

# San Diego Tracking Team

SDMMP Monitoring & Management Coordination Meeting  
*April 2019*



# The San Diego Tracking Team

- Founded in 2003 as a 501(c)(3) California non-profit corporation.
  - Almost entirely a volunteer-based organization
- Our Mission:
  - To sustain and expand long-term monitoring of the diverse wildlife and habitats of the San Diego region, to analyze and share findings, and to engage community members through educational outreach and volunteer activities.



# What We Do

- Quarterly Wildlife Track and Sign Surveys
- Free volunteer training for wildlife surveys
- Tracker/Naturalist class series
- Public Outreach events
- Projects



# Our Priorities

- Funding
- Growing our volunteer base
- Expanding our scope
- Remaining scientifically credible
- Use of our data





# Some SDTT Projects and Collaborations

- *Review of Regional Habitat Linkage Monitoring Locations*, Multiple Species Conservation Program (CBI for CA. DFW), 2003
- *Wildlife Corridor Monitoring Study* for the Multiple Species Conservation Program (CBI for CA. DFW), 2003
- *A Rubric to Evaluate Citizen-Science Programs for long-term ecological monitoring* (with Tredick, Lewison and Deutschman)
- *Non-Invasive Genetic Sampling of Southern Mule Deer* (Mitelberg and Vandergast, USGS)
- *Relationships between Human Disturbance and Wildlife Land Use in Urban Habitat Fragments* (SDSU: Markovchick-Nicholls, Regan and Deutschman)
- *Mussey Grade Road Wildlife Tracking Study* (SDTT performed)
- *Calavera Hills Wildlife Movement Study* (SDTT performed for Preserve Calvera)
- *Los Penasquitos Canyon Preserve Mule Deer Survey* (LPCTT/SDTT performed)
- *Lusardi-Lazanja Natural RMP Initial Surveys Project* (SDTT for Helix Environmental to the City of San Diego), 2016/2017

# Some Usages Of Our Data

- Validated effectiveness of wildlife tunnel between Penasquitos Canyon and Lopez Canyon
- Aided in the realignment of SR 56 away from Deer Canyon
- Aided in keeping sewage pumping station out of Penasquitos Canyon
- Aided in preserving Sorrento Valley Road/Carmel Valley Creek linkage
- Aided in identifying/preserving wildlife linkages between Penasquitos Canyon, Del Mar Mesa and current open space areas in 4S Ranch, Del Sur and Black Mountain Ranch

# Wildlife Surveys



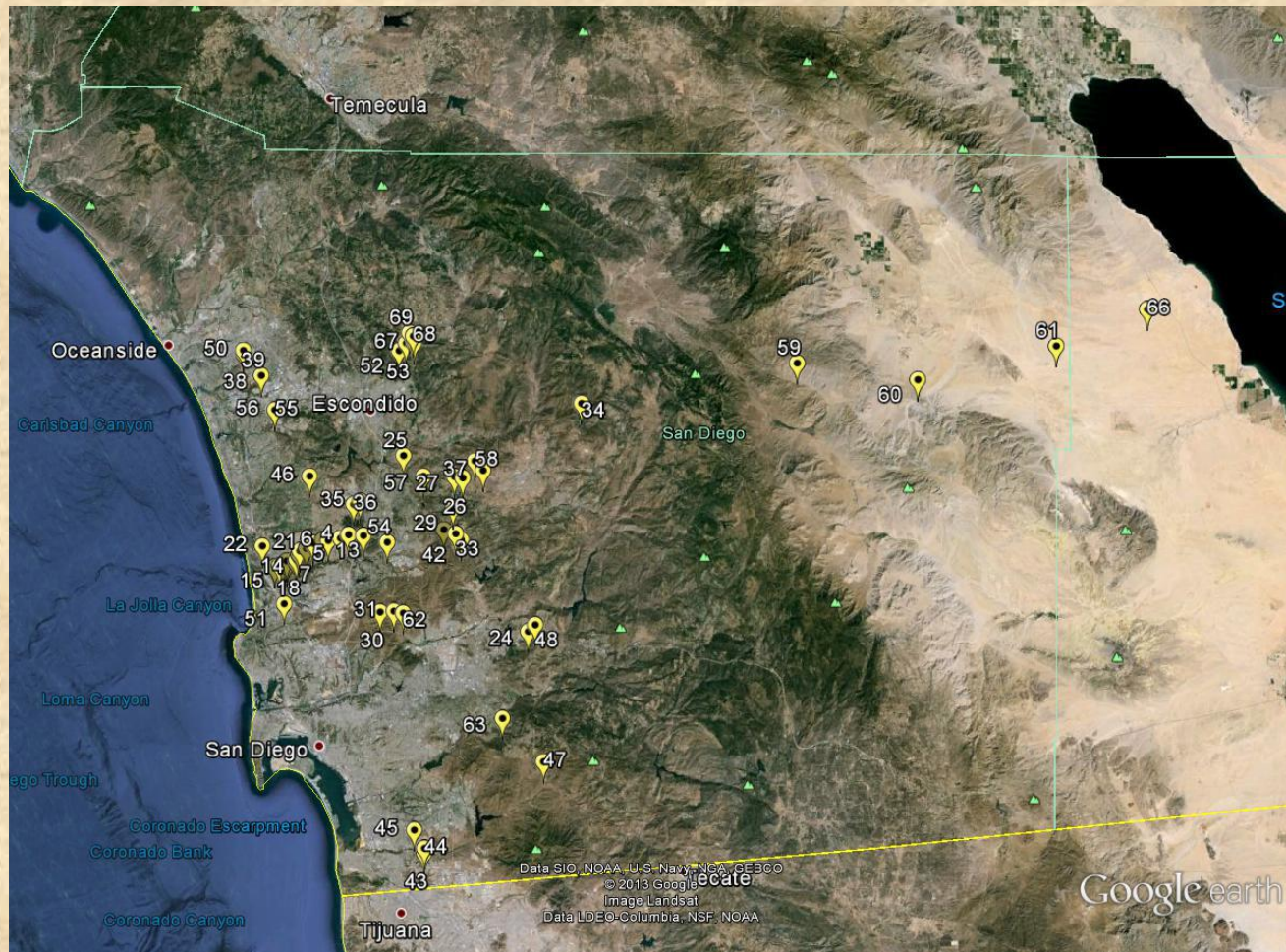
# Wildlife Survey “What’s”

- Transects established in specific open space areas and/or linkages
- Detect presence or apparent absence of target species using track and sign observations
- Quarterly Surveys
- Data collected since 1996





# Numerous Transects Throughout the San Diego Region



# Transect Locations

<b>Los Penasquitos Canyon Preserve</b> /Del Mar Mesa	<b>Penasquitos Lagoon (Torrey Pines SP area)</b>
<b>Poway Trails Reserve (Scripps Poway Parkway Tunnel)</b>	<b>Crestridge Ecological Reserve</b>
Lake Hodges	<b>Mount Woodson</b>
<b>Iron Mountain</b>	<b>Mission Trails Regional Park</b>
<b>Sycamore Canyon/Gooden Ranch</b>	<b>Lake Sutherland Reservoir</b>
Black Mountain Open Space Park	<b>Ramona Grassland Preserve</b>
Calavera Open Space	Culverts under Highway 67
Otay Mesa area	Lusardi Creek (west end)
<b>Rose Canyon Open Space</b>	Daley Ranch
Rancho La Costa Conservation Area	<b>Borrego Springs area</b>
Hollenbeck Canyon Wildlife Area	<b>Blue Sky Ecological Reserve</b>



# Protocol Summary

- Transects 1km in length, 10m wide
- Four 250m sections per transect
- Distinguish between single and multiple observations
- High degree of confidence in track or sign to be counted



# Target Species

- Bobcat
- Coyote
- Gray Fox
- Mule Deer
- Opossum
- Raccoon
- Striped Skunk
- Spotted Skunk
- Woodrat
- Badger
- Bighorn Sheep
- Black-tailed Jack Rabbit
- Burrowing Owl
- Mountain Lion
- Kit Fox
- Long-Tailed Weasel
- Ringtail
- Roadrunner
- Kangaroo Rat
- Black Bear



# Data Recorded

Observation Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Section #																				
Comment																				
<b>Species</b>																				
Bobcat																				
Coyote																				
Gray fox																				
Mule deer																				
Opossum																				
Raccoon																				
Striped skunk																				
Woodrat																				
Badger																				
Bighorn sheep																				
Black bear																				
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Burrowing owl																				
Cougar																				
Kit fox																				
Long-tailed weasel																				
Ringtail																				
Roadrunner																				
Spotted skunk																				
Kangaroo rat																				
<b>Evidence</b>																				
Tracks																				
Scat																				
Browse (name plant)																				
Claw marks/dig																				
Rub/dust bath																				
Den/nest/bed/lay																				
Fur/hair/feathers																				
Evidence of predation by																				
Cache of prey																				
Carcass of																				
Sighting/heard																				
<b>Presence of Cottontails</b>																				
Ground squirrels																				
Small rodents																				
<b>Metadata</b>																				
Use by Dogs																				
Use by Hikers																				
Use by Horses																				
Use by Bikers																				
Use by Motor Vehicles																				
Use by Squatters																				
<b>High Use Area</b>																				
<b>Section Not Surveyable</b>																				
<b>No Observations Made</b>																				
<b>Gross Disturbance</b>																				
<b>Call (760) 715-4102</b>																				

Rev 14b

Evidence	Tracks
Scat	<input checked="" type="checkbox"/>
Browse (name plant)	<input type="checkbox"/>
Claw marks/dig	<input type="checkbox"/>
Rub/dust bath	<input type="checkbox"/>
Den/nest/bed/lay	<input type="checkbox"/>
Fur/hair/feathers	<input type="checkbox"/>
Evidence of predation by	<input type="checkbox"/>
Cache of prey	<input type="checkbox"/>
Carcass of	<input type="checkbox"/>
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# Wildlife Cameras

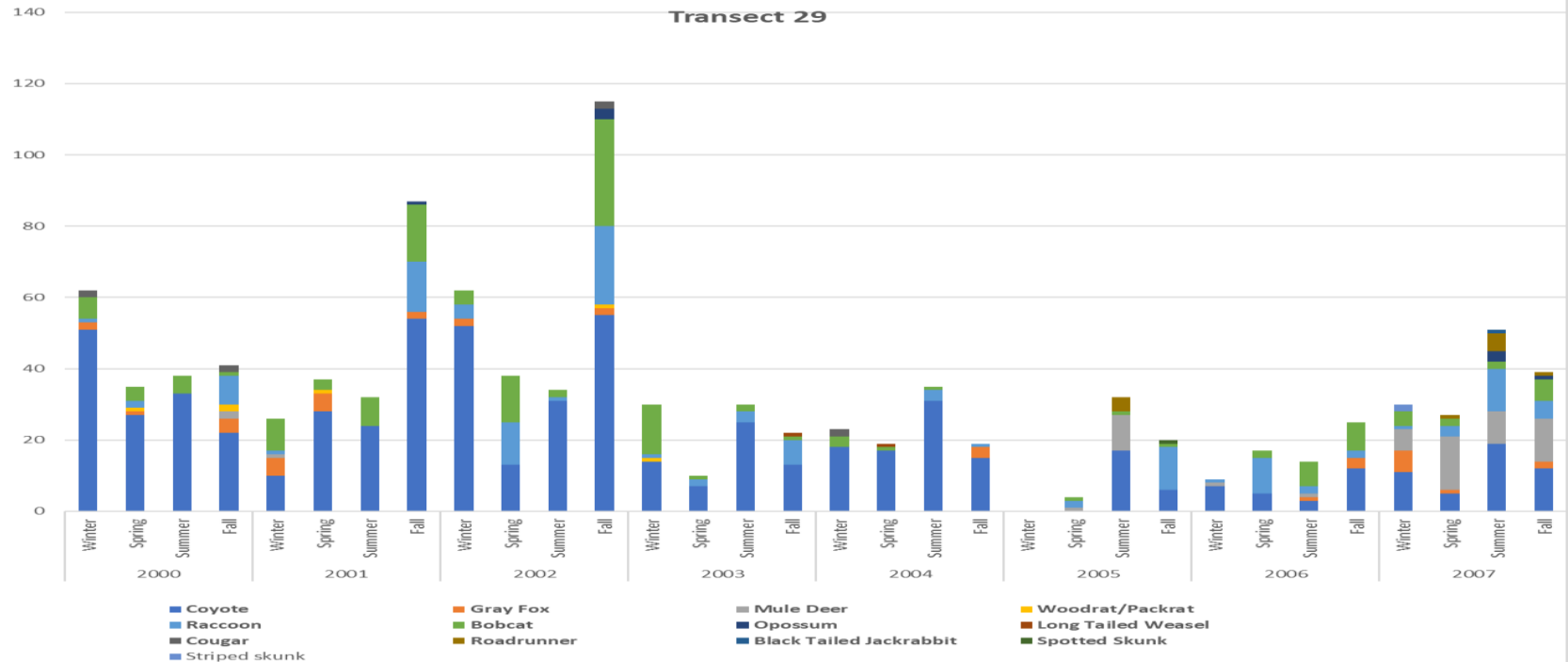




# Data Analysis

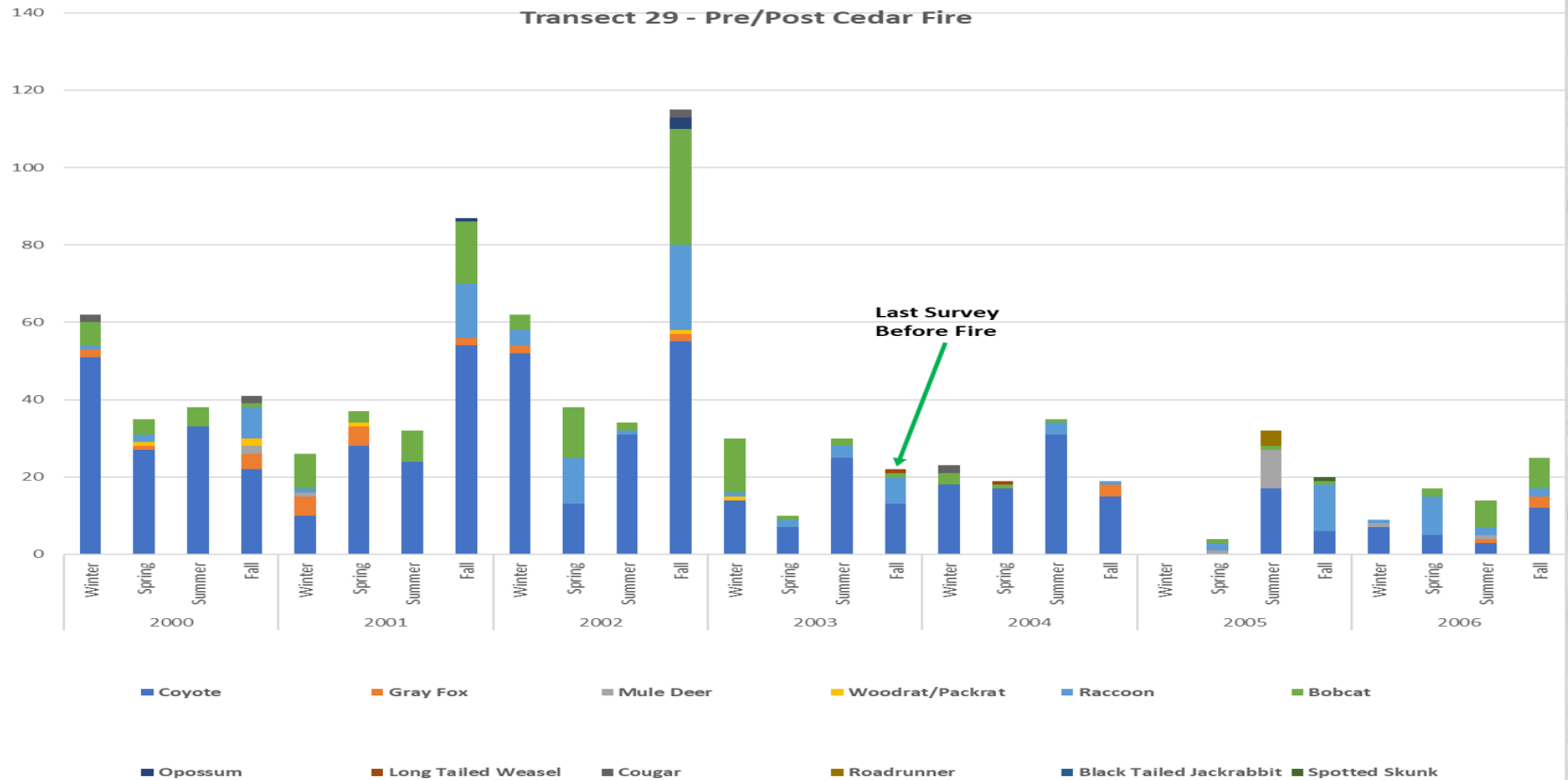
- Phase 1 – Shea Valero (advisors: Dr. M. Wells, Dr. A. Bohonak)
- Phase 2 – Lisa Markovchick-Nicholls (advisor: Dr. H. Regan)
- Phase 3 - Lisa Markovchick-Nicholls (advisors: Dr. H. Regan, Dr. D. Deutschman)
- Phase 4 – Jonah Evans, State Mammologist, Texas Parks and Wildlife

# Identifying Possible Trends





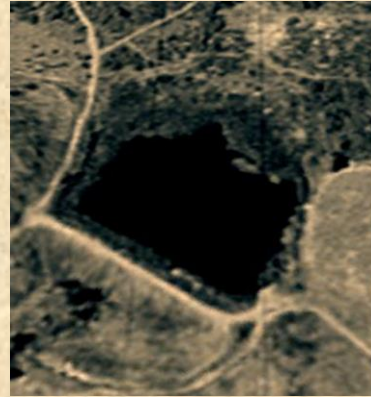
# Iron Mountain Transect



# Post 2002 - Climatic Impacts

Water Year (Oct-Sep)	Actual Rain Fall (inches)	% of Normal
2000**	5.75	58
2001	8.57	80
2002	3.3	31
2003	10.31	96
2004	5.18	48
2005	22.6	210
2006	5.36	50
2007	3.85	36
2008	7.2	67

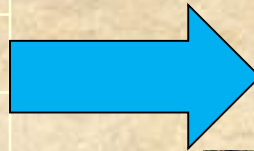
\*\* 1999 was below average rainfall



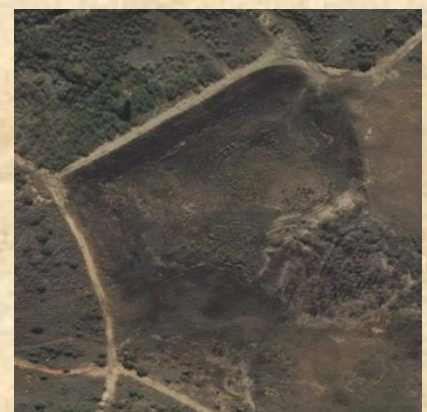
Mid 2001



Mid 2002



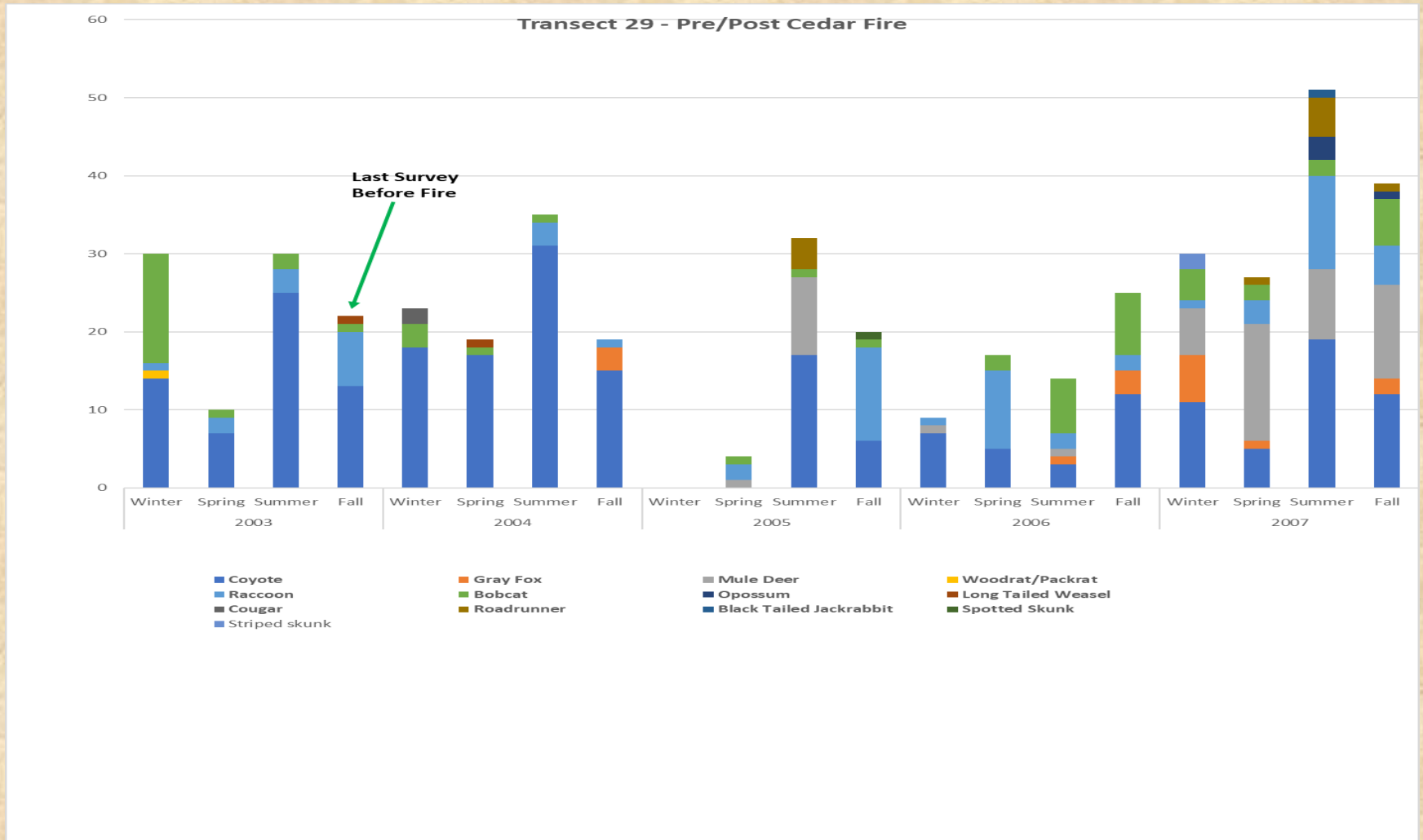
Mid 2004



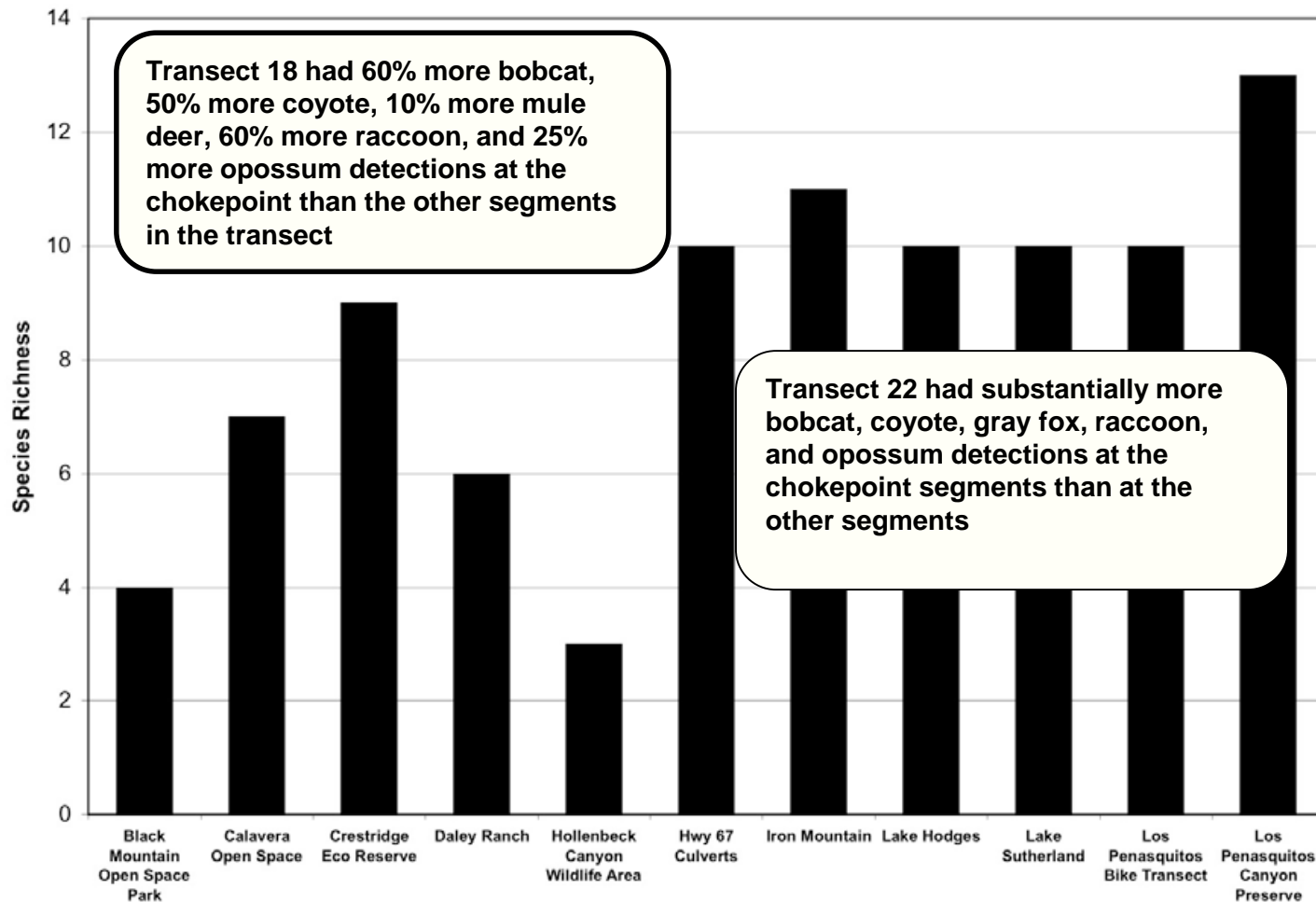
Jan 2008



# Iron Mountain Transect

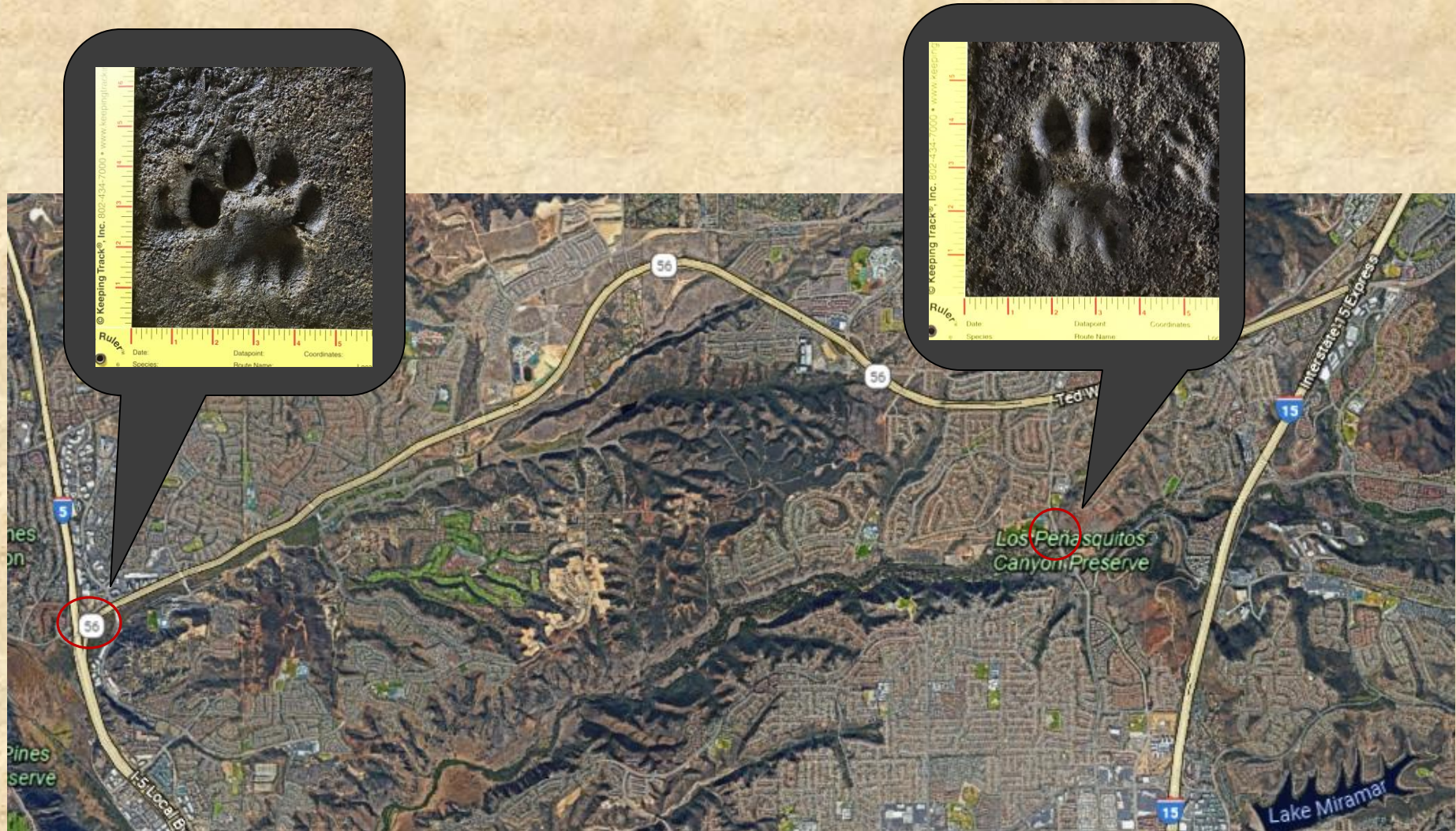


# Species Richness



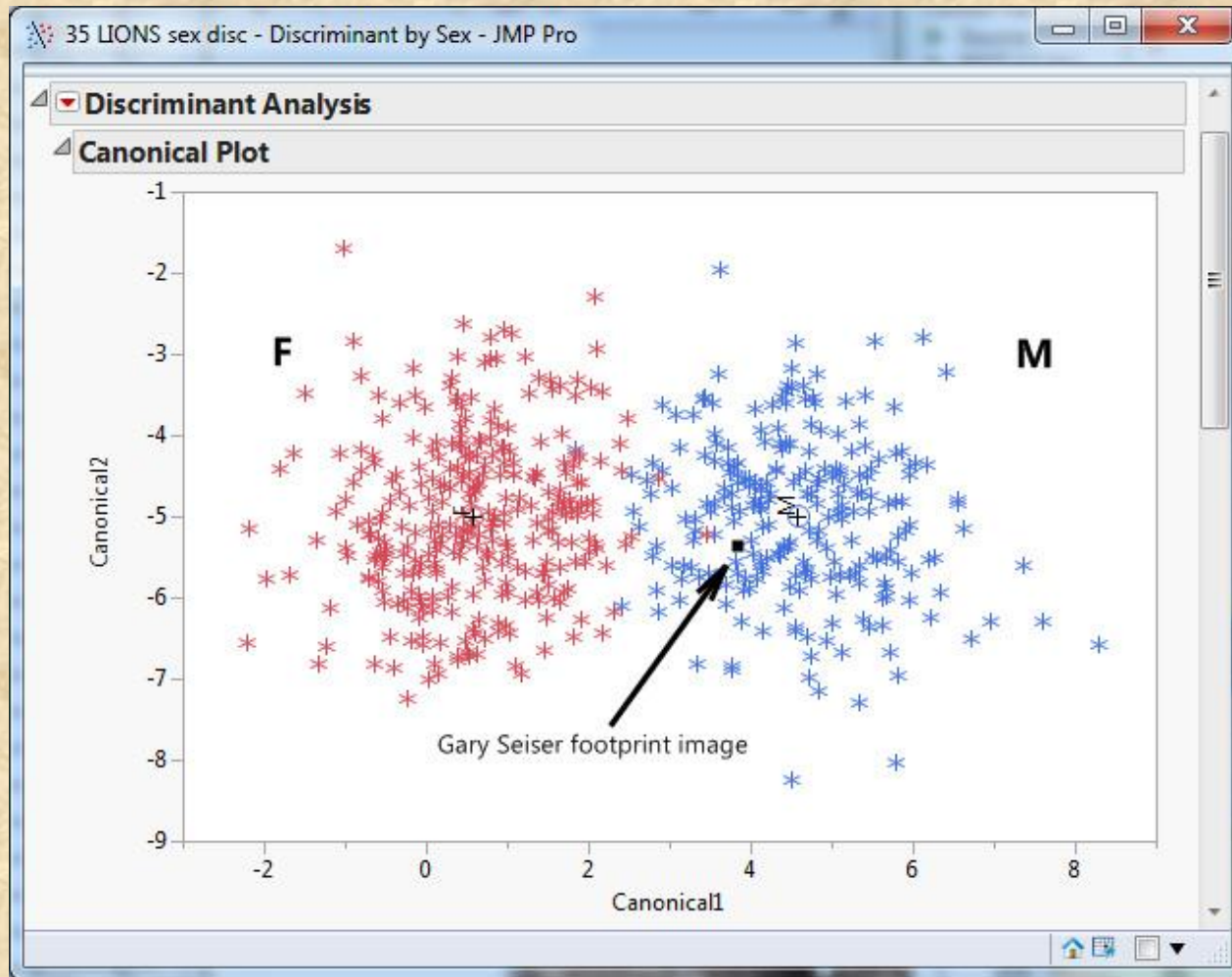


# Survey Discoveries





# Photo Analysis by WildTrack's Conservation FIT





# **Lusardi-Lazanja Natural RMP Initial Surveys Project**

## ***Tracking and Wildlife Movement Study***

# Background

- Helix Environmental Planning, Inc. held contract with the City of San Diego associated with the Lusardi-Lazanja Natural RMP Initial Surveys Project
- San Diego Tracking Team subcontracted by Helix to perform wildlife tracking and movement study
- Period of Performance: June 2016 through May 2017

# Project Description

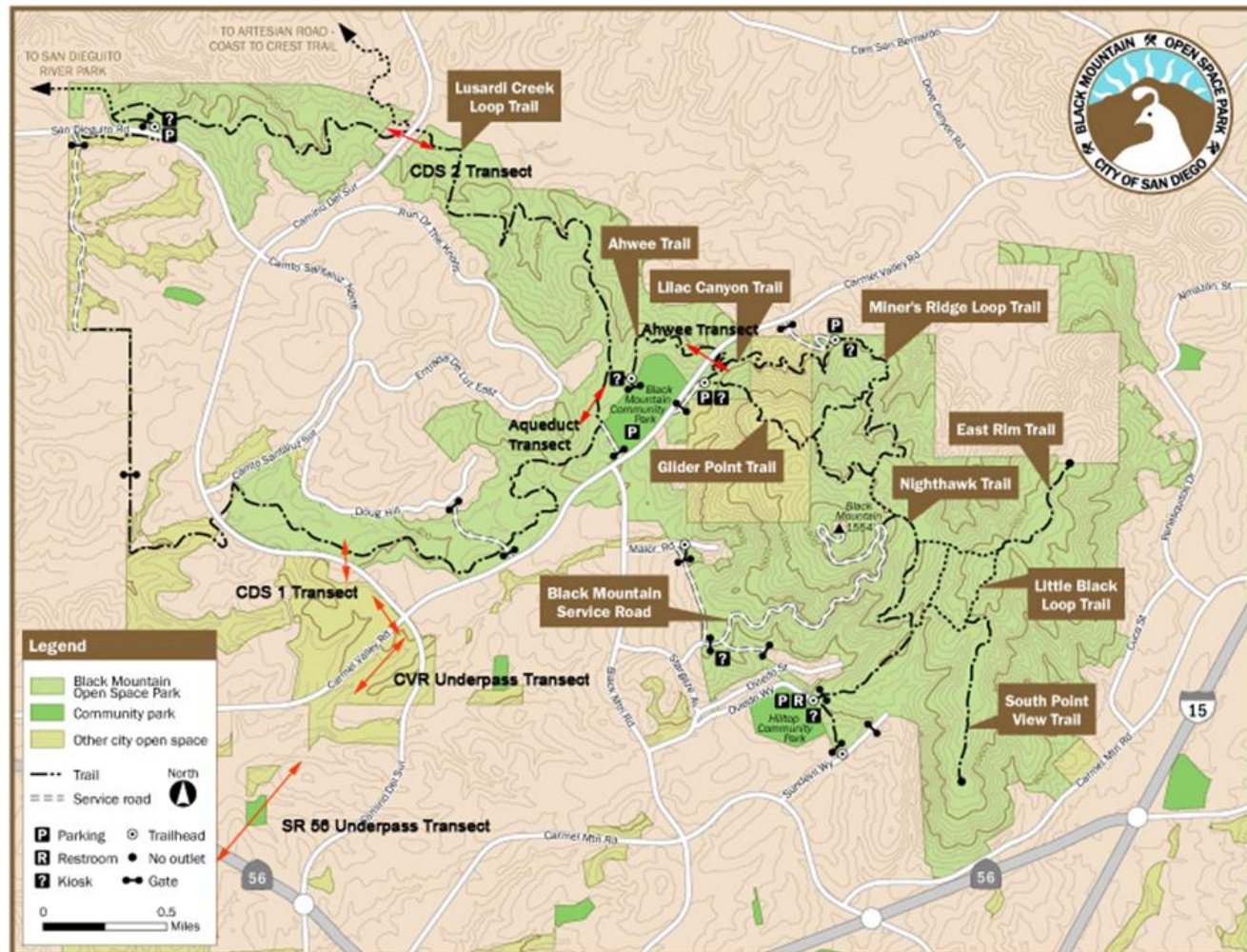
- Utilized transect-based surveys within project area
  - Monthly monitoring
  - Transects within project area selected by SDTT
- Primary Objectives:
  - Determine the presence and/or apparent absence of target species along each transect based upon observed data
  - Document large mammal movements through the connectors that link various segments of open spaces within the study area
  - Analyze the collected data and generate a set of recommendations for future activities.



# Project Location



# Transect Locations



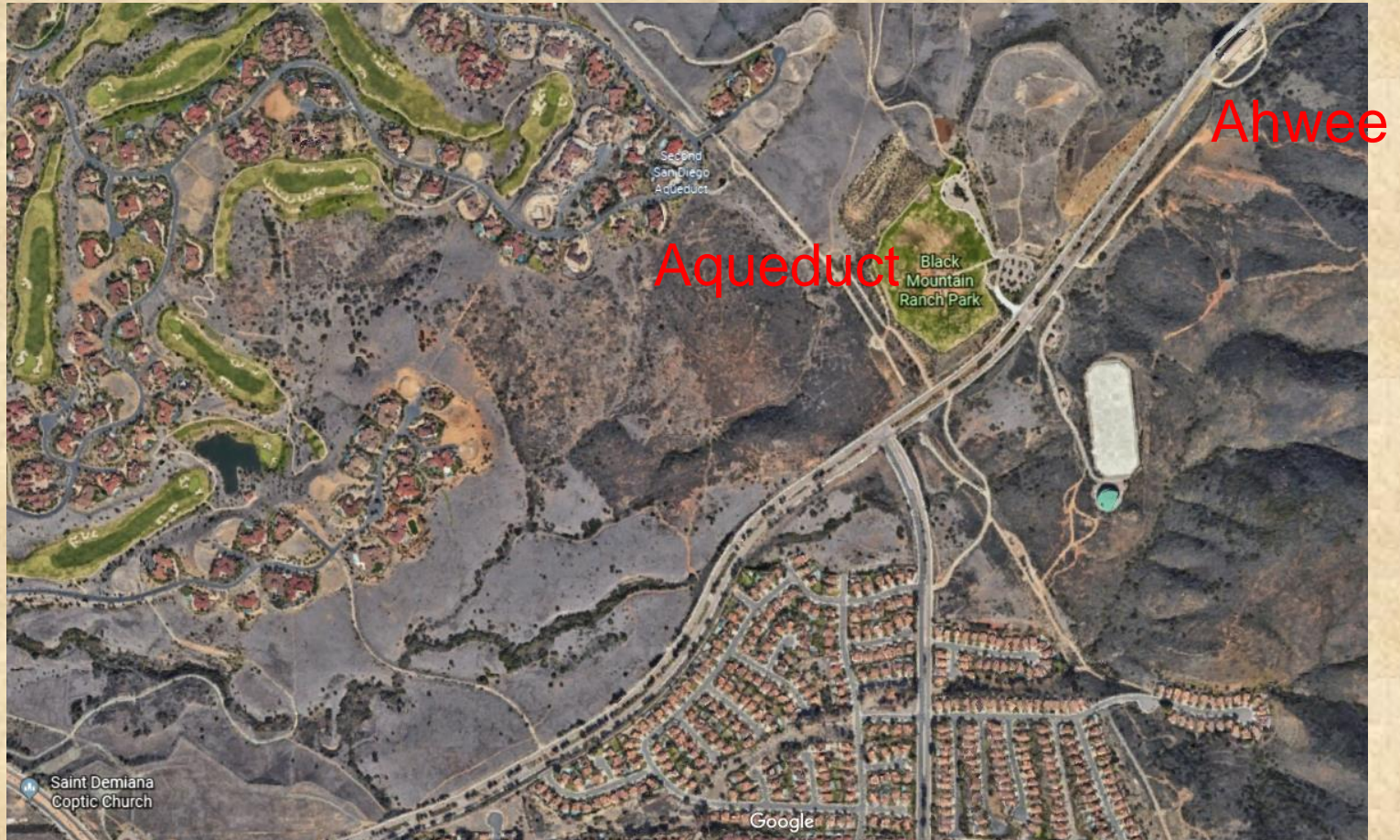


# Southwest Transects





# Northeast Transects





# Northwest Transects





# City of San Diego Wildlife Cameras





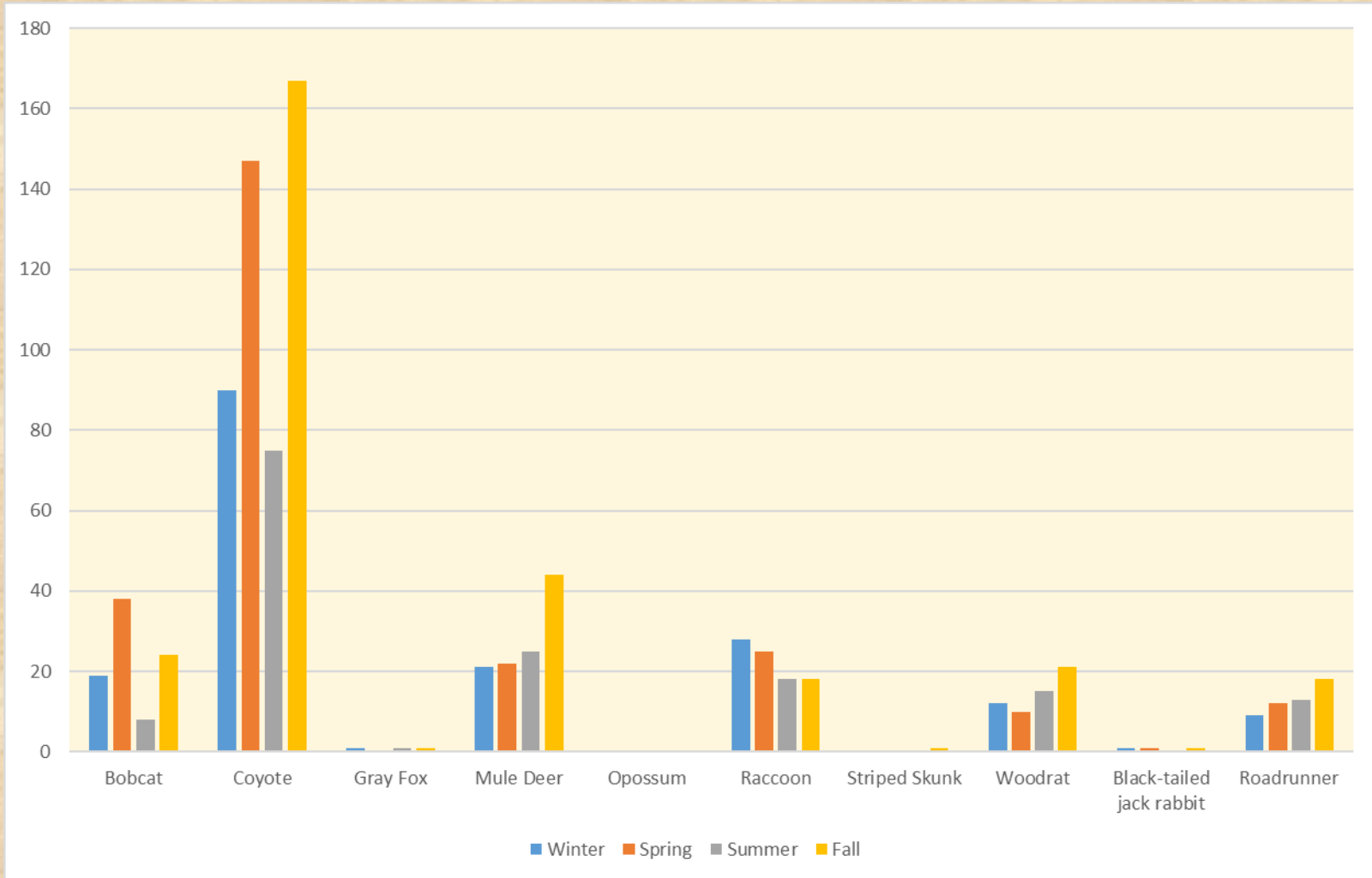
# Methodology

- Utilized standard SDTT wildlife survey protocol
  - Some adjustments to standard 1km transect length due to physical constraints (e.g.) and/or segment length (identifiable section boundaries)
- Target species were those identified on the SDTT's data collection sheet
  - Not all species were expected to be found in the project area
- Monitored each location monthly
  - Only one transect performed in January 2017 due to frequent storms and rains
- SDTT project team all certified trackers

# Track and Sign Observation Summary

	Total Observations Per Transect					
	SR 56 Underpass	Carmel Valley Road Underpass	Camino Del Sur Underpass #1	Ahwee Trail	San Diego Aqueduct	Camino Del Sur Underpass #2
Species						
Bobcat	37	12	12	2	0	26
Coyote	184	38	74	37	28	118
Gray Fox	1	0	0	0	0	2
Mule Deer	33	14	52	1	2	23
Opossum	0	0	0	0	0	0
Raccoon	50	6	4	0	1	23
Striped Skunk	0	0	0	0	0	1
Woodrat	18	2	0	27	0	11
Black-tailed jack rabbit	0	0	13	4	7	0
Roadrunner	14	3	19	3	21	7
<b>Totals</b>	<b>337</b>	<b>75</b>	<b>174</b>	<b>74</b>	<b>59</b>	<b>211</b>

# Total Species Observations By Season





# Movement Summary

- Mule Deer
  - Del Mar Mesa down into Deer Canyon/McGonigle Canyon
  - Along the SR 56, Carmel Valley Road and Camino Del Sur #1 transects under bridges
  - No movement observed directly under the CDS #2 bridge
    - Orientation and location of tracks observed suggests that creek crossing is likely occurring before and/or after the bridge
  - Little/No movement observed along Ahwee trail, under Carmel Valley Road Bridge or along Aqueduct trail
- Coyote and Bobcat movement frequently observed under the SR 56 and CDS #1 bridges.



# Movement Summary

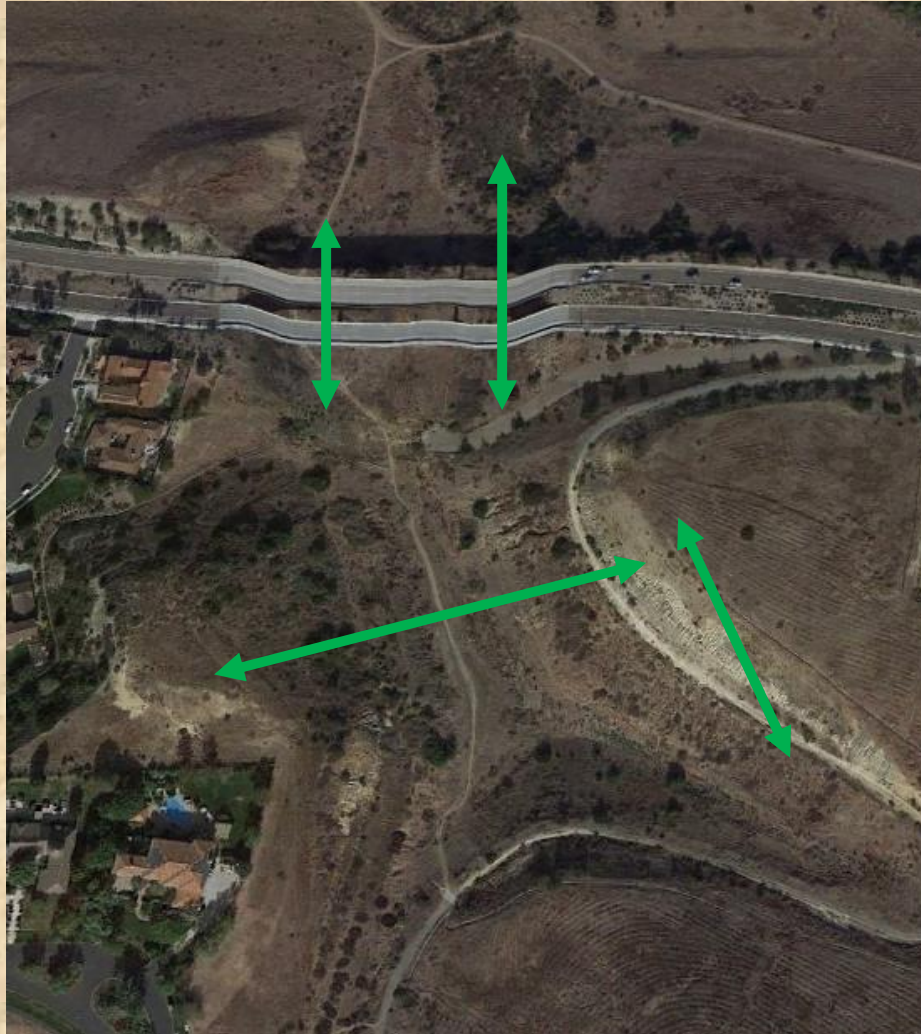
## SR56 Underpass (Mule Deer)





# Movement Summary

## CDS 1 Underpass (Mule Deer)

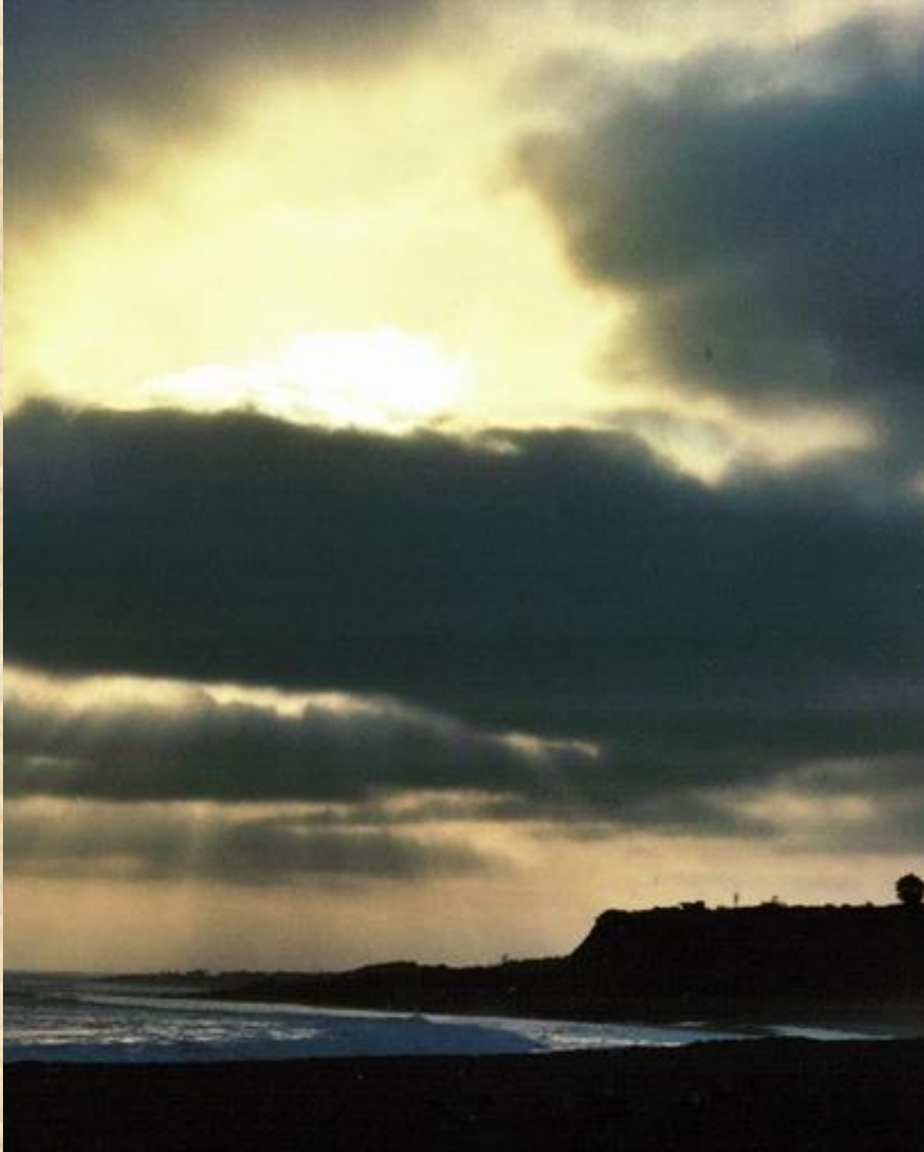




# Movement Summary

## CDS 2 Underpass (Mule Deer)





*For more information  
about the  
San Diego Tracking Team,  
please visit our website:*

**[www.sdttd.org](http://www.sdttd.org)**  
**or facebook**

*Thank you!*