



California Tribal Perspectives on Climate Change Resiliency

By Dr. Donna Miranda-Begay

Tübatulabal/Yokut/Paiute/Navajo – Tribal Affiliation



March 13-15, 2023; Monterey, California

Personal Background

Home is “yi-tii-en-ep” – where the flat water lives.
Tübatulabal Tribal Allotment (160 acres) Weldon, CA



Where is Weldon, CA?

Weldon is located about 60 miles northeast of Bakersfield and 5 hours southeast of Monterey

Monterey, California

Add destination

Leave now ▾ Options

Send directions to your phone

via US-101 N **4 hr 54 min**
Fastest route now, avoids road closures on Pearl St 278 miles

Details

Layers



March 13-15, 2023; Monterey, California

Overview

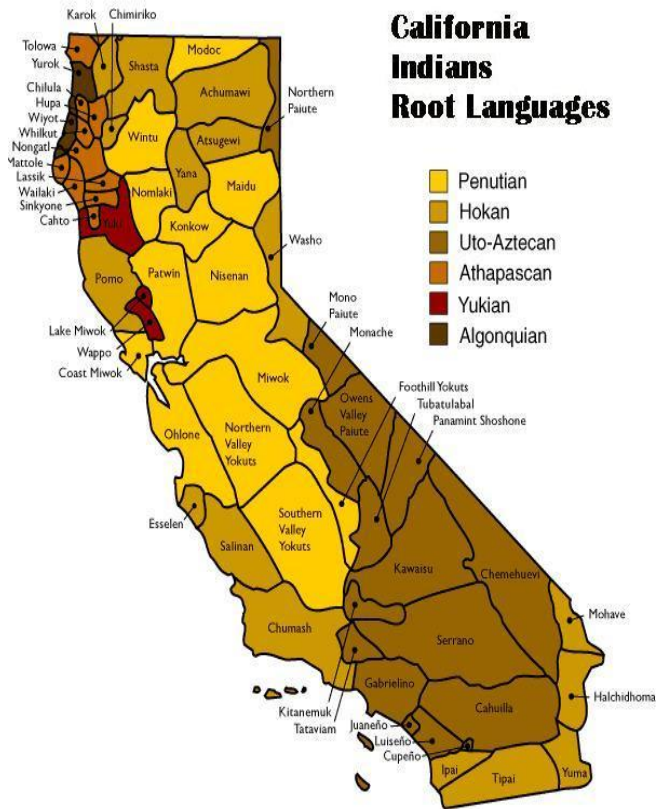
California Tribal Perspectives on Climate Change Resiliency

- Past and Present location of CA Native American Tribes
- How GIS was used to better inform decision-making and/or increase communication more effectively
- Recommended public policy changes to assist California Native American Tribes with Climate Change Resiliency

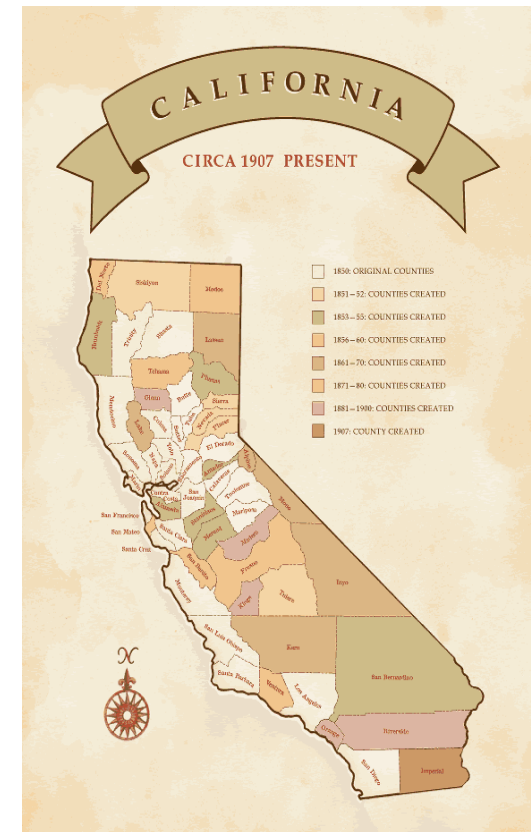


March 13-15, 2023; Monterey, California

Historically, California Indians have not been included in development of California and Local Government “Blue Print” plans. It is important to note that the current location of many California Tribes, may not be central to their traditional territories.



1850 CA Counties



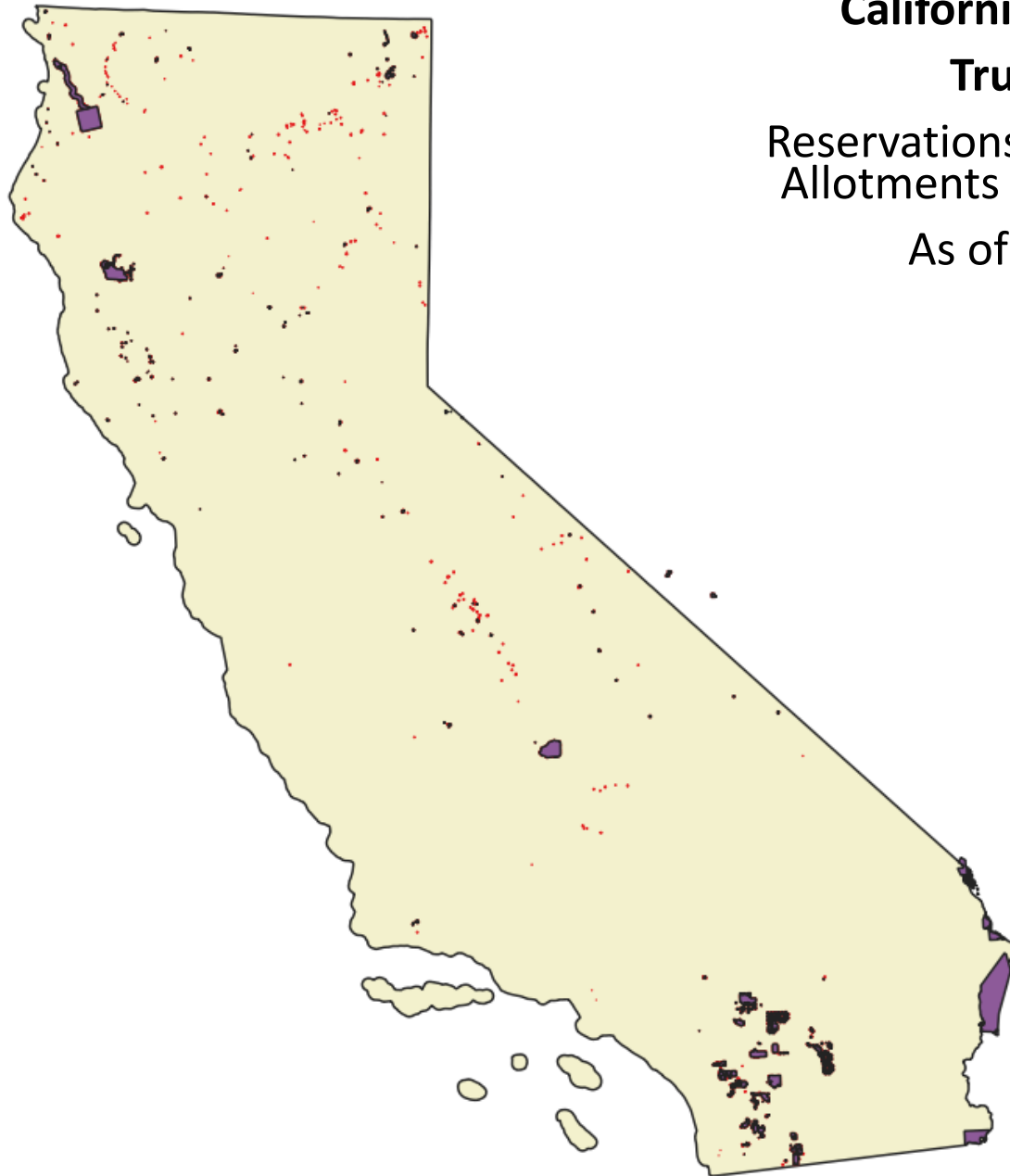
1907 and Present CA Counties

California Tribal Lands

Trust Lands

Reservations, Rancherias, and
Allotments (Public Domains)

As of June 2021



California Environmental Justice (EJ) – Tribal Perspective

- Prior to 1980s – California State “limited” outreach to Tribes in policy and program planning and development (i.e., water, transportation, land management)
- U.S. Environmental Protection Agency (Established in 1970)
- California Native American Heritage Commission (Established in 1977)
- California Environmental Protection Agency (Established in 1991)
- California Agencies and Departments – Tribal Liaisons (1990s)
- SB 18 (Burton, 2004) – Protection of Sacred Lands
- CA Tribal Water Summit (CA Dept. of Water Resources 2004)
- California Governor’s Office – Tribal Affairs Office (2010)
- Executive Order – B-10-11 Working with CA Tribes (2011)
- AB 52 (Gatto, 2014) – CEQA Enhancement Act

U.S. BIA GIS Data used by State government (2008)

CA Dept. of Water Resources work with CA Native American Tribes to create updated CA Native American Lands map (2013)

State Water Resources Control Board – Regional Map has Tribal Lands (2013)

CA GIS Council – open invite for Tribal GIS (2018) / Tribal Workgroup

CA Water Commission – Tribal input to Climate Change Report update 2023

Governor’s Office of Planning and Research – Tribal input to Climate Change Report update 2023

CA GIA – Tribal Focus Group or Committee? 2023?



SWRCB – added CA Tribal Lands mapping data to their Regional Map (2013) – including allotment lands (Public Domain)

SWRCB TRIBAL LIAISON: (916) 341-5501
 WATER QUALITY INFORMATION: (916) 341-5455
 WATER RIGHTS INFORMATION: (916) 341-5300
 FINANCIAL ASSISTANCE INFORMATION: (916) 341-5700
 DRINKING WATER INFORMATION: (916) 449-5577

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS

- NORTH COAST REGION (1)**
 www.waterboards.ca.gov/northcoast
 Tel: (707) 576-2230
 - SAN FRANCISCO BAY REGION (2)**
 www.waterboards.ca.gov/sanfranciscobay
 Tel: (510) 622-2300
 - CENTRAL COAST REGION (3)**
 www.waterboards.ca.gov/centralcoast
 Tel: (805) 549-3147
 - LOS ANGELES REGION (4)**
 www.waterboards.ca.gov/losangeles
 Tel: (213) 576-6600
 - CENTRAL VALLEY REGION (5S)**
 www.waterboards.ca.gov/centralvalley
 Tel: (916) 464-3291
 - FRESNO BRANCH (5F)**
 Tel: (559) 445-5116
 - REDDING BRANCH (SR)**
 Tel: (530) 224-4845
 - LAHONTAN REGION (6SLT)**
 www.waterboards.ca.gov/lahontan
 Tel: (530) 542-5400
 - VICTORVILLE BRANCH (6V)**
 Tel: (760) 241-6583
 - COLORADO RIVER BASIN REGION (7)**
 www.waterboards.ca.gov/coloradoriver
 Tel: (760) 346-7491
 - SANTA ANA REGION (8)**
 www.waterboards.ca.gov/santaana
 Tel: (951) 782-4130
 - SAN DIEGO REGION (9)**
 www.waterboards.ca.gov/sandiego
 Tel: (619) 516-1990
 - SANTA ANA REGION (8)**
 www.waterboards.ca.gov/santaana
 Tel: (951) 782-4130
 - SAN DIEGO REGION (9)**
 www.waterboards.ca.gov/sandiego
 Tel: (619) 516-1990
- Updated: 4/25/2017

California Indian Tribal Homelands and Trust Lands

- Indian land currently held in Trust by the United States Government
- Historical location of Indian land which was once held in Trust for a Terminated Tribe and/or the location of a landless Federally Recognized Tribe
- Indian land currently held in Trust by the United States Government and known as a Public Domain Allotment
- Indian land currently held in Trust by the United States Government but resides in the Nevada or Arizona Jurisdiction

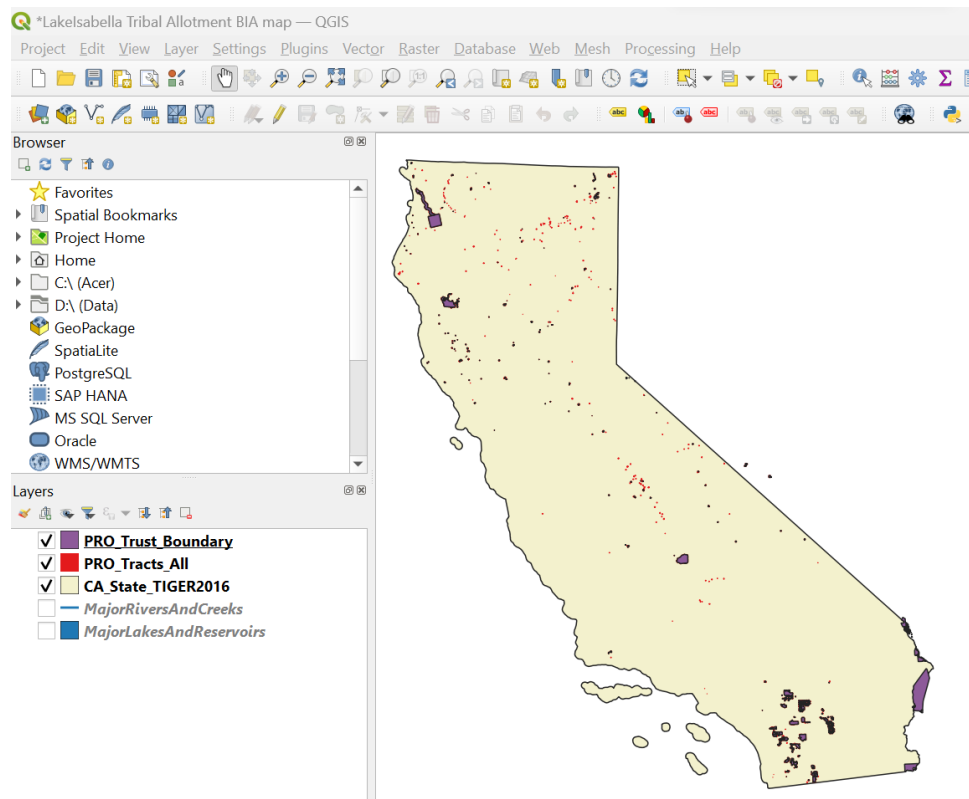
Miles 0 25 50 100 200



Getting CA Tribal Lands onto Federal/State/Local Government maps

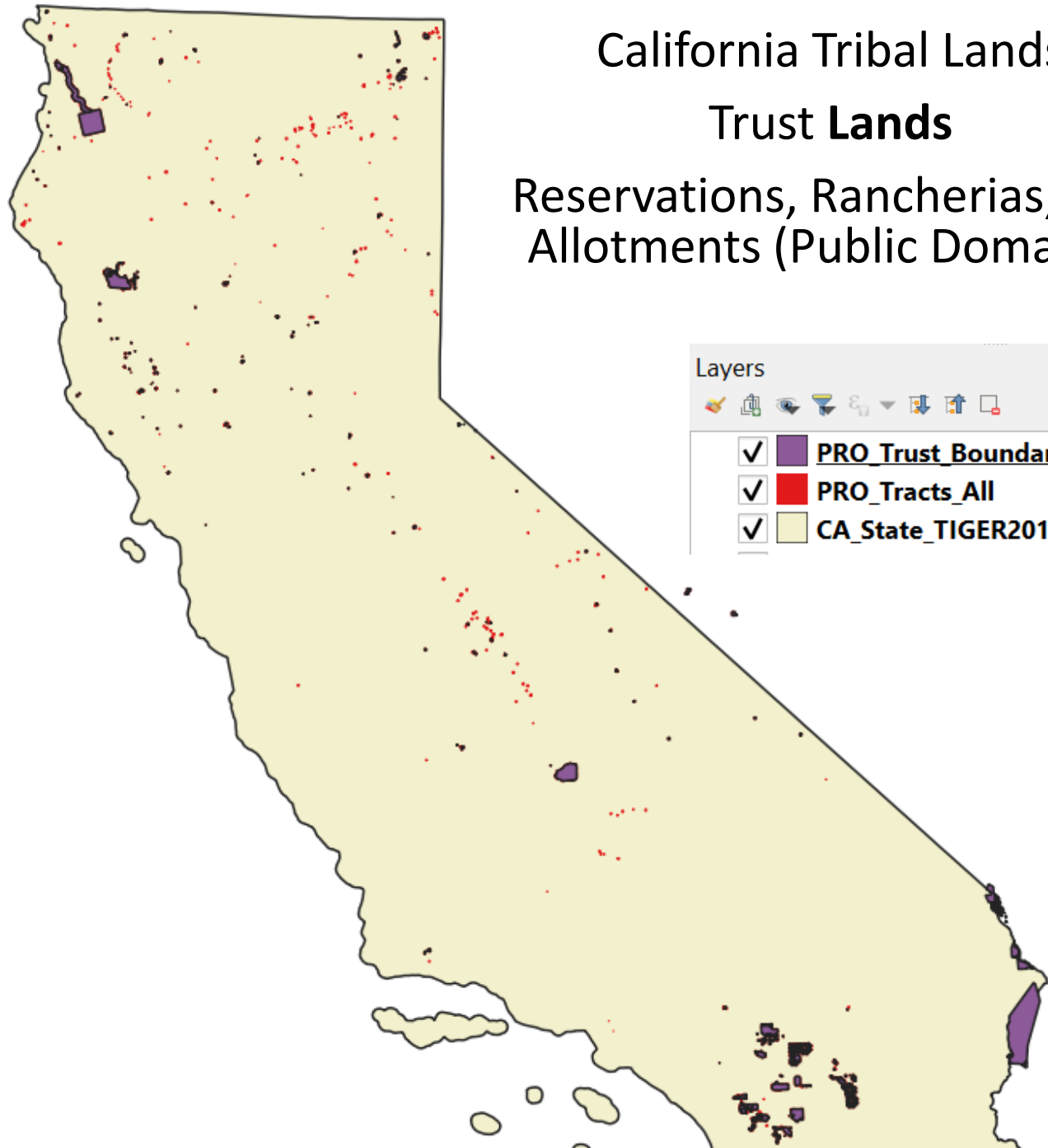
U.S. Department of Interior - Bureau of Indian Affairs
Pacific Region - GIS Data for California

https://www.bia.gov/sites/default/files/dup/assets/bia/pacreg/PRO_Indian_Lands.gdb.zip



California Tribal Lands Trust Lands

Reservations, Rancherias, and
Allotments (Public Domains)



U.S. Drought Monitor National Drought Mitigation Center University of Nebraska-Lincoln

[Map Export Tool | U.S. Drought Monitor \(unl.edu\)](#)

U.S. Drought Monitor

[Current Map](#)

[Maps](#)

[Data](#)

[Summary](#)

[About](#)

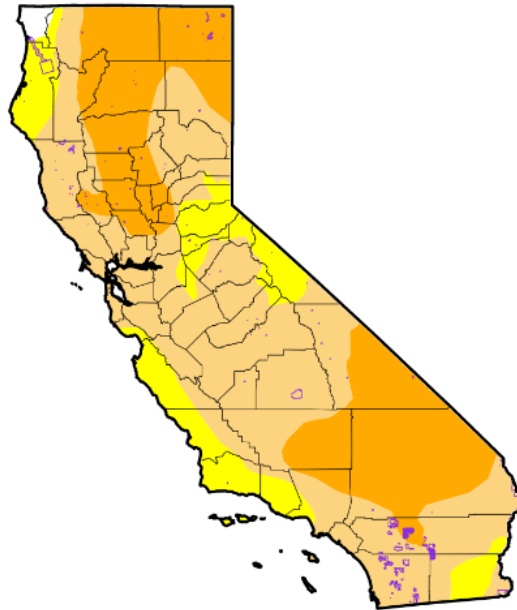
[Conditions & Outlooks](#)

[En Español](#)

[NADM](#)

Map Export Tool

[Home](#) > [Maps](#) > [Map Export Tool](#)

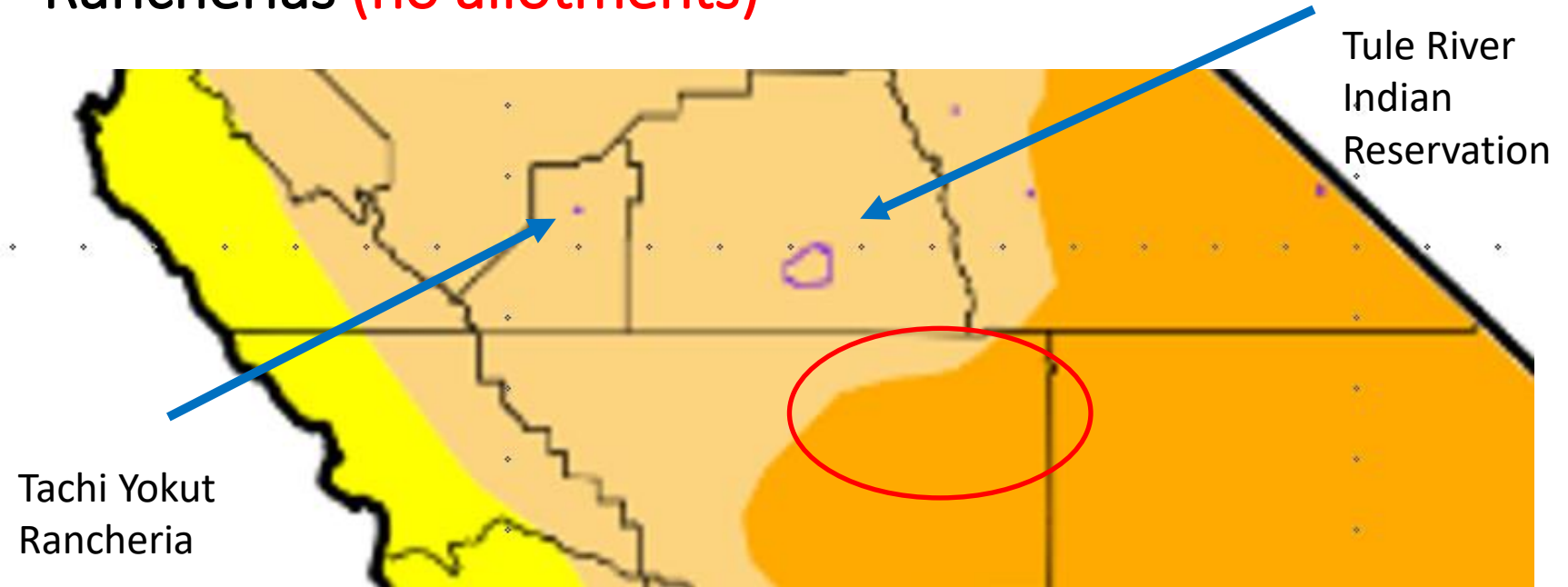


- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- New Hampshire
- New Jersey
- New Mexico
- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Puerto Rico
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming

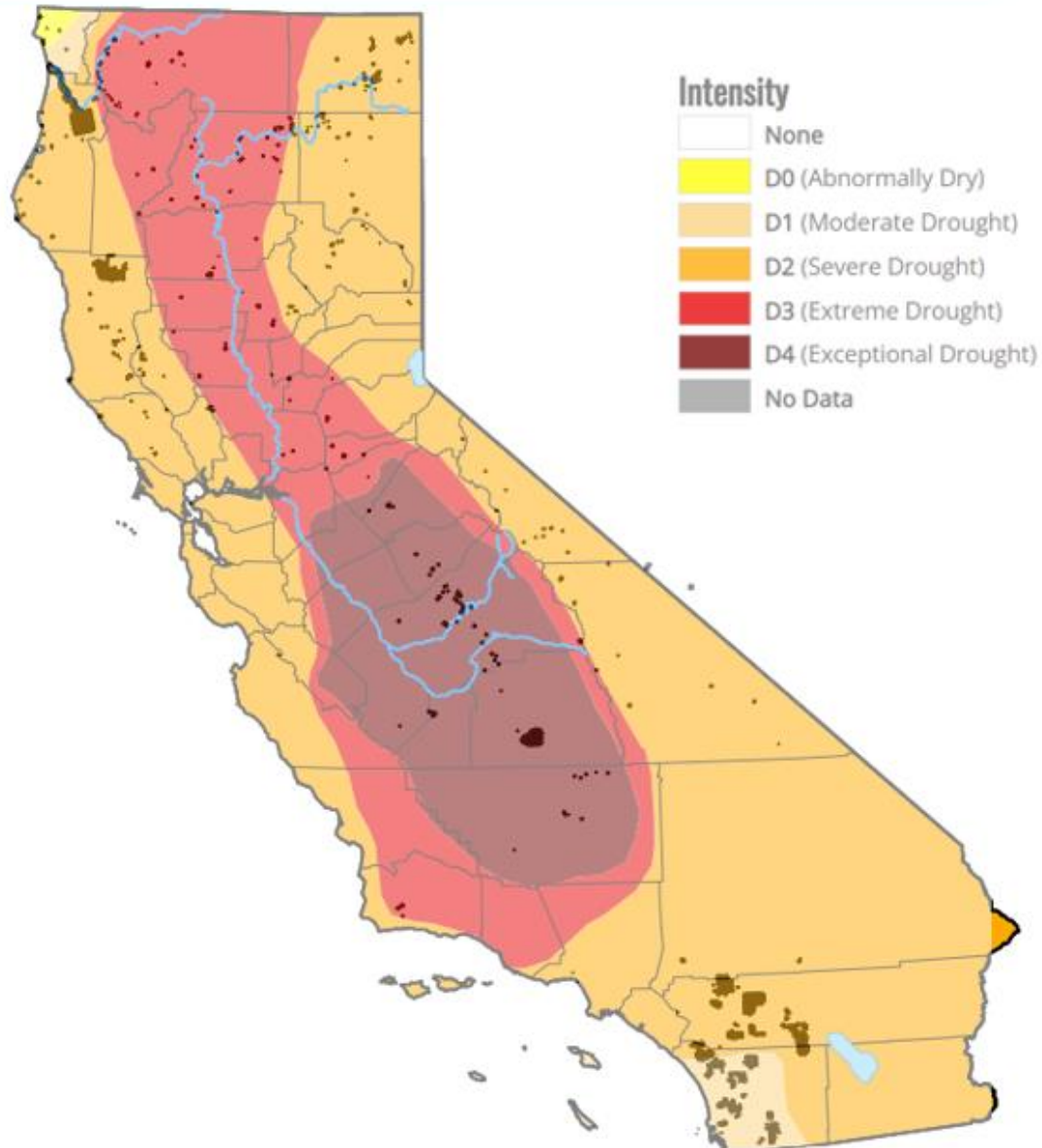
Reference Layers

- States
- 4-digit HUCs
- Congressional Districts (117th Congress)
- Counties
- Tribal Areas
- Federal Lands

Common mapping of Trust Lands – Reservations and Rancherias (no allotments)



Currently, it is important to include California Tribal lands - Reservations, Rancherias, and Allotment lands to GIS Mapping. Below is an example of U.S. Bureau of Indian Affairs and U.S. Drought Monitoring Mapping overlays. There are several California Tribal Lands in severe to exceptional drought status as of September 1, 2022.



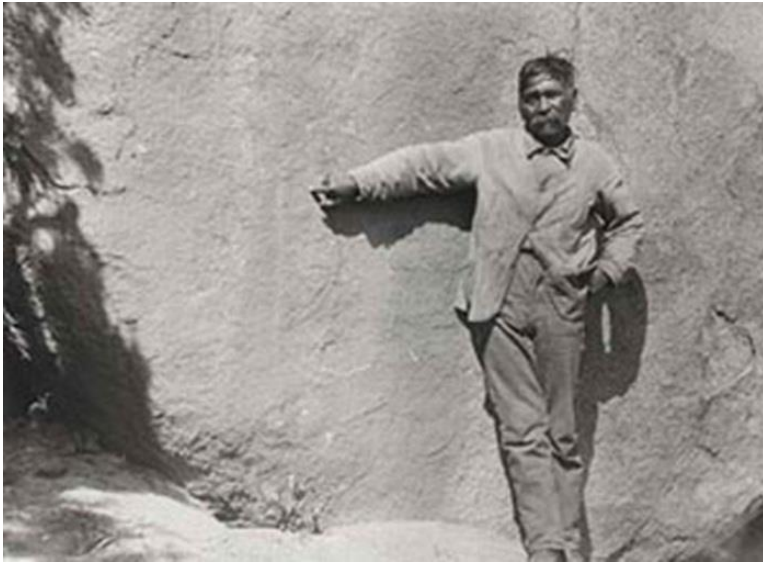
In working with California Native American Tribes - How GIS has been used to better inform decision-making and/or communicate more effectively

- Mapping in the past
- Protection of Cultural Resources and Landscapes
- Culturally Sensitive Resource Mapping
- Tribal participation on Federal, State, Local and Community planning



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Past – Mapping



1936 – Indian Henry (Paiute and Tübatulabal) photo by Waterman.

Lake Isabella Dam being planned – cultural and burial sites had to be identified due to flooding of where the North and South Fork of Kern river converge.

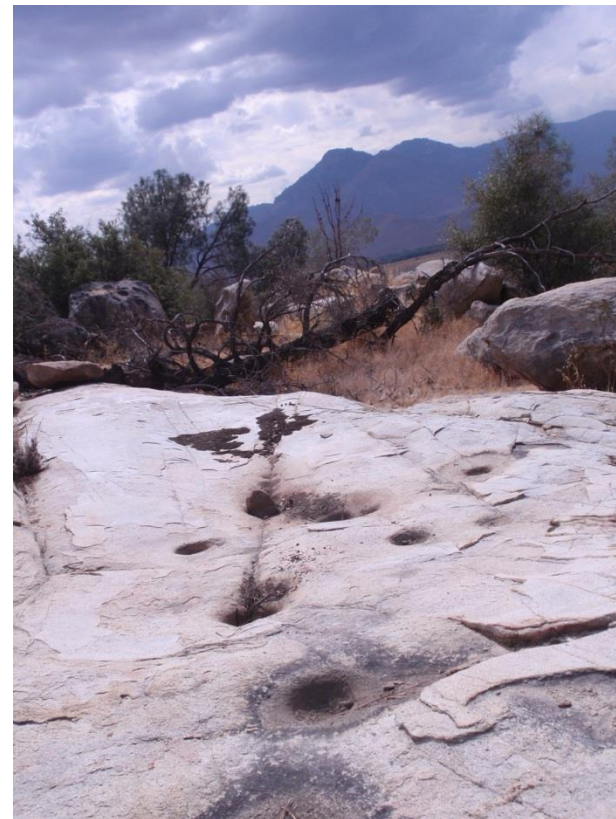
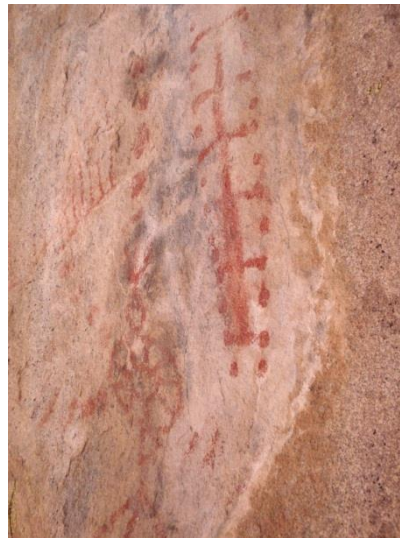
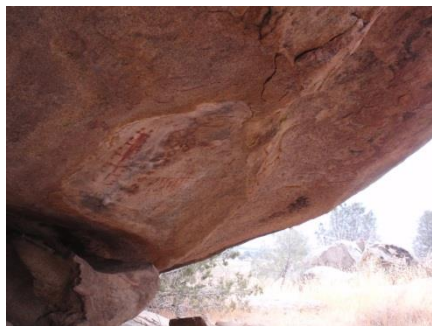
Indian Henry pointed out circle or spiral figure drawn onto boulder



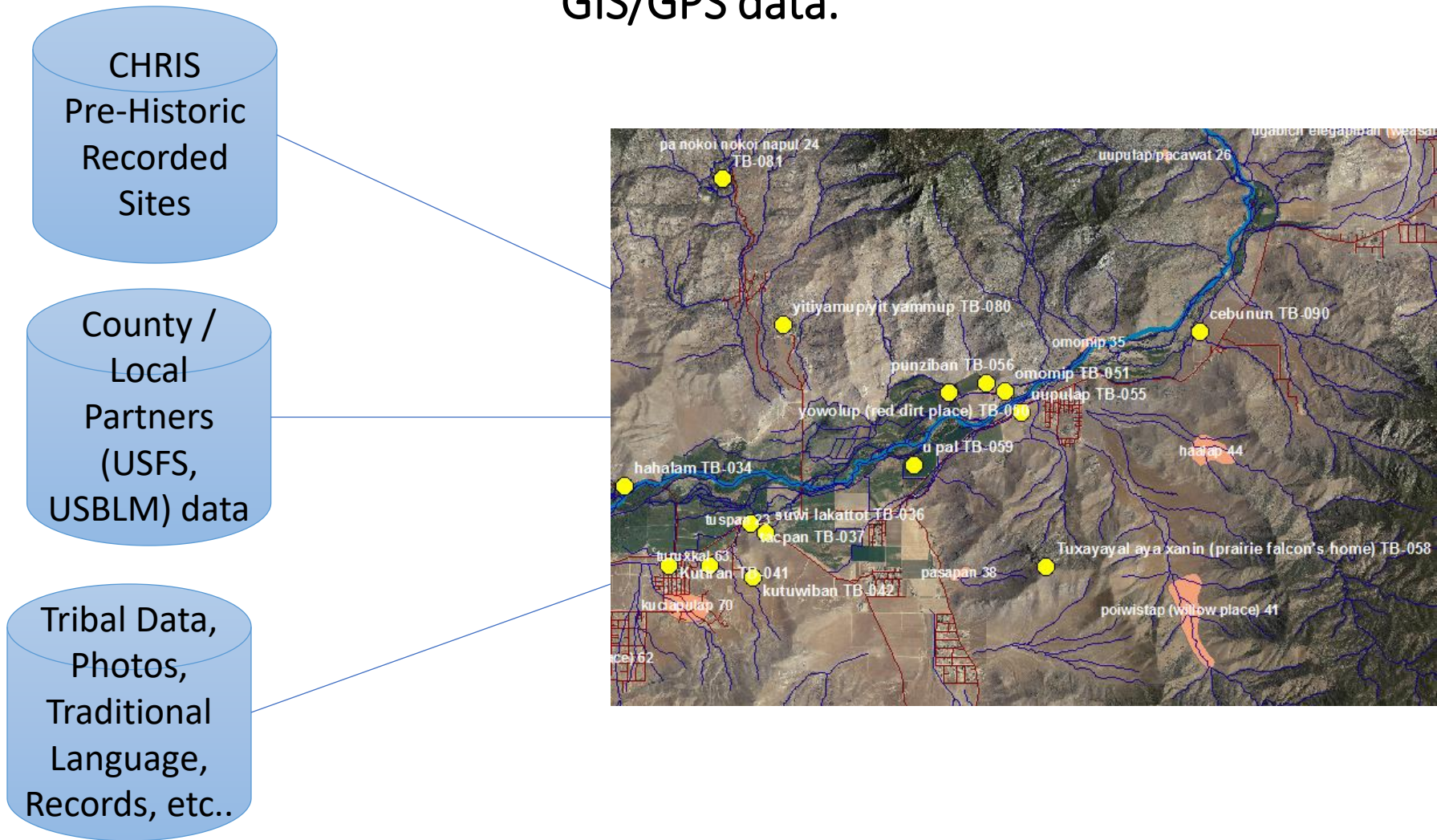
Cultural Sensitive Resource Mapping

In developing mapping - deciding on:

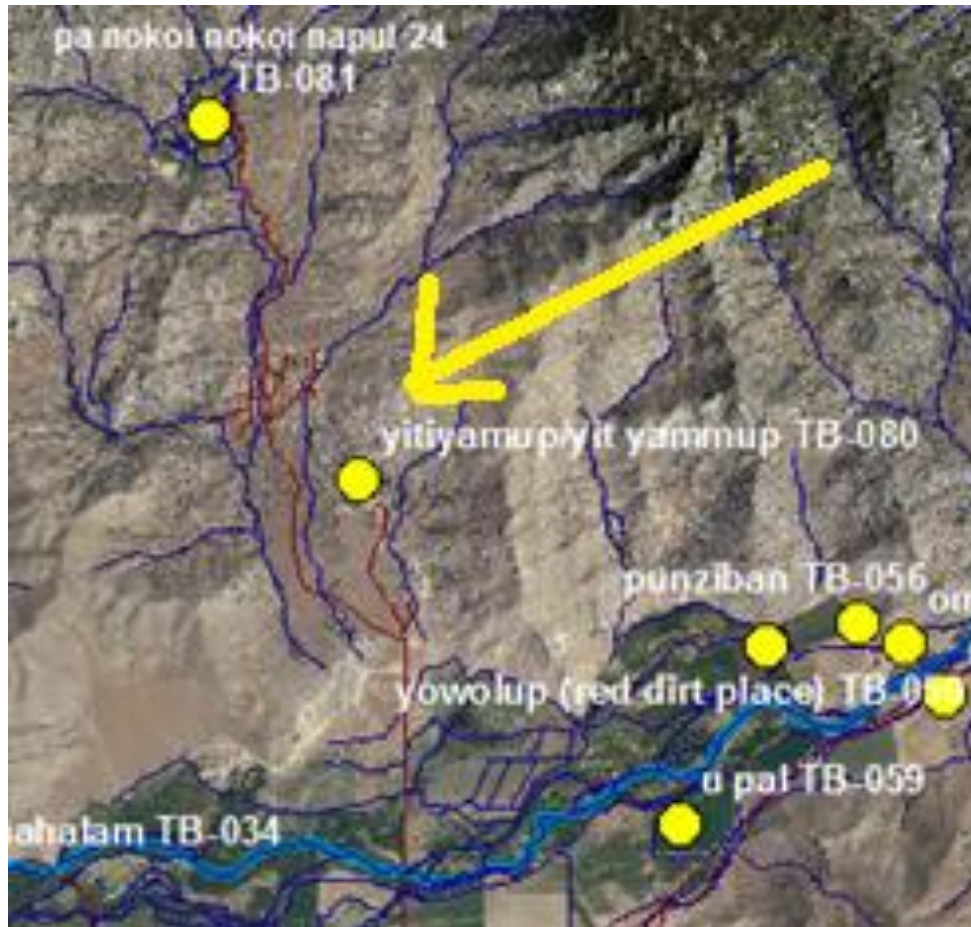
- What to map?
- Why map it?
- Who can have access?
- How to protect and back-up data/maps?
- Use of mapping
- Meaning of place
- Sensitive or okay to share with others
- How to share within your Tribe?
- What to share with public?



CHRIS (California Historical Resources Information System) / Local area cultural resource information, ethnographies, and GIS/GPS data.



California Historic Records Information System (CHRIS)



CHRIS Record – TB-080

Traditional Site Name:
yitiyanup
(yee-tii-yan-ep)

“where the flat water
lives”

Ethnographic Record

Type: verbal, recordings, field notes, traditional language, research, etc...

Format: Tribal declared format, USFS – Record Format, Anthropological, or other

Reliability: source, when, and valid by who

Storage: paper, digitalized, e-document (spreadsheet, PDF, Word).....

ETHNOGRAPHIC SITE RECORD
Sierra N.F./Sequoia N.F./BLM Bakersfield

Group: Tubatulabal Hab X
Use _____
P/N _____

Site Name/Source: yitiyamp Voegelin 1938:41(Fig. 11:9)

Alternate Name/Source: _____

Group Affiliation (major): Tubatulabal
(minor): Tubatulabal

Location
T/R: T25S/R34E, Sec. 35, SEk Quad: Isabella 15' Kernville 1908
UTM: _____
Arch. Site Reference: _____
Description of Location: At springs in foothills, north edge of South Fork Valley. Accurate to 1/4 section.

Environmental Characteristics
Proximity to Water: At springs.
Type Water Source: Springs.
Vegetation: _____
Exposure: _____
Elevation: 3000 feet.
Topography: Foothills, edge of valley.

Distinctive Features: _____

Population
Total Population: About 50.
Total families/domestic units: 2 -- related.
Total dwellings: _____
Remarks: Owned by Steban Miranda, occupied 1932. Known as the rancheria.

Ethnographic Record

Type: verbal, recordings, field notes, traditional language, research, etc...

Format: Tribal declared format
USFS – Record Format,
Anthropological, or other

Reliability: source, when, and valid by who

Storage: paper, digitalized, e-document (spreadsheet, PDF, Word).....

Ethnographic Site # Tb 80

ETHNOGRAPHIC SITE RECORD (Page 2)

Sierra N.P./Sequoia N.P./BLM Bakersfield

Site Name: yitiyamup

Site Description:

(size, layout, structure types, special features, etc.)

This site was recorded in 1884 by the General Land Office Survey. It is located there in 263/34E, Sec. 2, NE $\frac{1}{4}$, NE $\frac{1}{4}$, so the modern site has moved only slightly north -- or perhaps section lines have been altered.

Activities/Purposes

Activities by Season: _____

Site Type: Hamlet.

Data Reliability: Excellent: Visited by E. W. Voegelin with Stefan Miranda.

Additional Documentation:

Descriptions / Field Names

Tribal Descriptions and Coding vs. Public Partner Descriptions and Coding

Archeological Terms – scatter site, work site, habitat, mortar

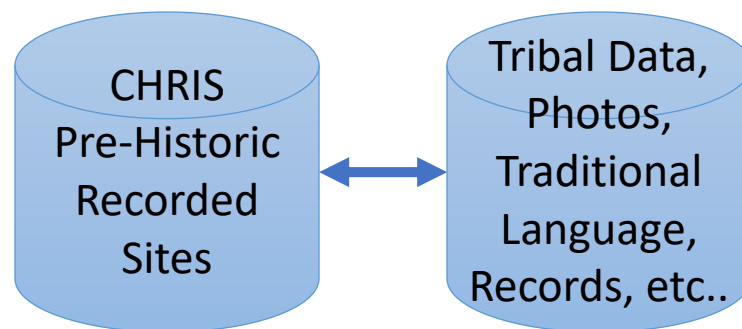
Tribal Description (English) – village, harvest area, bark house, grinding rock

Traditional Language – “yitiiyamup”, “toont”, “komol”, and “tunt”

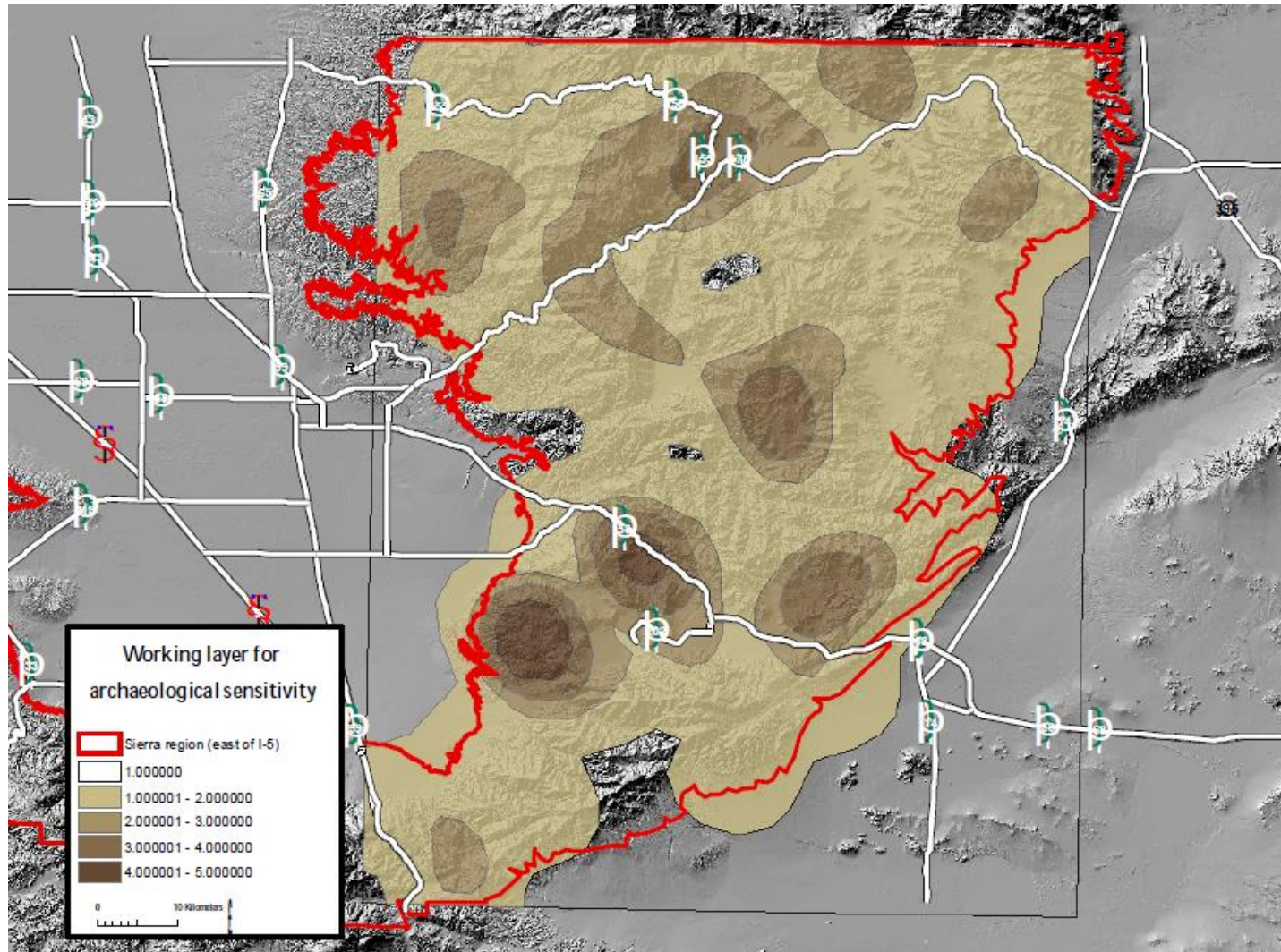
If data will be exchange back to public partners – will need to inform them of your descriptions and coding. When receiving data – Tribe should also be aware of public partners data descriptions and field names.

FIELD NAME: SITEDESC LOC GPS TYPESITE

Will data be shared and how?

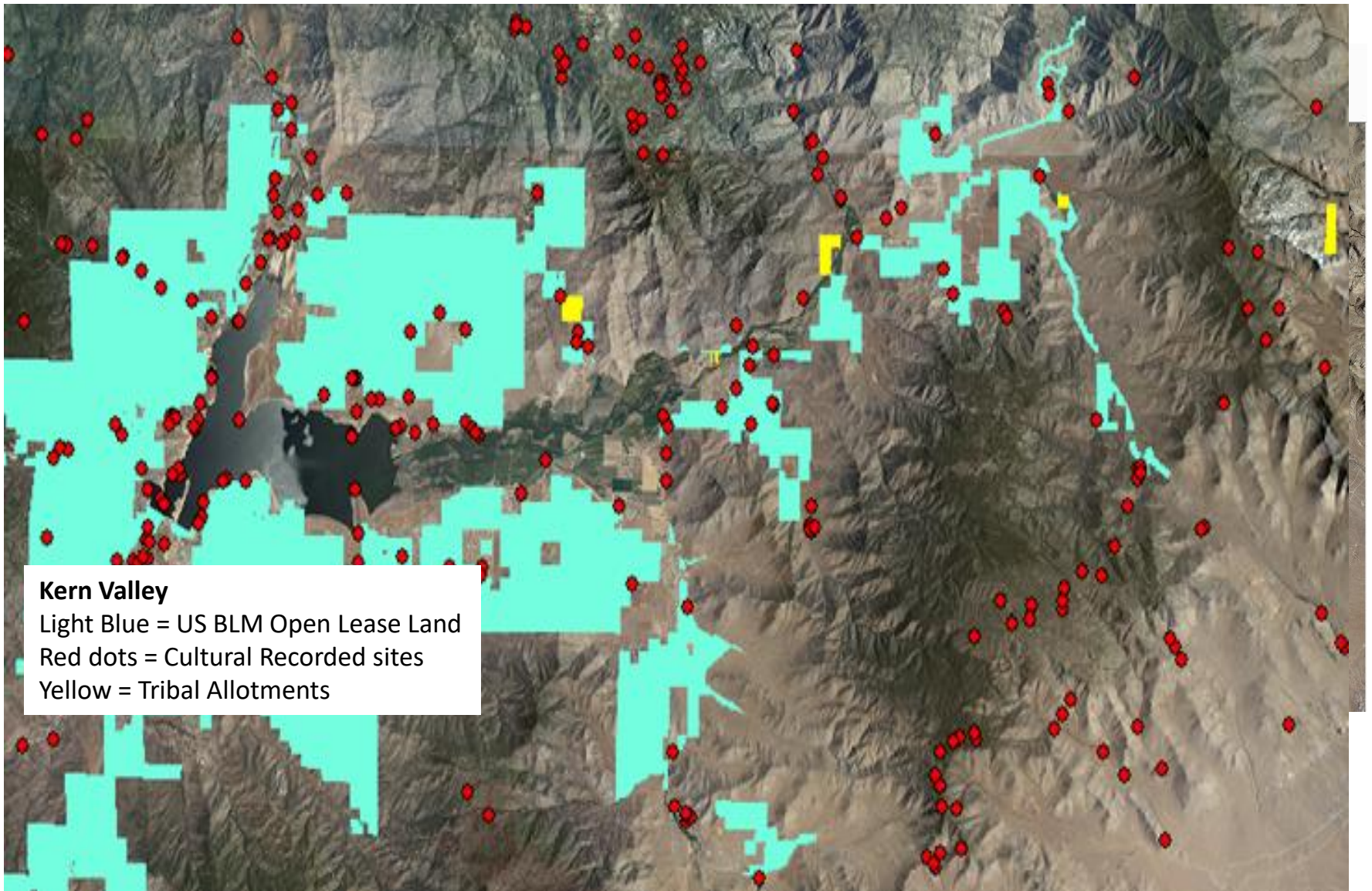


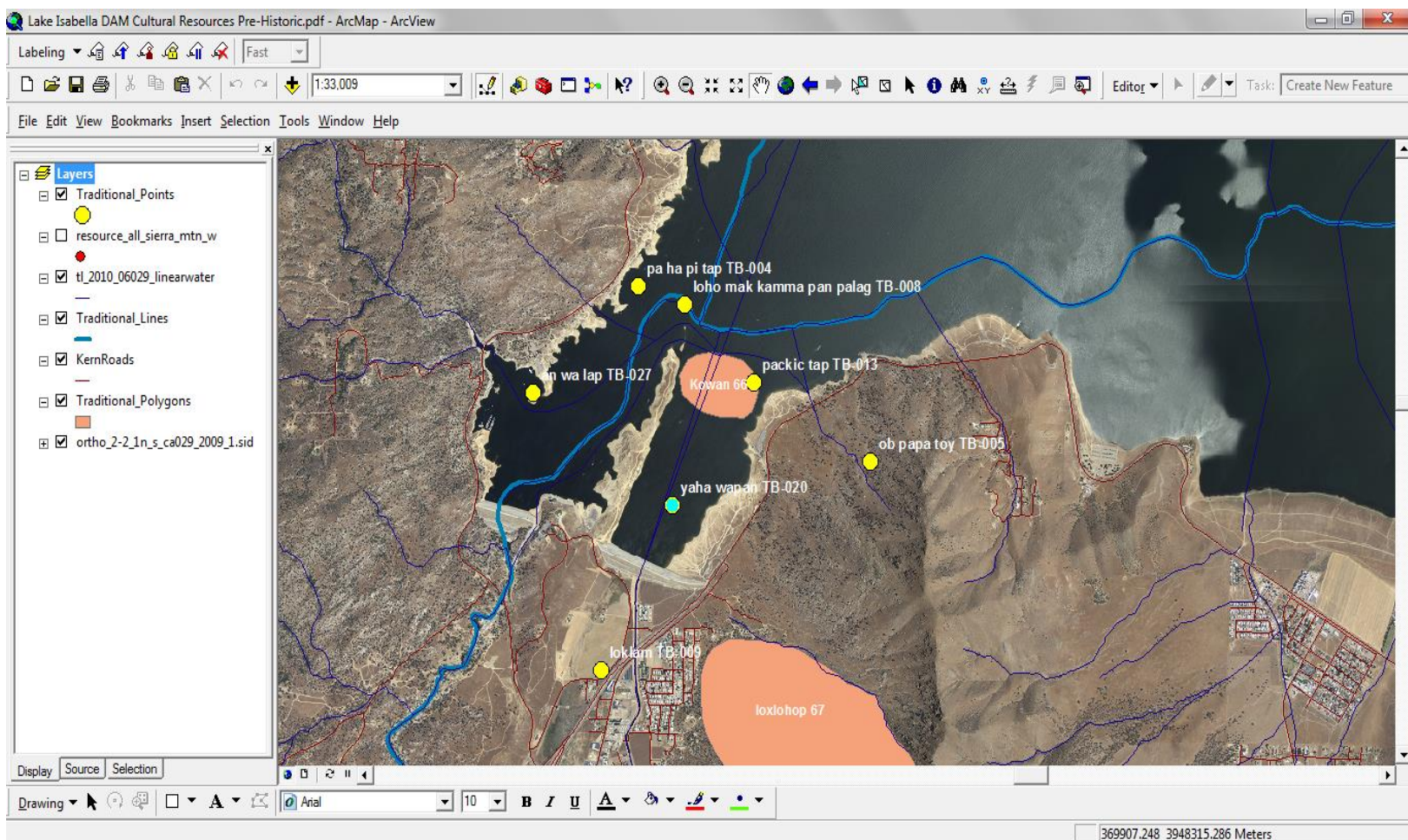
- **Sierra “Buffer” Zone** – Culturally Sensitive Resource Mapping (Binary Regression Analysis)
- Dr. Brian Hemphill (CSU Bakersfield) and Mike Pesses (Antelope Valley College)



Potential fracking sites in Kern Valley – U.S. BLM Open Lease Lands (2018)

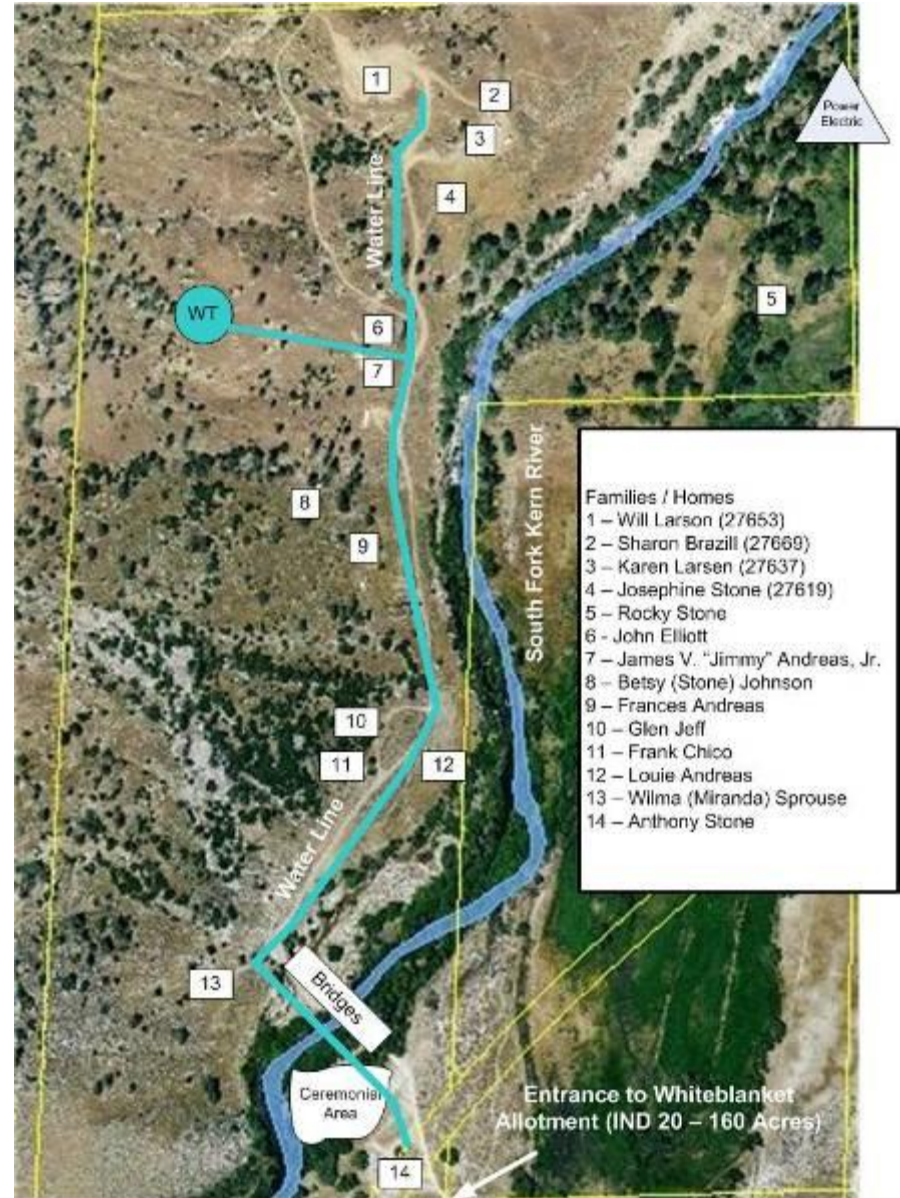
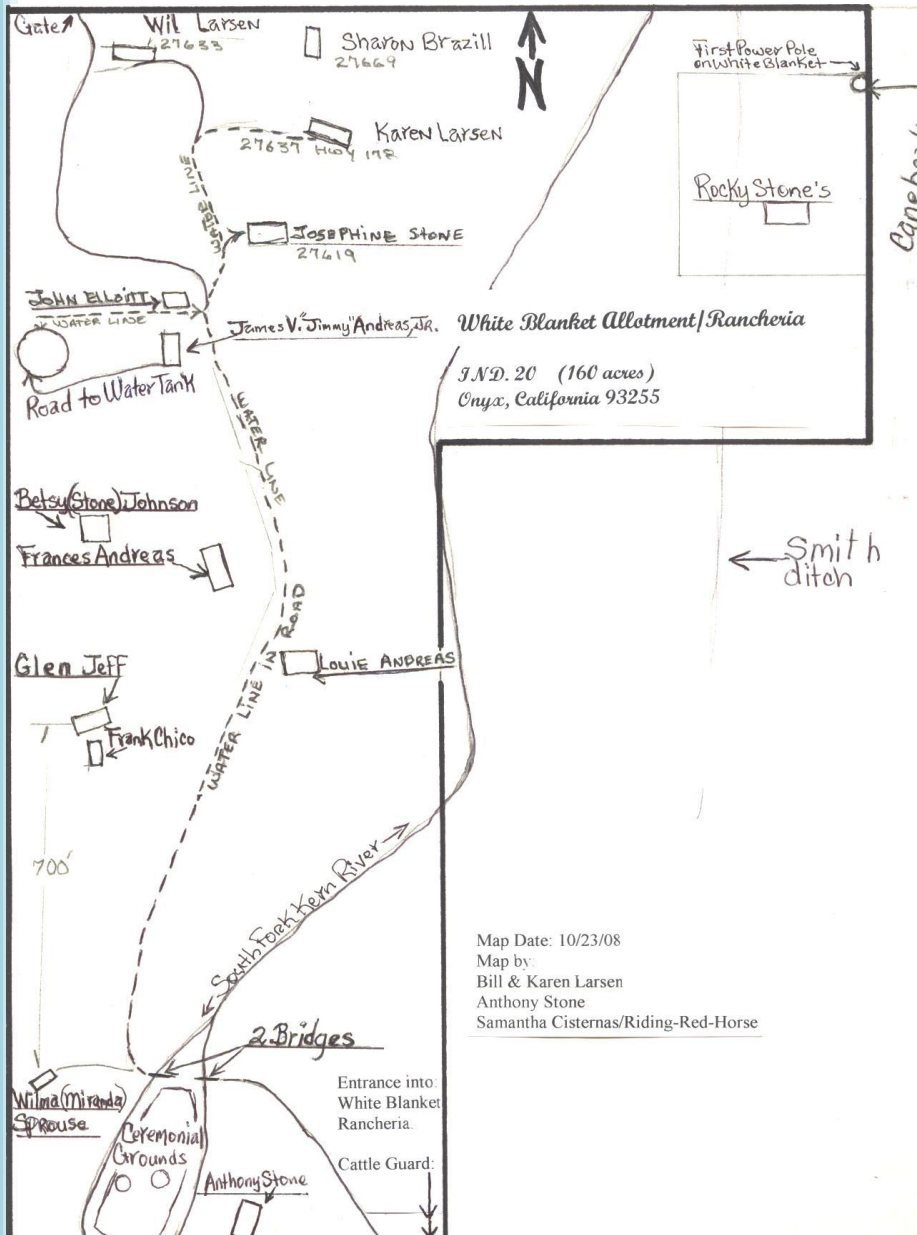
Ruled fracking not a good fit for Kern Valley.





- Use of ethnographic records by U.S. Forest Service
- Use of Linguist Research (1870s-1960s)
- Photos, Recordings, and old Maps
- ArcView Software – Data Exchange with US FS (includes data, photo, polygons, GPS data. County GIS data – roads, rivers, etc..)
- GIS Map used to work with U.S. Army Corps of Engineers – Lake Isabella Dam Expansion Project (2012-2024)

Hand Drawn map translated onto Aerial Photograph map – U.S. Indian Health Services Water Project for White Blanket Allotment



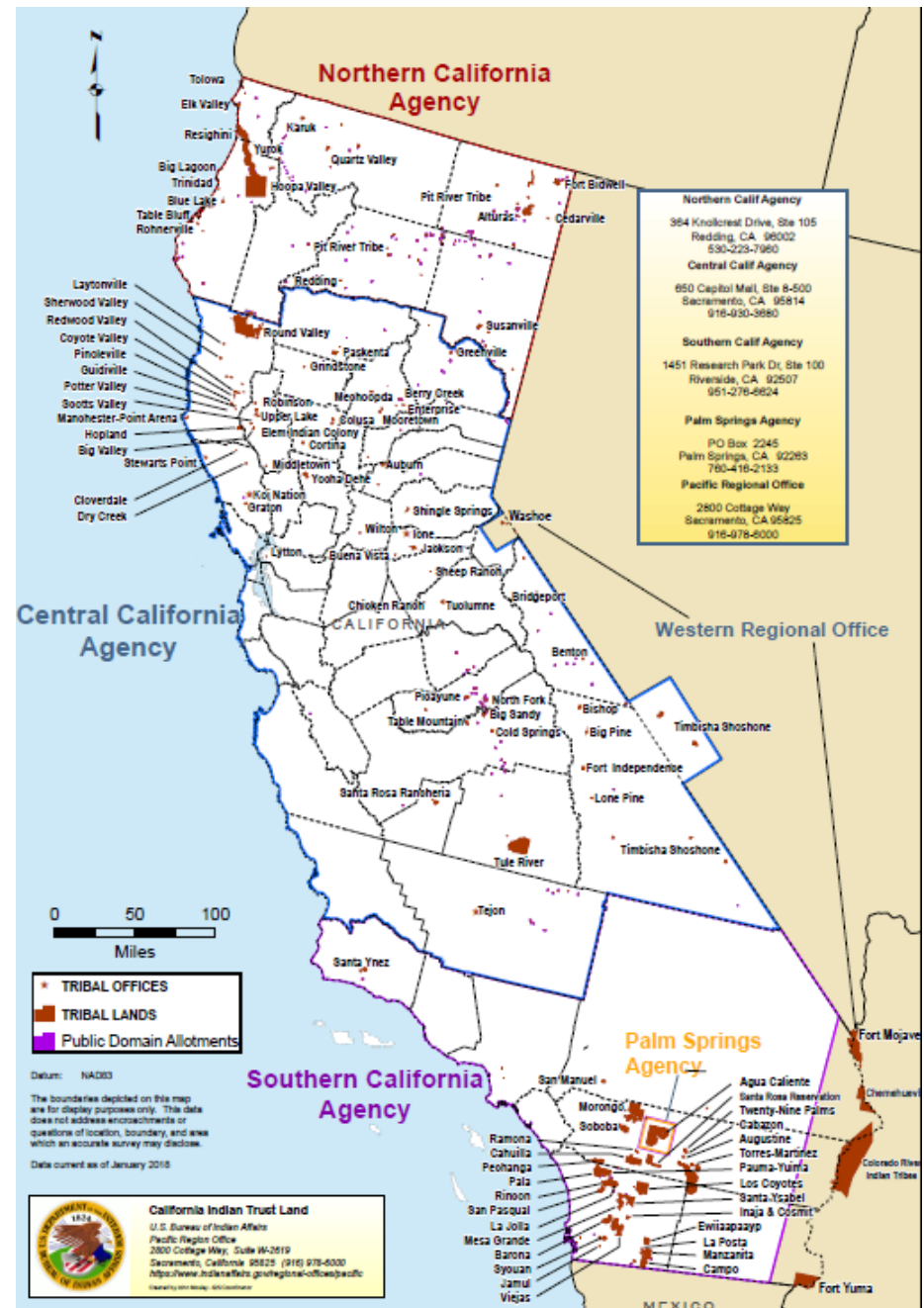
- | Families / Homes | |
|------------------|-------------------------------|
| 1 | Will Larson (27653) |
| 2 | Sharon Brazill (27669) |
| 3 | Karen Larsen (27637) |
| 4 | Josephine Stone (27619) |
| 5 | Rocky Stone |
| 6 | John Elliott |
| 7 | James V. "Jimmy" Andreas, Jr. |
| 8 | Betsy (Stone) Johnson |
| 9 | Frances Andreas |
| 10 | Glen Jeff |
| 11 | Frank Chico |
| 12 | Louie Andreas |
| 13 | Wilma (Miranda) Sprouse |
| 14 | Anthony Stone |

Concerns of climate change in California Native American Tribes

110 Federally Recognized Tribes
60+ Tribes seeking Federal Recognition

Federal Trust Lands – Reservations, Rancherias, and Allotments (Public Domains)

Landless Tribes



Concerns of climate change in California Tribal Communities.

CA Water Commission – outreach to CA Native American Tribes

James D. Sarmiento, PhD (Shasta), Feb. 15, 2023, Summary Update

Tribal Small-Group Discussions

Discussion Questions

1. How do you define drought?
2. Are you/is your community being impacted by the current drought? How?
3. What impacts do you foresee if the drought continues for another three or more years?
4. How is your community planning for and responding to drought impacts?
5. How can traditional ecological knowledge be incorporated into the State's approach to drought?
6. What kind of support could you use to help your community be resilient to long-term drought?
7. How would you like the Commission to incorporate Tribal perspectives into its ongoing work on long-term drought?
8. Would you like to participate in the Commission's long-term drought work? How?

Overview


- November 2022
- 4 meetings
- 20 Tribes/organizations
 - *12% of potentially 170 Tribes*
- 25 attendees

Drought Impacts, Responses, Concerns

- Participants pointed out that drought impacts and tipping points are very place-specific and noted that the sources of drought impacts often extend beyond their land and their control, so they can't solve them on their own.
- **Impacts** – natural resources are impaired; traditional foods are less abundant/harder to get to; human/wildlife conflict increases; humans/species migration; food sovereignty concerns; water quality issues; wildfire; unable to conduct ceremonies
- **Responses** – community outreach; storing food; managing forests; building new storage; groundwater infiltration; engagement in drought planning at local/State level
- **Concerns** – not involved early enough in drought efforts; not being heard by State/local governments; increased water use with green energy; unsustainable growth in areas with desal

Traditional Ecological Knowledge

- Participants noted the place-specific aspects of TEK, explaining that TEK should be led by Tribes for their areas and that each Tribe may have a different level of willingness to share TEK.
- Participants stressed the importance of extensive outreach, consulting Tribes early in the process – before decisions have been made – to best incorporate Tribal perspectives and TEK.
- TEK will take time and require big changes; need to start small.
- Cultural fire and meadow and floodplain restoration are examples of holistic landscape management.
- We need to start thinking about watersheds – land and water are part of the same cycle; all resources are part of the same system.
- Add the spiritual perspective: water is a life source and not taking care of water is failing to take care of human beings.



Drought Needs

- Participants shared their views on support Tribes need to prepare for, respond to, and be resilient to drought. Generally, participants felt that Tribes needed better-informed decision-makers and funding assistance. They noted that collaborative processes are leading to burn-out.
- Additional needs:
 - water rights
 - triggers that stop water use if it is harming communities
 - policies to support cultural burning
 - drought/climate mitigation through ecosystem restoration
 - clearer communication to Tribes about available programs

Colorado River – Potential Dead Pool

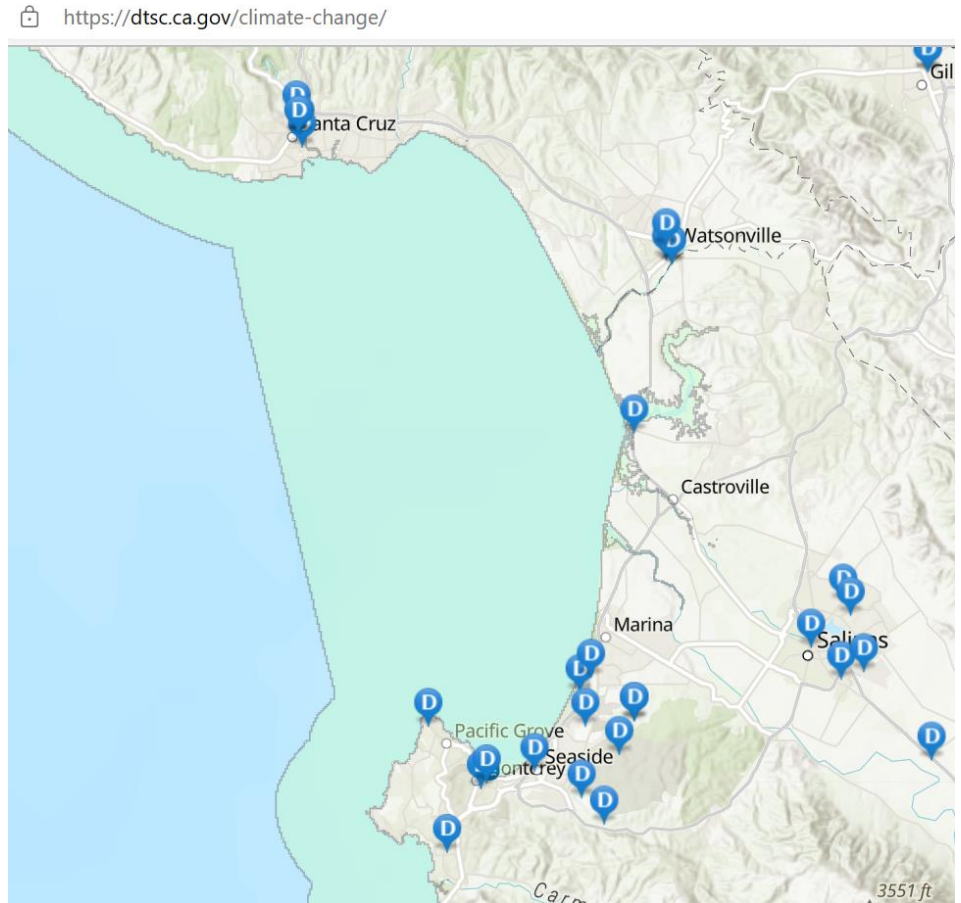
1984 Lake Mead Hoover Dam, NV Water Level Feb 2023



Colorado River – 25 feet drop in water level in 45 years,
per Hualapai Tribal Member.
Current deepest area is 20 feet (Feb 2023)

CA Dept of Toxic and Substance Control (DTSC) Sea Level Rising (SLR) Web App

DTSC has inventoried its universe of sites to assess the number of current projects that could be subject to a SLRVA.



[Sea Level Rise | Department of Toxic Substances Control \(ca.gov\)](https://dtsc.ca.gov/climate-change/)

**DTSC Sea Level Rise Guidance
Public Information and Feedback Session
March 30, 2023
6:00 PM to 8:00 PM**

The California Environmental Protection Agency's Department of Toxic Substances Control (DTSC) invites you to attend an Information and Feedback Session on the recently released *Sea Level Rise Guidance for DTSC Project Managers for Cleanup Activities* (SLR Guidance).

Join us online or by phone to learn more about the SLR Guidance and to share your perspectives.

- **WHAT:** DTSC Sea Level Rise Guidance Information and Feedback Session
- **WHEN:** Thursday, March 30, 2023, 6:00 p.m. to 8:00 p.m.
- **PURPOSE:** DTSC's Site Mitigation and Restoration Program staff will provide an introduction and overview of the recently released Sea Level Rise Guidance, currently open for public comment until October 31, 2023. Opportunity for feedback and public comment will immediately follow.
- **HOW TO PARTICIPATE:** This meeting will be held on Zoom with options for phone audio participation and closed captions.

For questions about this event, contact the DTSC Sea Level Rise Guidance Team at DTSC_SeaLevelRise@dtsc.ca.gov

To request a reasonable accommodation to attend this event, such as language translation or interpretive services, contact Gerry Dietrich, DTSC Public Participation Specialist, at Gerry.Dietrich@dtsc.ca.gov or (510) 402-8305 by 5 PM on 3/15/2023.

REGISTER EARLY

Potential Tribal New Partnership

Private Fay Creek Ranch 2275 acres in Weldon, CA

300+ acres for Tübatulabal

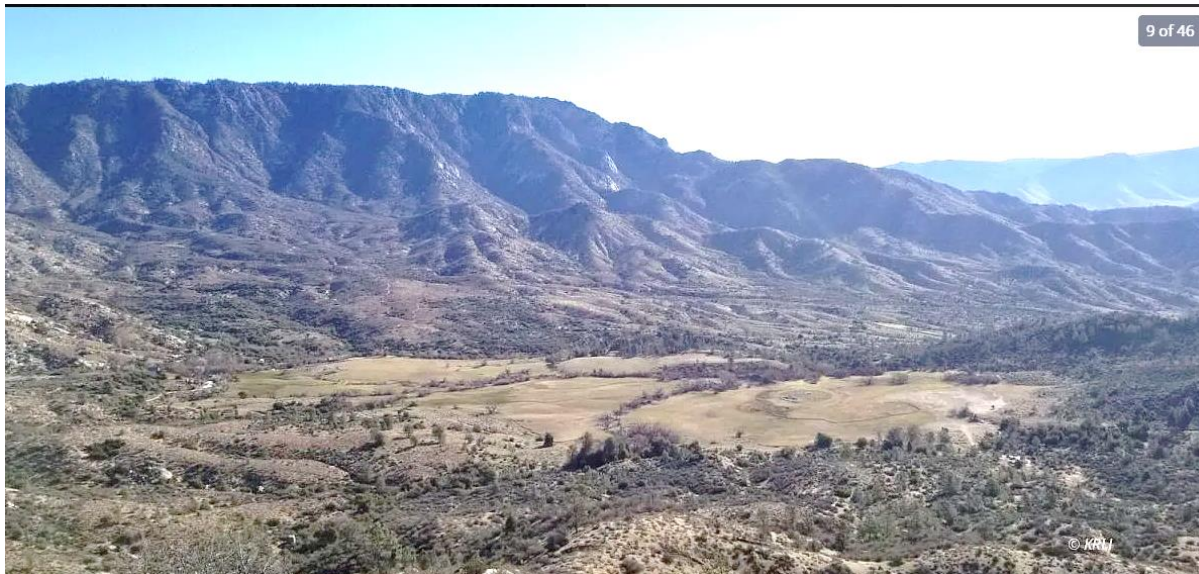
Few Acres for family ranch owners

Western Rivers Conservancy is working to purchase the ranch and will ultimately convey the property to the Kern River Valley Heritage Foundation and the Tübatulabal Tribe.



Fay Creek Ranch

- Need GIS Map
- Using Drone for Review of Landscape (both video and photos)
- Information Sharing with Tribe
- Purpose – new jobs, recreation, tourism, cultural preservation, and sharing of traditional knowledge



Recommended public policy changes to assist California Native American Tribes with Climate Change Resiliency

- Federal – U.S. Bureau of Indian Affairs be lead agency to update Tribal Trust Lands GIS data set and make the data set update mandatory at every 5 years. This data set should be announced and shared with all Federal Agencies.
- California State – include U.S. Bureau of Indian Affairs Tribal Trust Lands GIS data set on their Natural Resources, Environment, Employment, Economic Development, Emergency Response, and Climate Change planning and incidents maps.
- Provide more resources for CA Native American Heritage knowledge build of GIS and to assist State Agencies with Tribal Trust Land mapping.
- Provide resources to support the CA Historic Records and Information Systems (CHRIS).

“tuwu” (too-woo) Thank you / In a good way

Erskine Fire Area – 2016 / Native Plants Resiliency
saat (saw-aht) – Indian Mountain Tea (Feb 2023)



In Summary – Climate Change Resiliency

- Individual to organization – purpose / motivation
- Funding and Resources – one-time vs. on-going
- Use of technology tool – introduction to Tribal circle, acceptance, useful and meaningful.
- Who will be the lead and help with training?
- On-going knowledge build – within and outside the Tribe
- What if you are not part of the organization – what happens to the operations? Sustainable / Resilient

References

[US Department of Interior – Bureau of Indian Affairs – Pacific Regions, CA GIS Data set](#)

[https://www.bia.gov/sites/default/files/dup/assets/bia/pacreg/PRO Indian Lands.gdb .zip](https://www.bia.gov/sites/default/files/dup/assets/bia/pacreg/PRO_Indian_Lands.gdb.zip)

[Sea Level Rise | Department of Toxic Substances Control \(ca.gov\)](#)

[Fay Ranch Rd, Weldon, CA 93283 | Zillow](#)

[South Fork Kern River - Western Rivers Conservancy](#)



March 13-15, 2023; Monterey, California

tooyü' tüwü

Travel Well

Dr. Donna Miranda-Begay

donnabegay@yahoo.com

CA Tribal GIS

www.catribalgis.org

(Coming soon)



March 13-15, 2023; Monterey, California