

# **e'Muht Mohay**

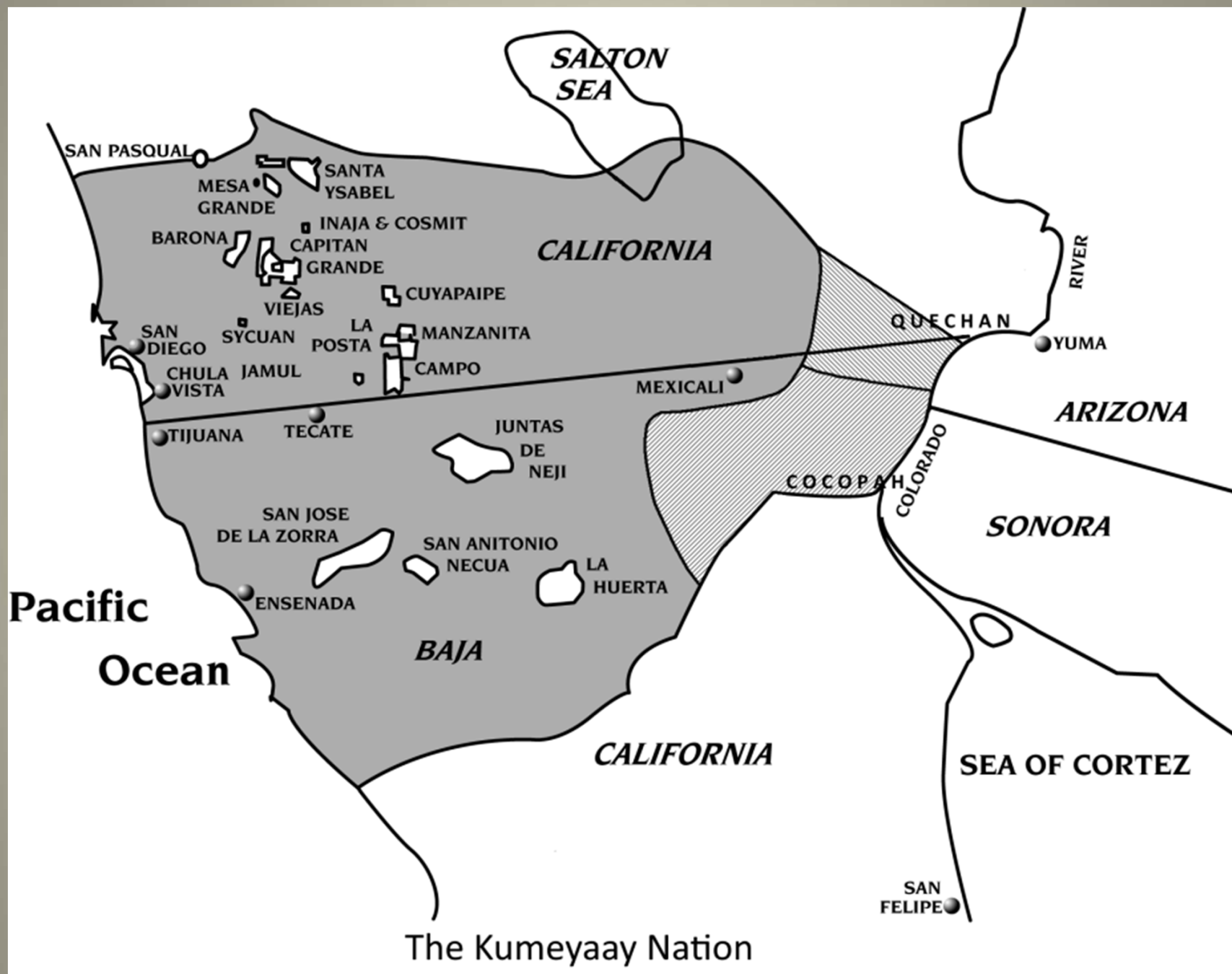
**Love of the Land**

**A Kumeyaay Approach to Conservation**

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# e'Mutt Mohay – Love of the Land

- Kumeyaay lived in a relationship of mutualism with the natural world. In fact, there was no word for Nature as Kumeyaay life was so intertwined that the concept of humans as separate from nature was a foreign concept.
- The right to harvest resources were reserved to Sh'mulls (Clans) but there was also, with that, a responsibility to protect and enhance those resources.
- Burning, wetland enhancement, planting, harvesting were done according to long established principles that protected and increased the capacity of the land.
- Songs, stories, trade, maritime traditions, cosmology, materials science are all integrated parts of this belief.

# Diet c. 1900

- Eastern San Diego County was still very traditional in diet in the early 20<sup>th</sup> Century.
- Government physicians reported no tooth decay, clear eyes, rarely obese.
- Traditional chaparral diet:
  - Bulbs, corms and tubers
  - Seeds, grains, nuts
  - Leaves, stems and flowers
  - Fruits and berries
- Meats were very lean so plants with fats, ie acorns, chia were essential.

# Harvesting and Uses

- Methods of harvesting helped to ensure the productivity of the resource through harvest timing (lunar cycle), pruning, planting, thinning and burning.
- Foods, teas
  - Acorns, pinyon, holly leaf cherry, redberry, manzanita, agave, yucca, cattails, ephedra, elderberry





# Harvesting and Uses

- Medicines/poisons
  - Yerba mansa, willow bark tea, chamise, oak galls
- Tools/weapons/musical instruments/games



# Harvesting and Uses

- Ceremonial/art
  - Datura, sage, tobacco
- Construction/utilitarian (baskets, cradle boards, traps, chordage)
  - Willow, cottonwood, elderberry, tule, juncus, deer grass



# The e'Waa – Adaptive Construction



- Different designs for different ecosystems
- Dome, pyramid, conical, rock crescent, a-frame



# Good Fire

- Fire has been one of the most powerful tools for habitat management for the last 12,000 years.
- Traditional burning has been demonstrated to enhance and increase the carrying capacity in ecosystems.
- The regular use of fire is documented for native peoples throughout present day California.

# Spanish Observations

- Fernando Rivera y Moncada, Governor, Las Californias 1774-1777

“between the San Gabriel and the Santa Clara River on the broad plains there was no fodder for the horses and mules because of the great fires of the Gentiles who burn the fields as soon as they gather up the weeds .....burning is universal although on some occasions it happens that it may be greater or less, according to the winds or calm...”

## Spanish (Cont'd)

- “In all of New California from fronteras northward the gentiles have the custom of burning the brush” Jose Longinos Martinez, 1792
- Father Crespi of the Portola expedition noted on 12 separate occasions examples of burning while traveling from Santa Cruz to San Francisco
- Governor Fages of the Royal Presidio of Monterey prohibited landscape burning.

# Spanish Proclamation

- Mission Santa Barbara, May 31, 1793, Jose Joaquin de Arrillaga, Interim Governor Las Californias

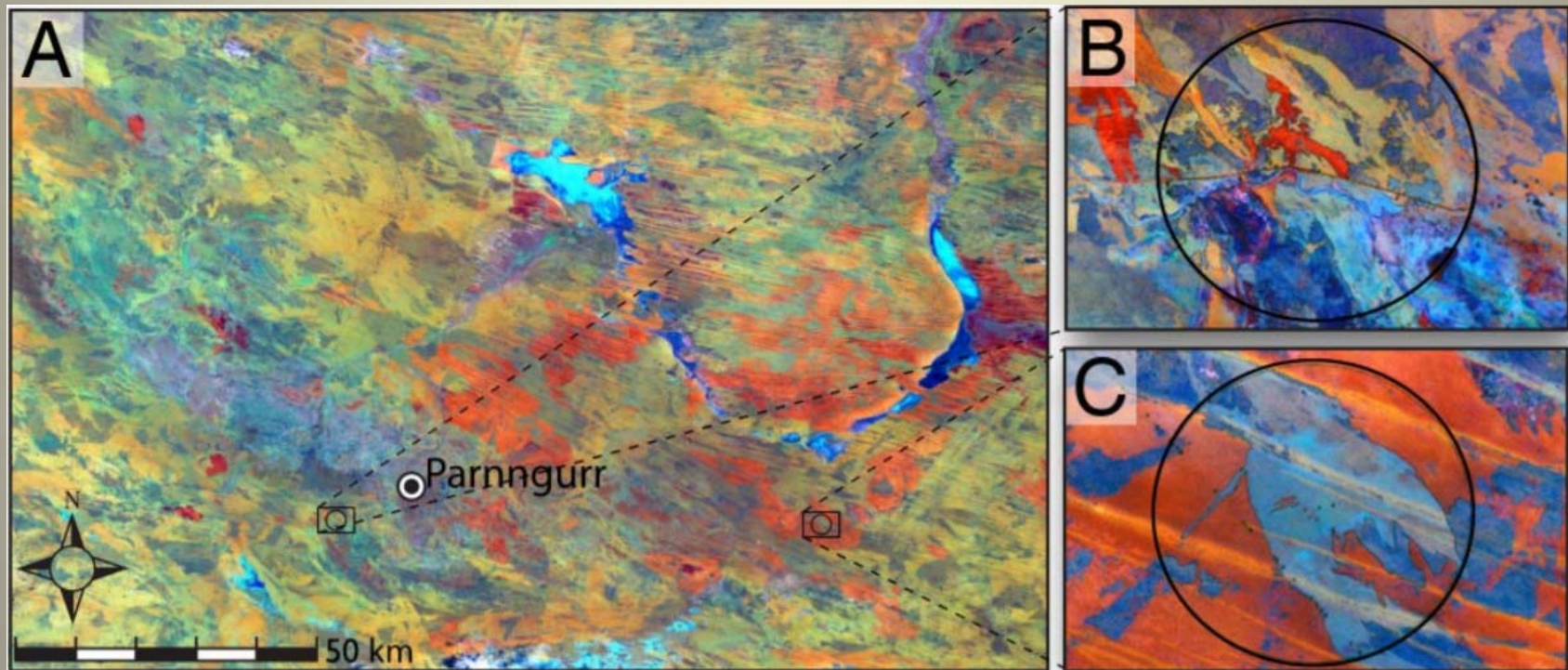
*“With attention to the widespread damage which results to the public from the burning of the fields, customary up to now among both Christian and Gentile Indians in this country, whose childishness has been unduly tolerated, and as a consequence of various complaints that I have had of such abuse, I see myself required to have the foresight to prohibit for the future (availing myself, if it be necessary, ...”*

# Benefits of Burning

- Enhance the growth and production of plants
- Promote growth of basket-weaving and cordage material
- Enhance habitats for game birds and animals
- Control pathogens
- Increase water resources (depending on area)
- Safety, trail maintenance



# Fire Mosaic



# Ecotones and their margins

- The patchwork of burned areas in various stages of revegetation created transitional ecotones.
- Shrubs and grasses that thrived in these zones were: chia, blue wild-rye, sumac, deerbrush, redbud, deer grass.
- Medicinal/Ceremonial plants included: yerba santa, jimsonweed, tobacco

# Ecotone Margins

- Large animals browsed the margins of the ecotones. (deer, bear, mt. sheep)
- Smaller animals used the mosaic as shelter in the brush canopy and food source in the open transitional area.

# Problems of Reintroducing Fire

- Loss of mosaic, excessive heat
- Land Use Planning
- Liability
- Invasives
- The Wildland Urban Interface



# Campo WUI Program





# Water

- Water drainages defined clan territories
- Water management extended to irrigation systems in the desert and riparian enhancement in the streams
- Place names defined by water, ie Jamacha, Japatul, Jacum, Jamul, Jakwisiaay, etc.

# The Importance of Wetlands

- Water supply
- Medicines
- Foods (plants and animals)
- Building materials
- Raw materials for crafts, tools

# Wetlands and U.S. Policy

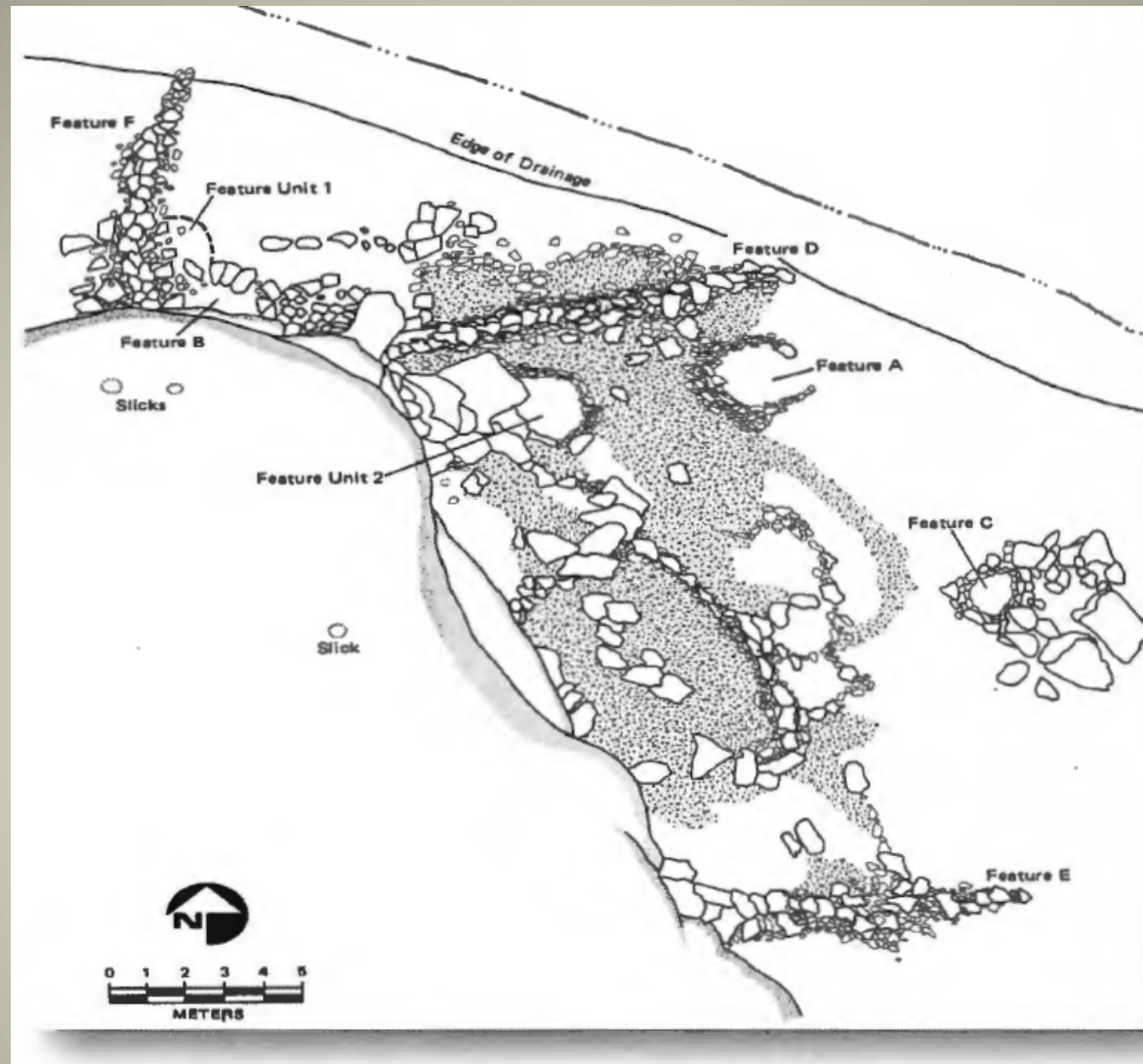
- Wetlands were considered wasted lands and the Bureau of Reclamation was charged with reclaiming these wasted lands.
- The Bureau of Indian Affairs also saw wetlands as a hindrance to their goals of assimilation of Indian people by changing their lifestyle to farming and ranching.
- Wetlands were intentionally drained to create plowable lands. The result in Kumeyaay lands was the gradual lowering of the water table, erosion of the fragile soils and desertification.



# Rock Drops

- Noted by Historian Harry W. Crosby while traveling the Baja trails.
- Recorded by priests at the first Jesuit Mission at Loreto in Baja California.
- Documented by Dr. Florence Shipek in her ethnographical work on the Kumeyaay.
- Noted by historian Richard Carrico
- Part of the oral history and directly observed by present day Kumeyaay.
- Called Zuni Dams in parts of New Mexico, also considered analogous to beaver dams in other ecosystems.





**Possible Water Diversion Features at Piedras Pintadas  
(Carrico and Kyle 1984)**

# Early Erosion Problem



- Years of grazing left the valley barren.































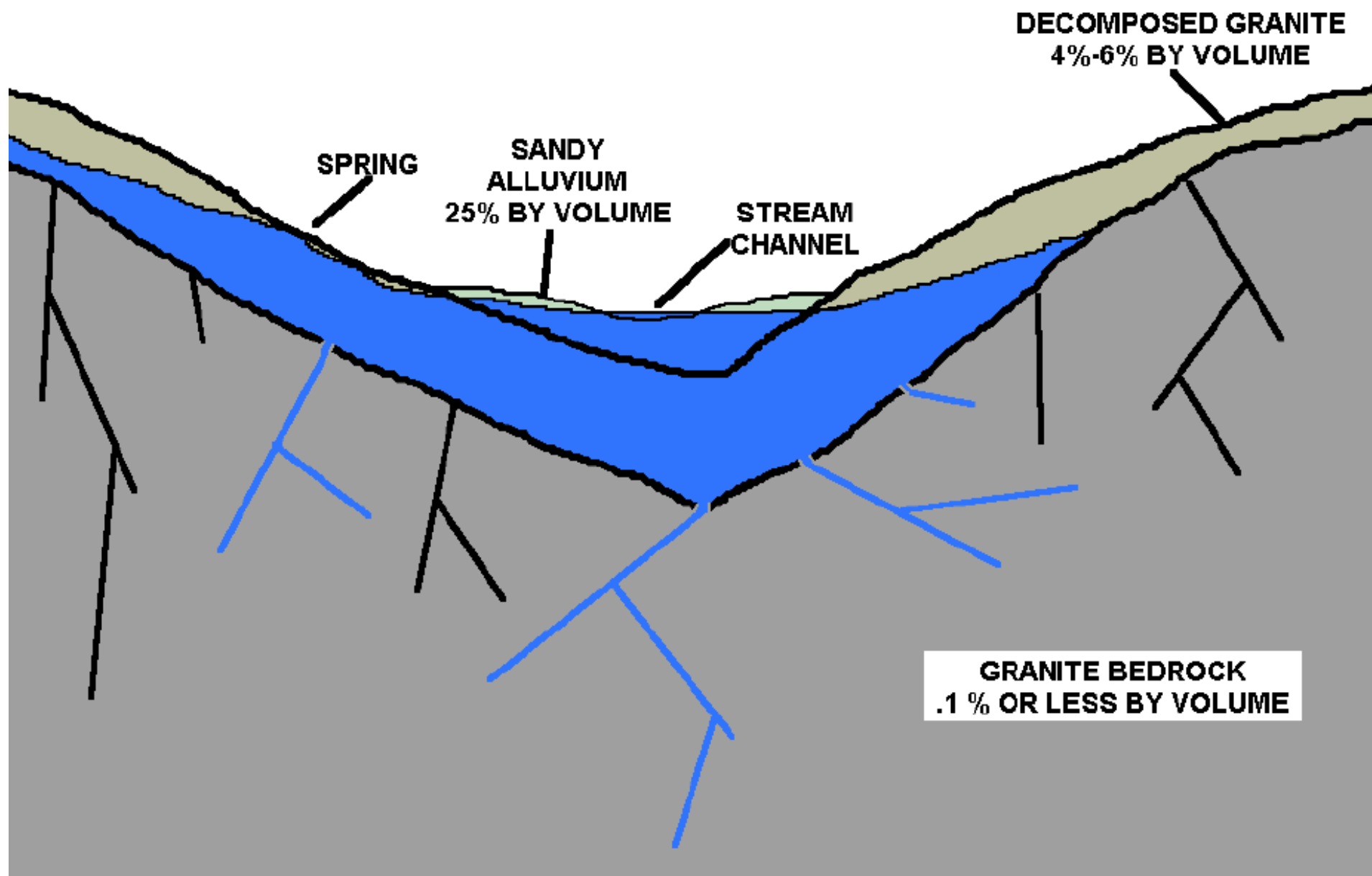


A geological cross-section diagram of a valley. The top layer is a light green area labeled "SANDY ALLUVIUM". Below this is a tan-colored layer labeled "DECOMPOSED BEDROCK". The base of the diagram is a grey area labeled "GRANITE BEDROCK". The granite bedrock is filled with numerous black lines representing fractures or faults. A small body of water is shown in the center of the valley, within the sandy alluvium layer.

**SANDY  
ALLUVIUM**

**DECOMPOSED  
BEDROCK**

**GRANITE  
BEDROCK**



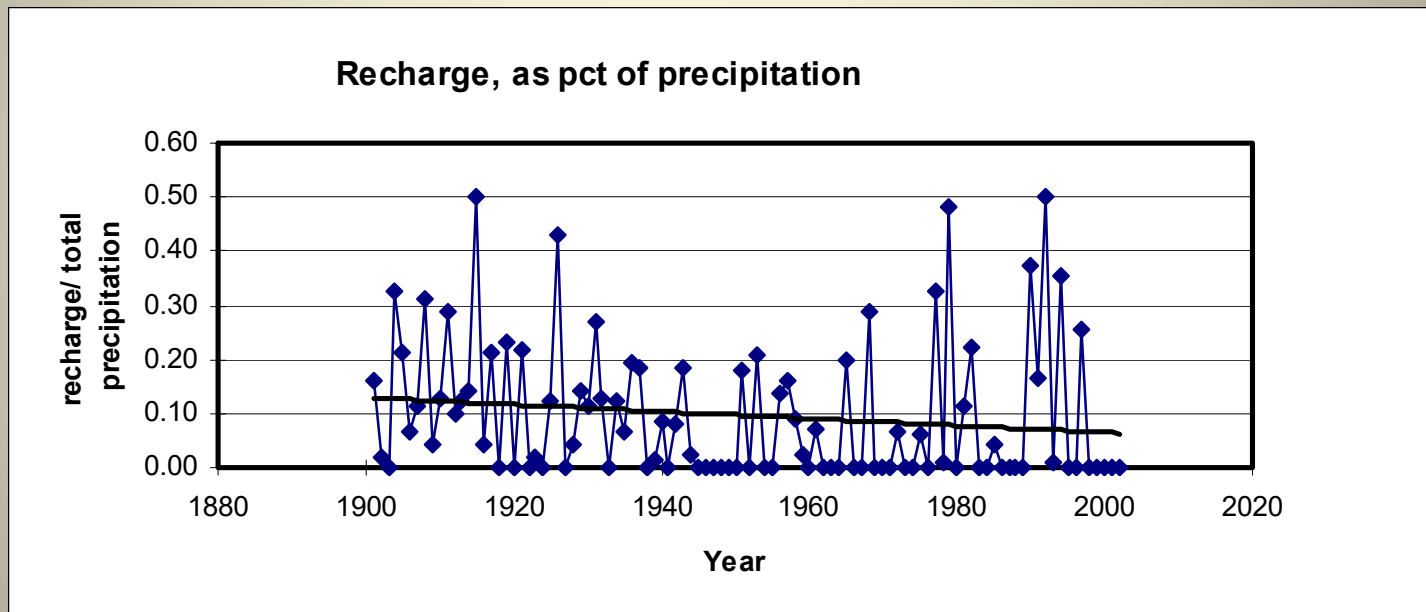
# The County Groundwater Model

## Basic Assumptions

SM cap.		3.50	inches		
runoff	0.3	30	%		
storage	0.050	5.00	percent eff porosity		
aq area	350.000		acres		
aq_depth	30.000		feet		
capacity	262.50		Ac-ft (50% allowed)		
ext. rate	25.00	15.50	Acft/yr or gpm (24 hr/day)		
min vol	97.65		driest condition occurred 1976		

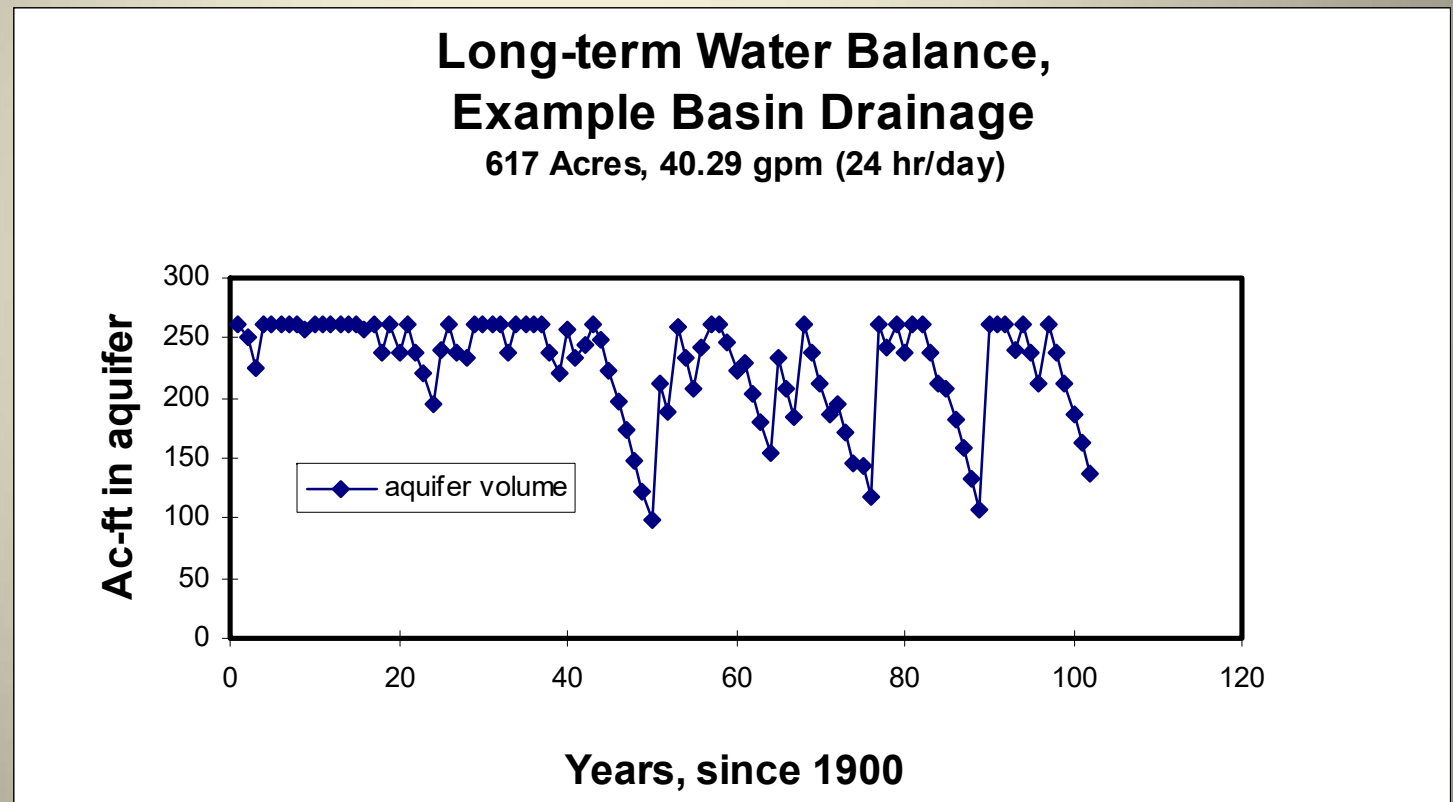
# Long Term Rainfall Trends

## Results



# Groundwater Capacity Model

## Results



# Diabold Creek Results

- Over 600 acre-feet of additional storage (enough for 1200 homes for a year)
- Increased riparian habitat
- Stabilized stream flow
- Stopped erosion
- Improved water quality
- Supply food, medicines & building materials
- Resurrect craft industries

# Tipping Points

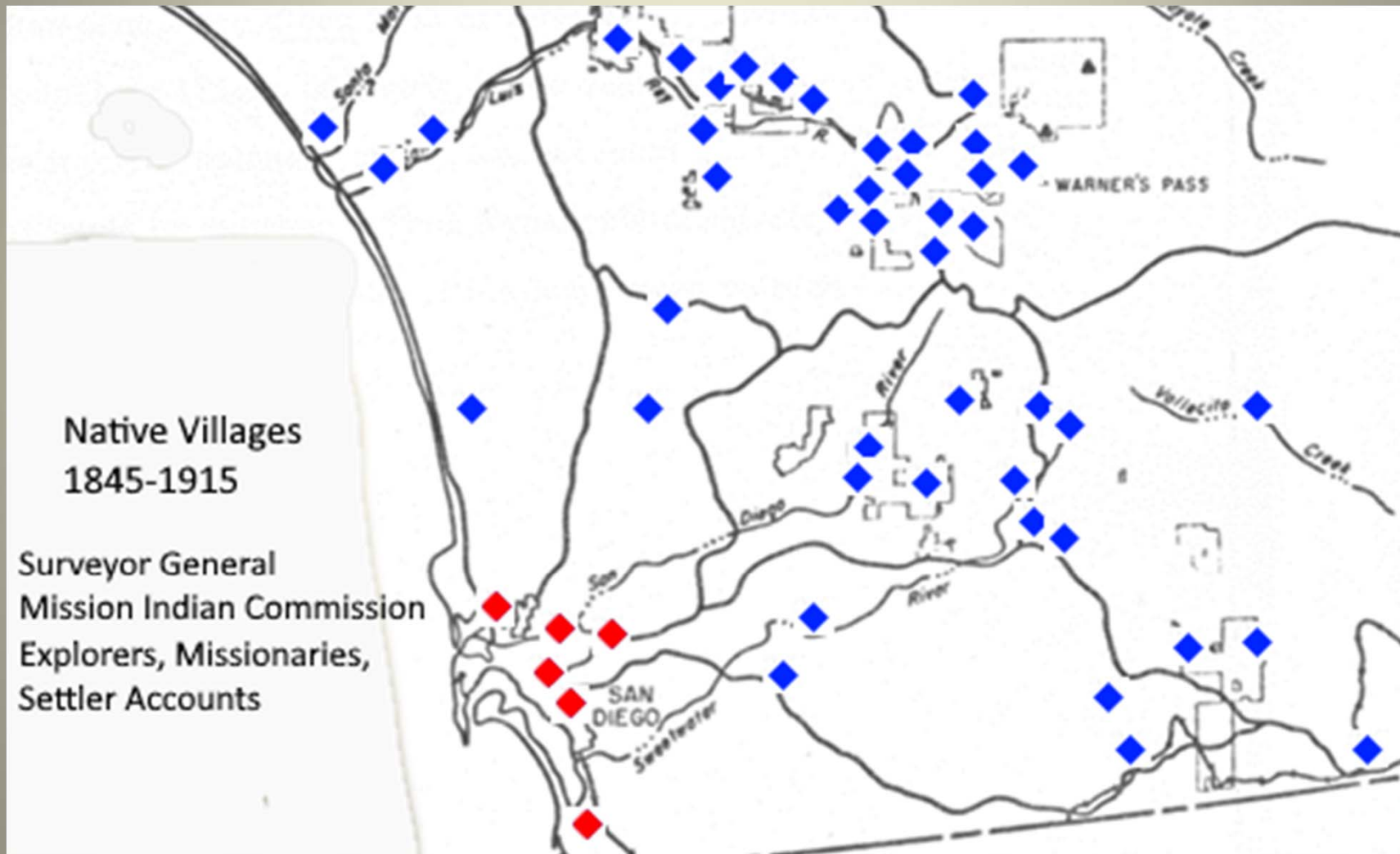
- Desertification, climate change
- Water law in California
- Invasives
- Humans as a part of the ecosystem



# California State Water Resources Control Board

- In 2017, the State Water Resources Control Board identified and described beneficial uses unique to California Native American Tribes, in addition to subsistence fishing. Resolution 2017-0027
- In March, 2020, the San Diego Regional Water Quality Control Board adopted the Tribal Beneficial Use category in their plan. Resolution R9-2020-0036
- Do date, no specific standards or designations have been made.

# Indian Villages Were Widespread into the 20<sup>th</sup> Century



# Tribal Beneficial Use

- The establishment of Tribal Beneficial Use standards will allow Indian Nations the opportunity to protect our citizens and patrons of our arts from potential harm.
- This process will also provide an opportunity to work more closely and collaborate with the Regional Board on water quality issues.
- The benefits of closer collaboration could even extend into the reintroduction of traditional techniques to enhance and protect mitigation lands.

# We Continue to Harvest and Use Resources from our Traditional Lands







# A Dynamic Ecosystem

- The Tribal traditional use areas can vary over time.
- Fire, drought, floods and other factors can shift the location, quantity or quality of traditional resources.
- The Cultural Use (CUL) designation should be the baseline standard for all waters of the region. (Approved by SCTCA on 8/17/21)



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