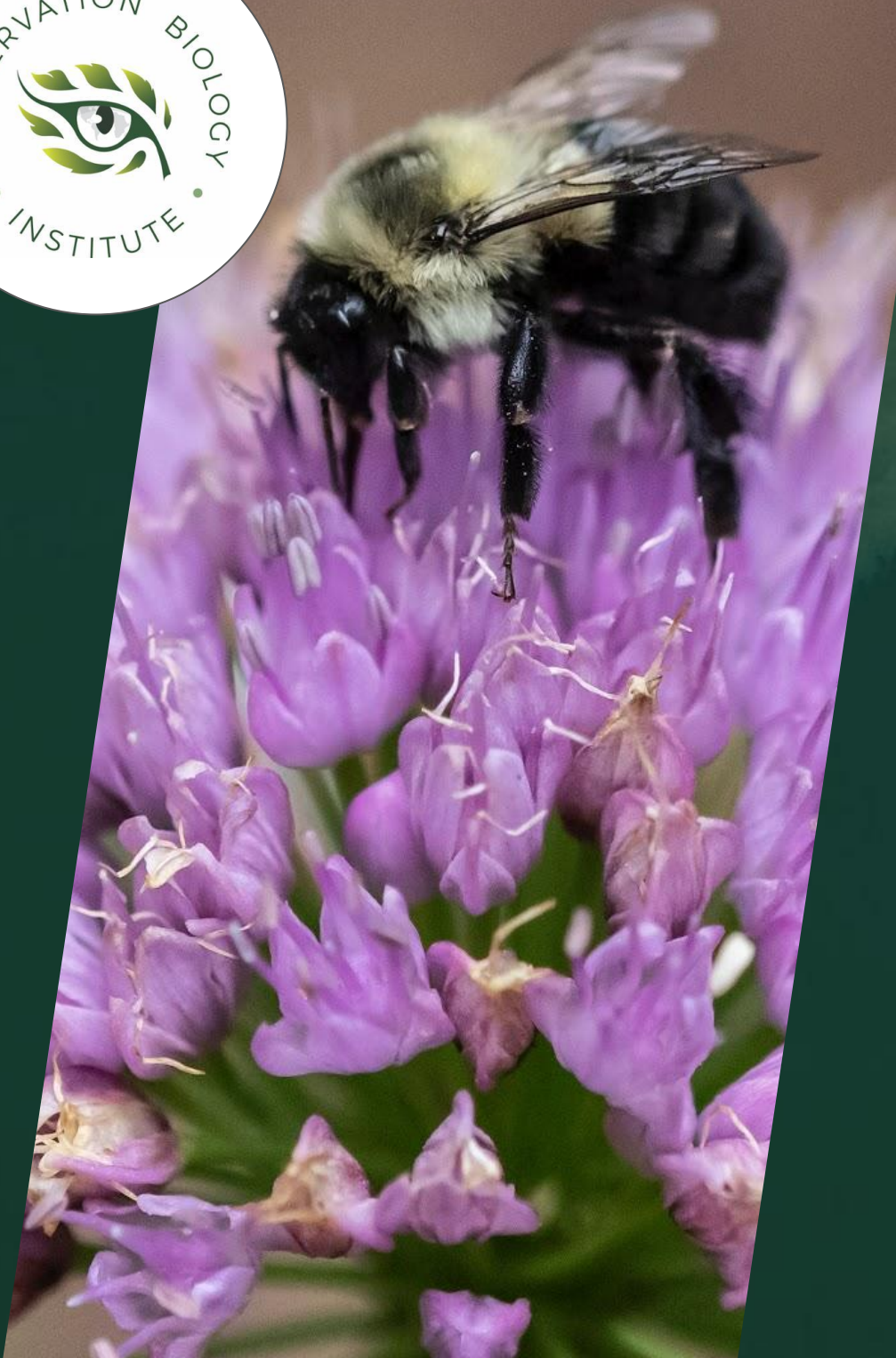




The Global Wildfire Collective facilitates collaboration among scientists, firefighters, policymakers and communities to enable wildfire resilience and recovery in ecological and social systems

GWC and Conservation Biology Institute (CBI)



CBI is a **non-profit, science-based conservation** organization with **three decades** of experience

CBI provides **advanced conservation science, technology, and planning** to empower partners in solving the world's critical ecological challenges

CBI team is composed of **three main disciplines:**

- Conservation Science
- Geospatial Science + Remote Sensing
- Software Engineering



GWC Scientific Pillars



**Wildfires &
Global Change**



**Fire Ecology
& Biodiversity**



**Fire
Management
& Policy**



**Equitable
Community Safety
& Resilience**



GWC Charter Members & Partner Institutions

- 42 charter members

- 14 partner institutions

- 26 countries represented

(as of Jun 2026)





GWC Charter Members - Secretariat



Dr. Alexandra D. Syphard
GWC Chief Scientist
Conservation Biology Institute
United States



Mr. Karl Peet
GWC Senior Global Strategist
Conservation Biology Institute
United States



Ms. Robin Jones
GWC Director
Conservation Biology Institute
United States



Ms. Jenna Sposato
GWC Communications
Conservation Biology Institute
United States



GWC Charter Members - Research (1) (selected)

Interdisciplinary Wildfire Research Scientists



Dr. Alejandro Miranda
Researcher
Department of Forest Science
University of La Frontera
Chile



Dr. David Bowman
Director Fire Centre, Professor of
Pyrogeography and Fire Science at
the University of Tasmania
Australia



Dr. Saeedeh Eskandari
Associate Professor
Research Institute of Forests
and Rangelands
Iran



Dr. Johan Sjöström
Senior Research Scientist
RISE Research Institutes of Sweden
Sweden



Dr. Stijn Erik R Hantson
Associate Professor
Faculty of Natural Sciences
Universidad del Rosario
Belgium / Colombia



Dr. Marijana Kapovic Solomun
Department of Forest Ecology,
Faculty of Forestry
University of Banja Luka
Bosnia and Herzegovina



GWC Charter Members - Research (2) (selected)

Interdisciplinary Wildfire Research Scientists



Dr. Juli G. Pausas

Professor of Research, Consejo Superior de Investigaciones Científicas (CSIC)
Spain



Dr. Sally Archibald

Professor of Animal, Plant and Environmental Sciences
University of Witwatersrand
South Africa



Dr. Mike Flannigan

BC Innovation Research Chair in Predictive Services, Emergency Management and Fire Science, Faculty of Science
Canada



Dr. Fantina Tedim

Professor
Department of Geography
Universidade de Porto
Portugal



Dr. Iokiñe Rodríguez

Senior Lecturer in Environment & Development, University of East Anglia
Venezuela / United Kingdom



Dr. Anne Ganteaume

Directrice de Recherche
INRAE
France



GWC Charter Members - Fire Operations (selected)

Firefighting practitioners



Lt. Bernardo Lenis Duque
Institutional Development Director
Benemérito Cuerpo de Bomberos
Voluntarios de Cali
Colombia



Mr. Markristian Madariaga Pareja
Jefe Nacional de previsión del riesgo
ante Incendios Forestales
Cuerpo General de Bomberos Voluntarios
Perú



Sr. Óscar Enrique Tibaquicha Velandia
Presidente
Federación Nacional de Brigadas de
Incendios Forestal
Territorio Muisca/Colombia

Interdisciplinary team members



Mr. Steve Hawks
Senior Director for Wildfire,
Insurance Institute for Business
& Home Safety (IBHS)
United States



Dr. Arindam Roy
Climate Science Advisor
Clean Air Fund
India



Mr. Shawn Zimmermaker
Staff Chief of Law Enforcement
CAL FIRE
United States





GWC Partner Institutions (selected)



**Academia
National de
Bomberos de
Colombia**



**Benemérito
Cuerpo de
Bomberos
Voluntarios de
Cali**



**Centre de
Recerca
Ecològica i
Aplicacions
Forestals
(CREAF)**



**Center for
Climate and
Resilience
Research (CR2)**



**Leverhulme
Centre for
Wildfires,
Environment and
Society**



**Environmental
Defense Fund
(EDF)**



**International
Savanna Fire
Management
Initiative (ISFMI)**



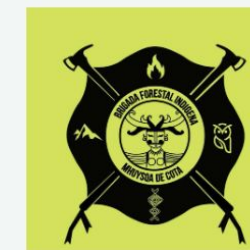
**La Unidad
Nacional para la
Gestión del
Riesgo de
Desastres
(UNGRD)**



**Universidad de
La Frontera**



**Universidad del
Rosario**



**Brigada Forestal
Indígena de Cota**



RÉPUBLIQUE TOGOLAISE

**Ministère de
l'Environnement
et de la
Ressource
Forestière
(MERF)**





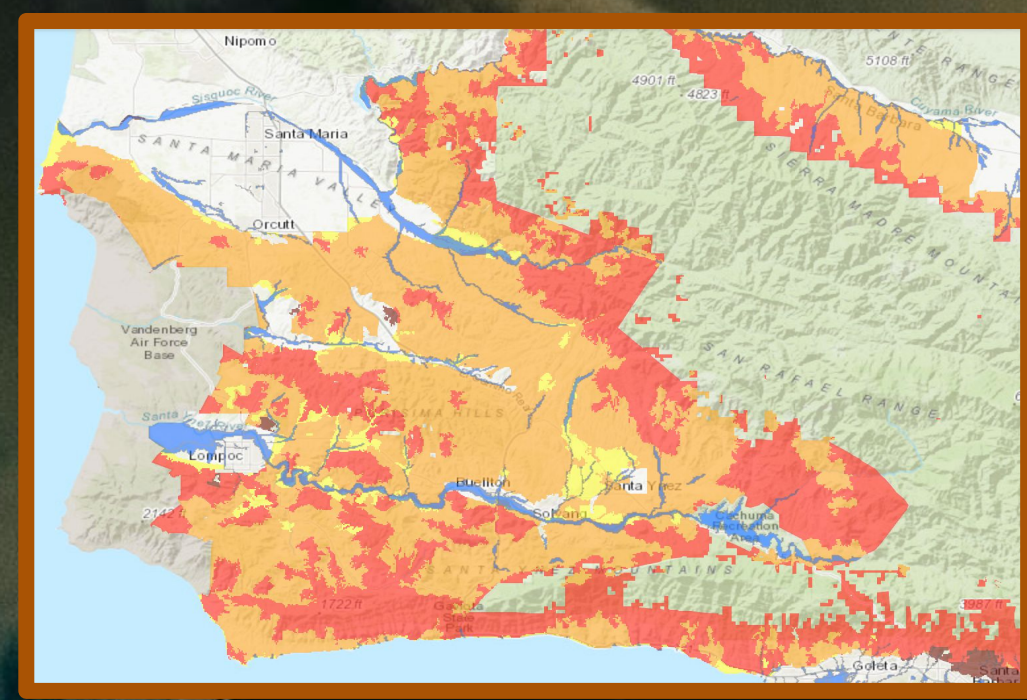
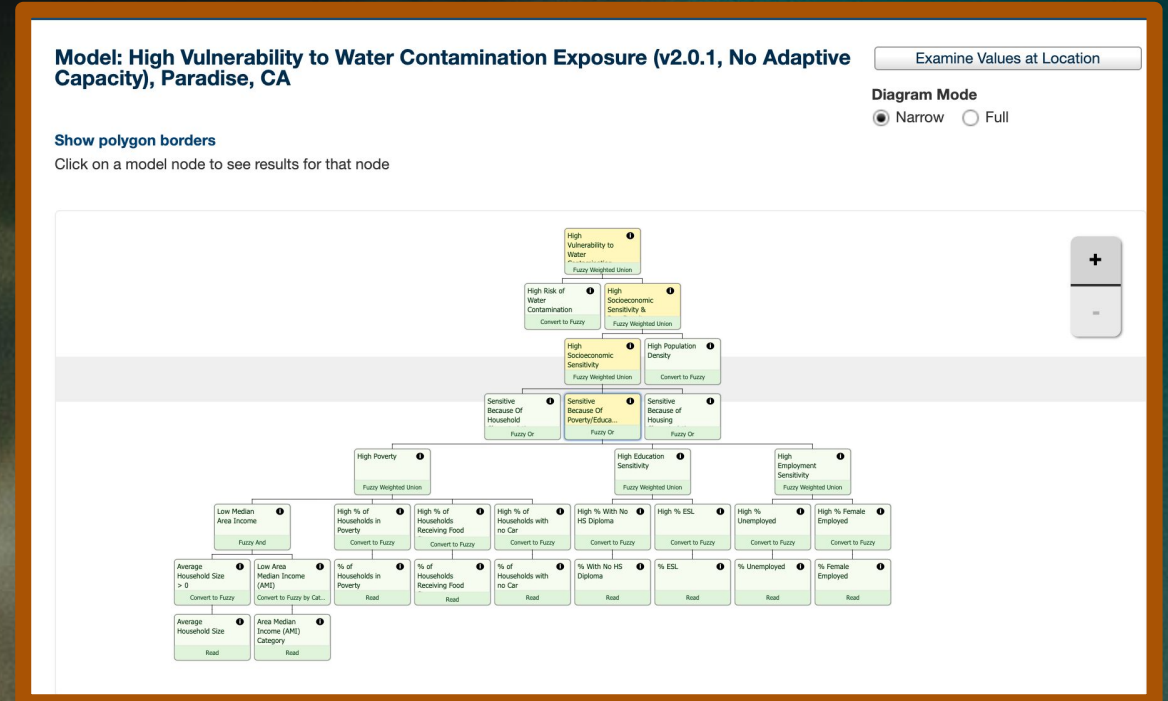
GWC Activities and Services



- ❖ **GWC Academy**
Trainings, workshops & webinars
- ❖ **GWC Research Collaboration**
Cross-region & cross-discipline transferability
- ❖ **GWC Spatial Data Gateway**
Platform for data & technology exchange
- ❖ **GWC Discussion Forum**
Multilingual exchange science & practice



Global Wildfire Collective Academy





GWC Fire Modelling Literacy Program



Tier 1: Base Module

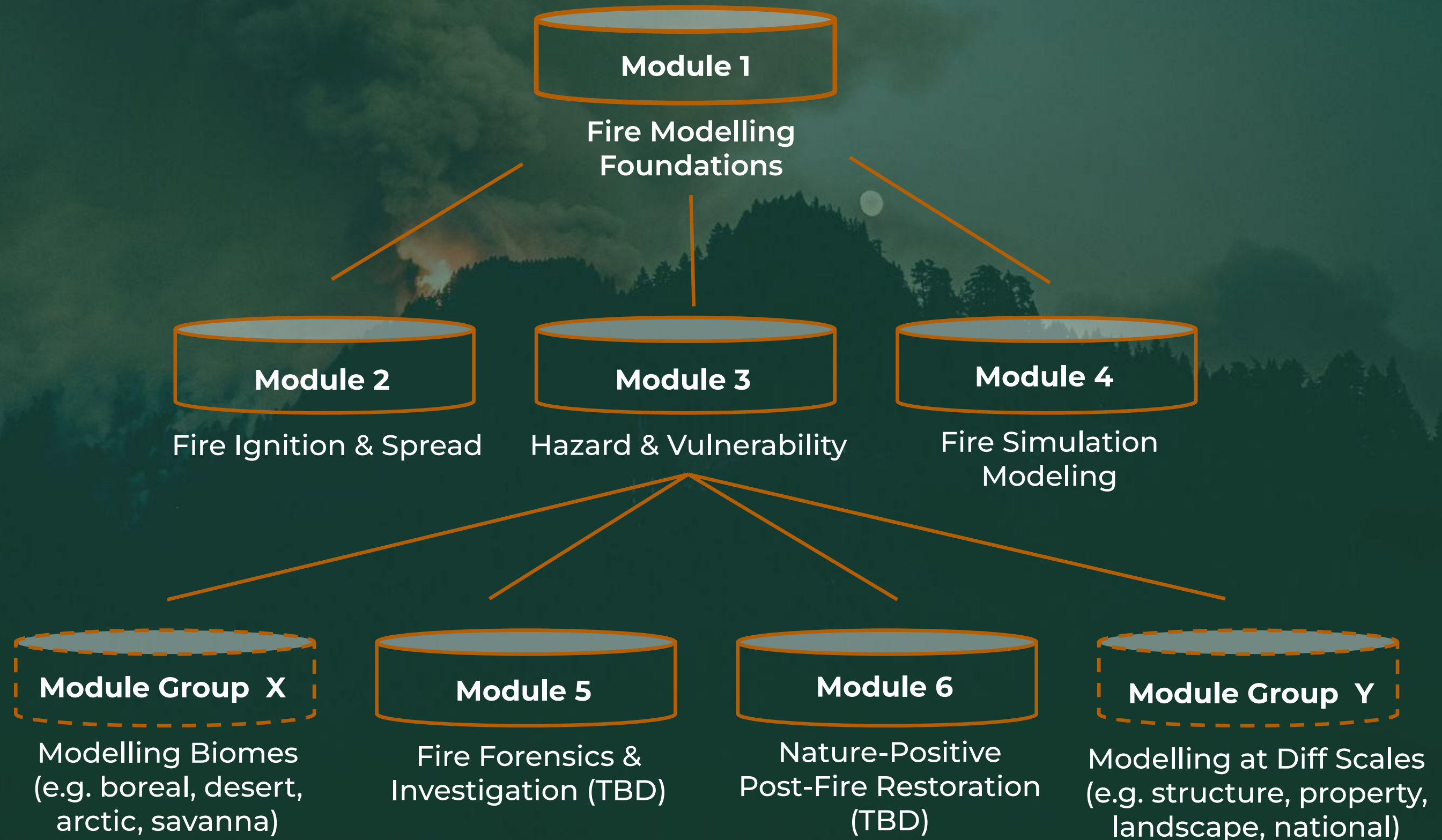
Foundation

Tier 2: Core Modules

Application

Tier 3: Further Modules

Specialisation





GWC Webinar Series



500+ registrants

30+ nations

Represented sectors:

- Academia
- Fire Operations
- Private Sector
- Government
- NGOs



Ecological & Human Causes and Impacts of Three Extreme Wildfire Events



Australia
2019-2020



Chile
2024



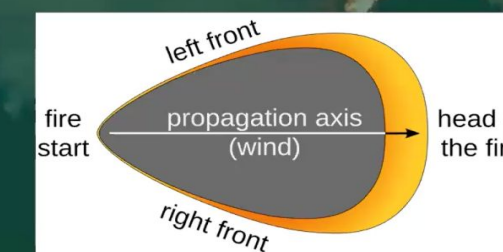
United States
2025

Inaugural Webinar – 20 March 2025



Wildfire Modeling

How models are used to address research and management issues across scales and disciplines



Webinar #3 – 2 December 2025
Hi, everyone! Welcome to the webinar. We are waiting as people are coming in from the waiting room, so we're just going to give it a second, because it takes a moment for ev



Wildfire in Boreal Forests



Webinar #2 – 9 July, 2025



Wildfire in Savanna Ecosystems



Webinar #4 – 28 April 2026

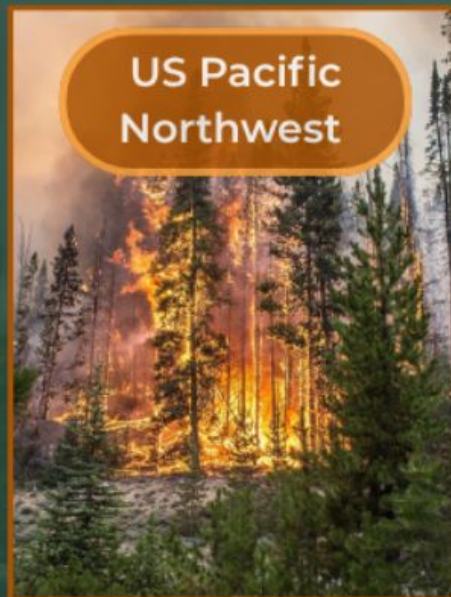


GWC Research Collaboration

New Grant- \$1.5M, 3 years

Scaling Regional Resilience

The GWC has been awarded a three-year grant through the US National Science Foundation (NSF) to advance wildland fire research and scale wildfire resilience science across pilot nodes in three nations



This project is funded through NSF's Fire Science Innovations through Research and Education (FIRE) program, a collaboration with NASA, the Strategic Environmental Research & Development Program and Environmental Security Technology Certification Program of the US Department of Defense, and the Gordon and Betty Moore Foundation

- **Wildfire impacts are accelerating**, as must resilience efforts
- 'One size fits all' approach could **worsen risk if misapplied**
- Need broader research on **responsible knowledge transfer**

Pending collaboration:
NATO (w/ *TNC Colombia*)



- Ecoregional resilience roadmaps (US & Colombia)
- Frameworks for responsible knowledge transfer



GWC Spatial Data Gateway



A **collaborative data sharing space** for wildfire-related datasets and maps to provide scientific knowledge to **make more informed decisions** on wildfire resilience and recovery





 **Global Wildfire Collective Gateway**

Search by keyword or location 

powered by 



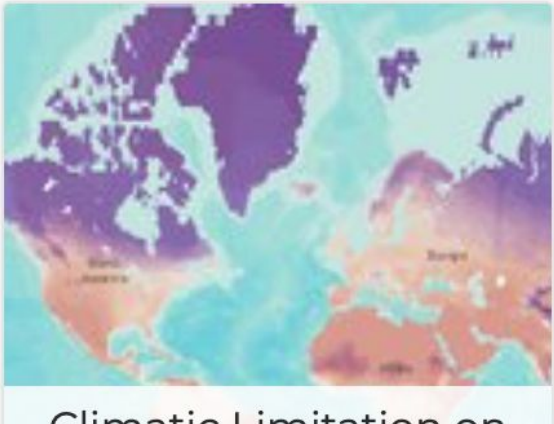

Featured Datasets

Explore the latest wildfire datasets

 <p>USA Current Wildfire Perimeters</p>	 <p>OpenAQ Recent Conditions in Air Quality</p>
 <p>California Wildfire & Landscape Resilience Interagency Treatments (Polygons)</p>	 <p>Land cover, Central and South America (GlobCover 2009)</p>

Featured Maps

Explore curated wildfire maps

 <p>Fire History, Vegetation, Fire Safety Councils, Pepperwood</p>	 <p>Historical Drought, Croplands, and Fire History for the Contiguous US</p>
 <p>Climatic Limitation on Net Primary Production (Churkina & Running)</p>	 <p>Community Fire Planning Zone</p>










GWC Discussion Forum



❖ A forum for GWC member **collaborations and knowledge sharing.**

❖ Multilingual support using AI to **automatically translate to ~60 languages.**

Category	Topics	Latest
<p>Wildfire & Global Change</p> <p>A holistic understanding of each region's unique fire-influencing variables is critical for developing comprehensive strategies for effective fire management and long-term co-existence with fire.</p>	1	<p> Functional traits databases 2 14h</p> <p>■ Fire Ecology & Biodiversity</p>
<p>Fire Ecology & Biodiversity</p> <p>Insights into how fire interacts with biological systems and impacts biodiversity and ecosystem function are crucial for developing fire management strategies that are best aligned with ecological processes and provide maximum benefits for people and nature.</p>	1	<p> Upcoming webinar on boreal forest fires, 9 July 2025 at 9am PDT 0 4d</p> <p>■ Events & Activities</p>
<p>Fire Management & Policy Operations</p> <p>The most effective preparedness efforts involve an interdisciplinary set of "before", "during", and "after" actions carried out by community members, fire practitioners, firefighters, policymakers, conservation planners, and developers that are informed by the scientific and Indigenous knowledge of ...</p>	1	<p> Landscaping and WUI Fires 1 4d</p> <p>■ Fire Management & Policy Operations</p>
<p>Equitable Community Safety & Resilience</p> <p>Discussions to help ensure that wildfire preparation, recovery strategies and policy interventions are appropriately, equitably, and effectively designed.</p>	1	<p> 29-31 Oct. 2025- Fire Modeling Workshop- Cali, Colombia 0 5d</p> <p>■ Events & Activities in-person</p>
		<p> Which are the best apps for fire awareness? 1 6d</p> <p>■ Equitable Community Safety & Resilience</p>
		<p> Admin Guide: Getting Started 0 Apr 8</p> <p>■ Staff</p>
		<p> 🏠 Welcome to Global Wildfire Collective Discussion Forum! 🙌 8 19h</p> <p>■ General</p>



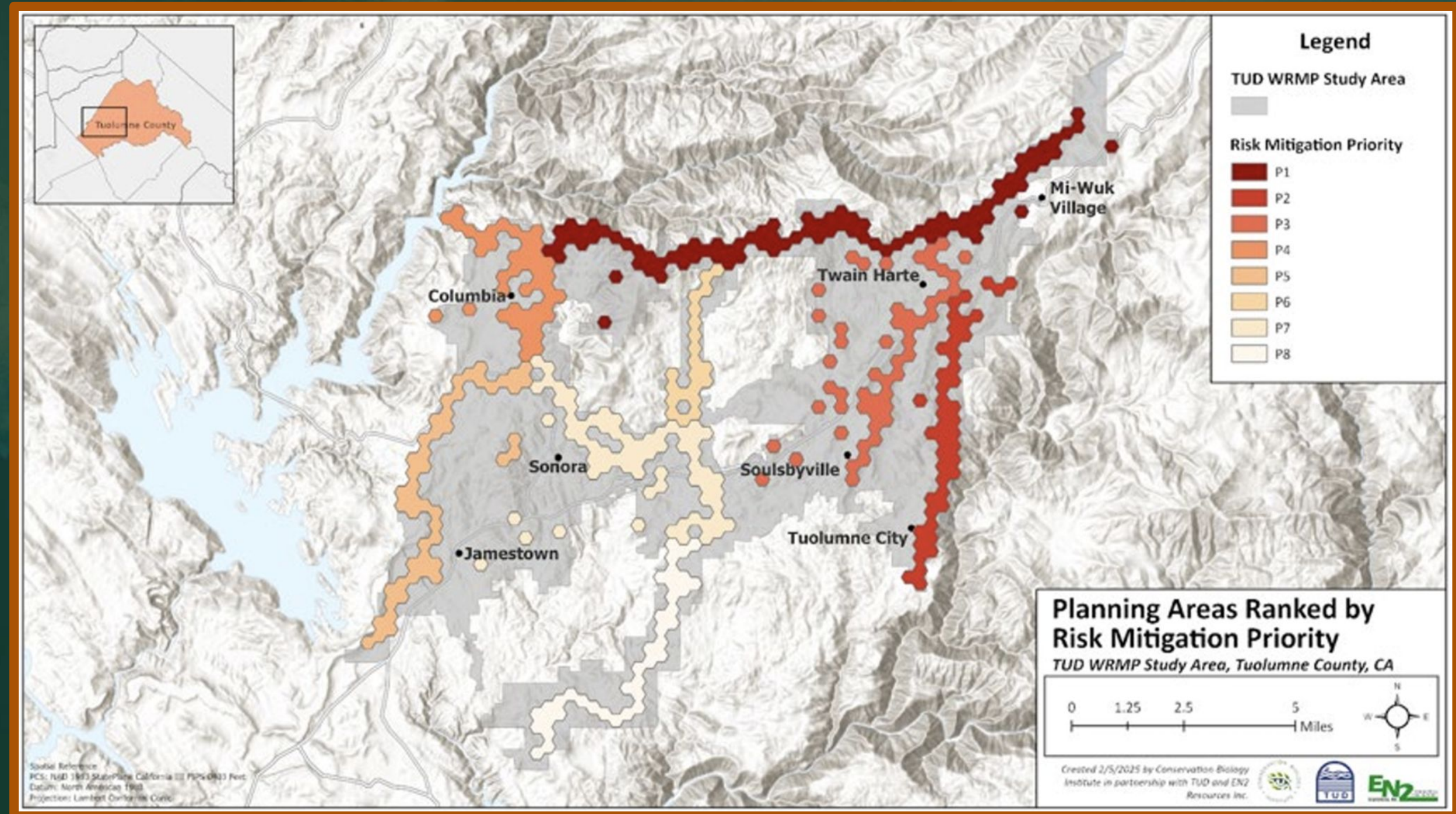
CBI Example 1: Tuolumne Utilities District Wildfire Defense Plan (California)



CBI and **EN2 Resources Inc.** partnered to develop a comprehensive strategy to protect water resources and increase community resilience to wildfire.

The plan follows state and federal resilience directives (i.e. California Wildfire & Forest Resilience Action Plan; US Forest Service Wildfire Crisis Strategy Implementation Plan)

(Project information [here](#))





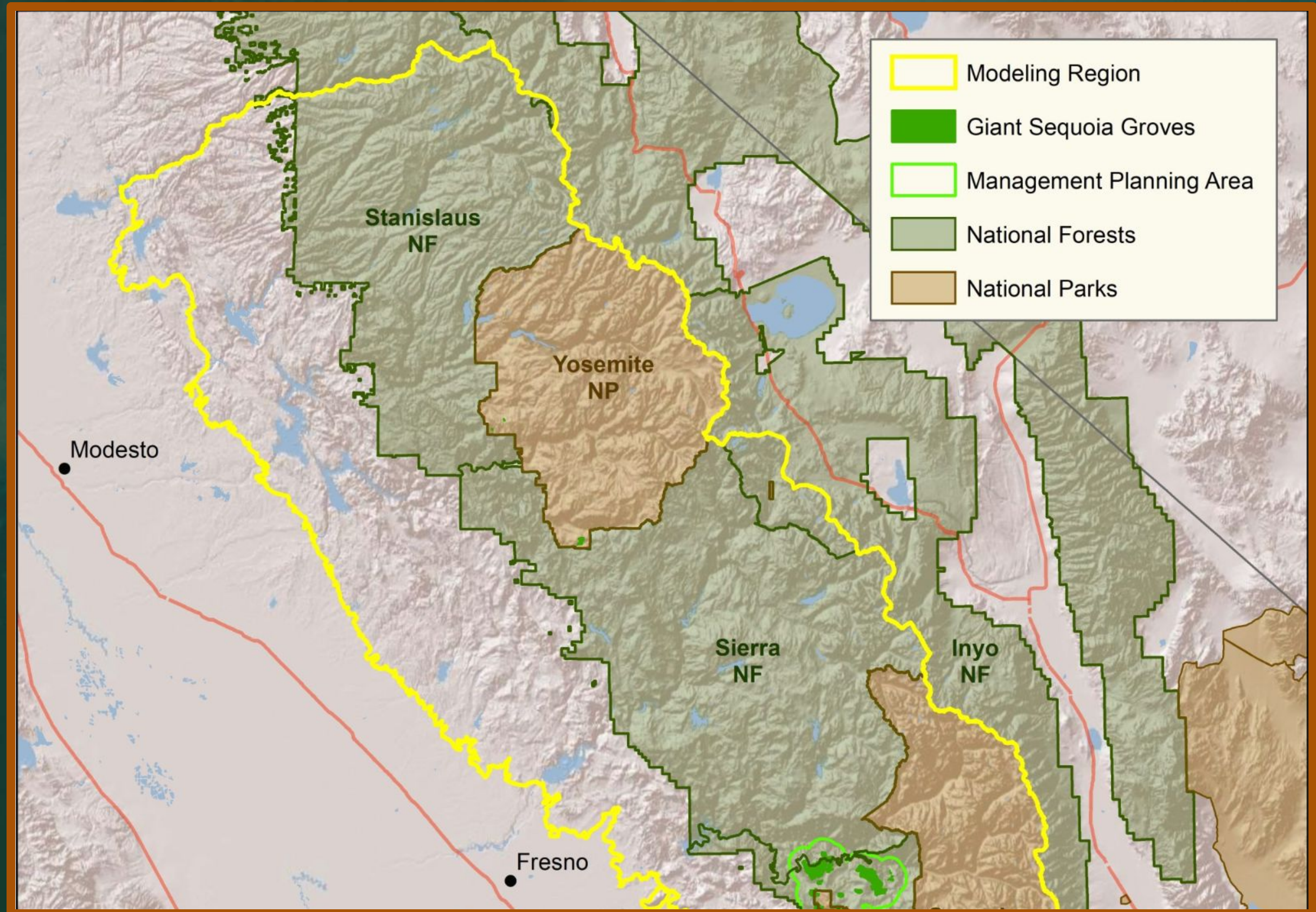
CBI Example 2: Sierra Nevada Forest Resilience Decision-Support System (California)



CBI developed and applied a decision-support system for forest resilience planning that models how vegetation, terrain, climate, and weather interact to influence fire risk.

The tool will allow managers to simulate fuel-reduction treatments, evaluate their effects on a range of risks and resources, project the impacts into the future, and assess levels of uncertainty.

(Project information [here](#))





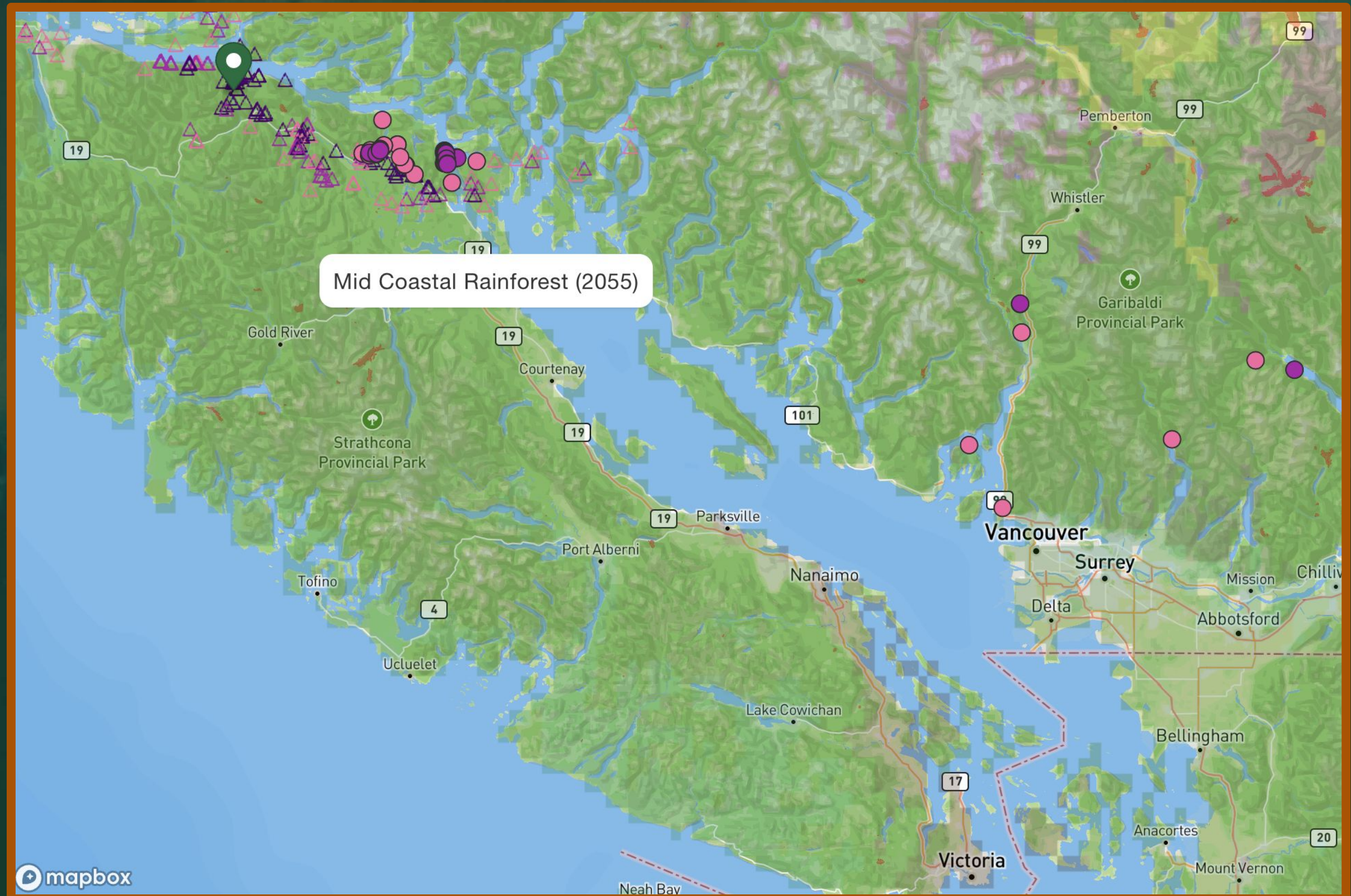
CBI Example 3: Climate Smart Restoration Tool



CBI developed the CSRT to provide information on seed collection and transfer of native plants. The CSRT maps current and future seed transfer limits for plant species using climate data.

The CSRT assesses potential plant species for ecosystem restoration using data (and genetic information where available) to infer vegetation transitions over time.

(Project information [here](#))

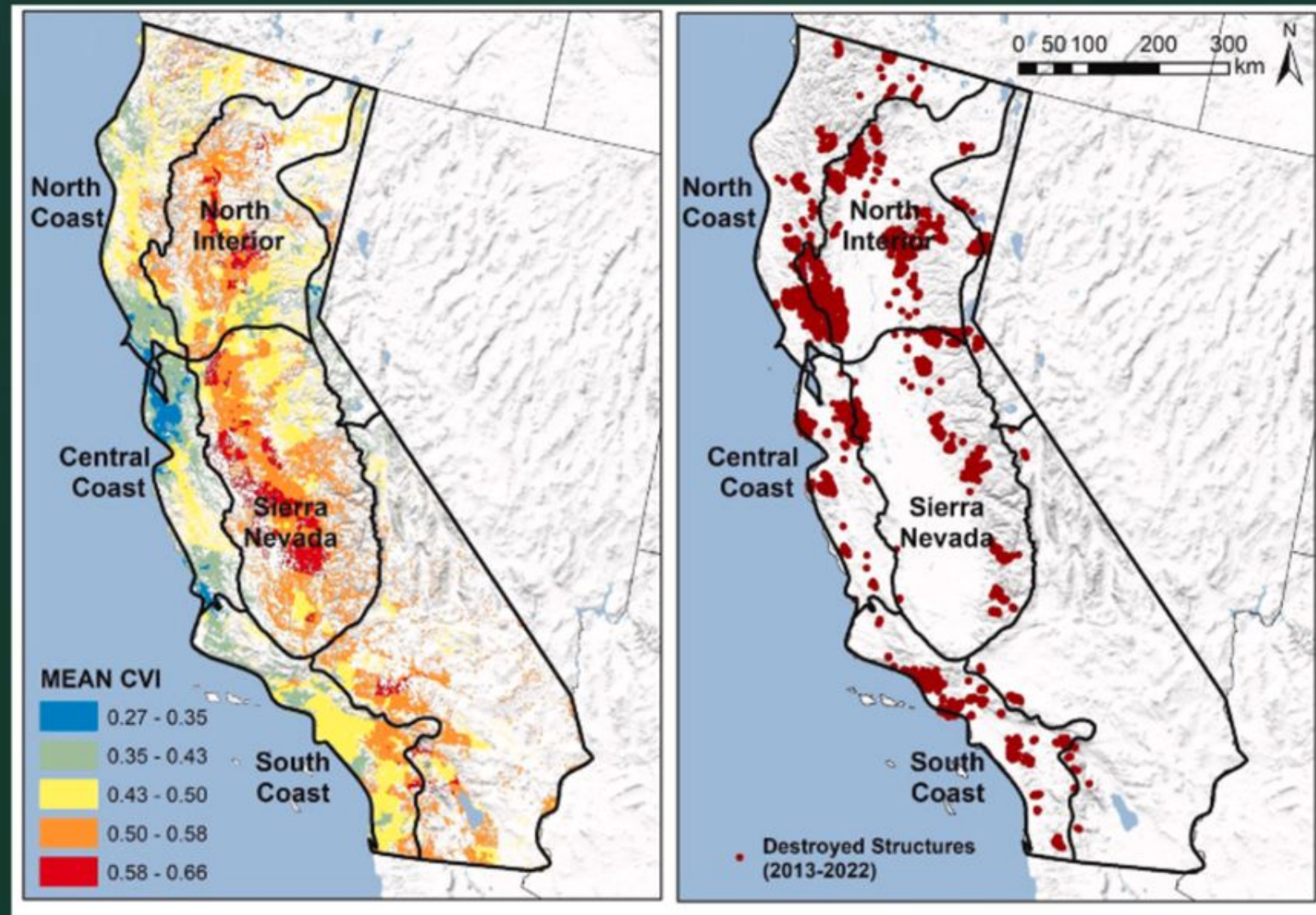




CBI Example 4: Convergence of Risk and Vulnerability



Evidence-based support for equitable resilience strategies



Climate – social
vulnerability index

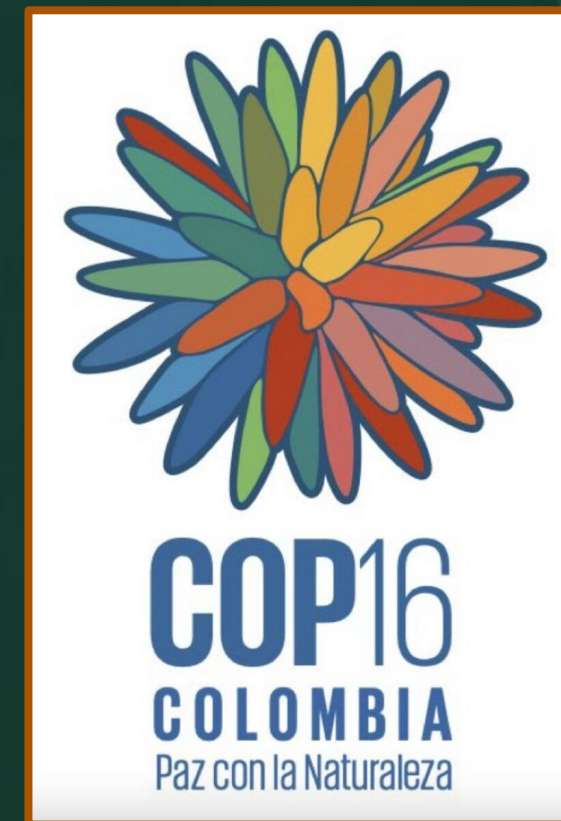
House loss
locations

- ❖ Mapping overlap of fire impacts & different types social vulnerability
- ❖ Different SoVI types – different geographical locations
- ❖ Predictors in structure loss models differ between high and low vulnerability

(Publication information [here](#))



UN Biodiversity Summit (COP16) (Oct 2024, Cali)





Expert Group Meeting (May 2025, Bogota)



#4) Community Safety & Equity

- Sinergias
 - Causas ICV
 - Brigadas Comunitarias
↳ MinAmb - JAVH.
 - Alternativas al uso del Fuego.
- Necesidades Técnicas ↔ Incorporación Conoc. local
- Rol de la GWC





FAO Global Fire Mgmt Hub + Global Forests Observation Initiative Plenary (ongoing)



CBI is a *member* of the Core Group of the Fire Hub Working Group on **Fire Data**

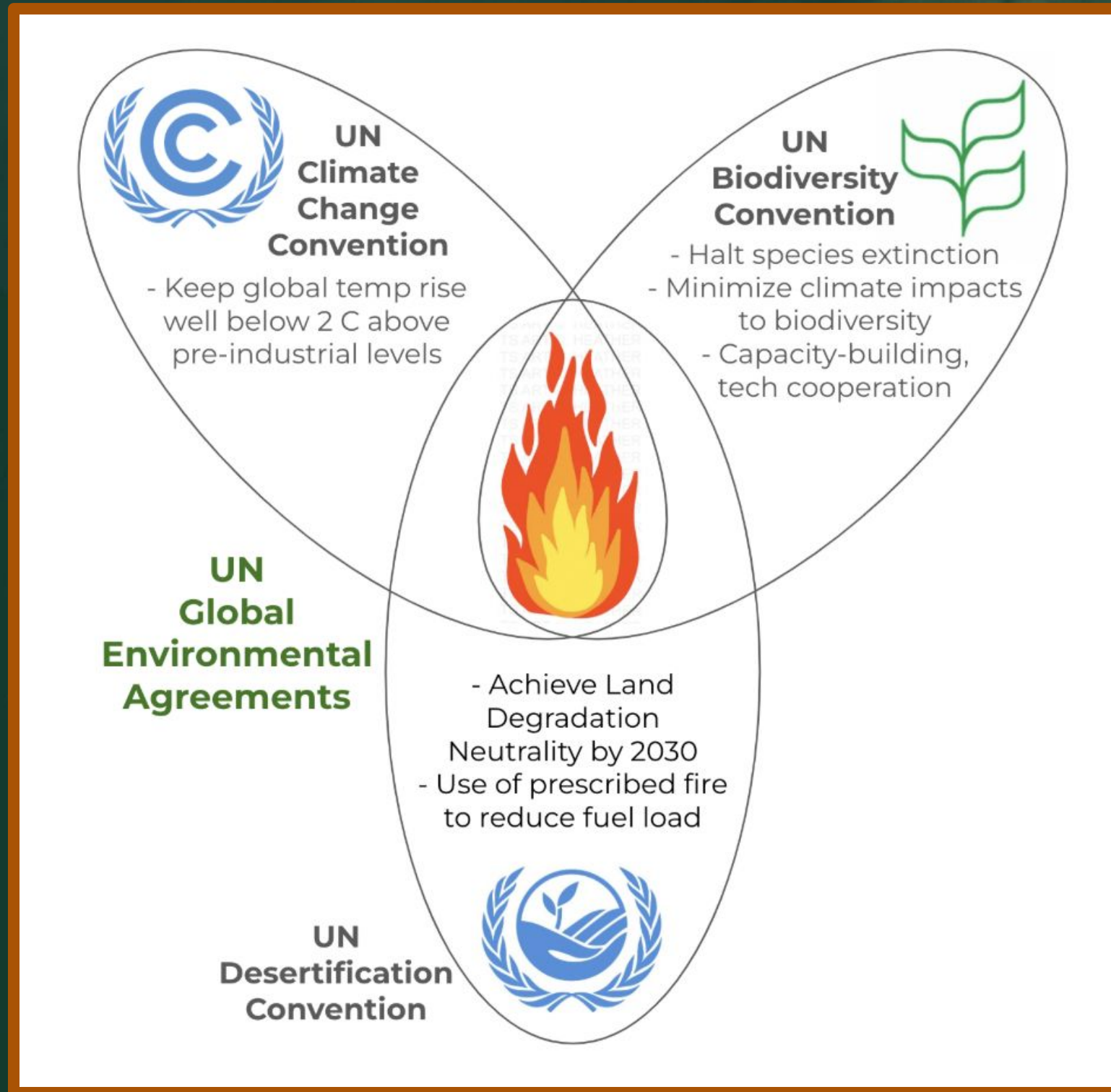


CBI is a *contributor* to the Fire Hub Working Group on **International Interoperability** and the Working Group on **Community-Based Fire Management**



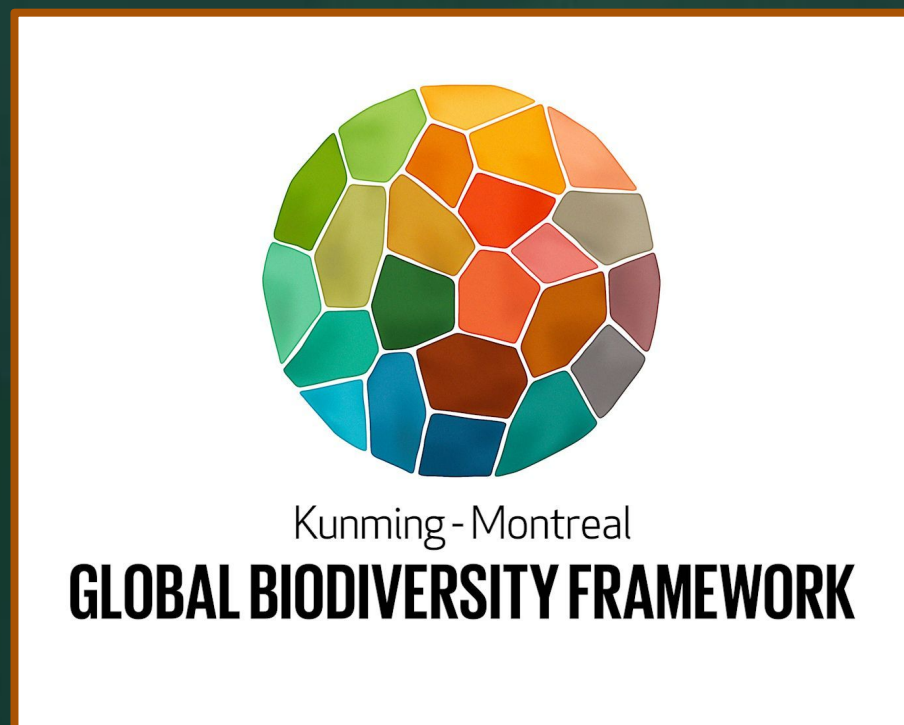


UN Conventions on Climate / Biodiversity / Land





UN Biodiversity/ Climate/ Land Engagement (2025)





Proposed Joint Work Programme on Wildfire Resilience across UN Rio Conventions



Annex 1: Proposed Joint Work Programme on Wildfire Resilience and Recovery (Draft)

Note: This proposal is based on existing UN Rio Convention work programmes & expert groups, e.g.

- CBD: Ad Hoc Technical Expert Group on Indicators
- UNCCD: Intergovernmental Working Group on Drought (2022-2024)
- UNFCCC: NWP Thematic Expert Group on Biodiversity and Climate Change

This proposal has two parts: (A) a Joint Work Programme containing (B) a Technical Expert Group

(A) Joint Work Programme on Wildfire Resilience and Recovery

Functions:

- Build national capacity and accelerate action on wildfire resilience and recovery
- Incorporate wildfire resilience in negotiations/strategic frameworks of each Rio Convention
- Provide means of implementation to scale up impact (input from Technical Expert Group)

Composition:

- Secretariats: Implementation-focused divisions, e.g.
 - CBD: Implementation Support Division
 - UNCCD: Global Policy, Advocacy and Regional Cooperation
 - UNFCCC: Means of Implementation Programme
- Parties:
 - National focal points with political focus (e.g. Ministries of Foreign Affairs)
- Non-Party Stakeholders:
 - Sub-national policymakers
 - Local and Indigenous community representatives
 - Industry groups (e.g. agriculture, energy, insurance)

Activities:

- Convene general assembly (1 per year, rotating among conventions)
- Convene regional capacity building sessions (input from Tech Expert Group) (1-2 per year)
- Report to outputs/outcomes to COP Presidencies (1 per 1-2 years)

(B) Technical Expert Group on Wildfire Resilience and Recovery (sub-group of JWP)

Functions:

- Increase science-based understanding of wildfire drivers, impacts, and solutions.
- Highlight need for context-sensitive solutions across geographies and ecosystems.
- Inform frameworks, policy dialogue, and negotiations within each Rio Convention.

Composition:

- Secretariats: Science/technology-focused divisions, e.g.
 - CBD: Science, Society and Sustainable Futures Division
 - UNCCD: Science and Policy Interface members
 - UNFCCC: Mitigation/Adaptation Programmes
- Parties:
 - National focal points with technical focus (e.g. Ministries of Environment)
- Non-Party Stakeholders:
 - Wildfire research scientists/ecologists
 - Fire and conservation managers and practitioners
 - Local/Indigenous community representatives

Activities:

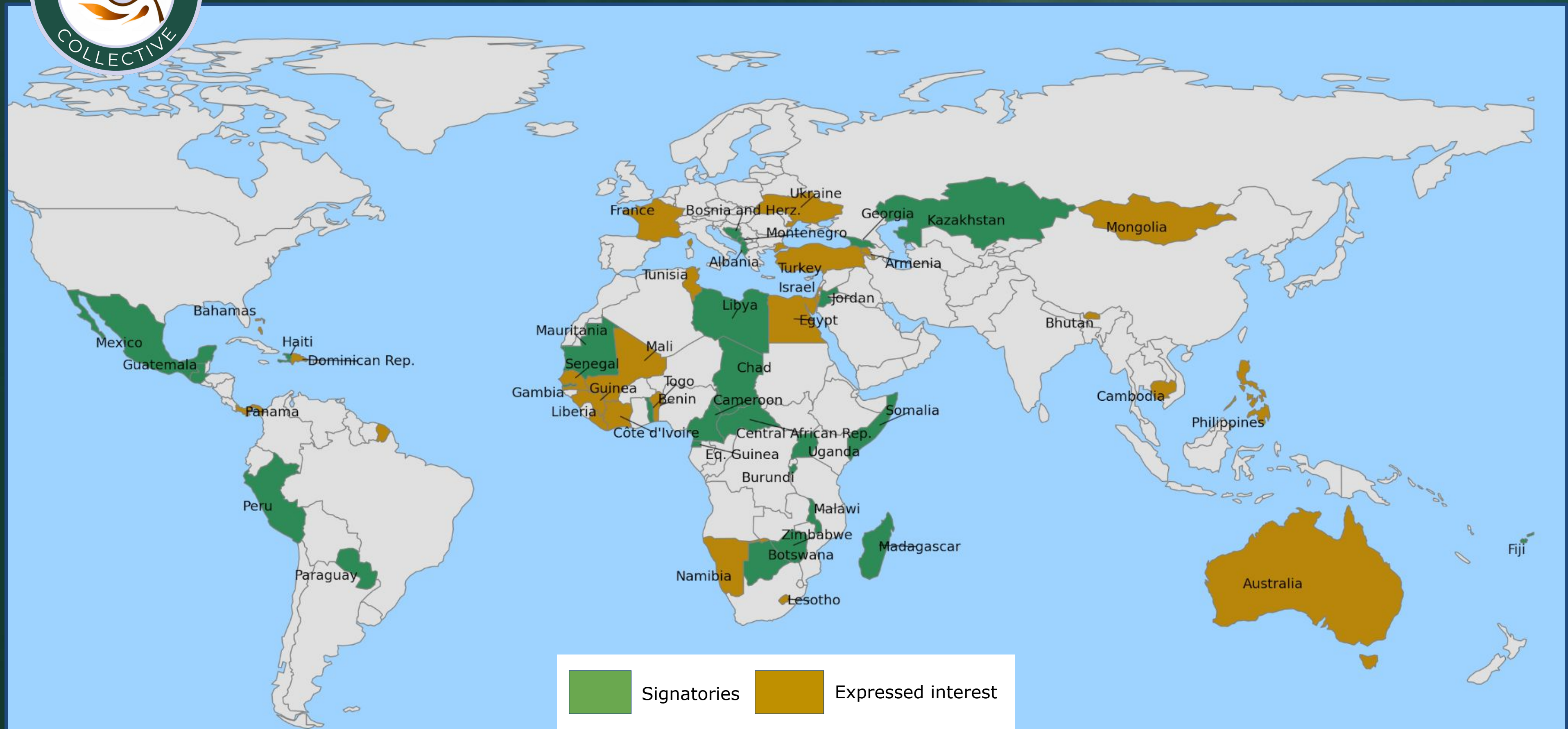
- Convene technical information exchange (1 per year, SBSTTA or other technical meetings)
- Convene national capacity building sessions (2-3 per year, at request of Parties)
- Facilitate remote collaboration (e.g. via [Global Wildfire Collective](#) Knowledge Exchange Hub)

The Conservation Biology Institute urges discussion/refinement of this proposal at the 27th meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (20-24 October 2025).

- | | | | |
|--|--------------------------|--|-------------|
| | Albania | | Libya |
| | Bosnia & Herzegovina | | Madagascar |
| | Botswana | | Malawi |
| | Burundi | | Mauritania |
| | Cameroon | | Montenegro |
| | Central African Republic | | México |
| | Chad | | Paraguay |
| | Equatorial Guinea | | Peru |
| | Fiji | | Saint Lucia |
| | The Gambia | | Samoa |
| | Georgia | | Somalia |
| | Guatemala | | Sénégal |
| | Haiti | | Togo |
| | Jordan | | Uganda |
| | Kazakhstan | | Zimbabwe |

36 signatories from **30 parties** to UN Conventions on Biodiversity, Climate and Land (as of Dec 2025)

Proposed UN Joint Work Programme on Wildfire Resilience - Party Responses





GWC National & Regional Roadmaps for Integrated Fire Management

Component 1: Assess existing conditions of wildfire vulnerability & resilience

(Estimated timeline: 2-3 months / Estimated budget: USD 40-60K)

- Compile inputs for assessments, e.g.
 - Literature review
 - Data discovery and gap analysis
 - Spatial data synthesis
- Conduct rapid analysis of wildfire vulnerability and resilience, e.g.
 - Map strengths/vulnerabilities across biomes
 - Map observed impacts to biodiversity loss, land degradation, climate change
- Engage remotely (surveys, interviews) contributors from core stakeholder groups, e.g.
 - National/subnational policymakers
 - Indigenous peoples/local communities
 - Research scientists (including *GWC Charter Members*)
 - Firefighting agencies
 - Industry partners
 - Civil society orgs
- Convene expert group meeting (EGM) and listening sessions (in-person/remote)
(See further details in draft *LAC EGM summary*)
 - Deliver two-day workshop with these objectives
 - Determine current wildfire science data needs and gaps in the LAC region
 - Share/assess existing efforts/initiatives to address data needs and gaps
 - Engage with local communities/area ecosystems to understand impacts
 - Incorporate these elements in workshop
 - Expert roundtable to discuss existing resources, gaps and roadblocks toward addressing the increasing risks of devastating wildfires
 - Field visit to deepen understanding through onsite observation/exchange

Component 2: Develop national wildfire resilience action plan (NWRAP)

(Estimated timeline: 4-6 months / Estimated budget: USD 60-80K)

Develop draft NWRAP based on principles of IFM from FAO/others (see *Annex 1* for background):

- Scientific analysis, e.g.
 - Assess decision support tools for dynamic and actionable responses,
 - Recommending use of existing tools, and assess needs for customised tools (see *CBI Project Example 1*)
- Operational analysis, e.g.
 - Assess operational readiness across biomes
 - Demonstrate operational application/implementation of decision support tools
- Policy analysis, e.g.
 - Assess political/social contexts; propose opportunities for enabling legislation
 - Demonstrate political application/implementation of decision support tools
 - Propose mechanisms for monitoring, reporting, verification (MRV)
- Community engagement planning, e.g.
 - Engage community members in strategies first responders to wildfire
 - Provide outreach/alerts to community members on wildfire preparedness

Currently in discussions with:



Armenia



Bahamas



Haiti



Madagascar



Panamá



Togo



Summary and Resource Links

Learn about our work

The GWC promotes science-based resilience strategies that prioritise biodiversity and ecosystem health



Explore our spatial data gateway

The GWC provides a collaborative space for sharing fire science maps and datasets among firefighters, policymakers and local communities



Join our wildfire discussion forum

The GWC facilitates knowledge-sharing and collaboration across disciplines, ecosystems and global regions





www.globalwildfirecollective.org

www.consbio.org