Science to Action:
Working Together to Build Resiliency at Lake Tahoe

Landscape Restoration:

Maʔyála Wáťa

Photo courtesy of John Peltier

Agenda

LAKE TAHOE
ENVIRONMENTAL
IMPROVEMENT
PROGRAM

10:45 **Introduce Panel and Topic**

10:50 **Panel Presentations:** Past-Present-Future of Science + Management Partnerships

11:30 **Questions for Clarification**

11:40 **Small Group Discussion:** Priority topics in Science and Management

12:05 **Reports:** Key themes from small groups

12:30 **Final observations** and adjourn

Panelists

- Jane Freeman, California Tahoe Conservancy
- Rhiana Jones, Washoe Tribe of Nevada and California
- Jonathan Long, USDA Forest Service, Pacific Southwest Research Station
- Facilitator: Victoria Ortiz, Tahoe Regional Planning Agency

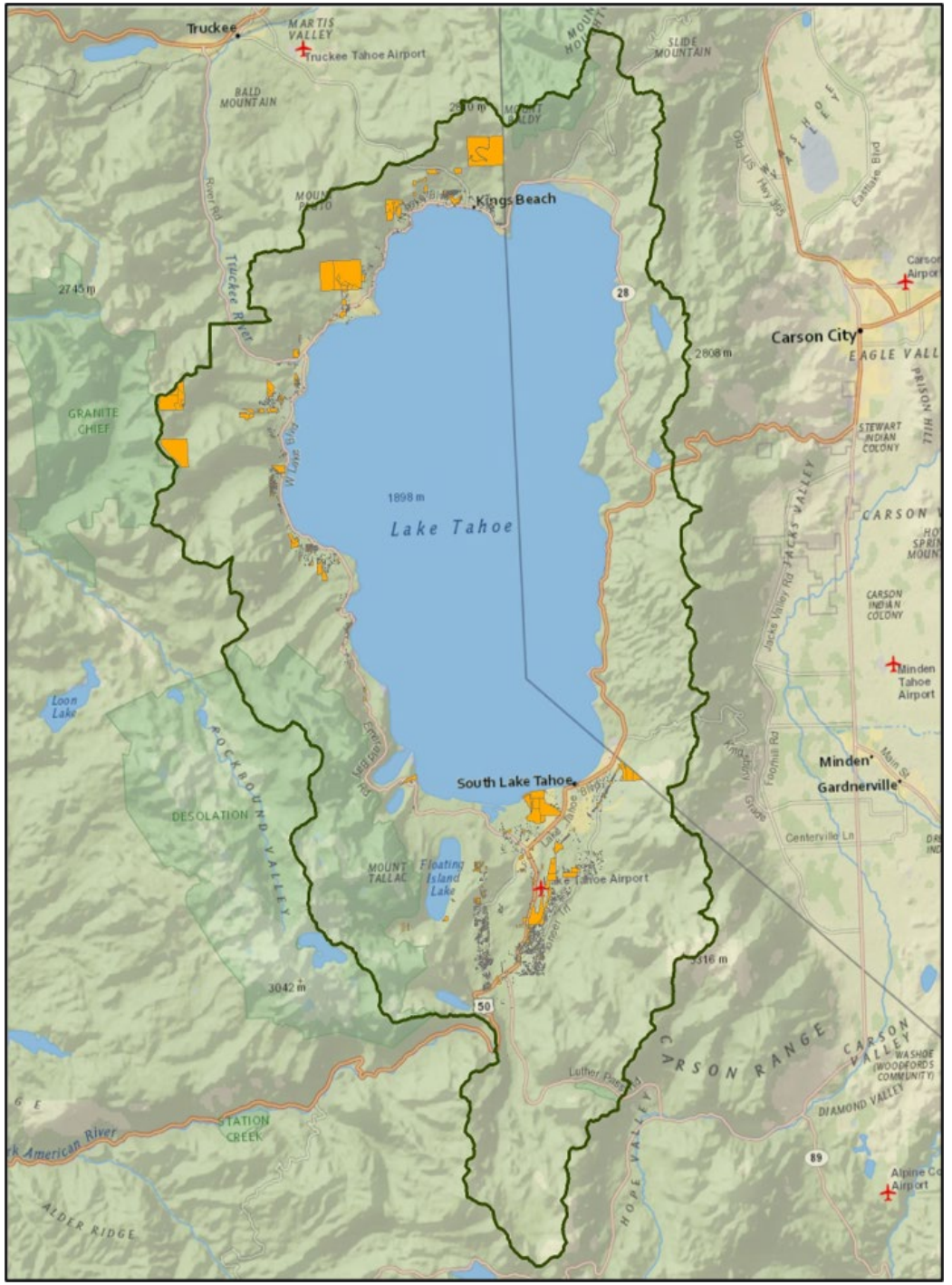
Presentation Overview

- Share Tribal, land management agency, and research community landscape restoration approaches, challenges, and future opportunities and science needs to achieve climate resilience.

- Center the conversation around an important place in the Tahoe Basin to the Washoe Tribe of Nevada and California and the Tribe's indigenous knowledge systems.

California Tahoe Conservancy

“Lead California’s efforts to restore and enhance the extraordinary natural and recreational resources of the Lake Tahoe Basin.”

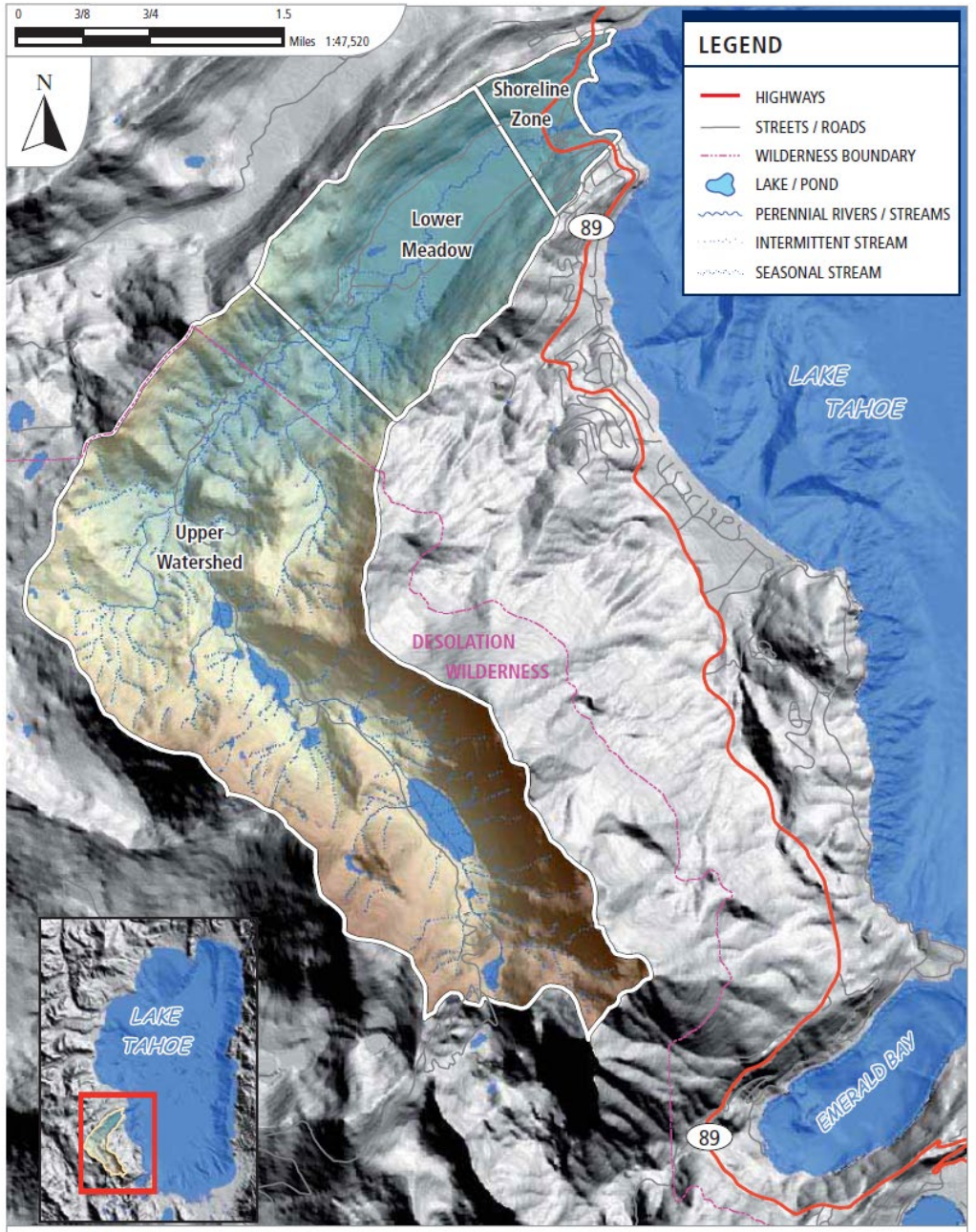


Tahoe Basin Landscape Restoration Framework

- Landscape restoration and stewardship in the Tahoe Basin: Past and Present
- Federal and State agency mandates and direction to achieve climate resilience and empower tribes
- Role of science in supporting agency and tribal stewardship and restoration over the years and going forward

Maʔyála Wáťa: **Overview**

- Background/History
- Landscape restoration goals
- Science focus and needs



SWANSON HYDROLOGY + GEOMORPHOLOGY
500 Seabright Ave, Suite 202 Santa Cruz, CA 95062
PH 831.427.0288 FX 831.427.0472

FIGURE 2-1: Meeks Creek watershed location map showing study areas from Ecosystem Assessment Report (LTBMU 2006a).


Another Lake-Saving Project
LAKE TAHOE
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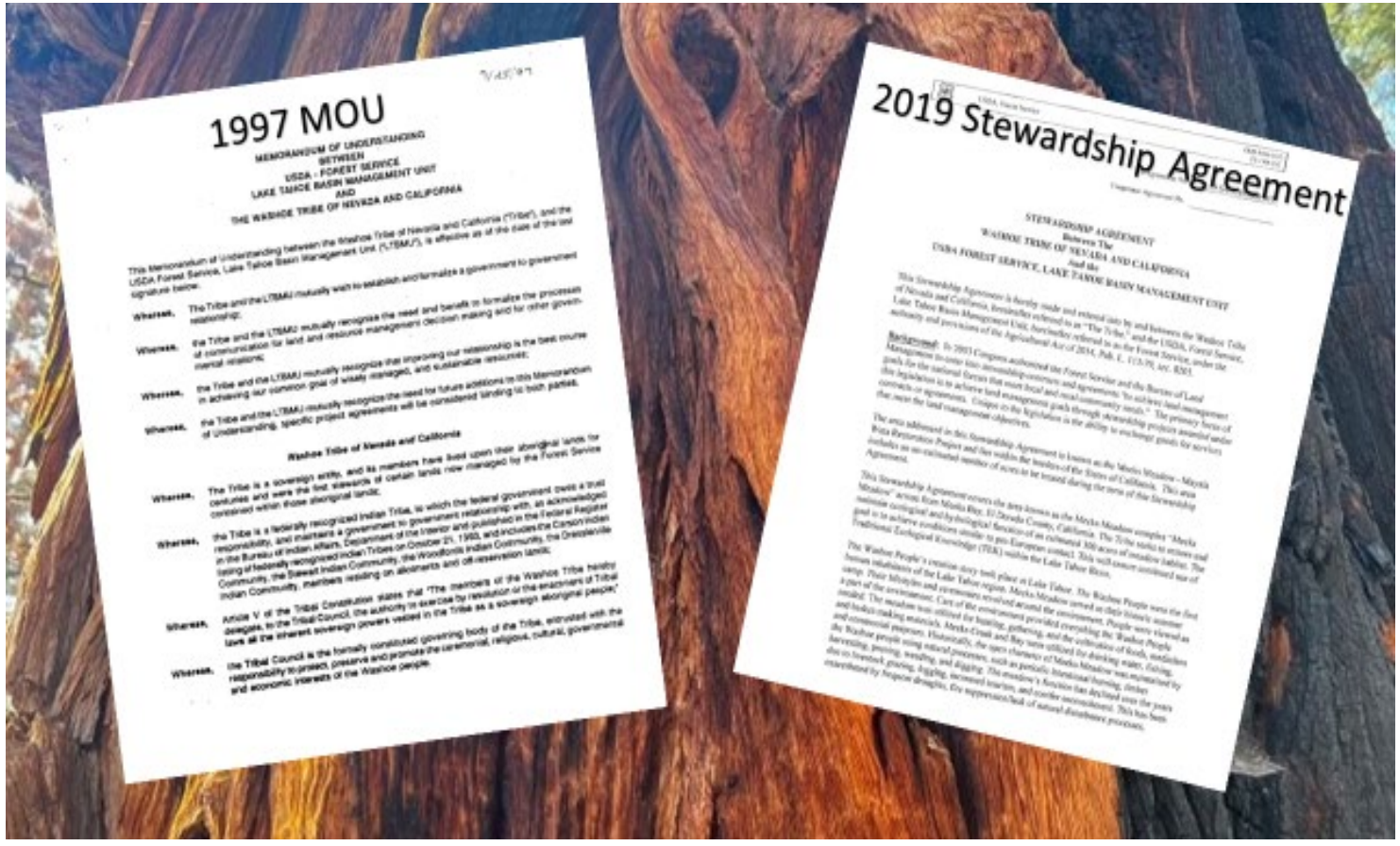
Máyala Wata Restoration
Planning Project for Meeks Meadow
Funding and Project Partners
TAHOE
REGIONAL
PLANNING
AGENCY
PROP 1
WATER BOND 2014
conservationcleanly.org

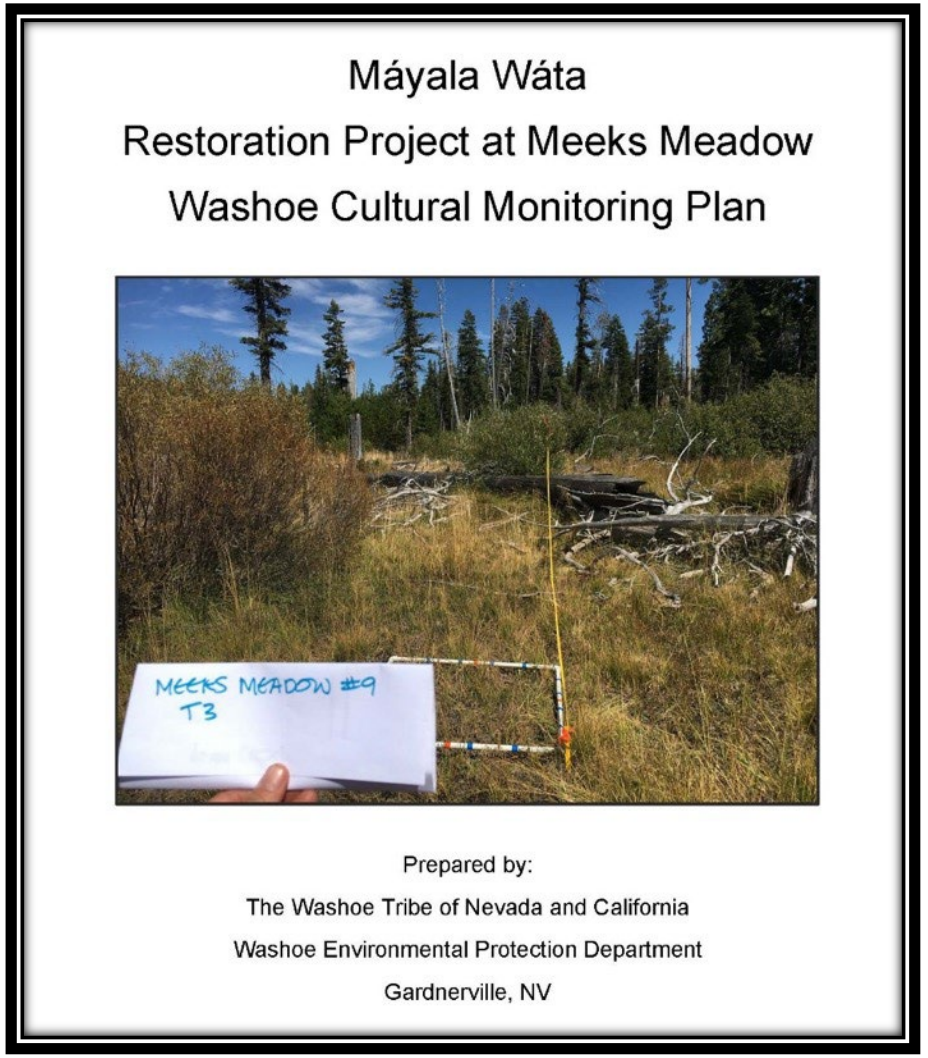

1997 MOU
MEMORANDUM OF UNDERSTANDING
BETWEEN
USDA - FOREST SERVICE
LAKE TAHOE BASIN MANAGEMENT UNIT
AND
THE WASHOE TRIBE OF NEVADA AND CALIFORNIA
2019 Stewardship Agreement
STEWARDSHIP AGREEMENT
Between The
WASHOE TRIBE OF NEVADA AND CALIFORNIA
And the
USDA FOREST SERVICE, LAKE TAHOE BASIN MANAGEMENT UNIT

Vision Statement

The Maʔyála Wàťa *Restoration Project empowers the Washoe Tribe of NV and CA to reintroduce cultural land management practices back into the Lake Tahoe Basin through a robust partnership with Federal, state, and non-profit agencies. The project will restore culturally significant flora and fauna that mimic beneficial historical indigenous conditions. This innovative project will serve as a model for large scale future conservation efforts using Traditional Ecological Knowledge (TEK).*

Importance of including Indigenous Knowledge Systems in Land Management and in collaboration with Federal Agencies

- Allows for the Tribe to manage their traditional homelands in a historical and cultural manner
- Including the Washoe community in restoration work days instills a sense of responsibility, belonging, and stewardship of the traditional Washoe Homelands
- This project serves as template for increased Tribal involvement in the Lake Tahoe Basin, working collaboratively with federal, state, and local agencies



GOALS

1. Thin 300 acres of encroaching conifers out of a Washoe summer home site: Meeks Meadow
2. Conduct a cultural burn to restore and enhance Washoe cultural and medicinal plants, burn every couple years
3. Return to meadow seasonal to plant, harvest, and conduct vegetation monitoring until end of Stewardship Agreement in 2028.

SUCCESSES

All USFS work was halted during COVID, WEPD took this opportunity to begin collecting groundwater data in the meadow to be able to report pre and post groundwater changes with respect to conifer removal in a montane meadow.

1. Have had many outreach days for the Washoe Community and public to share our stewardship activities in the basin.
2. Have established many new environmental partners and funders supporting this project and Washoe stewardship goals.

CHALLENGES

1. Capacity, staff overturn, funding, timing with partners
2. Having meaningful consultations with environmental agencies
3. Gaining acknowledgement and Respect for Indigenous Knowledge Systems


Metropolitan Museum of Art

Opportunities for Washoe Stewardship and Research to Advance Restoration

October 2023

Jonathan.W.Long@usda.gov

USDA Forest Service Pacific Southwest Research Station

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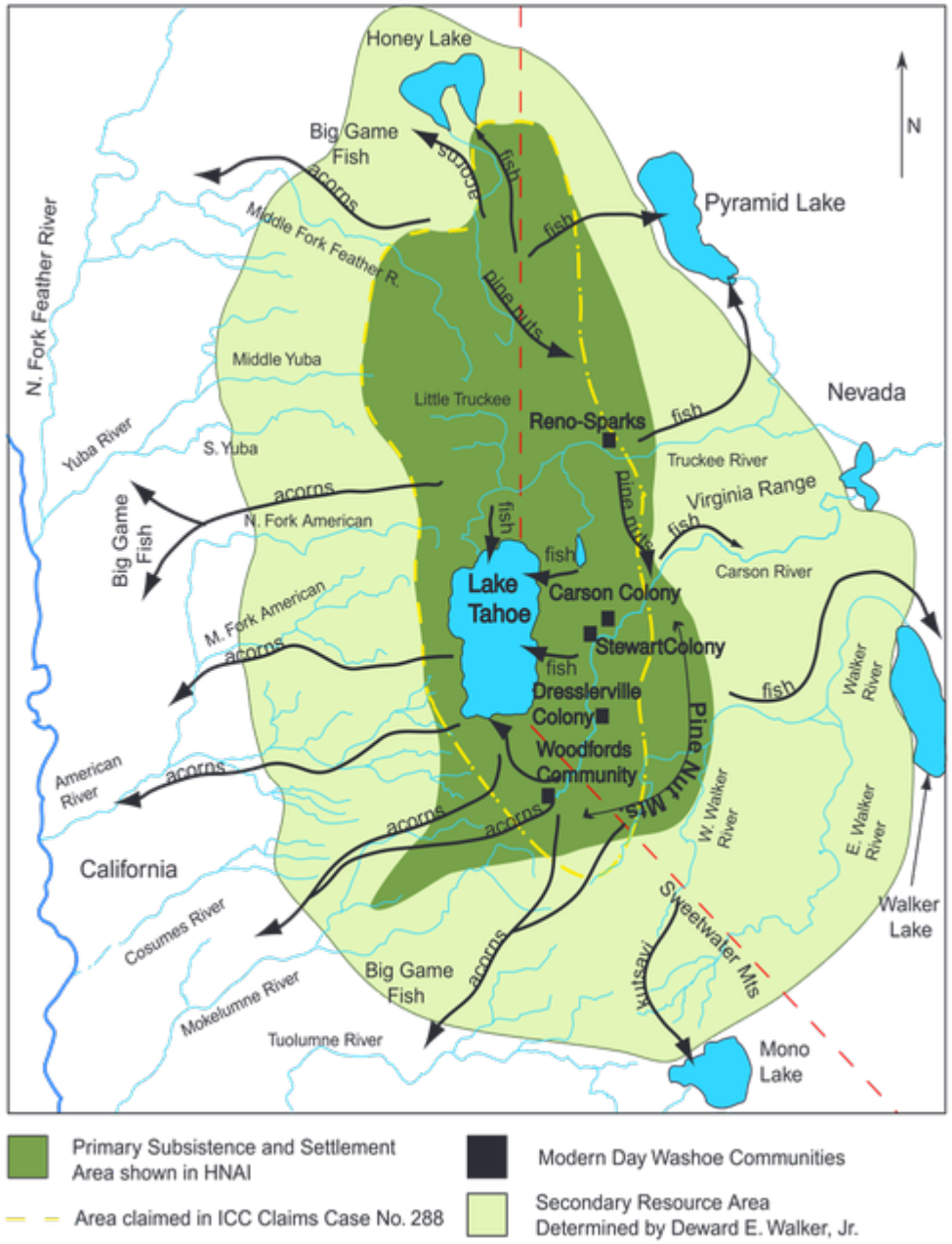
Washoe Stewardship in Greater Tahoe Region



https://washoetribe.us/aboutpage/4-Page-washoe-history

Lake Tahoe West Restoration

Amount of Active Treatment

None

~1000 acres annually

~4000 acres annually

Management Scenarios

1) **Suppression-Only**: No land management actions except fire suppression in all management zones.

2) Wildland Urban Interface (WUI): Forest thinning in the WUI only (most like recent treatment).

3) Thinning-Focused: High levels of forest thinning in the WUI, General Forest, and Wilderness.

4) Fire-Focused (moderate prescribed burning): Modest forest thinning in the WUI, moderate levels of prescribed fire, and some wildfire managed for resource objectives outside of the WUI.

5) Fire-Focused (high prescribed burning): Modest forest thinning in the WUI, high levels of prescribed fire, and some wildfire managed for resource objectives outside of the WUI.

The scenario with the most prescribed burning best promoted across socio-ecological values

Historical Fire Ecology:

Kip Van de Water and Malcolm North (2011)

[Fire regimes, stand structure, fuel loads, and fire behavior in riparian and upland forests, sierra nevada mountains, USA]

Mean composite fire return interval in area sampled

Site	Taylor Creek	Meeks Creek
Riparian	8.4 years over 10 ha	15.6 years over 2 ha
Upland	15.1 years over 10 ha	11.7 years over 2 ha

Sagehen Experimental Forest

- Fire history study by Valliant and Stephens (2009)
- Mean composite fire return interval: 2.2 years from 1700 to 2006 for entire 358 ha area
- Mean composite fire return intervals ranging from 4.1 to 13.2 for smaller clusters (0.6 -3.5 ha)

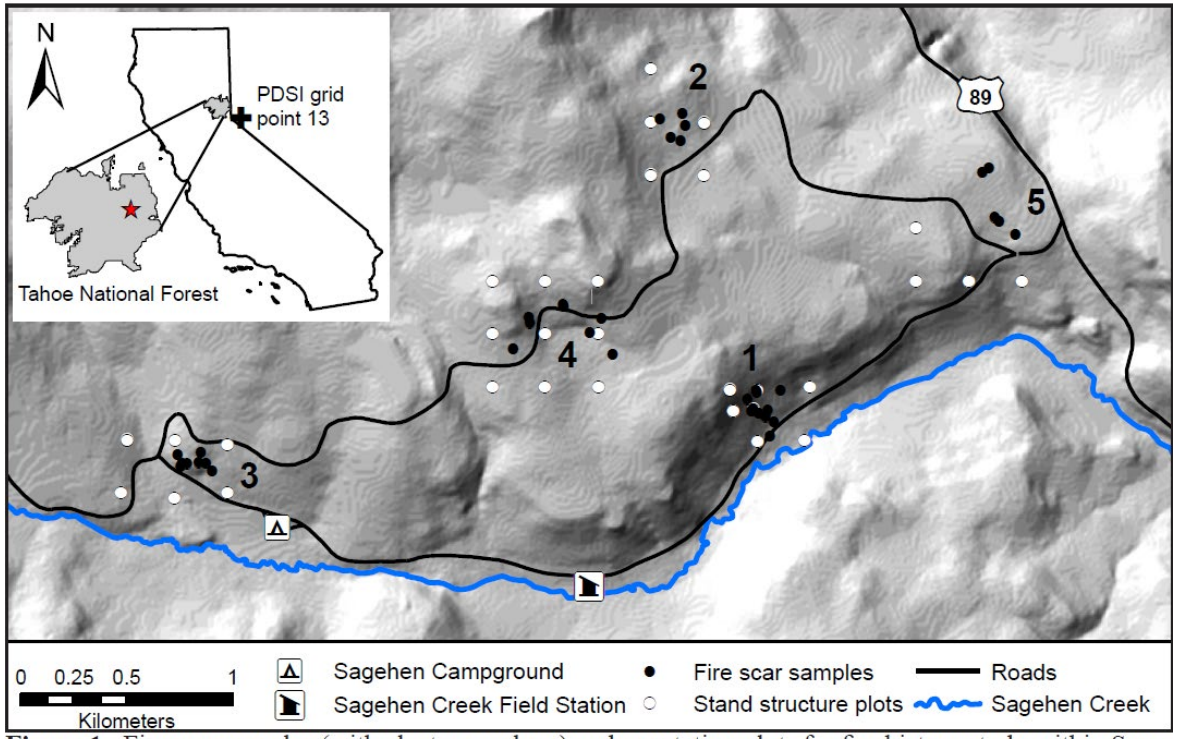


Figure 1. Fire scar samples (with cluster numbers) and vegetation plots for fire history study within Sagehen Experimental Forest, on the Tahoe National Forest in California.

- "Small frequent prescribed burns would best mimic the pre-settlement fire regime if fire is reintroduced into the ecosystem"
- "The loss of early earlywood fires during both the settlement and suppression periods is possibly due to a lack of Native American burning in Sagehen"

Meadows at Sagehen Experimental Forest

Camas at Sagehen Meadow

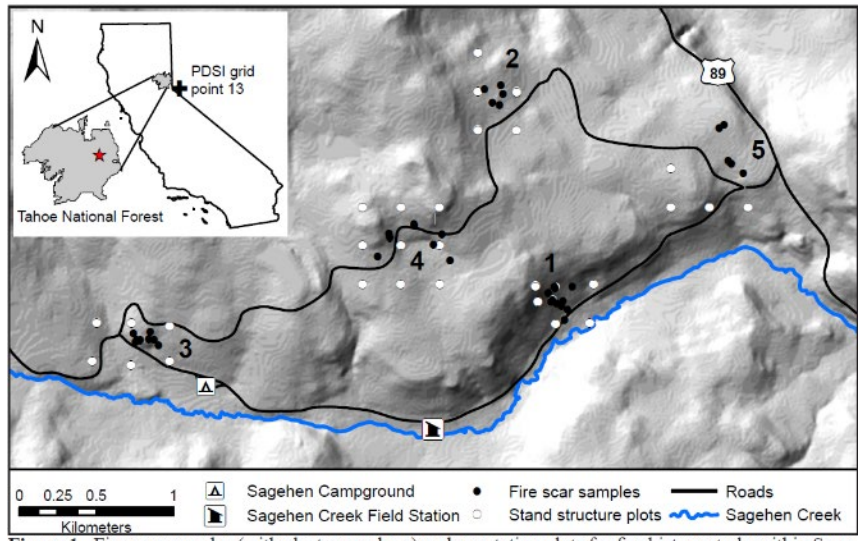
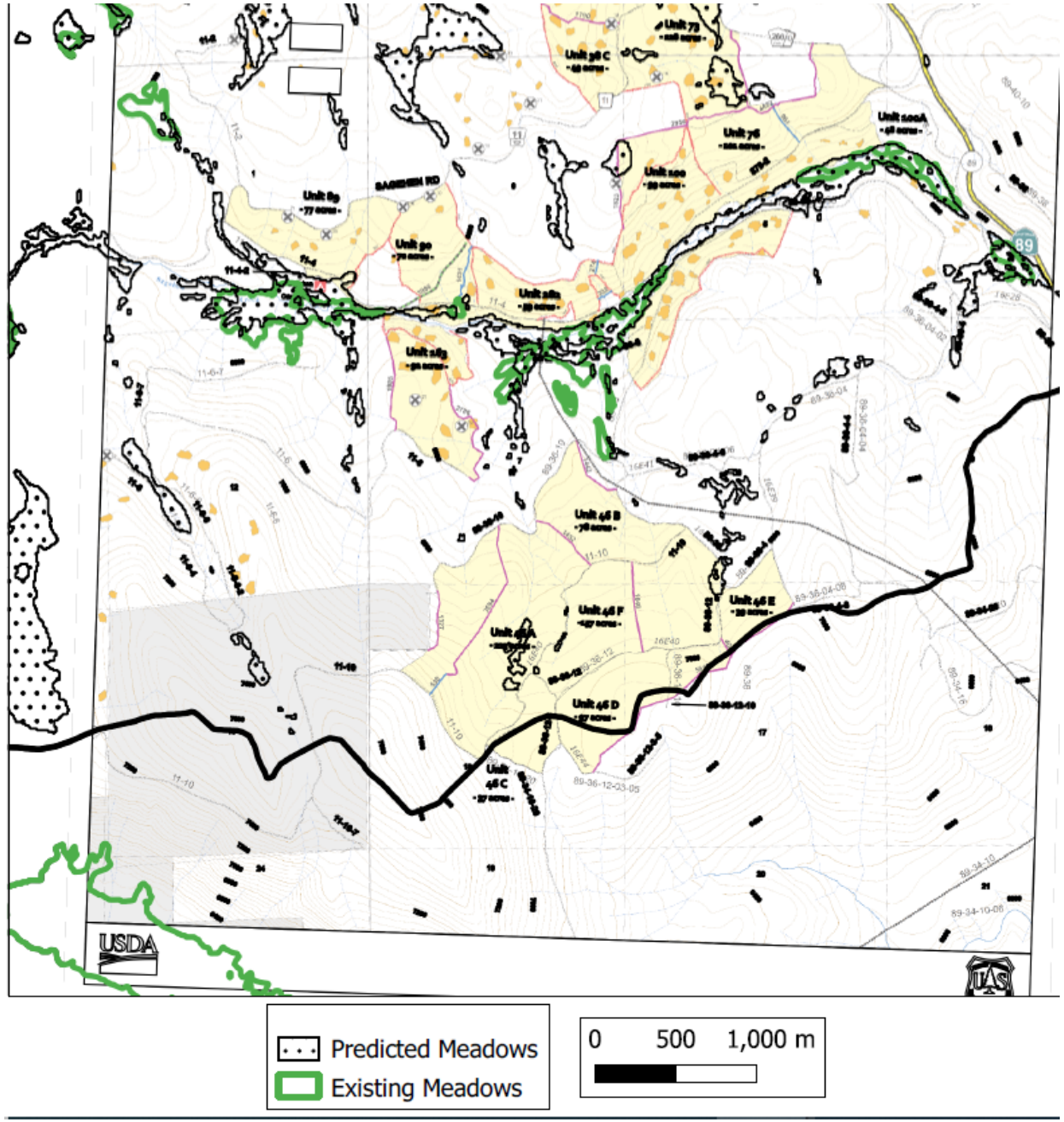


Figure 1. Fire scar samples (with cluster numbers) and vegetation plots for fire history study within Sagehen Experimental Forest, on the Tahoe National Forest in California.

→ "Lost Meadows" analysis by Pope and Cummings for Sagehen Ex. Forest

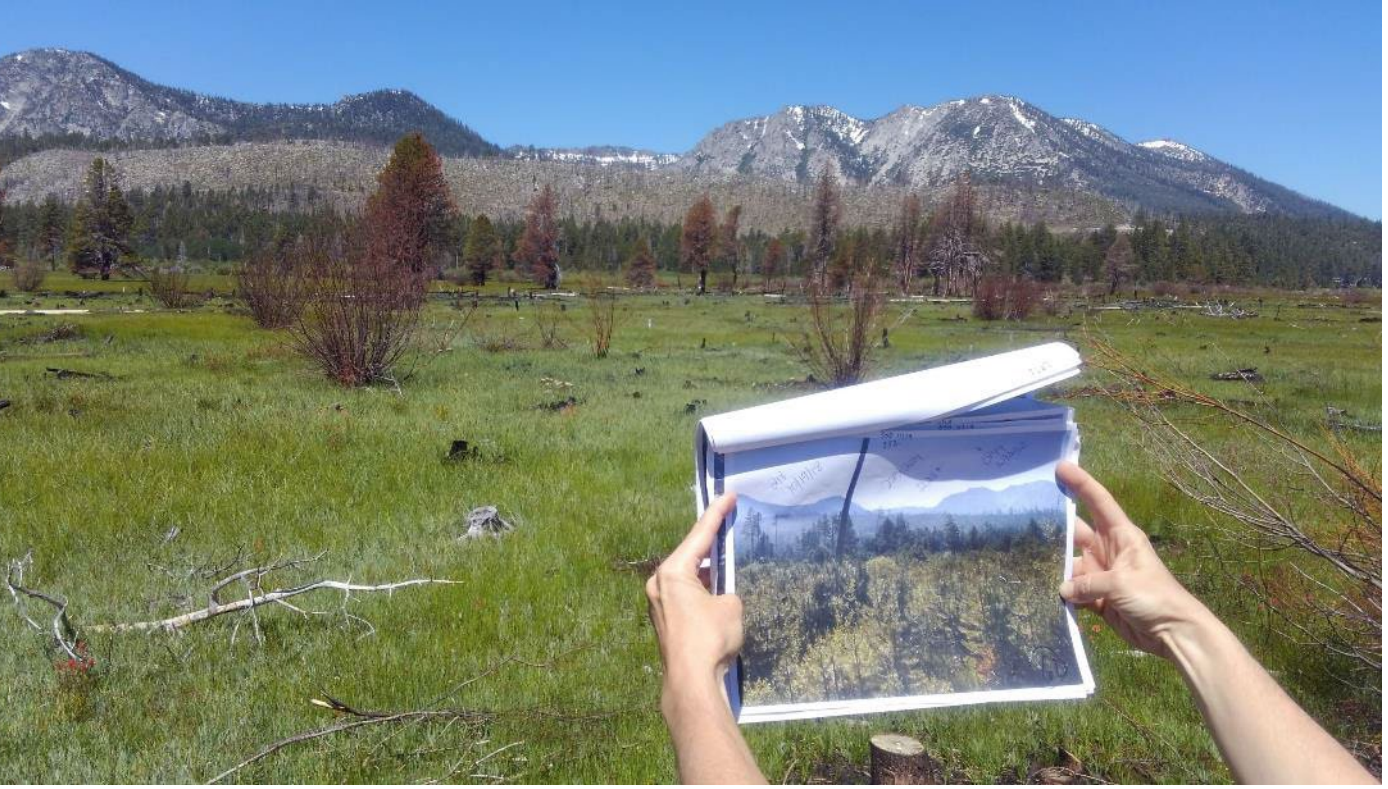


Restoring “Lost Meadows”

“Lost Meadows” Projected past extent

Current

Recovering the lost potential of meadows to help mitigate challenges facing California’s forests and water supply,
Karen L. Pope* and Adam K. Cummings.
California Fish and Wildlife Journal 109:e3



Fire Regimes and Meadow Restoration

What are the effects of cutting trees and restoring frequent fire?
...on culturally important plant resources
…on nutrients
…on carbon

Berries

Camas

Washoe basket bowl made about 1910 by Maggie Mayo James from willow, redbud, and dyed bracken fern root

Bracken fern

Willow

Examples of resources targeted for cultural burning

Untended plants are not generally usable

Ongoing efforts to support frequent fire, including cultural burning

- California A.B. 642 and Strategic plan calls for active engagement and partnering with California Native American tribes, tribal organizations, and cultural fire practitioners to expand the practice and understanding of cultural burnings

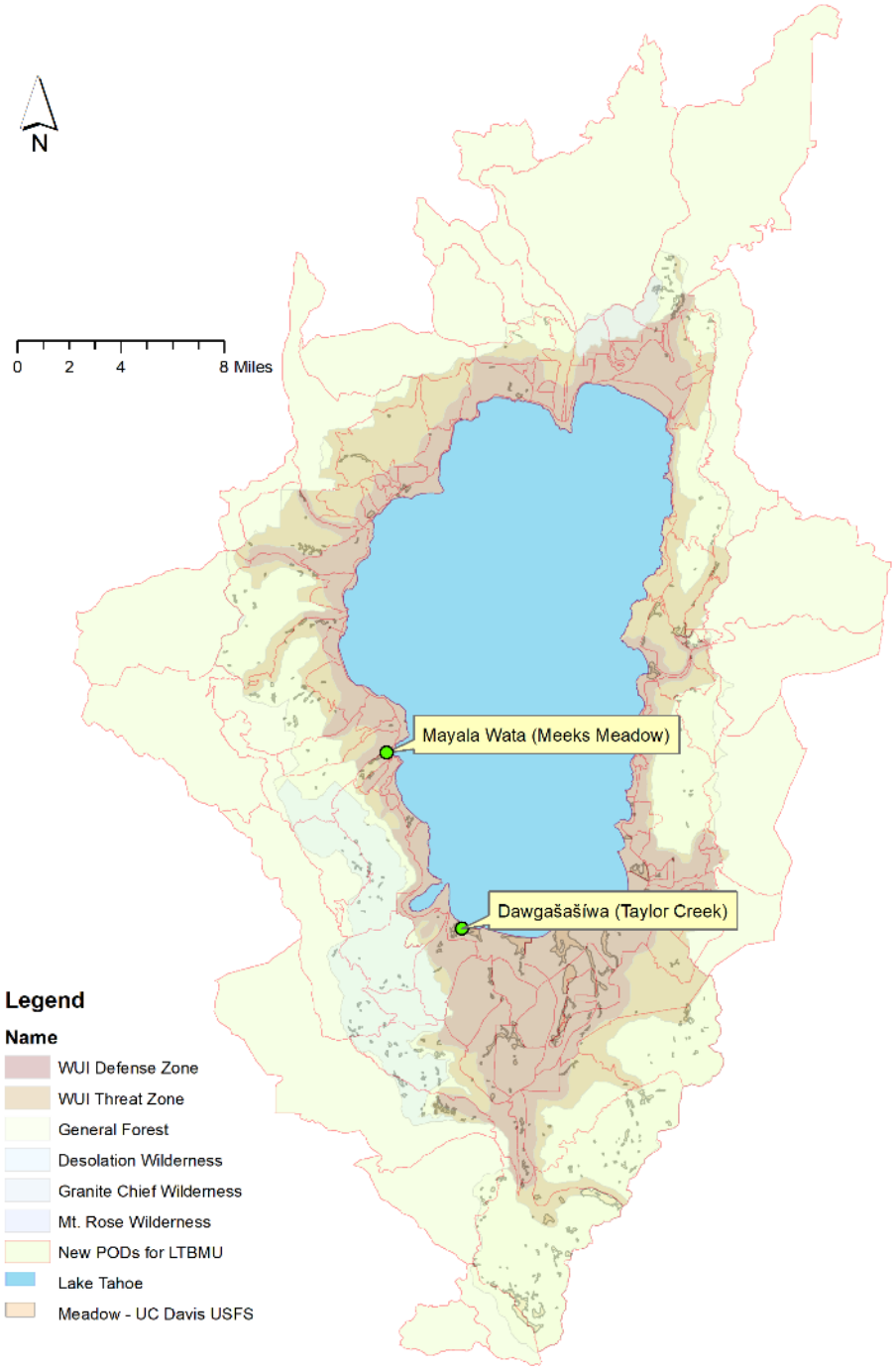
- Plans for Washoe-led TREX in Fall 2024

PRESCRIBED FIRE TRAINING EXCHANGE
TREX
Learning Together, Burning Together

Indigenous Peoples Burning Network

Tribal engagement in wildfire planning (PODs)

- Recognizing areas of tribal importance in fire and forest management plans
- Coordinated response on managed wildfire and integration of Indigenous stewardship, including cultural burning
- Sustainable/ respectful management of control line features/"fuel breaks"



Summary

Recent work:

Research on the need for restoring fire and Indigenous Stewardship practices

Lake Tahoe West landscape restoration

Opportunities:

Landscape fire planning

Meadow restoration using fire at Maʔyála Wàťa and Sagehen

Washoe TREX

Questions:

How do we advance these efforts to restore fire and Indigenous stewardship?

What are the ecological and social effects of restoring fire?

For more information

Website:
https://www.fs.usda.gov/research/about/people/jwlong
Email: jonathan.w.long@usda.gov

Evaluating pathways to social and ecological landscape resilience, part of a Special Issue in Ecology and Society: The Many Facets of Forest Resilience in the Lake Tahoe Basin, https://ecologyandsociety.org/feature/150/

Escaping social-ecological traps through tribal stewardship on national forest lands in the Pacific Northwest, United States of America. Ecology and Society 23(2).

Washoe Cultural Resources Vulnerability Assessment, Integrated Vulnerability Assessment of Climate Change in the Lake Tahoe Basin

Small Group Questions

- Did anything stand out as new, surprising, or as an “a-ha moment?”
- What are the most pressing current issues for this topic?
- What are opportunities to advance science delivery?

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Reports from Small Group Discussion

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THANK YOU! ʔuwaʔáŋawi

Please join us Friday to synthesize key themes and discuss how the Science Council can advance science delivery for healthy Tahoe systems!