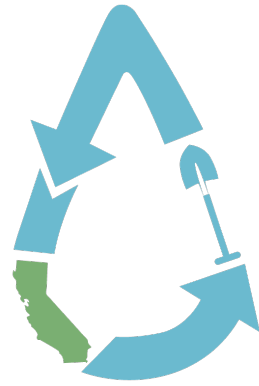


# LOCALIZING CALIFORNIA WATERS

## ACTIVATING THE REGIONAL PORTFOLIO

### 2019 CONFERENCE PROCEEDINGS



LOCALIZING  
CALIFORNIA  
WATERS



COWA

MADE POSSIBLE WITH A GRANT FROM THE WATER FOUNDATION



## Localizing California Waters: Yosemite 2019 Proceedings: Program & Speakers

### **LOCALIZING CALIFORNIA WATERS**

The Localizing California Waters (LCW) Conference connects unlikely allies towards the broader goal of water management throughout California by discussing local water approaches in an intimate setting.

LCW breaks down barriers to alignment through presentations, round table discussions, workshops and information networking to work towards an outcome of innovative solutions to local and global climate challenges by advancing local water policy and enacting best water management practices at an accelerated pace.

This year, we focused on activating the Water Portfolio.

### **HIGHLIGHTED PRESENTATIONS**

- LCW: The Power of Local Actions and Place-Based Toolkits: The LCW Progression
- Place-Based Narratives and Stories of Regional Collaboration
- The Tale of Everyday Water, the Edible Landscape, and the Healthy Resilient Community
- The Win of Resilience
- Road Map to LCW 2019 Workshop Outcomes: Collaborative Resilience with Shifting Climate Scenarios
- Facilitated Workshop: California Regional Climate Scenario
- Regional Needs: Building on Actions of LCW 2018, Ventura to SLO and the Russian River Watershed
- Regional Showcase: Ventura Instream Flow Enhancement Project & Water Resiliency Regional Framework
- Regional Showcase: Sonoma: intersecting Local Resilience Water Actions and Climate
- Unscene LA: Lessons from the Agency of Forgotten Landscapes
- Plenary Discussion: Getting to Collaboration
- Reflection Panel: Where are we?
- Integrated Design: Design for Landscape Scale Change: A Case Study in Practice
- A Water Budget Perspective: Ojai Valley Comparative Analysis for Reduced Consumptive Use and Recharge



## Localizing California Waters: Yosemite 2019 Proceedings: Program & Speakers

- ROUNDTABLE DISCUSSION: Defining Watershed Budgets: Unlocking Regional Climate Response, Safe Drinking Water & Healthy Environments
- Tuolumne River Conservation Actions for Instream Flow
- Where Does All the Conserved Water Go? A Path for Regional Collaboration with SGMA
- ROUNDTABLE DISCUSSION: From SGMA to Surface Water: Collaborative Frameworks & Shared Values
- Plenary Discussion: Local Approaches
- The Role of the Designer: Lessons from the Agency of Forgotten Landscapes - Part II
- ROUNDTABLE DISCUSSION: Sharpening Our Tools: A Conversation on Pushing Potable Reuse and the Future of Safe and Reliable Drinking Water
- Carbon Neutral Water Installation/Designer Lightning Topics
  2. Advancing Greywater in Southern CA
  3. The Future Urine Separation and Local Fertilizer
  4. The Ecological Landscape Carbon Calculator
  5. Greywater as a Sample Key Water Budget Indicator
- Stormwater/Rainwater Integration
  1. Stormwater Runoff and Remediation Post-Fire in Santa Rosa & Thomas Fire
  2. Integrating Stormwater by Direct Conveyance to a Drinking Water Treatment Facility
  3. Tribal Plant Palettes for Stormwater Reuse and Fire Recovery
- Discussion: What Tools Can we Sharpen for a Healthy, Resilient Sense of Place
- The Neighborhood Link to Buzz
- Plenary Discussion: Stories from the Field - Tools for a Healthy, Resilient Sense of Place
- Lightning Talks
  1. Cultural Burning for Habitat Regeneration and Soil, Water Community Health
  2. Carbon Farming for Landscape Scale Implementation in Forests, Ag, and Rural Areas
  3. North Coast Instream Flow Tools
  4. Landowner Resilience Programs and Integrating Climate Resilience Toolkit
  5. Camp Fire Rapid BMP Deployment
  6. Permitting Sustainability
- ROUNDTABLE DISCUSSION: Integrating Outcomes to Reach a Resilient Sense of Place



## Localizing California Waters: Yosemite 2019 Proceedings: Program & Speakers

- Facilitated Workshop: Building and Managing for Regional Resilience
- Water of Our Wilderness
- Basins of Relations: Net Positive
- Wholistic Engineering: Applied to Net Positive Water and Urban Agriculture (Closed-Loop Water and Nutrient Systems)
- Moving with Water: Innovating Natural Design
- Workshop: Acting Together
- KEYNOTE: Building Community Health from California Resilience
- Reflection Panel: Where are we?
- Bringing it All Together: Regional TEAM ACTION Plans Presentations
- Facilitated Final Recommendations for Regional Action Portfolios by Regional Teams

### LIST OF SPEAKERS

- Ancestral Guard
- Anecita Agustinez, *Tribal Policy Advisor, DWR*
- Laura Allen, *Greywater Action*
- Tom Ash, *Inland Empire Utilities Agency, DWR Volunteer Advisor (retired)*
- Adam Ballard, *Program Manager, Wildlife Conservation Board*
- Mari Beltran, *Ecological Designer, Watershed Progressive*
- Sebastian Bertsche, *Principal, Foresite Mapping LLC; Permaculture Artisans*
- Dore Bietz, *Tuolumne Band of Miwok W Indians*
- Brent Buckman, *Founder, Hyphae Design Laboratory*
- Aja Bulla-Richards, *Associate Creative Director, Watershed Progressive*
- Carmel Brown, *Financial Assistance Branch Chief, IRWM Division, DWR*
- Sherry Lee Bryan, *Water Division Program Manager, Ecology Action*
- Mark Buehrer, *Director, 2020 Engineering*
- CDFW
- Josiah Cain, *Director of Innovation, Sherwood Design Engineers*
- Celeste Cantu, *Chair, PPIC Water Policy Center Advisory Council*
- Mike Collignon, *Executive Director Green Builder® Coalition*
- Pablo Conejo-Warner, *Professor, Environmental Engineering, Chico State*





## Localizing California Waters: Yosemite 2019 Proceedings: Program & Speakers

### LIST OF SPEAKERS

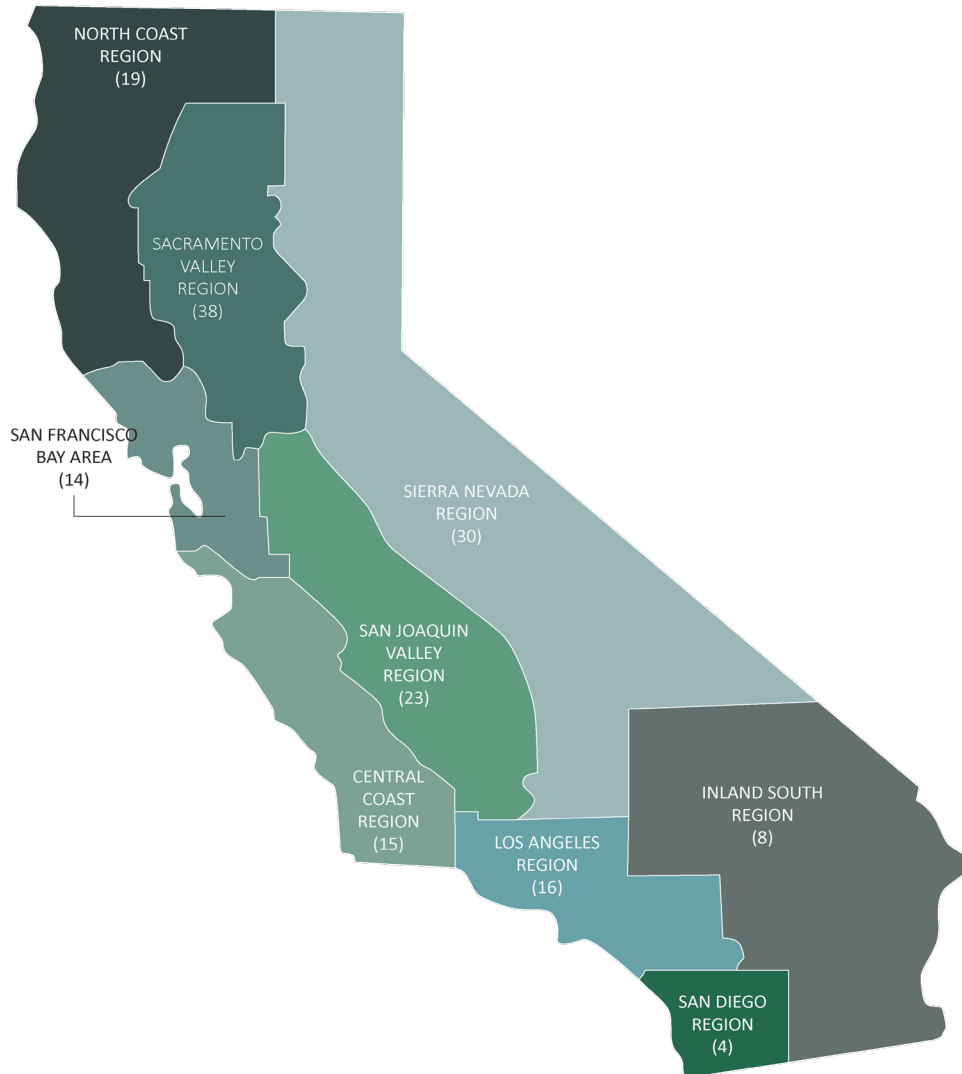
- Matt Clifford, *Staff Attorney, California Water Project, Trout Unlimited*
- Trina Cunningham, *Traditional Ecology Land Management Consultant*
- Brian Currier, *Office of Water Programs, CSU Sacramento*
- Martha Davis, *Project WET*
- Kevin Delano, *Geologist, Division of Water Rights, SWRCB*
- Brock Dolman, *Director, The Water Institute*
- Peter Drekmeier, *Policy Director, Tuolumne River Trust*
- Erik Ekdahl, *Deputy Director, Division of Water Rights, SWRCB*
- Debbie Franco, *Senior Advisor, Water and Rural Affairs, Governor's Office of Planning and Research*
- Letitia Grenier, *Senior Scientist, San Francisco Estuary Institute*
- Aimee Haasteaby, *Water Resource Analyst, Watershed Progressive*
- Dustin Hardwich, *California Water Rural Agency Association*
- Joel Hawley, *Project Manager & Technical Advisor, Watershed Progressive*
- Trathen Heckman, *Executive Director, Daily Acts*
- Regina Hirsch, *Executive Director, Watershed Progressive*
- Phil Isenberg, *Chair (2010-2014) and Member (2014-2016), Delta Stewardship Council*
- Leigh Jerrard, *Principal, Greywater Corps*
- Shelton Johnston, *Park Ranger, Yosemite National Park*
- Patrick Koepele, *Executive Director, Tuolumne River Trust; Chair, Yosemite Sustainable Solutions (YSS)*
- Robert Kostlivy, *Tuolumne County Environmental Health Director*
- Nicole Kuenzi, *Office of Chief Council, SWRCB*
- Brad Lancaster, *Harvesting Rainwater for Drylands*
- Harold Leverenz, *Research Engineer, UC Davis*
- Art Ludwig, *Oasis Designs*
- Tony Madrone, *Watershed Progressive/Indra Designs*
- Lindsay Mattos, *Tuolumne County Resources Conservation District*
- Michael Parker, *Engineering Geologist, Central Valley RWQCB*
- Erin Ragazzi, *Assistant Deputy Director, Division of Water Rights, SWRCB*
- Adonia Ripple, *Executive Director, Yosemite Conservancy*
- Staci Smith, *NOAA-NMFS*
- Rob Steiner, *President, Water Ledger*
- Wayne Tate, *President, Eagle Aerial Solutions*
- Rick Taylor, *Elder Creek Landscapes*
- Peter Thielke, *President, Senior Canyon Mutual Water Company*
- Julie Tumamait-Stenslie, *Ojai Valley Chumash*
- Carol Wallen, *Senior Biologist, NorthStar Engineering*
- Jackson Webster, *Professor, Environmental Engineering, Chico State*
- Galen Weston, *Blue Oak Farms*
- Nick Wiegel, *California Onsite Water Association*
- Bill Wierick, *Council member, Ojai City Council*
- Bob Wilkinson, *Professor, UCSB Bren School of Environmental Science and Management*
- SWRCB, *Instream Flow Staff/Division of Water Rights and Chief Legal Counsel Staff*





# Localizing California Waters: Yosemite 2019

## Affiliations & Organizations



- 2ND Nature
  - Bay Maples: Wild California Gardens
  - California Rural Water Association
  - California Water Research
  - California Water Efficiency Partnership
  - Creeklands Conservation
  - CSU Chico Civil Engineering
  - Daily Acts
  - Eagle Aerial
  - Ecology Action
  - Elder Creek Landscapes
  - Friends of the River
  - Gazar Consulting
  - Geoflow, Inc.
  - Governor's Office of Planning and Research
  - Green Builder Coalition
  - Greywater Corps
  - Hicks Law
  - Indra Designs
  - Lescure Engineers
  - Maven's Notebook
  - Mendocino County Environmental Health
  - Mono Lake Committee
  - Nevada County Environmental Health
  - National Oceanic and Atmospheric Administration
  - NorthStar Engineers
  - Oasis Design
  - Occidental Arts & Ecology Center
  - Ojai City Council
  - Office of Assemblymember Monique Limon
  - PACE Supply
  - PPIC Water Policy Center Advisory Council
  - Permaculture Artisans
  - Pioneer Water Tanks
  - Questa Engineering Corporation
  - Rachio
  - River Partners
  - Robert D Neihaus, Inc.
  - San Francisco Estuary Institute
  - Scotts Valley Water District
  - Sherwood Design Engineers
  - Sonoma State Geography and Land Planning
  - South Yube River Citizens League
  - Spring Gulch Farm
  - State Water Resources Control Board
  - Trout Unlimited
  - Tuolumne River Trust
  - UC Davis
  - UC Santa Barbara
  - Ventura County Resource Conservation District
  - Ventura County Watershed Protection District
  - Watershed Coalition of Ventura County
  - Watershed Progressive
  - Wildlife Conservation Board
  - XERXES
  - Xio Water Systems
  - Yosemite Conservancy
- ADDITIONAL PARTICIPANT STATES:**
- Arizona
  - Colorado
  - Oregon
  - Washington



## Localizing California Waters: Yosemite 2019 Participant Survey Results



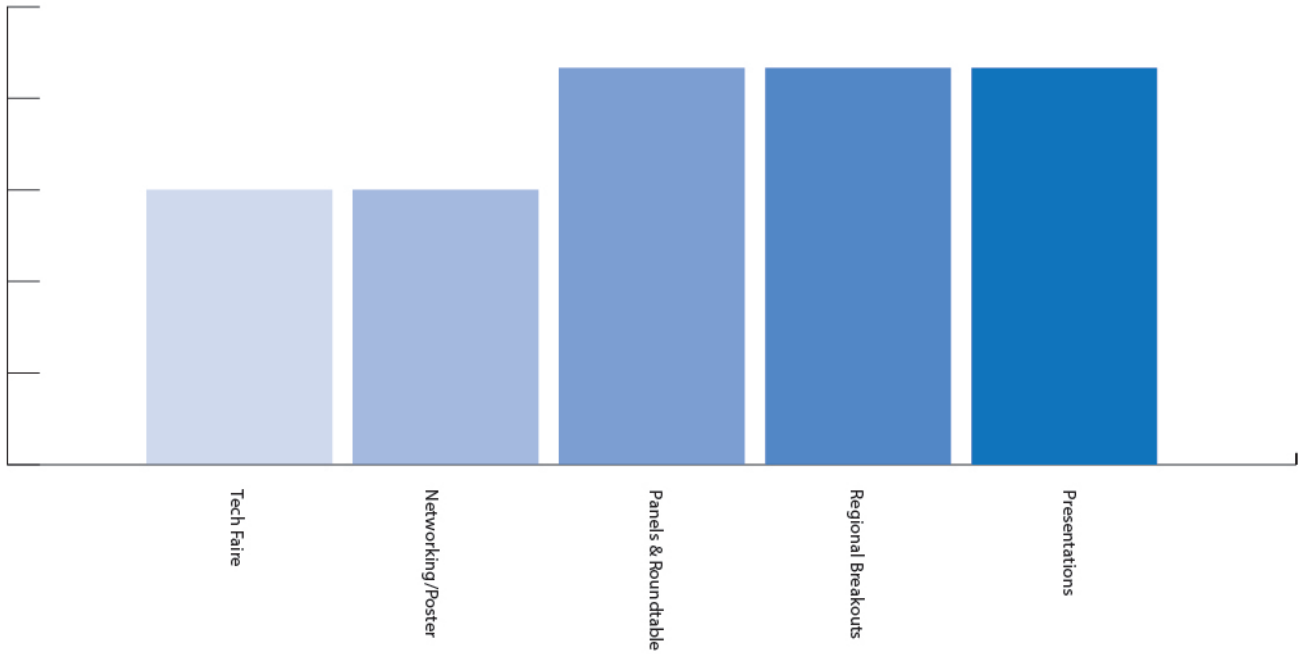
### Some favorite “aha” moments included:

- Half a loaf of bread analogy
- Breakout sessions
- “Pre-legal” adobe buildings
- Ojai greywater 830 acre/feet/yr available in sphere of influence
- Mark Buehrer, 2020 design
- Brad Lancaster and stories about community engagement
- Cultural burning practices
- Link between new technology and capacity to base water rates on water budgets
- Connection between grassroots activists and state policymakers
- “What river are you made of?”
- “Mono Lake is part of the ‘hood.”
- Tribal involvement
- Poetry of sense of place
- Water budgets
- Fish and Wildlife working together with tribes to clean up and prevent large scale cannabis growers for better water quality and ecosystem
- Hearing from the Yurok youth
- Healthy Fires = Healthy Waters
- COWA workshop and connecting with other greywater installers
- Camp Fire responders & cleanup

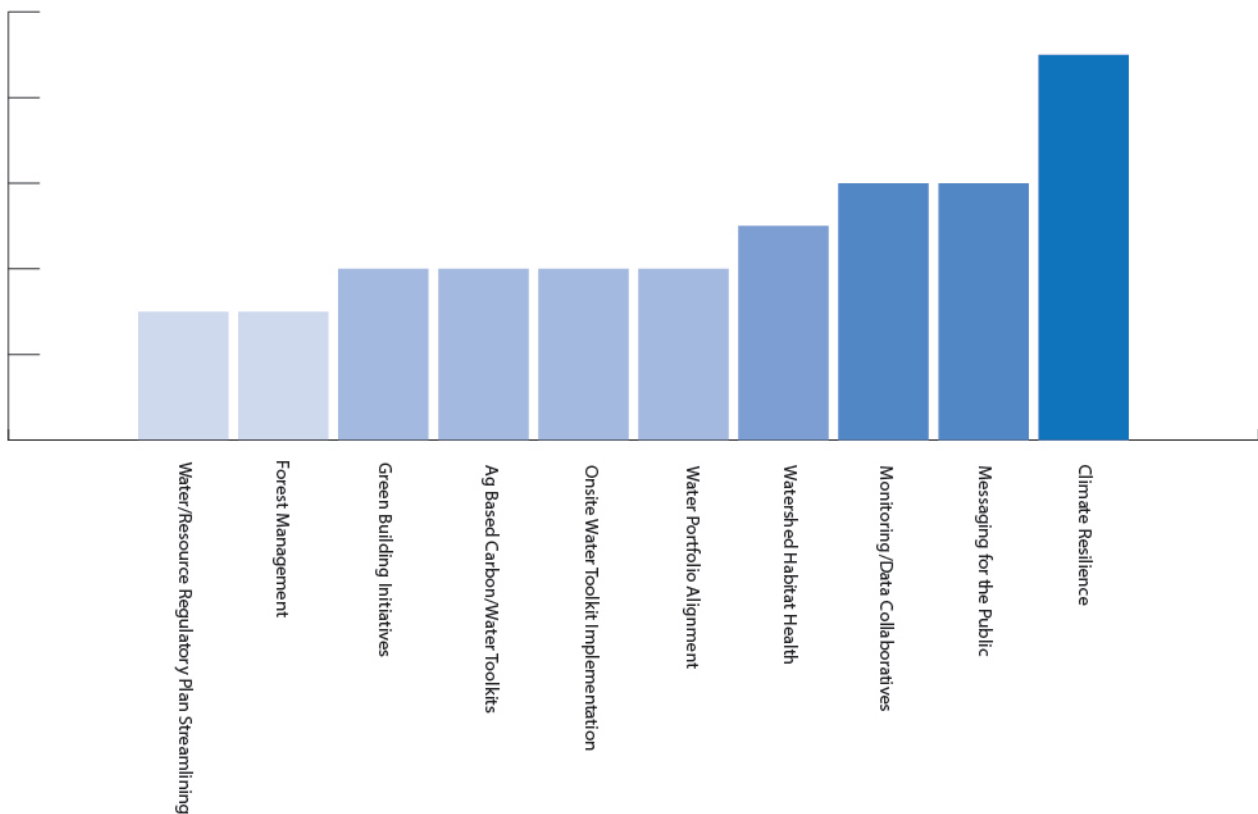


# Localizing California Waters: Yosemite 2019 Participant Survey Results

## What did you find most valuable?



## What are the topics you would like to talk about at LCW 2020?







## Localizing California Waters: Yosemite 2019 Regional Group Summaries

### OVERVIEW

At the Localizing California Waters 2019 conference, participants worked in groups to discuss regional challenges and opportunities for resilience, including a general overview of how California's climate is changing, and that we expect changes to accelerate. Groups discussed the importance of thinking about how those changes will make watersheds function differently. What is the definition of resilience? How can we create proactive opportunities to improve conditions along with adaptation and mitigation?

The following regional summaries reflect notes taken during the breakout sessions, conversations and group activities.

### SAN DIEGO

The San Diego region is comprised of 11 watersheds. The group recognized that the county's boundaries are largely defined by various communities, landscapes and cultural mixes, which both challenge and contribute to a sense of place:

- (1) the ocean - all watersheds end at the ocean.
- (2) the desert - tourist and local communities are drawn to the desert and its native habitat; challenges of this habitat include water conservation/quantity
- (3) Camp Pendleton, marine corps base - a large part of the community in SD are military families; there are issues with transparency around the military's use of regional resources
- (4) a large suburban community - generally wealthier community of homeowners
- (5) the US/Mexico border - a local community that is bilingual, and equally affected by water quality/quantity and conservation decisions.

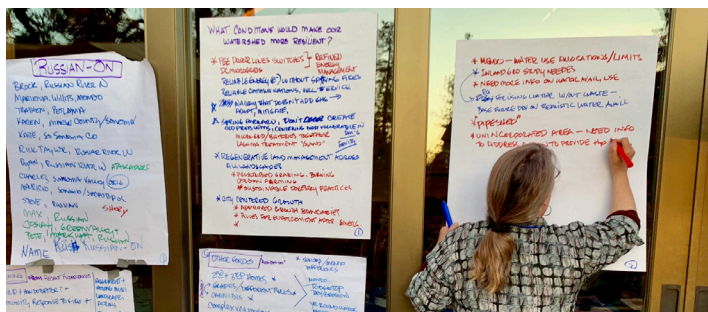
### Prioritized Actions:

1. Create a San Diego/Tijuana cross-border Watershed Resiliency Collaboration involving schools, students, researchers and local community to enhance sense of place, with demonstration projects showing the relationship between decisions and consequences across the border.
2. Promote habitat enhancement and protection
3. Water quality and water security for the community through community engagement, incentives, education and installation
4. Promote sense of place, all watersheds go to the ocean, so protect and educate about the ocean
5. Decentralize energy systems
6. HOA conversions, WERS ratings (or similar), feedback loop
7. Promote inter-regional engagement, community building (ie: bilingual manuals, educational programs to build watershed literacy)
8. Have separate, specific projects and approaches for each of the 11 watersheds in the region.

### LOS ANGELES - LONG BEACH

Los Angeles was identified as having great potential in human capital and untapped natural capital, namely the massive groundwater basins. The team name reflected the central element to our action: to improve and utilize the "Underground Lake" below our feet. The answers to cultivating resilience lie in the existing resources of the city (the house has "good bones"). The region has numerous existing successes that align with the actions identified, so recognizing and building these up is key. Sharing and communicating the existing and future successes is key for spread of information and proof of concept. We came upon a higher level frame work needed to harness the "LA capital" broken into three facets:

- (1) Community building/stakeholder governance;
- (2) Planning/funding/data;
- (3) Project implementation (focus on improving decentralized systems, and on infiltration combined with urban vegetation and food production).





## Localizing California Waters: Yosemite 2019 Regional Summary

### **Worst-Case Climate Scenario** includes:

- Mass extinction of species
- Insufficient water for municipal supply
- Massive human suffering and disease
- Food scarcity
- Complete loss of resilience
- Infrastructure and cultural collapse.

### **Best-Case Climate Scenario** includes:

- Becoming adaptive, innovative and resilient
- Species recovery and reintroduction
- Better development and zoning
- Less centralized energy and water supply
- Thriving green economy; sustainable
- Just green infrastructure
- Strong community and sense of place.

### **Prioritized Actions:**

**1.** Build community, listen to stakeholders. Tap existing groups, build on existing work through listening and outreach. Provide education on natural systems. Tour existing successful/pilot programs such as SMURF Santa Monica. Provide environmental justice tables.

**2.** Planning/funding/data. Grassroots community planning. Corporate accountability. Water budgets, open source information and data driven ordinances. Provide funding for pilot projects and support unconventional project types. Zoning and permitting evolution based on above successes.

**3.** Infiltration and biodiversity projects. Decentralized, on public and private lands. Parcel-scale direct install programs for on-site water reuse, harvesting and infiltration. Green streets. Stimulate water-efficient local food systems such as aquaponics, dry farming, hyper local farming.

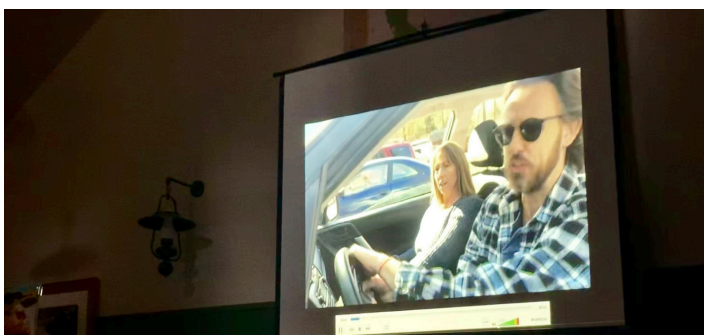
### **VENTURA - SAN LUIS OBISPO**

This group focused on the Ventura Watershed as a model for the state, and identified a vision for this model and key elements. At the core of changing our paradigm is Heart Connection and Change in Consciousness. Across all aspects of this vision the fine arts, music, poetry and science will bridge the following components:

- (1) Education: integrated into entire curriculum at every age. Training and literacy support. Sense of place and university collaborations.
- (2) Community Building: provide training and support for literacy. Block parties and community workshops to build community. Communication through social media and community clean-ups.
- (3) Tools & Models: An all-schools program. Toolkits. Water budget and a live watershed model. Interactive dashboard.
- (4) Code Change: transition to non-combustible buildings. Resilience and watershed planning underlays.
- (5) Pilot Projects: An all-schools program and school projects that serve as community hubs and parks. Non-combustible buildings. Bike trail.

### **Prioritized Actions:**

- 1.** Collaboration efforts, leverage the work everyone is already doing by creating a live platform for collaboration - connecting all the projects, studies, data, models and work being done
- 2.** Continuing to meet and bring others into the conversation
- 3.** Go out into the community to reach underserved/underheard people





## Localizing California Waters: Yosemite 2019 Regional Summary

### MERCED

The Merced group was composed primarily of students from UC Merced, who are familiar with the agricultural and economic challenges in the region. This group focused on how to bridge the gap and build relationships between farmers, community members and the state.

#### **Worst-Case Climate Scenario** includes:

- Agriculture quality decline/loss of food source - depletion of resources
- Inflexible crop types
- Heat waves, air quality inconsistency
- Increased water temperatures
- Collapsed dams
- Habitat conversion - increased invasive species, decreased native species
- Poor knowledge transfer between key stakeholders
- Water/energy nexus domino effect - blackouts, low power reliability
- Population decline - unlivable space, minimal resources

#### **Best Case Climate Scenario** includes:

- Population increase - due to housing crisis
- Decentralized infrastructure for water and energy
- Reduced impact agriculture - groundwater recharge
- Increased crop efficiencies
- Increase high production farmland
- Decrease/convert poor production land to advantageous land use
- Economic reframing - tax incentives and scholarships

#### **Prioritized Actions:**

1. Upstream watershed restoration - dam removal; mine cleanup
2. Utilize UC Merced as a gateway to knowledge and actions - incentivize students to graduate with a degree that can be applied to the local area/stay in local area upon graduating with scholarships; use the campus as a pilot program for urban runoff collection/reuse; utilize/develop green/ag tech

support

3. Sustainable Ag practices - build soil organic matter; convert poor quality/production land uses into something more productive or infiltrative; utilize compost and biochar; use no-till practices; educate farmers; groundwater recharge with good Ag practices

### EAST BAY - MOKELUMNE

#### **Worst-Case Climate Scenario (2100)** includes:

- Massive fires burning structures
- Sea level rise 16 ft;
- Reservoir quality decreases
- 4 degree C increase in temp
- Massive displacement of people
- WWT plant inoperable; GW and creek flooding
- Increase in landslides, erosion, winds
- Not enough water supply, increase demand, reduced supply
- Increase in disease, mosquitos
- Low/no snow pack
- Drought worse, heat waves
- Climate wars

#### **Best-Case Climate Scenario (2100)** includes:

- 6.9 ft sea level rise
- Varied local water supply
- Forest management for safe fires
- 2 degree C increase in temp
- Restore small water cycles
- Summer gof
- Year round flow in creeks
- Increase native plants and soil quality
- Decreased erosion
- Modest change in winds
- Change relationship to water
- Huge reduction in water use
- Max aquifer, wetland recharge
- Some snow pack left
- Worse drought
- Composting toilet

#### **Prioritized Actions:**

1. Watershed Restoration (streamflow connectivity, urban rain gardens, native planting) - GIS maps to



# Localizing California Waters: Yosemite 2019 Regional Summary

create toolkit; Survey - create matrix of stakeholders  
Create implementation plan. Public input.  
Educational tours for landowners and residents.  
Curriculum projects to implement restoration projects and funding.

2. K-12 Water Education (and rafting) - Vocational training. Campus retrofits. Campus watershed tour  
Funding - bill to create statewide funding for 1 week of experiential outdoor education. Rafting for high school, visit water supply for 4th and 5th grade
3. Good leaders - Engage k-12 with local reps. Push watershed friendly and resilient policies. Engage in campus/education voters.

## RUSSIAN RIVER

NO PLAN. ACT NOW.

### Prioritized Actions:

1. Build public and political will to make changes.
2. Use the information we have now to make plans.
3. Ag opportunities for using less water (ie dry farming vineyards)
4. Russian River bi-county initiative
5. Shared narrative to abundance
6. Education via joint briefing sessions, mobile tours, and joint shared data/tools
7. General plan updates with a resiliency element
8. Use pilot demonstrations to showcase resiliency/regeneration
9. Reliable energy and refined energy management
10. Reliable communications

## TUOLUMNE - STANISLAUD - PENINSULA

**Worst-Case Climate Scenario** includes:

- Decreased snowpack and warming temperatures decrease seasonal flow
- Droughts increase tree mortality and catastrophic fires
- Floods cause erosion of soil
- Effect is loss of soil "sponge" and degraded watershed health with resulting effects on timber, tourism, real estate, agriculture and other economies.

**Best-Case Climate Scenario** includes:

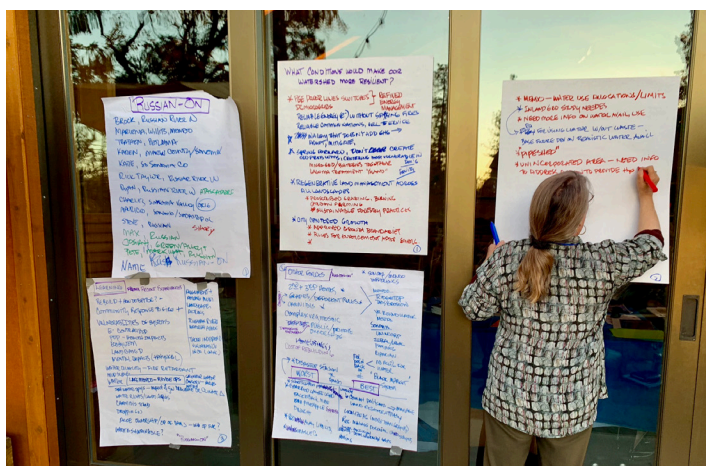
- Land and water management tools used to maintain natural infrastructure and watershed health.

### Prioritized Actions:

1. Upper Water Management tools  
Prescribed/cultural burns  
Targeted grazing/browsing (biomimicry)  
Mulching
2. Central Valley and Ag Tools  
Riparian Buffers  
Fallow land as seasonal flood plains  
Groundwater monitoring and accountability
3. Urban setting  
Water budgets and true-cost pricing  
Incentives for conservation/efficiency and onsite treatments
4. Education and outreach  
To students  
Provide regional LCW meetings - involve local stakeholders not currently engaged

## SACRAMENTO

In discussing best and worst case climate scenarios for the region, four solutions rose to the top of the discussion. The group decided to frame the work of building river basin governance. To support this idea, they discussed how to apply the concept of a specific planning framework that supports participants to identify interdependent desired outcomes addressed: societal goals;





## Localizing California Waters: Yosemite 2019 Regional Summary

system states; behaviors and infrastructure and enabling conditions. The group used a solution of implementing the one water lens (integrated water management). SEE MORE IN NOTES.

### **Worst-Case Climate Scenario** includes:

- 10 ft sea level rise (up to Freemont Weir)
- Billions of dollars lost
- Placerville burns down
- Increased number of natural disaster-related deaths - more likely for vulnerable communities
- Extended drought
- Immigration from the Bay Area to Sacramento
- Extinction of native fish
- Decrease in: agricultural inputs to economy; job loss; stability of societal structures
- Birthrate/population
- Infrastructure rebuild or upgrades
- Increase in: health issues; food insecurity
- Anxiety and violence

### **Best Case Climate Scenario** includes:

- Change in agriculture: crops and how they are grown
- Drop in groundwater supplies
- Displaced populations from CA
- Decrease in snockpack, flashier floods
- Timing and availability of water
- Increase in harmful algal blooms
- Extinction of cold water fish
- Decrease in community access to water
- Change in values around water
- Decrease in water quality
- Increased river flooding
- Hotter weather
- Dry summer
- Increased fires
- High winds
- Increase in demand for electricity
- Loss tree canopy
- Increased demand for water
- Sea level rise

### **Prioritized Actions:**





## Localizing California Waters: Yosemite 2019 Regional Summary

1. Establish a regional governance for river basins  
- fund through river basin tax for public benefit portions (planning; management of land and water use; regulation)
2. Societal Goals (Public Health and Safety; Stable Economy; Resilient Ecosystem; Opportunities for Enriching Experiences)
3. Address aging infrastructure and prioritize updates that meet societal goals
4. One water lens: storm, grey, recycles, waste, drinking and groundwater
5. Water budgets that include the environment and budgets for diverters

