

# GOLDEN EAGLES RESEARCH IN SAN DIEGO AND ORANGE COUNTIES

Jeff A. Tracey (USGS), Robert N. Fisher (USGS), Peter Bloom (BBI)



# ACKNOWLEDGEMENTS

- Field Team
  - USGS: Jeremy Sebes, Cary Cochran, Devin Adsit-morris, Michelle Curtis
  - BBI: Karly Moore, Michael Kuehn
- Funding
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  - SWG: Jeep Pagel, Karen Miner
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  - Pala Band of Mission Indians: Kurt Broz
- And don't forget...
  - Kris Preston (SDMMP/USGS), Winston Vickers (UC Davis), Ryan McCreary (APHIS), Amber Craig (Border Patrol), Frank Konyn

# MOTIVATING QUESTIONS



1. What are the population dynamics of golden eagles in San Diego County?
2. Is the local breeding population sustained by locally produced eagles or immigrants from other areas?
3. How does human use (e.g., development, recreational activity) influence occupancy of nesting territories, nesting success, and movements?
4. What are the primary foraging areas used by resident eagles in areas designated for future development?

# OBJECTIVES



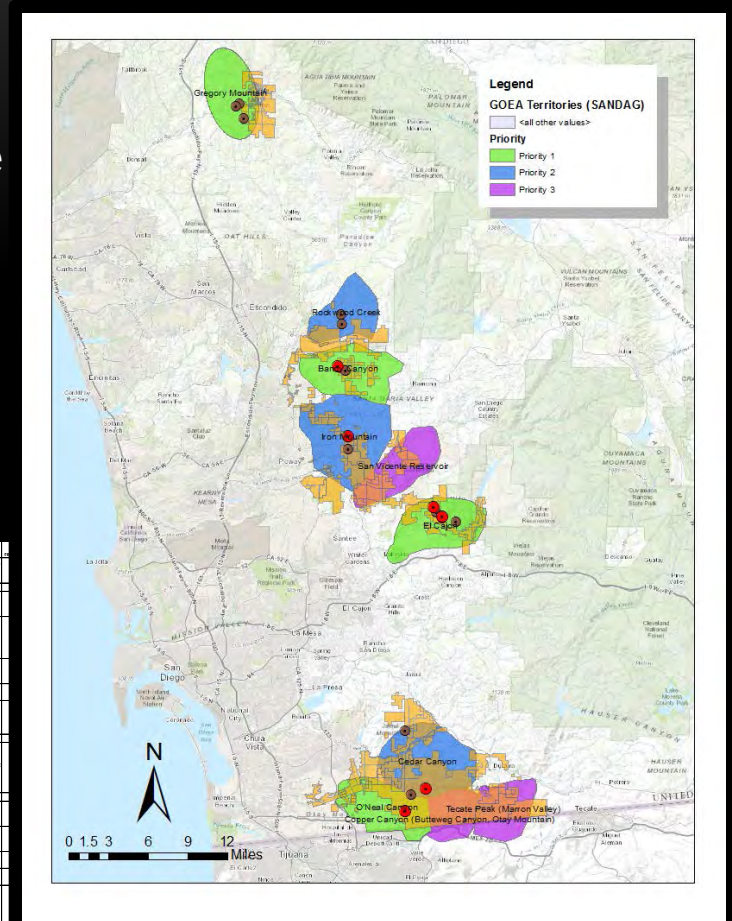
1. Collect GPS biotelemetry data to develop models for golden eagle movement behavior and resource use in three spatial dimensions.
2. Establish a site-occupancy monitoring program to assess the potential effects of human land use on occupancy dynamics and nesting success of golden eagles.
3. Collect genetic samples and analyze genetic differentiation and diversity of golden eagles in San Diego County relative to other sampled regions of western North America.
4. Collect samples for future testing for parasites, pathogens, and toxicants.

# GETTING STARTED...

- Initial contracting and GSM unit purchase in June
- Funding from SANDAG and SWG
- Meeting on July 22 at CDFW offices
- Preparation in August – September
- Started baiting in October

Territory	Priority	Ranking	Status	Threats	Timing of Threats	potential catchability (1-5, low = very good, one = unknown)	Ownership	Imp's/Comments
Reedy Canyon	A	SANDAG	Occupied 2014	Restoration - near on private land	ongoing	5		source of cattle within its territory, considerable open space, near on private land
San Marcos	B	SANDAG	Not known occupied 2010	Restoration - near on private land	ongoing	5		
Gregory Canyon	A	SANDAG	Occupied, successful 2014	oil spill and residential development - near on private land	ongoing	5		tribal lands, landfill and development, and on private land
Rockwood Creek	B	SANDAG	per bittner, needs burned in 2017, but shifts seen on territory in 2010 and 2015	Expansion of agriculture - near on private land	ongoing	Unknown		Trapping area would be behind locked gates, which would be highly beneficial. Occupancy status currently unknown, but appears to be occupied
O'Neal Canyon	A	SANDAG	Not known occupied 2012	Industrial development, rock quarry, landfill	ongoing	if occupied, 2	United Ecological Reserve, City Branch Reserve City	border issues: border fence has been helpful, but keeping a trapline up may not be for some
Cedar Canyon	B	SANDAG	Not known occupied 2010	Some proposed residential development, recreation	recreation ongoing - development control plans out	if occupied, 3		Trapping area near power line, may help in eagles having perches prior to landing at trap site
El Capitan San Miguel	A	SANDAG	Occupied 2014	recreation - climbing	ongoing	4		Eagles appear to have banded pair couple of years, next may be monitor drought may be affecting this site. Open habitat on USFS land would possibly be used for trapping
Grant Meadows (B-S)	B	SWG	Occupied 2014	2	7	if occupied, 3-4		Potential upcoming wind facility, eagle take permit currently under review
Chico Mountains	A	SWG	Occupied known 2012	wind and solar	ongoing - within a year	if occupied, 3-4 (may be trap site?)		Eagles may have vacated territory due to better power line
Thru Valley	A	SWG	Not known occupied 2012/13	wind and solar	ongoing - within a year	if occupied, 3-4		Open area would be available for trapping, BSA nearby
Chico Hills	A	SWG	Occupied 2013	urban development	ongoing	if occupied, 3-4		More work to verify occupancy status prior to trapping
Yuba	B	SWG	Occupied 2012/13	urban development (less intense than Chico)	ongoing	if occupied, 3-4		More work to verify occupancy status prior to trapping
Camp Pendleton	B	SWG	Unknown when last occupied, ca 2004 (?)	none		if occupied, 4-5		More work to verify occupancy status prior to trapping

Noted using catchability, known data and variety of those data, and general overall relevance to jeff's modeling effort to obtain uniformity of edge, and some housing density variability, and to allow for some control data, such as predation within the wildland urban interface or golden eagles.





# BAIT – THE FUEL FOR EAGLE TRAPPING



# BAIT – ACQUISITION AND STORAGE





# EXPLORATORY BAIT SITES





# CHECKING BAIT SITES



# BAITING EAGLES – THE COYOTE PROBLEM





# ACTIVE BAIT SITES



# RAMONA GRASSLANDS (IRON01)





# RAMONA GRASSLANDS (IRON01)



# BOULDER OAKS (IRON02)





# RANCHO JAMUL (RJER03)



# OTAY SUMMIT (OTAY02)





# CEDAR RIDGE (OTAY01)



# CEDAR RIDGE





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# CEDAR RIDGE



# TRAP SITES





# PROCESSING



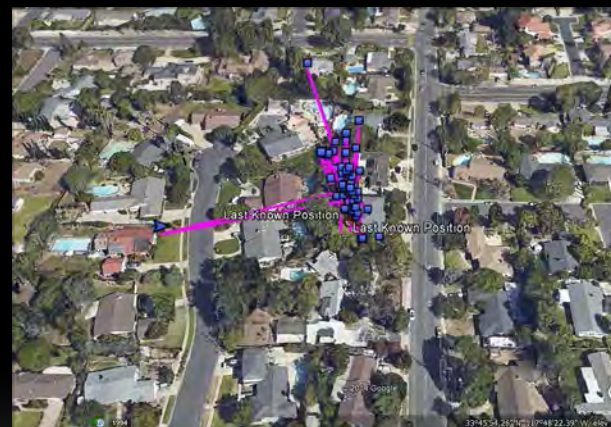
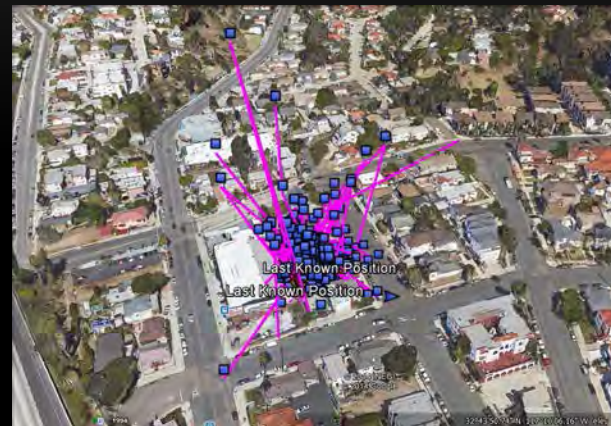
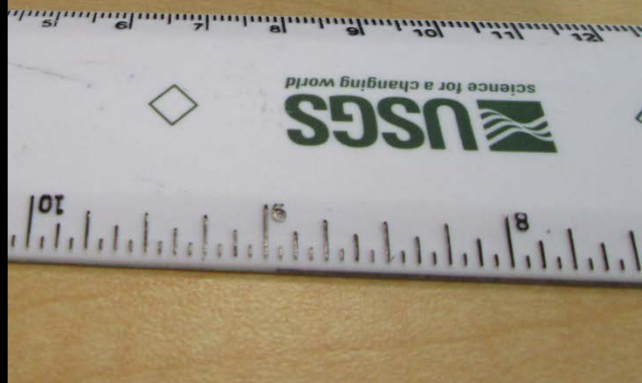
- Blood Samples
  - Genetics
  - Pathogens, etc.
- Feathers
  - Genetic testing
  - Lead and stable isotope analysis
- Swabs
  - Disease
- Measurements
- USGS band

# FIELD LEAD TESTING





# GSM UNITS



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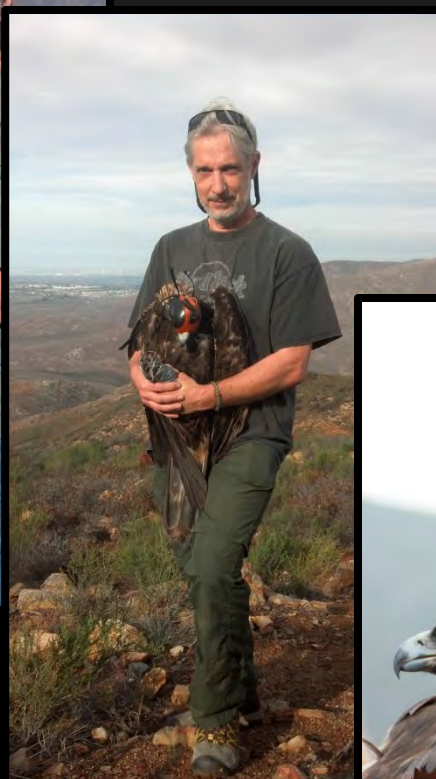




# CURRENTLY TELEMETERED GOLDEN EAGLES

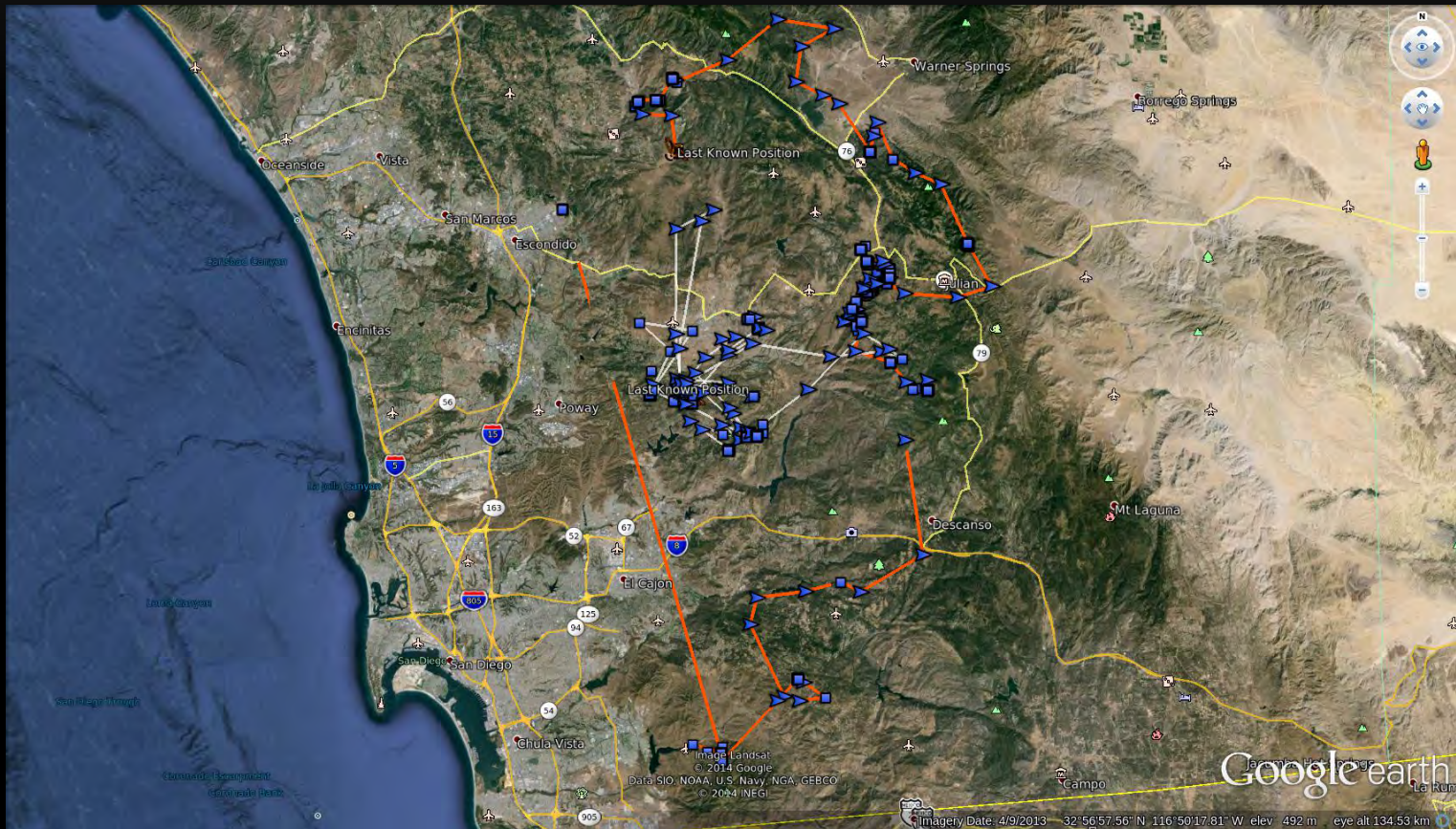


- Boulder Oaks:
  - Female, 11/22
- Cedar Ridge:
  - Female, 11/28
  - Female, 12/05
  - Male, 12/05



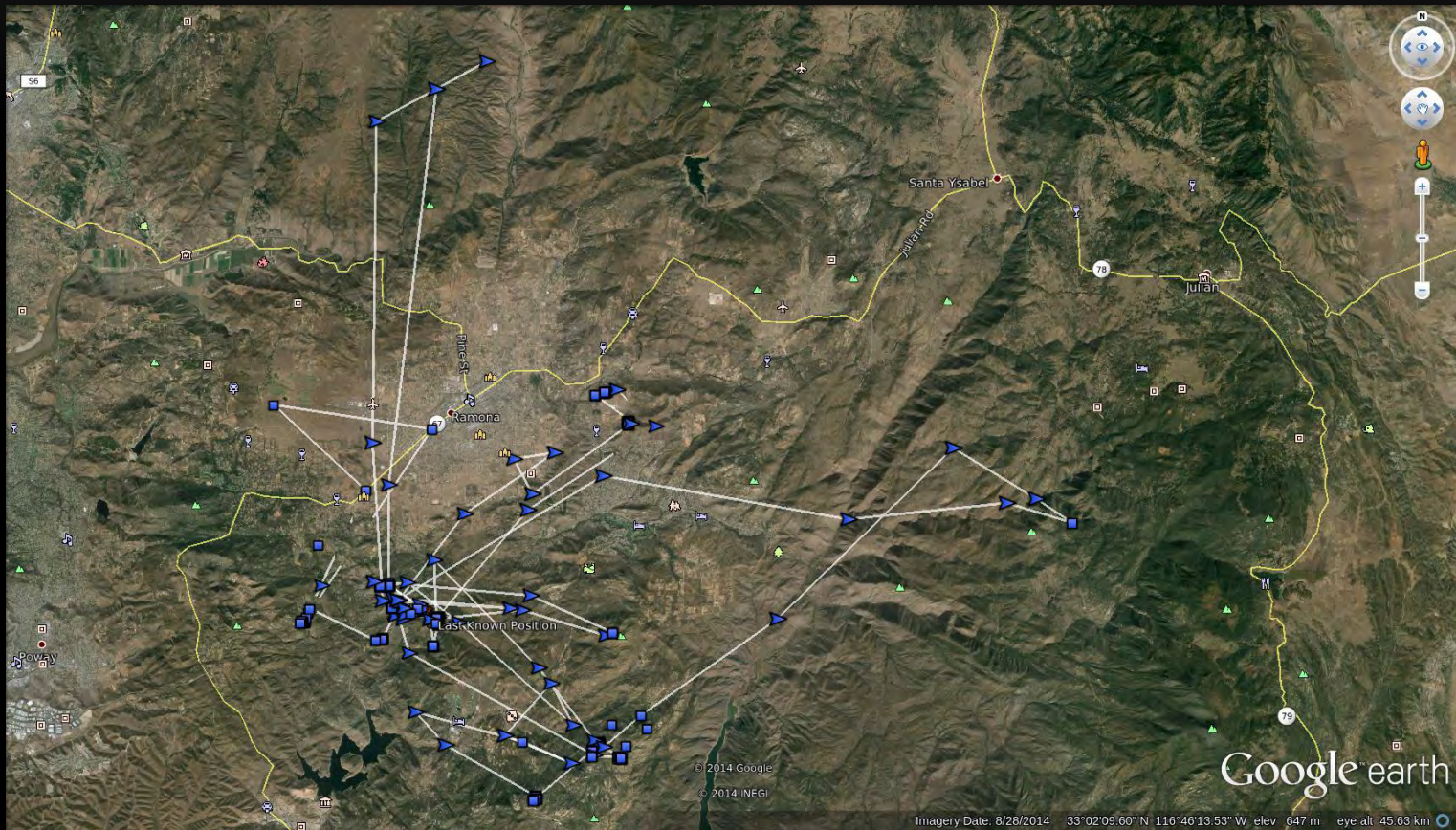


# SD-F001 & SD-F002



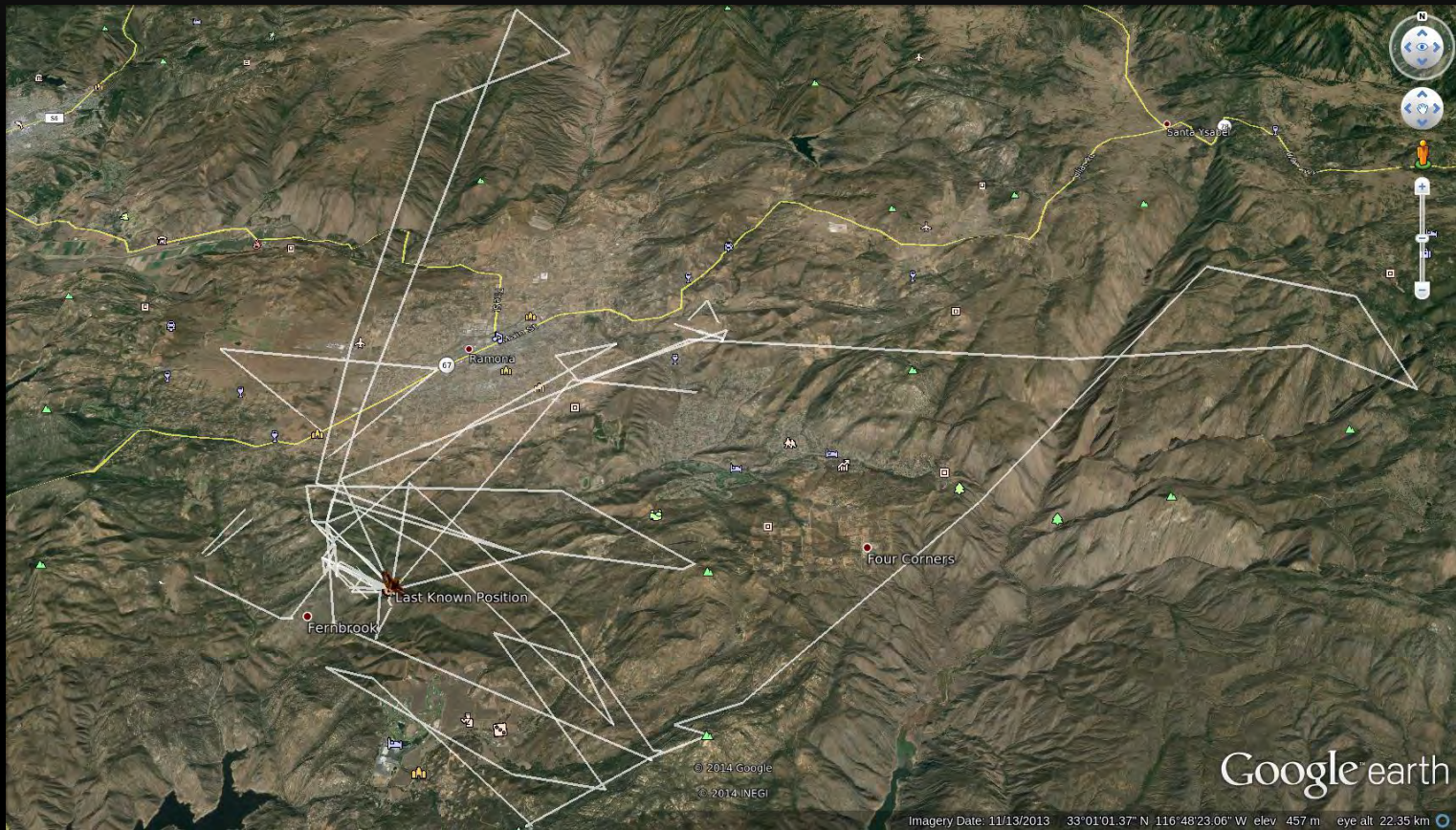


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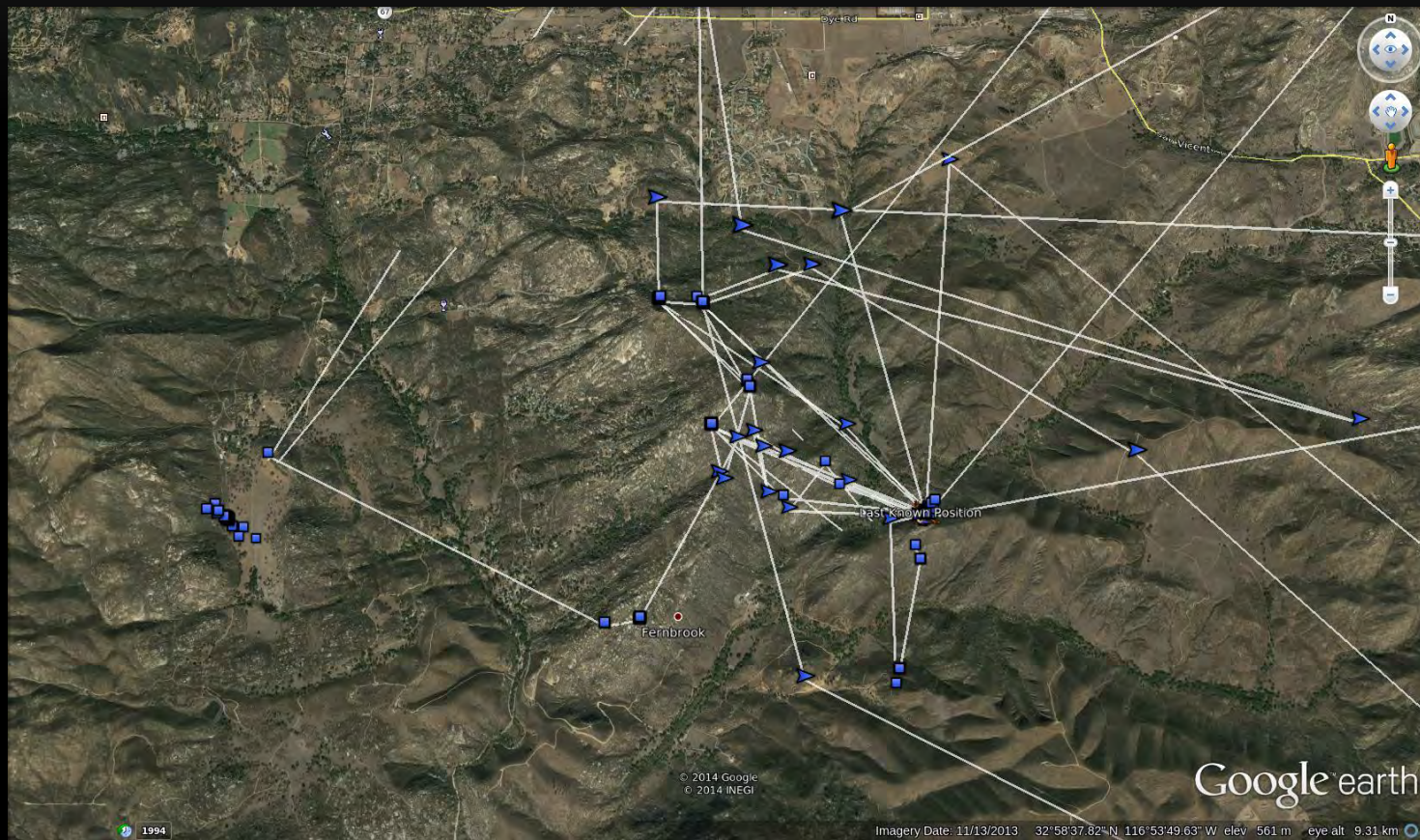


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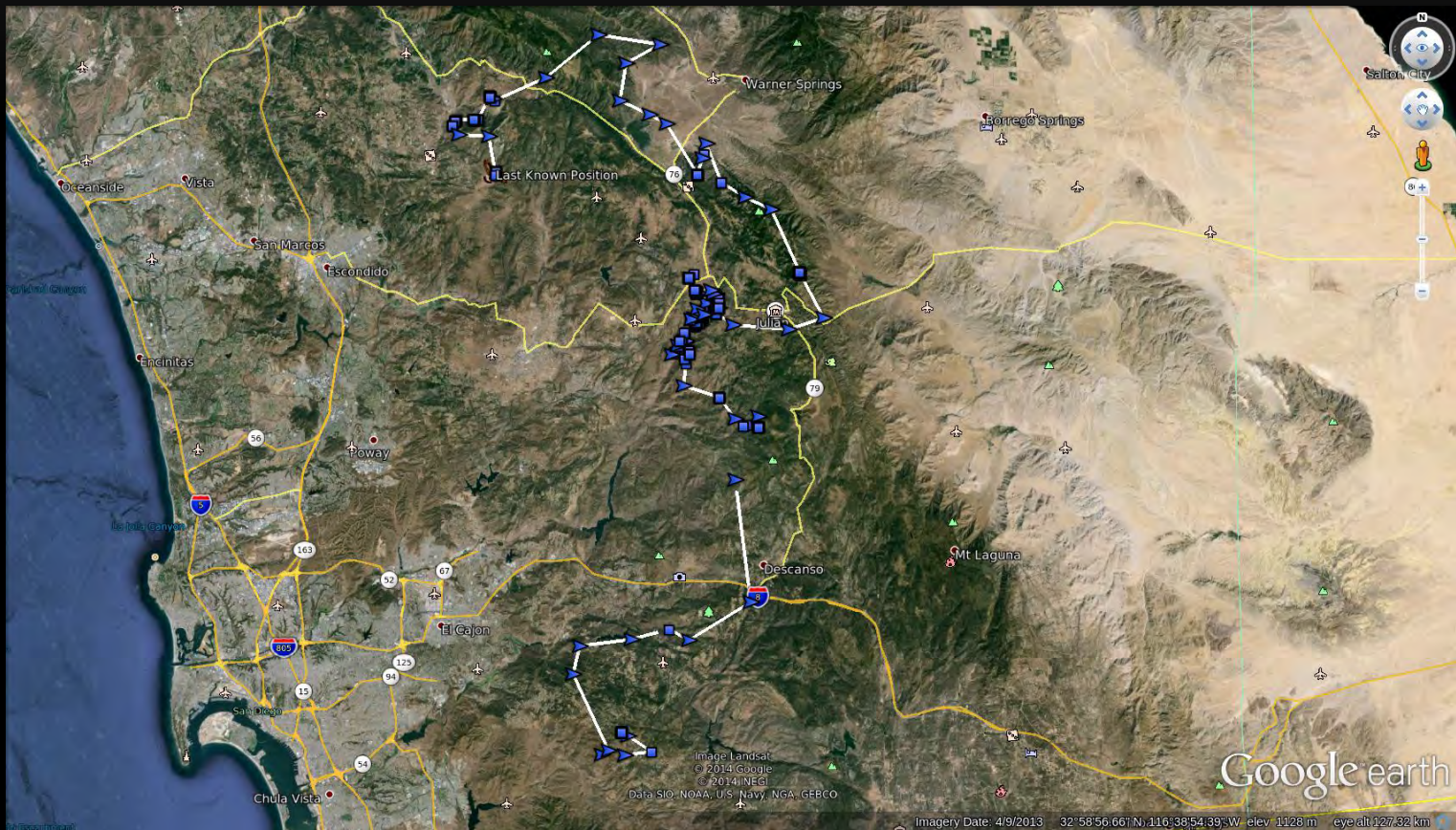


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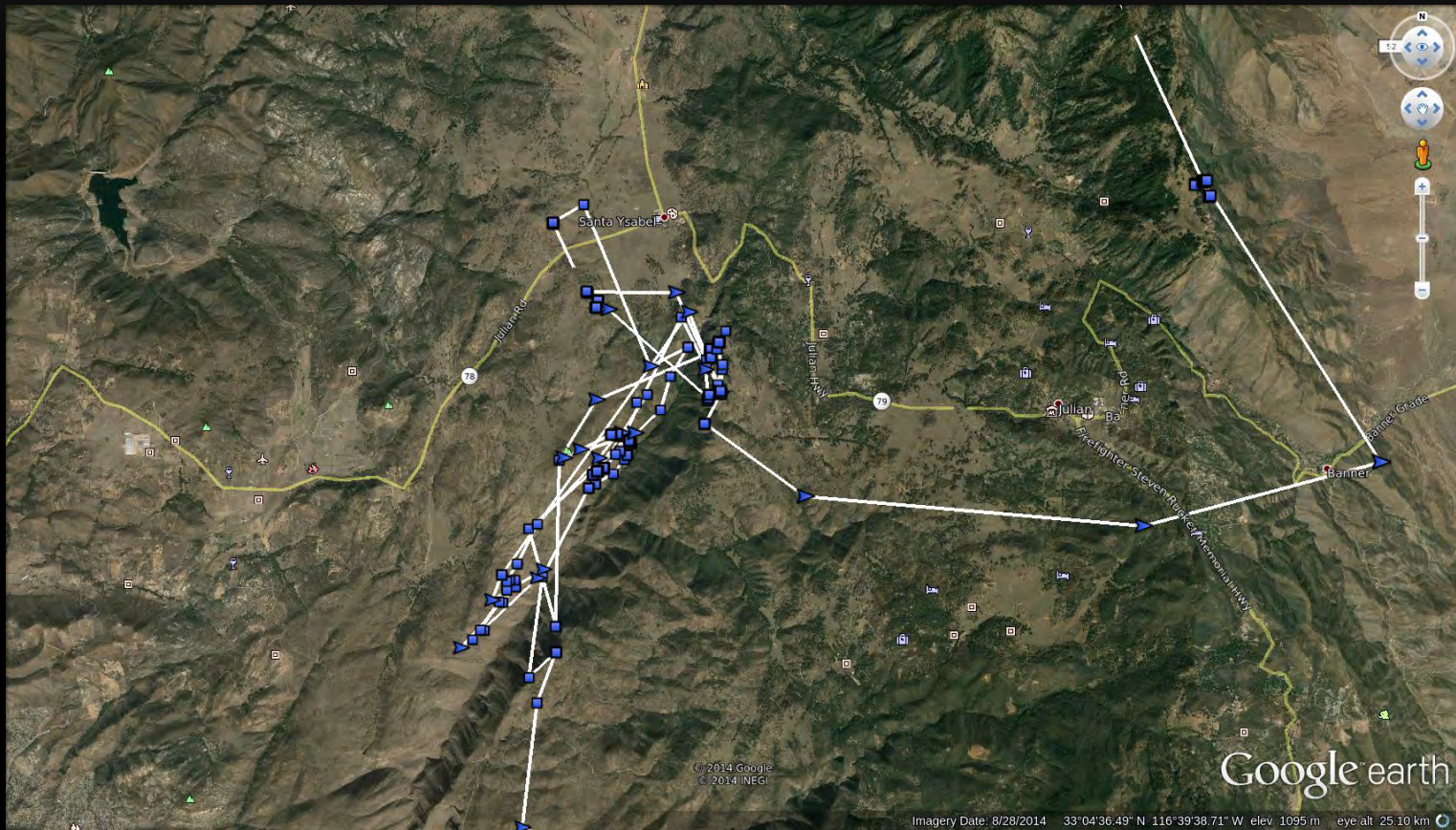


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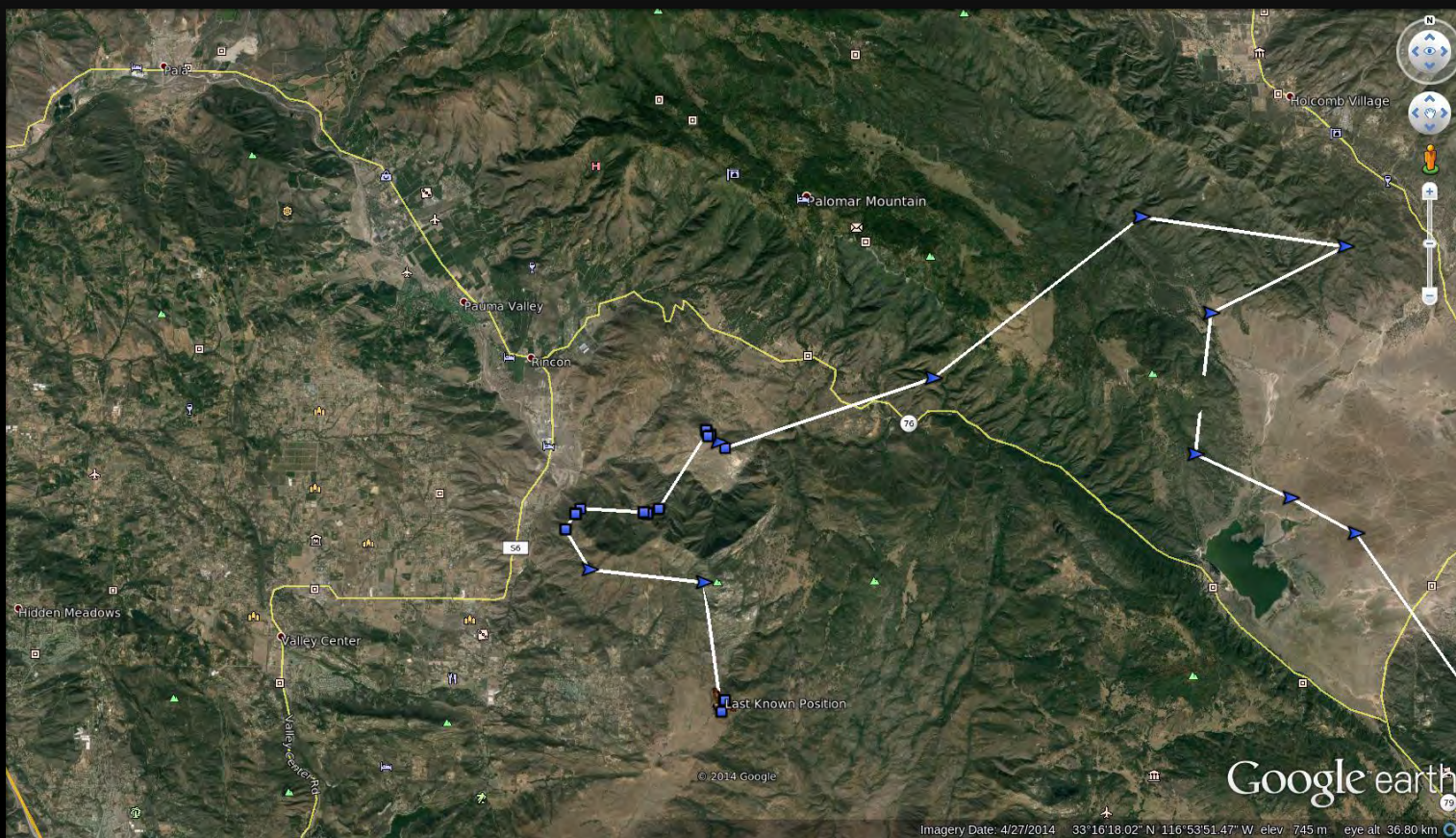


SD-F002





# SD-F002



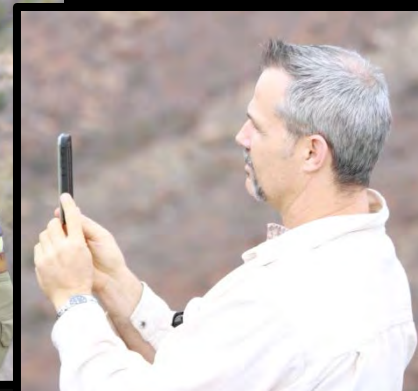
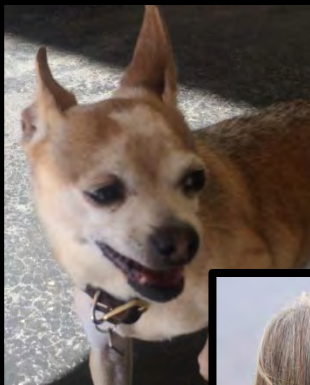
# NEXT STEPS





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