



CLIMATE & WILDFIRE INSTITUTE

# INTENTIONAL FIRE

## ACCELERATING PRESCRIBED & CULTURAL FIRE SOLUTIONS

FACILITATING THE EXCHANGE OF IDEAS AND BUILDING  
RELATIONSHIPS BETWEEN FIRE POLICYMAKERS,  
RESEARCHERS, TECHNOLOGISTS, AND PRACTITIONERS  
IN SUPPORT OF INTENTIONAL FIRE.

Written by

**CLIMATE & WILDFIRE INSTITUTE (CWI) STAFF**

**SHIVANI SHUKLA, UC BERKELEY, CLEE**



October 18-19

**CWI 2023**

**SIGNATURE CONVENING REPORT**

Palisades Tahoe, CA, USA

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## INTRODUCTION

**The concept of Intentional Fire**, encompassing both prescribed and cultural burning, provides us with the opportunity to explore the anthropogenic side of Beneficial Fire (which also includes natural wildfires that have positive ecological impacts). Our human experiences with Intentional Fire are nuanced and varied, ranging from small cultural burns designed to steward the land and preserve cultural heritage, to landscape scale prescribed burns solely focused on reducing hazardous fuel loading in areas at risk for catastrophic wildfire. Intentional Fire, and all that goes with it, intersects with our socio-political conditions, natural resource management, cultural and Indigenous practices and right to burn, public health, and other environmental and safety considerations, including the policies shaping the way society addresses and responds to wildfires and their impacts on communities and ecosystems.

However, Intentional Fire faces a number of barriers at many scales and within many spheres, including within and between communities, agencies, and state governments. Decades of western scientific research document the need for more intentional fire in many of our global ecosystems. This is supported by centuries of Indigenous experience demonstrating the same. The question is no longer if there should be more Intentional Fire where appropriate, but rather how to achieve this, especially in the light of changing climate and fire regimes, and the increasing presence of people on the landscape. This has been an ongoing conversation for many years and while some progress has been made, we are falling far short of our targets for increasing intentional fire at the rate and scale necessary to support cultural and ecological restoration as well as landscape and community resilience to wildfire.

The Climate & Wildfire Institute, therefore, gathered over 60 experts and thought leaders from the research, policy, technology, and practitioner spheres in Palisades Tahoe, CA, with the aim to cultivate ideas, connect communities of practice, build bridges among leaders in Intentional Fire, and promote interconnected, forward-moving action to put good fire to the ground.

**The main objectives of the convening were to:**

- Identify practical steps to scale our greater prescribed and cultural burning goals.
- Understand how to better facilitate and embolden the use of intentional fire through connecting research, policy, and practice.
- Identify gaps and barriers in the conversations around intentional burning that may guide CWI's future work.

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CWI engaged Urban Wild Studios to capture ideas and amplify discussions through live graphic recording. This report contains these illustrations and visually summarizes the messages and themes that surfaced throughout the convening.



# PRESENTATIONS AND CONVERSATIONS

Over two days, the attendees heard from three expert panels and seven individual presenters, as well as from each other during small group breakouts and plenary discussions. While many of the conversation throughlines and solutions discussed during the convening reiterated previously developed recommendations, this convening was heavily focused on creating space for conversations that moved beyond the norm. For example, sharing and acknowledgements of personal experiences and relationships with fire emerged throughout the convening as well as discussions on the value systems influencing the politics of intentional fire.



## DAY 1

### Welcome

**Herman Fillmore**, Washoe Tribe Representative

**Caroline Godkin**, CWI Executive Director

**David Saah**, CWI Board Treasurer

CWI Executive Director Caroline Godkin and CWI Board member David Saah opened with a welcome and introduction to CWI. The opening statement of Washoe Tribe Representative Herman Fillmore included how, "The health of our lands is related to the health of our people. If our lands are sick the people are sick."

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## PANEL: FRAMING OUR PERSPECTIVES ON INTENTIONAL FIRE

CWI Deputy Director of Operations and External Affairs, Bethany Hannah, introduced the idea that understanding the perspectives and motivations of various communities of practice is critical to shaping effective solutions and approaches to increasing the pace and scale of intentional fire. To both introduce the different communities of practice in the room and to frame their perspectives, representatives from each community of practice—including researchers, policy makers, practitioners, technological innovators, and land stewards—presented their approach to supporting intentional fire.

### Moderator

**Bethany Hannah**, CWI Deputy Director of Operations and External Affairs

### Speakers

**Lenya Quinn-Davidson**, UCANR's Fire Network Director

**Simon Weibel**, Burnbot Head of Fire and Sales

**Dr. Don Hankins**, CA State University Professor of Geography and Planning

**Dr. Sasha Berleman**, Fire Forward Director

**Talon Davis**, Land Stewards Fire Crew member on the Cultural Fire Management Council Member



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## POLICY

INSPIRATION IS A STRATEGY

STATE

FEDERAL

SO MUCH CHANGE VIA PASSED BILLS

PEOPLE SOLUTIONS

RESULT OF BOLD LEADERSHIP AND THOUSANDS OF PRACTITIONERS

PRESCRIBED FIRE TRAINING WORKING TO BUILD A NETWORK OF OPPORTUNITY

AND FUND EXISTING TRAINING PROGRAMS

PEOPLE PROBLEM

- PROGRAM SHUT-DOWNS
- INADEQUATE PAY
- SLOWED POLICY UPDATES

## RESEARCH

WE ARE CONSTANTLY THINKING ABOUT BENEFICIAL BURNS

ACCESS ISSUES

NEED TO CONNECT AND COLLAB & RESEARCH AND PRACTICE

IMPORTANCE OF BASIC SCIENCE

- BIODIVERSITY
- WATER STEWARDSHIP
- RESILIENCE OF LANDSCAPE
- SPECIES DYNAMICS
- AIR QUALITY EMISSIONS

CONSIDERATIONS

CWI'S RESEARCH INITIATIVE

POLICY

LAND MONITORING

AWARENESS BUILDING

## LAND STEWARDS

BURNING FOR CONTINUOUS LIFE

NEED TO BE INTIMATE WITH THE LAND

"IF WE COULD PRACTICE SAREFOOT I MIGHT"

WE'RE ALL HERE ON THIS ONE EARTH

CULTURAL BURNING STARTED AS A NEED FOR BASKET STICKS TO CARRY CHILDREN

EVERYONE BECOMES FAMILY

CONVENES DIVERSITY

GOALS TO SCALE TECH EFFECTIVELY

MORE BURNS

- SAFER
- EFFICIENTLY
- IN THE RIGHT WAY

OPEN UP BURN WINDOW

## TECH

WE KNOW NOTHING WILL REPLACE THE HUMAN ELEMENT

BUT WE CAN MAKE THE "KNIFE SHARPER"

## PRACTITIONERS (FIRE FORWARD)

JUNE 2017

STRATEGY

LISTEN

FILL THE GAPS

3

STARTED LEADERSHIP TRAINING PROGRAM

LEADERS HELP TRAIN OTHERS

FINALLY ACCOMPLISHED PRESCRIBED BURN, AFTER YEARS OF WORK

STARTED PROGRAM USING LEARNINGS

1 ACQUIRED EQUIPMENT

2 TRAINED PEOPLE TO DATE

CONFLICT, PERCEIVED RISK

NEED SUPPORT FOR COMPLEX BURNS

CARE FOR EVERY PERSON

CHALLENGE STALLED BY BUREAUCRACY, PAPERWORK

LENYA QUINN  
SIMON WEIBEL  
DON HANKINS  
SASHA BERLEMAN  
TALON DAVIS

Panel FRAMING PERSPECTIVES

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INTENTIONAL FIRE: ACCELERATING PRESCRIBED AND CULTURAL FIRE SOLUTIONS

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## BREAKOUT GROUPS

Who is in the room?  
Introduction to  
communities of practice.



### Moderator

**Alex Hall, CWI**  
Board Secretary  
and Director of  
UCLA's Center for  
Climate Science

**LEFT** CWI Board Member Alex Hall welcomed convening participants to share their visions of an ideal relationship with fire, whether on a personal or societal level.



**ABOVE** Participants met with self-identified communities of practice to discuss their current work, motivations to and perspectives on supporting intentional fire.

## PLENARY DISCUSSION: BLUE SKY VISIONING

Convening participants passed the microphone around the room to share their visions of an intentional fire future where perceived barriers and challenges to intentional fire implementation were removed and their ideal relationship with fire flourished.

## BREAKOUT SESSION: PERCEIVED BARRIERS TO THE BLUE SKY VISION

After attendees identified and shared their blue sky visions, they reconvened with their communities of practice to identify perceived barriers to their visions. Each community of practice then reported out the perceived barriers they had identified to the full group.

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IT'S A  
VALUES  
CONVERSATION

CLIMATE  
CHANGE

INCREASING  
PREVALENCE  
OF HARD TO  
CONTROL  
FIRES

WILL  
AFFECT  
PERCEPTION

## PERSPECTIVES

Indigenous

CARE for  
the LAND

Western

LAND IS  
MEANT to  
BE USED  
BY HUMANS



THEME  
RELINQUISHING  
CONTROL

Return  
of Native  
Plants  
+ Species

## WHAT DOES SUCCESS LOOK LIKE?

FIRE AS NATURAL,  
NORMAL, ALWAYS  
HERE

DIFFERENT PARADIGM  
PART of our LANDSCAPE

BURNS HAPPEN WHEN  
they ARE NEEDED

FIRE TREATED  
CORRECTLY, PRESCRIBED  
FIRE REGULATED  
POSITIVELY

TRANSFORM OUR  
RELATIONSHIP WITH  
FIRE VIA THE SAME  
WITH our LANDSCAPES

CHANGE  
PERCEPTION  
THRU MEDIA

TOLERANT PUBLIC

CONSIDER SYSTEM  
REBUILD INSTEAD  
of TWEAKING

QUALITY JOBS  
IN FIRE

COOPERATIVE  
WORKFORCE

RECOGNIZE  
INDIGENOUS  
LEADERSHIP

BETTER EDUCATION  
AND AWARENESS

RETURN LAND  
AND WATER BACK

Passion.  
Curiosity  
Empathy

## CLIMATE CHANGE

CONSIDERATIONS

- CONNECTIVITY,  
INTERDEPENDENCE
- LET NATURE  
ADAPT by GIVING  
it SPACE



DEALING WITH  
CONSEQUENCES of  
HISTORICAL  
TREE CLEARING

BUILDING  
WORKFORCE

INVOLVE YOUNG  
VOICES, NEED  
to BUILD PIPELINE

R. DIXIE  
FIRE

BUT GIVES  
OPPORTUNITY  
to USE THIS  
LAND  
DIFFERENTLY

## BARRIERS to VISION

RESTRICTED  
ABILITY  
to ADAPT

LAND ACCESS

SOVEREIGN  
RIGHTS

WORKING  
& CODIFY  
in CALIFORNIA

COOPERATION/  
AGREEMENTS

CAPACITY

OWNERSHIP  
PATTERNS

AIR QUALITY

USE  
DATA  
NARRATIVE  
to INFLUENCE

CAN DO  
THIS  
NOW

BETTER EDUCATION  
for PUBLIC

CLEAN AIR ACT

LIMITED BURN  
WINDOW

CONTINUAL  
STAFF  
SOPS

WHAT IF PRESCRIBED  
FIRE WAS ELEVATED  
to NATIONAL EMERGENCY

WHO IS  
NOT AT  
THE  
TABLE

FEAR  
of  
FAILING

ONLY  
ONE  
AGENCY  
CONTROLS

TIME

FUNDING

MAKE it GRAY SKY  
COMFORT  
WITH FIRE  
AND SMOKE

# BLUE SKY VISIONING

DRAWN BY URBAN WILD STUDIO

CLIMATE & WILDFIRE INSTITUTE

ANNUAL CONVENING

INTENTIONAL FIRE: ACCELERATING  
PRESCRIBED AND CULTURAL FIRE SOLUTIONS

# PRESENTATIONS: INTENTIONAL FIRE SUCCESS STORIES

**Inspiring participants** to celebrate the progress being made toward accelerating intentional fire implementation, this afternoon session showcased intentional fire success stories. Dr. Ilkay Altintas focused on Technology and Research advances she is leading at UCSD; Rhiana Jones from the Washoe Tribe discussed the revitalization of Cultural Fire; and, Dr. Malcolm North spoke to the work being done to implement prescribed fire in the Teakettle Experimental Forest.

## Presenters

**Dr. Ilkay Altintas**, CWI Board Member and Chief Data Science Officer of the San Diego Supercomputer Center

**Rhiana Jones**, Washoe Environmental Protection Department Director

**Dr. Malcolm North**, U.S. Forest Service Pacific Southwest Research Station Research Forest Ecologist



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**FOCUS**

- 1 NEXT-GEN FIRE SCIENCE
- 2 POSITIVE RELATIONSHIPS
- 3 EQUITY

**METHOD**

1D GAPS

GRADUATE INTO SCALEABLE SUSTAIN USE

**BURN PRO3D**

MEASURING-  
✓ ROADS  
✓ CANOPY HEIGHTS  
✓ BURN RATE  
...and more

MODELING-  
✓ PRE- AND POST-BURN LANDSCAPE  
✓ CONVERSATION WITH LAND  
...and more

with **ILKAY ALTINTAS**

TO DO THIS WORK MUST CENTER **EQUITABLE ACCESS TO DATA**

EMERGING-AI NEEDS

- HIGH-RES, 3D MAP DATA
- NEXT-GEN FIRE MODELS

**LOSING RESOURCES IN NATIVE LANDS**

- SOIL DECIMATED
- PINE NUT TREES BURNED AWAY

**FIGHTING ACTIVE FIRES**

- PREACHER
- CALDOR
- NUMBERS
- TAMARACK

NEW CONES IN 50-60 YEARS

PINYON PINE RESEARCH

CONSERVATION RESTORATION EDUCATION

WORKED AROUND SOME RESTRICTIONS by USING FARMLAND -CLASSIFIED LAND

BUILDING SAWMILL to REMOVE FALLEN BIO MASS

with **WASHOE TRIBE**

PARTNERING WITH AGENCIES to REHAB the BURNED AREAS

PLUS to SEEK FUNDING- AND EXPAND CAPACITY

**TEAKETTLE EXPERIMENTAL FOREST**

3300 ACRES PRESCRIBED BURN OF OLD GROWTH

AIMING FOR 3 YEARS!

**GAME CHANGERS**

- ✓ FUNDING
- ✓ CLIMATE & WILDFIRE INSTITUTE

**LARGE-SCALE PRESCRIBED FIRE IS NEEDED to CONNECT SMALLER TREATMENTS**

**U.S. FOREST SERVICE**

NEEDS TO CENTRALIZE & INSTITUTIONALIZE SUPPORT:

- \* LEGAL
- \* LIABILITY
- \* WORKFORCE

with **MALCOM NORTH**

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# SUCCESS STORIES



## KEYNOTE

### WHERE PRACTICE MEETS POLICY: INDIGENOUS CULTURAL FIRE RESURGENCE IN CALIFORNIA



#### Presenter

**Dr. Melinda Adams**

In her compelling keynote presentation, Dr. Adams spoke to reclaiming cultural fire practices throughout California, emphasizing the importance of working with Indigenous fire practitioners and cultural bearers as convening participants work to increase the pace and scale of intentional fire implementation. Her examples of opportunities and barriers to supporting cultural burners offered frameworks for building allyships and partnerships with Tribes. Ultimately, she argued, the revitalization of cultural fire practices and supporting tribal co-management, tribal co-stewardship, and tribal sovereignty around environmental stewardship must be an integral part of supporting intentional fire policies, practice, and research.

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## RESEARCH

INDIGENOUS VOICES MUST BE TAKEN MORE SERIOUSLY

COLONIAL LEGACY of DISPLACEMENT

REMOVAL, CULTURAL SEVERANCE

MUST RETURN LAND + WATER STEWARDSHIP

REFERENCES for CONTINUED COMMS.

### BARRIERS

- PERCEPTION
- RESOURCES
- POLICY

STATUS OF TRIBES + CLIMATE CHANGE REPORT

GOOD FIRE REPORT

## U.C. DAVIS CULTURAL BURNING CLASS

FUTURE POLICY MAKERS, KEEPERS of the FLAME

## SOCIO-CULTURAL ECOLOGICAL RECLAMATION

COMMUNICATING BENEFITS to SOIL AND LAND to DEMONSTRATE BENEFITS of CULTURAL BURNING

### METHODS

- DEMONSTRATIONS
- STORYTELLING
- RETURN + REGROWTH of VALUED PLANTS

INVITED LEARNERS to UNDERSTAND STATUS, INDIGENOUS TECHNIQUES, BENEFITS

## FIRE PRAXIS + PROTOCOL

NEED ACCESS to LAND to PRACTICE

BALANCING POSITIONS as BOTH RESEARCHER AND TRIBAL MEMBER

## MORE WINS

✓ PLANNING PROPOSALS & CATALYZE INNOVATIVE WILDFIRE SCIENCE

✓ WATCH TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK)

DIGITAL TWIN to CREATE BETTER FIRE DATA

HEAL, RE-MATRIATE, RE-MOTHER the LANDS

FUTURISTIC THINKING

INDIGENOUS PERSPECTIVES ARE EMBEDDED, SYSTEMIC, CENTRALED

WHERE PRACTICE MEETS POLICY:  
INDIGENOUS CULTURAL FIRE RESURGENCE in CALIFORNIA

# KEYNOTE WITH DR. MELINDA ADAMS

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## SUMMARY OF PROGRAM: DAY 1

# EVENING FILM SCREENING AND DISCUSSION: WTREX-SOUTH AFRICA FILM

After dinner, convening participants had the option of watching a film screening and panel discussion showcasing the Women-in-Fire Prescribed Fire Training Exchange in South Africa (March, 2023) supported discussions around how to support an inclusive and diverse fire workforce, with an emphasis on women's contributions to intentional fire implementation.

## Panelists

**Bethany Hannah**, CWI Deputy Director of Operations and External Affairs

**Kelly Martin**, Vice President of the International Association of Wildland Fire

**Lenya Quinn-Davidson**, UCANR's Fire Network Director

**Luke Mayfield**, President of Grassroots Wildland Firefighters



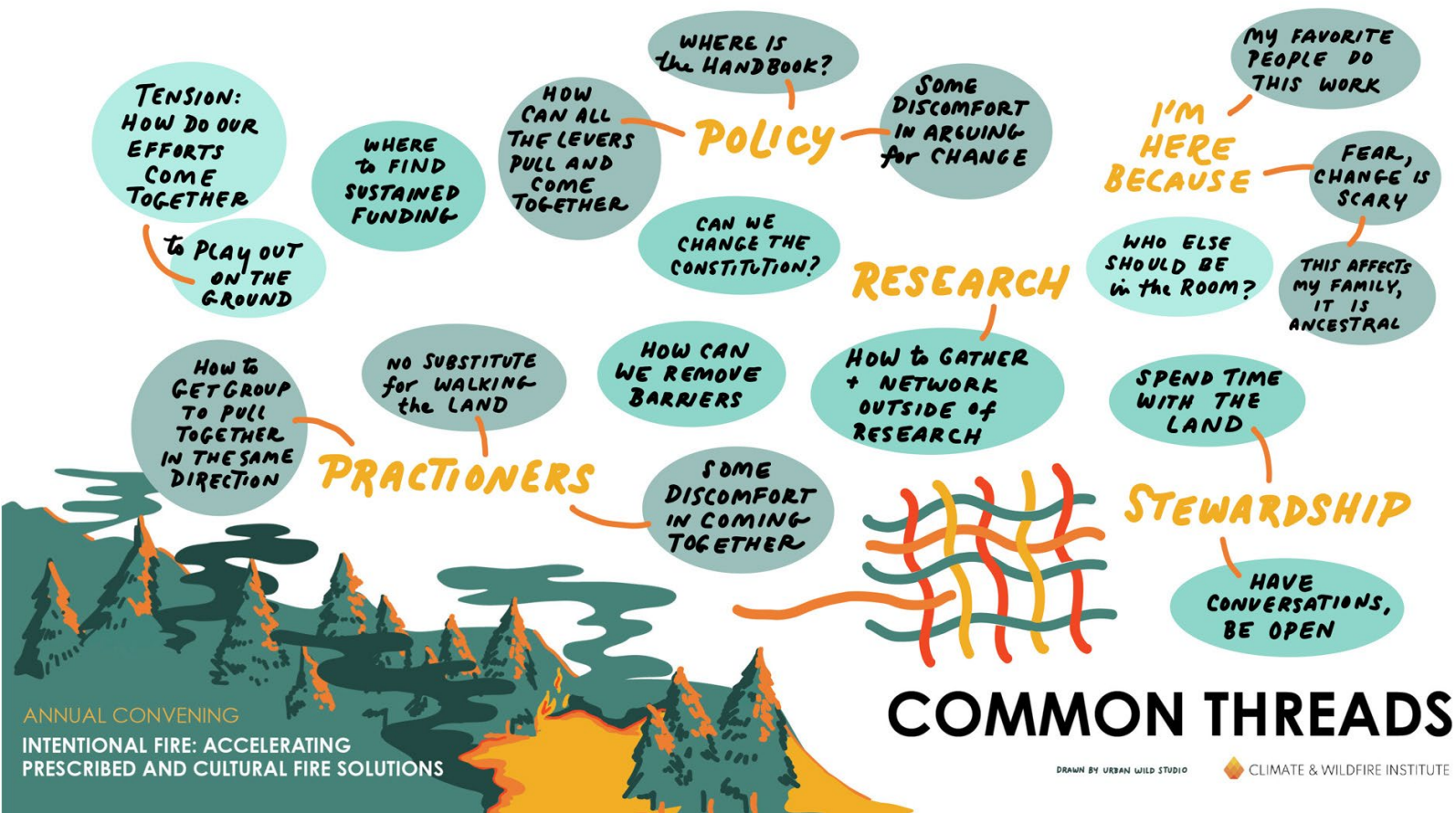
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## DAY 2

### PRESENTATIONS:

#### WHAT HAPPENS IF WE DO NOT REACH OUR GOALS

Four presentations explored the consequences of achieving, and not achieving, our blue sky visions. Each presenter shared their expertise and experience on topics ranging from public health implications of smoke to effective community engagement.



#### Presenters

**Zeke Lunder**, Director at Deer Creek Resources

**Dr. Scott Stephens**, CWI Board Member

**Dr. Alan Talheim**, Assistant Deputy Director for Climate & Energy at CAL FIRE

**Dr. Sarah McCaffrey**, retired researcher at USDA Forest Service

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## DISCUSSION: FEASIBILITY OF AND IDENTIFIED GAPS TO ACHIEVING IDENTIFIED GOALS

In small breakout groups that mixed communities of practice, attendees identified the gaps and risks to achieving their goals of accelerating intentional fire implementation.

### Moderator

**Chris Anthony**, retired Chief Deputy  
Director of CAL FIRE



## DISCUSSION: PRACTICAL STEPS TO ACHIEVING OUR GOALS

Attendees discussed practical steps, however big or small, to achieve their blue sky visions and goals of intentional fire implementation.

### Moderator

**Dr. Lara Kueppers**, CWI Board Member  
& UC Berkeley



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## PRESENTATION: LOOKING TO THE FUTURE

Kelly Martin discussed how fire and people have historically been part of the landscape, grounding participants again in Washoe Tribe Representative Herman Fillmore's opening statement on the connection between people, landscapes, and fire. She also shared some of the recommendations recently presented by President Biden's Wildland Fire Mitigation and Management Commission

### Speaker

**Kelly Martin**, Vice President  
of International Association  
of Wildland Fire

## BREAKOUT GROUPS: APPROACHES TO THE NEXT PRACTICAL STEPS

Breakout groups, which included a variety of communities of practice, discussed what actions they could take to support the previously discussed practical steps.

### Moderator

**Dr. Lara Kueppers**, CWI Board Member  
& UC Berkeley



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# WHAT DOES SUCCESS LOOK LIKE?

## ENVISIONING 2050

During the Blue Sky Visioning exercise, participants described their ideal relationship with fire, including their visions of: returning the right to apply fire to Indigenous people; public and institutional support of the expanded use of intentional fire; and, a well-trained and well-supported workforce focused on intentional fire implementation.

Well received by participants was the idea of a “Grey Sky Vision” where there is more smoke in the air from intentional fire application.

**CONSEQUENCES**

- ↑ SMOKE EMISSIONS
- SMOKE EXPOSURE → NEGATIVE HEALTH EFFECTS
- WILL INTENTIONAL FIRE MEAN LESS EXPOSURE?
- WE DO KNOW SMOKE MITIGATION EFFORTS ARE EFFECTIVE
- HARD TO QUANTIFY ENVIRONMENTAL AND HEALTH BENEFITS, WE NEED MORE OF THIS DATA
- ALAN TALHEIM

**2012-2015 DROUGHT**

**CREEK FIRE 2020**

**MEGA FIRE**

**YOSEMITE**

- HISTORICAL BURNS CREATED JIGSAW PUZZLE ON LANDSCAPE
- SELF-LIMITING BEHAVIOR
- YET THEY ARE BEHIND ON INDIGENOUS BURNING
- GET MORE PEOPLE ON THE GROUND FOR BURNS

**WHEN FOREST HAS BURNED WITHIN 3 YEARS, BURNS ITSELF OUT**

**CONDITIONS ARE STABLE**

**PARTNERING WITH INDIGENOUS COMMUNITY ON RESTORATION, REPOPULATION OF CULTURALLY IMPT. PLANTS**

**SCOTT STEPHENS**

**HOW TO BETTER FRAME THE PROBLEM?**

**BRING MORE PERSPECTIVES TO THE TABLE**

**EXPLAIN ENGAGE EMPOWER**

**DO NOT JUST EDUCATE**

**THE HEALTH OF THE LAND REFLECTS THE HEALTH OF THE PEOPLE**

**SOMETIMES THE RIGHT THINGS TAKE TIME**

**GO SLOW + SMALL & GO FAST**

**SARAH McCAFFERY**

**SIX RIVERS NATIONAL FOREST KLAMATH**

**FIRE TEAMS COME AND GO**

**LOCALS, HOTSHOT CREWS MADE ECOLOGICALLY BENEFICIAL DECISION NOT TO BURN**

**THEY KNOW THE LAND**

**BURN THE RIDGES**

**TAKE ADVANTAGE OF THE BURNS THAT HAVE HAPPENED**

**IN MANY WAYS, GOOD FIRE AND COLLABORATION ALREADY HAPPENING**

**EVERY PLACE HAS A DIFFERENT FIRE STORY**

**TOLD A DIFFERENT NARRATIVE ABOUT BURNING THIS YEAR**

**SO MANY FIRES HISTORICALLY THAT A HUGE FIRE CAN'T HAPPEN HERE**

**PARTS OF THE STATE THAT HAD IT WORST ARE NOW IN THE BEST CONDITIONS**

**ZEKE LINDER**

**Q&A**

**LIMITATIONS of MODELING**

- CAN BE INACCURATE, LACK OF DATA OR SENSORS
- CAN CAUSE UNNECESSARY FEAR OR WORRY

**RESPONSE CAN COME DOWN TO**

- ✓ LOCAL POLITICS
- ✓ RESOURCING

**10. IN TAHOE, CURRENTLY 3 PRESCRIBED BURNS WITH 7 HOTSHOT CREWS**

**WILDFIRE VS. PRESCRIBED FIRE**

**MANAGED VS. UNPLANNED**

**WORD SALAD**

**LANGUAGE MATTERS**

**THERE IS NO ONE RIGHT WAY MUST EXPLAIN**

**IN LEADERSHIP, BE PRESENT BOOTS ON THE GROUND**

**SHARE OUR STORIES & RELATE AND CONNECT**

**LISTEN + LEARN IT MAY NOT BE COMFORTABLE BUT IT IS NECESSARY**

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**BLUE SKY VISIONING 2**

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## CLOSING REMARKS

CWI's executive director Caroline Godkin thanked all convening participants for their lively discussions, commitment to compassion and thoughtfulness throughout the convening, and for their time and energy in support of intentional fire.

### Speaker

**Caroline Godkin**, CWI Executive Director

### Special thanks for support of this convening:

**Mikel Robinson**, Full Scope Management, Inc.

**Jennifer Craer**, UCLA SLAGC

**Sophie Katz**, UCLA SLAGC

**Leah Lavelle**, Urban Wild Studios

**Chris Bartkowski**, Generikal

**Volunteer Wildfire Services**  
and **Justin Sullivan**, WTREX-SA Film

**Jess De Boer**, Jess De Boer Design

**Lenya Quinn-Davidson**

**Sarah Mccaffrey**

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# RECURRENT THEMES AND MAIN TAKEAWAYS

## WORKFORCE DEVELOPMENT

- **We must increase the access to and the number of intentional fire practitioners.**
  - + **We can build the capacity necessary to expand prescribed fire application by increasing the frequency and geographic locations of training options and certification options while decreasing the cost and barriers to entry.**
  - + **Cultural fire practitioners have qualifications that are different from those of agencies when it comes to applying intentional fire. To increase the number of intentional fire practitioners, we must respect the multitude of ways that intentional fire is understood and applied, including cultural burning. Land management and regulatory agencies must adapt their policies and practices to support this.**
  - + **We can design intentional fire trainings to support a diverse and inclusive workforce with retention in mind:**
    - Inclusion of youth from tribal nations
    - Affinity training for diverse groups (i.e., WTREX (Women's Training Exchange) led by Lenya Quinn-Davidson)
    - Improving access to intentional fire training
    - Identifying funding opportunities that support innovative and conventional training initiatives
  - + **We can better support grassroots efforts (like Prescribed Burn Associations) that support and inspire community-led prescribed fire implementation.**

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### WORKFORCE DEVELOPMENT CONTINUED

- We can expand the seasonal wildland fire workforce to become a year-round workforce, with a larger segment of personnel dedicated to the application of intentional fire through:
  - + **Support of more apprenticeships and career development opportunities**
  - + **Expansion of technological solutions**
  - + **Deeper engagement with policy processes**
- Invest in fire practitioner safety by expanding the role of technology in applying safer, more efficient fire treatments and techniques
- Ensuring worker rights in policy and in practice
- Creating a way for intentional fire resources (staff, equipment, expertise) to be shared beyond either traditional boundaries or land ownership
  - + **This could mean pooling resources for optimal burn windows available (this is analogous to IROC<sup>1</sup>, currently used to manage fire suppression resource allocation) and supporting All Hands, All Lands work currently underway.**

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<sup>1</sup> IROC (Interagency Resource Ordering Capability) is a centralized system for ordering and dispatching resources for fires and other types of incidents and keeping track of personnel qualifications used by agency suppression teams to share and call in resources to incidents. Having the ability to see what resources are where and to assign these across geographic and jurisdictional boundaries has made fire suppression far more effective and collaborative. Convening attendees noted that a similar system focused on supporting intentional fire activities could greatly expand our ability to increase the pace and scale of intentional fire and to address the barriers around planning, workforce capacity, equipment gaps, etc. Note: IROC replaced ROSS (Resource Ordering Status System), which served a similar incident response purpose.

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### BRINGING GOOD FIRE TO THE GROUND

- Create more pathways and resources for tribes to reclaim cultural burns and preservation of fire-centric cultural resources and heritage.
- + We must do so by recognizing that cultural burning, like prescribed fire, is dependent on time, place, and conditions, and that fire can be restorative and not destructive. With this recognition—and the understanding that cultural burning promotes Indigenous community healing and cultural vitality—agencies must commit to the co-management and co-stewardship of landscapes within and beyond tribal reservations. With these collaborations, Indigenous land stewards will help shape the future of intentional fire implementation.

### EXPANDING BURN SEASON AND GEOGRAPHY

- Using technological and data advancements to expand and optimize burn windows and seasons
- We must broaden the use and understanding of best practices for implementing fire in a diverse set of ecosystems in a diverse set of conditions (example in young stands or riparian ecosystems)
- Use a **pyrosilviculture** approach to open up burn windows

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### ECOSYSTEM BENEFITS OF INTENTIONAL FIRE

- Consideration of the ecological benefits of implementing intentional fire, and what we will lose if we don't.
  - + This includes fire controlling for invasive species, reducing fuel loads, promoting the growth of local, native plant species, supporting soil carbon storage, nutrient cycling, and water holding capacity, and the regeneration of fire dependent species. This also includes how smoke can also benefit ecosystems, such as protecting migrating salmon from extreme heat and sun.

### DATA-CENTRIC FIRE MODELING

- Science-based, transparent, open access, and collaborative data.
- Spatial data + use of AI and ML in optimizing prescribed fires. Example: WIFIRE's **BurnPro 3D** (Ilkay Altintas; Scott Stephens)

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## CONCLUSION & NEXT STEPS

The discussions and connections from this convening exceeded our expectations and objectives. Feedback from the attendees was extremely positive and the connections made or re-made at this event will continue to foster growth in our approaches to restoring more intentional fire to our landscapes.

In addition to hosting a collaborative convening, a few key areas of interest were identified as potential areas to explore for the CWI annual plan and into the future. These include:

- + **Advocating for intentional fire policy and practices that support Indigenous co-stewardship of lands and fire and a recognition of sovereign rights to manage fire on tribal lands.**
- + **Developing and expanding inclusive, all-season workforces expansion and development, to diversify and increase the capacity of intentional fire practitioners.**
- + **Scope potential mechanisms that could facilitate and operationalize cross-organizational resource sharing and optimization of workforce capacity in support of increasing intentional fire work across the landscape.**

While successful, we acknowledge that there were areas for improvement. We identified an absence of private sector partners (timber and forestry businesses), economists, non-federated tribes, and public health practitioners at this convening and connecting with these sectors will be key to creating a collaborative atmosphere for intentional fire. Given the absence of these sectors, it was not surprising that the majority of our unanswered questions were around smoke, economics and the role of private industry, and the impacts on communities.

This report represents an accounting of some of the conversations from this convening but this is just the first step in how these conversations will continue forward at both CWI and amongst our attendees. We encourage you to share the convening synthesis report broadly with your networks to continue the conversations. Also please send your feedback or questions to [sgoodman@climateandwildfire.org](mailto:sgoodman@climateandwildfire.org).



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# APPENDIX

## Convening Resources Available for Education and Outreach

### CURRENT LEGISLATIVE ECOSYSTEM SUMMARY

California is a leader in creating and passing intentional fire and progressive wildfire legislation; a number of these bills and programs were discussed during the convening. These include:

#### California:

- + California's State Certified Prescribed-Fire Burn Boss Program (CARX) (SB 1260 (Jackson, Ch.624, Stats 2018)): This program supports state certification of private prescribed fire practitioners. By enabling private landowners to become or hire burn bosses, this program increased the access to implement intentional fire on private lands.
- + Budget Act of 2021 (SB 170 (Skinner, Ch. 240, Stats 2021)): This bill created a \$20 million Prescribed Fire Claims Fund in case of an escaped prescribed fire. The funds are set aside by the state to pay for claims made by non-public entities against private intentional fire practitioners including tribal members, private landowners, private burn bosses, and other nongovernmental entities. The hope is that this bill will reduce private burn bosses' and cultural burners' concern over liability claims when implementing intentional fire.
- + Civil Liability: prescribed burning operations: gross negligence (SB 332 (Dodd, Ch. 600, Stats 2021)): This bill shifted the California liability standard to require suits taken against a prescribed fire practitioner, in the case of an escaped prescribed fire, to prove that the practitioner did not take proper precautions and acted in gross negligence. Originally, the liability standard in California was of simple negligence, which made it harder for the prescribed fire practitioner to prove they had prepared for the prescribed fire. This bill makes it so that more private burn bosses and cultural burners feel protected by the law when conducting properly planned intentional fire.

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### CURRENT LEGISLATIVE ECOSYSTEM SUMMARY CONTINUED

- + Wildfires (AB 642 (Friedman, Ch. 375, Stats 2021)): Requires CAL FIRE to appoint a cultural burning liaison and develop an automated system for issuing burn permits. There is hope that this will accelerate the prescribed fire permitting process. The bill also defines cultural burning and cultural fire practitioner. The bill defines these terms in the Public Resources Code as:
  - + "4002.4. "Cultural burn" or "cultural burning" means the intentional application of fire to land by California Native American tribes, tribal organizations, or cultural fire practitioners to achieve cultural goals or objectives, including for subsistence, ceremonial activities, biodiversity, or other benefits."
  - + "4002.6. "Cultural fire practitioner" means a person associated with a California Native American tribe or tribal organization with experience in burning to meet cultural goals or objectives, including for subsistence, ceremonial activities, biodiversity, or other benefits."

At the federal level, several bills and initiatives were discussed as potentially impacting the acceleration of intentional fire. These include:

- + Exceptional Events Rule (40 C.F.R. §§ 50.1, 50.14, 51.930): The US Environmental Protection Agency (US EPA) instituted a rule that prescribed fire could be considered an "Exceptional Event", meaning prescribed fire emissions could be excluded from PM2.5 emissions. Because of the onerous requirements to show that a prescribed fire falls under the exceptional event rule, no air quality regulator had used it as of December 2022. Convening attendees discussed the need to make it easier to implement intentional fire under air quality regulation processes.
- + The US EPA is considering lowering its annual PM2.5 standard. This made convening attendees concerned, as attaining prescribed fire permits is already a challenge.

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### CURRENT LEGISLATIVE ECOSYSTEM SUMMARY CONTINUED

- + The Stewardship Project is a collective of Indigenous and Western scientists proposing pathways to co-management of lands, natural resources, and intentional fire application between agencies and indigenous land stewards.
- + The Stewardship Project is funded through CWI. Convening attendees discussed the need to support Indigenous stewardship of fire and lands, with some referencing the recommendations of The Stewardship Project.
- + [The Wildfire Mitigation and Management Commission Report](#), submitted in September 2023 with agreement from all commission members, made 148 recommendations which included recommendations on how to expand the use of beneficial fire (managed wildfire as well as intentional fire use). The Report was extensively referenced throughout the convening for its recommendations on co-stewardship between agencies and tribal entities of wildfire and beneficial fire. A number of commission members attended the convening.

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# GLOSSARY

**WILDFIRES:** Unplanned fires, whether started by natural ignitions or by humans.

**BENEFICIAL FIRE:** Fires that support fire adapted ecosystems and may contribute to wildfire mitigation. These include natural and anthropogenic fires (prescribed fire, cultural burning, and managed wildfires). AKA Good Fire.

**INTENTIONAL FIRES:** A subset of beneficial fires that is limited to anthropogenically lit prescribed fire and cultural fire. Intentional fire practices use fire at the right time of year and under the right conditions that can be used to mitigate future catastrophic fires, increase wildfire resilience, encourage healthy ecosystems and biodiversity, and support cultural practices.

**PRESCRIBED FIRES:** A subset of intentional fire, purposefully applied and managed by fire practitioners with the goals of restoration and mitigating catastrophic fires.

**CULTURAL BURNS:** A subset of intentional fire, applied and managed by Indigenous people using Traditional Ecological Knowledge to achieve cultural objectives and benefit. Cultural burns are part of a larger practice of active stewardship.

**BURN BOSSES:** Individuals who are certified by either NWCG or CAL FIRE to plan, organize, and execute prescribed fires. They draft a plan that outlines the goal of the burn, how it will be conducted, and what safety measures are needed, go through the permitting process, coordinate resources for implementing the burn, and oversee that implementation.

**FUEL TREATMENT:** Activities that result in reducing vegetation amounts or changing the arrangement of fuels in the environment.

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# KEY INTERESTED PARTIES IN CALIFORNIA HIGHLIGHTED DURING THE CONVENING:

CAL FIRE

CALIFORNIA AIR RESOURCES BOARD

WIFIRE LAB

FIRE FORWARD

STEPHENS LAB

INDIGENOUS PEOPLES BURNING NETWORK

KEEPERS OF THE FLAME

CULTURAL FIRE MANAGEMENT COUNCIL

INTERTRIBAL STEWARDSHIP WORKFORCE INITIATIVE

CLIMATE & WILDFIRE INSTITUTE

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