



A Green Infrastructure Vision for Coyote Valley
SPUR Forum
October 24, 2017



An aerial photograph of a river valley. A large dam and reservoir are visible in the upper left. The surrounding landscape is a mix of green vegetation and brownish, eroded soil. The river flows through the center of the valley. Two semi-transparent dark grey horizontal bars are overlaid on the image, containing white text.

1900s: environmental stability

2000s: probably not so much

An aerial photograph of California with several atmospheric rivers highlighted in a bright blue color. These rivers are shown as long, narrow bands of moisture flowing from the Pacific Ocean inland towards the Sacramento Valley, the Central Valley, and the San Joaquin Valley. Major cities like Sacramento, San Francisco, and San Jose are labeled. The map also shows major highways and geographical features like the Coast Range and Sierra Nevada.

THE COMING MEGAFLOODS

Huge flows of vapor in the atmosphere, dubbed "atmospheric rivers," have unleashed massive floods every 200 years, and climate change could bring more of them

By Michael D. Dettinger and Lynn Ingram

Graphic: Don Foley
Source: *The Coming Megafloods (Scientific American 2013)*
by Michael Dettinger & Lynn Ingram



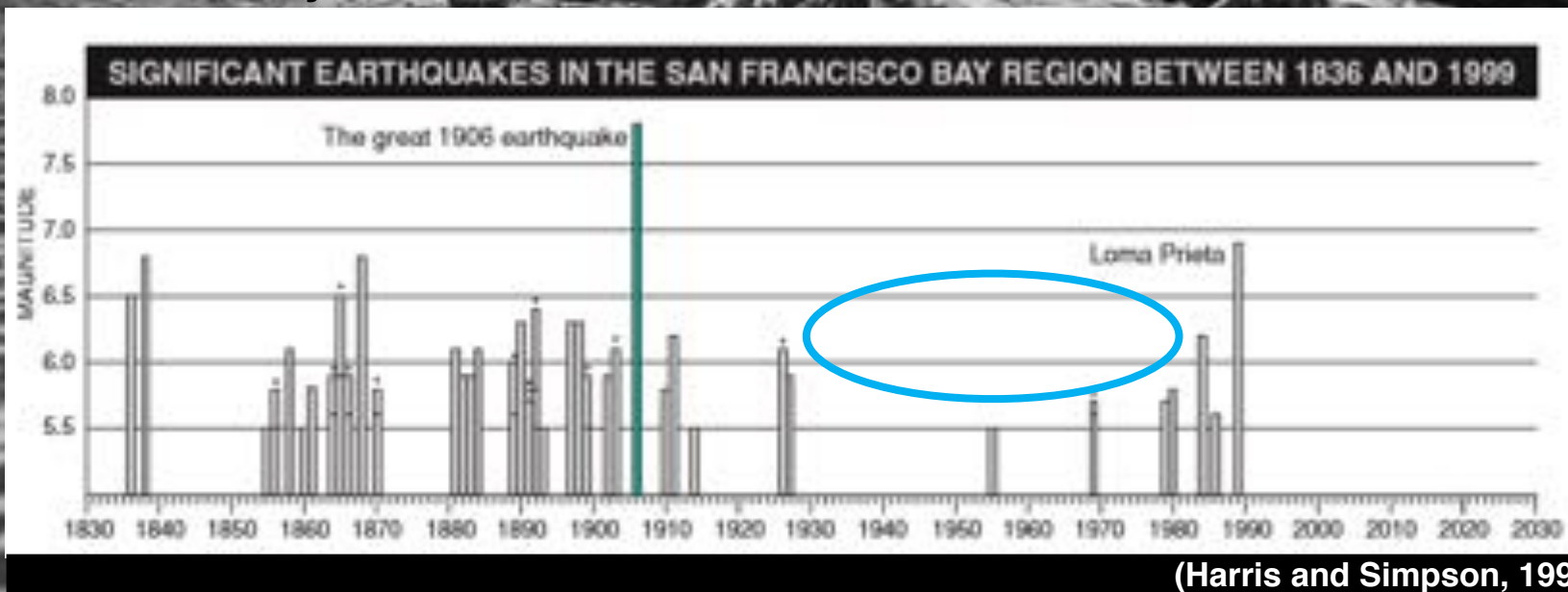
roughly every 200 years

last in 1861-62

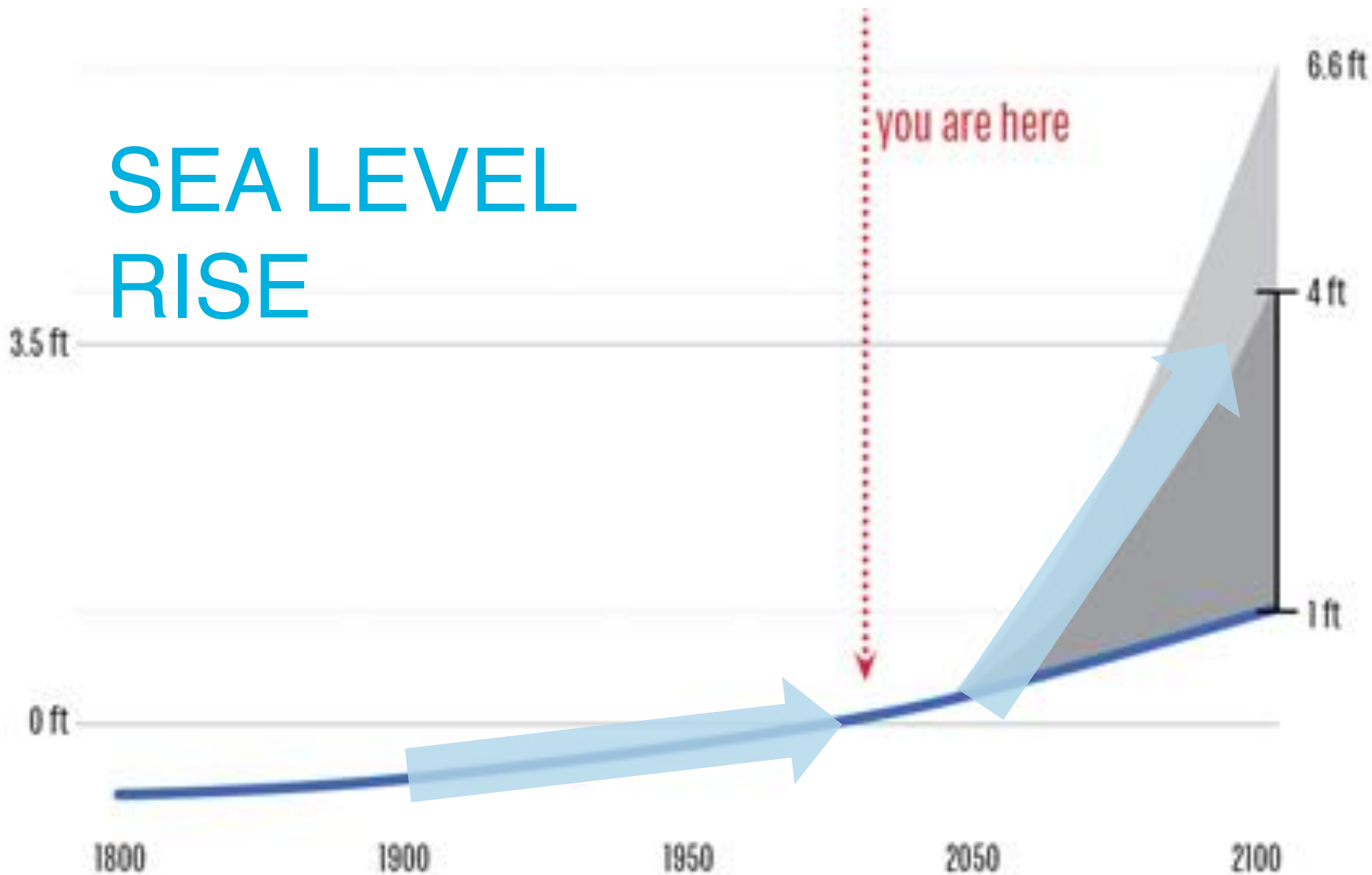
Graphic: Don Foley
Source: *The Coming Megaflood*
by Michael Dettinger & Lynn Ingle

THE BIG ONE

protective “stress shadow” cast over most of the 20th century



SEA LEVEL RISE



“Landscape Resilience”

Urban forests reduce **heat**, provide **shade**, and store **carbon**

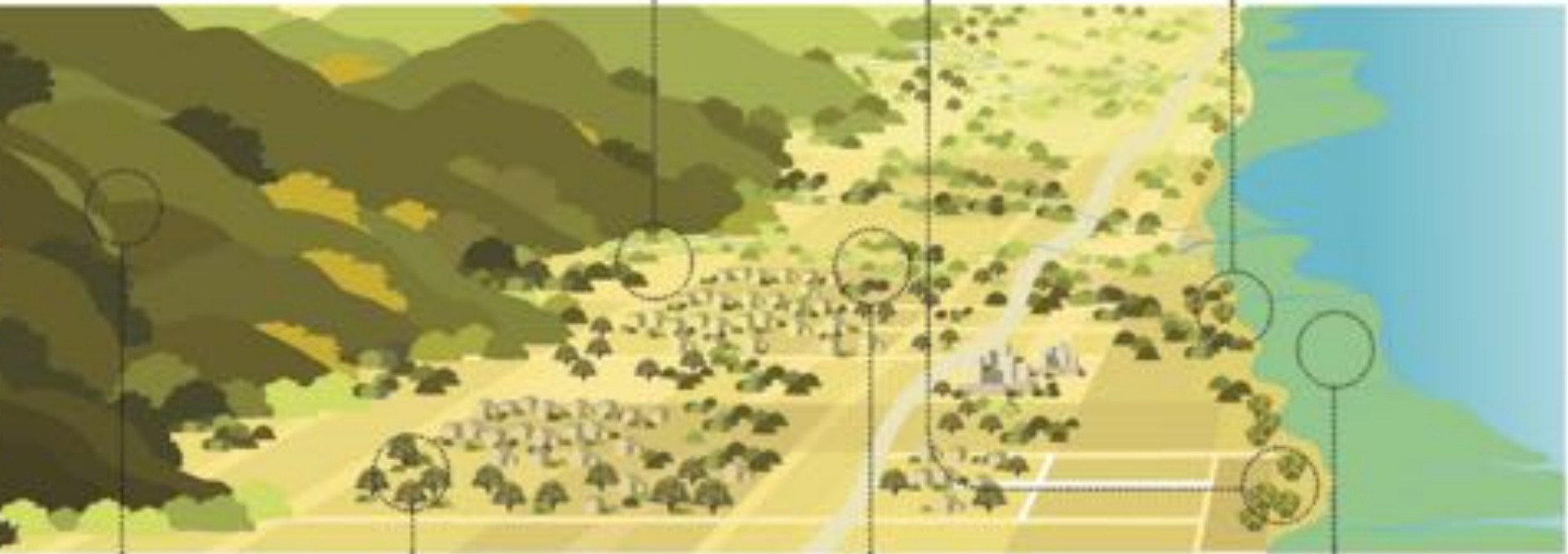
Creeks with floodplains **reduce flood risk**

Marshes buffer shoreline from **rising sea levels**



Native trees and landscaping is **drought tolerant**, **connects people to nature**, and makes city **unique**

Coordinated actions at scale create “landscape resilience”



Improved landscape permeability through native landscaping and stream restoration

Groundwater-dependent habitats (eg. willow groves & freshwater marshes) where near-surface groundwater is likely to remain high

Land-shore interfaces that accommodate inland migration of Bay habitats over time

Large areas of open space in the hills and baylands

Re-establishment of oak savanna communities and associated habitats (eg. grassland, shrubland) in urban areas

Naturalistic flows and flooding in creeks with adequate water quality and water and sediment supply

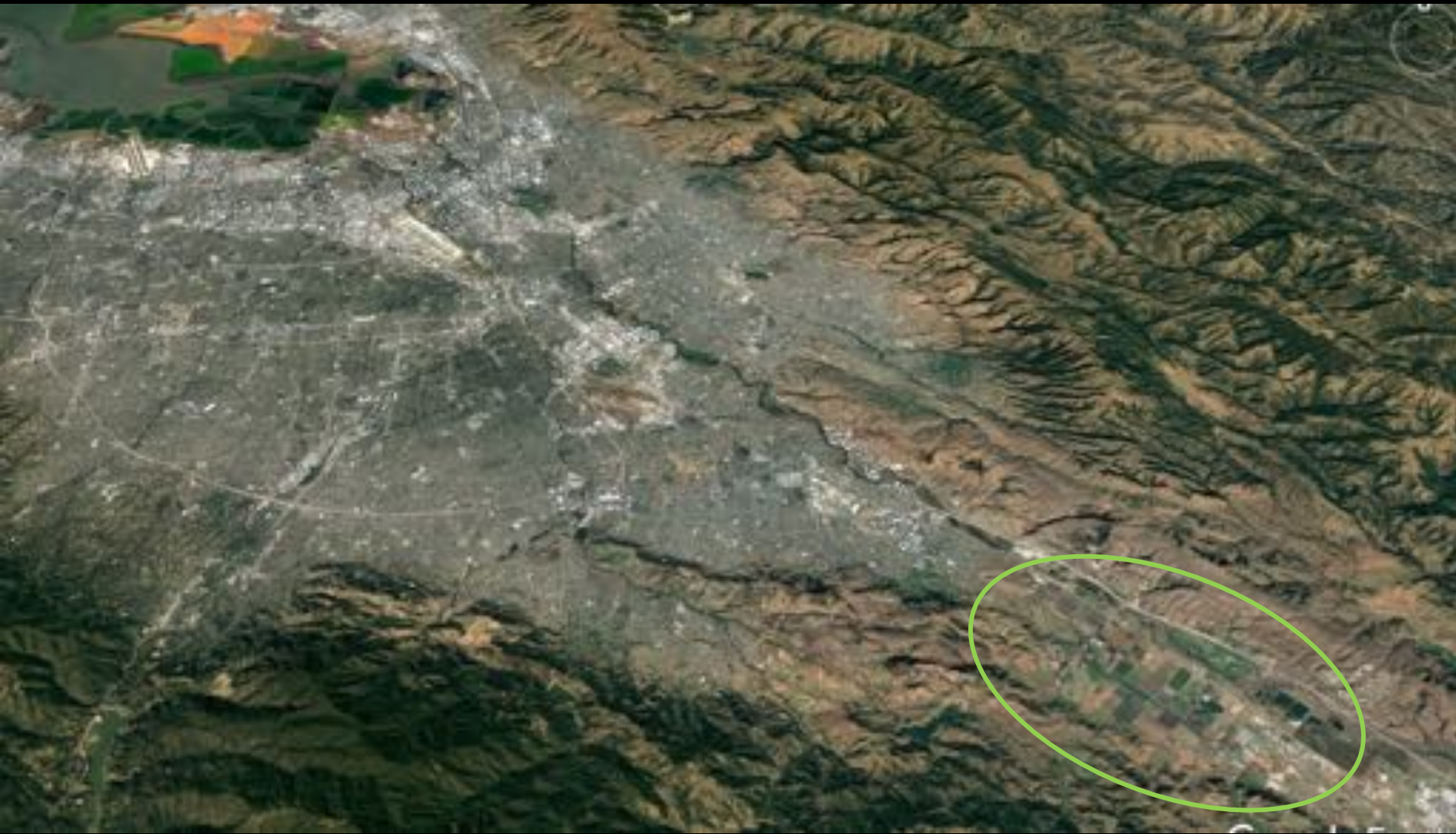
Large areas of tidal marsh supported by critical processes (eg. sediment accretion, natural tidal flooding regime)

LANDSCAPE RESILIENCE FRAMEWORK



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LAGUNA SECA RECLAMATION

(64-65)

Looking south from north end of Lagoon, Dec. 23, 1916. (a) Clam-shell at end of Lagoon Ditch--dark line extending eastward is Ditch, (b) Dragline Excavator No. 2 working on Main Canal, (c) New fence on property-line (indistinct dots are posts).

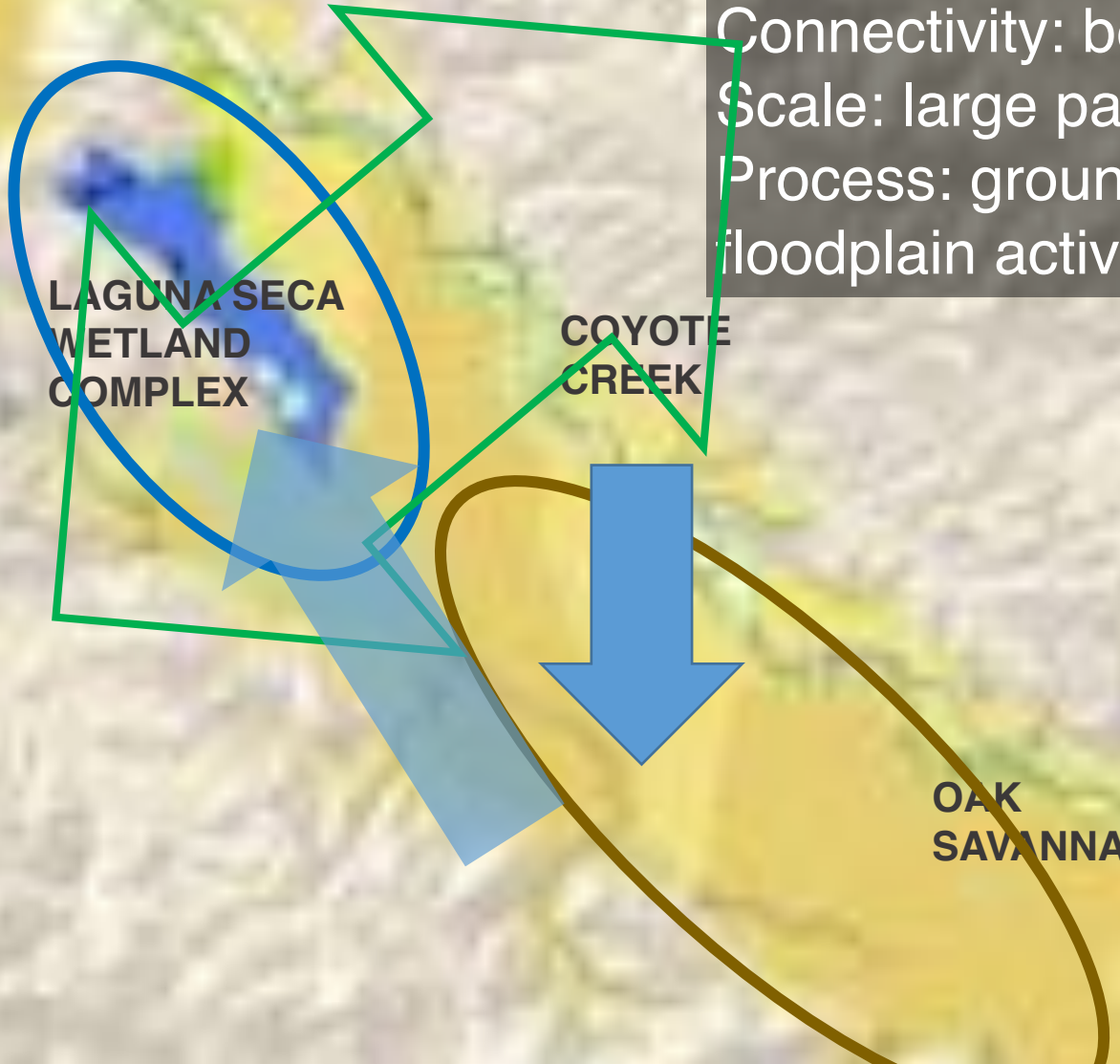
Potential for Landscape Resilience

Diversity: wetland types, valley oaks

Connectivity: between ranges

Scale: large patches

Process: groundwater recharge, floodplain activation



LAGUNA SECA
WETLAND
COMPLEX

COYOTE
CREEK

OAK
SAVANNA



LAGUNA SECA RECLAMATION

(66-67)

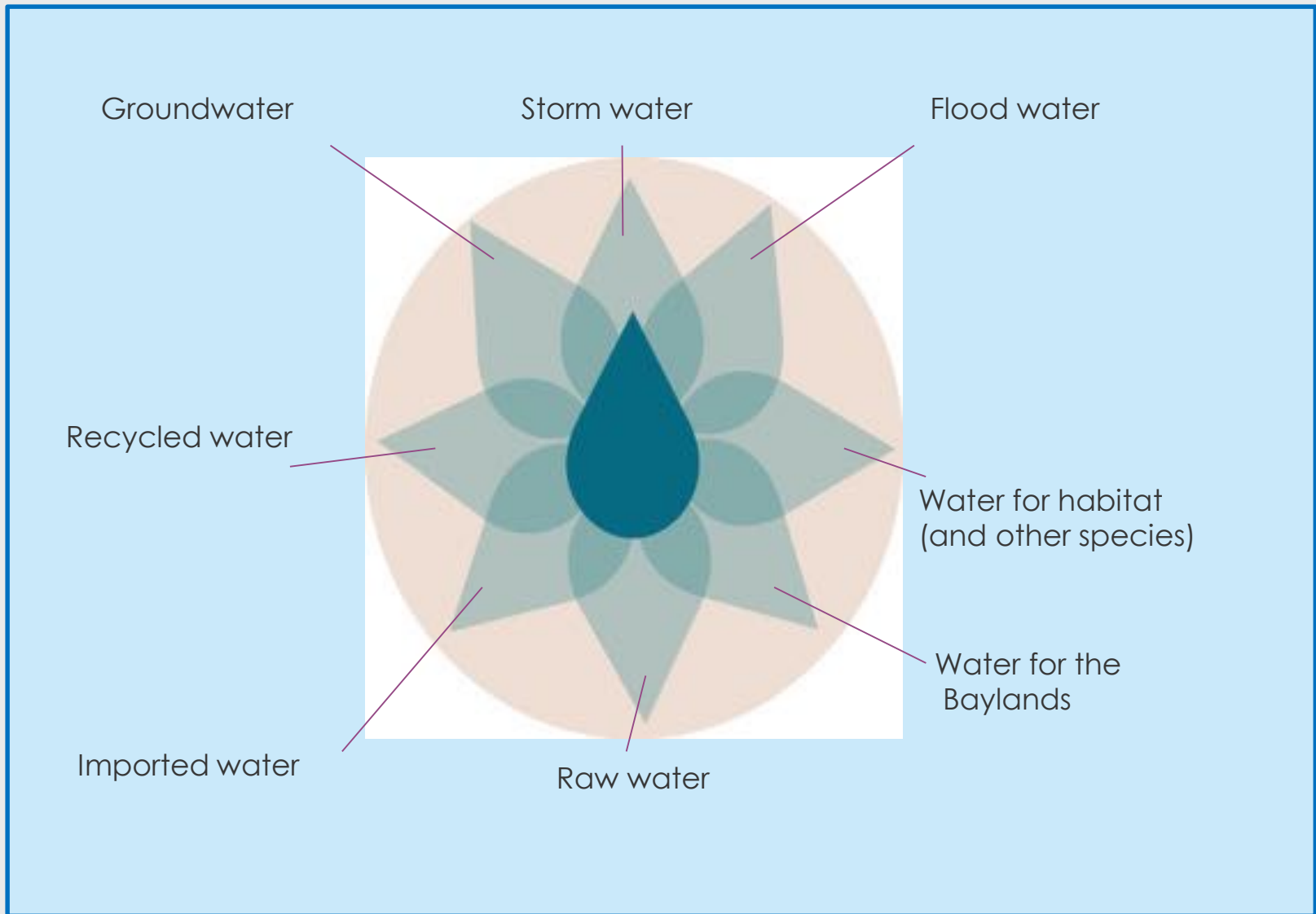
Bottom of Lagoon on December 28, 1916 showing Clam-shell machine at end of Ditch. Discoloration on tules shows height of water before drainage. Small shallow pools are from drainage water still coming from tules and flowing to Ditch.



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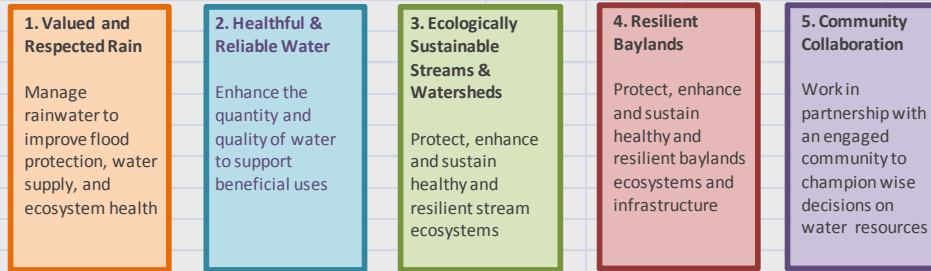


Water Resources through One Water Context



Seek Opportunities to Meet Goals and Objectives

GOALS



	OBJECTIVES*
A	Reliable Current and Future Water Supply for Urban, Rural, Agricultural, and Environmental Needs
B	Sustainable Groundwater Subbasins
C	High Quality Surface Water and Groundwater
D	Reliable and Effective Flood Risk Reduction Using an Integrated Approach
E	Expanded and Protected Buffer Lands Adjacent to Water Bodies
F	Stream Flows Support Natural Processes
G	Resilient Habitats and Resources for Native Species
H	Adapt to and Prepare for Climate Change
I	Anticipate and Prepare for Emergencies
J	Effective Community and Tribal Engagement

* Order of objectives does not indicate order by priority.

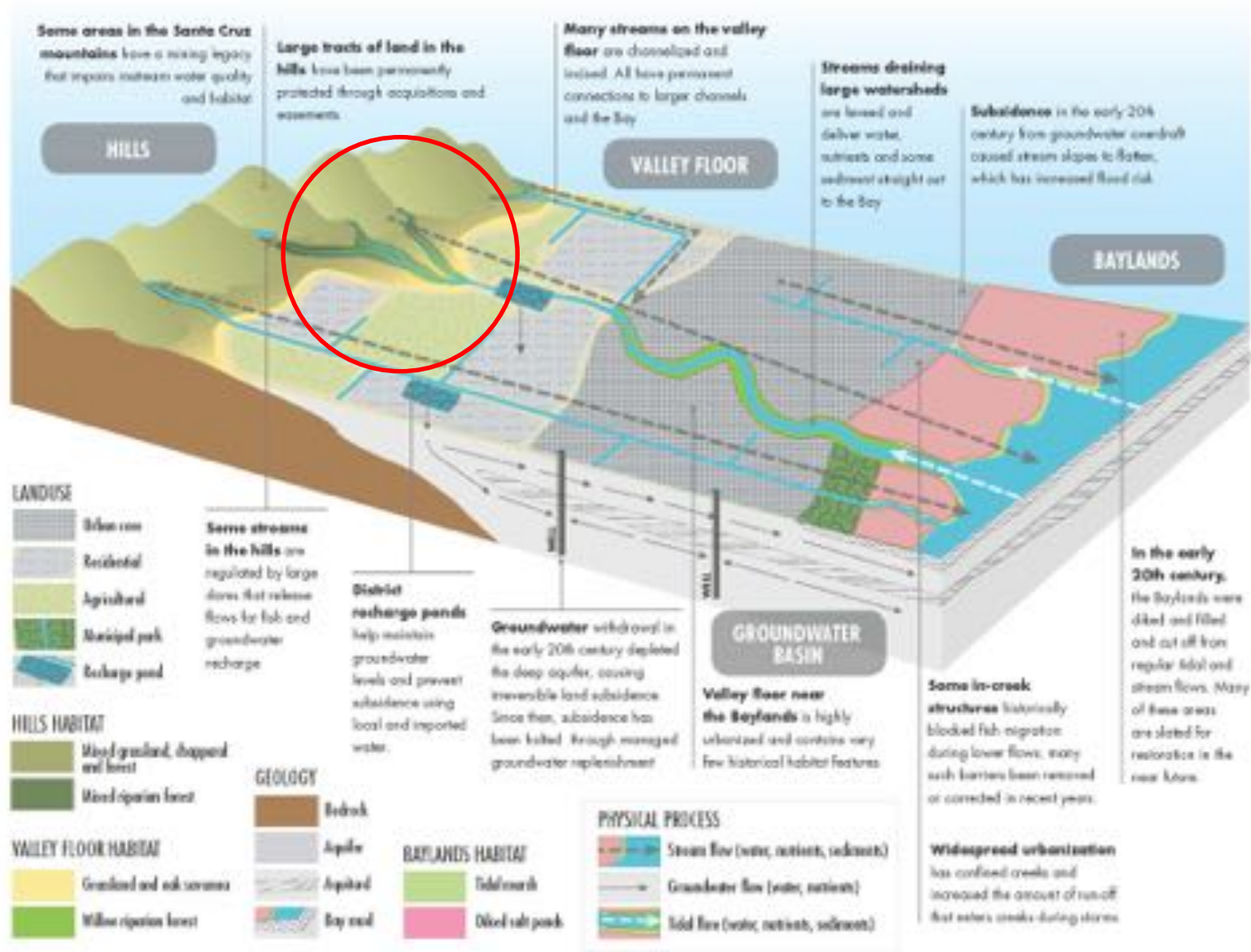
Integrated Watershed-Based Planning



Watershed View and an Integrated Approach



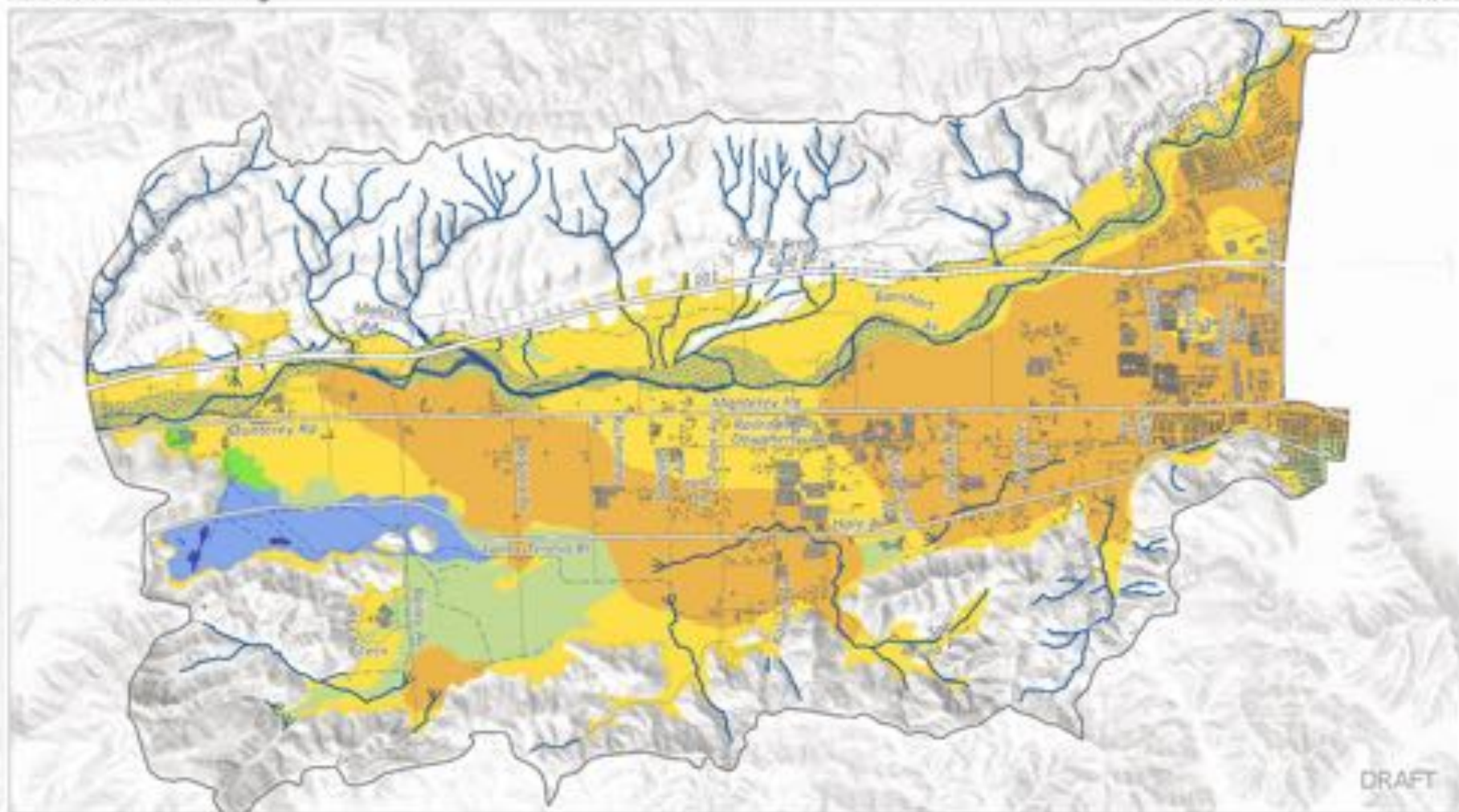
Landscape View



Upper Coyote Creek/Coyote Valley

Biodiversity

Historic Ecology



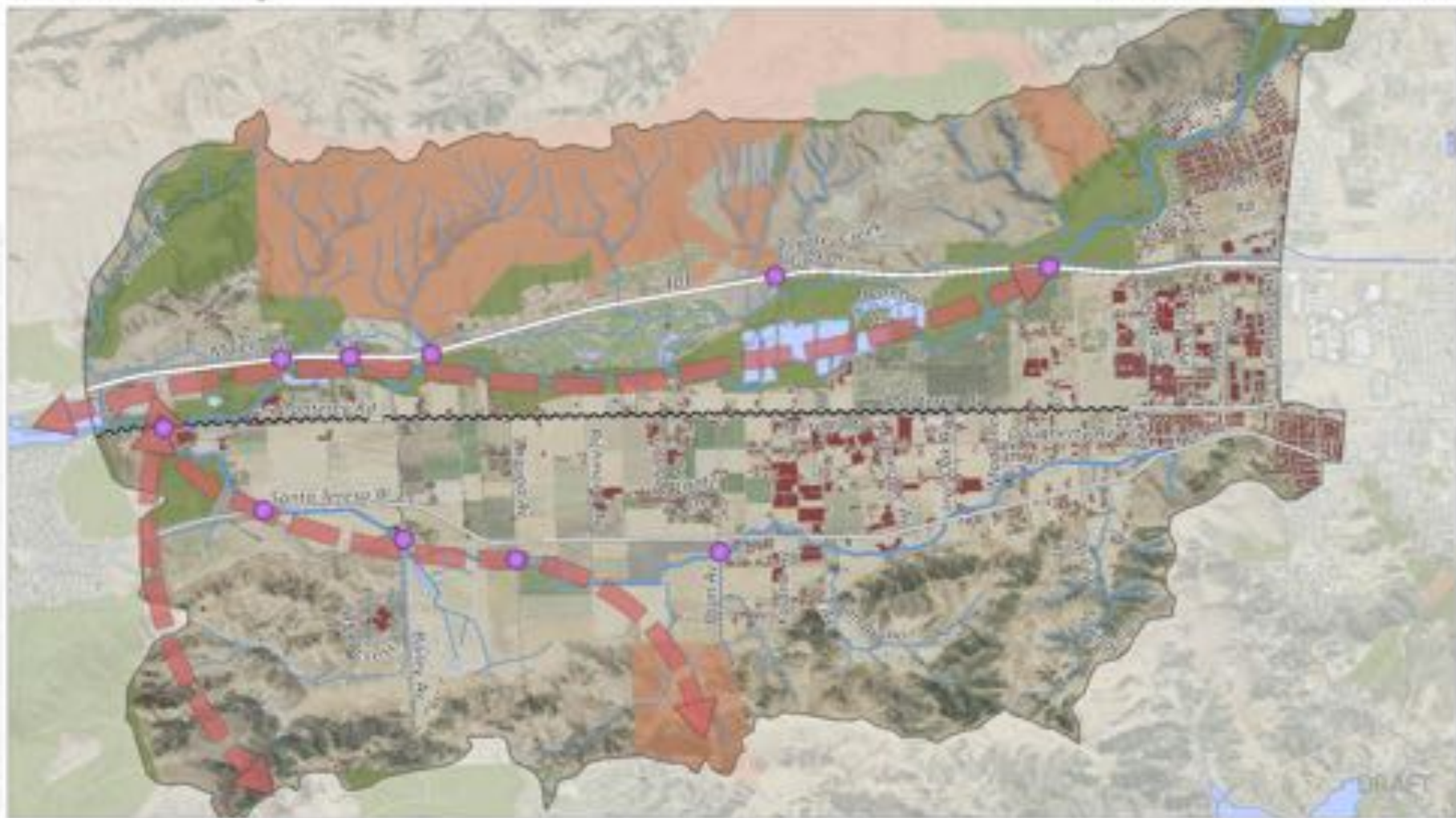
- Historic Creek
- Modern Creek Addition
- Yellow: Oak Savanna
- Orange: Oak Woodland
- Blue: Freshwater Marsh
- Dark Blue: Perennial Pond
- Light Green: Wet Meadow
- Green: Willow Grove
- Light Yellow-Green: Riparian



Upper Coyote Creek/Coyote Valley

Biodiversity

Wildlife Movement



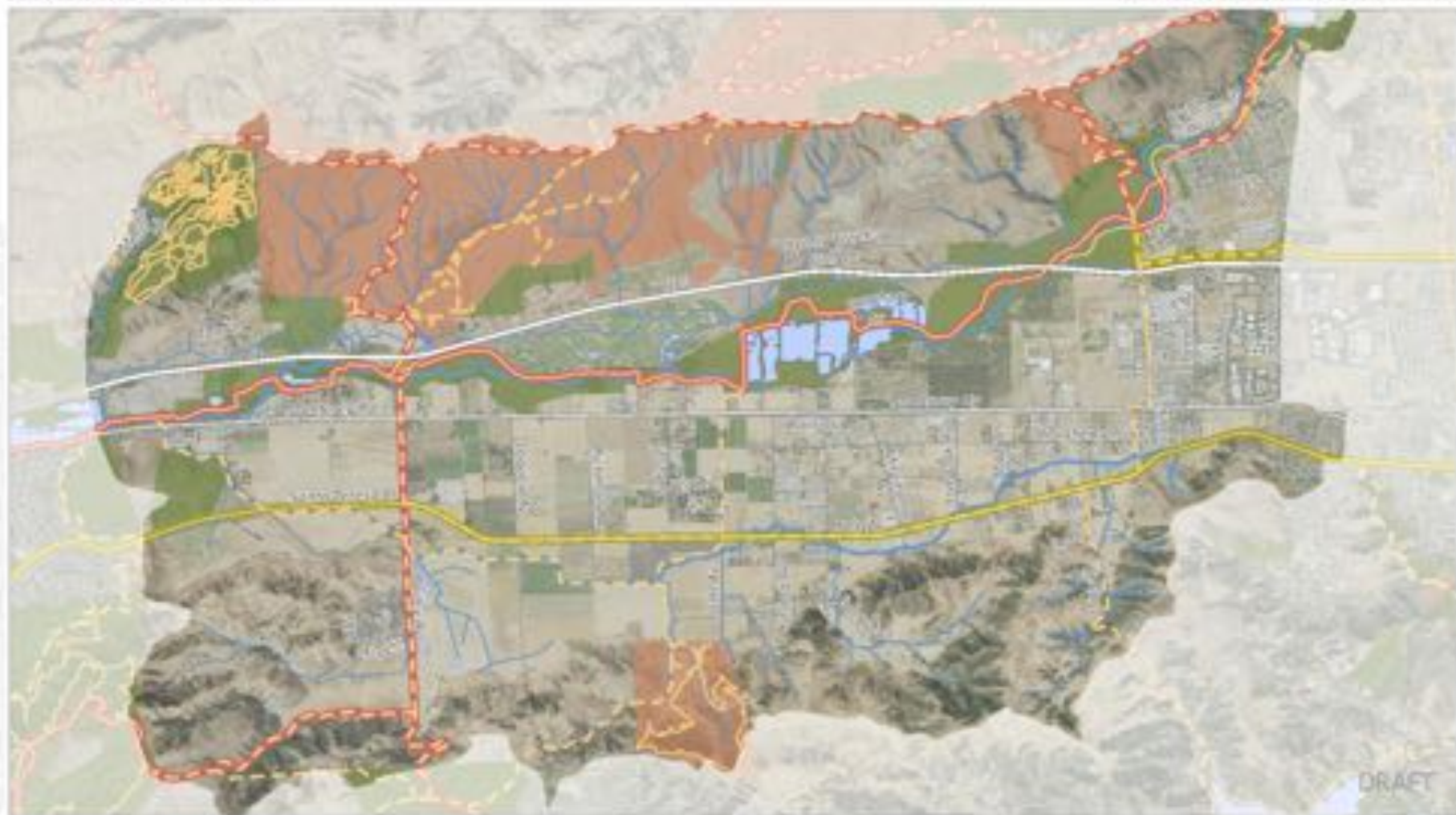
- Confirmed Passage Locations
- Road Median
- Buildings
- OSA Preserves
- Other Protected Open Space



Upper Coyote Creek/Coyote Valley

Recreation

Parklands & Trails



Trail Status

— Incomplete

— Complete

— Bay Area Ridge Trail

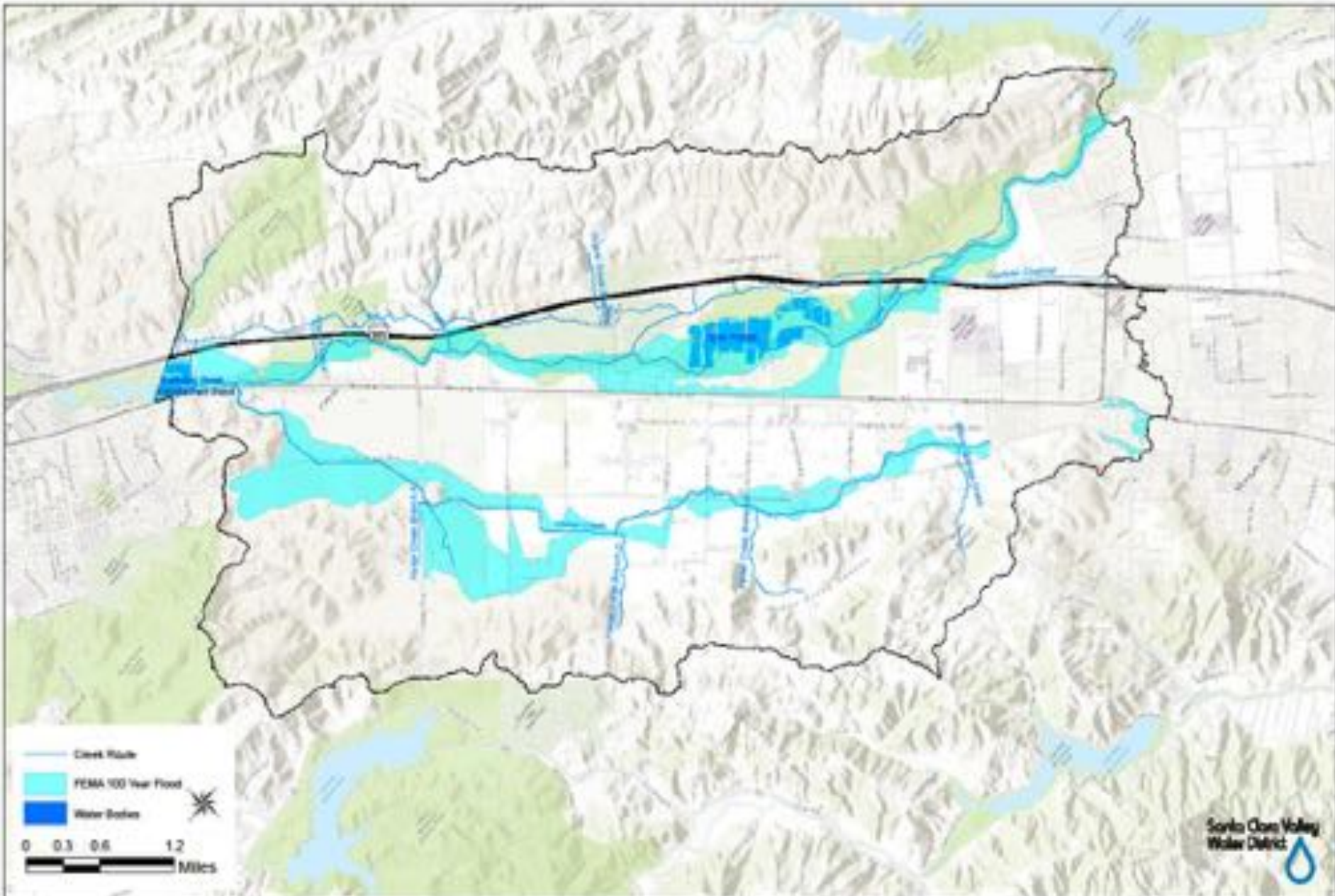
— Juan Bautista De Anza Trail

— OSA Preserves

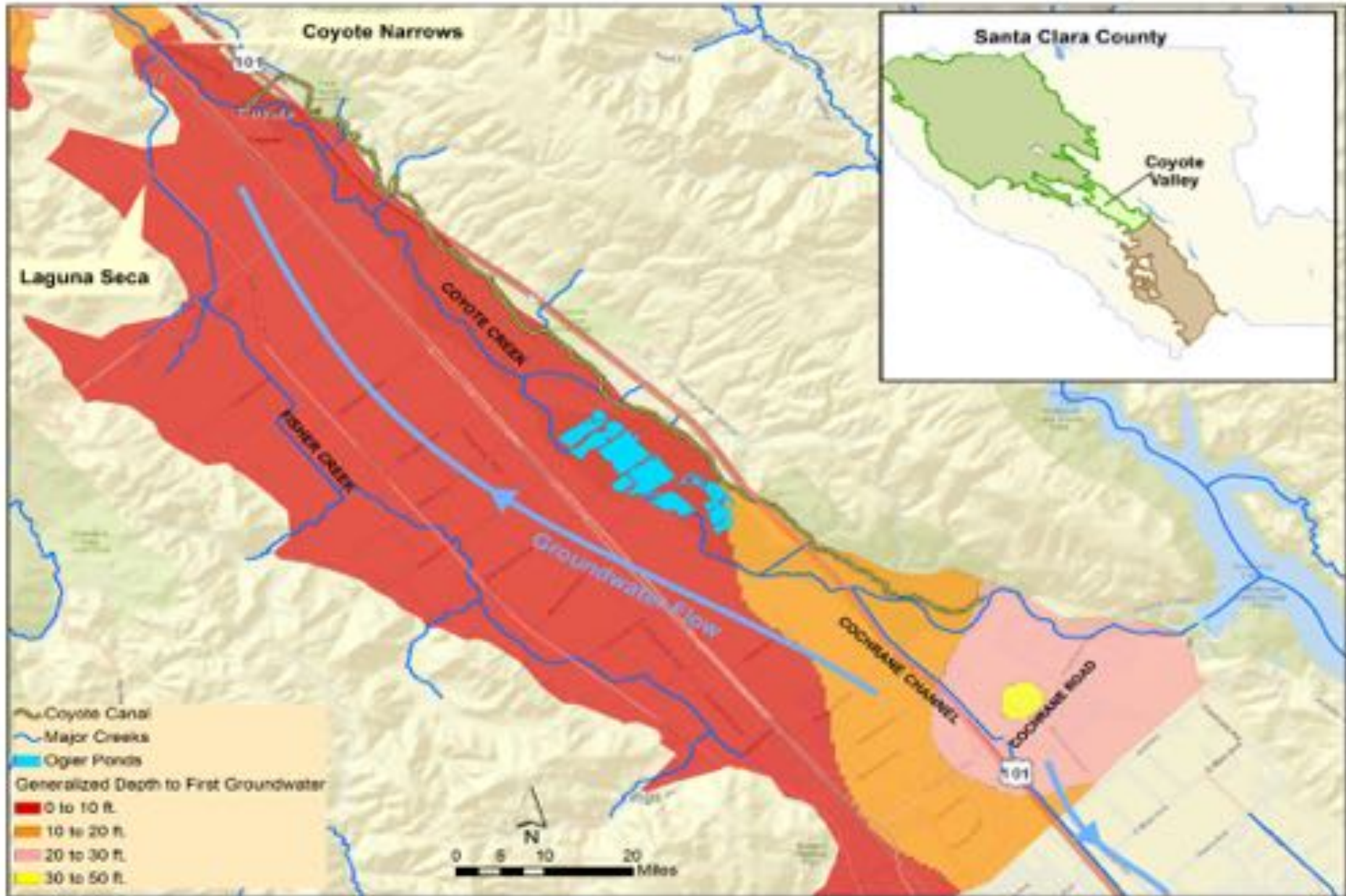
— Other Protected Open Space



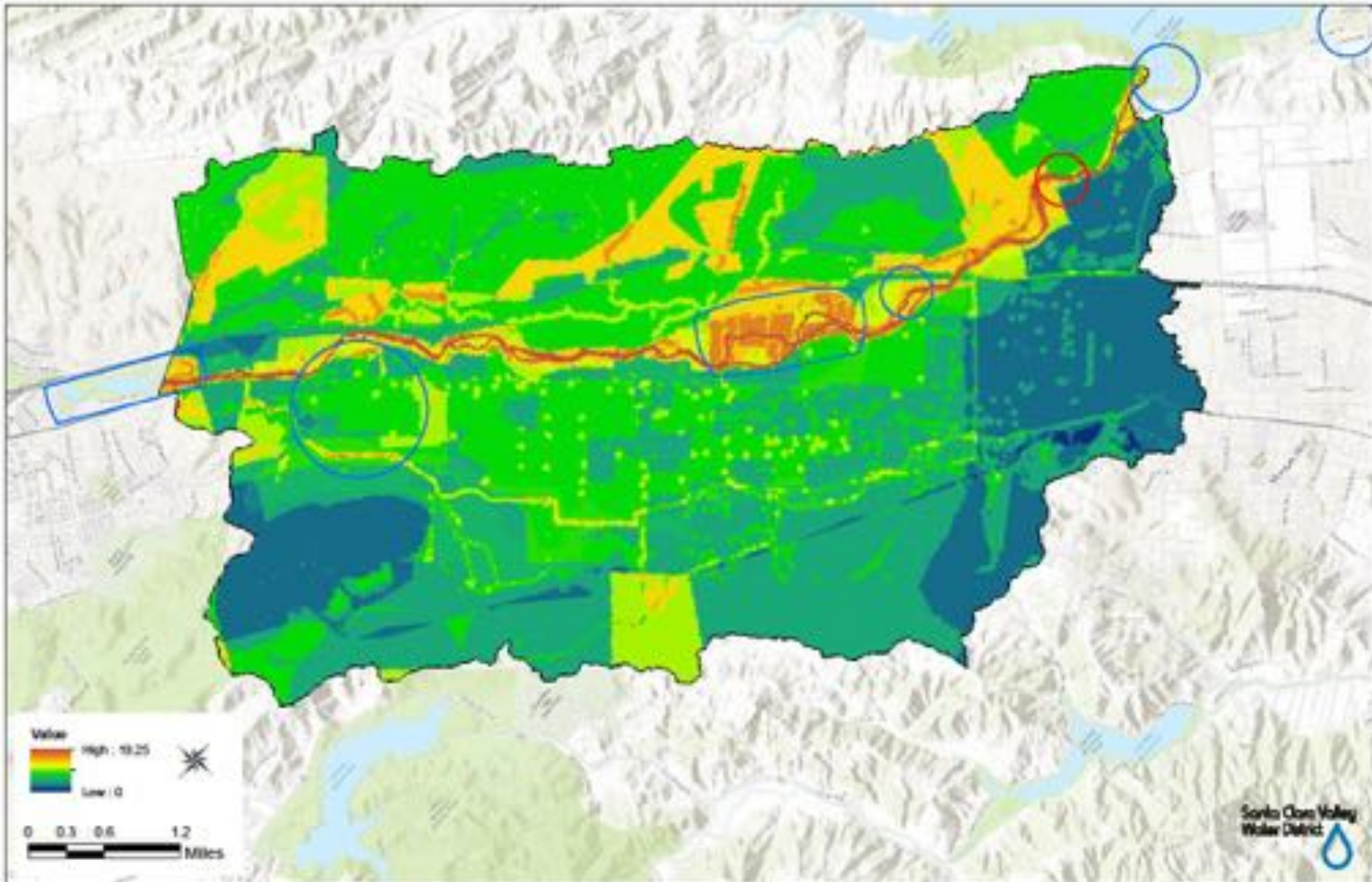
Upper Coyote Creek/Coyote Valley



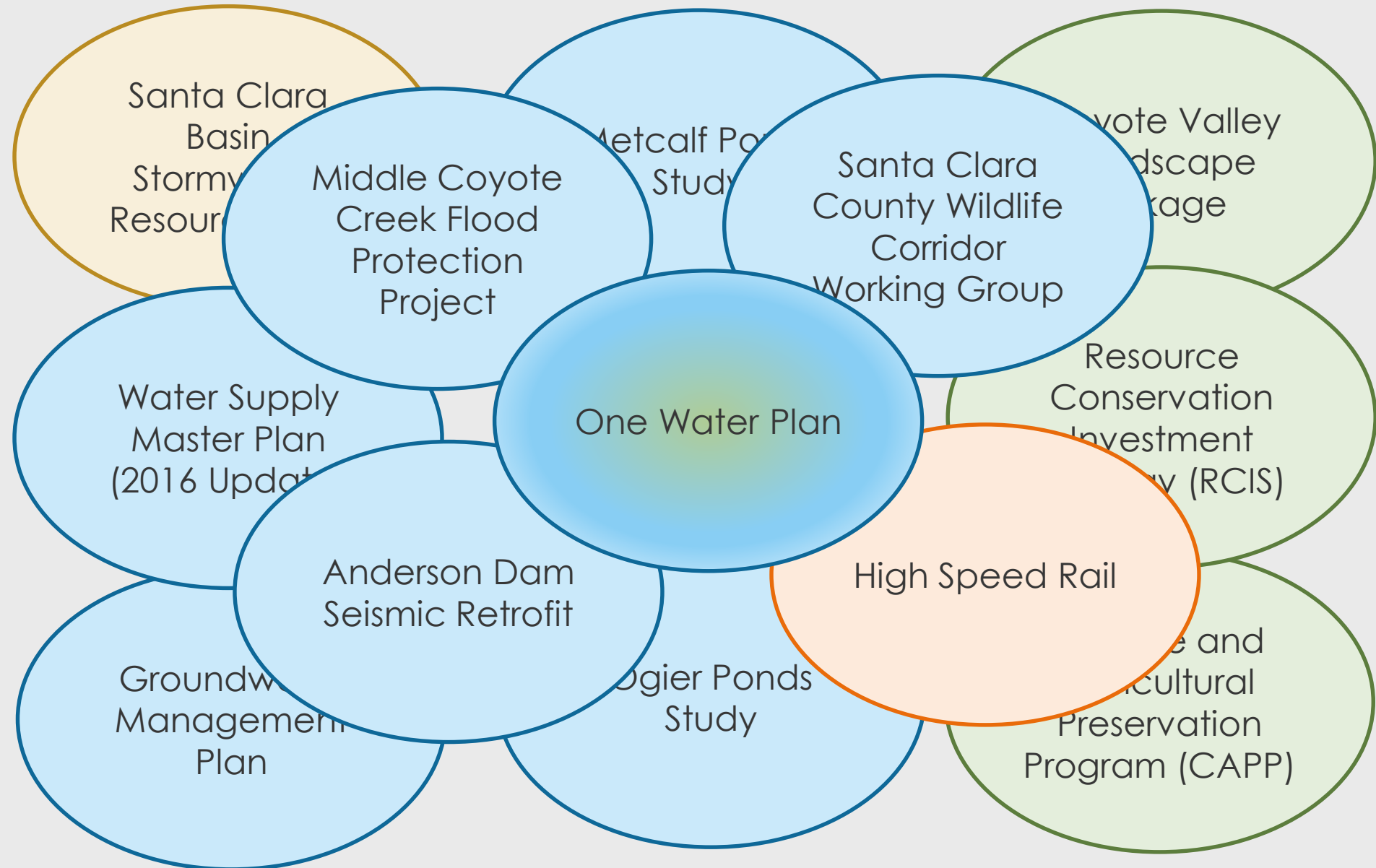
Upper Coyote Creek/Coyote Valley



Coyote Valley Opportunities



Coyote Valley – Relevant Regional Efforts

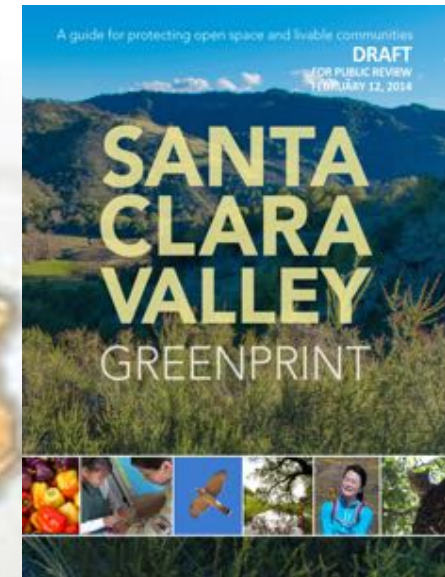




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Figure 13: Conservation Focus Areas

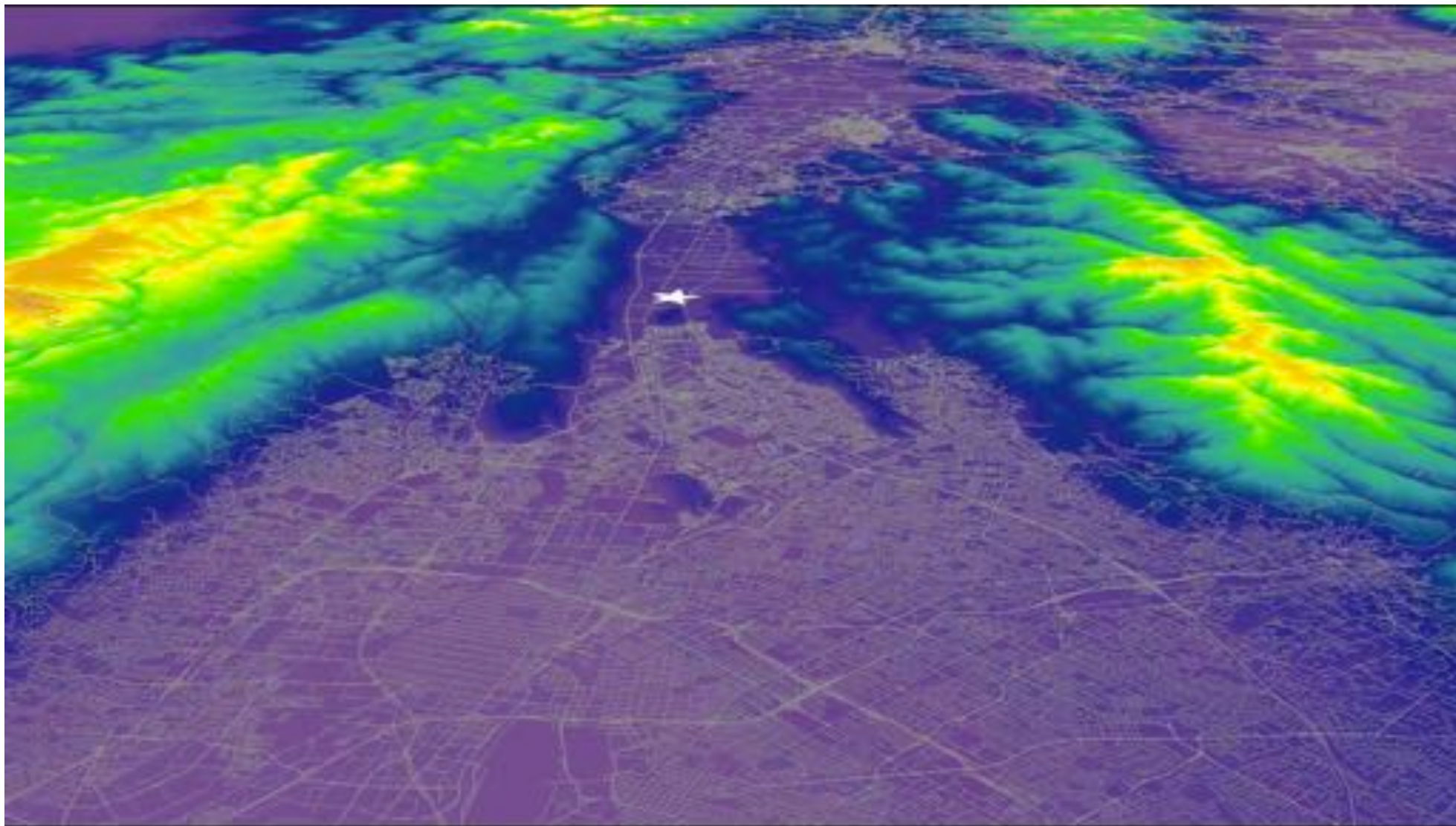


Data sources: CPAD 2013, SCC Parklands Database, FMMP 2010, SCVWD Waterbodies, the Open Space Authority.

Coyote Valley Landscape Linkage: Conservation for a Resilient Future

Coyote Valley





Coyote Valley's ROI

- *7,400 acres connect over one million acres of habitat*
- *\$3.5 billion of public/private investment*

Coyote Valley - An Irreplaceable Natural Resource



Ryan
Phillip
S



Ryan

Laguna Seca

2017



1916

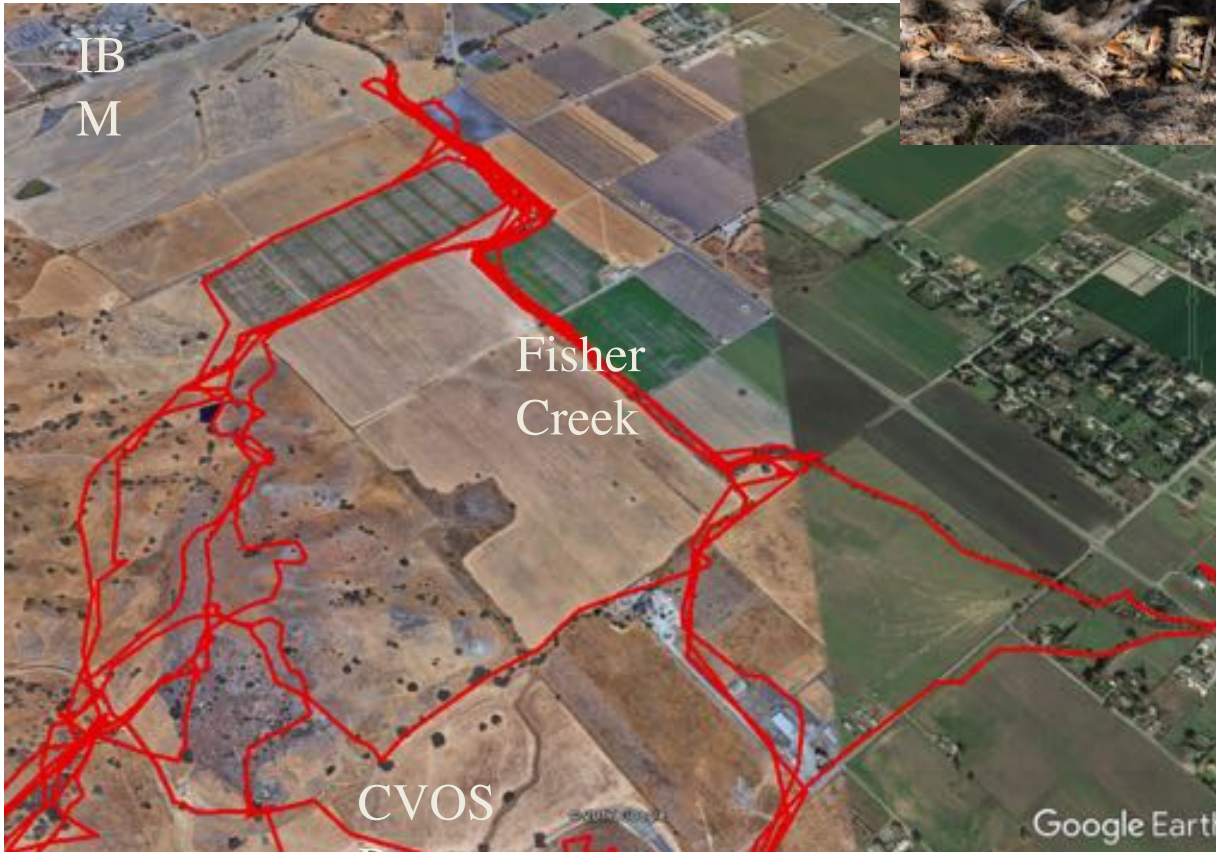


Research Confirms Wildlife Movement Through Coyote Valley

- De Anza College (2012)
- Coyote Valley Linkage Assessment Study, Pathways (2016)
- Ground Squirrel Genetic Research and Occupancy Modeling, Morgan Gray, UC Berkeley (2017)
- Burrowing owl (2017, in progress)
- Tri-colored Blackbird (2017, in progress)
- Bobcat and Gray Fox Radio-collar Study (2017, in progress)



Bobcat B-08 “Madrone” Travels Through Coyote Valley



Landscape Linkage Recommendations

- Work with willing landowners and local government to conserve areas identified as essential for conservation
- Improve existing infrastructure (culverts) and remove barriers to movement (Monterey Highway median and fencing)
- Coordinate with transportation and wildlife agencies to plan, design, implement additional wildlife under and overcrossings (HSR)



Major Barriers – Monterey Highway



Landscape Linkage Recommendations

- Integrate Coyote Valley's water resources and floodplain benefits into the SCVWD OneWater Plan and resiliency planning for City of San Jose
- Secure public and private funding for model restoration projects
- Create a 21st Century Greenbelt with multiple community benefits: Placemaking, compatible agriculture and public trails system

A Green Infrastructure Vision for Coyote Valley: Helping Nature and Humans Adapt to a Changing Climate

- Biodiversity and Plant and Animal Migration
- Stormwater Capture
- Groundwater Recharge
- Groundwater Quality
- Flood Risk Reduction
- Carbon Sequestration
- Food Security
- Climate Stability and Resilience

