Yuba IRWM/RWMG Meeting, August 18, 2021

(***Thank you for joining us! Please ensure your phone is muted until directed for Q&A***)

Agenda:

1. Welcome
2. Announcements
3. Reminders
   - Yuba Water Grant Program
   - Yuba IRWM Project Development Circuit Ride Calls
4. Water Supply/Drought Update
5. The Sierra Fund-Mine Remediation and Meadow Restoration Project
6. Yuba Racial Equity Initiative
7. Contacts and Next Meeting

Announcements

- Public announcements
  - DWR announced that Small Community Grant applications for emergency drought relief can be submitted now (no formal PSN process)

- Dry Well concerns
  - To report a water supply shortage from a domestic well, go to the DWR MyDryWaterSupply webpage (https://mydrywatersupply.water.ca.gov/report/)
  - Yuba County Emergency Services Office can also advise:

Briana Haberman
Emergency Operations Manager
bhaberman@co.yuba.ca.us
(530) 749-7520 (main)
(530) 749-7522 (direct)
Cell phone for emergencies (530) 845-3029

YUBA WATER AGENCY

Yuba Water Community Impact Grant and Loan Program

- Next Open Period is Sept 1-Oct 1 2021
- New Grant scoring criteria and templates are now part of the new online application
- Available funding for the remainder of the Fiscal Year is just $500,000
  - Heavy preference for applications that leverage external funding
  - Applications linked to external funding can be submitted at any time
  - Need to be strategic in project planning
    - infrastructure, drought response, COVID-related funding, and Wildfire risk reduction funding all are yet to be fully developed via state and federal grant programs
  - The IRWM team is available to discuss a funding strategy for your project once you identify a relevant grant program

YUBA WATER AGENCY

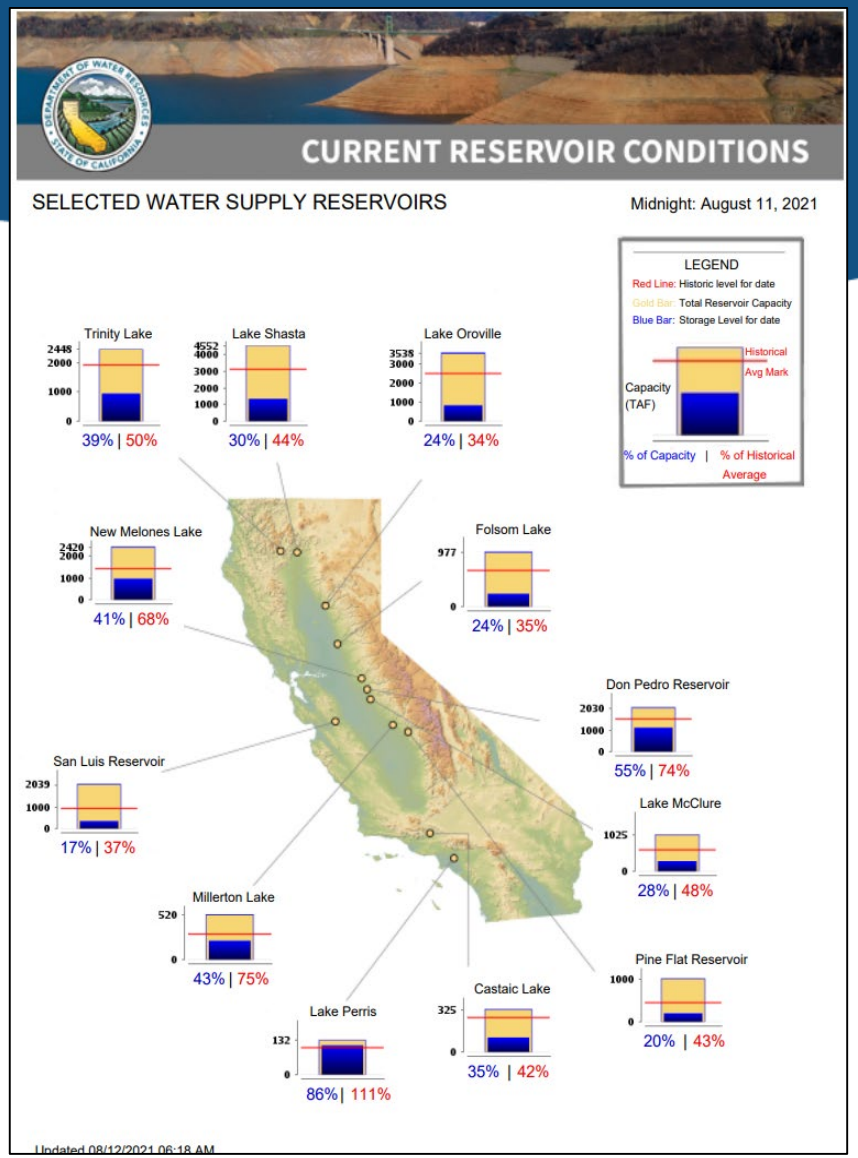
Reminder: Yuba IRWM Project Circuit Ride

- Katie Burdick and Keri Rinne continue to offer project development calls or video meetings
- Please feel free to email Keri (keri.rinne@gmail.com) to request a call from her or Katie for Project Development
- Please **send all project short forms to Keri Rinne**
  - provide as much detail on project tasks, especially planning vs. implementation detail, schedule and budgets
- Funding evaluation memos will be sent back to you to help develop a funding strategy (*use these memos prior to applying to Yuba Water for funding support*)

Yuba Water Supply Update

Current Conditions

- Currently under a Yuba Accord Flow **Schedule 5 for a dry year (***maintain minimum flows at Marysville Gage to 400 cfs***)**
- New Bullards Bar Storage as of 8/12/21 = **450,000 acre-feet**, **46% of capacity**, **64% of normal year to date (***Many other major reservoirs are below 40% of capacity***)**
- Inflow Year to Date: 279,000 acre-feet, **only 24% of normal**
- Water supply reductions=72,000 acre-feet of irrigation shortages to Member Units = **33% reduction from normal supply of 225,000 acre-feet**



Yuba Water Supply Update and Drought Response

Remainder of WY 2021 Forecast:

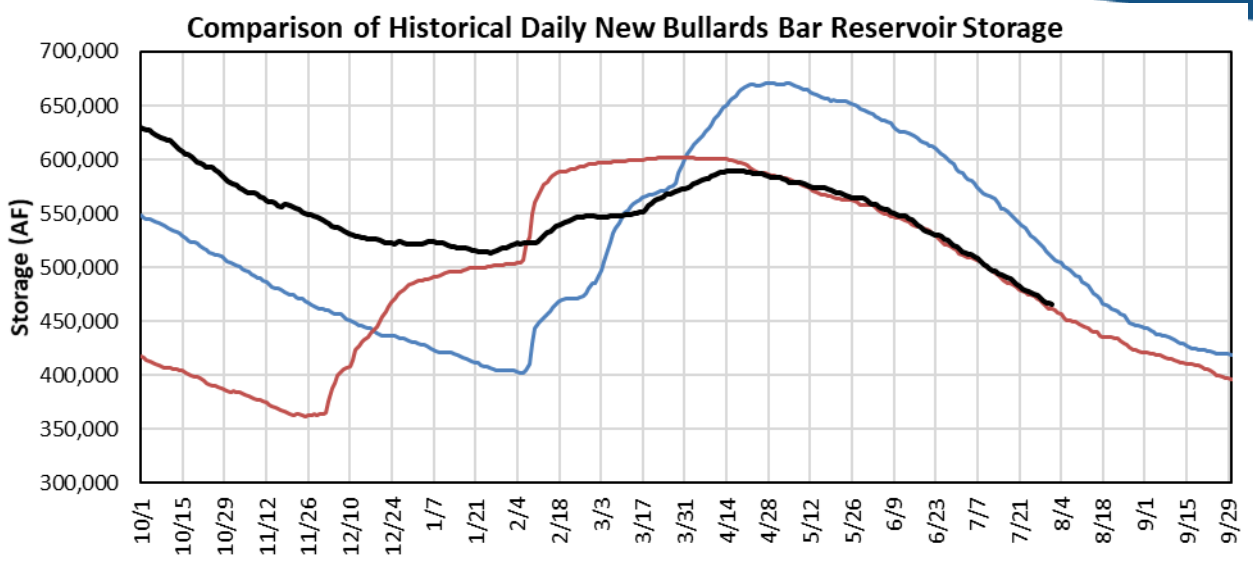
- End of Water Year (September 30th) storage forecasted to equal 390,000 acre-feet (currently ~450,000 AF)
- End of Calendar Year 2021 storage forecast could be as low as 300,000 acre-feet or lower if it does not rain

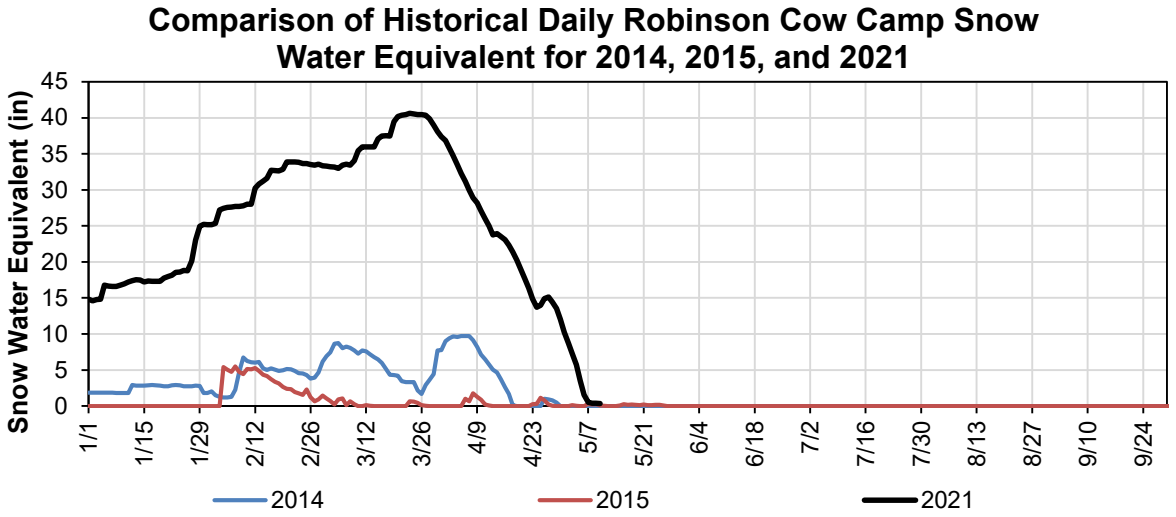
Comparison to 2014-15 Drought:

- Water Year 2021 is the 4th lowest single precipitation year in 113 years of record, with the 2nd lowest runoff totals into NBB
  - 2021 had less total precipitation overall than 2015, but cold temperatures during 2020/21 early-mid winter led to mostly snow precipitation in upper watershed (*2014-2015 had almost zero snowpack*)
  - Warmer 2021 spring and low snowpack led to reduced surface water runoff (only 20% of total precip. ran off as surface water) due to increased evaporation, vegetative evapotranspiration, and soil infiltration from high temperatures and thirsty soils and plants

YUBA WATER AGENCY

Reservoir storage is still tracking very close to 2015





THE SIERRA FUND

BLUE FOREST CONSERVATION

Climate Resilience with Forest Health Collaborations Mines and Meadows in the Yuba River Watershed

Summer 2021 YWA IRWMP

Goals:

- Expand and deepen the Forest Resilience Bond models to include meadows and mines

- Develop additional forest health projects that include mines and meadows

Tasks:

Task 1: Coordinate forest resilience planning efforts with mines remediation and meadow restoration planning

Task 2: Build a benefit calculations model for mines and meadows restoration

Task 3: Develop multi benefit project portfolios using alternative funding models

Project Need

Impacts to Resiliency

The California Gold Rush

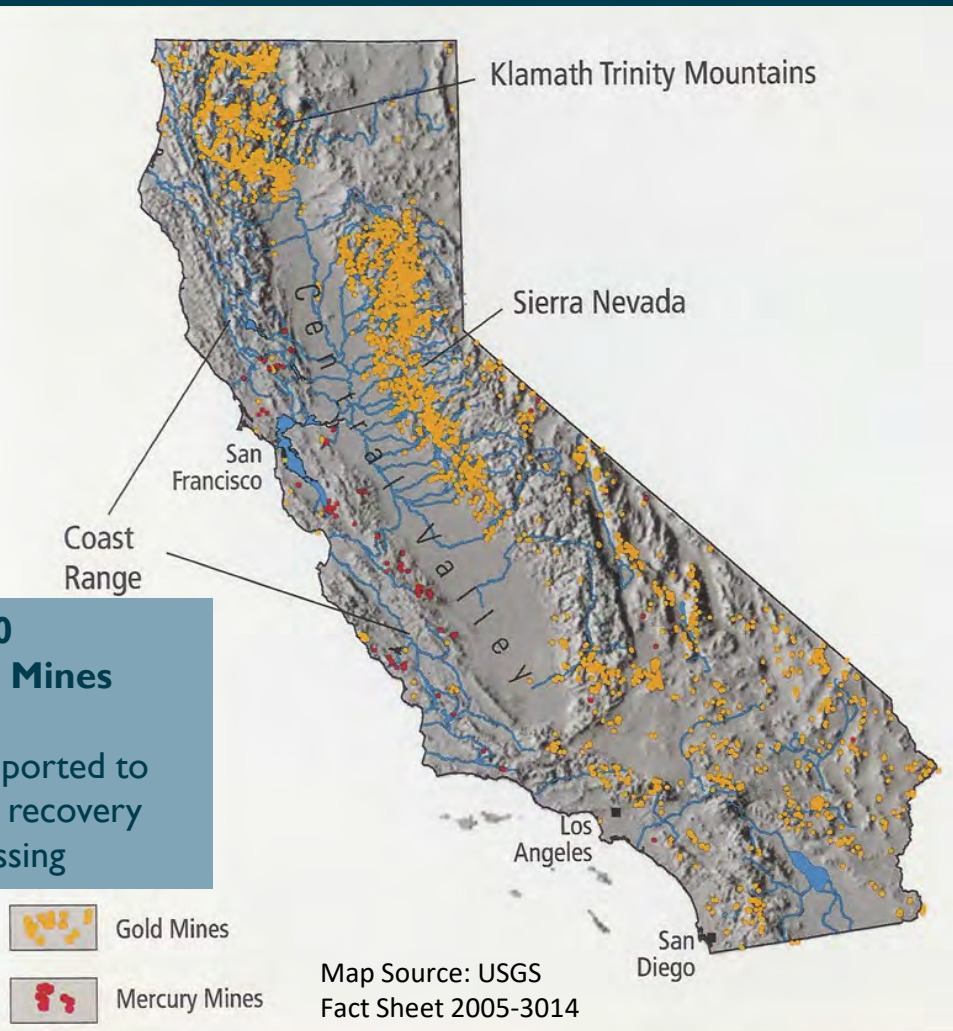
Mines | Meadows | Forests | Fish | People

Hydraulic Mines

Hydraulic Mining: Access gold in ancient river deposits

Over 40,000 Abandoned Mines

Mercury: Imported to improve gold recovery during processing



Map Source: USGS Fact Sheet 2005-3014

Meadow Restoration

Meadow Degradation: Overgrazing and incision

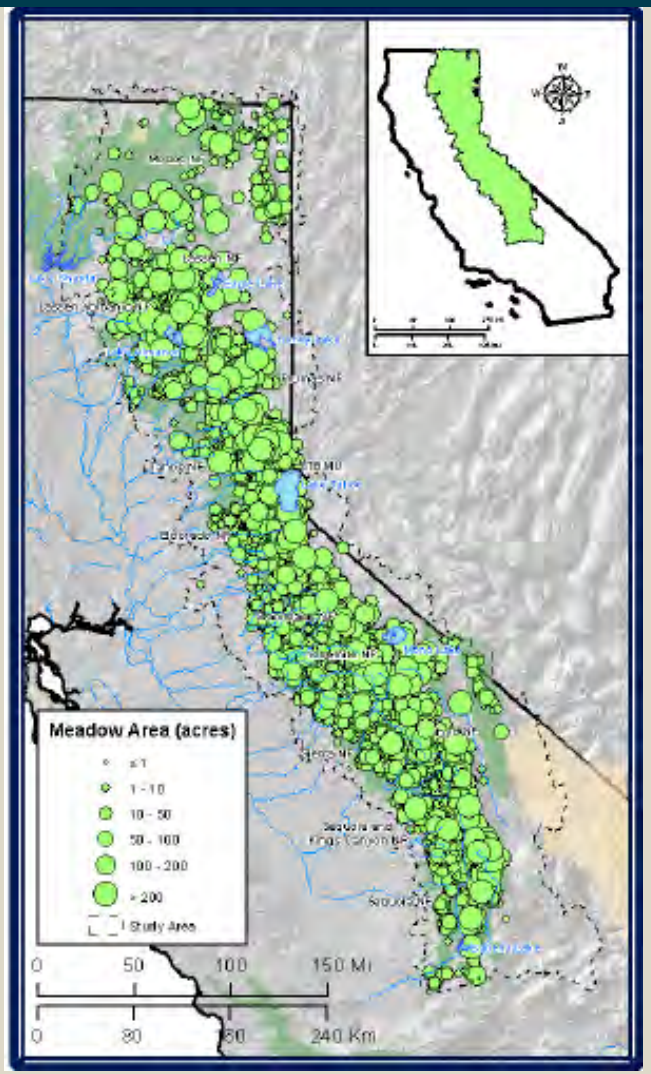
Hydrologically functional: Water quality, habitat, carbon

Drawings by Restoration Design Group.

Over 19,000 meadows (>1ac)

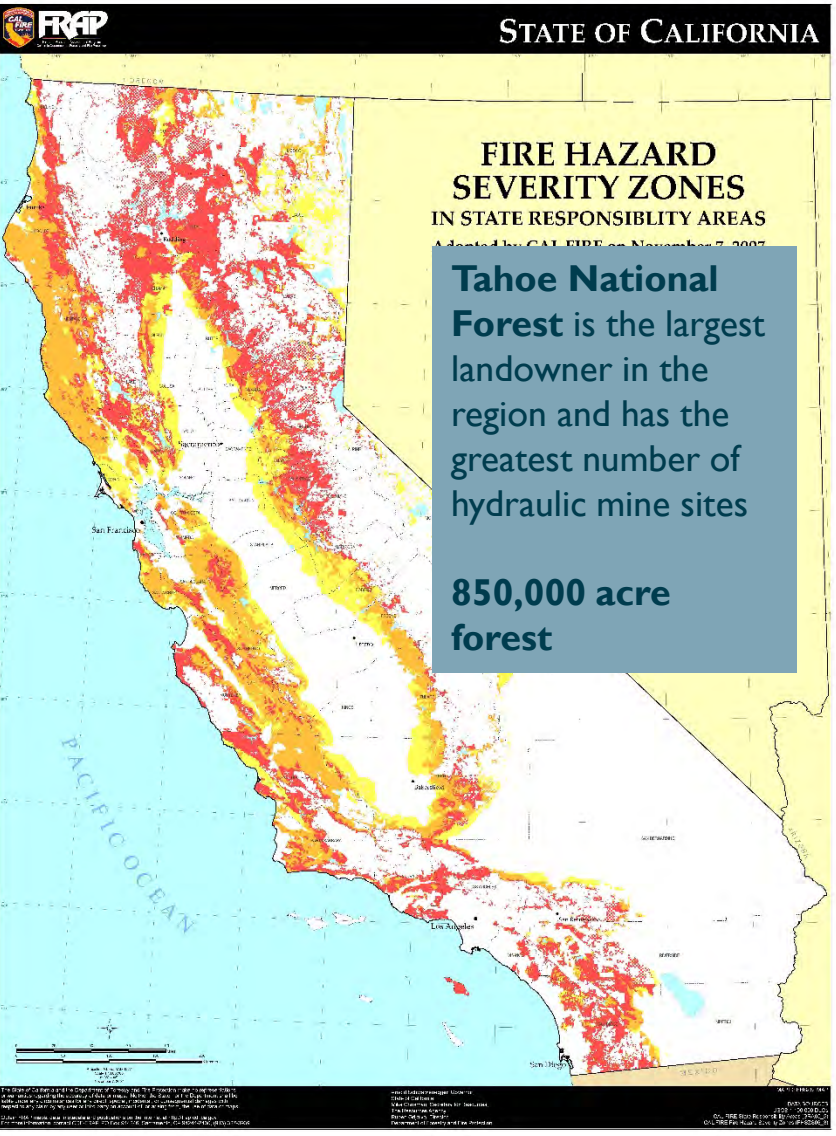
280,000 acres of meadow in the Sierra Nevada

40-60% degraded



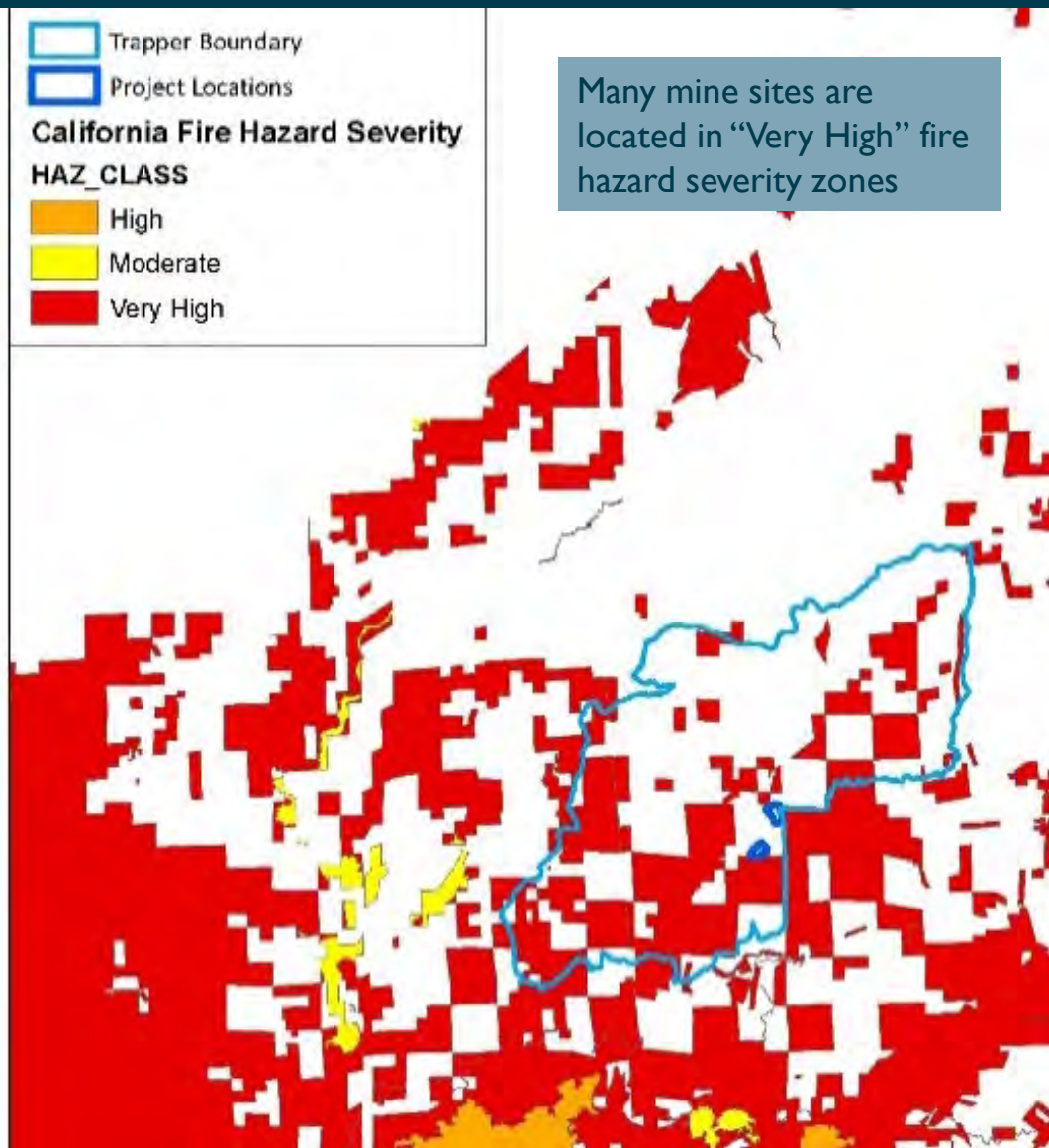
Distribution of Sierra Nevada and Southern Cascade Range Meadows (Viers et al. 2013)

Project Need



Tahoe National Forest is the largest landowner in the region and has the greatest number of hydraulic mine sites

850,000 acre forest

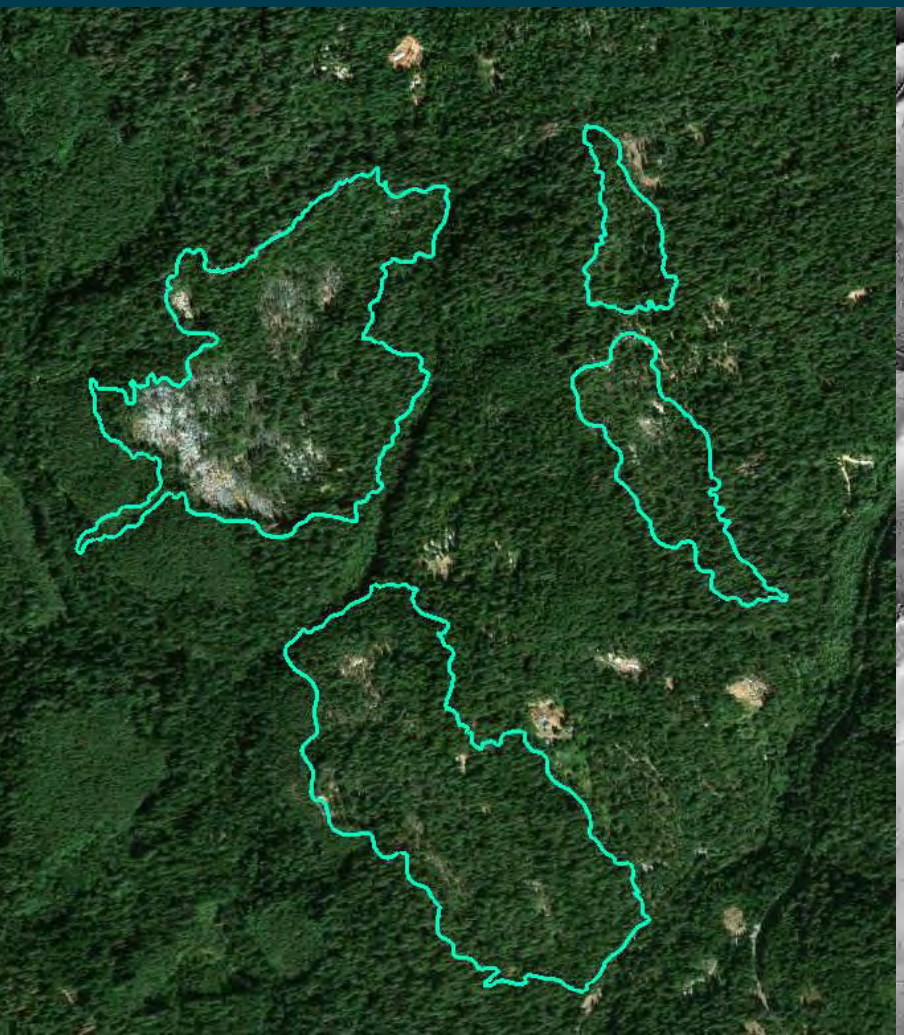


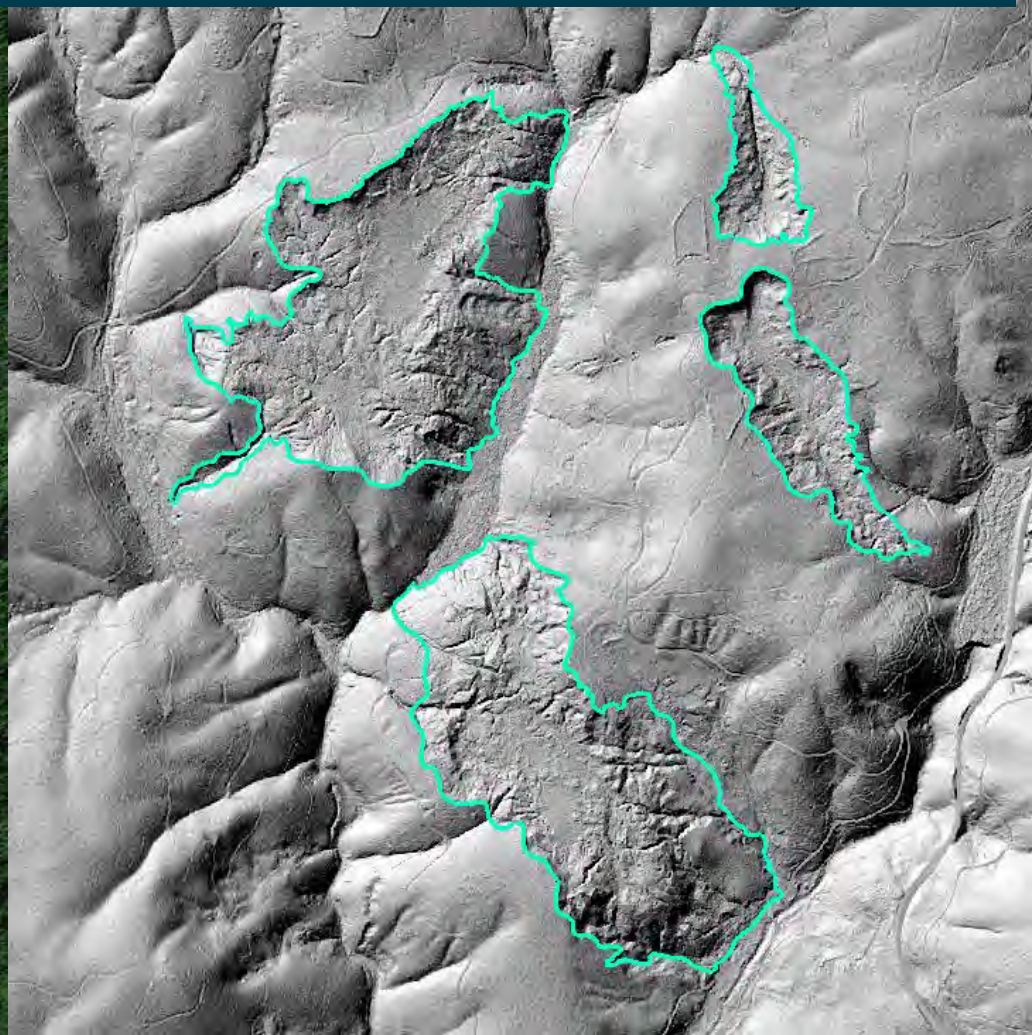
Many mine sites are located in "Very High" fire hazard severity zones

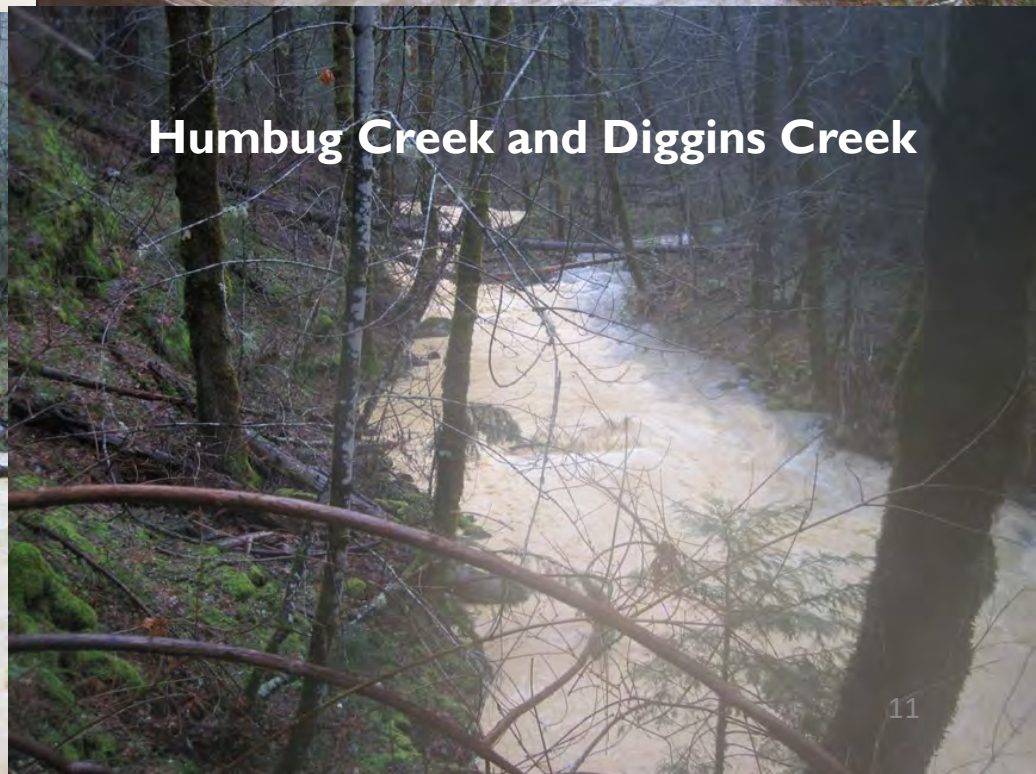
What does it look like out there? Hydraulic Mine Site Characteristics

- Active Erosional Areas
- Drain Tunnels
- Ditches
- Ponds
- Gullies / Headcuts
- Multiple Outflow Points

What has changed:
LiDAR allows for Improved Mapping







Photos taken by Dr. C. Monohan 3/14/2012

What is Forest Health in the Gold Country

Ecosystem benefits of Hydraulic Mine Remediation:

- Sediment abatement
- Carbon sequestration
- Water Quality
  - specifically Mercury Reduction

What is Forest Health in the Gold Country

Ecosystem benefits of Meadow Restoration:

- Sediment abatement
- Carbon sequestration
- Habitat and Water Quality
  - Specifically temperature, timing

Next Steps

Task 2: Build a benefit calculations model for mines and meadows restoration

- So that hydraulic mines and meadows can be remediated as part of Forest Health projects.

Task 3: Develop multi benefit project portfolios using alternative funding models

- **Develop AML Resilience Bond Pilot Project**
  - Middle Yuba and Our House Dam upper sub-watersheds

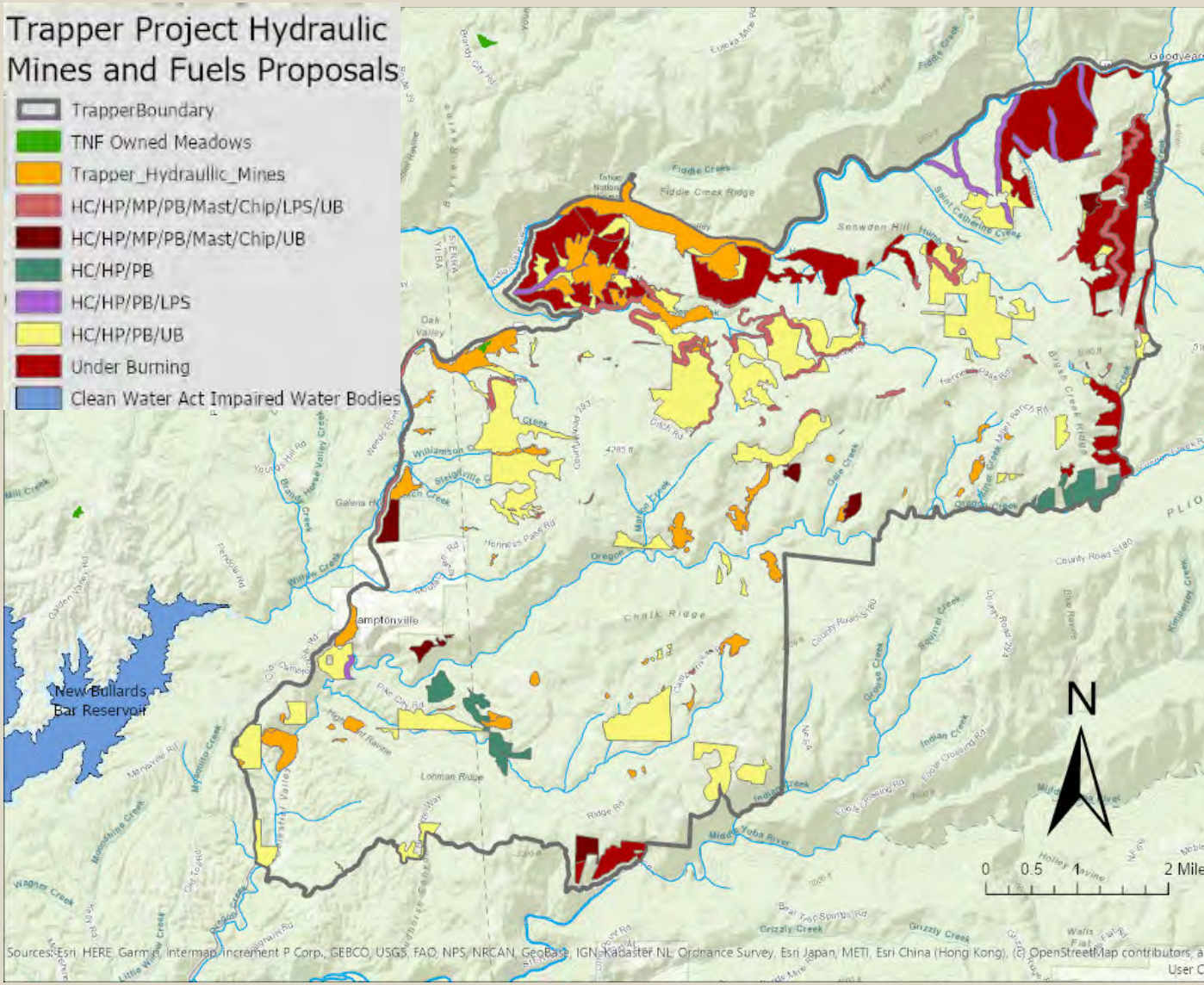
Trapper Project-Case Study

Approximately 31,000 acre planning area, with 19,300 acres of National Forest System

63 Hydraulic Mines
1,199 acres

TN Forest Service project to enhance watershed health by improving;

- Forest health and resilience to changing climatic conditions
- Reduce surface and ladder fuels
- Protect and/or improve wildlife habitat
- Maintain and improve watershed and soils conditions



Trapper NEPA FONSI

Oct 2020 Tahoe National Forest

Forest Health activities:

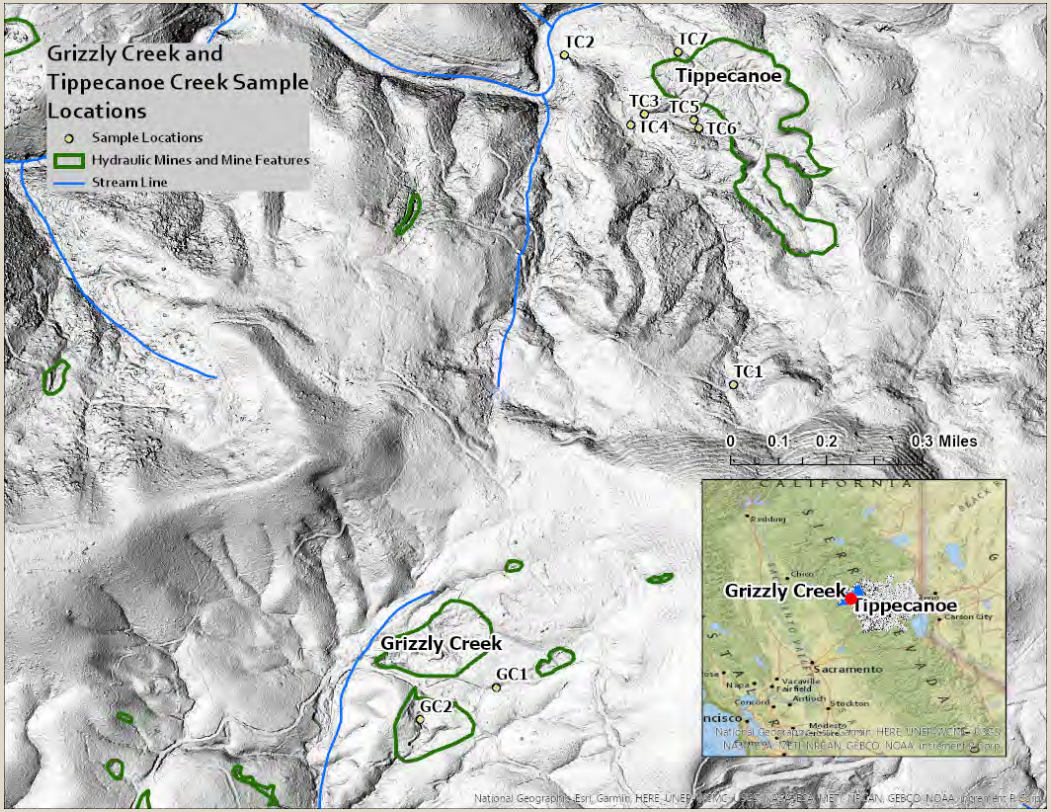
- Commercial thinning (9,107 acres)
- Fuels reduction (15,324 acres)
- Hazard Tree Removal
- Reforestation
- Road repair, maintenance, construction an decommissioning
- Wildlife nest box, platform structures
- Bark beetle management
- Invasive plant management
- Hydraulic mine stabilization and drainage improvements

SNC Planning Grant
Trapper Pilot Projects

- Tippecanoe:
  Plug tunnels and direct pathways to Oregon Creek, fuels reduction, chip broadcast to promote revegetation and reduce erosion

- Grizzly Creek:
  Establish stable geomorphic landscape, fuels reduction, chip broadcast to promote revegetation and reduce erosion.

- Timeline:
  March, 2018 – May, 2022

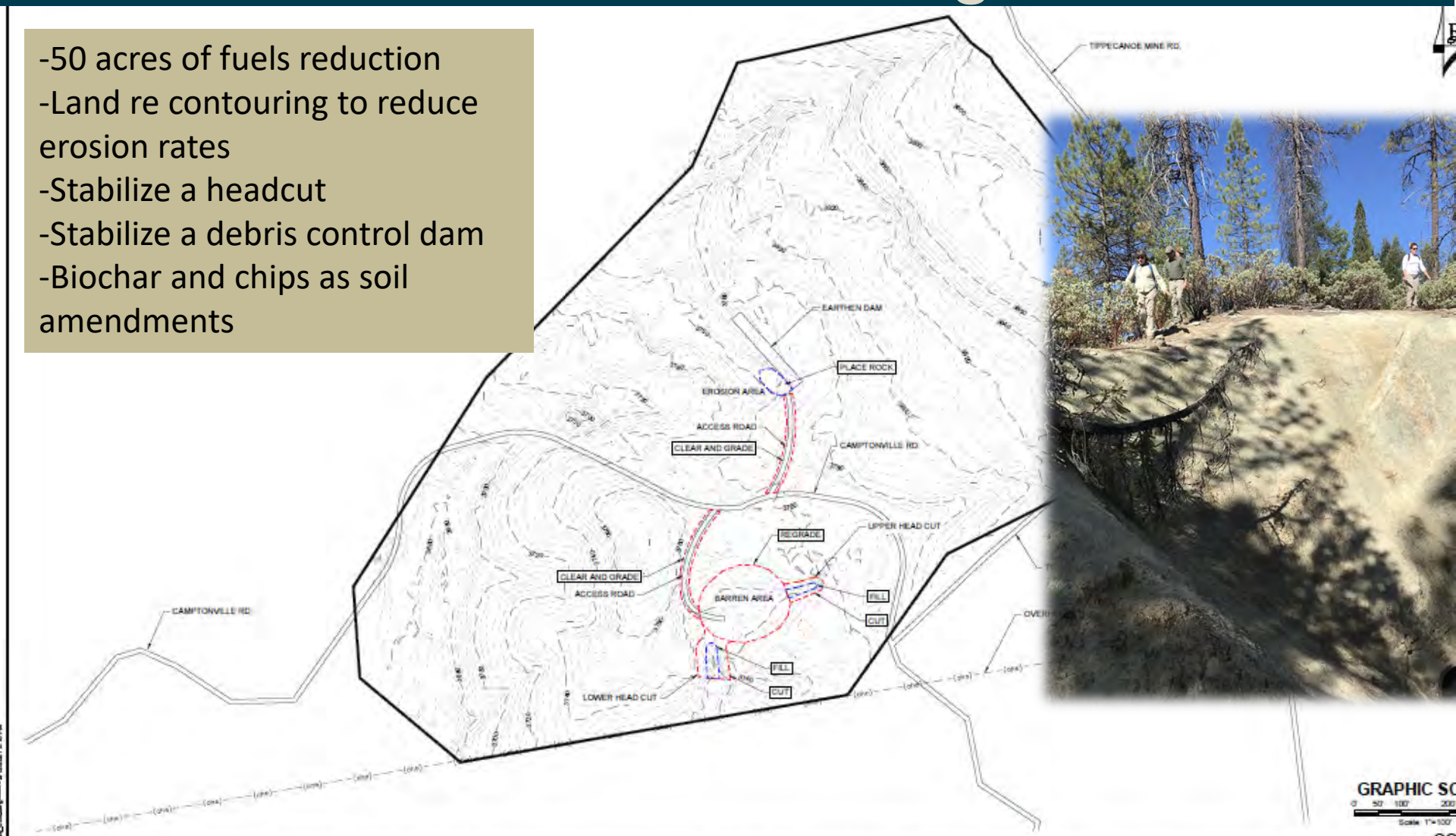


Assessment:

- Archaeological survey completion spring 2020
- Storm sampling for project effectiveness monitoring plan
- Remediation Design informed by cultural and environmental assessments
- Fuels Reduction and Erosion Prevention Plans

Grizzly Creek Remediation Design

-50 acres of fuels reduction
-Land re contouring to reduce erosion rates
-Stabilize a headcut
-Stabilize a debris control dam
-Biochar and chips as soil amendments



ATTENTION
PRELIMINARY DRAWING NOT FOR
TAHOE NATIONAL FOREST
CALIFORNIA
FORSGREN Associates Inc.
GRIZZLY CREEK DIGGINS
CONCEPTUAL REMEDIATION DESIGN

Forest Health in the Gold Country

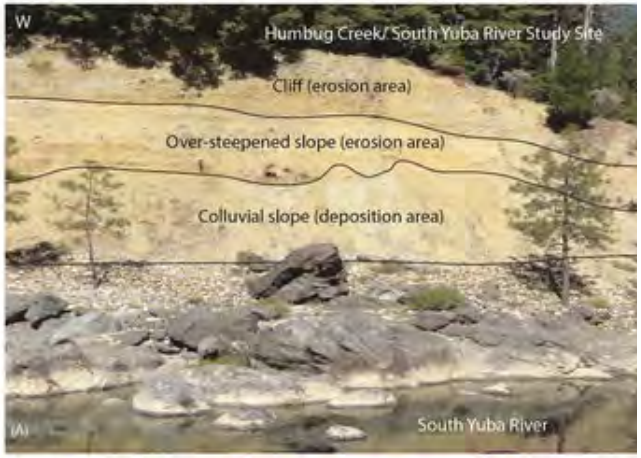
- Can hydraulic mines be remediated as part of Forestry Health projects?
  - Grizzly Creek Pilot project
    - Key was including it in NEPA, additional sites can be added with NEPA amendments
    - NEXT STEPS: CEQA to be eligible for State Funds
- Can we create financial mechanism for including mines in Forest Health projects?

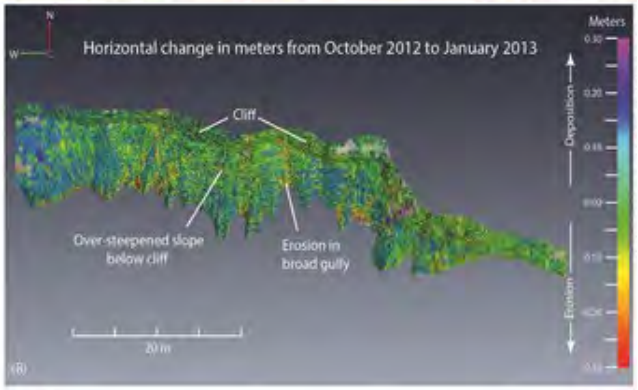
AML Resilience Bond

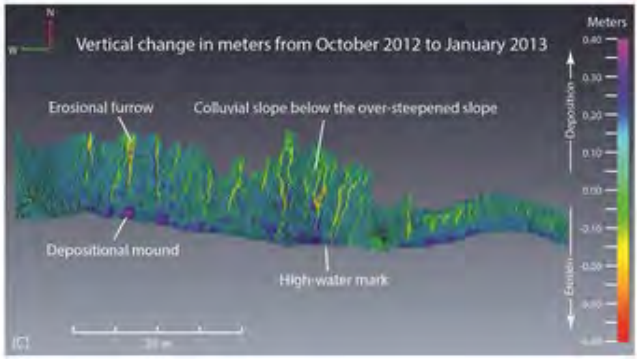
- Can we use this pilot project as an example of a way to include hydraulic mine remediation in other forest health projects?
- Develop a Resilience Bond to fund AML remediation based on the ecosystem benefits
  - Quantify Ecosystem Benefits
  - Identify Payers for these Benefits
  - Structure a Resilience Bond to fund AML Remediation

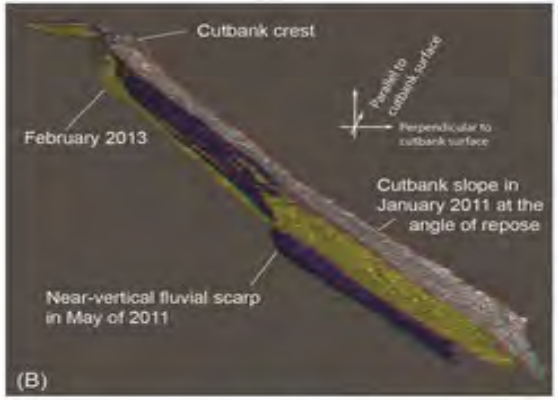
Sediment Abatement: USGS Terrestrial LiDAR

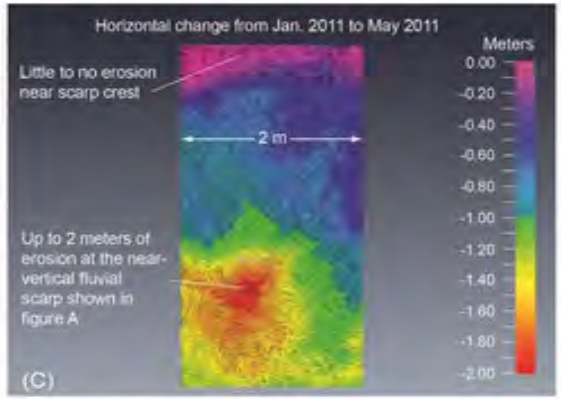
Estimated erosion rate = 0.1 m3/m2/year

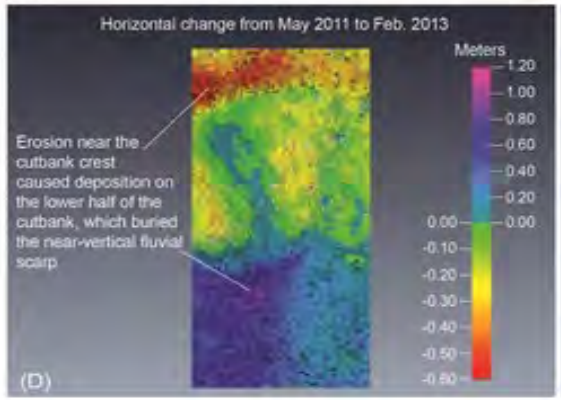


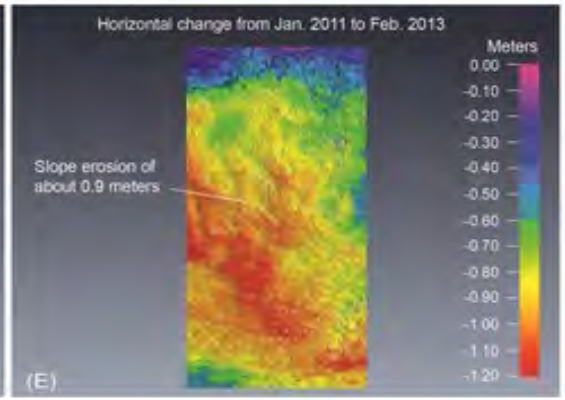












Where does this matter most?

Log Cabin Dam

Oregon Creek

Our House Dam

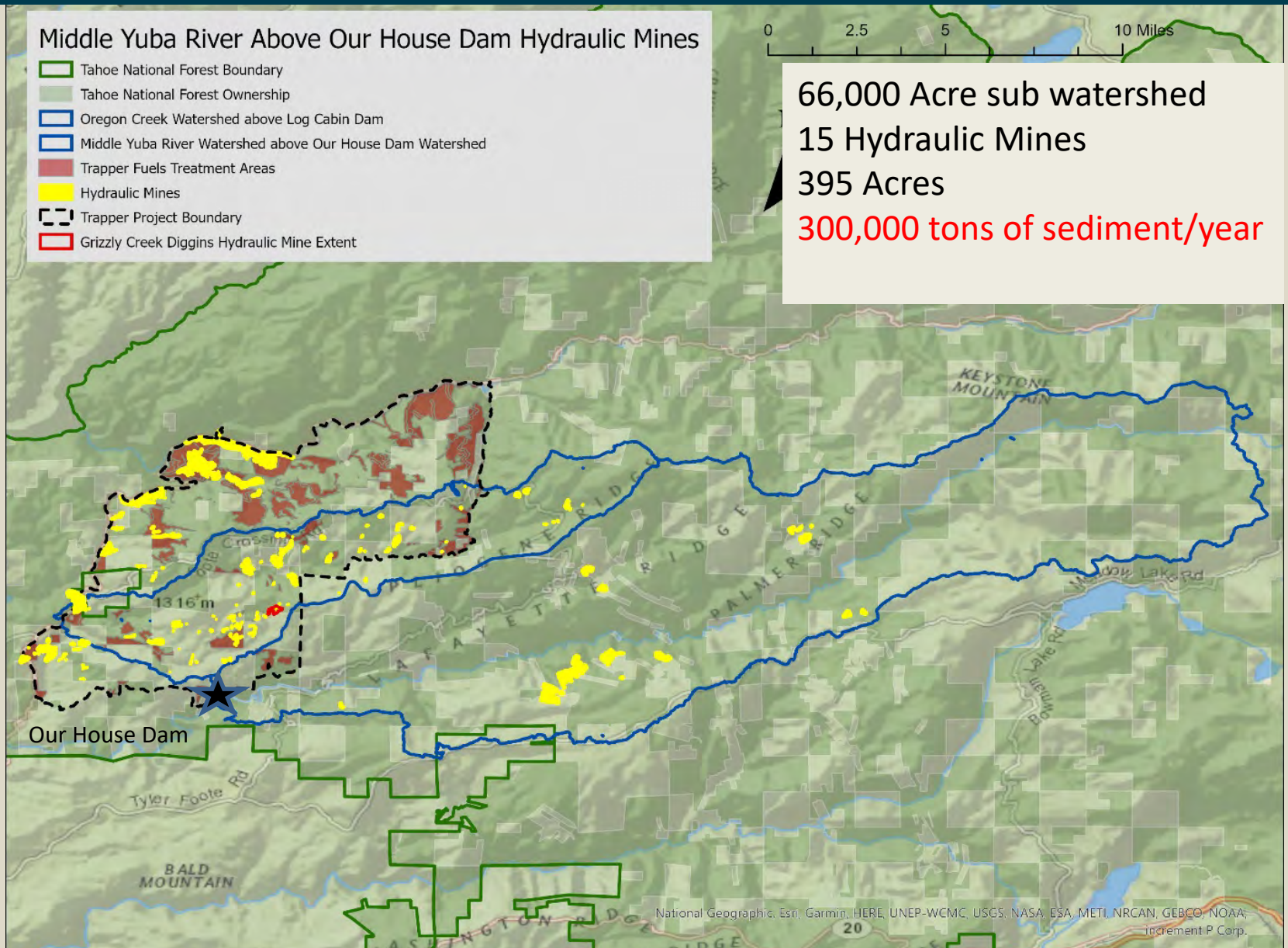
Middle Yuba

Why does this matter at these impoundments?

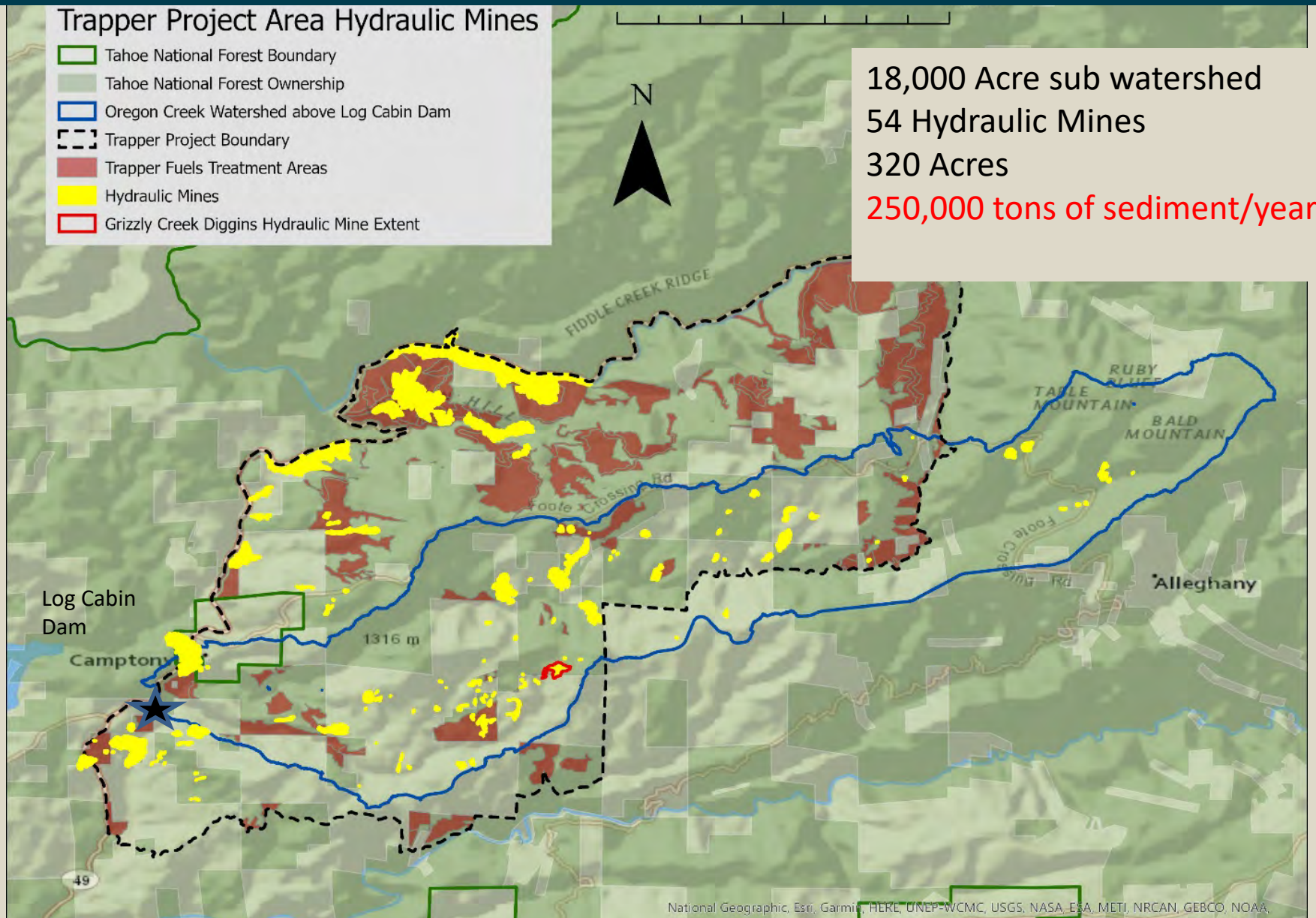
- Our House Dam-Middle Yuba
- ~7M$ worth of maintenance costs in 2017

To remove 90,000 tons of sediment

Middle Yuba


Middle Yuba River Above Our House Dam Hydraulic Mines
Tahoe National Forest Boundary
Tahoe National Forest Ownership
Oregon Creek Watershed above Log Cabin Dam
Middle Yuba River Watershed above Our House Dam Watershed
Trapper Fuels Treatment Areas
Hydraulic Mines
Trapper Project Boundary
Grizzly Creek Diggins Hydraulic Mine Extent
0
2.5
5
10 Miles
66,000 Acre sub watershed
15 Hydraulic Mines
395 Acres
300,000 tons of sediment/year
Our House Dam
1316 m
KEYSTONE MOUNTAIN
LAFAYETTE RIDGE
PALMER RIDGE
Meadow Lake Rd
Bowman Lake Rd
Tyler Foote Rd
BALD MOUNTAIN
20
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Oregon Creek



Costs of Maintenance vs Cost of Remediation

AML Resilience Bond Proof of Concept

Cost per acre for hydraulic mine remediation $~35,000-50,000/acre

Number of HM Acres in the Middle Yuba and Oregon Creek = 715 acres

Need 24M - 35M --investment opportunity

Cost to remove 90,000 tons of sediment = $7M *(note this is not an annual cost)*

BUT WAIT HOW MUCH SEDIMENT IS COMING OUT OF THE MINES EACH YEAR?

Amount of HM sediment per year 550,000 tons of sediment/year

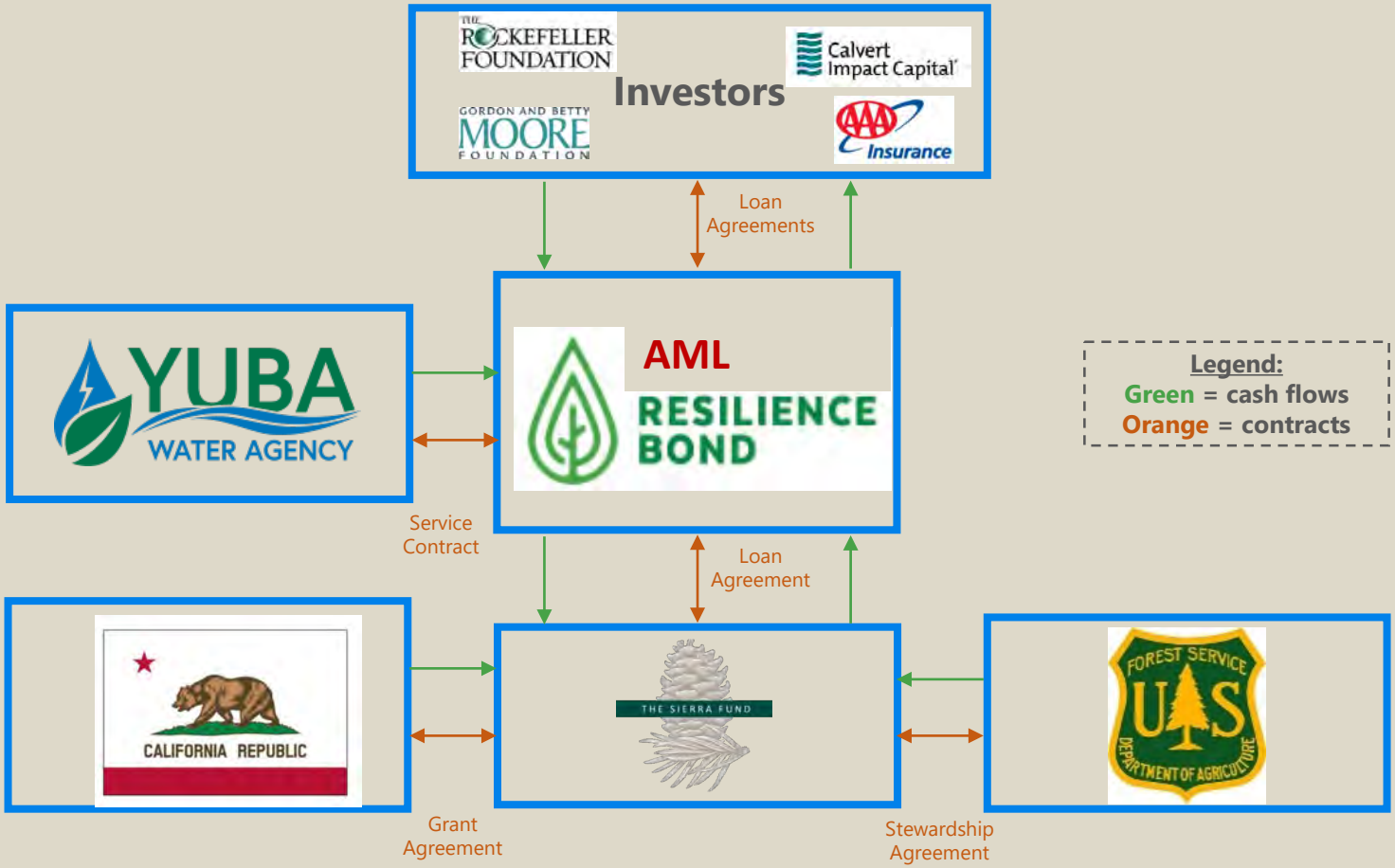
Need 42M --and the problem still is not fixed

Co-Benefits:

Increased carbon sequestration in soils with biochar

Reduced mercury discharge with remediation

Pilot AML RB: Structure & Stakeholders



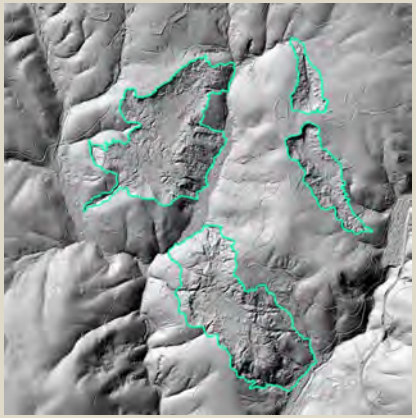
On going work with World Resources Institute Qualifying Ecosystem Benefits

Ecosystem benefits of Hydraulic Mine Remediation:

- Sediment abatement
  - Terrestrial LiDAR-part of Grizzly Creek project ($35K)
- Carbon sequestration
  - Biochar Carbon Amendments-part of US Endowment proposal
- Mercury Reduction
  - Hg TMDL, data gaps analysis, in a proposal (HARDEST PART) unless we can change how the TMDL measures Hg

Key points

- Hydraulic mines are extensive in our area and have unique ongoing impacts that we need to understand
- By understanding the impacts of the resource extraction era, we are able to help create truly comprehensive watershed restoration projects
- Resilience Bonds are a way to do large scale hydraulic mine remediation projects

Climate Resiliency

- Restore watershed function
- Process Based Restoration
  - Restore the processes that allow the watersheds to be resilient (to withstand change)
- Remediate mine scarred lands
- Restore Meadows
- Carbon sequestration is critical-reverses climate change

  -Forests are the solution

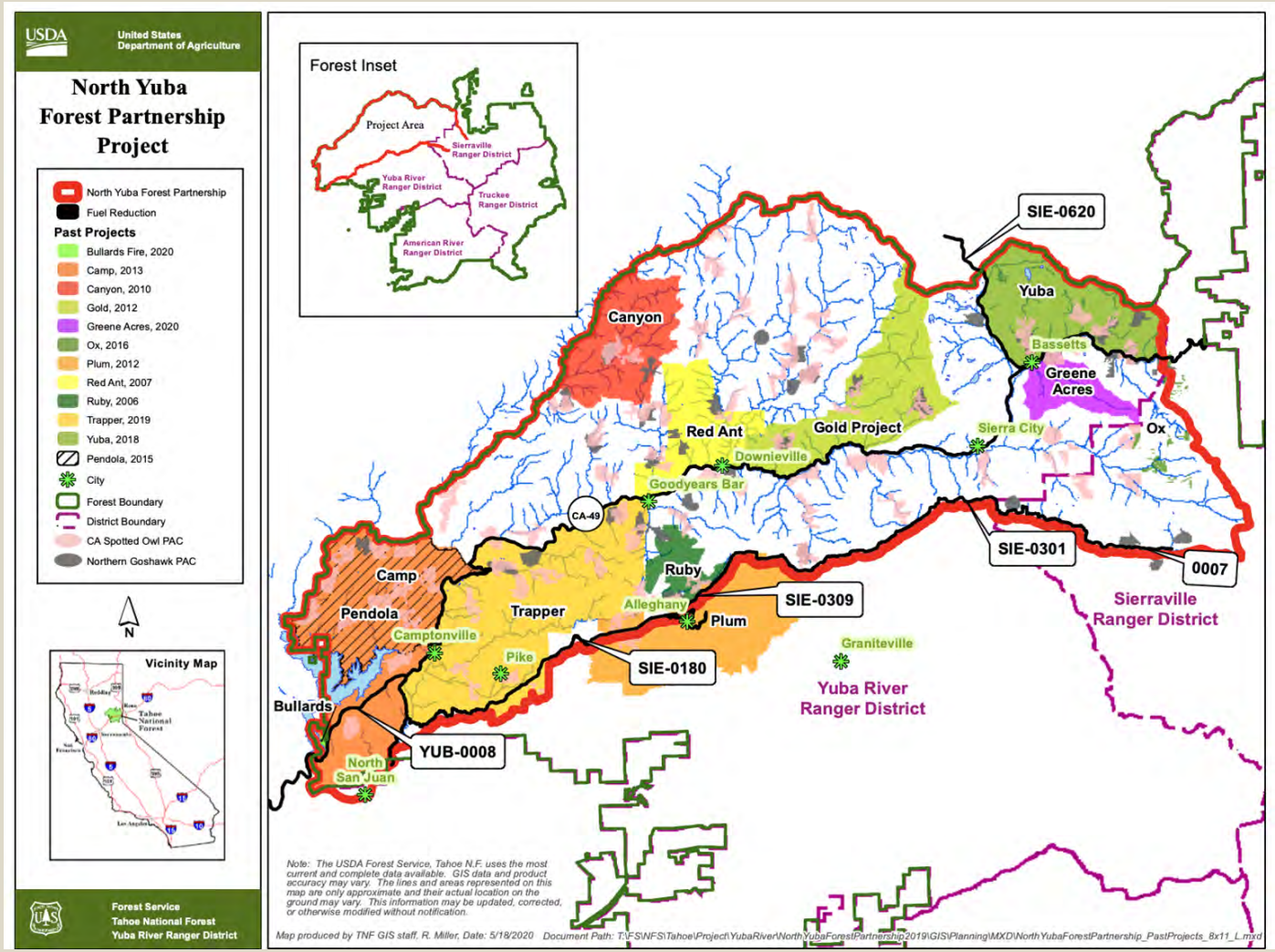
BLUE FOREST CONSERVATION

Contact Us!

The Sierra Fund
204 Providence Mine Road, Suite 214
Nevada City, CA 95959
www.sierrafund.org

Carrie.Monohan@SierraFund.org
nick@blueforest.org
phil@blueforest.org

Forest Resilience Bond Planned Actions



TU AGUA

LATINO OUTREACH
IN THE YUBA IRWM REGION
2013 - 2021

THE BACKSTORY: 2013 - 2021

- The Tu Agua project was initially part of the 2015 Yuba IRWMP update and consisted largely of data collection –to better understand the makeup and dynamics of the Latino population in the valley floor area of the Plan.
- Initial data gathering focused on: interviews with local residents and relevant organizations, ‘person-on-the-street’ interactions, in-depth interviews with local associations/formal organizations and leaders, as well as conversations with agency and organization staff across the Yuba IRWM region.
- Initial results indicated that the Latino community was overwhelmingly unaware of water issues, the watershed, or where their water comes from.

THE BACKSTORY: 2013 - 2021

- The populations of Olivehurst, Linda, Wheatland and Marysville are respectively comprised of 39%, 36%, 30%, and 30% Latino residents, many of them linguistically isolated (2020).
- In 2017, the Dept of Water Resources initiated a Disadvantaged Community Involvement (DACI) Grant for the Sacramento River Funding Area/SRFA.
- The results of the 2015 Yuba IRWMP updates directly informed key elements of the overall SRFA grant. The Tu Agua project is the result of IRWMP Update process outcomes and the DACI opportunity.

DACI ACCOMPLISHMENTS 2018-2021

- ✓ Generated more than 195,000 impressions on Facebook
- ✓ Directly engaged and educated more than 2,500 individuals at community events
- ✓ Provided presentations to Spanish-speaking parents at four local elementary schools (Olivehurst area)
- ✓ Participated in Spanish-language radio interviews reaching a large geographic footprint

ONGOING DACI PROJECT COMPONENTS 2021 - 2022

- Board Training and Education
- Communications Audit
- Latino Advisory Committee
- Community Events (fairs, ELAC, etc.)
- Media (social, print, radio)
- DAC Outreach Manual

Desired Outcomes by Project Component

- **Overall Goal**: engage disadvantaged communities, build community participation and nurture racial equity as it pertains to water issues in the participating municipalities.
- **Board Training and Education:** Train participating water agency boards on the dynamics and practice of engaging issues of racial equity and the importance of engaging traditionally underrepresented communities.
- **Communications Audit** – Review participating agencies' existing communications materials and provide recommendations on what is effective and/or could be improved to better engage language-isolated communities.

Desired Outcomes by Project Component

- **Latino Advisory Committee**: Develop a committee of Spanish-speaking community members to serve as a connection between the various boards/councils and the Latino community. The committee can help identify water issues unique to their communities, advise the board on impacts to the Latino community, and be trained to ultimately formally represent their communities at the decision-making level.

Desired Outcomes by Project Component

- **Community Events**: Participate in community events, ELAC meetings and other opportunities where we can directly interact with and educate community members.
- **Media** (social, print, radio): Continue the successful Facebook education and advertising program. Develop an outdoor and radio advertising campaign reiterating and reinforcing Tu Agua messaging.

DESIRED OUTCOMES

- Latino community that is more aware of and understands local water issues and services
- A growing cadre of local residents preparing themselves to serve on boards, committees, water and environmentally focused community-based organizations, and pursue water-related jobs
- Water agencies better equipped to effectively serve and communicate with a growing, diverse population
- Water systems in which the needs of underrepresented communities are more readily identified, brought to the attention of decision-makers and systematically and systemically addressed

NEXT STEPS: 9/21 – 9/22

- Work with senior staff at Olivehurst Public Utilities District, Linda Water Agency, Marysville and Wheatland to determine which DACI project components are the best fit for each jurisdiction.
- Make presentations to the various boards/councils about the program, following input, collaboration and coordination with staff.
- Develop work plan and schedule for each participating entity.
- Initiate program components beginning in September/October of 2021 with all project work completed by Sept/Oct 2022.

- **Next Meeting-November 17, 2021 9:00-11:00 Please Save the Date**
  - Contact Joanna if you have a project or subject you'd like to present (or get an update on)

- **Contact**
  - Joanna Lessard (jlessard@yubawater.org) or Katie Burdick (katie@burdico.net) with any general questions or concerns

  - Keri Rinne (keri.rinne@gmail.com) with any questions about the project development process, Circuit Ride meetings, or to submit new or updated IRWM projects short forms.

  - Questions on your funding memo analysis can be directed to Susan Robinson (srobinsongs@frontier.com)

Thank you for attending!