



SOUTHERN CALIFORNIA MONTANE FORESTS PROJECT

*A Climate-Informed
Conservation Strategy*



www.climatesciencealliance.org/southern-forests



SAN DIEGO STATE
UNIVERSITY



Southwest Climate
Adaptation Science Center





The goal of this project is to engage partners across the region in advancing our collective understanding of the vulnerabilities and challenges facing these forests and identify the opportunities and strategies for increasing forest resilience.

El objetivo de este proyecto es trabajar con colaboradores a través de la región para avanzar nuestro entendimiento colectivo de las vulnerabilidades y los obstáculos enfrentados por estos bosques e identificar oportunidades y estrategias para aumentar la resiliencia forestal.

BUILD A COMMUNITY OF PRACTICE / *Crear una comunidad de práctica*

We will promote partner engagement and collaboration, striving to develop a common understanding among resource and fire managers, policy makers, the science community, Tribal partners, and other stakeholders regarding the threats to southern California's montane forests and the ecosystem services they provide as well as strategies to minimize those threats.

Vamos a promover participación y colaboración, con el fin de desarrollar un entendimiento común entre administradores de recursos e incendios, legisladores, la comunidad científica, colaboradores Tribales y otras partes interesadas sobre las amenazas a los bosques montañosos y los servicios ecosistémicos que proporcionan tanto como estrategias para minimizar esas amenazas.

BUILD A CLIMATE-INFORMED STRATEGY

Crear una estrategia climática

Our project team will work with the community of practice to:

1. **Develop a forest conservation strategy**

Desarrollar una estrategia de conservación de bosques

2. **Identify implementation actions**

Identificar acciones de implementación

3. **Promote collaboration**

Promover la colaboración

RESEARCH AND MANAGEMENT TEAM



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**Sarah
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**Nicole
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**Carolyn
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Jeff Heys

Cleveland
National Forest

ENGAGEMENT STRATEGY TEAM



**Megan
Jennings,
Ph.D.**

San Diego
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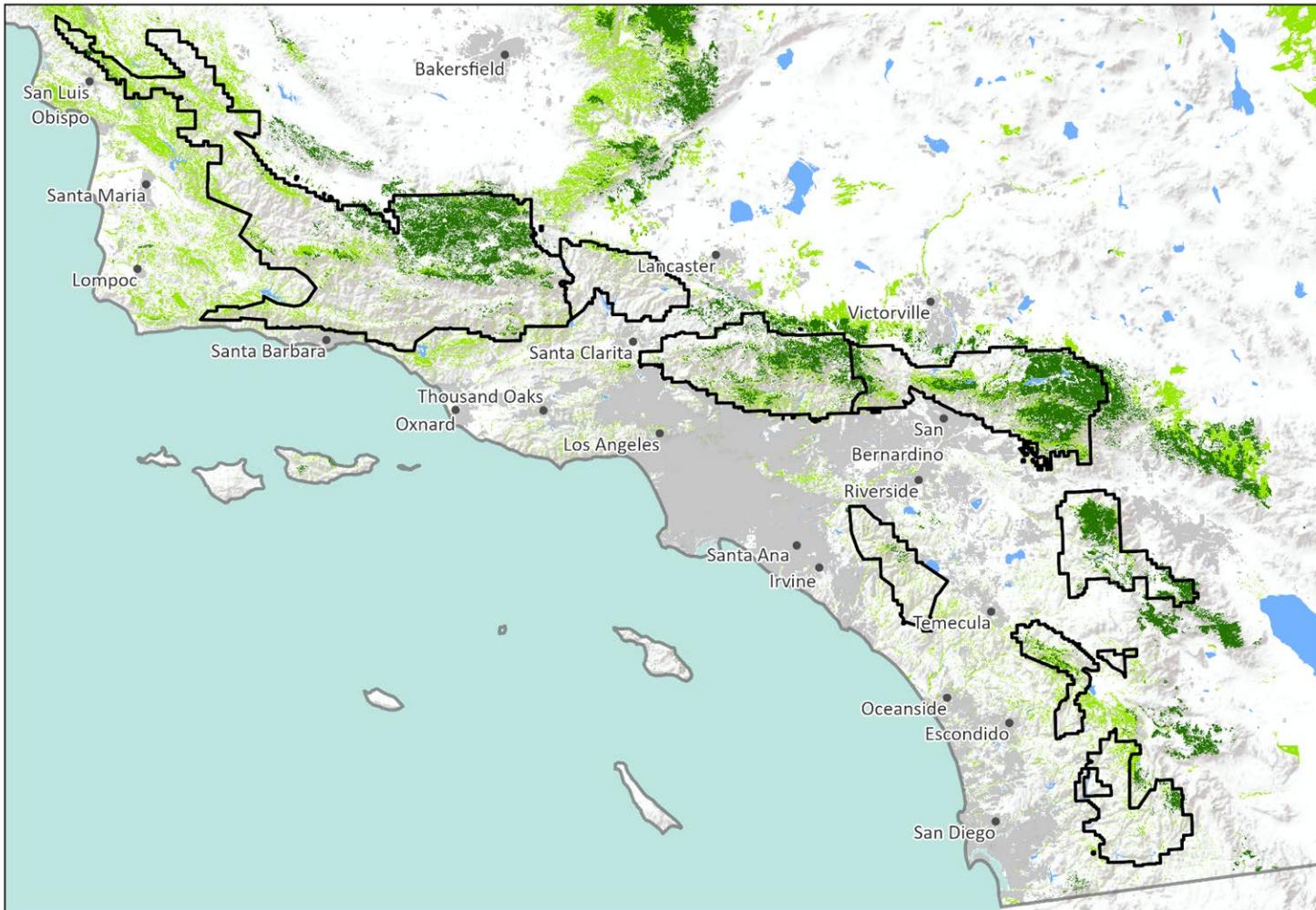
**Amber Pairis,
Ph.D.**

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Connor Magee

Climate
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Coniferous forest

Urban areas

Hardwood forest

National Forest Boundaries

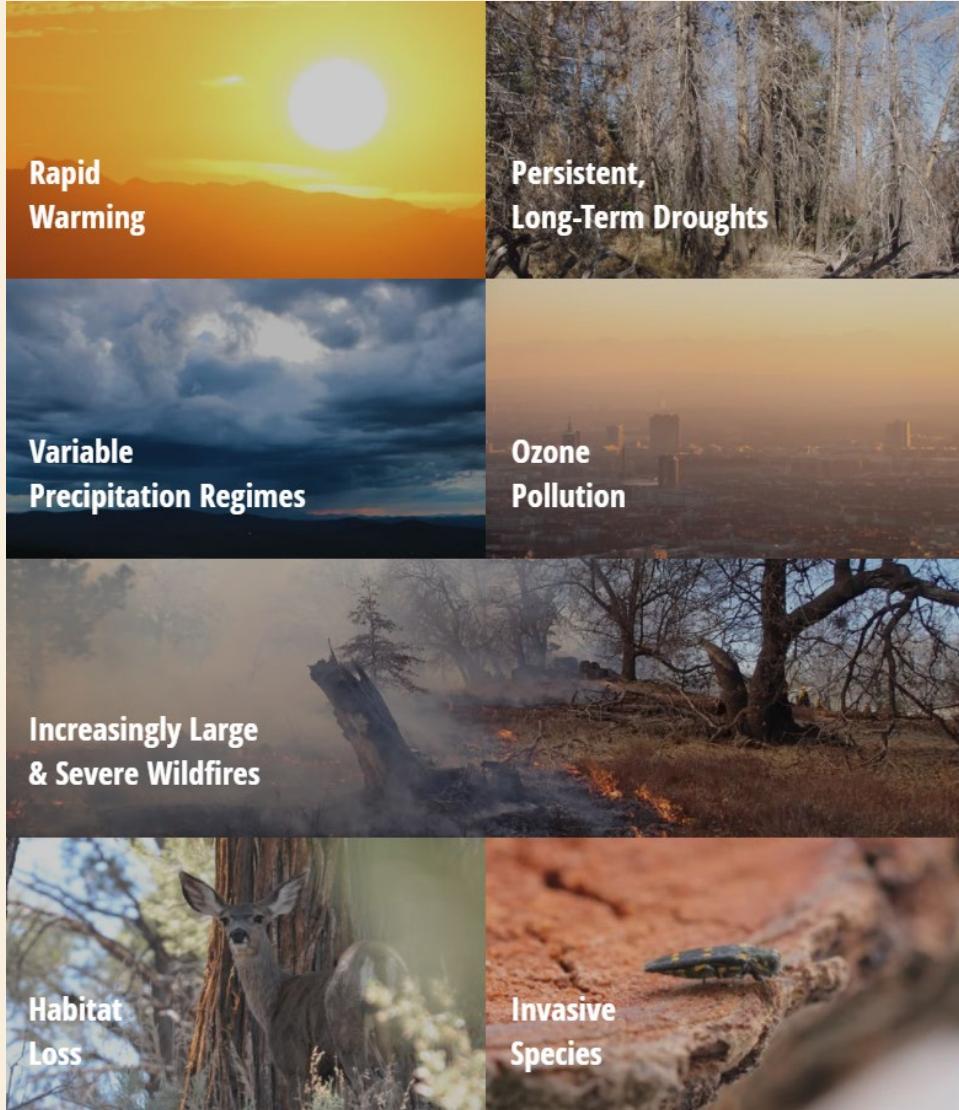
0 20 40 80 Miles
0 25 50 100 Kilometers



Map depicting extent of hardwood (light green) and coniferous forest (dark green) in southern California in relation to National Forest boundaries.



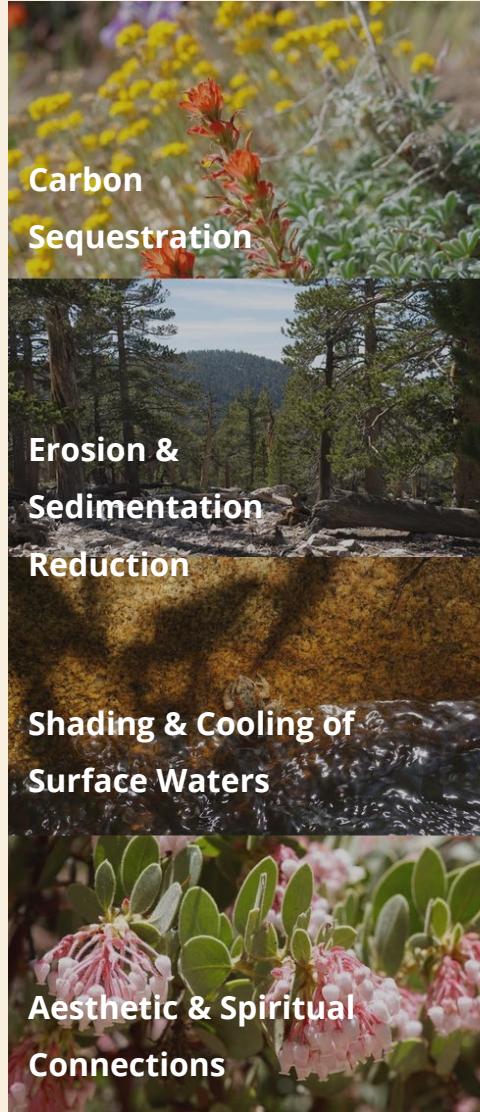
PROJECT CHALLENGES / RETOS



- Rapidly intensifying stressors and disturbances
Estresantes y perturbaciones rápidamente crecientes
- Many with strong climate connections
Muchos con fuertes conexiones climáticas



SHARED VALUES AND SOLUTIONS / SOLUCIONES Y VALORES COMPARTIDOS



- Watershed protection and important ecosystem services
Protección de cuencas y servicios ecosistémicos importantes
- Recreational opportunities and cultural connections
Oportunidades recreativas y conexiones culturales





Dead trees in a plantation on Black Mtn, CNF



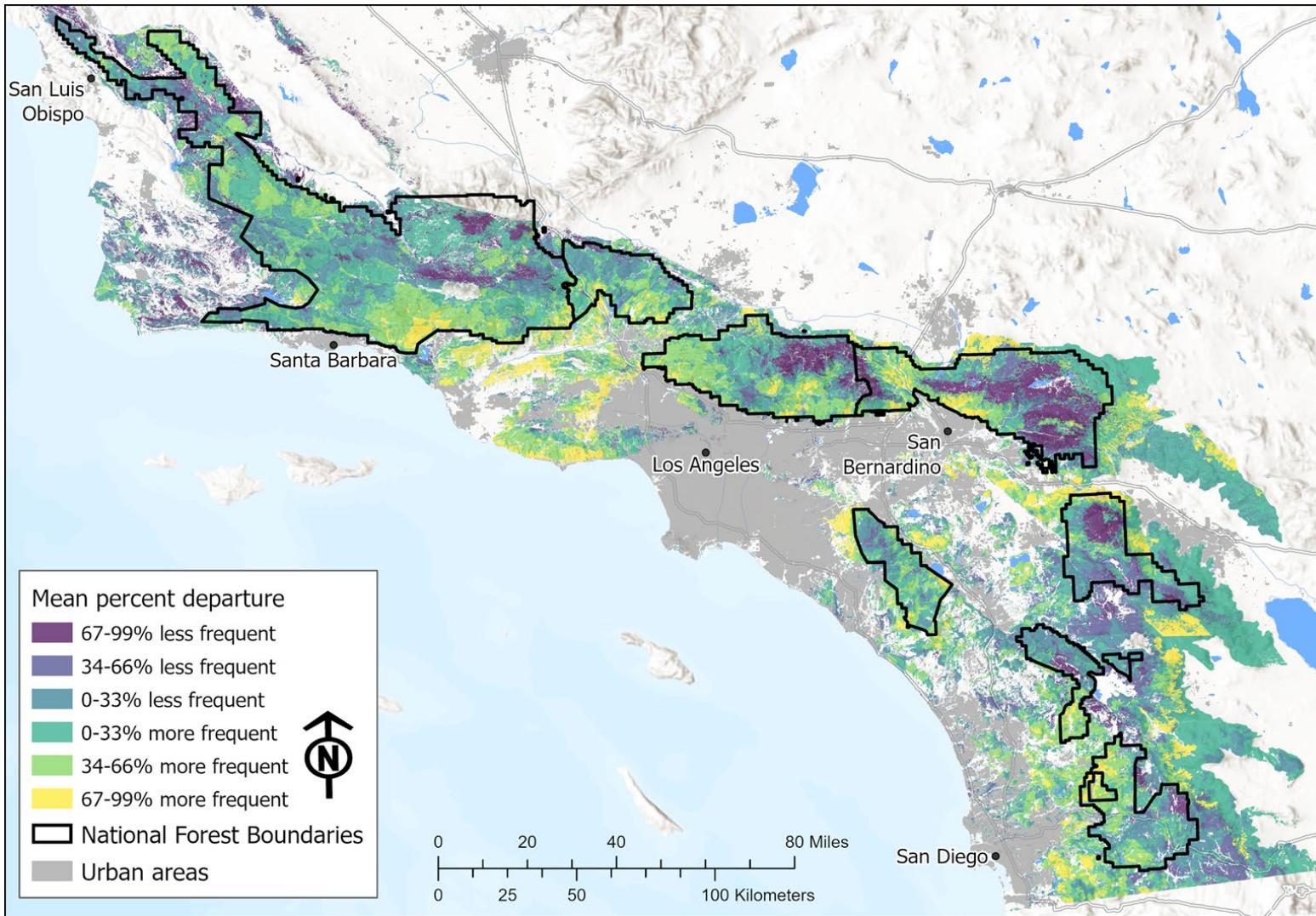
BACKGROUND

Forest loss is being driven by tree mortality and stand-replacing wildfires. Climate change is exacerbating these threats.

Pérdida de bosques está siendo impulsada por mortalidad de árboles y incendios forestales sustituyentes de arboledas. El cambio climático empeora estas amenazas.



Fire Return Interval Departure



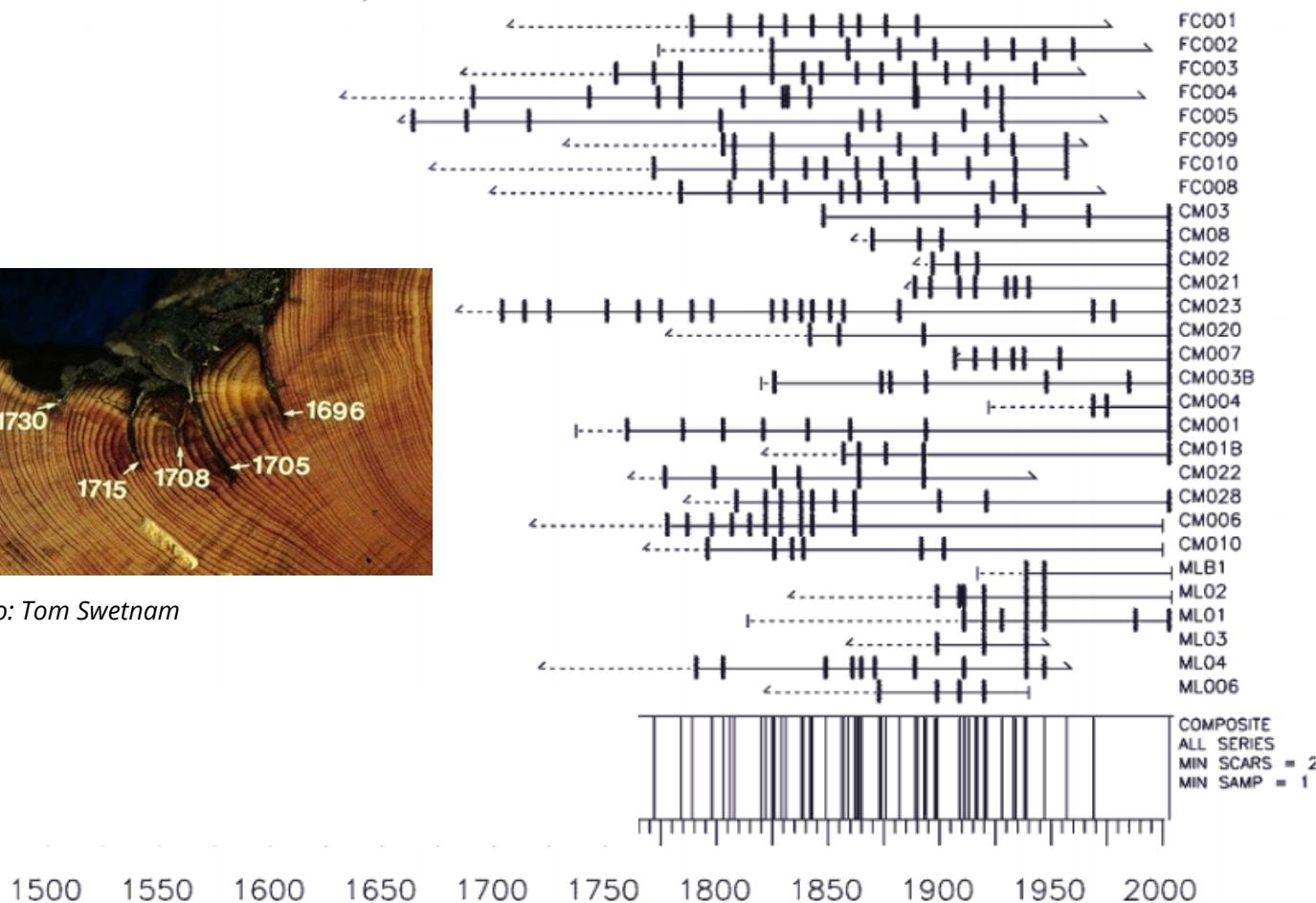
Map depicting change in fire frequency in southern California. Purple areas represent forested areas where fire exclusion has reduced fire frequency and increased forest density and fuels.



Cleveland NF & Cuyamaca SP

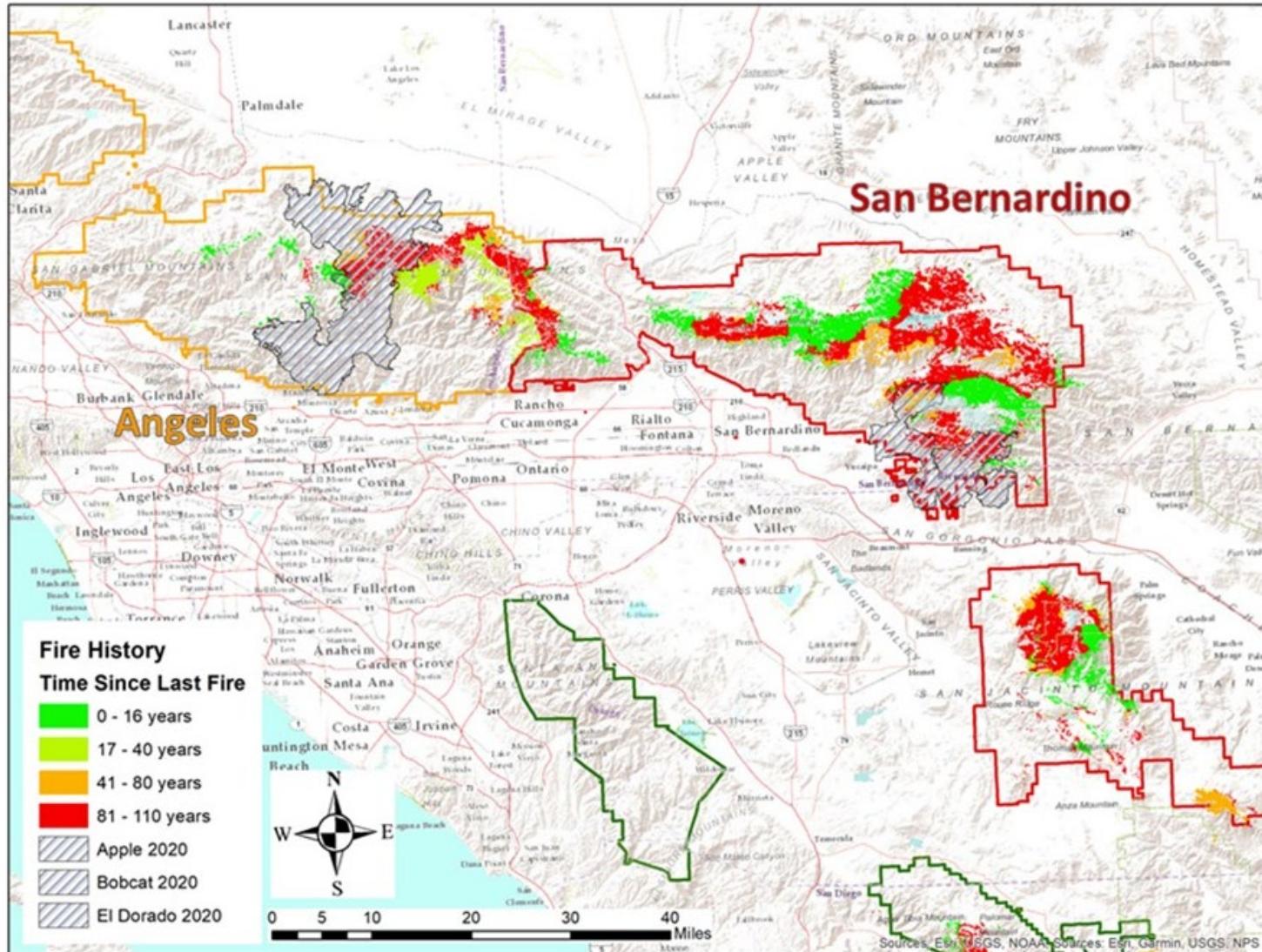


Photo: Tom Swetnam



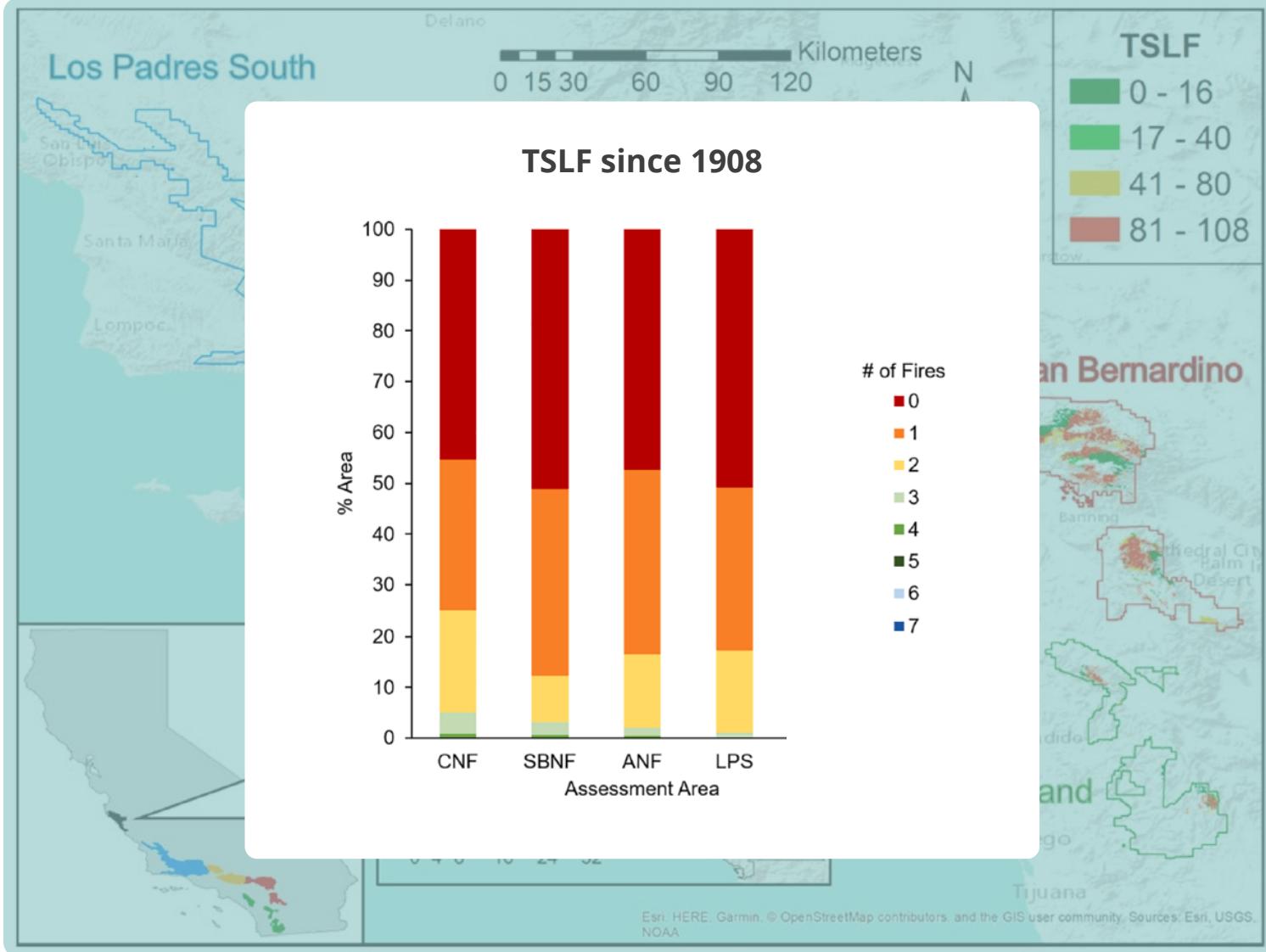
Timeline of fire scars on tree rings in Palomar Mtn, Cuyamaca, and Mount Laguna demonstrate a marked history of fire suppression (Skinner, Stephens, & Everett 2006)
(Bottom is reconstructed timeline based on fires mapped across multiple trees)





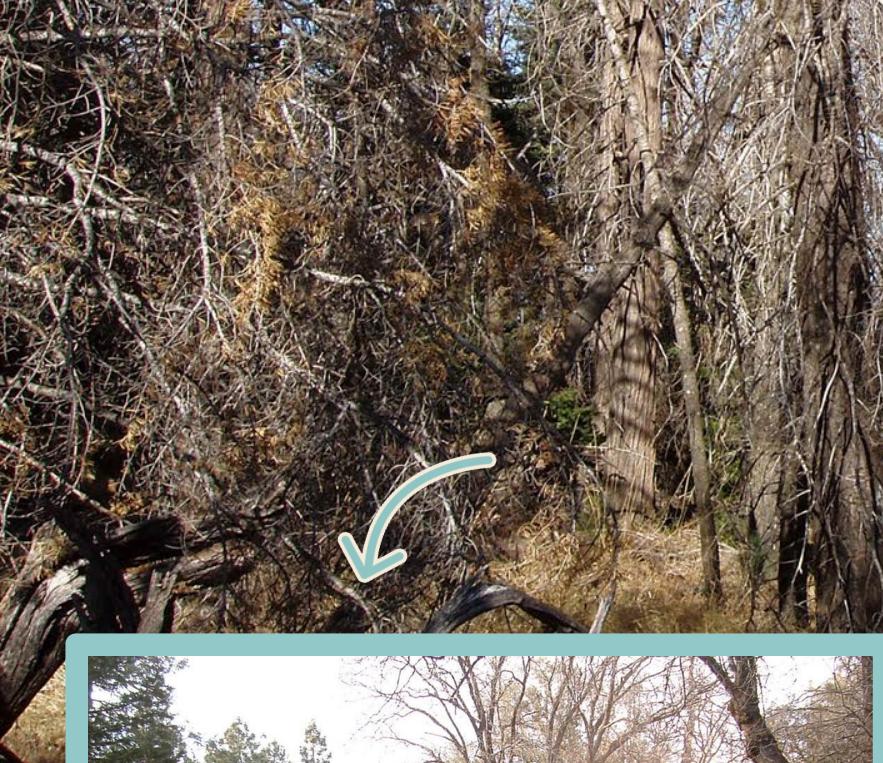
Map depicting Time Since Last Fire (TSLF) in relation to National Forest boundaries in southern California. (Nigro and Molinari 2019)





Map depicting Time Since Last Fire (TSLF) in relation to National Forest boundaries in southern California. (Nigro and Molinari 2019)





Harvest of dead trees necessitated by the early 2000s drought

Stand of dense, dead white fir in 2004, pre-treatment

IMPLICATIONS

Overly dense forests susceptible to drought, disease, and insect mortality

Bosques demasiado densos son susceptibles a sequía, enfermedad y mortalidad de insectos





Dead trees in Cuyamaca Rancho State Park after 2003 Cedar fire

IMPLICATIONS

Implications for biodiversity and fire conditions. Severe, stand-replacing fires more common.

Implicaciones para biodiversidad y condiciones de incendios. Incendios severos que reemplazan arboledas más comunes.



DEVELOPING A CONSERVATION STRATEGY



- Science-based guidance on threats and desired conditions
Asesoramiento basado en ciencia sobre amenazas y condiciones deseadas
- Practitioner perspectives on overcoming barriers to implementation
Perspectivas de profesionales sobre superación de obstáculos a la implementación
- Development of goals and strategies to mitigate threats and vulnerabilities and overcome barriers to action
Desarrollo de objetivos y estrategias para mitigar amenazas y vulnerabilidades y superar barreras a la acción
- All-lands approach / *Estrategia "All-lands"*
- Opportunity to develop partnerships and explore joint projects to enhance forest health and resilience
Oportunidad para desarrollar colaboraciones y explorar proyectos comunes para mejorar salud y resiliencia forestal
- Partner and stakeholder engagement
Participación de partes interesadas



INTERCONNECTED SYSTEM = COLLABORATION



Prescribed fire burning up to Laguna Meadow, CNF

- Promote ongoing collaborative action
Promover acción colaborativa persistente
- Foster development of partnerships to improve forest resilience and to secure long-term solutions
Apoyar desarrollo de colaboradores para mejorar resiliencia forestal y para asegurar soluciones duraderas



INTERCONNECTED SYSTEM = ENGAGEMENT



Prescribed fire creeping towards deer grass patches

- Community and practitioner engagement
Participación comunitaria y profesional
- Tribal community involvement; whose ancestral lands cover these four forests
Involucración de comunidades tribales, cuyas tierras ancestrales cubren estos cuatro bosques



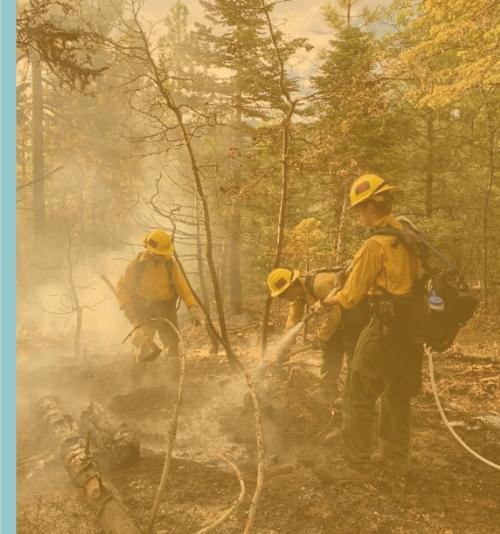


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NEXT STEPS

- Early outreach and notification of project
Divulgación y avisos sobre el proyecto
- Gathering stakeholder and partner contact lists
Recopilar lista de contactos de interesados
- Creating Advisory and Technical Groups
Crear de grupos técnicos y consultores
- Planning initial partner and stakeholder outreach meetings for late spring
Planear juntas iniciales con partes interesadas





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