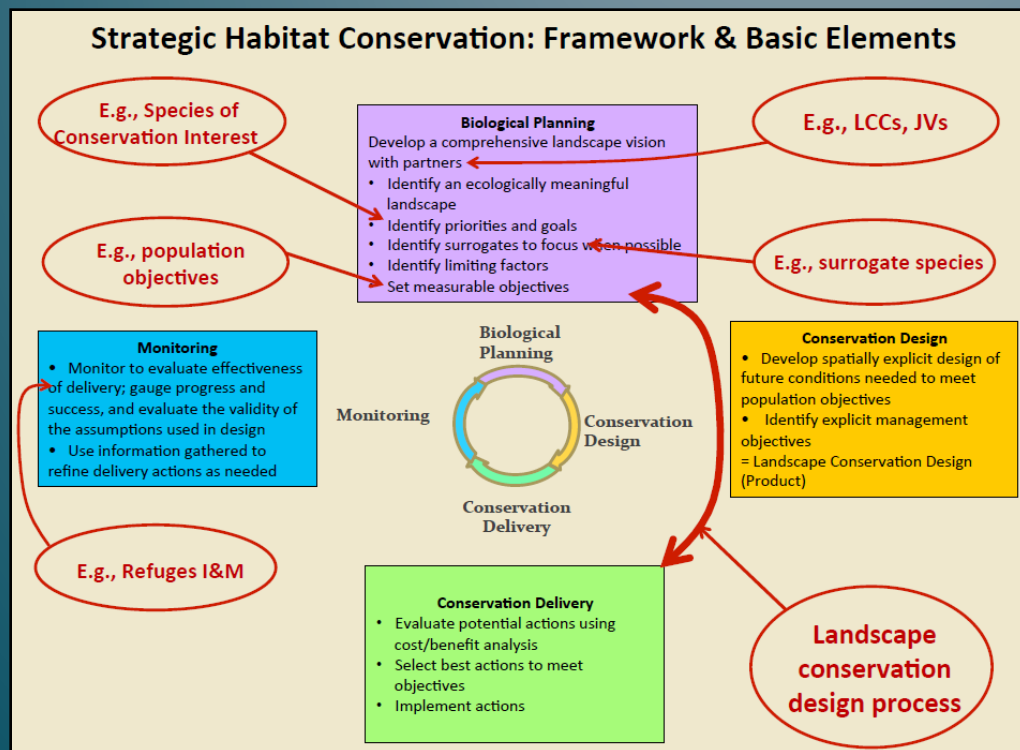
- **Fire and Wildlife Strategic Plan (FWSP)**
  - USGS has completed workshop, analysis, & overall goals & objectives for before, during, & after fire
  - Need specific MSP species goals and objectives
- **Monitoring Strategic Plan (MNSP)**
  - MSP has many elements of monitoring
  - Implementation already underway (CAGN, CAWR, rare plant IMG, etc.)
  - Need regional vegetation monitoring study & background/overview/approach





# USFWS Strategic Habitat Conservation Framework, 2008

- The essence of SHC is setting explicit objectives for populations and then figuring out how to attain these objectives most efficiently using our own resources and by working with partners
- Tied to Landscape Conservation Cooperatives (LCCs)



# How About 1 Strategic Plan instead of 5?

- **Why?** To set an example for national efforts, potentially access more funding opportunities, and put management & monitoring info in one place
- **Title:** *Strategic Habitat Conservation Roadmap for Conserved Lands in Western San Diego County (The “SHC Roadmap” )*
- **Include all strategic plan elements into one document:**
  - *Monitoring, Management, Connectivity, Invasive Species, Fire and Wildlife*
  - *Background Volume with Intro, Process, Methods, Species Info, Mgmt/Monitoring Rationale, and MU Description section to include core and linkage maps*
  - *Goals and Objectives Volumes: Species, Vegetation, Threats & Stressors*

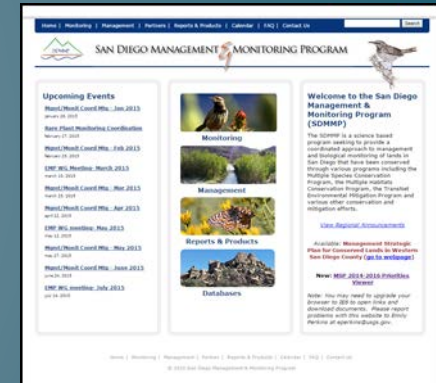
# Partnering on Implementation



- *Current Opportunities*
  - *Monthly Monitoring & Management Coord. Meetings*
  - *Quarterly Land Manager Meetings*
    - *North County, North Coast, South County*
  - *MSP Workshops, April 2014*
  - *Trainings (GIS Viewer, Databases, Protocol)*
  - *Project level meetings (Rare Plants, BUOW, Eagles, etc)*
  - *Transnet Land Mgmt Grants*
- *2015: Focus on completing the SHC Roadmap*
- *2016+: Re-evaluate meetings based on support needed*
  - *Some monthly meetings focused on implementation, rotating MU meetings, continued training & project level meetings*

# Technical Support/Infrastructure

- SDMMP Regional Support
- Centralized Website ([www.sdmmp.com](http://www.sdmmp.com))
- Conserved Lands Database (CLD)
- Master Occurrence Matrix DB (MSP-MOM)
- Online GIS Map Viewers
- South Coast Multi-Taxa Database (SC-MTX)
  - Query and download data
  - Enter data and create reports
- Online Library
- Strategic Plan Tracking Database (SP-Tracker)





# SDMMP.com

- Completed/Ongoing
  - Library search and retrieval system added
  - GIS viewers added
  - Web portal input system started
  - Species profiles
  - Reports and products/databases updated
  - Events and announcements
- 2015 Goals
  - Reorganize and redesign entire site
  - Create an integrated map viewer and SP-tracker system



# San Diego Management & Monitoring Program

[Home](#)[News & Events](#)[Projects](#)[Strategic Plans](#)[Resources & Tools](#)[About Us](#)

## Upcoming Events

**Mgmt/Monit Coord Mtg – June 2014**  
june 25, 2014

**MSCP Annual Report Workshop**  
july 22, 2014

**Mgmt/Monit Coord Mtg – July 2014**  
july 23, 2014

**EMP Working Group August 2014 Meeting**  
august 12, 2014

[Events Calendar](#)



## Quick Links

[SC-MTX](#)[Document Library](#)[Online Map Viewer](#)[Grant Opportunities](#)[Highlighted Projects](#)[Species List](#)[Strategic Plans](#)[Grant Information](#)[South Coast MTX](#)[Online Maps & GIS](#)[Document Library](#)

## Announcements

[Upload Data or](#)

«**UR Documents Grant for Fire and Ecology due 6/23/14.** The Department of Defense has a call for projects regarding Ecologically Sustainable Fire Risk Reduction. Applications are due 6/23/14. For more information, [click here](#) and search under Keyword: N62473-14-2-0006.

«**Monthly Meeting Materials posted:** The materials used and discussed in the monthly management and monitoring meeting have been posted, ([click here](#)).

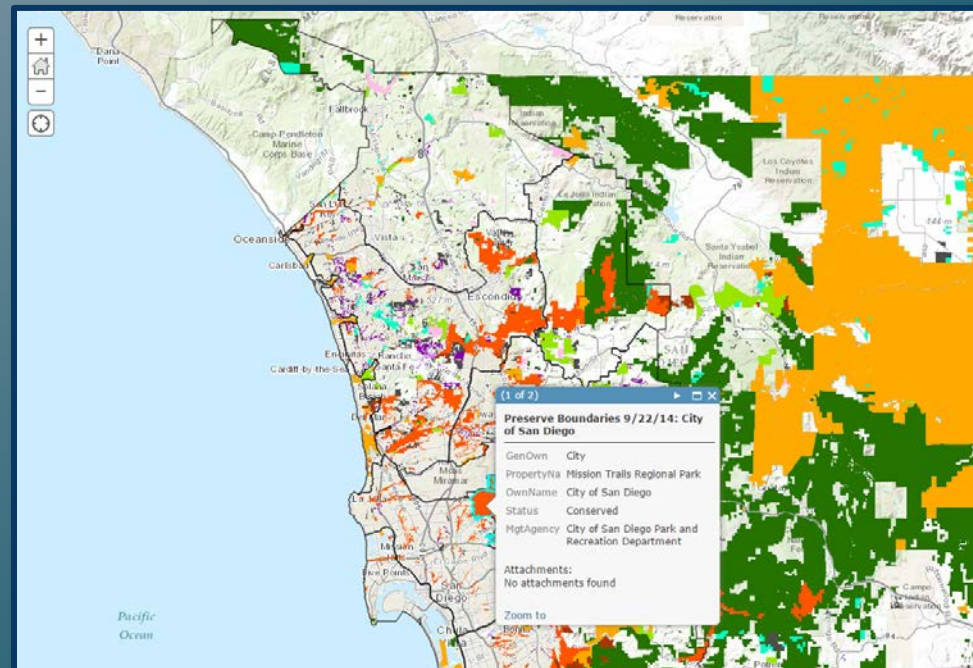
«**SW Partners in Amphibian and Reptile Conservation Annual Meeting:** The PARC annual meeting will take place in San Diego from June 9th to June 14th. See the SDMMP calendar for additional information and links to register ([click here](#))

[All Annoucnements](#)



# Conserved Lands Database

- *Completed*
  - *Updated public and non-profit lands*
  - *Latest version on SanGIS 1/2015*
- *2015 Goals*
  - *Continue updating with new information*
  - *Add new acquisitions*





# MSP-MOM

- *Completed*
  - *SL, SO, SS Plant species occurrences in the MSPA*
  - *Information on yearly location and size (where available)*
- *2015 Goals*
  - *Add animal species and plant polygons*
  - *Add new occurrences and new annual survey information*





- *Incorporate SP-Tracker for live queries of Goals, Objectives, and Actions*





# South Coast Multi-Taxa Database

--query and download data

<http://mtx.sdmmp.com/index.php>

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



## SOUTH COAST MULTI-TAXA DATABASE WEB PORTAL

[Home](#) | [Database search](#) | [Spatial search](#) | [GIS services](#) | [Submit data](#) | [Disclaimers](#)

### Search

Keyword:  [Submit](#) (Or, [click here to return all studies.](#))

Project type:  Point of Contact:

Target species:  County:

Observed species:  Reserve:

Target vegetation:  Date Range:  to

### Results

[View across studies](#)  
Data queried across all projects and filtered for the selected criteria.

**Coastal California Gnatcatcher Vegetation Surveys**  
Project type: Monitoring-Vegetation | Target species: California Gnatcatcher | Target vegetation: Coastal Scrub  
Vegetation surveys to support California gnatcatcher surveys.  
County: San Diego | Date: 2004-07-21 to 2009-09-24 | PoC: Clark Winchell

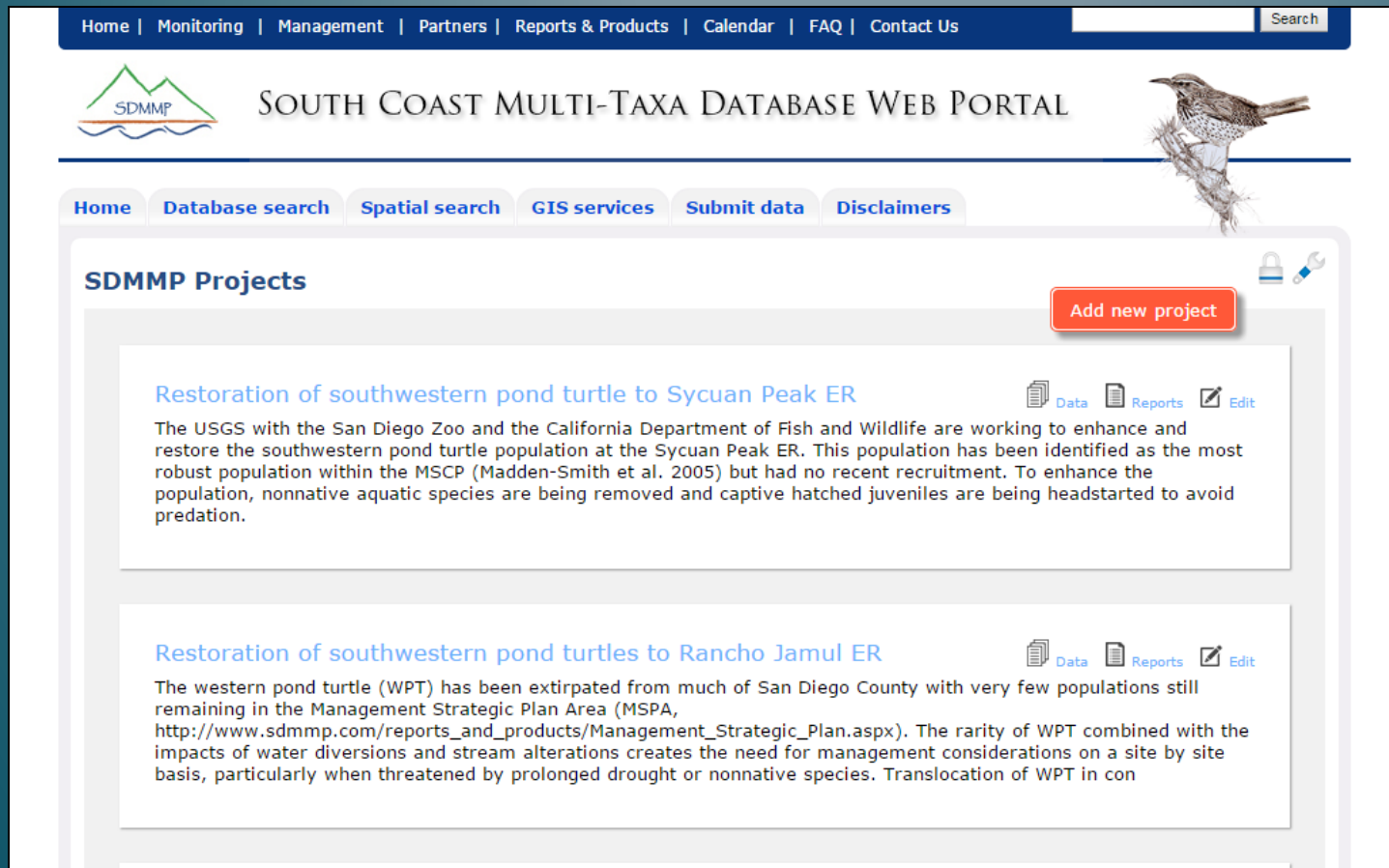
**Coastal Cactus Wren Cactus Patch Mapping**  
Project type: Monitoring-Vegetation | Target species: Cactus Wren | Target vegetation: Coastal Scrub  
Surveys to assess cactus patches as suitable habitat for coastal cactus wren.  
County: San Diego | Date: 2009-05-18 to 2011-05-04 | PoC: Clark Winchell

**San Diego Pitfall Trap Veg Surveys**  
Project type: Monitoring-Vegetation | Target vegetation: Coastal Scrub  
Vegetation sampling to support pitfall monitoring in San Diego County  
County: Riverside, San Diego | Date: 1995-12-04 to 2012-08-20 | PoC: Carlton Rochester

**Thorne's Hairstreak Vegetation Surveys San Diego**  
Project type: Monitoring-Vegetation | Target species: Thorne's Hairstreak | Target vegetation: Coastal Scrub  
Mapping Tecate cypress and associated vegetation for Thorne's hairstreak habitat.  
County: San Diego | Date: 1990-01-01 to 2010-07-06 | PoC: Matthew Forister

# South Coast Multi-Taxa Database

## --enter data and create reports



The screenshot displays the South Coast Multi-Taxa Database Web Portal. At the top, a dark blue navigation bar contains links: Home | Monitoring | Management | Partners | Reports & Products | Calendar | FAQ | Contact Us, followed by a search box. Below this, the portal's logo (SDMMP) and title "SOUTH COAST MULTI-TAXA DATABASE WEB PORTAL" are shown, along with a bird illustration. A secondary navigation bar includes links: Home, Database search, Spatial search, GIS services, Submit data, and Disclaimers. The main content area is titled "SDMMP Projects" and features a red "Add new project" button. Two project entries are listed:

- Restoration of southwestern pond turtle to Sycuan Peak ER**  
The USGS with the San Diego Zoo and the California Department of Fish and Wildlife are working to enhance and restore the southwestern pond turtle population at the Sycuan Peak ER. This population has been identified as the most robust population within the MSCP (Madden-Smith et al. 2005) but had no recent recruitment. To enhance the population, nonnative aquatic species are being removed and captive hatched juveniles are being headstarted to avoid predation.
- Restoration of southwestern pond turtles to Rancho Jamul ER**  
The western pond turtle (WPT) has been extirpated from much of San Diego County with very few populations still remaining in the Management Strategic Plan Area (MSPA, [http://www.sdmmp.com/reports\\_and\\_products/Management\\_Strategic\\_Plan.aspx](http://www.sdmmp.com/reports_and_products/Management_Strategic_Plan.aspx)). The rarity of WPT combined with the impacts of water diversions and stream alterations creates the need for management considerations on a site by site basis, particularly when threatened by prolonged drought or nonnative species. Translocation of WPT in con

Each entry includes icons for Data, Reports, and Edit.

Beta  
testing is  
near  
completion

# South Coast Multi-Taxa Database

generate & export reports:

CNDDDB, USFWS 45-day, CA Scientific Collecting, SanBIOS

Mail to:  
California Natural Diversity Database  
California Dept. of Fish & Wildlife  
1807 13th Street, Suite 202  
Sacramento, CA 95811  
Fax: (916) 324-0475 Email: CNDDDB@wildlife.ca.gov

**Date of field work (mm/dd/yyyy):** 06/09/2009

*For Office Use Only*

Source Code \_\_\_\_\_ Quad Code \_\_\_\_\_  
Elin Code \_\_\_\_\_ Occ. No. \_\_\_\_\_  
EO Index No. \_\_\_\_\_ Map Index No. \_\_\_\_\_

**California Native Species Field Survey Form**

**Scientific Name:** *Emys marmorata pallida*

**Common Name:** Southwestern pond turtle

**Species found?** ☒ Yes ☐ No If not, why? \_\_\_\_\_

**Total No. Individuals:** 1 **Subsequent visit?** ☐ Yes ☒ No

**Is this an existing NDDDB occurrence?** ☐ Yes, Occ. # \_\_\_\_\_ ☐ No ☐ Unknown

**Collection?** No If yes: \_\_\_\_\_  
Number \_\_\_\_\_ Museum / Herbarium \_\_\_\_\_

**Reporter:** Chris Brown

**Address:** 4165 Spruance Road, Suite 200  
San Diego, CA 92101

**Email:** \_\_\_\_\_

**Phone:** \_\_\_\_\_

**Plant information**

**Phenology:** \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_%  
vegetative flowering fruiting

**Animal information**

**1**  
# adults # juveniles # larvae # egg masses # unknown  
☐ ☐ ☐ ☐ ☐  
wintering breeding nesting rookery burrow site other

**Location description (Please attach map AND/OR fill out your choice of coordinates below)**

County: San Diego Land owner: \_\_\_\_\_  
Quad name: Alpine, CA Elevation: 278  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4 Meridian: H M S Source of coordinates (GPS, topo, map & type): GPS  
T \_\_\_\_\_ R \_\_\_\_\_ Sec \_\_\_\_\_ 1/4 of \_\_\_\_\_ 1/4 Meridian: H M S GPS Make & Model: \_\_\_\_\_  
Datum: NAD27 NAD83 WGS84 WGS84 Horizontal accuracy: \_\_\_\_\_  
Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)  
Coordinates: -116.80063100 32.7225300

**Habitat description (plants & animals):** plant communities, dominants, associates, substrates/soils, aspects/slope:

**Animal behavior:** (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):


Please fill out separate form for other rare taxa seen at this site.

**Site information**

**Overall site/occurrence quality/viability (site + population):** Excellent

**Visible disturbances:**

**Threats:** invasive species - test

	A	B	C	D	E	F	G	H	I	J
1	 <b>California Natural Resources Agency</b> <b>DEPARTMENT OF FISH AND WILDLIFE</b> <b>SCIENTIFIC COLLECTING REPORT OF SPECIMENS CAPTURED OR SALVAGED</b>									
2	PERMITEE'S FIRST NAME					LAST NAME				
3	Chris					Brown				
4	MAILING ADDRESS					CITY			STATE	
5	4165 Spruance Rd #200					San Diego			CA	
6	I certify this is a true and correct report of all specimens captured or salvaged under the authority of my Scientific Collecting Permit									
7	PERMITEE'S SIGNATURE						DATE		SPONSOR'S NAME	
8	In checking this box I agree to the above statement									
9										
10	***Location***									
11	Common Name		Scientific Name		(Mandatory)	Site name		Marine Protected Area (MPA)(if applicable)		UTM
12					County					Eastings Northings Zone
13										
14	Southwestern pond turtle		Emys marmorata pallida		San Diego	SPER Pool 1				
15										
16										
17										

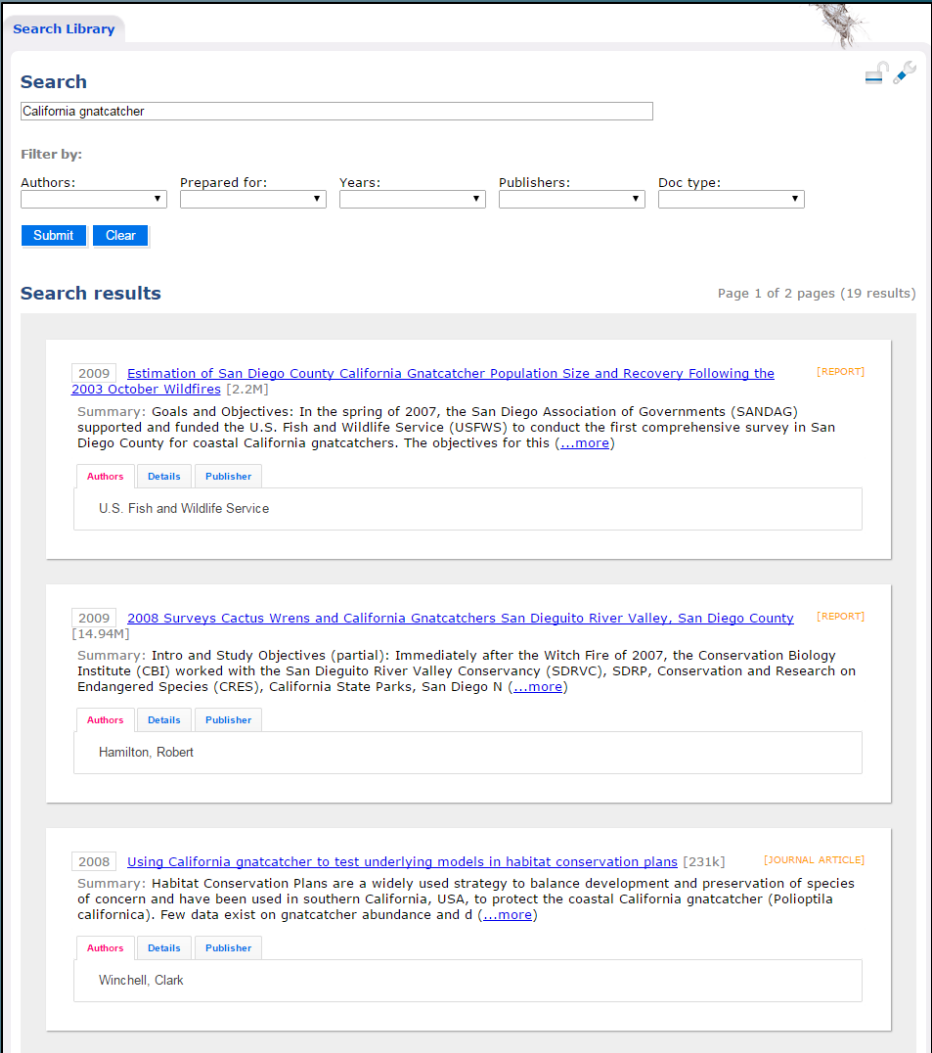


# Online Library

--approx. 200 reports  
and increasing

--to upload reports to  
share, contact Sharon  
for instructions and  
assistance

<http://mtx.sdmmp.com/library.php>



The screenshot displays a web-based search interface titled "Search Library". At the top, there is a search bar containing the text "California gnatcatcher". Below the search bar, there are several filter options: "Filter by:", "Authors:", "Prepared for:", "Years:", "Publishers:", and "Doc type:". Each of these filter options has a dropdown menu. Below the filters, there are two buttons: "Submit" and "Clear".

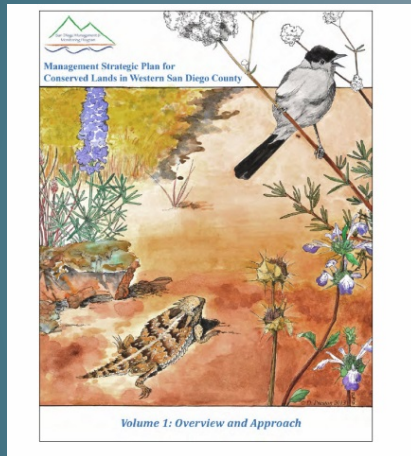
The search results are displayed below the filters, with the heading "Search results" and a page indicator "Page 1 of 2 pages (19 results)". The results are listed in a table-like format, with each entry showing the year, title, and a brief summary.

The first result is from 2009, titled "Estimation of San Diego County California Gnatcatcher Population Size and Recovery Following the 2003 October Wildfires [2.2M]". The summary states: "Goals and Objectives: In the spring of 2007, the San Diego Association of Governments (SANDAG) supported and funded the U.S. Fish and Wildlife Service (USFWS) to conduct the first comprehensive survey in San Diego County for coastal California gnatcatchers. The objectives for this (...more)". The author is listed as "U.S. Fish and Wildlife Service".

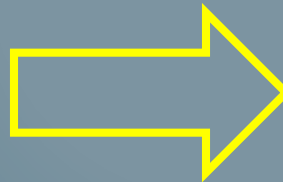
The second result is from 2009, titled "2008 Surveys Cactus Wrens and California Gnatcatchers San Dieguito River Valley, San Diego County [14.94M]". The summary states: "Intro and Study Objectives (partial): Immediately after the Witch Fire of 2007, the Conservation Biology Institute (CBI) worked with the San Dieguito River Valley Conservancy (SDRVC), SDRP, Conservation and Research on Endangered Species (CRES), California State Parks, San Diego N (...more)". The author is listed as "Hamilton, Robert".

The third result is from 2008, titled "Using California gnatcatcher to test underlying models in habitat conservation plans [231k]". The summary states: "Habitat Conservation Plans are a widely used strategy to balance development and preservation of species of concern and have been used in southern California, USA, to protect the coastal California gnatcatcher (Polioptila californica). Few data exist on gnatcatcher abundance and d (...more)". The author is listed as "Winchell, Clark".

# Strategic Plan Tracking Database (“Tracker”)



Document: 100's of pages



SPECIES OBJECTIVES and ACTIONS			
MSP 2014-2016 implementation priorities			
Sticky dudleya			
Objective category:	IMG Inspect and manage occurrences as necessary		
Objective:	Beginning in 2014, annually inspect the four known occurrences of sticky dudleya on Conserved Lands in MU6 (Table 2-3.5), collect covariate data on abundance and threats, conduct routine management actions as necessary, and submit monitoring and management data to SC-MTX.		
MUs	MU6	Years:	2014, 2015, 2016
Status 2014:	available_for_implementation	Implementing_entity:	Land Managers, Contractors
Actions			
Conduct regional monitoring protocol surveys to assess occurrence status 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			

Query output: 10's of pages on a specific topic

- MS Access database with “guts” of MSP -- outputs of goals, objectives, actions, implementation, monitoring, etc.
- Currently provides output for in-house and stakeholder use
- Envisioning an online version with all components of SHC Roadmap

# Status of Implementation - CSP



- 2009-2014:
  - Mountain Lion GPS Telemetry Study (LA1) – UCD WHC
  - American Badger Occupied Habitat Study (LA1) - USGS
  - Linkage Evaluation Study (LA1) – USGS, CBI
  - Deer Genetics Study (LA2) - SDSU
  - Bobcat Telemetry Study (LA2) - SDSU
  - Cactus Wren Genetic Connectivity Study (B1) - USGS
  - California Gnatcatcher Genetic Connectivity Study (B1) - USGS

## Existing Connectivity Projects Not Originally Included in CSP:

- SW Pond Turtle Genetics Study (Small Animals) - USGS
- Native Bees and Fragmentation Study (Pollinators) - UCSD
- Small Vertebrate & Undercrossings (Small Animals) - USGS
- San Diego Fairy Shrimp Genetics (Small Animals) - SDSU

# Status of Implementation - CSP



Photo City of San Diego

- 2015:
  - Continue American Badger Study - USGS
  - Continue Mtn Lion Study – NoCo + Genetics – UCD WHC
  - SD Horned Lizard Genetic Connectivity Study – USGS
  - SR94 & SR67 Wildlife Crossings Analysis and Implementation of Recommendations - CBI, SDSU?
  - Arroyo Toad Genetics Study – USGS
  - SW Willow Flycatcher Surveys of SLR – USGS
  - Quino Checkerspot Niche Model – SDMMP
  - Deer Genetics - USGS



# Status of Implementation - IPSP

- 2014 SANDAG Agreement with County of San Diego's Department of Agriculture, Weights and Measures (AWM), Jason Giessow will coordinate project
- 2015 Goals:
  - Workplan developed includes treatment of 10 of 12 plants from IPSP plus 3 plants; tracking of 17 other plant spp.

Invasive Plant Species Annual Work Plan,  
Implementation of Invasive Species Plan  
Recommendations

Field season 2015

Prepared for:  
San Diego Association of Governments

Prepared by:  
County of San Diego AWM

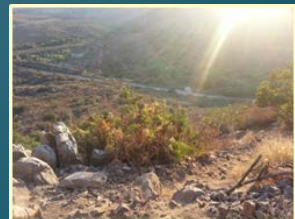
January 2015

*Ageratina adenophora* (eupatory)  
*Carrichtera annua* (Ward's weed)  
*Centaurea solstitialis* (yellow star thistle)  
*Centaurea stoebe* (spotted knapweed)  
*Elymus caput-medusae* (medusahead)  
*Enchylaena tomentosa* (ruby saltbush)  
*Genista monspessulana* (French broom)  
*Hypericum canariense* (Canary Island St. John's wort)  
*Iris pseudacorus* (yellow flag iris)  
*Limonium duriusculum* (European sea lavender)  
*Limonium ramosissimum* (Algerian sea lavender)  
*Lythrum salicaria* (purple loosestrife)  
*Retama monosperma* (bridal broom)

# Status of Implementation – MSP/Roadmap

## 2011-2014:

- American Badger Study (GN, RS) - USGS
- **Cactus Wren Implementation Plan (PIP) - TNC, SD MMP**
- **Rare Plant Inspect and Manage (IMG) Objective, 29 species - LMs**
- Dehesa Nolina Survey (ISV) - CBI
- Golden Eagle Research Study (PIP, RS) - USGS
- Nuttall's Acmispon (BMP) development - SD Audubon
- Orcutt's Spineflower Management (SB, PIP, ITR, IEX) - CLC
- Otay tarplant (BMP) development - CBI/TNC/Land IQ
- **San Diego thornmint (BMP, GN) - CBI, CNLM**
- SW Pond turtle survey and translocation (PIPa, ISV, ITR) - USGS
- Burrowing Owl Life-History study (PIP, RS) – ICR
- **San Pasqual Cactus Wren Habitat Restoration (IEX) – ICR**
- SR94 Infrastructure Plan – SDSU Engineering students
- Del Mar Mesa Enforcement Study – City SD, CDFW
- Recreation & Wildlife Study, Phase 1 – CSU



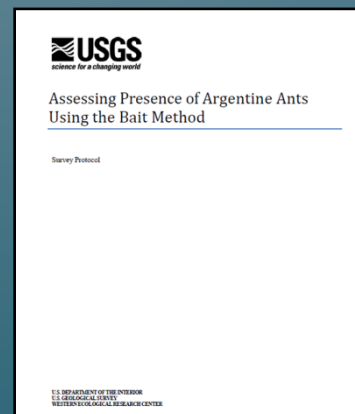
# Status of Implementation – MSP/Roadmap

## 2015:

- Rare Plant Inspect & Manage (IMG) Obj, 29 species - LMs
- Rare Plant Genetics (GN), 5 species - USGS
- South County Cactus Wren Monitoring - USGS
- Regional CA Gnatcatcher Monitoring - USGS
- Arroyo Toad Surveys (ISV) - USGS
- SW Pond Turtle Translocation Study (ITR) - USGS
- Pallid and Townsend's Bat Status and Distribution Study (RS) – SDNHM, USGS
- San Diego Ambrosia (BMP) development – City San Diego
- Recreation & Wildlife Study, Phase 2 – CSU
- Feral Pig Eradication – USDA APHIS

# Other Implementation

- Preserve Mmgt Plans – Otay Mesa W. & So. Crest – CBI, AECOM
- Rapid Assessment Protocols & Protocol Optimization - USGS
- Least Tern Predator Management, Mission Bay – USDA APHIS
- Current and upcoming Transnet LMG funded projects – multiple entities
- Harbison's Dun Skipper & Hermes Copper Surveys - SDSU
- Salt Creek and Rice Canyon Cactus Restoration – RECON, Co.
- Coastal Dune Restoration – SELC





# Coastal California Gnatcatcher

- *Developing regional monitoring program – So CA in 2016*
  - *Status & trend*
  - *Factors affecting occupancy*

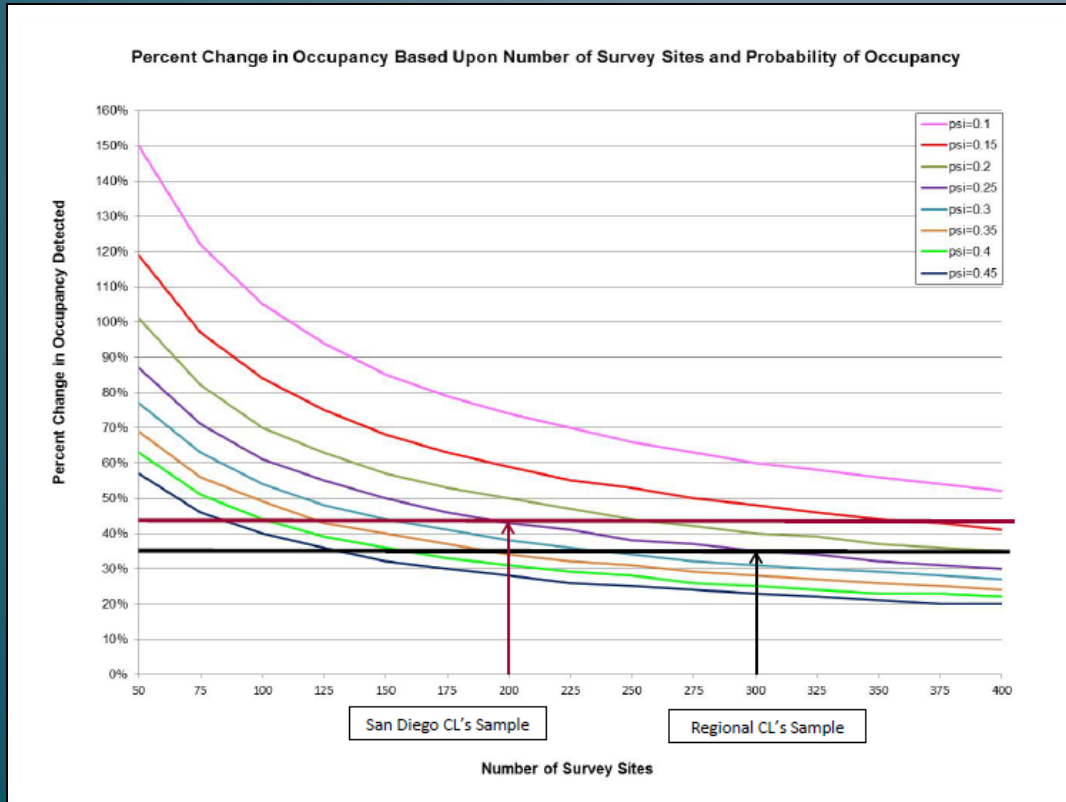


Photo Bonnie Peterson USFWS

# Coastal California Gnatcatcher

- *Fire study - San Diego Co 2015*
  - *Vegetation & gnatcatchers recovered from 2003 & 2007 fires?*
  - *2014 fires - track post-fire vegetation & gnatcatcher occupancy*

# Coastal Cactus Wren

- Otay Genetic Unit ↓ in 2014 to ~10 prs & 3 flgs on CLs in ORV
- Outlying territories unoccupied
- Drought - likely 1 factor in ↓

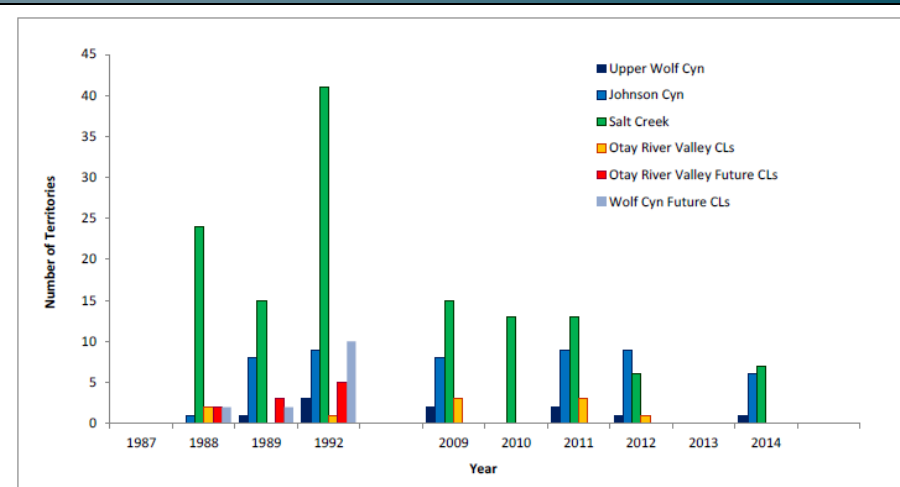


Fig. 4. Estimated number of cactus wren territories between 1988 & 2014 at various sites within the Otay Valley.

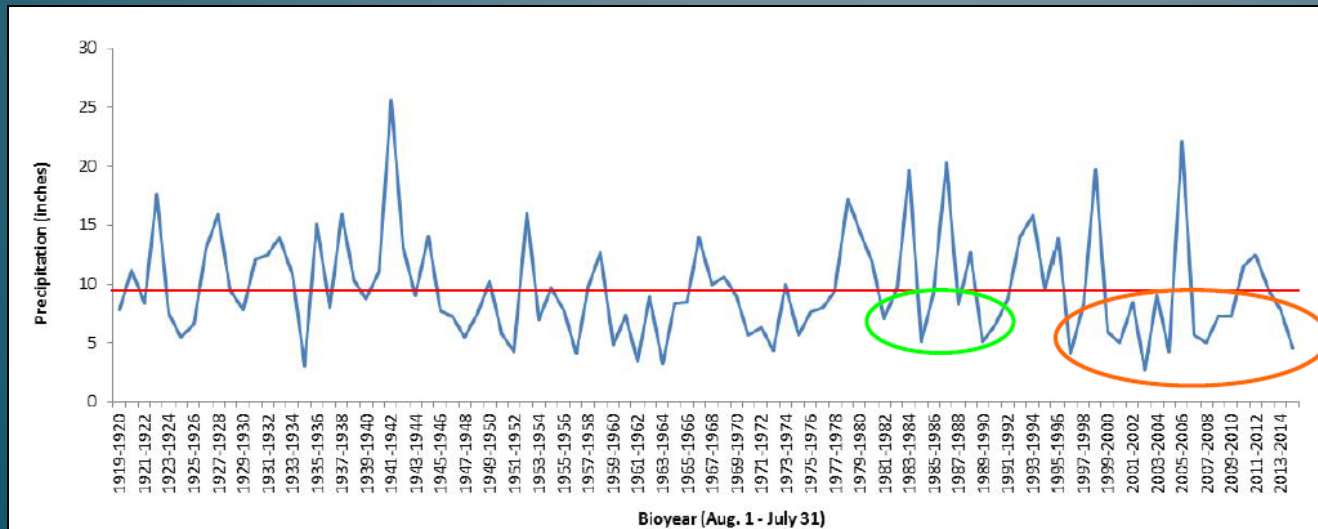


Fig 2. Bioyear precipitation in Chula Vista from 1921-2013. The red line represents average bioyear rainfall, the green circle shows drought years in the 1980s, and the orange circle highlights drought years from the mid-1990s to 2014.



# Coastal Cactus Wren

- 2015 Monitoring
  - *Wrens & Habitat in South County*
  - *Banding study - fitness , veg & arthropods- ORV & L. Jennings*
  - *Factors associated with food → manage for ↑ resilience*





# Coastal Cactus Wren

- 2015 Mgmt
  - Continue improving habitat at Lake Hodges - ICR
- MSP Implementation Plans (IPs):
  - So San Diego Co Conservation Plan - Trish Smith (TNC) with SDMMMP & USGS
  - San Pasqual Valley Restoration Recommendations – ICR modeling & coord w/land owners & mgrs



Photo Joshua Sudock, OC Register

# Rare Plants

- 2014-2015 MSP Inspect & Manage Objective
  - Protocol → assess plant status, habitat & threats
  - Data → prioritize mgmt & funding
  - Coord mtg:
 

Feb. 17, 10-noon,  
USGS conf rm 103
  - Protocol training to be scheduled

Rare plant species identified by the Management Strategic Plan (MSP) for "Inspect & Manage" monitoring in western San Diego County in 2015.

Scientific Name	Common Name	MSP Starting Year
<i>Acanthomintha ilicifolia</i>	San Diego thormmint	2015
<i>Acemispou prostratus</i>	Nuttall's acemispou	2014
<i>Agave shawii var shawii</i>	Shaw's agave	2014
<i>Ambrosia pumila</i>	San Diego ambrosia	2014
<i>Aphanisma blitoides</i>	Aphanisma	2014
<i>Baccharis vanessae</i>	Encinitas baccharis	2014
<i>Bloomeria clevelandii</i>	San Diego goldenstar	2014
<i>Brodiaea filifolia</i>	Thread-leaved brodiaea	2014
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea	2014
<i>Brodiaea santarosae</i>	Santa Rosa brodiaea	2015
<i>Chloropyron maritimum ssp maritimum</i>	Salt marsh bird's-beak	2014
<i>Chorizanthe orcuttiana</i>	Orcutt's spineflower	2014
<i>Clinopodium chandleri</i>	San Miguel savory	2014
<i>Dicranostegia orcuttiana</i>	Orcutt's birds-beak	2014
<i>Dudleya blochmaniae</i>	Blochmann's dudleya	2015
<i>Dudleya brevifolia</i>	Short-leaved dudleya	2014
<i>Dudleya variegata</i>	Variegated dudleya	2014
<i>Dudleya viscida</i>	Sticky dudleya	2015
<i>Erysimum ammophilum</i>	Coast wallflower	2014
<i>Fremontodendron mexicanum</i>	Mexican flannelbush	2014
<i>Hazardia orcuttii</i>	Orcutt's hazardia	2014
<i>Lepechinia cardiophylla</i>	Heart-leaved pitcher sage	2014
<i>Monardella stoneana</i>	Jennifer's monardella	2015
<i>Monardella viminea</i>	Willow monardella	2014
<i>Nolina cismontana</i>	Chaparral nolina	2014
<i>Nolina interrata</i>	Dehesa nolina	2014
<i>Packera ganderi</i>	Gander's ragwort	2014
<i>Rosa minutifolia</i>	Small-leaved rose	2014
<i>Tetracoccus dioicus</i>	Parry's tetracoccus	2014



# Rare Plants

- 2015 MSP Genetics Study Objective
  - SDNHM collect samples & vouchers :
    - ✓ *Salt marsh bird's-beak*
    - ✓ *Orcutt's bird's-beak*
    - ✓ *Willow monardella*
    - ✓ *Encinitas baccharis*
    - ✓ *Otay tarplant*



Photo City San Diego



Photo City San Diego



Photo City San Diego

# Rare Plants

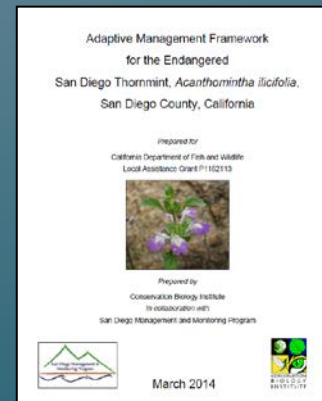
- 2015 MSP Genetics Study Objective
  - USGS – next generation DNA sequencing & cytological screening to determine:
    - Mixed ploidy among or w/in popns?
    - Popn genetic structure? Genetic drift & loss of diversity? Gene flow among popns?
    - Genetic bottlenecks? Evidence of local adaptation?
    - Rec. for common garden & reciprocal transplant expts, collecting, bulking & distributing seed for enhancing exist occur & establishing new occur.





# San Diego thornmint framework

- 2014 CBI created *adaptive mgmt framework*
- To be included in SHC Roadmap as model for other species
- Framework approach:
  - Obtain data & interview LMs & experts
  - Conceptual model
  - Habitat suitability models
  - Model climate influences & potential impacts climate change
  - Hypothesize regional popn structure & habitat connectivity
  - Prioritize enhancement & connectivity opportunities
  - Prioritize mgmt actions & BMPs



# Roundtable Discussion

- Suggestions for
  - SHC Roadmap – Format and content?
  - Meetings?
  - Implementation Process?
- How can we implement across preserve complexes?
- What are your technical support needs?
- Do you have priority data sets for integration?