



Ann-Marie Benz

Horticulture Programs
Manager

California Native Plant Society



Building Resilience: Native Plant Landscapes for Fire-Adapting Communities



CALIFORNIA
NATIVE PLANT
SOCIETY

California Native Plant Society's Mission:

To conserve California native plants and their natural habitats, and increase understanding, appreciation, and horticultural use of native plants.

Our work is diverse by design, blending science and conservation with gardening and education.



Dedicated to conserving
California native plants and
their natural habitats....

Restoring nature one
garden at a time



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Photo: Ann Dalkey

35 Local Chapters





California is incredibly diverse and what we do here has a huge impact!

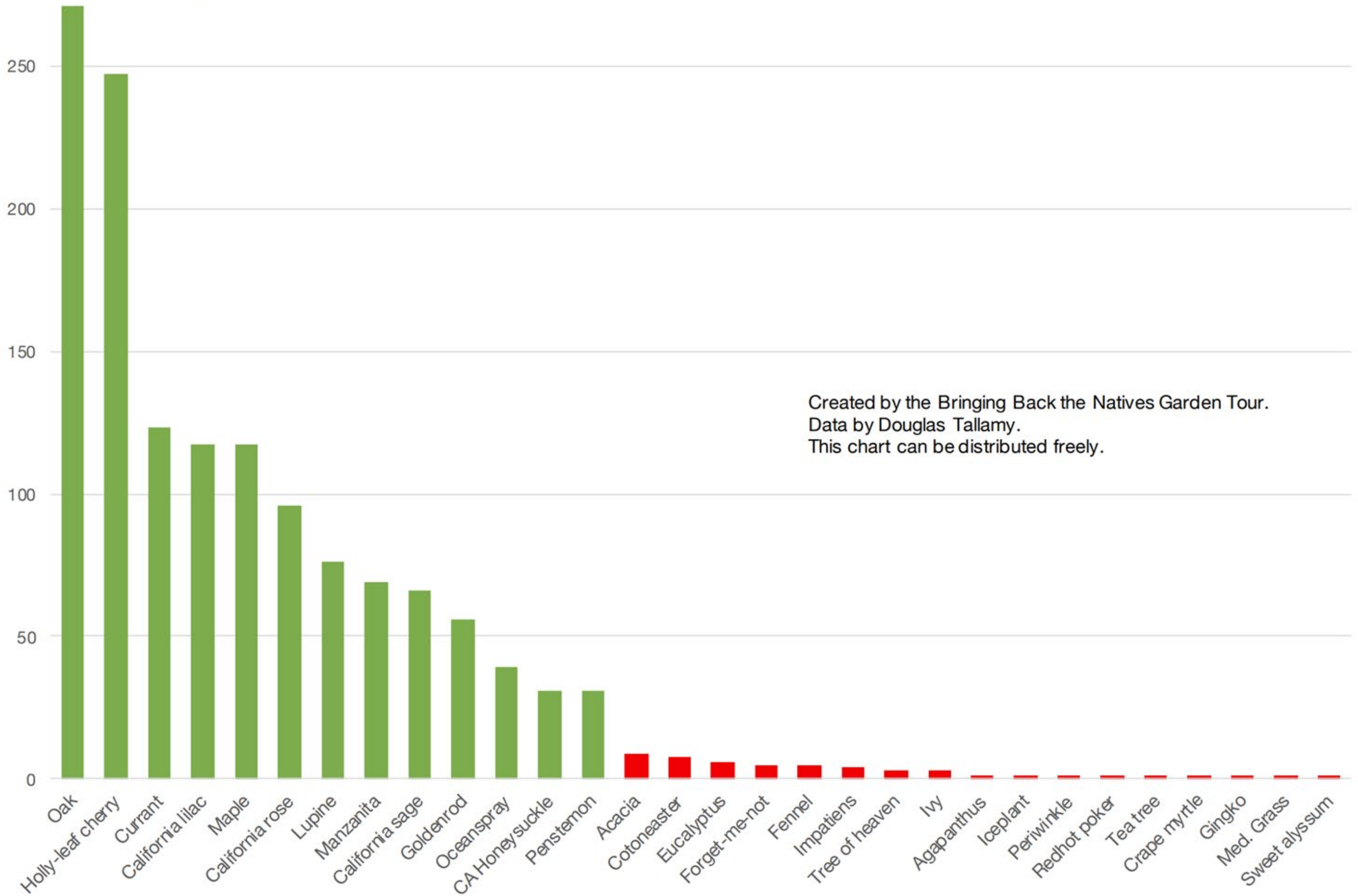


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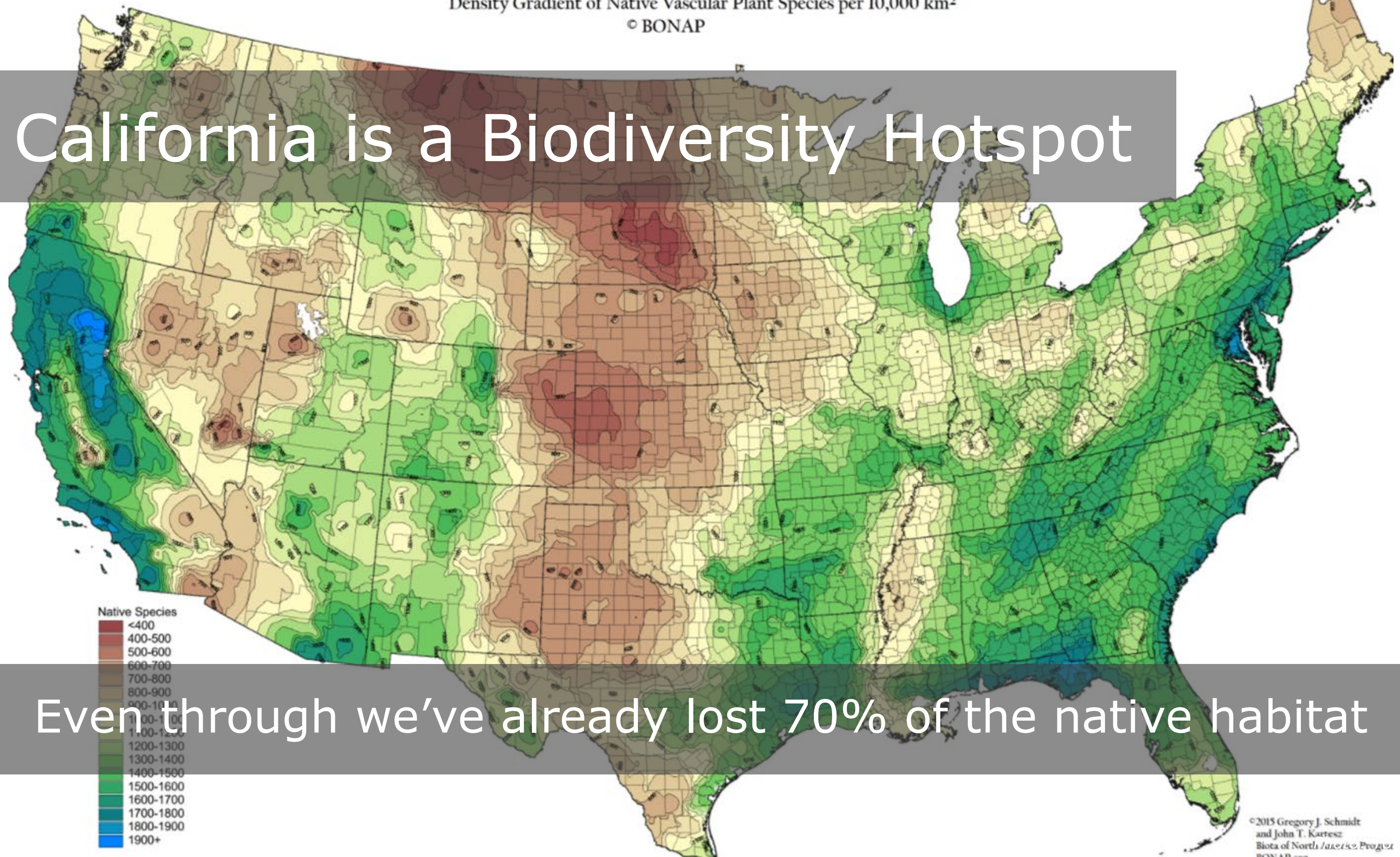
Photo: CNPS

Typical native and nonnative plants and their reproductive value to butterflies and moths

Number of species of butterflies and moths that will lay eggs on this plant



California is a Biodiversity Hotspot



Even though we've already lost 70% of the native habitat

What is the difference between native plants and other low water use plants?

Non-native, drought friendly plants, even those from other Mediterranean climates, will need supplemental irrigation and care to thrive in our climate, especially during the hottest months.



Photo: Kristen Wernick



ARTEMISIA

From a story in ARTEMISIA | Vol. 49 No. 2
Indigenous Ecologies
Cultivating Fire, Plants, and Climate Futurity
Fall 2023
By Melinda M. Adams, N'dee, San Carlos Apache

Fire Pathways and Risk from wild land to the WUI to urban green spaces



FIRE MOVEMENT THROUGH WILDLANDS, WUI, AND URBAN GREEN SPACES

Wildfire Spread Pathways

- Wildfires move rapidly from wildlands into suburban and urban areas via continuous fuel corridors like parks and riparian zones.

WUI Expansion and Risks

- The expanding Wildland–Urban Interface increases community exposure to fire through proximity and intermixed flammable vegetation.



FIRE MOVEMENT THROUGH WILDLANDS, WUI, AND URBAN GREEN SPACES

Role of Embers and Fire Spread

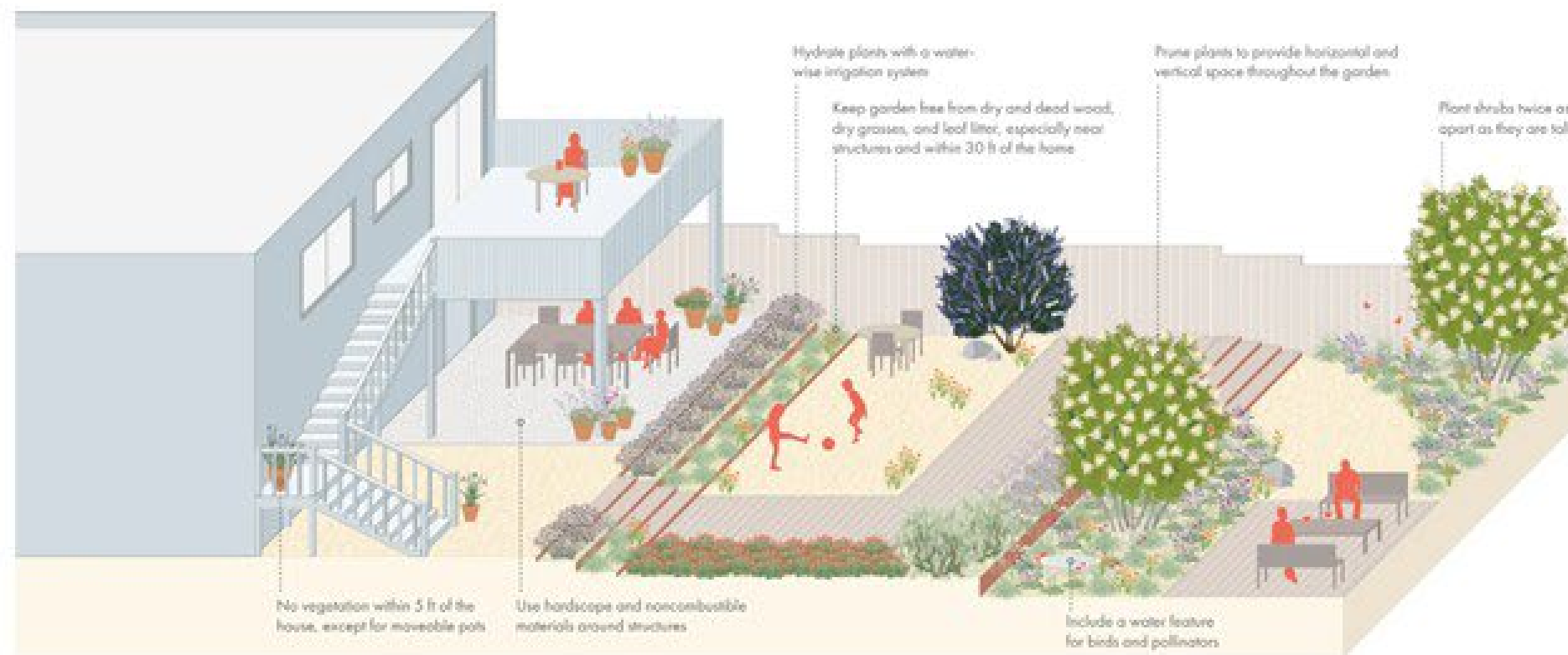
- Embers can travel long distances, igniting vegetation or structures far ahead of the main flame front, driving fire progression.

Vegetation Management Importance

- Proper vegetation choices and maintenance in urban green spaces can help slow fire spread and enhance public safety.



NATIVE PLANTS AS FIRE-RESILIENT INFRASTRUCTURE



FIREWISE GUIDELINES



HOW NATIVE VEGETATION SUPPORTS FIRE-RESILIENT LANDSCAPES

Moisture Retention in Native Plants

- Native perennials retain moisture longer, reducing the chance of fire ignition during dry seasons.

Structural Fire Resistance Traits

- Native shrubs and trees have thicker bark and deep roots that influence fire behavior and aid recovery.

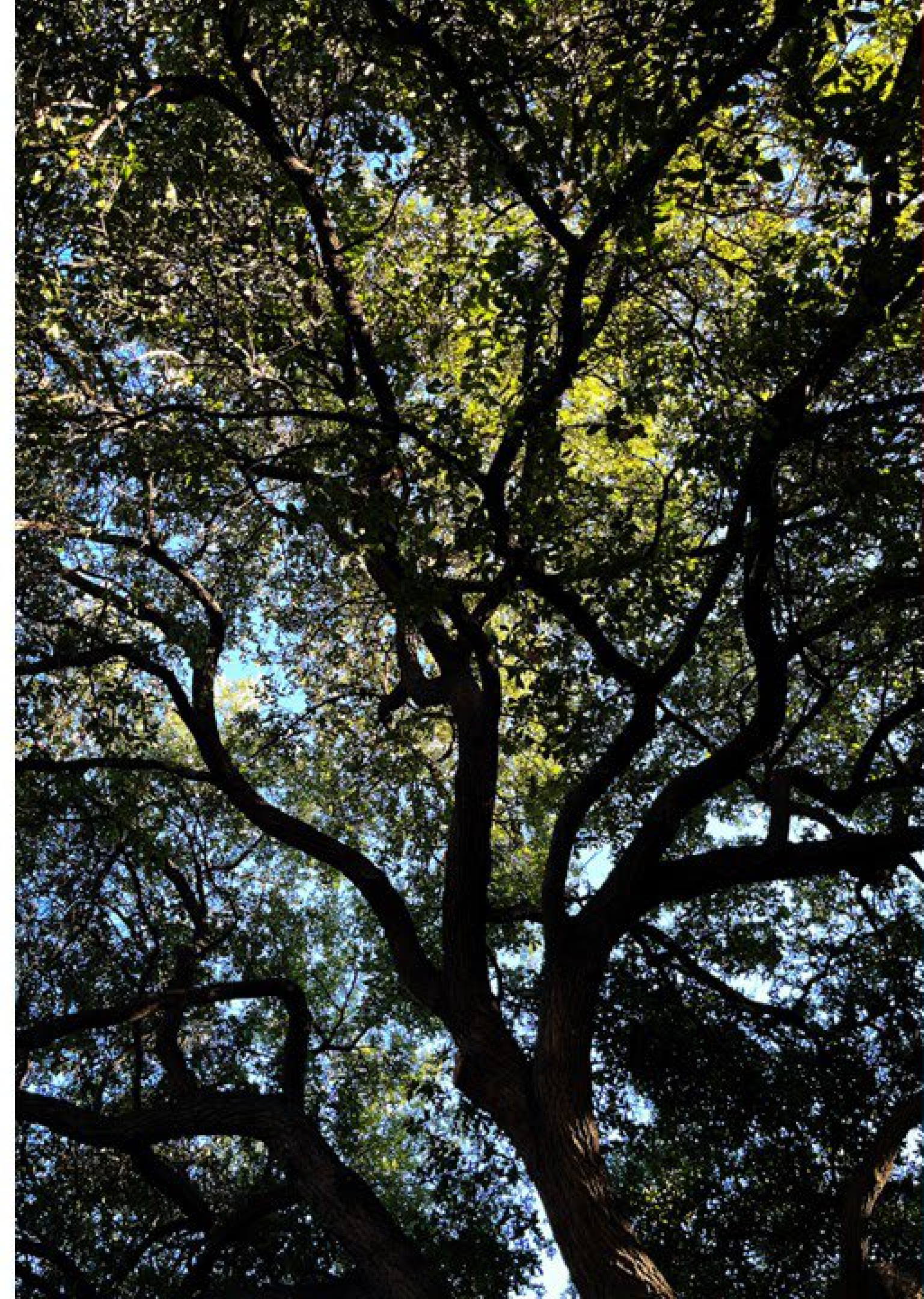
HOW NATIVE VEGETATION SUPPORTS FIRE-RESILIENT LANDSCAPES

Reduced Fuel Continuity

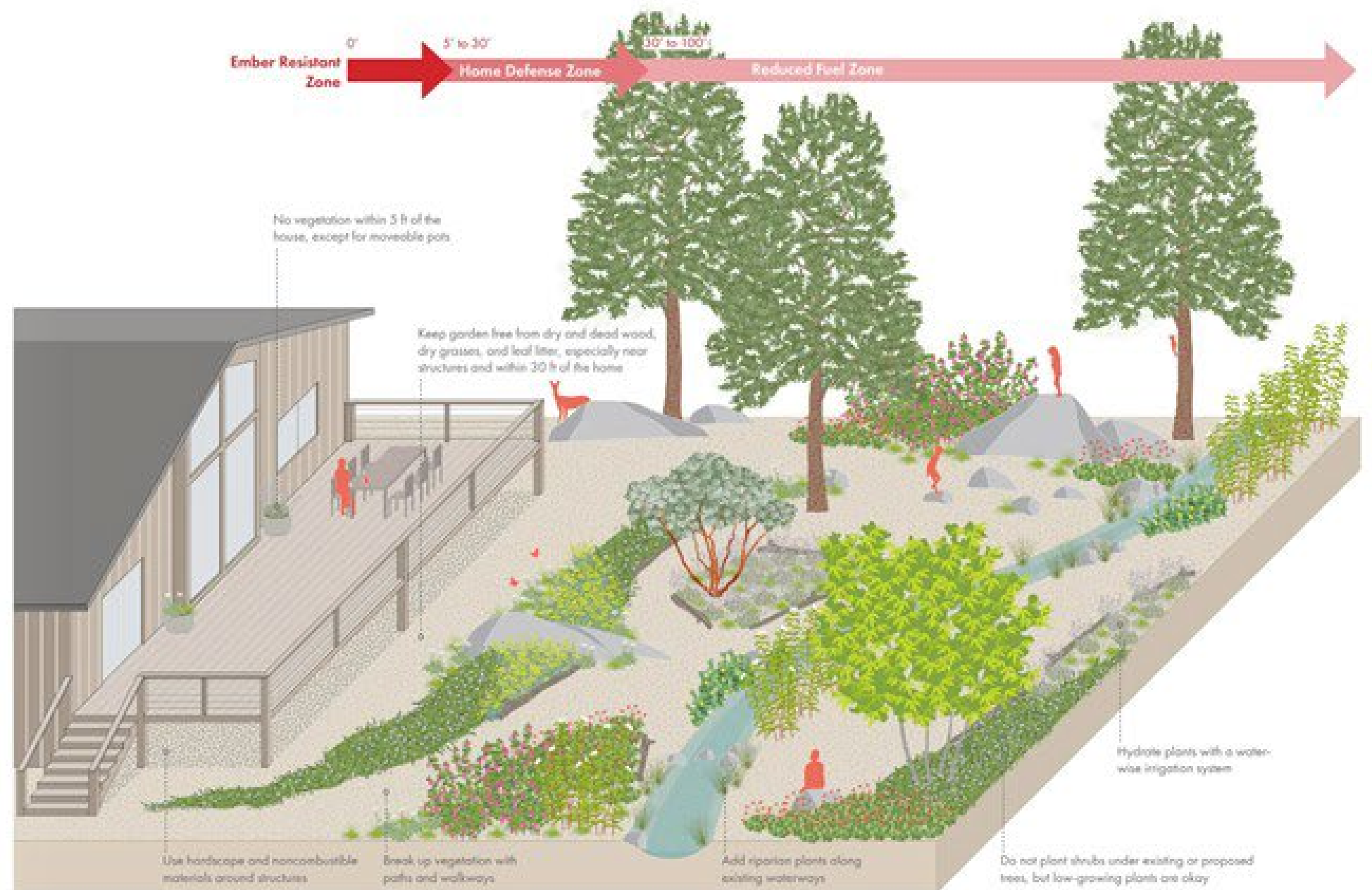
- Spaced, patch-like native vegetation breaks up continuous fuel, slowing fire spread across landscapes.

Ecological and Defensive Benefits

- Native landscapes improve soil stability, resist invasive species, and act as fire-smart infrastructure.



Designing Across the WUI Gradient



FIREWISE GUIDELINES


STRATEGIC LANDSCAPE DESIGN FROM NEAR-STRUCTURE ZONES TO WILD EDGES

- Corridors linking urban areas to greenways and wildlands act as fire pathways, allowing fire behavior, embers, and heat to move rapidly along vegetation “funnels” if they’re not actively managed.
- Transition zones are ecologically sensitive and socially critical, supporting biodiversity, recreation, and infrastructure—making post-fire restoration in these corridors essential to both ecosystem function and community safety.

Los Angeles Times

TRAVEL & EXPERIENCES

When will Eaton Canyon recover? Sooner than you think



A wayfinding sign at Eaton Canyon Natural Area directs visitors to the nature center (2750 N. Alhambra Drive), which was destroyed by the Eaton fire, and the nearby trail that also burned. (Justin Coogrove / Los Angeles Times)

By **Jaclyn Coogrove**
Staff Writer

Jan. 16, 2025 11 AM PT

On Tuesday, I walked along the path parallel to Eaton Creek, trying to comprehend the gray-scale scene around me. Charred limbs of manzanita and other small trees and shrubs jerked out of the earth like seared skeletal remains. Heaps of leathery brown prickly pear pads sagged into the dirt and ash. Even the rocks were burned. Just a week prior, this was a vibrant place of abundance.

The utter desolation felt disorienting. In the summer, thousands flood the canyon to escape the heat, splashing in its crisp, cold waters. It is easily one of the most popular hiking destinations in Los Angeles County. I often avoid it, seeking quiet refuge farther into the San Gabriel Mountains, where I can be alone with my thoughts and the trees.

But there I was Tuesday, standing alone near the scorched earth and blackened chaparral. For once, I missed the crowds.

Eaton Canyon has been empty in recent years only because of tragedy, first during the closure orders put in place at the start of the COVID-19 pandemic, and now because of a fire that has, as of Thursday morning, taken 16 lives and burned thousands of homes and businesses and just

STRATEGIC LANDSCAPE DESIGN FROM NEAR-STRUCTURE ZONES TO WILD EDGES

- Planning ahead for restoration reduces post-fire hazards, such as erosion, invasive species establishment, and loss of native habitat connectivity.
- Proactive, corridor-focused management builds long-term resilience, ensuring that greenways remain functional ecological networks, not unintentional conduits for fire spread.





STRATEGIC LANDSCAPE DESIGN FROM NEAR-STRUCTURE ZONES TO WILD EDGES

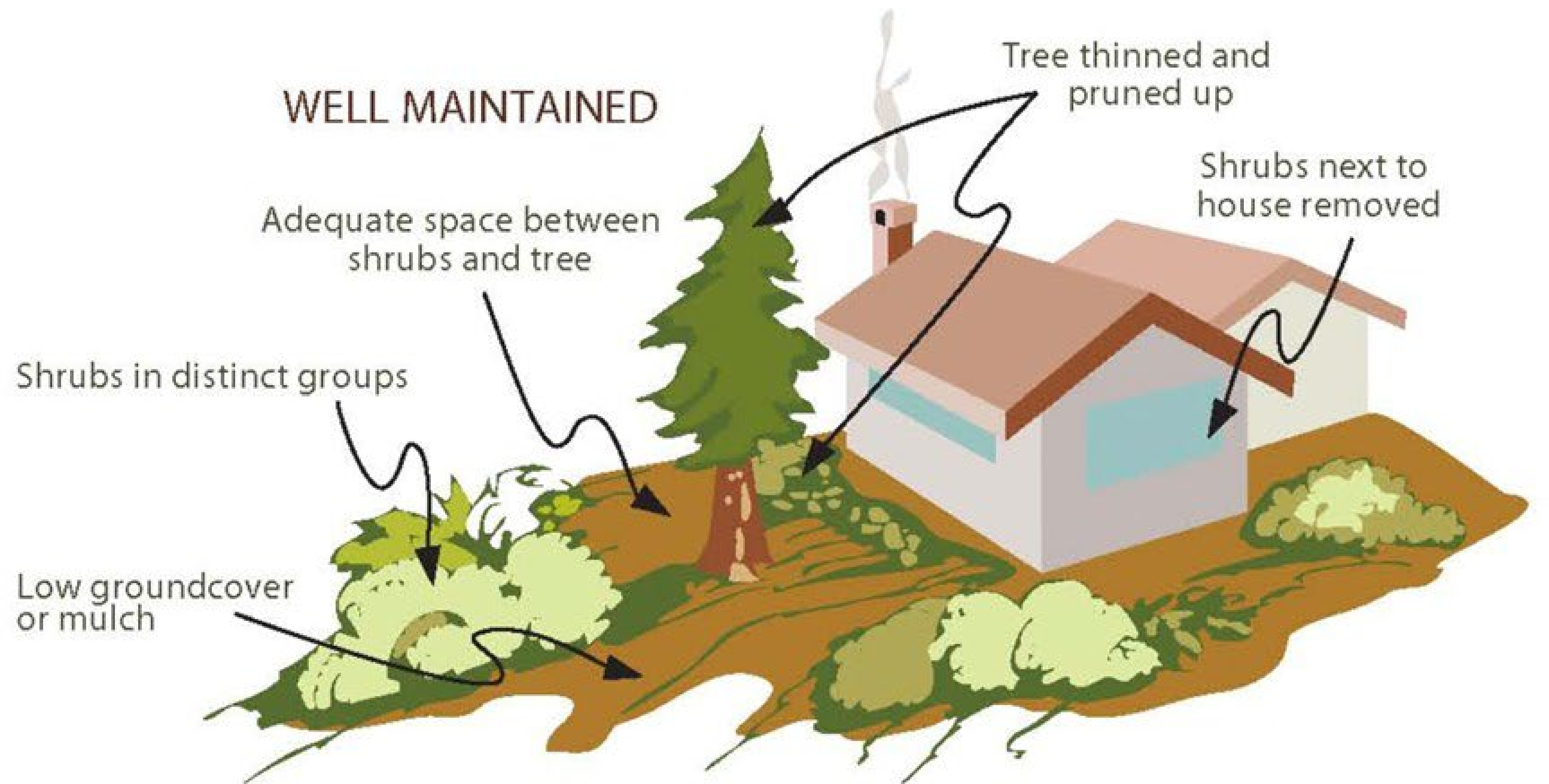
Wild Edge and Riparian Zones

- Reducing ladder fuels and controlling invasive species near wild edges slows fire spread and supports habitat.

Ecological and Fire Resilience

- Thoughtful plant patterning and native species selection promote both fire resilience and ecological health.

MAINTENANCE
AS FIRE
MANAGEMENT



HOW MAINTENANCE PRACTICES INFLUENCE FIRE RISK

Fuel Bed Management

- Controlling invasive grasses and removing dead wood prevents dense, easily ignited fuel beds that increase fire risk.

Vegetation Pruning and Thinning

- Pruning shrubs and thinning vegetation reduce ladder fuels, lowering the chance of fire spreading vertically.



Prune your trees' lower limbs to reduce the threat of fire around your property.
Photo by Lois Vanderville, UCCE Master Gardener of El Dorado County

HOW MAINTENANCE PRACTICES INFLUENCE FIRE RISK

Strategic Irrigation and Mulching

- Irrigation maintains plant moisture while careful mulching avoids fire hazards near structures.

Maintenance in Public Spaces

- Consistent maintenance in parks and riparian areas prevents invasive regrowth and reduces fire vulnerability.





CLIMATE AND COMMUNITY CO-BENEFITS

COOLING, WATER CONSERVATION, CARBON STORAGE, AND BIODIVERSITY

Urban Cooling Benefits

- Native trees and vegetation reduce heat by providing shade and evapotranspiration, improving thermal comfort significantly.

Water Conservation

- Using climate-appropriate native plants conserves water by relying on low-water species suited to regional climates.





COOLING, WATER CONSERVATION, CARBON STORAGE, AND BIODIVERSITY

Carbon Storage Enhancement

- Deep-rooted native perennials improve soil structure and store more carbon than turf or shallow-rooted plants.

Biodiversity Support

- Native plants support pollinators, birds, and wildlife, strengthening ecosystems and enhancing resilience.

AVOIDING UNINTENDED FIRE RISKS





RISKS OF OVER-CLEARING AND INVASIVE GRASS TAKEOVER

Impact of Over-clearing

- Excessive vegetation removal creates disturbed soils where invasive grasses thrive, increasing fire hazards.

Invasive Grasses and Fire Risk

- Invasive annual grasses dry early and ignite easily, rapidly spreading fire across landscapes.

RISKS OF OVER-CLEARING AND INVASIVE GRASS TAKEOVER

Ecological Stewardship Strategies

- Maintaining soil cover and re-establishing native perennials reduces invasive grass takeover and fire risk.

Avoiding Bio-disturbance

- Minimizing grading, scraping, and unmanaged mowing prevents stimulation of invasive seed germination.





RECOMMENDATIONS FOR AGENCIES & PRACTITIONERS



IMPLEMENTING ECOLOGICALLY SOUND DEFENSIBLE SPACE AT COMMUNITY SCALE

System-Level Vegetation Management

- Manage vegetation as interconnected networks across parks, trails, and private properties to reduce wildfire risks.

Native Plant Palettes and Maintenance

- Use native species resistant to invasive grasses, with ecological maintenance to support multi-year establishment.



IMPLEMENTING ECOLOGICALLY SOUND DEFENSIBLE SPACE AT COMMUNITY SCALE

Collaborative Agency Planning

- Coordination among fire agencies, water districts, park departments, and public works streamlines vegetation management.

Public Education and Compliance

- Educate residents on proper clearing and fire-smart landscaping to protect ecosystems and enhance resilience.



CONCLUSION



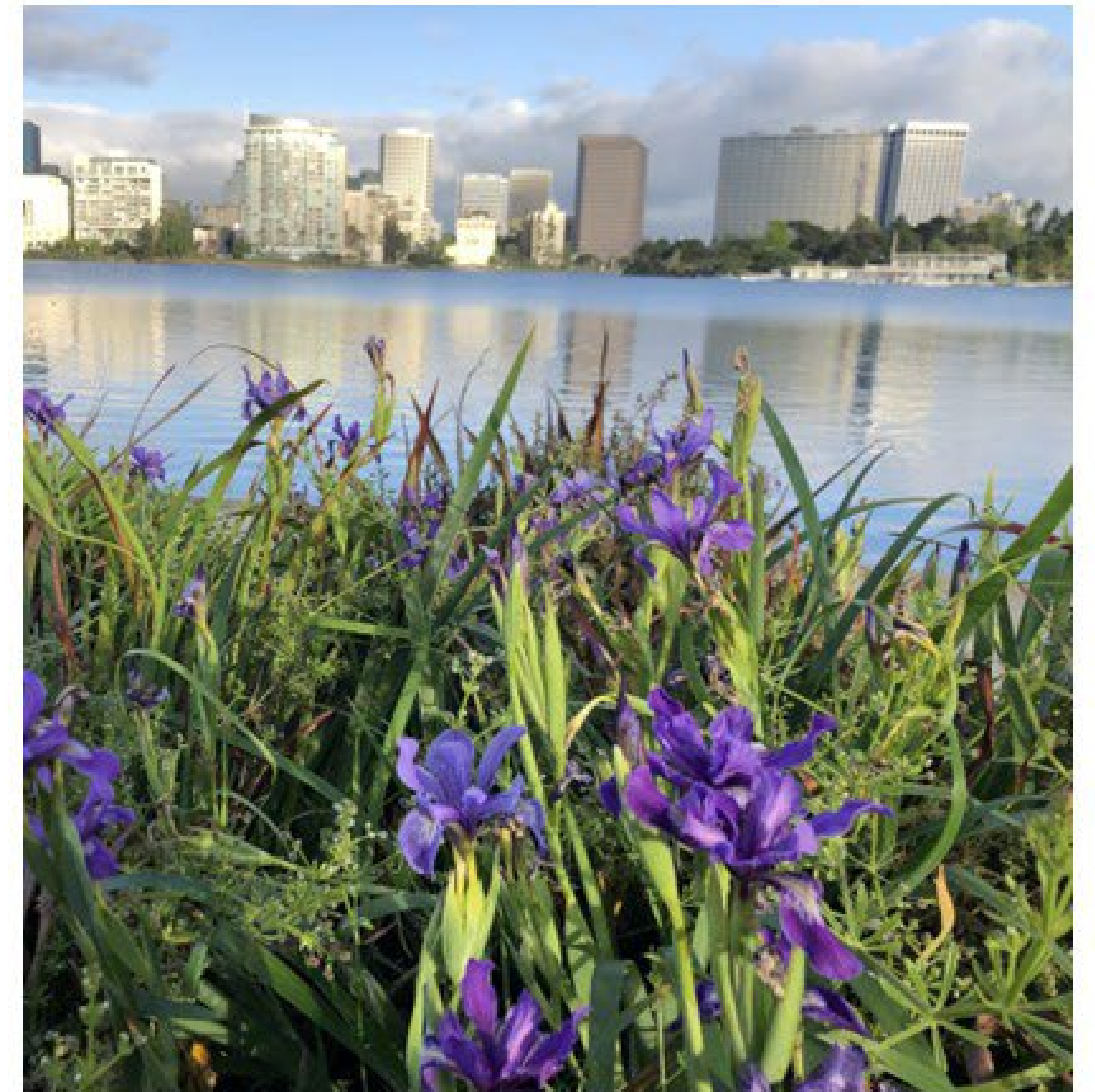
INTEGRATING ECOLOGY AND FIRE RESILIENCE

Fire-Resistant Native Landscapes

- Native landscapes designed with fire behavior in mind reduce wildfire risks by limiting fuel buildup and supporting soil moisture.

Ecologically Informed Defensible Space

- Defensible space strategies integrate WUI design, Zone 0 guidance, and vegetation patterning to protect people and ecosystems.





INTEGRATING ECOLOGY AND FIRE RESILIENCE

Collaborative Fire-Aware Practices

- Collaboration among agencies and communities fosters fire-aware environments that are climate-resilient and biologically rich.

Long-Term Landscape Resilience

- Integrating ecological principles ensures landscapes act as buffers, enhancing long-term resilience in fire-prone areas.



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FIRE RECOVERY GUIDE

Resources

- [Calscape.org](https://calscape.org)
- Leaf burn times of California native plants
Las Pilitas Nursery online
- CNPS Wildfire Resources for Resilience & Recovery site



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Care for your garden

Find landscape professionals

About us

California's native plant destination

Cultivate California's wild side in your own backyard with Calscape. We make it easy for you to select, find, and grow locally native plants that support California's unique biodiversity and wildlife.

Explore native plants



Happy Gardening!
Ann-Marie Benz
Horticulture Programs
Manager
abenz@cnps.org