



# MSCP 2008 Annual Report Workshop

## August 26, 2009



# Approved NCCP/HCPs

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- MSCP – County of San Diego; Cities of San Diego, La Mesa, Poway, Chula Vista
- City of Carlsbad (MHCP)
- San Diego Gas & Electric Company
- Central and Coastal Orange County
- Southern Orange County (HCP only)
- Western Riverside County MSHCP
- Coachella Valley

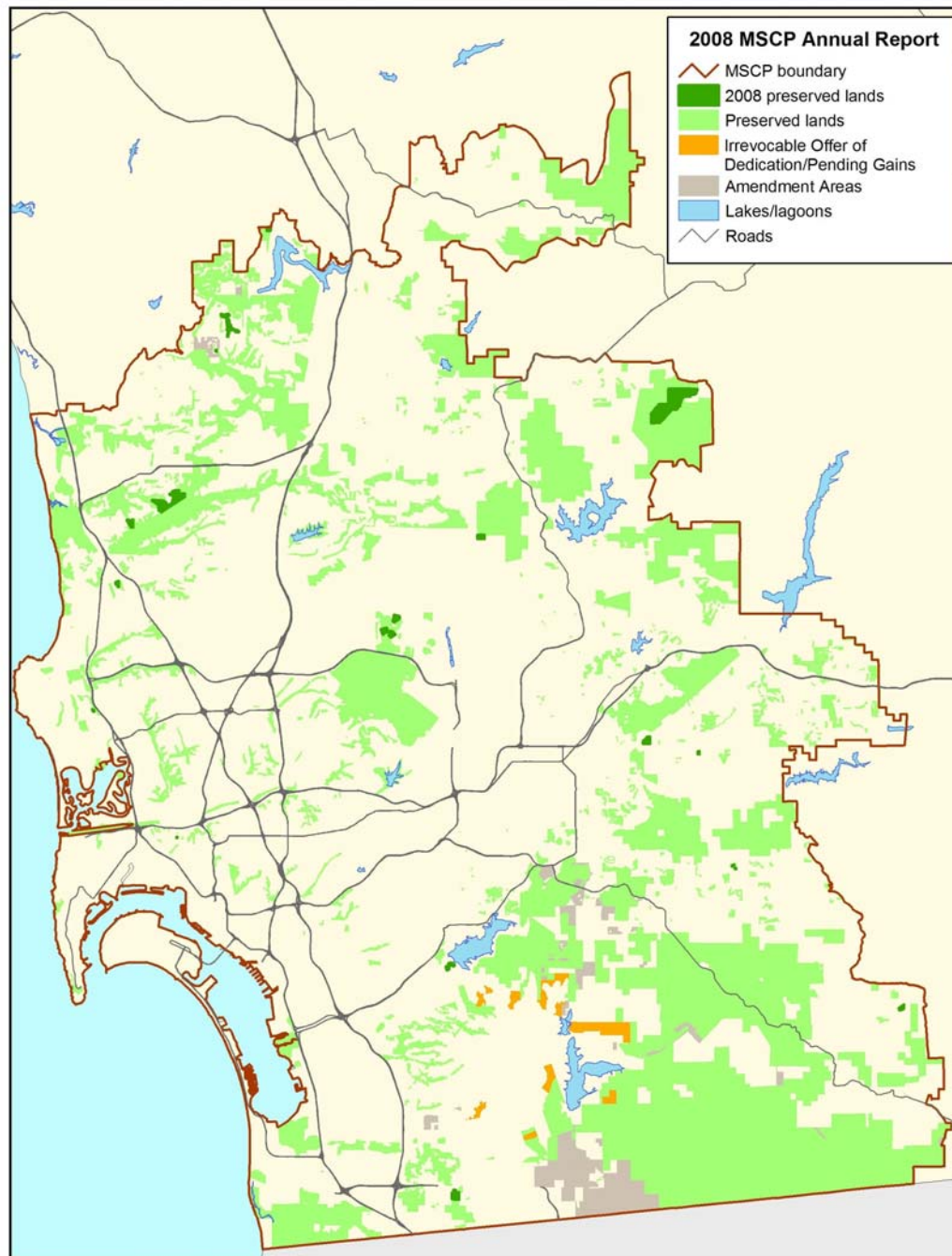
# NCCP/HCP Planning

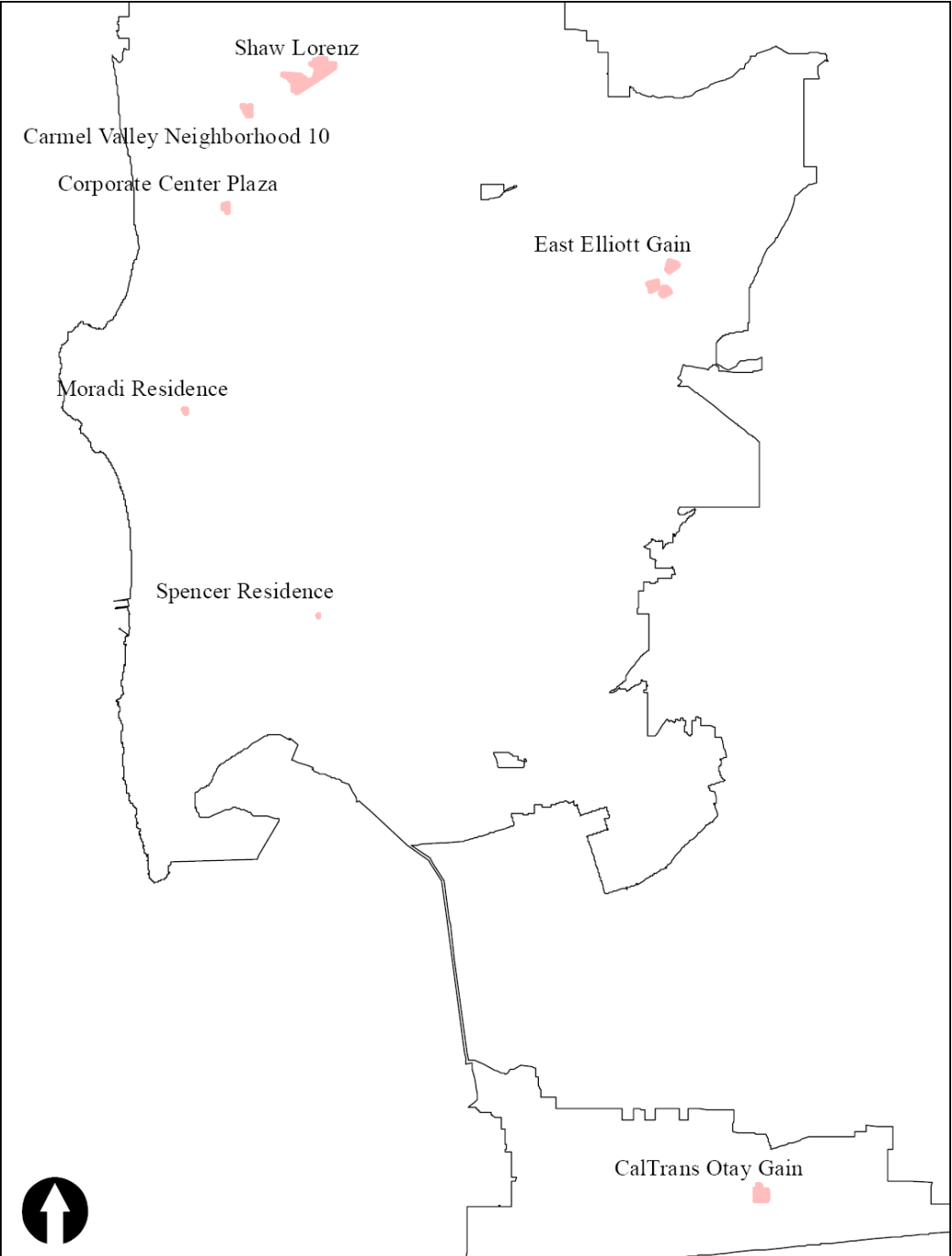
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- San Diego County Water Authority
- City of Rancho Palos Verdes
- City of Oceanside
- NC MSCP (EC MSCP on hold)
- County SD MSCP Quino Amendment
- City of Santee (MSCP)
- Joint Water Agencies (Sweetwater, Helix, Padre Dam, Otay)
- Orange County Transportation Agency (OCTA)
- City of San Diego HCP for Vernal Pool Species

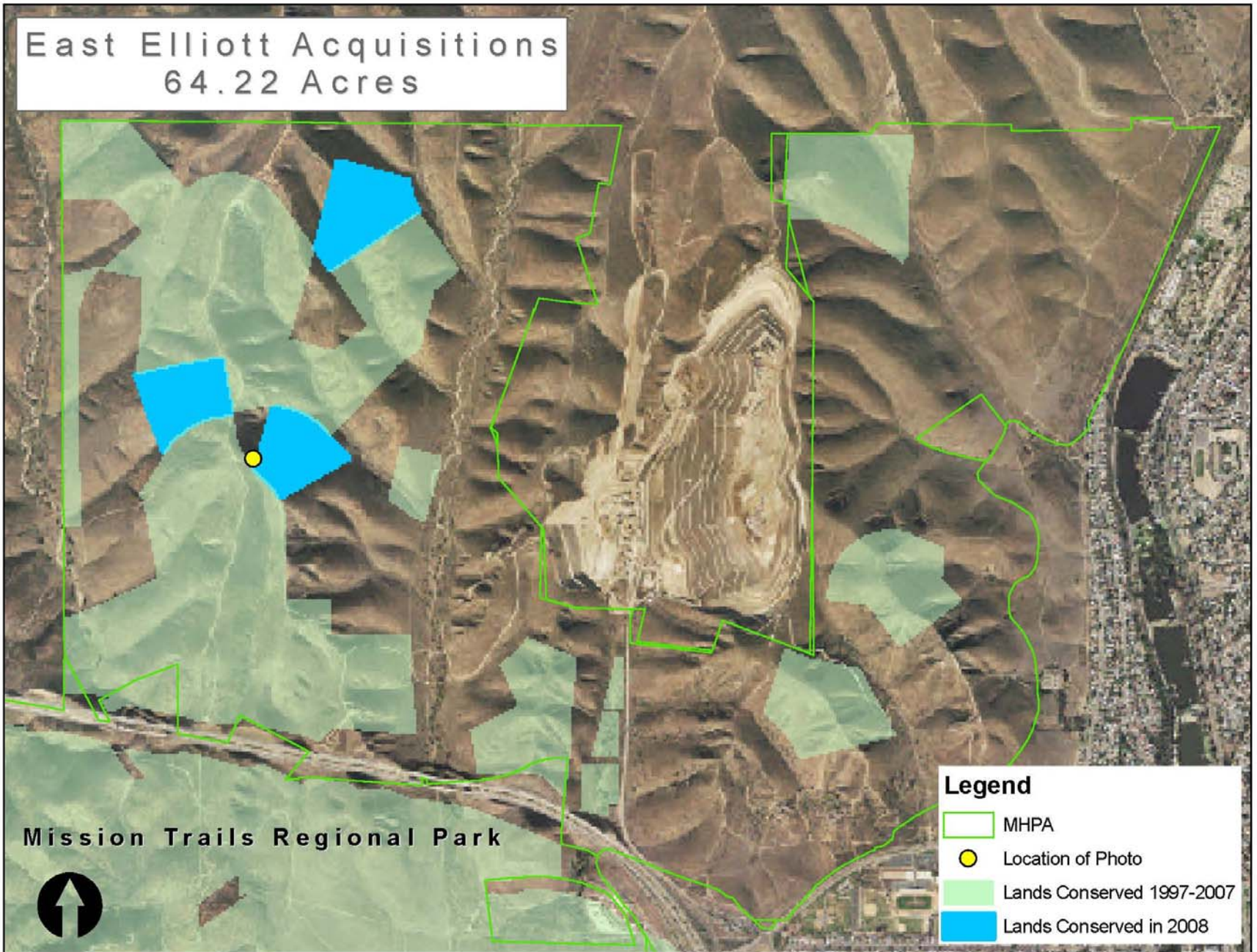
# MSCP Habitat Losses and Gains

|                     | 2008           | 2008          |                  |
|---------------------|----------------|---------------|------------------|
| Jurisdiction        | Habitat Losses | Habitat Gains | Cumulative Gains |
|                     |                |               |                  |
| County San Diego    | 202.00         | 652.00        | 83,881.50        |
| City of San Diego   | 266.90         | 263.54        | 35,632.10        |
| City of Chula Vista | 231.00         | 172.00        | 2,771.30         |
| City of La Mesa     | -              | -             | 50.29            |
| City of Poway       | 29.11          | 45.73         | 1,831.00         |
|                     | 729.01         | 1,133.27      | 124,166.19       |





# East Elliott Acquisitions 64.22 Acres







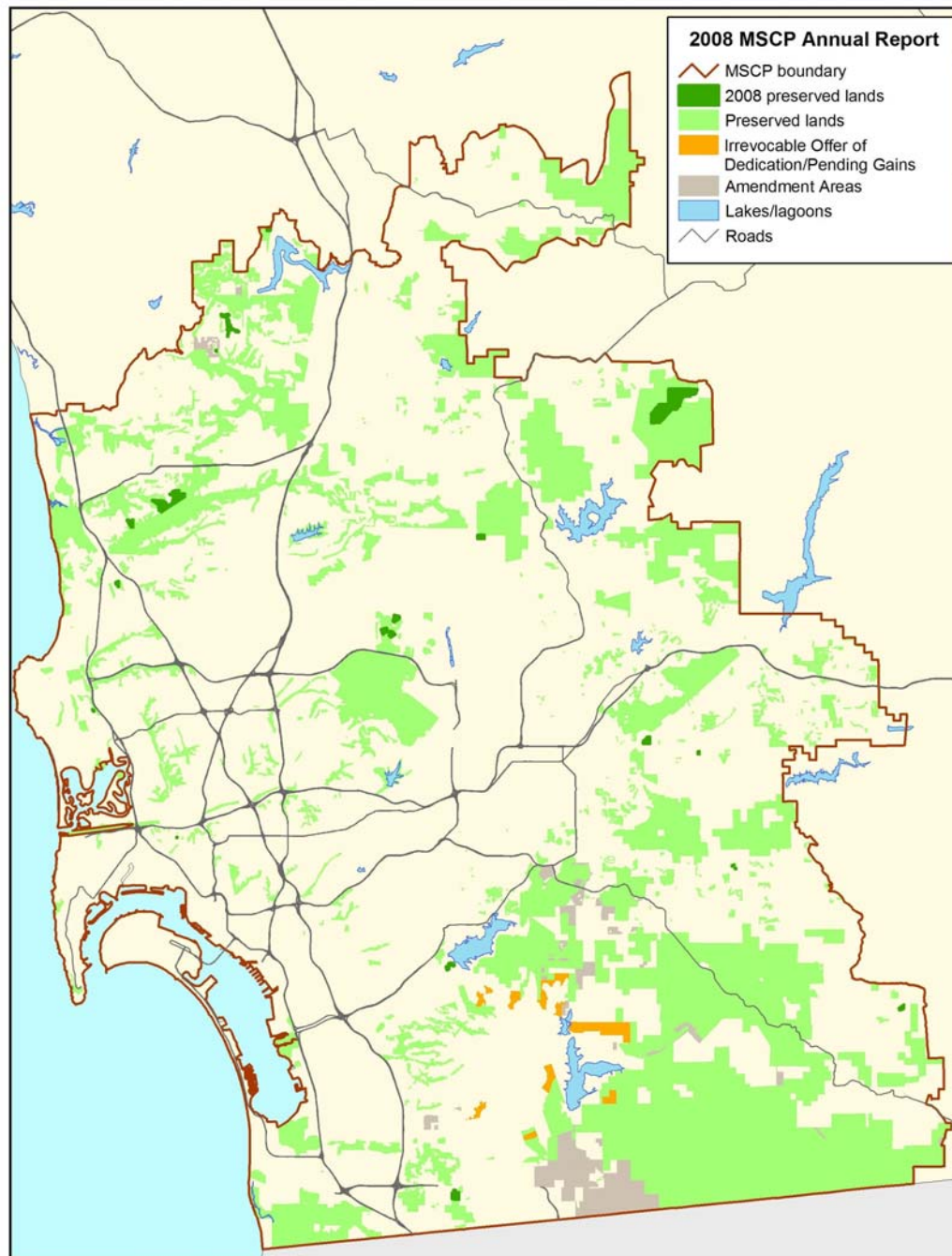
West Del Mar Mesa (Shaw Lorenz) Gain  
130.67 Acres

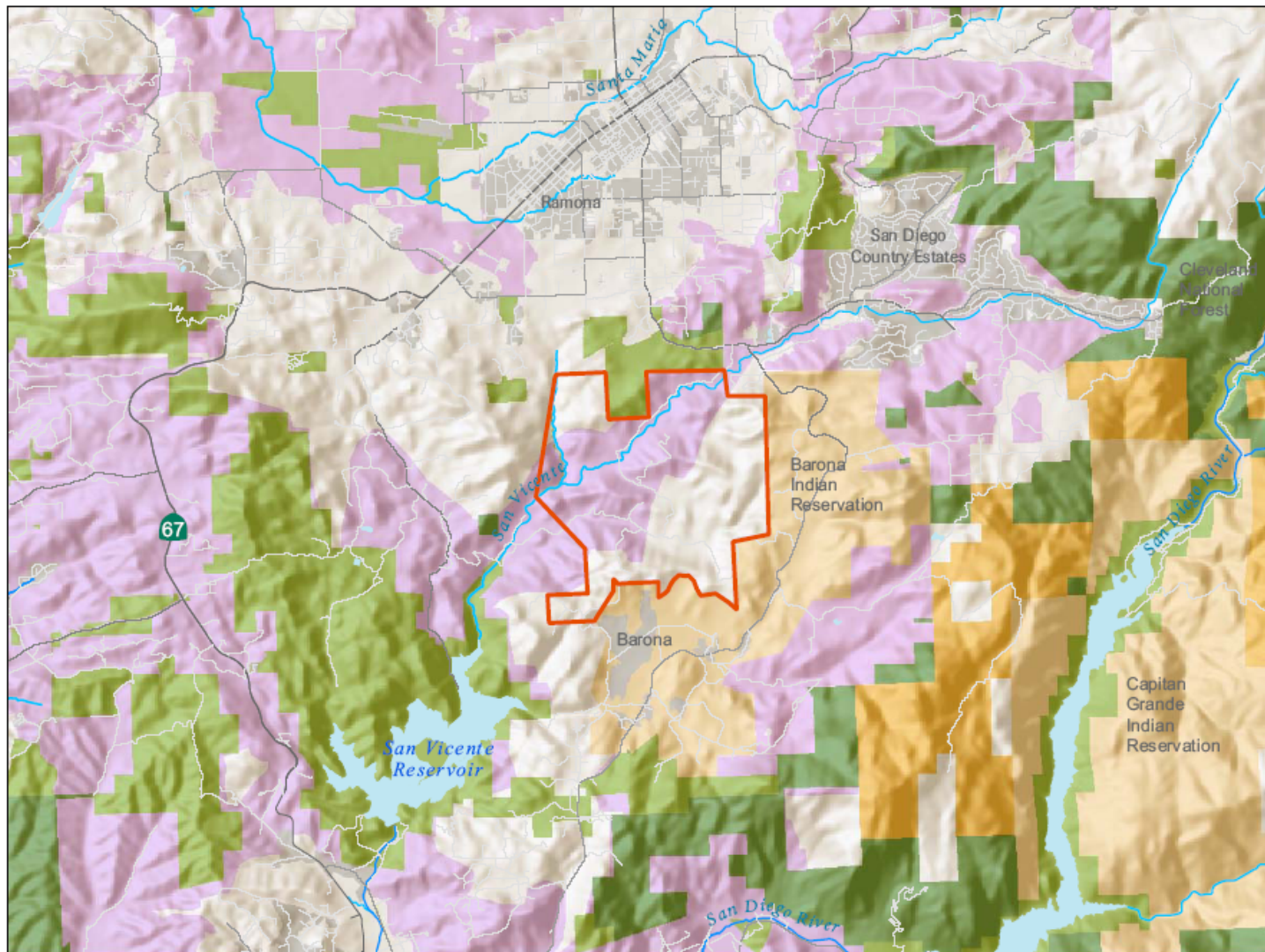


**Legend**

- Location of Photo
- Lands Conserved in 2008







Priorities

Monte Vista

Land Owner

- US Forest Service
- City or County
- BLM
- Tribal Lands

Land Use

Urban

NCCP

Pre-Approved Mitigation Area

Water Bodies

Lakes

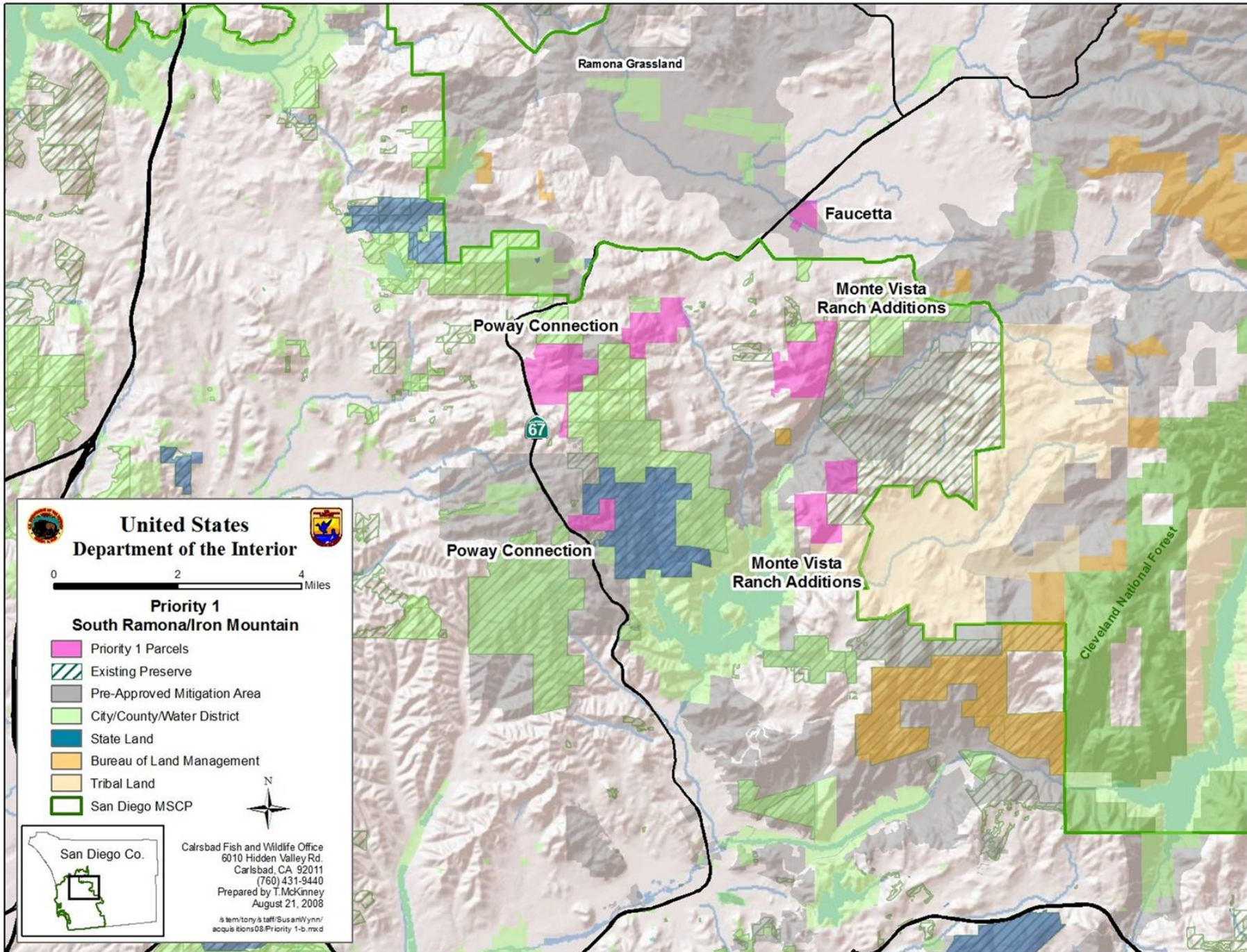
Rivers

- River
- Tributary

Roads

- Highway
- Major Road
- Main Road
- Minor Road





**United States  
Department of the Interior**



0 2 4 Miles

**Priority 1  
South Ramona/Iron Mountain**

- Priority 1 Parcels
- Existing Preserve
- Pre-Approved Mitigation Area
- City/County/Water District
- State Land
- Bureau of Land Management
- Tribal Land
- San Diego MSCP



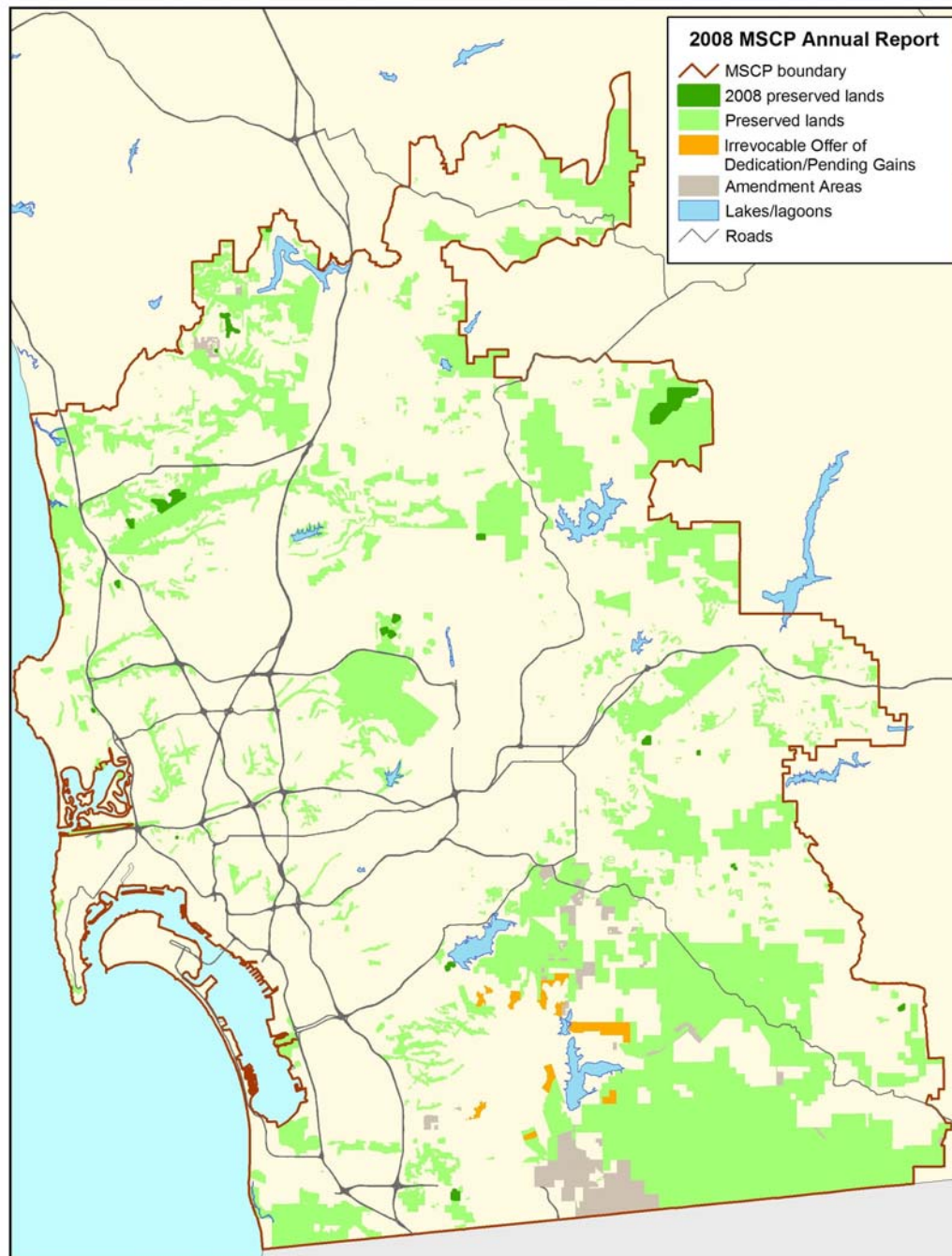
Carlsbad Fish and Wildlife Office  
6010 Hidden Valley Rd.  
Carlsbad, CA 92011  
(760) 431-9440  
Prepared by T. McKinney  
August 21, 2008  
s:\em\tony\staff\Susan\Wynn\acquisitions\Priority 1-b.mxd

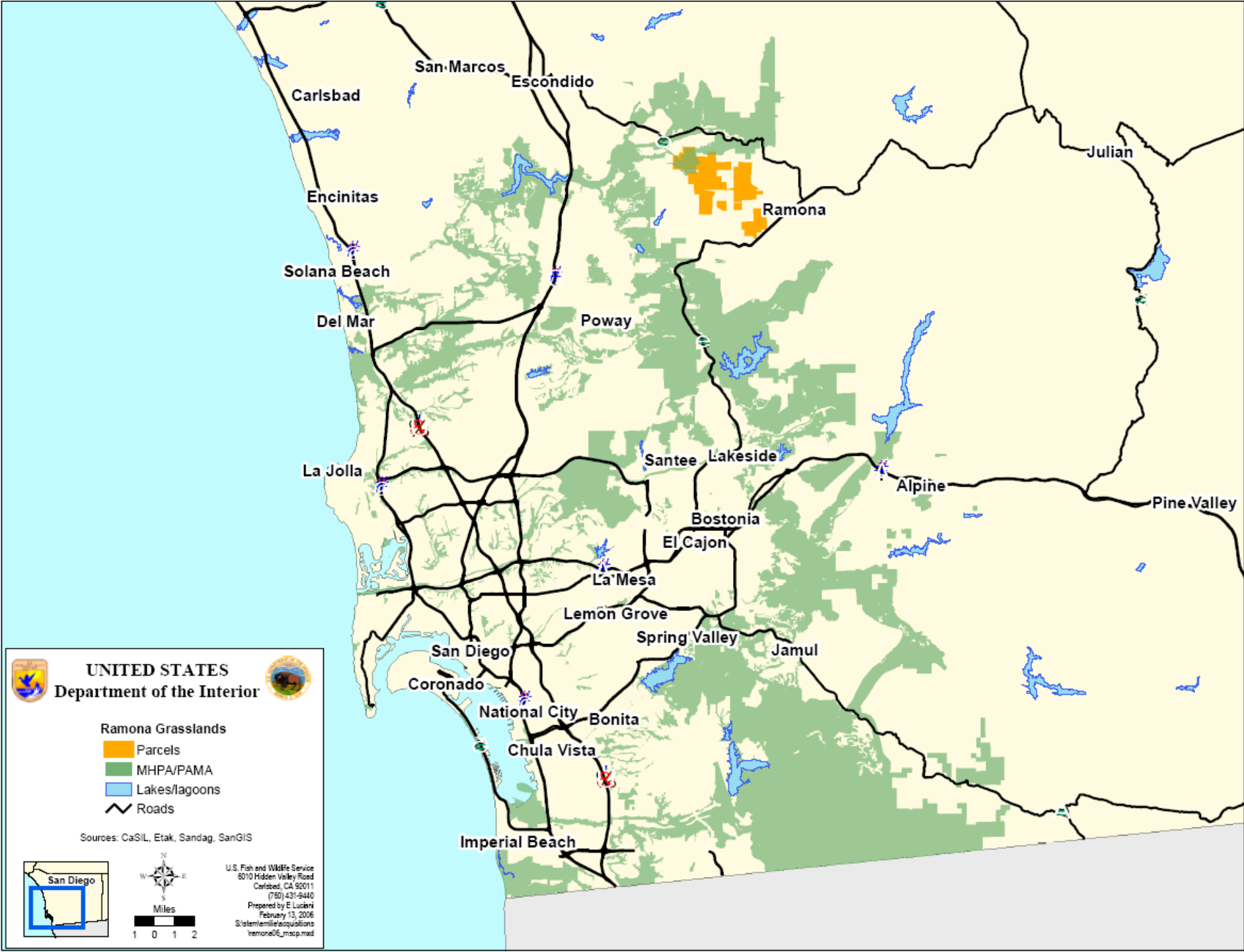
















**UNITED STATES**  
**Department of the Interior**

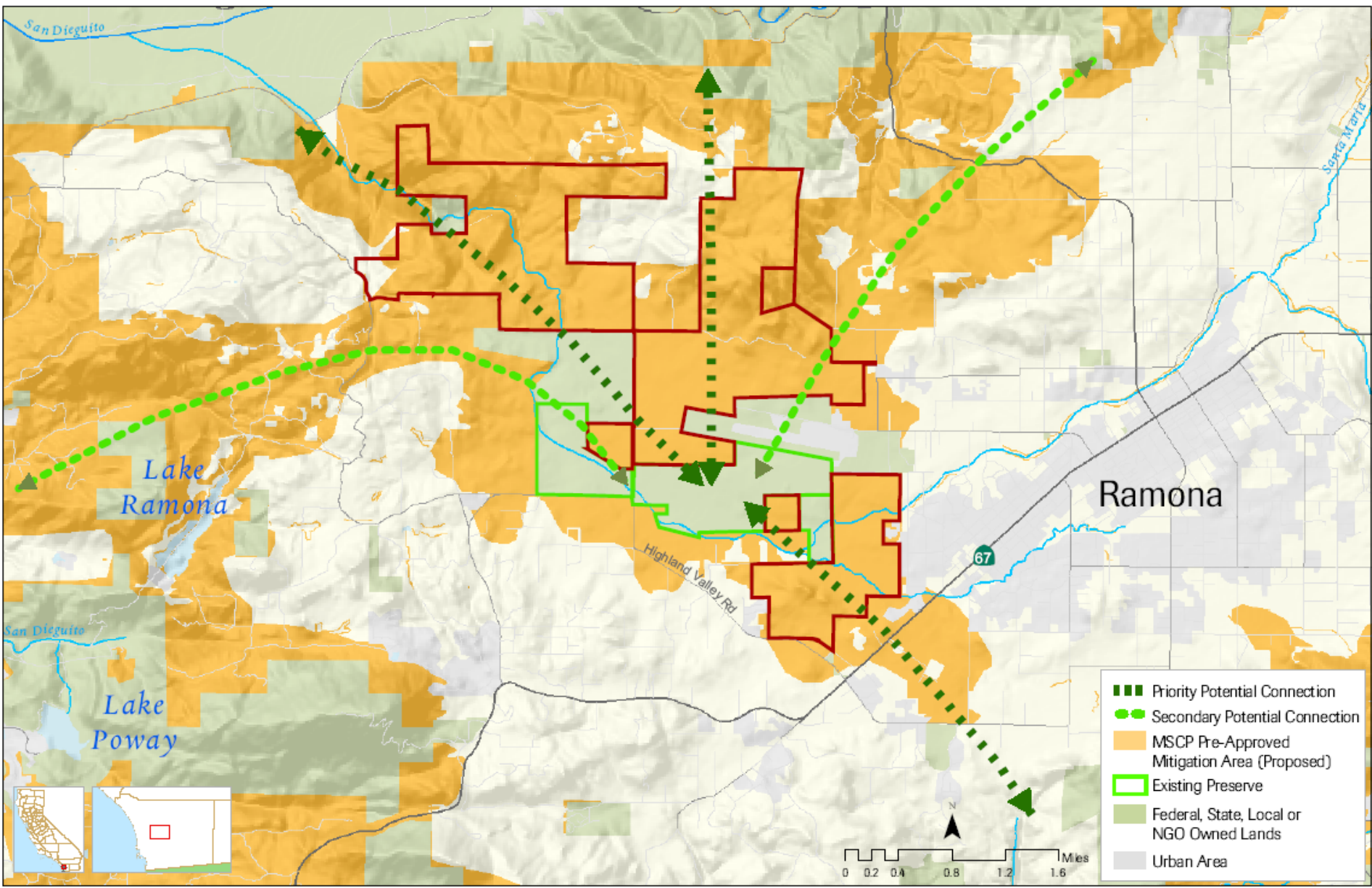
**Ramona Grasslands**







-  Parcels
-  MHPA/PAMA
-  Lakes/lagoons
-  Roads

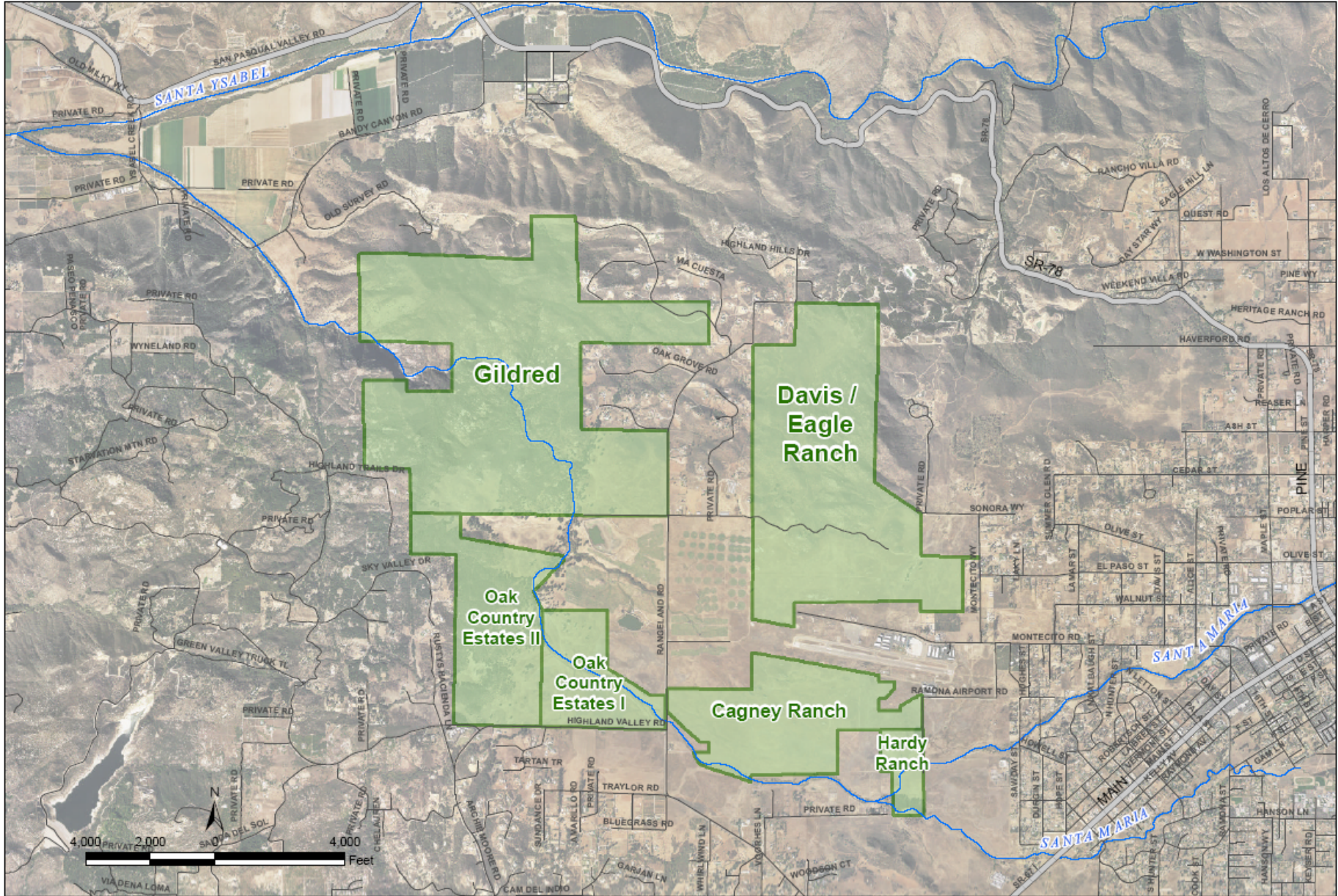
Sources: CaSIL, Etak, Sandag, SanGIS



U.S. Fish and Wildlife Service  
 6010 Hidden Valley Road  
 Carlsbad, CA 92011  
 (760) 431-9440  
 Prepared by E. Luciani  
 February 13, 2006  
 S:\stemile\acquisitions\luciane06\_mscp.mxd



-  Priority Potential Connection
-  Secondary Potential Connection
-  MSCP Pre-Approved Mitigation Area (Proposed)
-  Existing Preserve
-  Federal, State, Local or NGO Owned Lands
-  Urban Area



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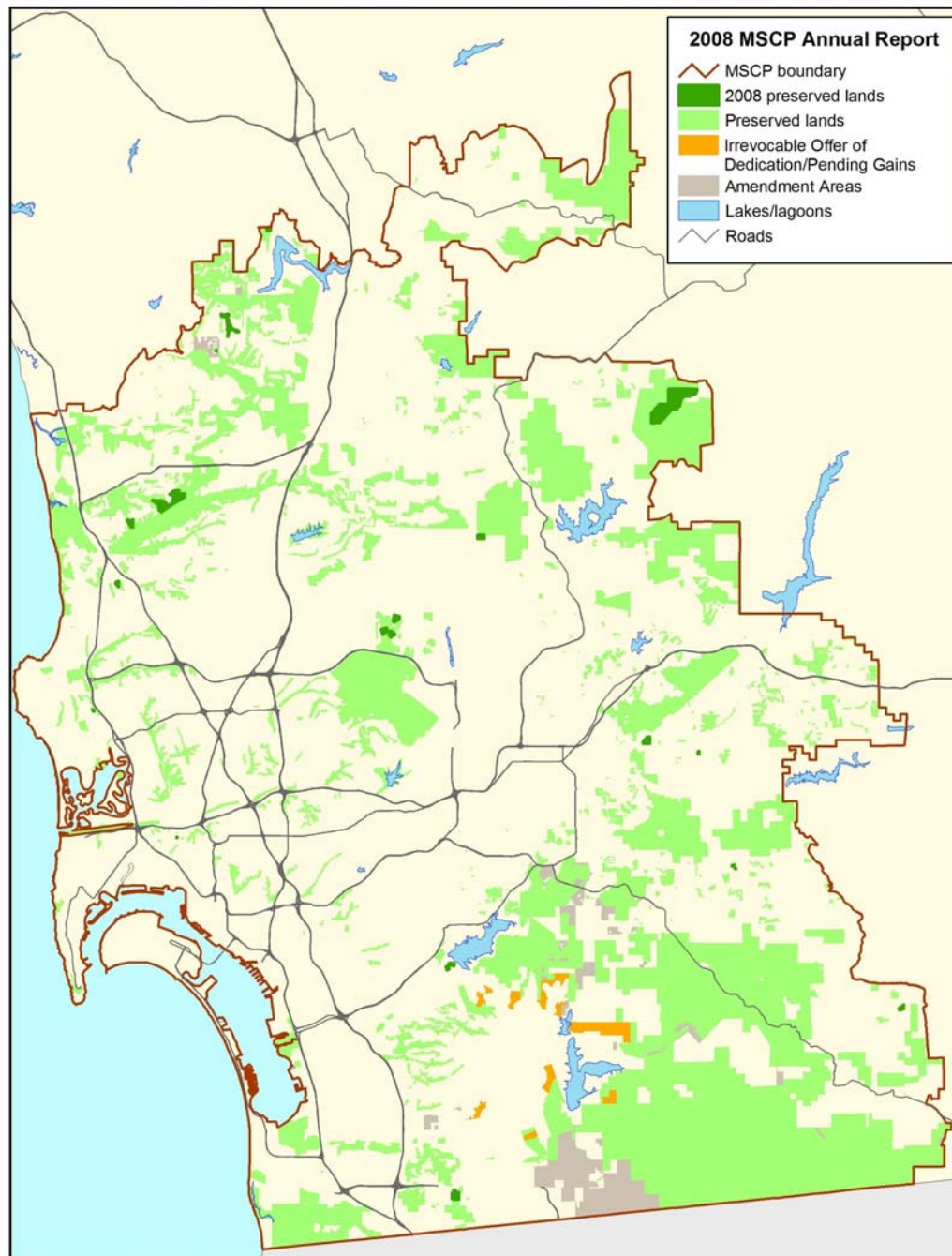


**Figure 1A**  
**Ramona Grasslands Preserve**  
**All Properties Acquired**  
**with State Funds**



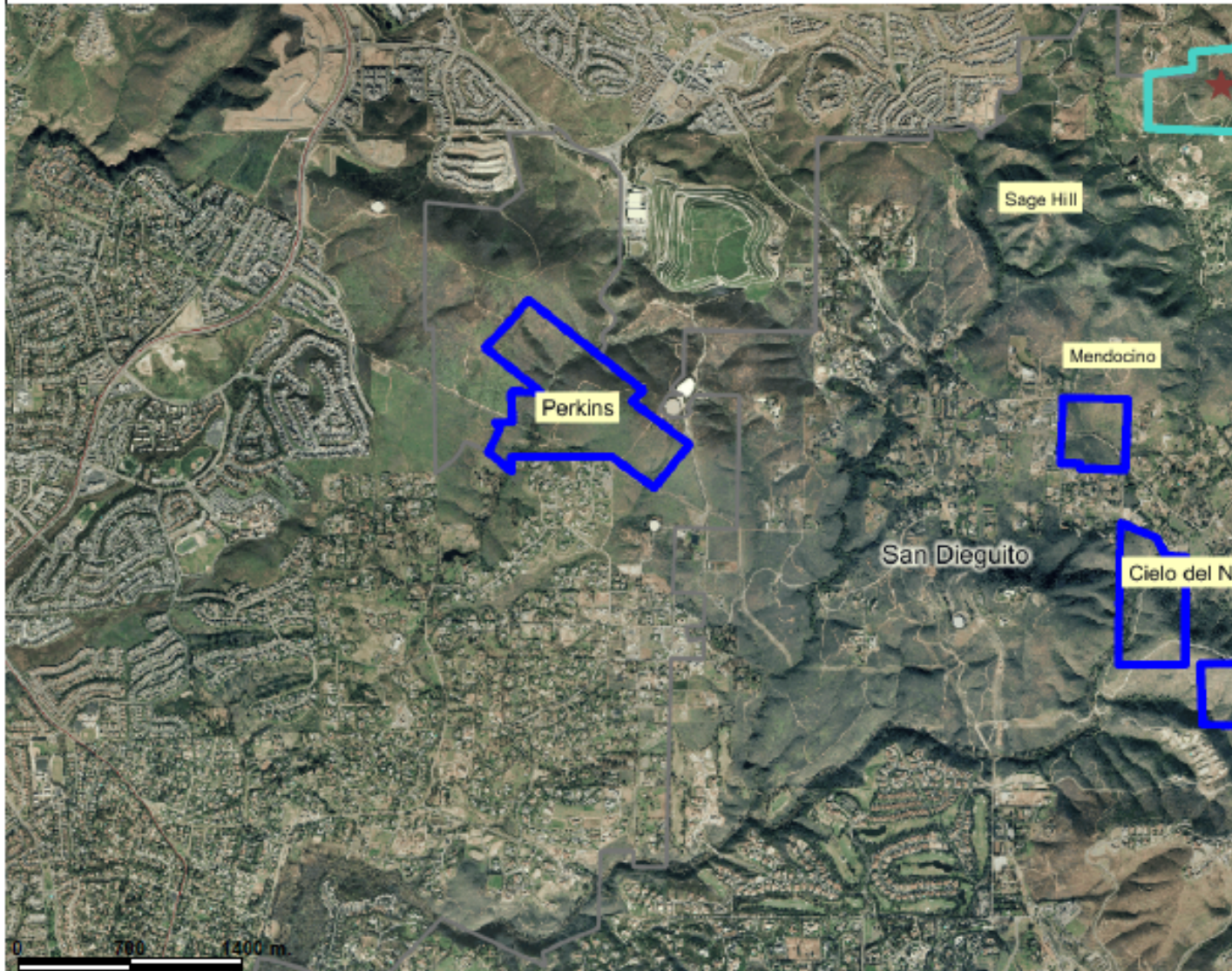








# Aerial - MHCP- SCMSCP - NCMSCP



## Legend

- Highways
- Freeways
- Water Bodies
- Water Bodies
- Sponsor Groups
- Sponsor Groups
- Other
- Community Planning Area
- Community Planning Areas
- 2008 Orthophoto South West
- 2008 Orthophoto South East
- 2008 Orthophoto North West
- 2008 Orthophoto North East

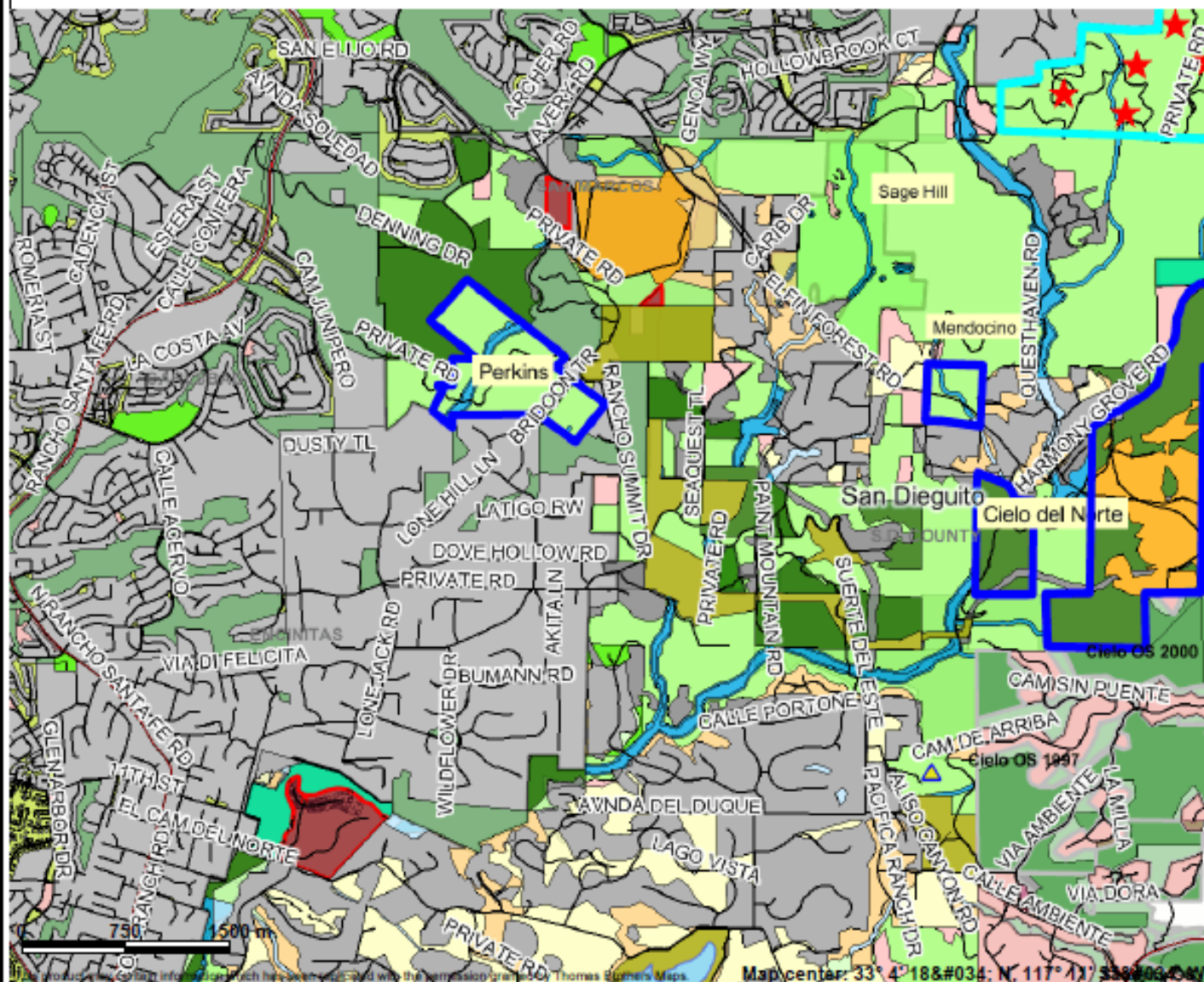


Scale: 1:38,515

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# MSCP-NCMSCP-MHCP Connection



### Legend

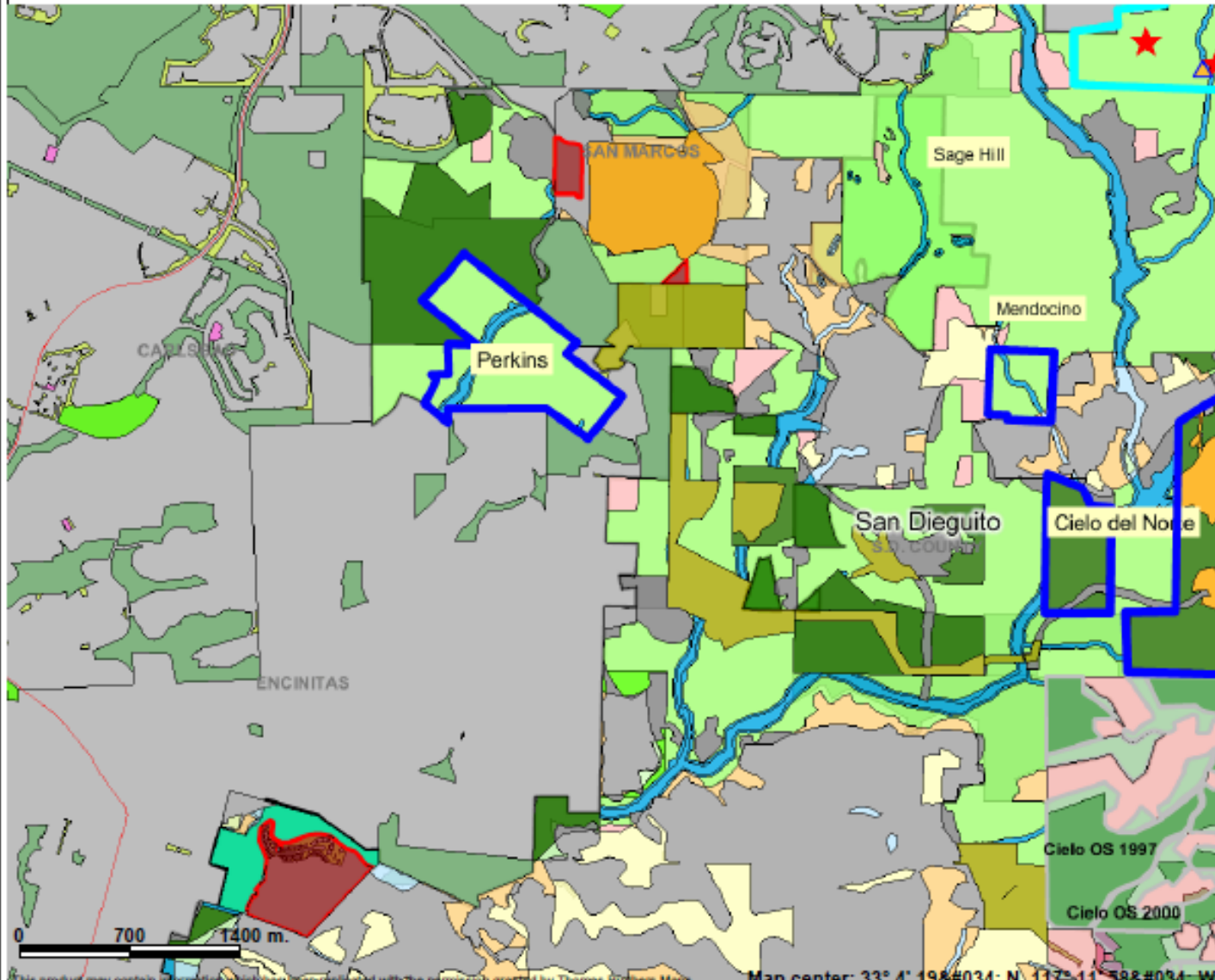
- Highways
- Freeways
- Streets
- Water Bodies
- Water Bodies
- Habitrak 2005 Data**
- Habittrak Gain
- Habittrak Loss
- DPLU Version: DRAFT MSCP Designations - North**
- Natural Upland Habitats outside PAMA
- Urban/Developed outside PAMA
- Urban/Developed within PAMA
- Existing Agriculture Important for Preserve Design
- Existing Agriculture outside PAMA
- Existing Agriculture Containing Habitat Value Important for Coverage of a Specific Species
- Tribal or MHCP City-owned
- US Forest Service
- Other Areas Not Covered
- Natural Upland Habitat within PAMA
- Natural Vegetation outside PAMA
- Anticipated Project Uplands
- Baseline Preserve Areas
- Open Space Easement outside PAMA
- Hardline Gains
- Pre-negotiated (Hardlined) Take Authorized Areas
- Riparian/Wetland Habitat and Transition Zone within PAMA
- Riparian/Wetland Habitat and Transition Zone outside PAMA
- SR76 Project Area
- Other

Scale: 1:43,505

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# MHCP-SCMSCP-NCMSCP Core Area



## Legend

- Highways
- Freeways
- Water Bodies
- Water Bodies
- Habitrak 2005 Data
- Habitrak Gain
- Habitrak Loss
- DPLU Version: DRAFT MSCP Designations - North
- Natural Upland Habitats outside PAMA
- Urban/Developed outside PAMA
- Urban/Developed within PAMA
- Existing Agriculture Important for Preserve Design
- Existing Agriculture outside PAMA
- Existing Agriculture Containing Habitat Value Important for Coverage of a Specific Species
- Tribal or MHCP City-owned
- US Forest Service
- Other Areas Not Covered
- Natural Upland Habitat within PAMA
- Natural Vegetation outside PAMA
- Anticipated Project Uplands
- Baseline Preserve Areas
- Open Space Easement outside PAMA
- Hardline Gains
- Pre-negotiated (Hardlined) Take Authorized Areas
- Riparian/Wetland Habitat and Transition Zone within PAMA
- Riparian/Wetland Habitat and Transition Zone outside PAMA
- SRT6 Project Area
- Other
- Parks - Existing Land Use



Scale: 1:38,515

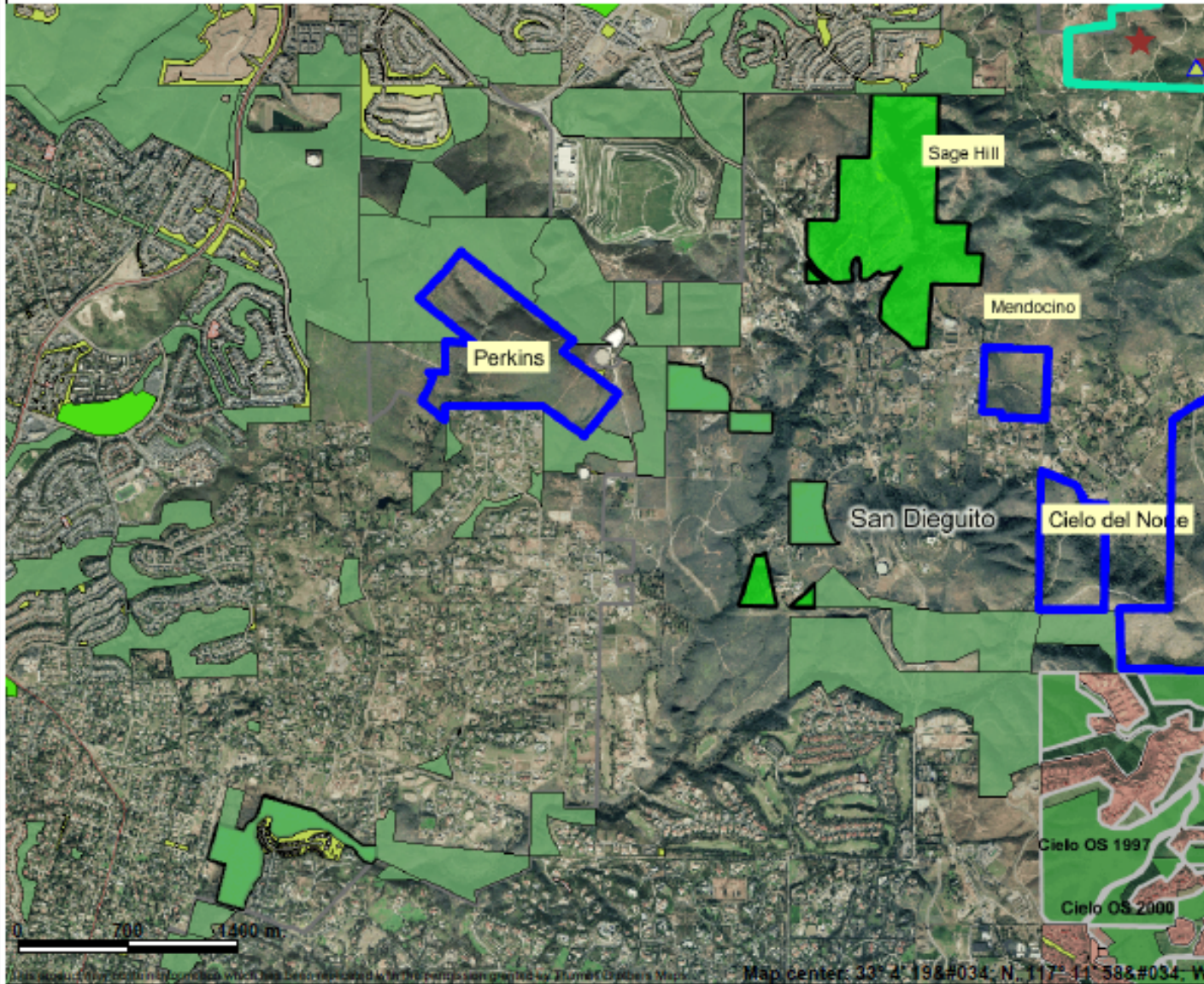
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Map center: 33° 4' 19.8#034; N, 117° 41' 38.8#034; W

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# MHCP-SCMSCP-NCMSCP Core Area Aerial



## Legend

- Highways
- Freeways
- Water Bodies
- Water Bodies
- Habitrak 2005 Data
- Habitrak Gain
- Habitrak Loss
- Parks - Existing Land Use (SANDAG)
- Active Use
- Passive Use
- Open Space Reserves Preserves
- Beach - Active
- Beach - Passive
- Landscape Openspace
- Residential Recreation
- Undevelopable Natural Areas
- County Parks
- Sponsor Groups
- Sponsor Groups
- Other
- Community Planning Area
- Community Planning Area
- 2008 Orthophoto South West
- 2008 Orthophoto South East
- 2008 Orthophoto North West
- 2008 Orthophoto North East



Scale: 1:38,515

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# Sage Hill Status

- Acquired: February 19, 2009
- 234-acres
- Acquisition Cost: \$11,000,000
  - Funded through:
    - *TransNet*: \$ 8,027,433
    - *County San Diego*: \$ 829,000
    - *WCB/Section 6*: \$ 2,143,567
- Owned by and Managed by County
  - Resource Management Plan underway



# MSCP 2008 Annual Report Workshop

## August 26, 2009

U.S. Fish and Wildlife Service

San Diego National Wildlife Refuge Complex



# MSCP Covered Species at Tijuana Estuary NWR and San Diego Bay NWR



**Salt Marsh Bird's Beak**



**Light-footed Clapper Rail and chick**



**California Least Tern**



**Elegant Terns**

**Tern photos courtesy of Jack Daynes**





## San Diego Bay NWR Salt Pond Restoration



- Restoration begun with \$2.9 million NOAA grant and partnership with Port of San Diego – multi-year project
- Breach levees to allow tidal flow and elevate bottom to promote cord grass for the Light-footed Clapper Rail
- Maintain some open water with nesting islands
- Other hypersaline ponds with invertebrate populations retained for shorebird foraging



## MSCP Covered Species at San Diego NWR

- **Least Bell's Vireo (Thanks USGS for surveys)**  
**Stable - 33 territories in 2009**
- **San Diego Ambrosia**  
**Stable - increasing distribution through translocation; adding protection**
- **San Diego Thornmint**  
**Stable - new occurrence on McGinty Mountain**



## Non-covered Species

- **Quino Checkerspot Butterfly**  
**Status inconclusive. Low numbers (up to 7 in 2009)**  
**Wide distribution on Refuge at 6 locations**  
**(4 new), but not detected at 4 recent locations**



## San Diego NWR Vernal Pool Restoration

- 30-acre restoration begun spring 2007
- Transnet grants will fund continued restoration
- Native plants cautiously emerging and soil crusts developing
- SD Fairy Shrimp distribution increasing – now in 7 pools (6 created; 1 natural)
- Also supports Otay tarplant, California gnatcatcher, burrowing owl, San Diego barrel cactus
- High potential for spreading navarettia and other vernal pool species

## Burrowing Owls at Sweetwater Authority and San Diego NWR



### Nest box installation

- 15 boxes at SWA in Dec. 2006
- 10 boxes at SDNWR in Sept. 2007

### Immediate owl occupancy at both sites

- Owls from SWA went to SDNWR in 2007
- Released 5 sibling captive-born owls





**Burrowing Owl Nest Monitoring**



**Pete Famolaro, SWA, scopes through peephole**

## Burrowing Owls at San Diego NWR



### Spring 2008

- One breeding pair
  - one brood of 3 young

### Spring 2009

- Three breeding pairs and a single owl
  - three broods totaling 10 young

### July 2009

- At least 17 owls present and all banded

### Next Steps

- Weed control for vernal pools - maintains open habitat for owls
- Soft-release captive owl
- Install more nest boxes in restoration area east of current site

## Cactus Wrens at San Diego NWR Cooperation with many partners



- Currently only one pair of Cactus Wrens, shared with Sweetwater Authority
- Coordination with Working Group
- Transnet grant for habitat enhancement on 139 acres

- November 2008: Salvaged cactus from Bayshore Bikeway on San Diego Bay NWR

- January 2009: Volunteer crew planted 6,000 cholla cuttings and 15 mature plants into cactus farm at CA Fish and Game's Rancho Jamul Ecological Reserve

- Cuttings weeded and watered, over 99% have new growth, often multiple branches from 5-25 cm long

- Will transplant to the field in winter 2009-2010. Looking for additional salvage opportunities





## Otay Tarplant at San Diego NWR

- 67-acre restoration area
- De-thatched spring 2005 followed by weed control, seed collection, planting of natives
- Weed cover and soil seed bank greatly reduced. Survival and growth of planted native grasses and shrubs has improved habitat quality on site
- Otay tarplant remains abundant, extensive, and productive
- In 2010, will continue weed control, broadcast hundreds of pound of annual plant seeds including Otay tarplant, and plant additional container stock



## Harris Fire Recovery



- Fire burned over 4,137 acres of 8,500-acre Refuge in October 2007
- Quino checkerspot butterfly was most sensitive species severely affected by fire - Rehabilitation focuses on quino habitat
- 128 acres in 4 ridge top polygons de-thatched and received selective weed control with herbicide
- Polygons are monitored for treatment effectiveness
- Additional acreage for a total of 356 acres will be treated in late 2009 through 2011; will likely include reseeded with native species in the future
- Rehabilitation will benefit quino and more species including gnatcatcher and cactus wren

## More projects at San Diego NWR

- **Wildland Urban Interface Program**  
5-year project to remove exotic, invasive plants to reduce hazardous fuels along 4.6 miles of Sweetwater River and its tributaries
- **Native Grasslands**  
30-acre area with some native grass and Olay tarplant was weed treated in 2008-2009. Plans for future active restoration of native grasses, sage scrub, cactus
- **Western Bluebirds**  
12 nest boxes installed by Youth Conservation Corps; more to come!



2008 YCC crew



2009 YCC crew



# MSCP 2008 Annual Report Workshop

## August 26, 2009





2009

Coastal California Gnatcatcher  
Coastal Cactus Wren  
Surveys in San Diego County



# Goals

- Percent Area Occupied
  - Coastal California Gnatcatcher
  - Coastal Cactus Wren
- Population Estimate
  - Coastal California Gnatcatcher (only)
- Better understanding Habitat Requirements
- Examine the impacts of recent wildfires

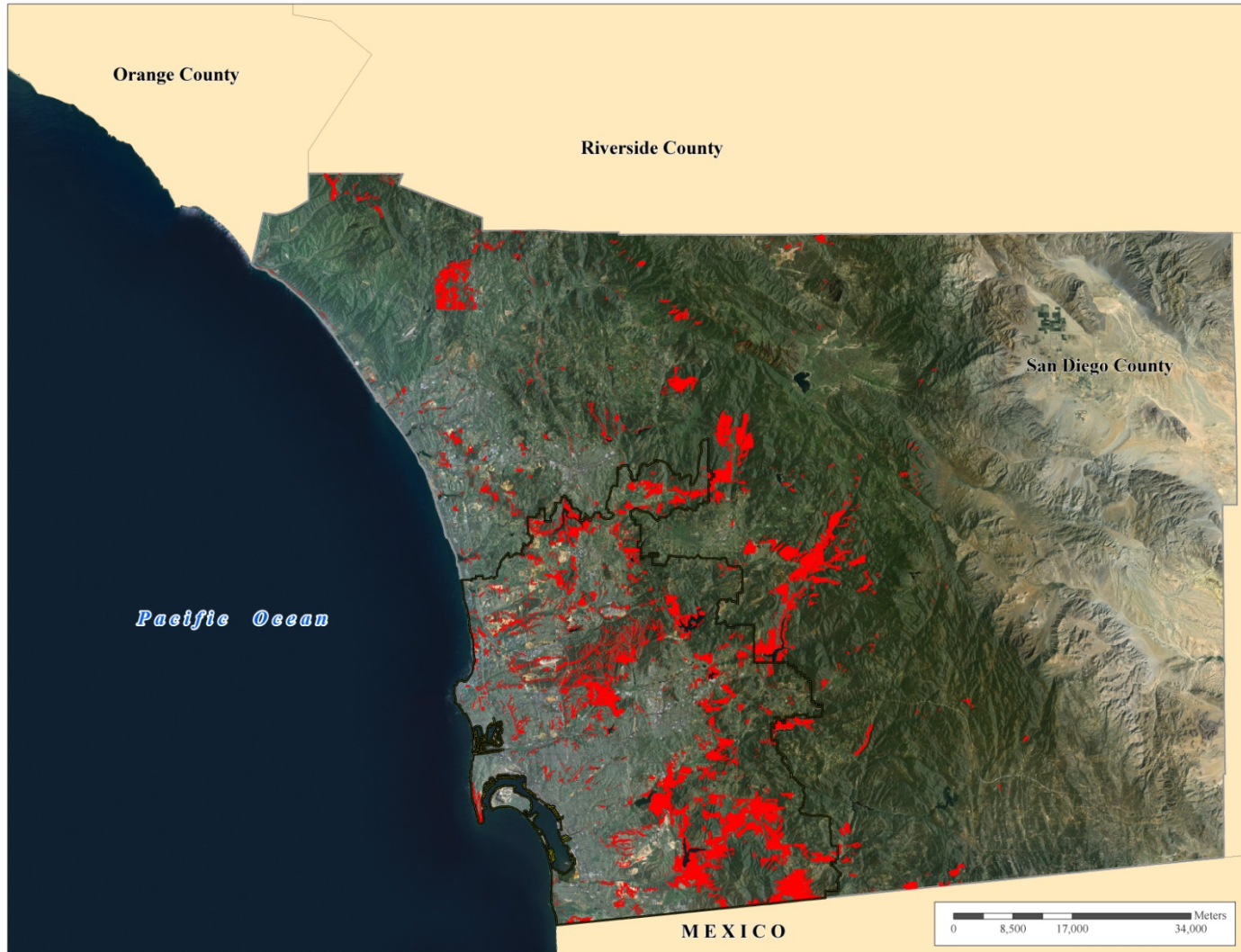


# Coastal California Gnatcatcher

- 2002
  - Combined Survey Orange & San Diego Counties
    - Public and Quasi Public Lands
      - Cannot sub set
- 2004
  - Surveyed MSCP Preserve Lands
    - Included lands impacted by 2003 wildfires
    - No military lands
- 2007
  - Surveyed Public and Quasi Public Lands San Diego County
    - Included MSCP Preserve lands
      - Included lands impacted by 2003 wildfires
    - Included NWS Fallbrook and MCAS Miramar
- 2009
  - Surveyed Public and Quasi Public Lands San Diego County
    - Included MSCP Preserve lands
      - Included lands impacted by 2003 wildfires
    - Included NWS Fallbrook and MCAS Miramar



# Coastal California Gnatcatcher Sample Frame



# Coastal California Gnatcatcher

Implement Random Stratified Sampling

– Concentrate effort in higher quality strata





# Coastal California Gnatcatcher

- Stratified by Habitat Type and Burn History
- Number of Points Surveyed
  - 443 Points
    - 57 of 79 Points Surveyed in Burned Very High Quality Habitat
    - 37 of 54 Points Surveyed in Burned High Quality Habitat
- Grid is 600 meter X 600 meter Spacing
- Points are surveyed 6 times
  - Presence/Absence
  - Auditory Removal
  - Distance data



# Coastal California Gnatcatcher Vegetation Data

- Plant Transect
  - Conform to SDSU protocols for measuring changes in plant communities
  - Two 50 meter transects centered at survey point
  - Took measurements every meter
    - Measured species present at each point
    - Measured height of plants



# Coastal California Gnatcatcher Vegetation Data

- Plant Transect
  - 76 Points
    - 152 Transects
  - All points with CAGN 2004 and 2007
  - All points with CAGN either 2004 or 2007
  - Randomly selected points with no CAGN



# Coastal California Gnatcatcher Photo Plots

- All points photographed (N/E/S/W)
  - Surveyed in 2007 and 2009
- Points that were burned in Harris Fire located on the Refuge were photographed in November 2008
  - 27 Points have plant transect data collected prior to 2008 fires.



# Coastal California Cactus Wren

- MSCP Preserve Lands

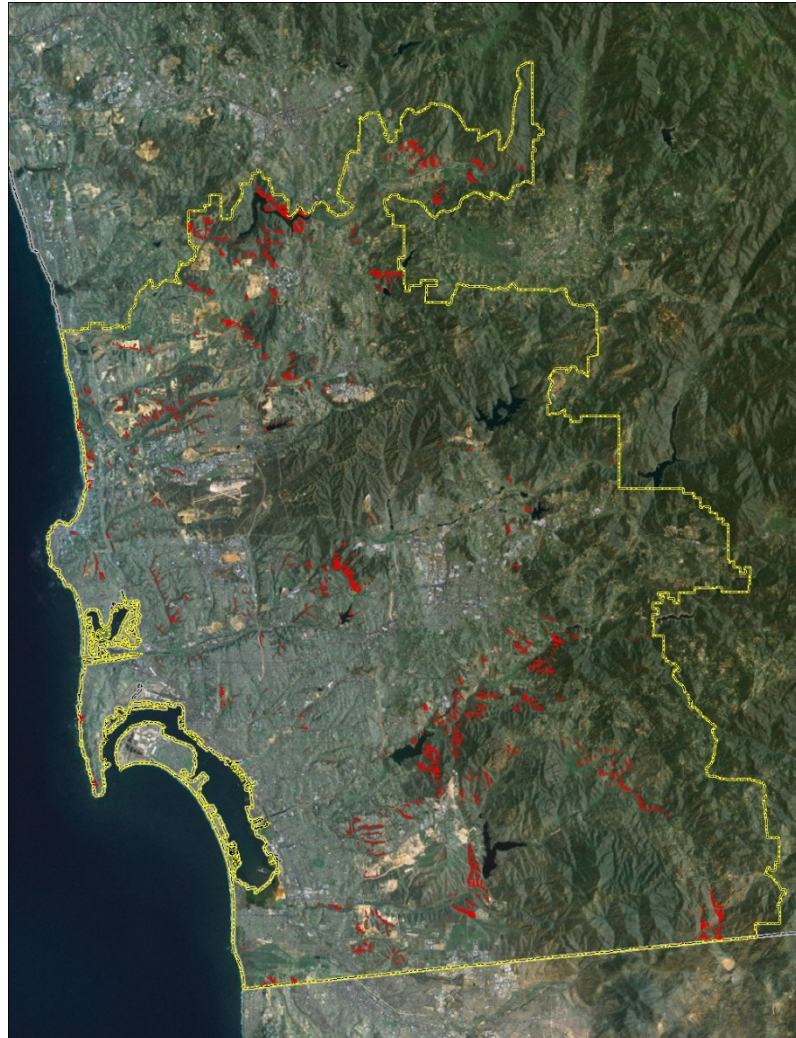


- Mapped cactus on southwest facing slopes below 1,500 feet

- First year of surveys



# Coastal Cactus Wren Sample Frame



# Coastal California Cactus Wren

- Mapped
  - 574 cactus patches
    - 3 or more cactus
    - Greater than 75 centimeters tall
    - Within 15 meters of each other
- Surveyed
  - 355 plots
    - Plots are mapped cactus patches  $> 0.1$  hectares
  - Presence/Absence Surveys
    - Used play back Tapes
    - Visited 3 times



# Coastal California Cactus Wren

- Habitat Measurements

- Number of Prickly Pear

- Over 75 centimeters

- Number of Cholla

- Over 75 centimeters

- Average Height of Patch

- Elderberry on Patch

- Number
- Distance to

- Classified cactus patch to match Orange County





# Future Plans

- Coastal Cactus Wren
  - 2010 next survey
  - Scheduled yearly



- Coastal California Gnatcatcher
  - 2012 next survey
  - Scheduled every 3 years



# MSCP 2008 Annual Report Workshop

## August 26, 2009

Logo here



# TransNet Environmental Mitigation Program

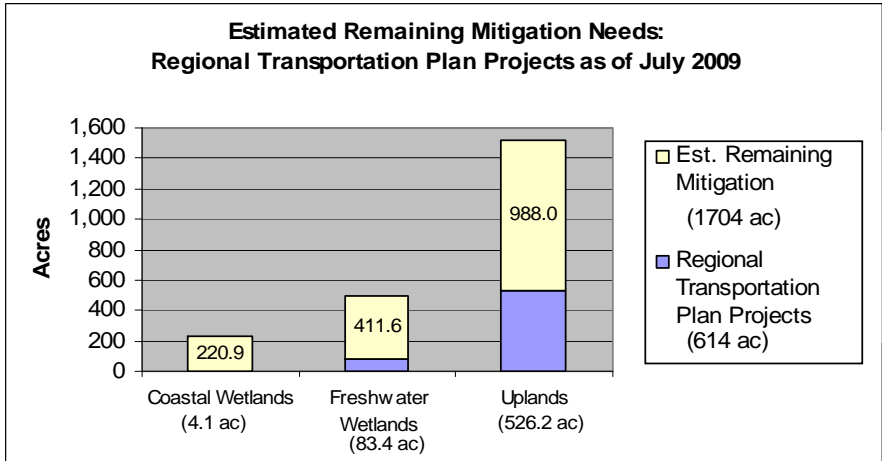
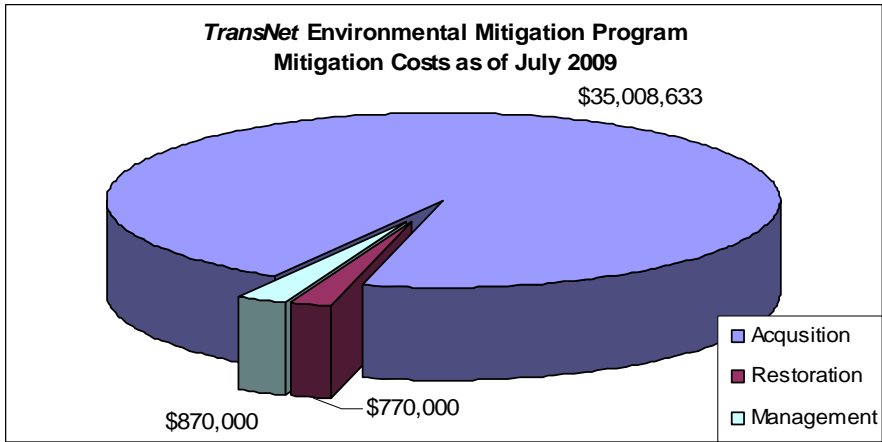
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## Biological Mitigation Fund

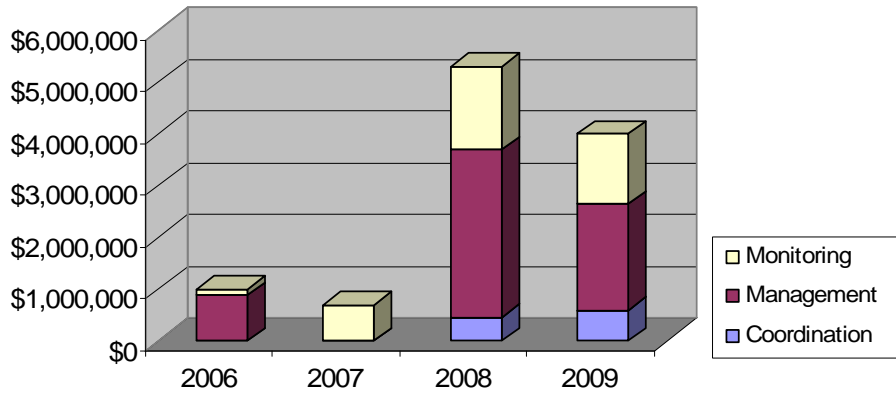


## Regional Habitat Conservation Fund

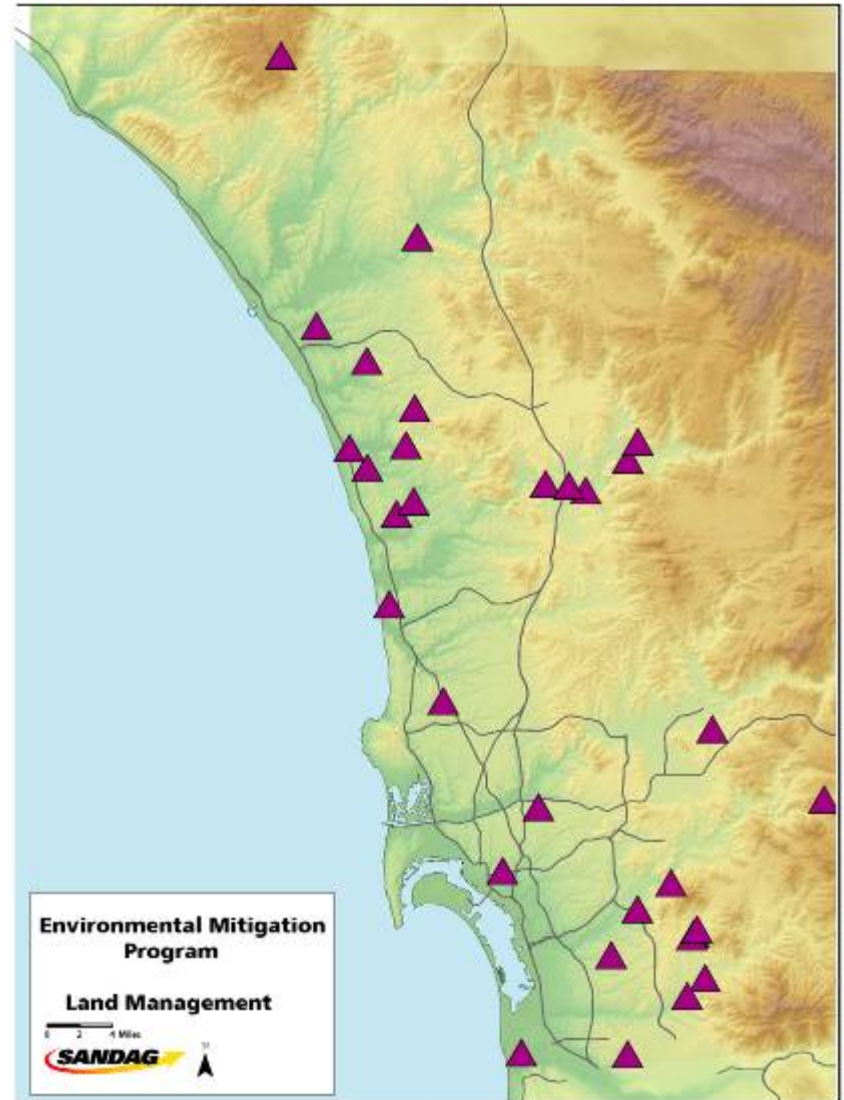
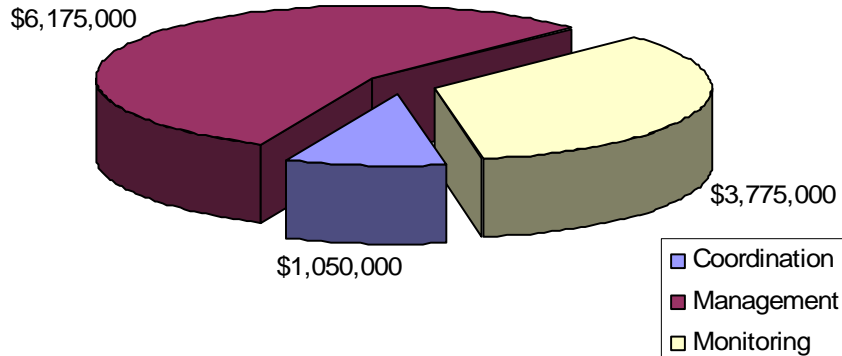




**Encumbrances by Fiscal Year**



**Conservation Fund Encumbrances by Category as of July 2009**



# Regional Monitoring Efforts Funded by SANDAG

- California Gnatcatcher (USFWS)
- Cactus Wren (USFWS)
- Burrowing Owls (BioResources)
- Post Wildfire Recovery (USGS)
- Rare Plant Protocols (USGS)
- Habitat Monitoring (SDSU)
- Thorne's Hairstreak Butterfly (UNR)
- Vegetation Mapping Update (EDAW/CDFG)
- OHV Enforcement (SD Sheriffs/CDFG)
- Regional Management and Monitoring Coordination





# MSCP 2008 Annual Report Workshop

## August 26, 2009



# County of San Diego



## South County Plan Summary

- Funding
- Acquisitions
- Preserve Management

## Updates

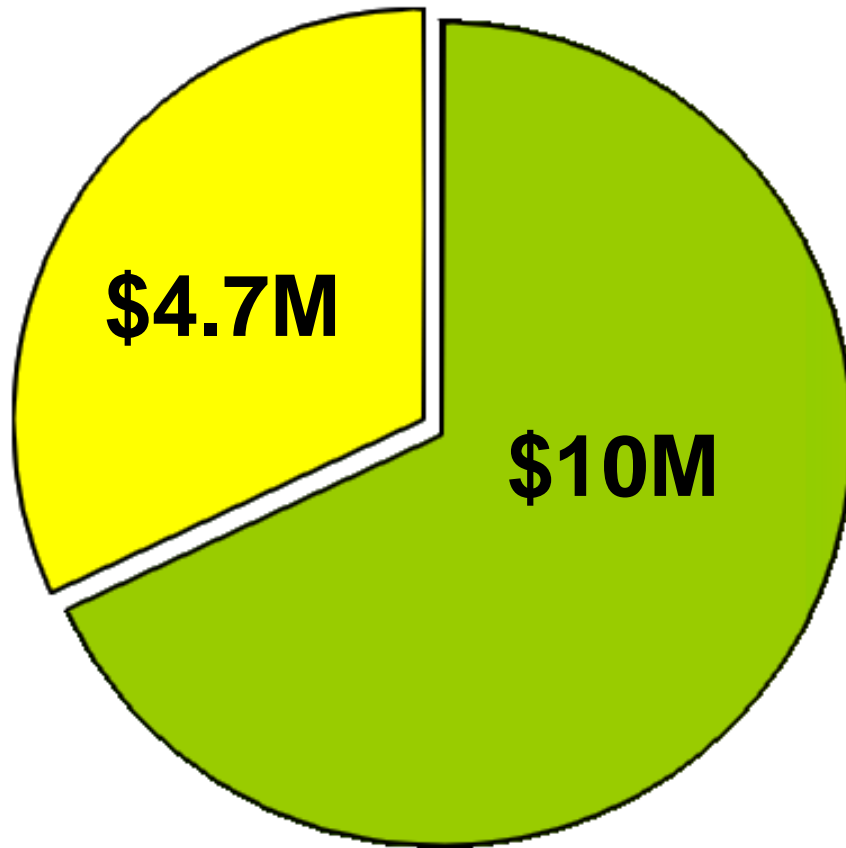
- North County Plan
- East County Plan
- Quino Checkerspot Butterfly Amendment



Photo: Courtesy of Guy Bruyea



# Funding: FY 2007/08



 **Acquisitions**

 **Management & Monitoring**

# 2008 County Acquisitions



## **South County**

- 10 acres (Del Dios Highlands)
- 20 acres (Sycamore Canyon)

## **North and East County**

- 3,561 acres (Ramona Grasslands)

## **Cumulative**

- 4,750 acres (South County)
- 10,553 acres (North and East County)

# MSCP Preserve Management



## Resource Management Plans

- Boulder Oaks Preserve
- Lakeside Linkage Preserve
- Available online: [http://www.co.san-diego.ca.us/parks/management\\_plans.html](http://www.co.san-diego.ca.us/parks/management_plans.html)

## Baseline Surveys

- Del Dios Highlands
- Sycamore Canyon/Goodan Ranch
- El Capitan Suite
- Lusardi Creek
- Otay Ranch Preserve





# North County Plan

- Northwestern unincorporated area
- 294,849 acres
- 63 plant and animal species to be covered
- Some specific environmental issues:
  - SR 76 expansion along San Luis Rey River.
  - Vernal pools in downtown Ramona.
  - Role of agricultural lands in conservation.

## Communities

Bonsall  
De Luz  
Fallbrook  
Harmony Grove  
Lilac  
Pala  
Pauma Valley  
Rainbow  
Ramona  
Rincon Springs  
Twin Oaks Valley  
Valley Center

# North County Plan: Next Steps



- Comments received on preliminary draft Plan available online and being used to revise the Plan
- Public review of draft EIR/EIS and revised draft North County Plan - by Dec. 2009



# East County Plan



- Preliminary draft preserve map released in December of 2008.
- Map available online.
- On hold until June 2010





# Quino Amendment

- Listed as endangered shortly before South County Subarea Plan approved in 1997.
- At the time, not enough information for coverage.
- County then began amendment process.



Quino Checkerspot Butterfly - Courtesy of Fred Roberts

# Quino Amendment Timeline



- Conservation Policy Summer 2009
- Management/Monitoring Plan Summer 2009
- Financing Plan Fall 2009
- Draft EIR/EIS public review Spring 2010
- Final EIR/EIS public review Fall 2010
- Board of Supervisors Spring 2011
- Implementation Spring 2011





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# City of San Diego

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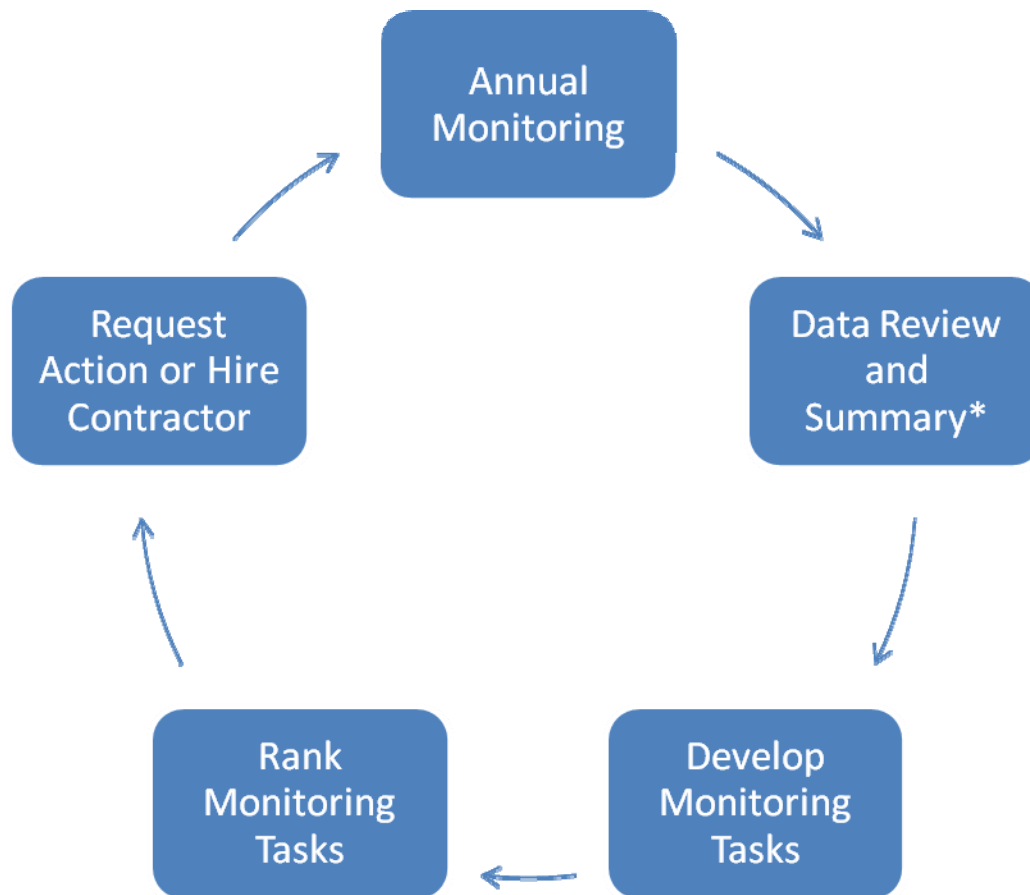
- Rare species monitoring
  - 20 plants at 32 sites
    - Largest effort to date
    - Methods based on USGS 2006 recommendations
  - Adaptive management based on monitoring results



*Cylindropuntia parryi* var. *serpentina*  
is monitored annually at Balboa Park,  
Spring Canyon and Otay Mesa



# City of San Diego

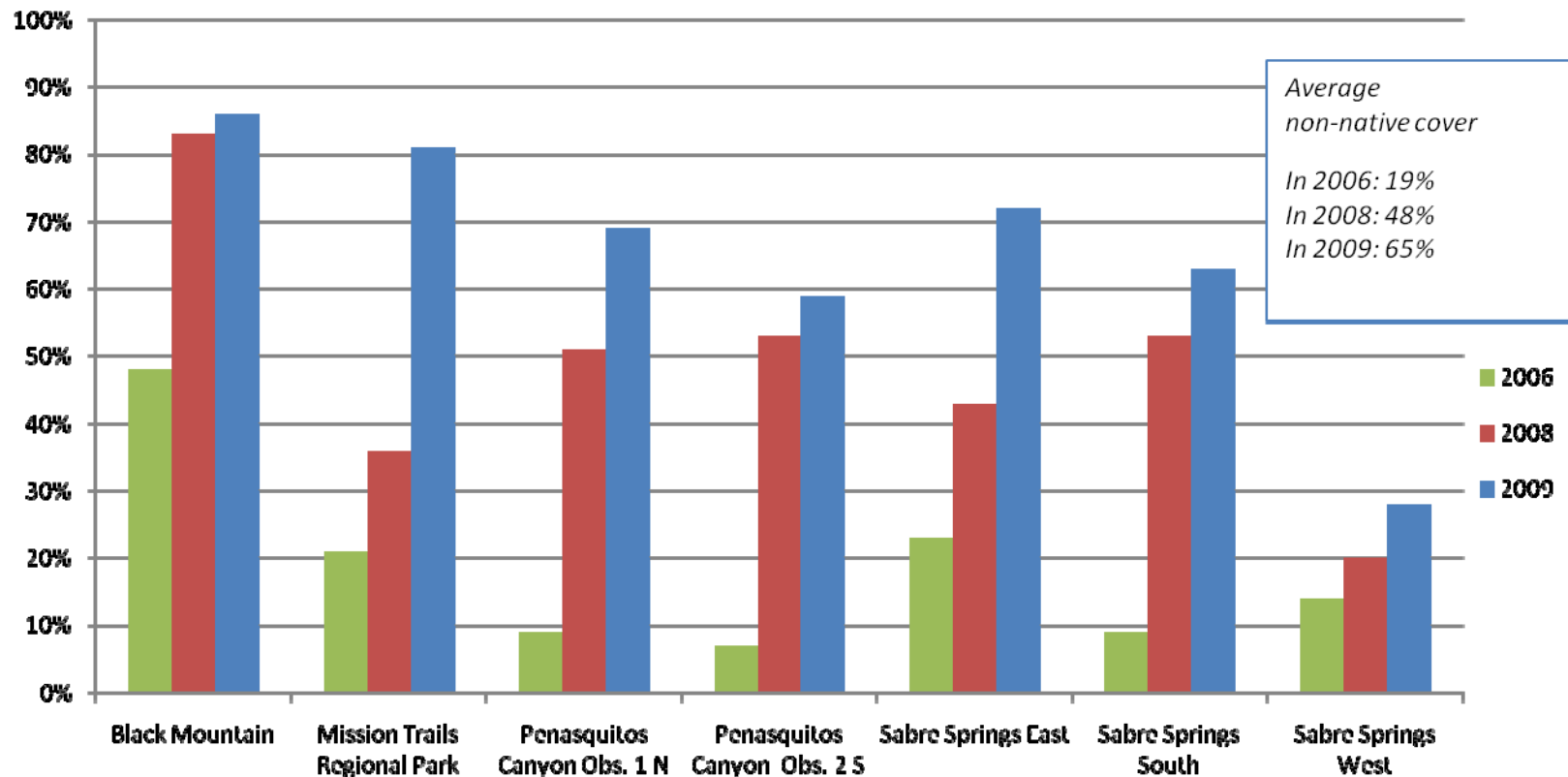


*Acanthomintha ilicifolia* is monitored at Sabre Springs, La Zanja, Los Peñasquitos, Dennerly Ranch and Mission Trails



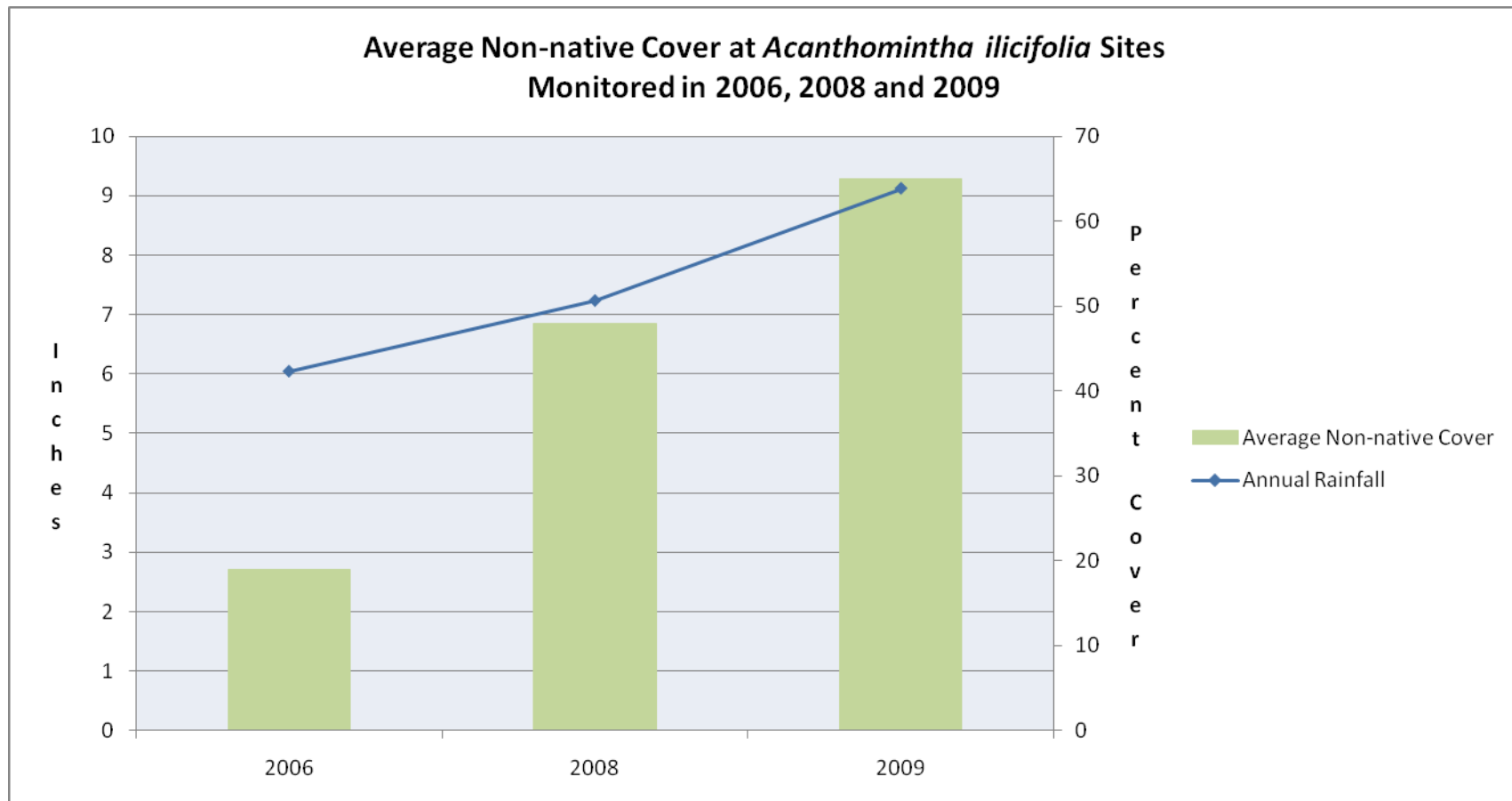
# City of San Diego

**Non-Native Cover at *Acanthomintha ilicifolia* Populations  
2006, 2008 and 2009**





# City of San Diego



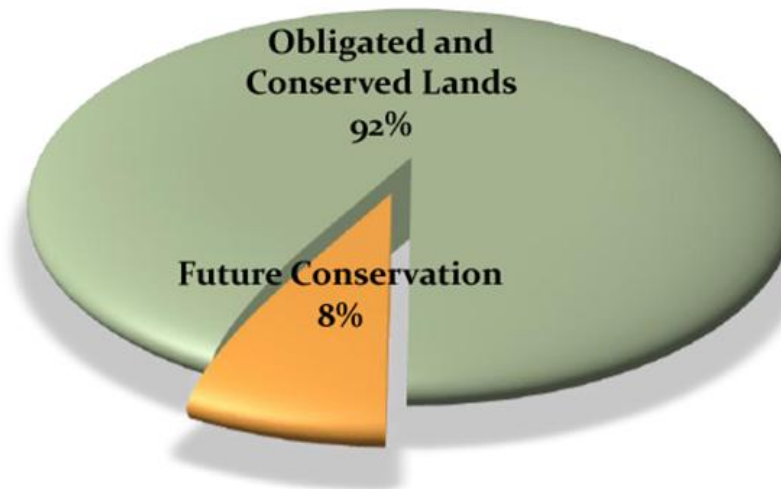


# City of San Diego

| As of Dec 2008                | Acres  |
|-------------------------------|--------|
| Obligated and Conserved Lands | 48,440 |
| Future Conservation           | 4,287  |

## City of San Diego MSCP Conservation

Total Conserved and Obligated Land: 48,440 Acres, or 92% of City's 52,727 Acre MSCP Obligation



Notes: 1) Conserved Lands have been conserved via fee title or conservation easement; 2) Obligated Lands have been entitled by the City, have pending conservation easements, or have existing mitigation bank agreements in place; 3) Future



# City of San Diego

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- Grant for acquisition (2008)
  - Focus on Otay Mesa vernal pools
  - \$4,918,000 from U.S. Fish and Wildlife Service
  - \$518,000 from City of San Diego



Maritime Succulent Scrub and Vernal Pools in Otay Mesa



# City of San Diego

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- Management activities
  - 35+ invasive removal projects
    - Often in partnership with non-profit organizations and “Friends” groups
  - Removal of transient camps and trash
    - 300+ tons of trash/debris



Volunteers carry trash out of Deer Canyon in the Del Mar Mesa Preserve

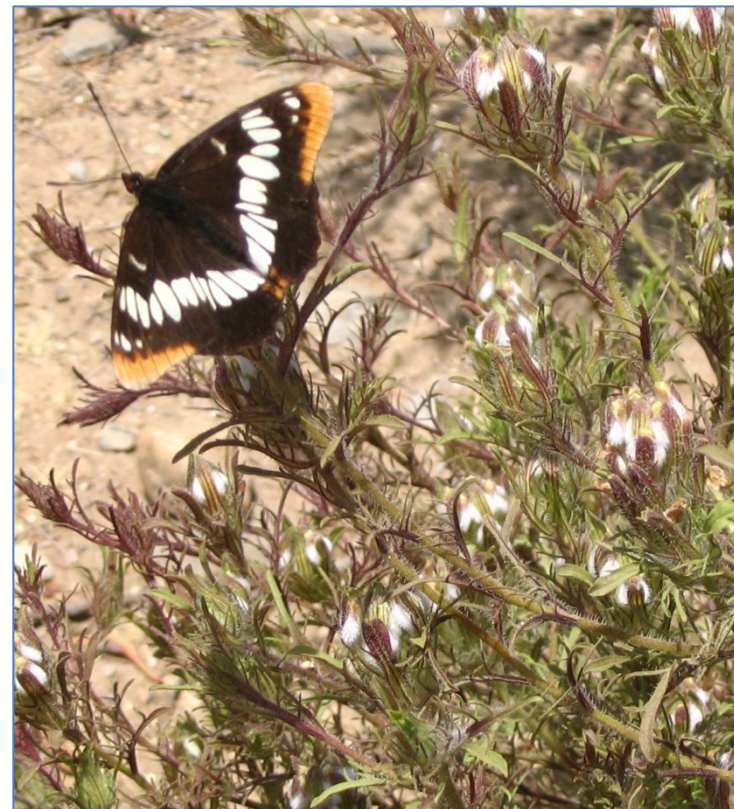




# City of San Diego

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- Management activities
  - ORV deterrent structures
    - Dennery Canyon
    - Proctor Valley
    - Otay Valley Regional Park
    - Del Mar Mesa
  - Open space code compliance officer investigated 309 cases
  - Full-time herbicide applicator (new position)



Lorquin's Admiral on *Cordylanthus orcuttianus*  
in Otay Valley Regional Park



# City of San Diego

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- Education
  - Educational programs presented to over 9,000 children
  - 3,496 volunteers assisted in managing open space lands in 2008



Ranger Jeff and Jr Volunteer Casey give a live snake presentation to a group of schoolchildren



# MSCP 2008 Annual Report Workshop

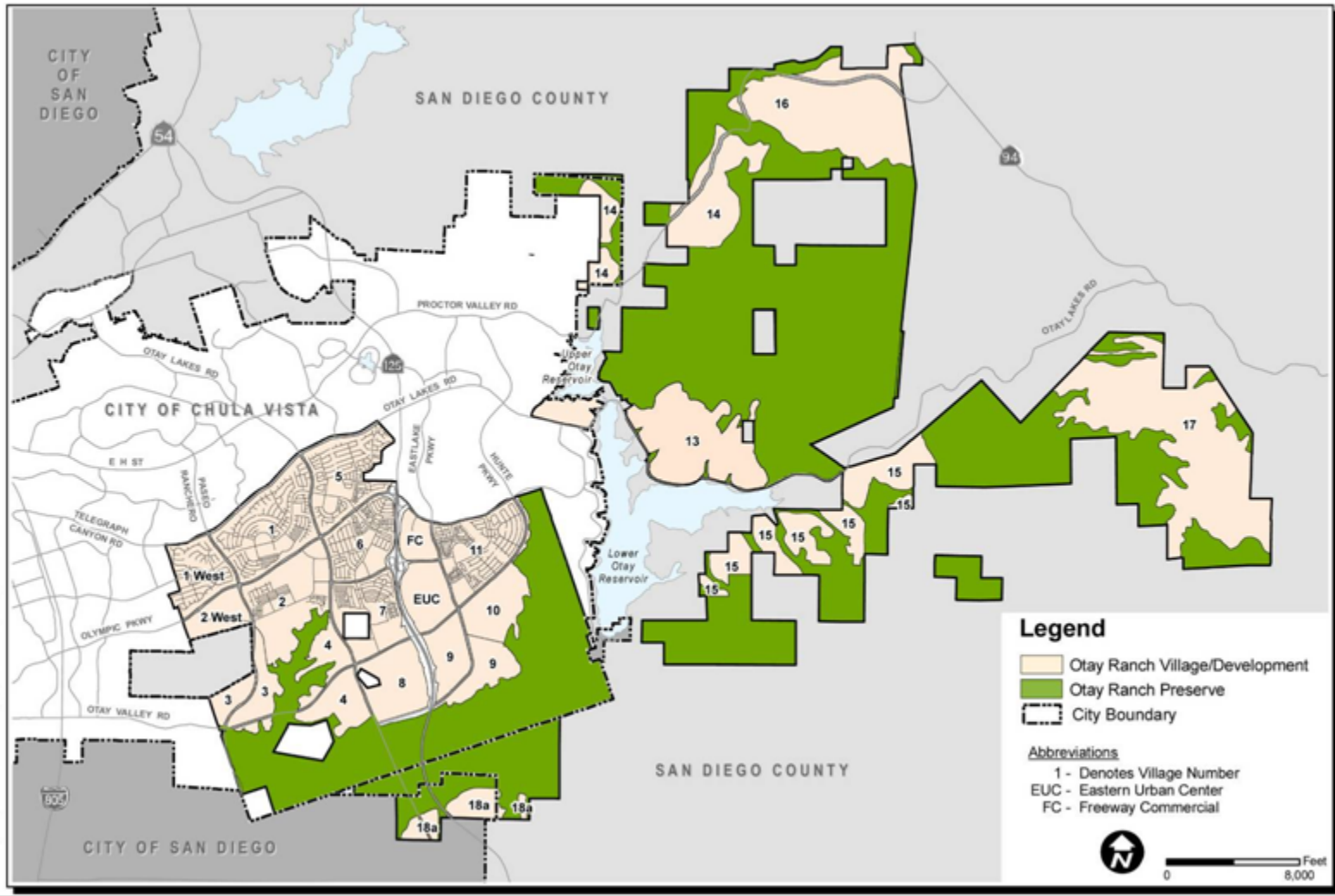
## August 26, 2009



City of Chula Vista  
Otay Ranch Preserve



# Otay Ranch Preserve



# Otay Ranch Preserve



11,375 acre Preserve  
~2,600 acres within Chula Vista  
~8,700 acres within County of San Diego

Biological Resources include:

- Coastal sage scrub
- Maritime succulent scrub
- Chaparral
- California gnatcatcher
- Cactus wren
- Vernal pools
- San Diego thornmint
- Willowy monardella



# Otay Ranch Preserve

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## Management and Monitoring Activities

City of Chula Vista and County of San Diego serve as the Preserve Owner/Manager (POM)

POM is currently managing ~1,300 acres

2008 biological surveys completed include:

- Vegetation mapping
- Invasive plants
- Floral surveys
- Gnatcatcher surveys
- Cactus wren surveys
- Avian wetlands species
- General butterfly surveys



# Otay Ranch Preserve

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## Management and Monitoring Activities (cont.)

For 2009/2010:

- RECON to serve as Preserve Steward/Biologist
- RECON to continue monitoring of land currently managed by POM
- POM to accept ~1,500 acres of land
- Implement Cactus Wren habitat restoration in Salt Creek using Transnet Grant funding



# Otay Ranch Preserve

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## Long-Term Funding Strategies

### Community Facilities Districts (CFD)

- A Community Facilities District is set up to provide funding for operations and maintenance of public lands by levying an annual “special tax” which is collected from the property owners in conjunction with property taxes.
- The City of Chula Vista approved the creation and implementation of CFD 97-2 in October 1998





# Otay Ranch Preserve

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## Community Facilities Districts (cont.)

The formation of the CFD involved:

- Establishing the initial budget based on actual cost estimates for biological management and monitoring
- Preparation of a Special Tax Report identifying:
  - Allowable uses for CFD funds
  - The formula determining the tax rates
  - The Maximum Tax Rate

# Otay Ranch Preserve

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## Community Facilities Districts (cont.)

CFD funds are to be used for:

- Maintenance activities including removal of trash and control of exotic species
- Security and enforcement of “no trespassing”
- Preserve improvements and repairs/replacement of fencing
- Biota monitoring

CFD allows the City not to rely on the general funds to cover cost for long-term management and monitoring

The City is the first jurisdiction in the region to initiate a tax based funding mechanism

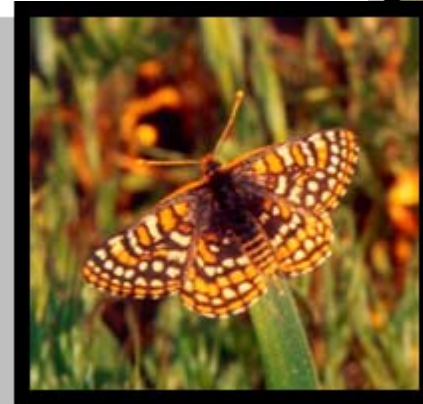
# Otay Ranch Preserve



## Long-Term Funding Strategies (cont.)

### Preserve Management Endowment Fund (PMEF)

- Contributions made by the City in association with construction of public infrastructure
- PMEF provides supplemental funding for enhancement and restoration program within Otay Ranch



# Otay Ranch Preserve

Thank You...





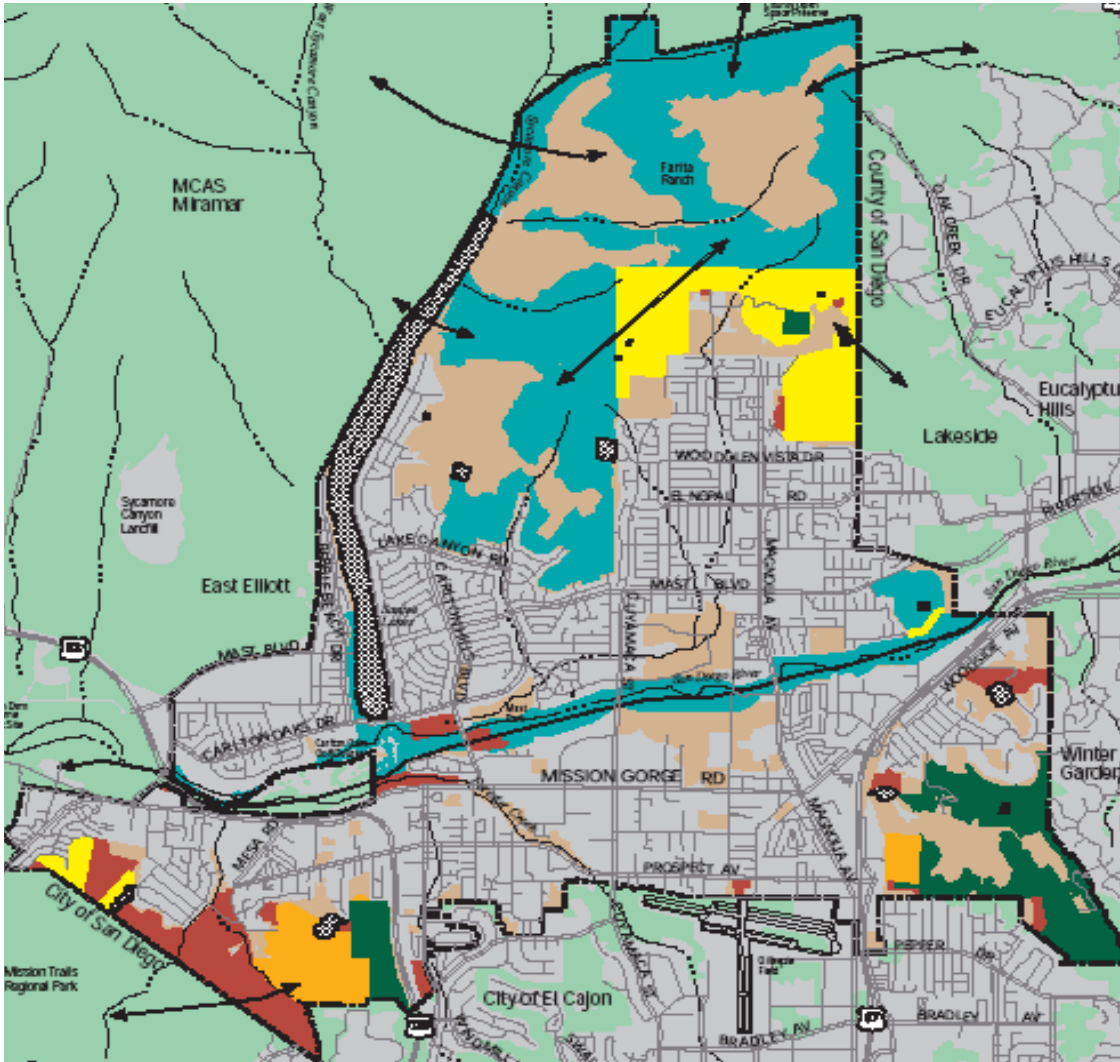
# MSCP 2008 Annual Report Workshop

## August 26, 2009

Logo  
here



# Santee *Draft* Subarea Plan

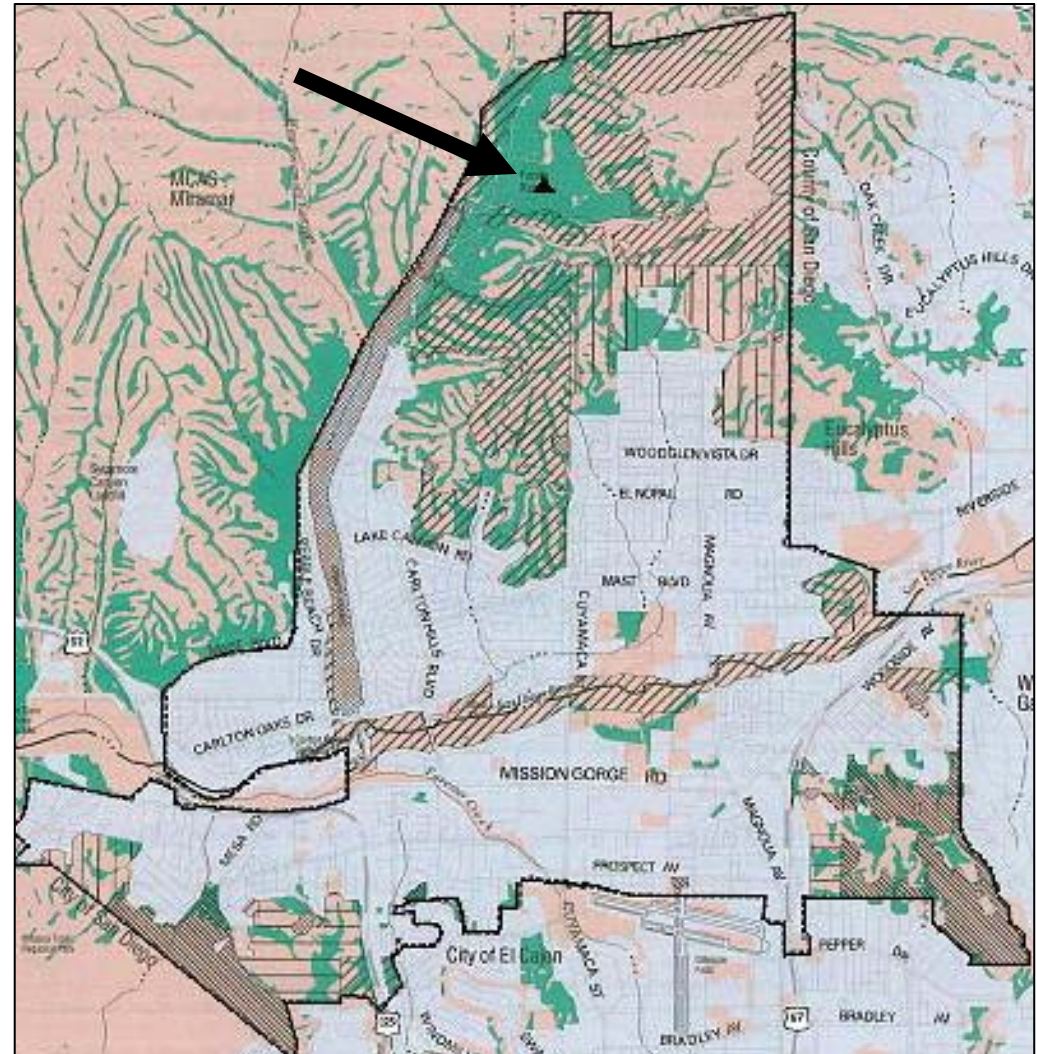


- 2,518 acres anticipated at build-out
- 34 species proposed for coverage
- among these - two butterflies

# Quino Checkerspot Butterfly



- 🦋 **Listed as Federally Endangered in 1997**
- 🦋 **Not covered under original MSCP Subregional Plan**
- 🦋 ***Draft Conservation Strategy prepared***
- 🦋 **Report = regional applicability**



# Hermes Copper Butterfly

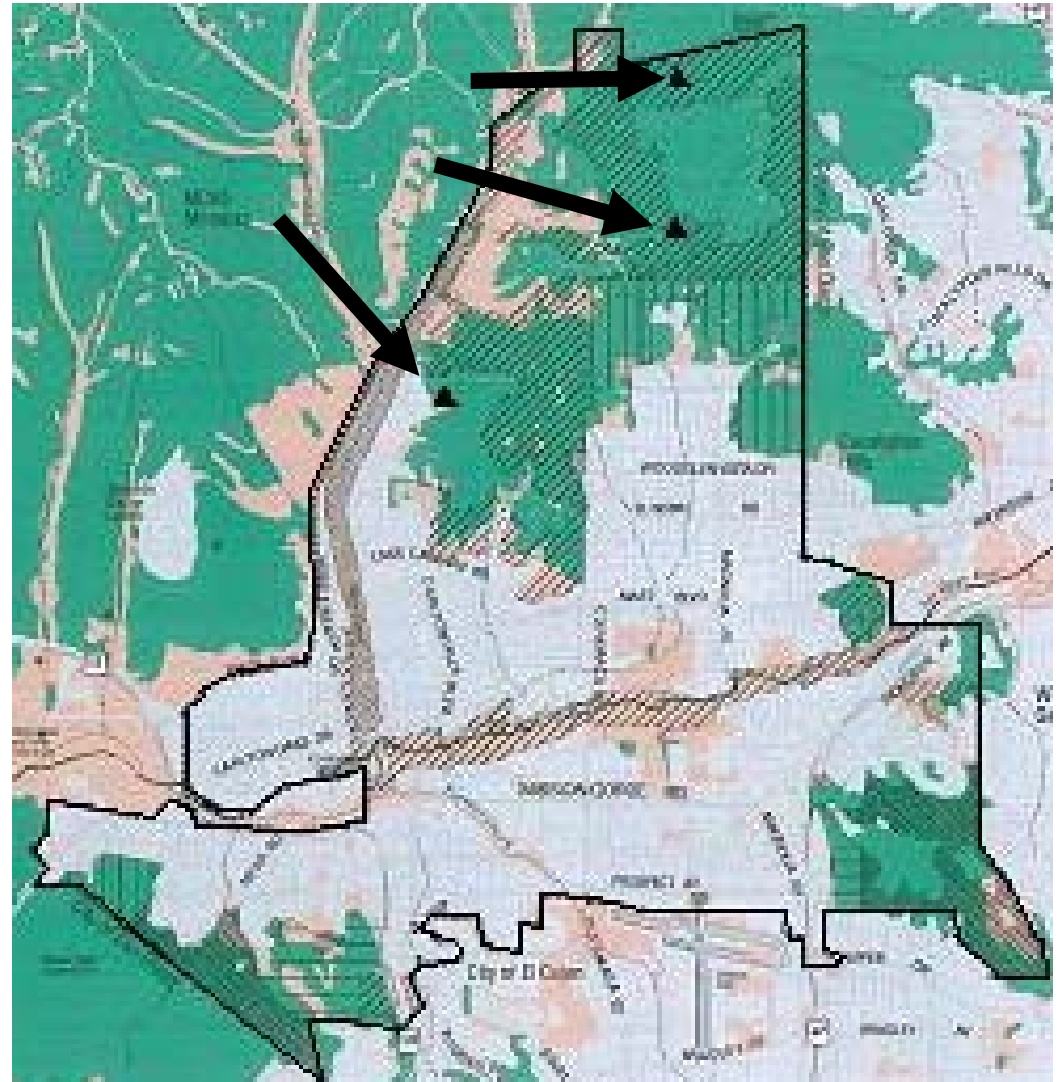


🦋 **Not current Listed as Federally Endangered**

🦋 **Not covered under original MSCP Subregional Plan**

🦋 **Draft Conservation Strategy prepared**

🦋 **Report intended as *Regional Strategy***





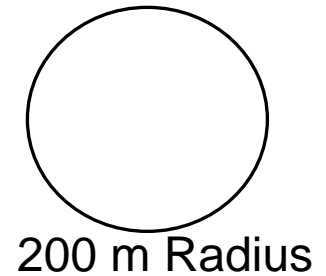
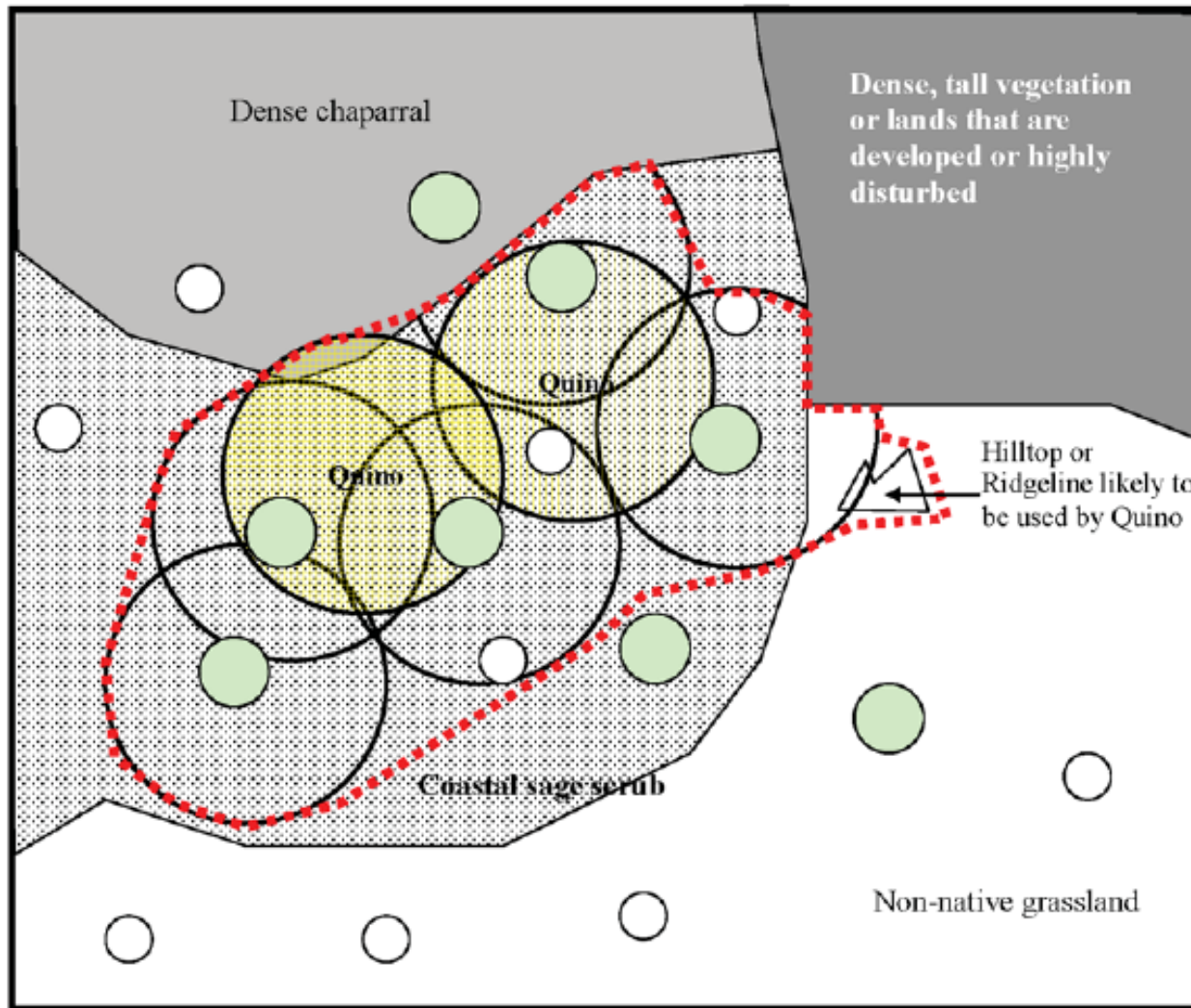
# Primary Components of Conservation Strategies

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- 1. Set Guidelines to Identify Habitat (existing and potential)**
- 2. Set Goals for Conservation**
- 3. Create Approval Process for new development with potential impacts**

# 1. Habitat Mapping Methodology (identify habitat)



200 m Radius



Significant Larval Host  
Plant Patch



Insignificant Host or  
Nectar Plant Pop.



Quino Habitat

## 2. Set Goals for Conservation



 **Goal:** 80% preservation of occupied habitat

 **Rank potential habitat** – based on cover and density of:


- larval host plants
- nectar sources
- potential hilltopping (quino)
- competing weed species

# Goals for Conservation (cont.)



 **Connectivity with off-site populations, including other jurisdictions = priority**

 **Annual reporting workshops / share data**

 **Implement genetic studies of populations in area**

 **Develop captive breeding program**



### 3. Development Approval Process



1. Is Quino/Hermes present?
2. If suitable habitat, perform habitat delineation
3. Rank habitat (low, medium, high)
4. Identify area for preservation:
  - 🦋 80% High,
  - 🦋 50% Medium,
  - 🦋 30% Low

# Cost Analysis



| Activity   | One-Time Cost          | One-Time Cost/Acre | Annual Cost/Acre |
|--|------------------------|--------------------|------------------|
| <b>Enhancement</b>                               |                        |                    |                  |
| Restoration and Enhancement Plan                 | \$50,000–<br>\$100,000 | -                  | -                |
| Fencing and Signage                              | -                      | \$5,000–\$20,000   | -                |
| Seed Collection/Temporary Storage/Seed Dispersal | -                      | -                  | \$500–\$1,500    |
| Dethatching                                      |                        |                    | \$2,500–\$3,500  |
| <b>Restoration</b>                               |                        |                    |                  |
| Seed Bulking/Seed Dispersal                      | -                      | -                  | \$1,500–\$5,000  |
| Container Planting                               | -                      | -                  | \$1,000–\$3,500  |
| Herbicide Treatment (5 visits per year)          | -                      | -                  | \$3,000–\$6,000  |

# Questions?

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# MSCP 2008 Annual Report Workshop

## August 26, 2009



Bureau of Land Management







# Quino Checkerspot Butterfly

- The BLM assisted the FWS in the 2008 range-wide presence/absence study.
- Eight (8) plots totaling sixteen (16) acres were surveyed on BLM lands within the Dulzura Quino Occurrence Complex.
- Quino were found on six of the eight plots.





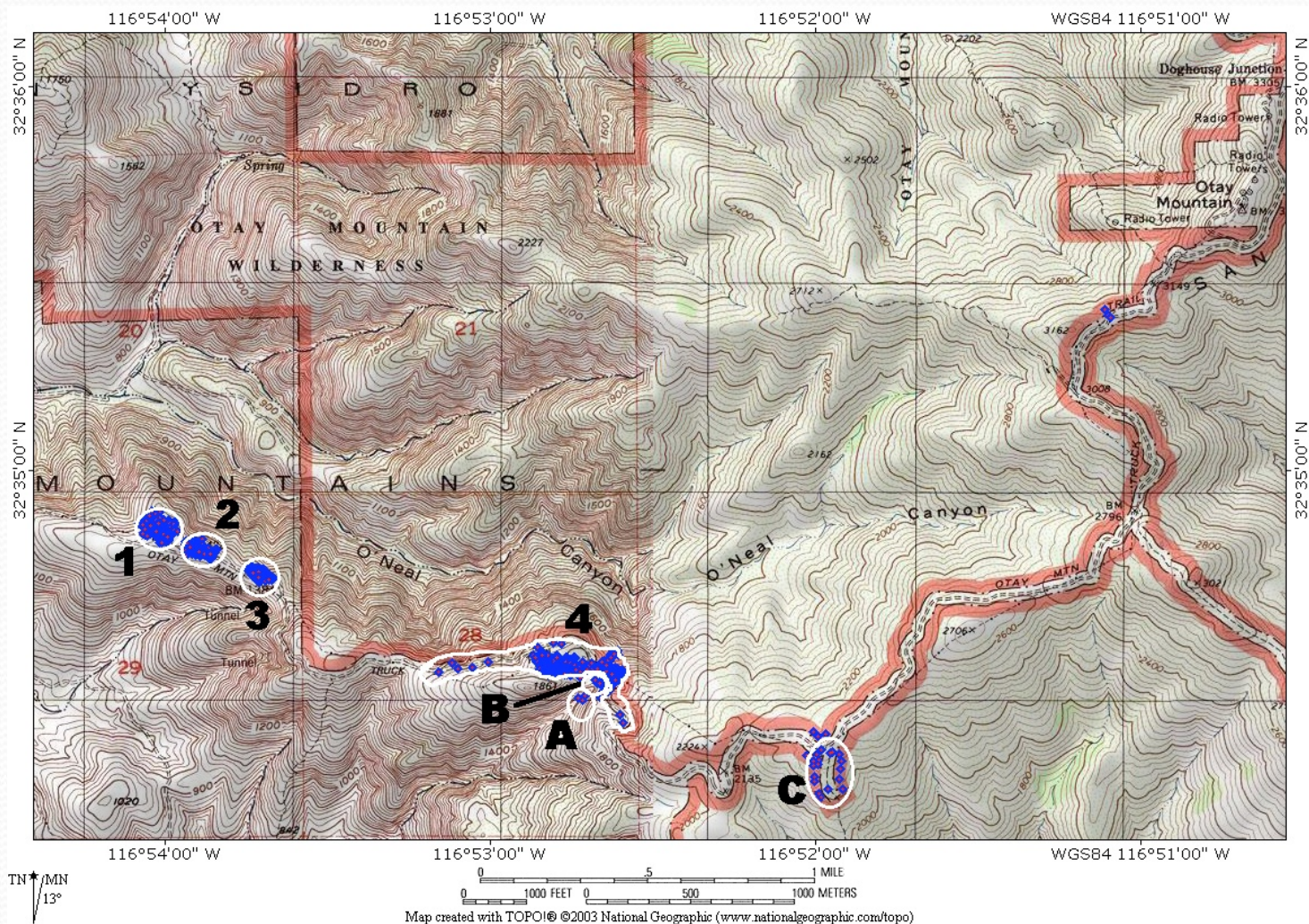
# Thorne's Hairstreak Butterfly/ Tecate Cypress

In partnership w/  
SDSU, Dr. Kathy  
Williams is  
studying the  
relationship  
between Thorne's  
hairstreak and  
Tecate cypress at  
four (4) sites on  
Otay Mountain.





# Thorne's Hairstreak Butterfly/ Tecate Cypress





# Thorne's Hairstreak Butterfly/ Tecate Cypress

## Purpose of the study:

Promote the continued viability and persistence of Tecate cypress and Thorne's hairstreak populations on Otay Mountain.





# Thorne's Hairstreak Butterfly/ Tecate Cypress

## Study Objectives:

- ❖ Identify stands of Tecate cypress where Thorne's occur on Otay Mountain.
- ❖ Determine age class(es) of Tecate cypress used by Thorne's as host plants.





# Thorne's Hairstreak Butterfly/ Tecate Cypress

## Study objectives

con't:

Identify threats from

- fire
- non-native plant infestations
- undocumented immigrant activity





# Thorne's Hairstreak Butterfly/ Tecate Cypress

## Results:

- ❖ No eggs or larvae were found on cypress trees at heights greater than two (2) meters.
  - ❖ Initially, Thorne's larvae reared in the lab showed a preference for young\* cypress tissue but eventually, the larvae ate both young and mature cypress.
- \* for the purpose of this study "young" is defined as those trees without cones and, "mature" is defined as those trees having cones.



# Thorne's Hairstreak Butterfly/ Tecate Cypress

SANDAG contracted with the University of Nevada, Reno to implement Thorne's hairstreak monitoring using the San Diego MSCP Animal Monitoring Protocols.

Monitoring began in May 2009 with the mapping of all Tecate cypress trees greater than one meter in height on Otay Mountain.

*The Otay Mountain Wilderness Tecate Cypress/Thorne's Hairstreak Butterfly Survey* final report is available from Dr. Williams:

**[kathy.williams@sdsu.edu](mailto:kathy.williams@sdsu.edu)**





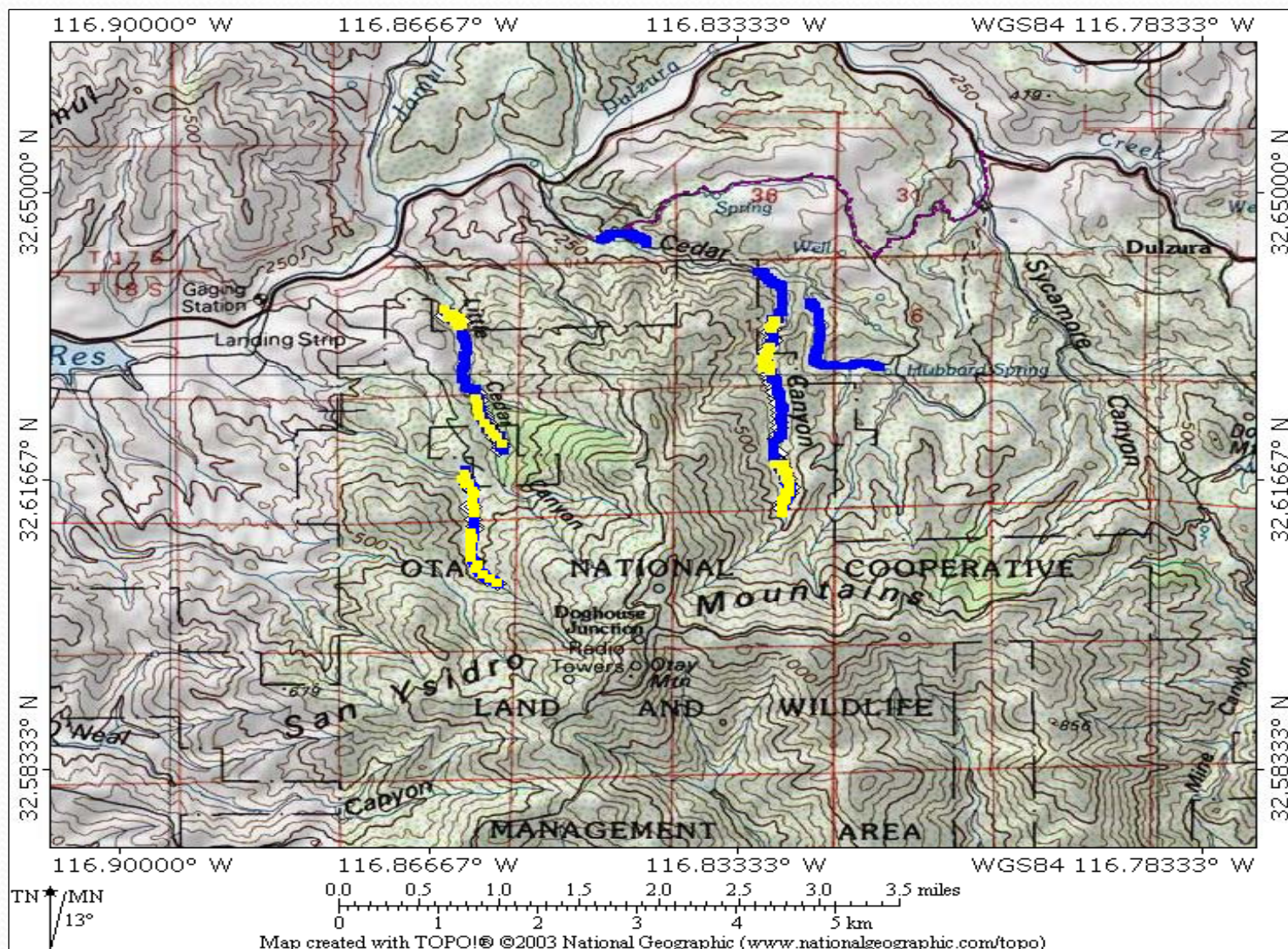
# Mexican Flannelbush

Also in partnership  
w/ SDSU, Dr. Kathy  
Williams is  
studying  
populations of MFB  
in Cedar, Little  
Cedar and  
Woodwardia  
Canyons on Otay  
Mountain.





# Mexican Flannelbush





# Mexican Flannelbush

## Research Goals:

- ❖ Document the occurrence of MFB individuals in the canyons.
- ❖ Record numbers of plants per stand, their sizes and, estimate density.





# Mexican Flannelbush

## Research goals con't:

- ❖ Record flowering phenology .
- ❖ Note potential threats from co-occurring non-native plant species.





# Mexican Flannelbush

## Results:

- ❖ Estimates of densities and abundances suggest these populations are relatively vigorous and, they appear to be recovering from the unprecedented short fire frequencies of the last decade.
- ❖ No obvious threats from non-native species at this time however, vigilant monitoring of *Tamarix* sp. is recommended.



# Mexican Flannelbush

## Results con't:

- ❖ Cedar Canyon: ~ 1000 individuals w/ 2-3 plants/sq. meter and as dense as 5 plants/sq. meter in some areas when surveyed in May and July/August 2008
- ❖ Little Cedar Canyon: ~ 50 individuals found in the spring 2008 (no new recruits); 30 individuals found **resprouting** in September 2008.
- ❖ Woodwardia Canyon: three stands totaling ~ 600 individuals found in May 2008.



# Mexican Flannelbush

Copies of the *Otay Mountain Wilderness Mexican Flannelbush Study* final report are available from Dr. Kathy Williams:

[kathy.williams@sdsu.edu](mailto:kathy.williams@sdsu.edu)



# Townsend's Big-eared Bat



Following the 2007 Harris Fire, the BLM utilized Burned Area Emergency Stabilization funding to protect Townsend's big-eared bat habitat-a BLM Sensitive Species.





# Townsend's Big-eared Bat

- ❖ A bat gate was installed in the Donahoe mine in Marron Valley, Dulzura, CA.
- ❖ Although bats were not detected during preconstruction surveys, this mine has historically provided habitat for Townsend's big-eared bats.

