



FRIENDS OF  
**MISSION TRAIL**  
NATURE PRESERVE



**CITY OF CARMEL-BY-THE-SEA**

# **Mission Trail Nature Preserve**

## **Master Plan Implementation Review**

March-2025

# Mission Trail Nature Preserve Master Plan

## Mission Trail Nature Preserve Master Plan

1996 plan adopted by the City Council and incorporated into the City's LCP.

- \* ***Protect, maintain, and enhance the rare coastal habitats (includes ecological forestry wildfire mitigation)***
- \* ***Preserve the forested, tranquil atmosphere of the property and provide reasonable low-impact access for the enjoyment of the natural surroundings***



# Citizen Action

## Friends of Mission Trail Nature Preserve formed (2009)

## MTNP Yesterday, Today & Tomorrow (2010)

MTNP history, initial project needs assessment, annual work program (see appendix), and a call to action

*“This narrative is our tribute to a unique canyon and, hopefully, it will initiate a dialogue about how to restore, manage and utilize the Mission Trail Nature Preserve”*

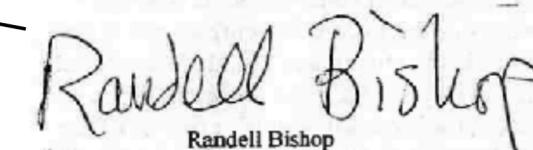
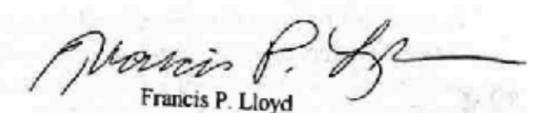
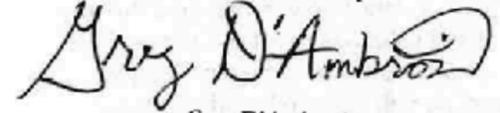
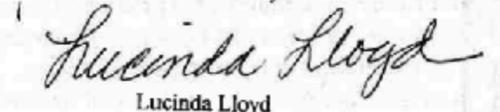
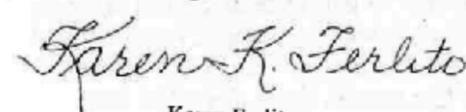
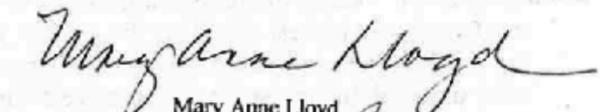
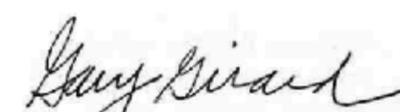
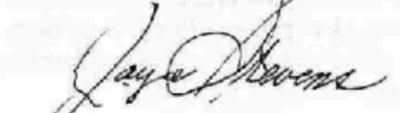
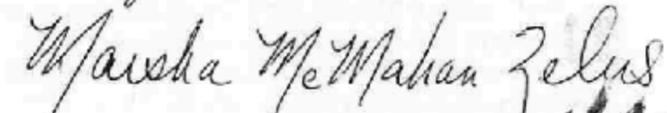
## Friends of MTNP incorporated as a 501c3 (2012)

## Friends of MTNP Blue Book (2013)

Proposed projects to further implement the MTNP Master Plan



Signatures of Carmel Parkland Advocates

 Randell Bishop	 Francis P. Lloyd
 Greg D'Ambrosio	 Lucinda Lloyd
 Karen Ferlito	 Mary Anne Lloyd
 Gary Girard	 Joyce Stevens
	 Marsha McMahan Zelus



# Other Guiding Documents

## **Baseline Biological Assessment (BBA; Nedeff 2016)**

A comprehensive biological overview of the Preserve

## **Renewable 5-Year Coastal Development Permit**

Re-approved by the Planning Commission in 2021; next approval 2026

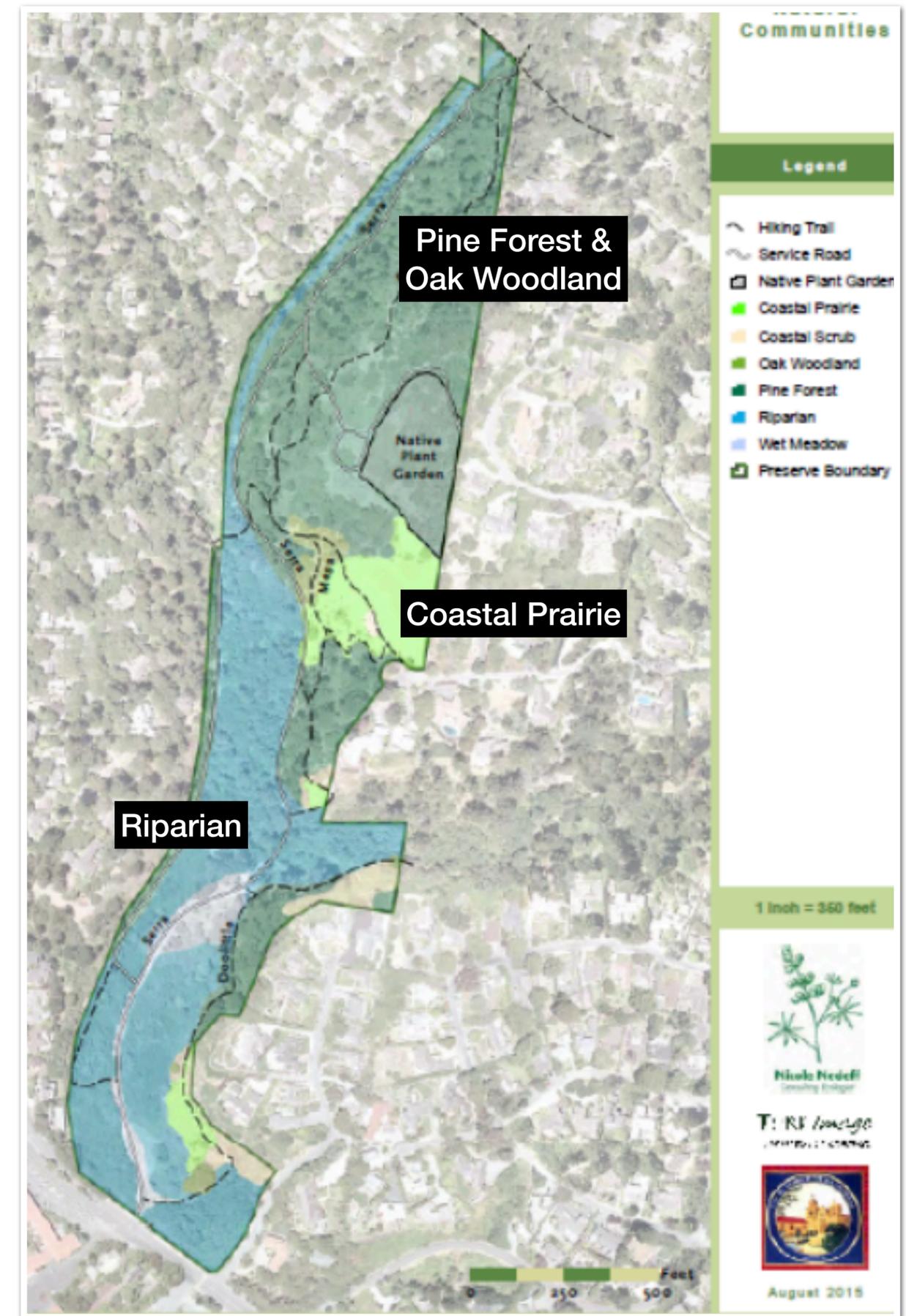
## **Stream Stability Study (Dudek 2019)**

## **Invasive Plant Action Plan (Burleson 2019)**

Expands on invasive plant management techniques outlined in the BBA

## **Community Wildfire Protection Plan (CWPP; MFD 2023)**

An assessment of wildfire risk and identification of priority mitigation projects.



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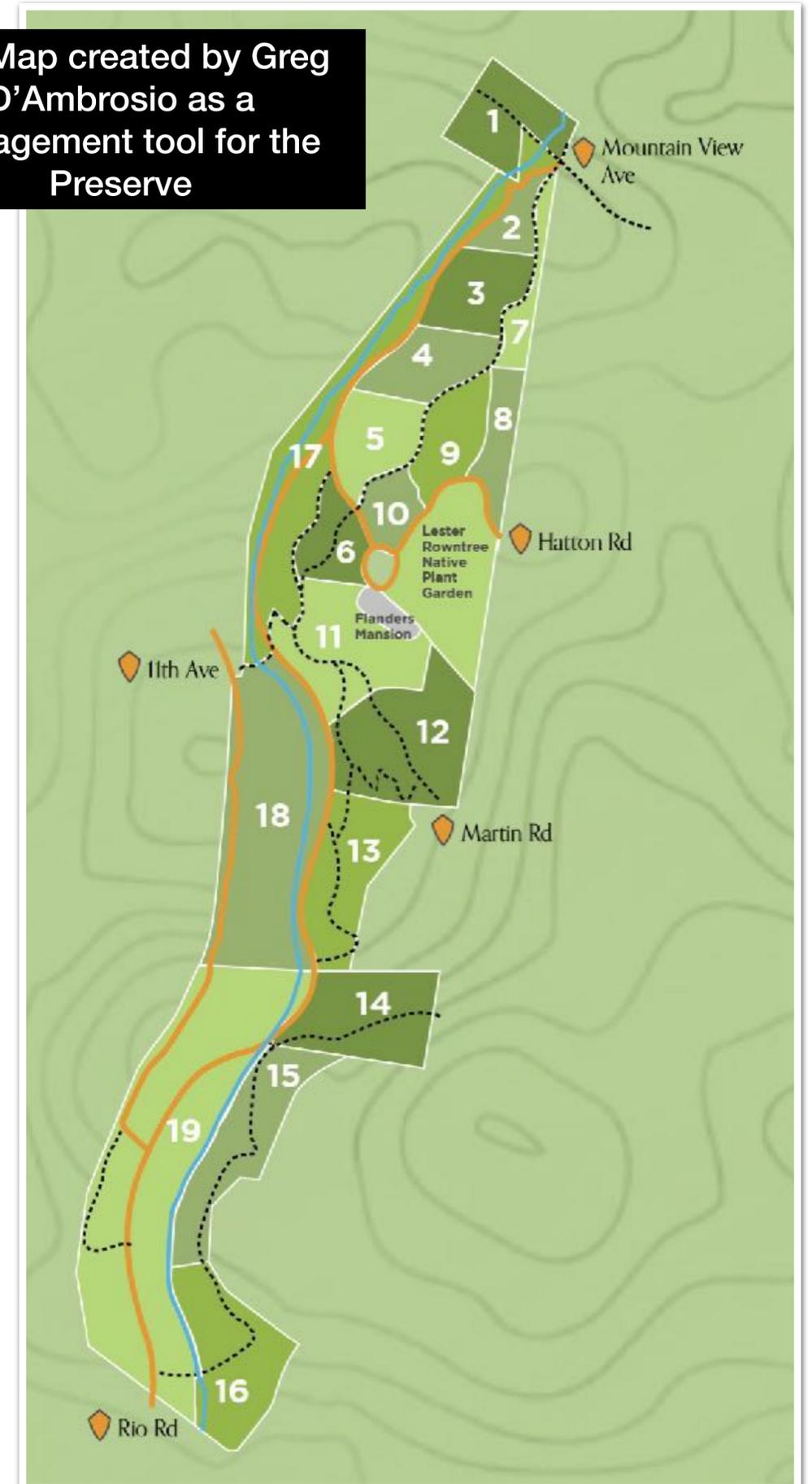
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Plot Map created by Greg D'Ambrosio as a management tool for the Preserve



# MTNP 15 Year Accomplishments

- 2009 through 2024

## Master Plan

### **Protect rare coastal habitats**

#### **Invasive Eradication Programs Completed**

- \* Initial invasive tree eradication program completed
- \* Initial genista eradication program completed

#### **Annual Maintenance**

- \* Clearing of downed trees
- \* Plot sweeps and invasive vegetation removal
- \* Meadows mowed and ladder fuel reduction
- \* Reforestation of areas cleared of invasive trees

#### **Other Habitat Improvements**

- \* Removed water tank, PG&E pole, pump house, and decommissioned the well
- \* Stream Stability Study Projects #1 through #3

## Master Plan

### **Provide low-impact access**

#### **Trail & Amenity Improvements**

- \* Single-track trails developed, restored, and rerouted
- \* Mountain View entrance stairs and ramp installed
- \* Entrance & trail signage, and benches installed
- \* Doolittle & Willow Trail raised boardwalks installed
- \* Pine root point-of-interest display installed
- \* Two Forks overlook installed

#### **Annual Trail & Amenity Maintenance**

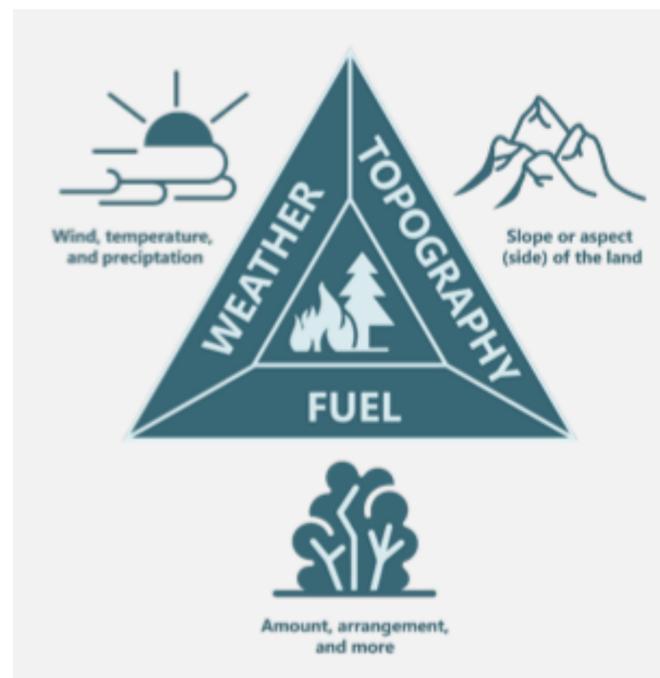
- \* Trail, bridge, and signs maintained
- \* Trees blocking trails or posing hazards removed

# Protect Rare Coastal Habitats

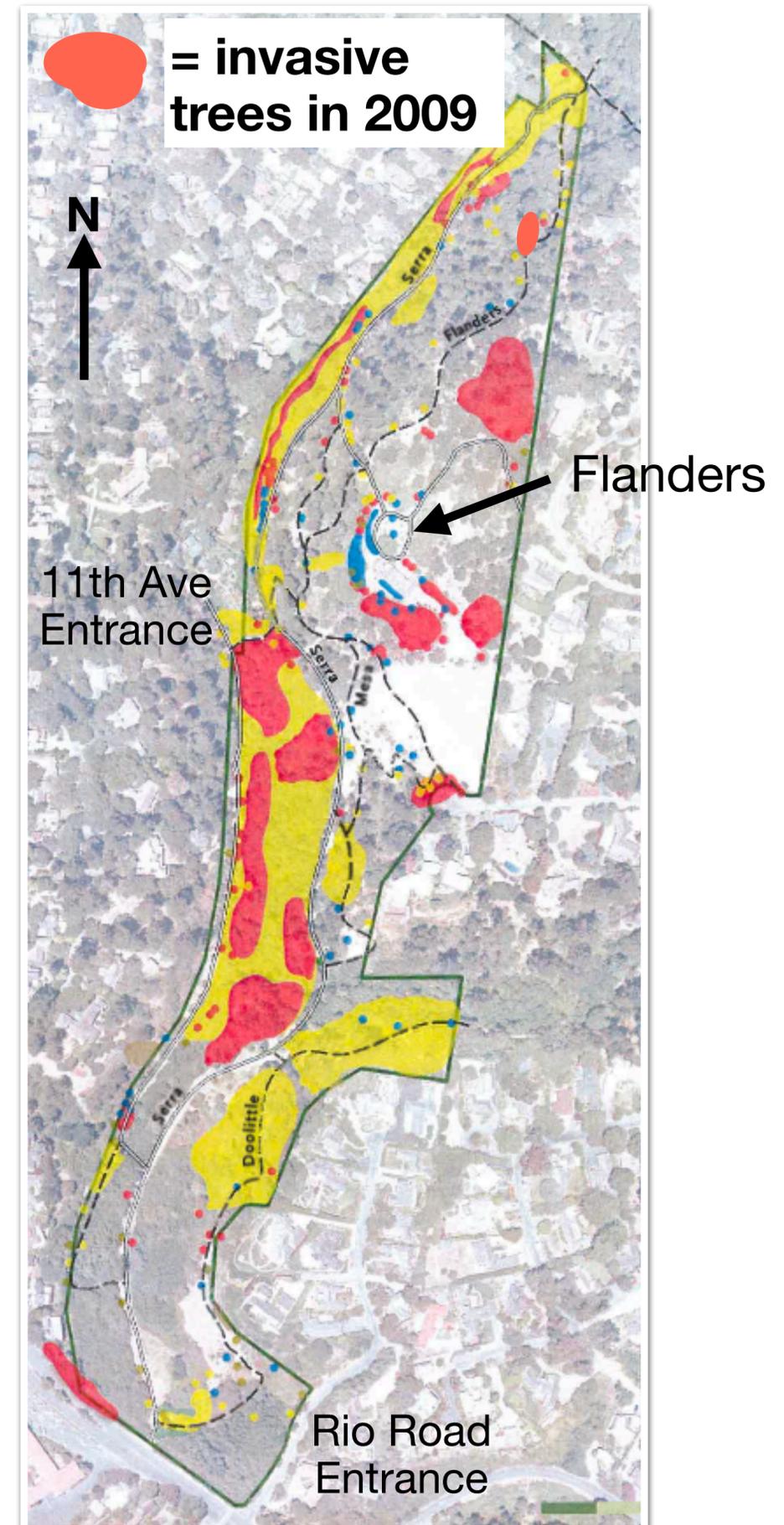
- *Protect, maintain, and enhance*

In a huge win for both habitat restoration and wildfire mitigation, the initial eradication programs recommended by the BBA for invasive eucalyptus, acacia, and pittosporum trees, and genista plants have been completed

Regular plot sweeps and a continuous maintenance removes other invasives and fire fuels



**A healthy native forest is more fire resistant**



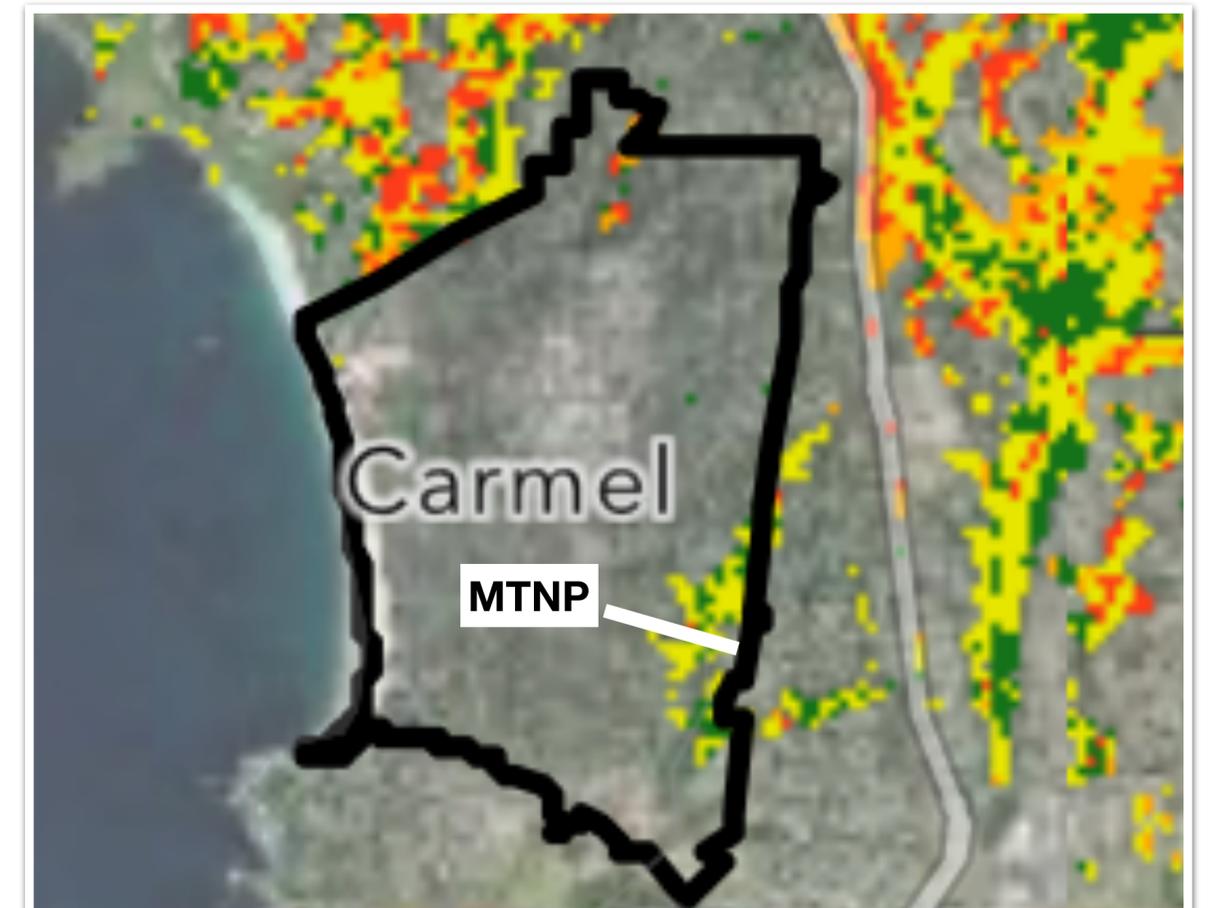
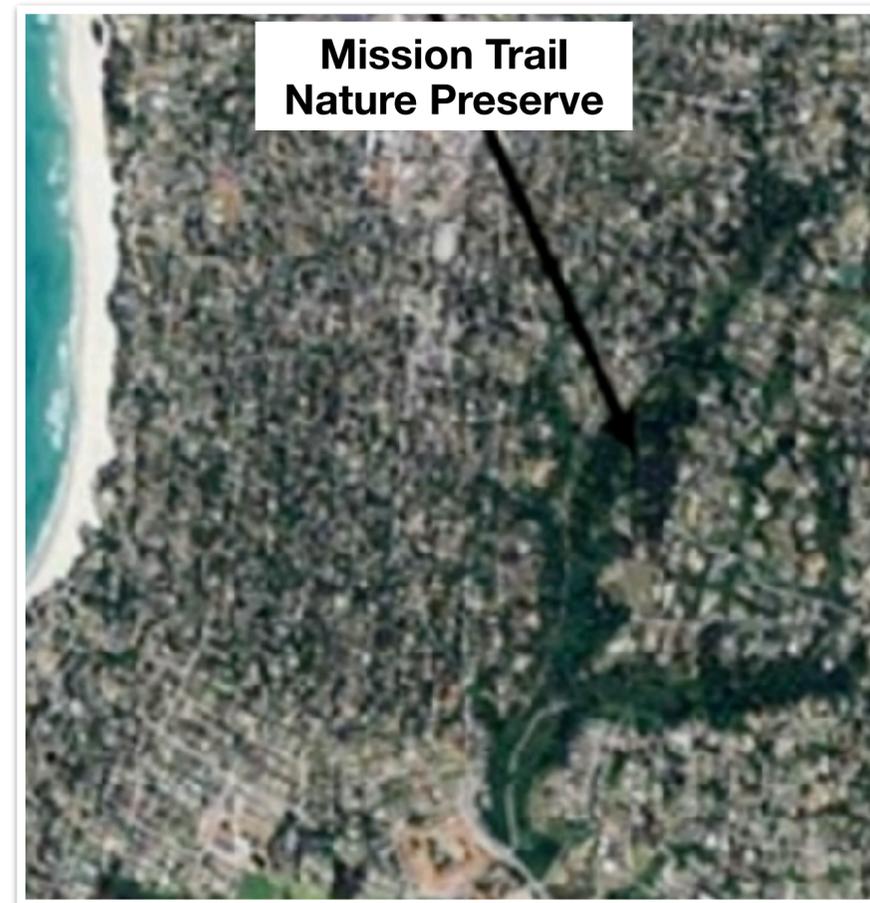
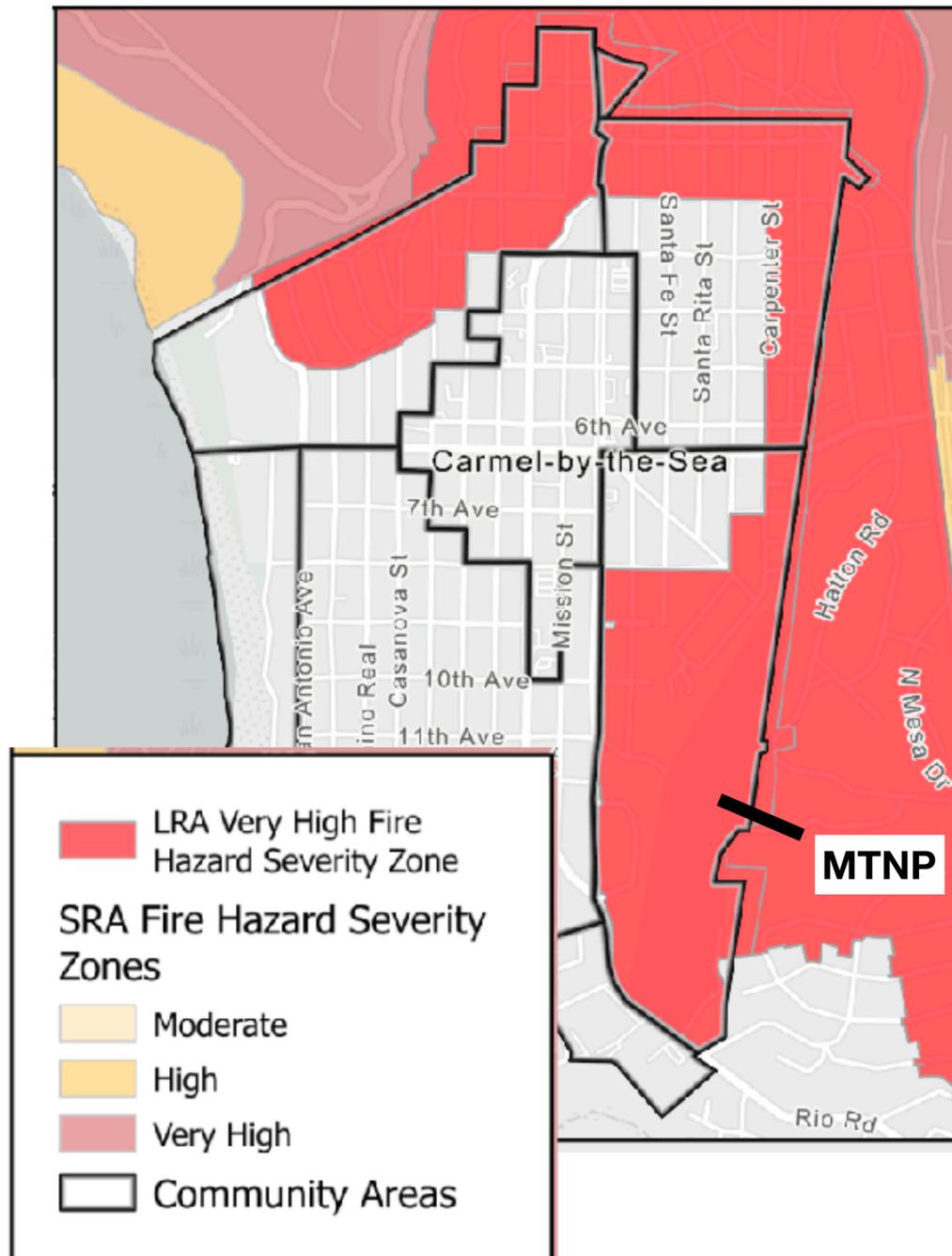
# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

Significant fire fuel removal over the past 15 years has mitigated wildfire risk in the Preserve

CWPP, Nov-2023

Continuous maintenance is critical



Wildfire intensity under peak weather conditions (CWPP, Nov-2023)

# Protect Rare Coastal Habitats

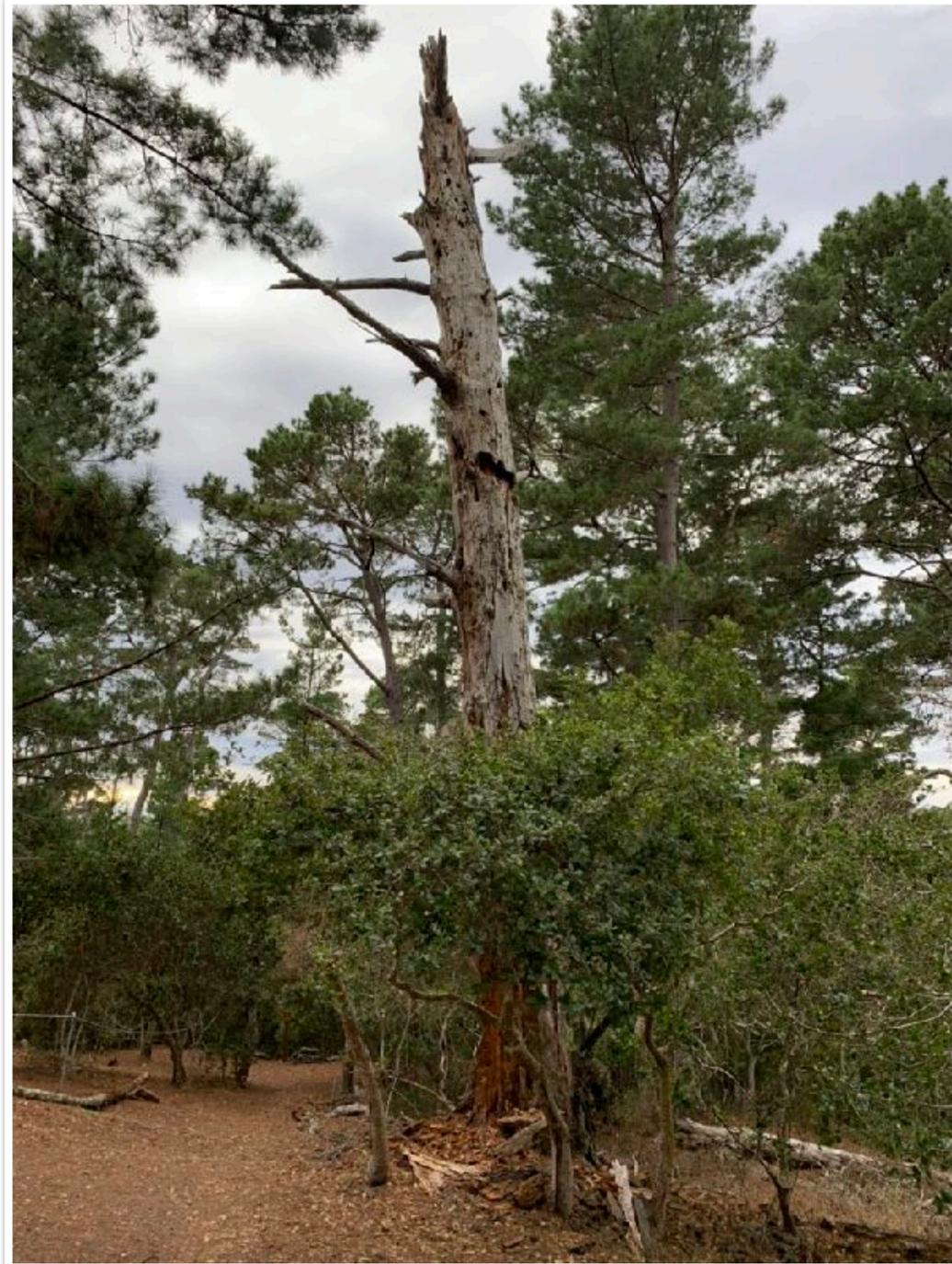
- *Protect, maintain, and enhance*

**Tree slash (branches < 4" in diameter) from downed trees is removed to reduce the fire fuel and wildfire risk, while the larger limbs and trunks are left for ecological benefits**



# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*



**Wildlife tree  
trunks are left in  
place at a safe  
height for habitat**

**Wildlife tree  
used as a  
woodpecker  
nesting site and  
acorn granary**



# Protect Rare Coastal Habitats

*- Protect, maintain, and enhance*

**Hand pulling invasive plants is an important method for maintaining the Preserve's ecological integrity and biodiversity**

**Regular plot sweeps identify new hot spots**

**Monthly Weed Pull events coordinated**

**Weekly contractor (Town & Country Landscaping) work coordinated**



# Protect Rare Coastal Habitats

Some of the most frequent invasive plant targets in recent years



Genista (French broom)



English ivy



Cape ivy



Poison Hemlock



Pittosporum



Acacia



Eucalyptus

# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

**Native Monterey Pine  
forest near Flanders**

**Close to a hundred large  
invasive eucalyptus  
trees (many > 24") on  
either side of these  
pines were removed**

**Ecological forestry  
entails careful and  
targeted removal of  
forest fuels**



# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

**Area cleared of invasive eucalyptus near Flanders led to a significant water table rise and a rapid recolonization by natives**



**Invasive acacias removed and native saplings planted in 2024 near 11th Ave; a multi-year invasive resprout control program is required**



# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

**Native cottonwood grove near  
recent clearings south of 11th  
Avenue**



# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

**Removing dense low-moisture fuels and fire-prone invasives creates space for healthy natives with improved plant and soil moisture retention, fire resistance, and habitat**

Dried poison Hemlock



Dried and woody Genista



# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

The Martin Meadow ESHA mowing schedule is timed to allow native flowers (e.g Hickman's Onion) to set seed

**The lack of a beneficial fire regime has maintenance implications**



ESHA: Environmentally Sensitive Habitat Area

Monterey Pine serotinous cones



Serotinous cones are an adaptation to thrive and survive in environments with frequent wildfires

# Protect Rare Coastal Habitats

- *Protect, maintain, and enhance*

Justin Ono & Mary Bilse (Public Works), and Greg D'Ambrosio (FOMTNP) tour the Preserve with Monterey Fire in May 2024



Community Wildfire Protection Plan

## Monterey, Carmel-by-the-Sea, and Pacific Grove

NOVEMBER 2023

### Table D-1. Priority Vegetation Management Projects

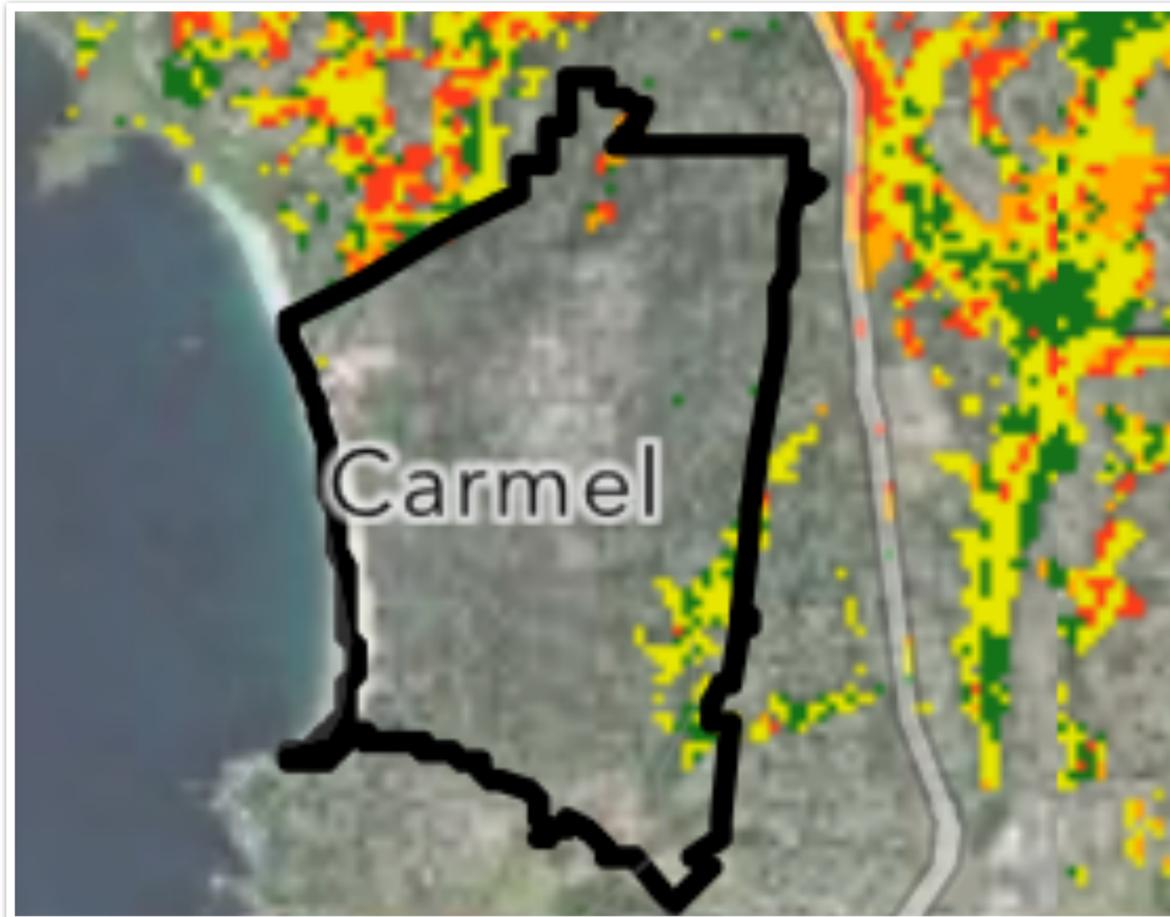
Project Description	Coordinating Agencies / Entities
<p><b>Develop a Forest Management Plan for the Mission Trail Preserve with a focus on forest health and ladder fuel reduction</b></p>	<p><b>MFD, CBTS, Friends of Mission Trail Nature Preserve</b></p>

# Protect Rare Coastal Habitats

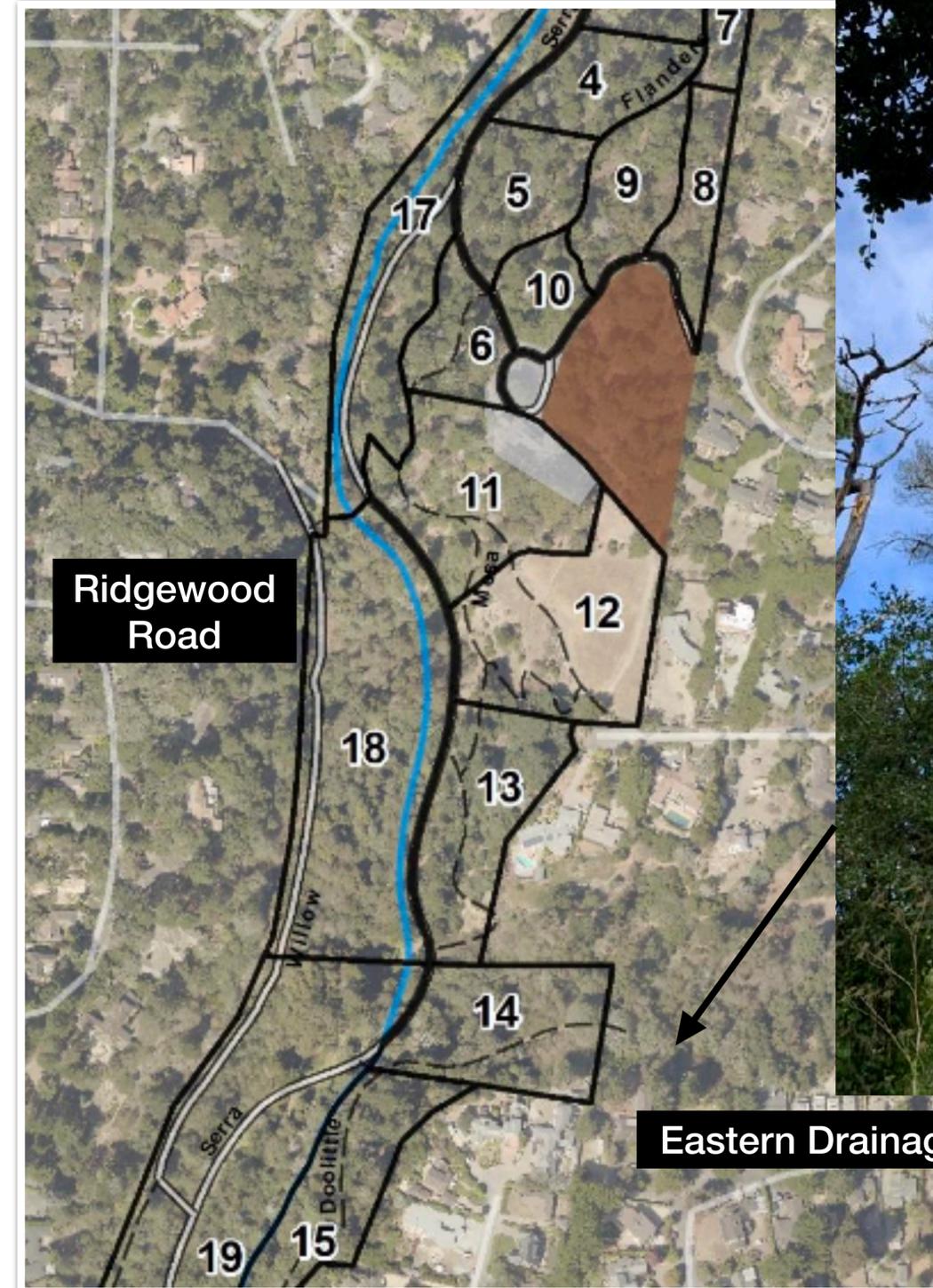
- *Protect, maintain, and enhance*

**Outreach to neighbors with forested parcels outside the Preserve boundaries is needed**

**Wildfire intensity under peak weather conditions (CWPP, Nov-2023)**



**Dead pines, brush thickets, and other ladder fuels**



# Mission Trail Nature Preserve Master Plan

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1996 plan adopted by the City Council and incorporated into the City's LCP.

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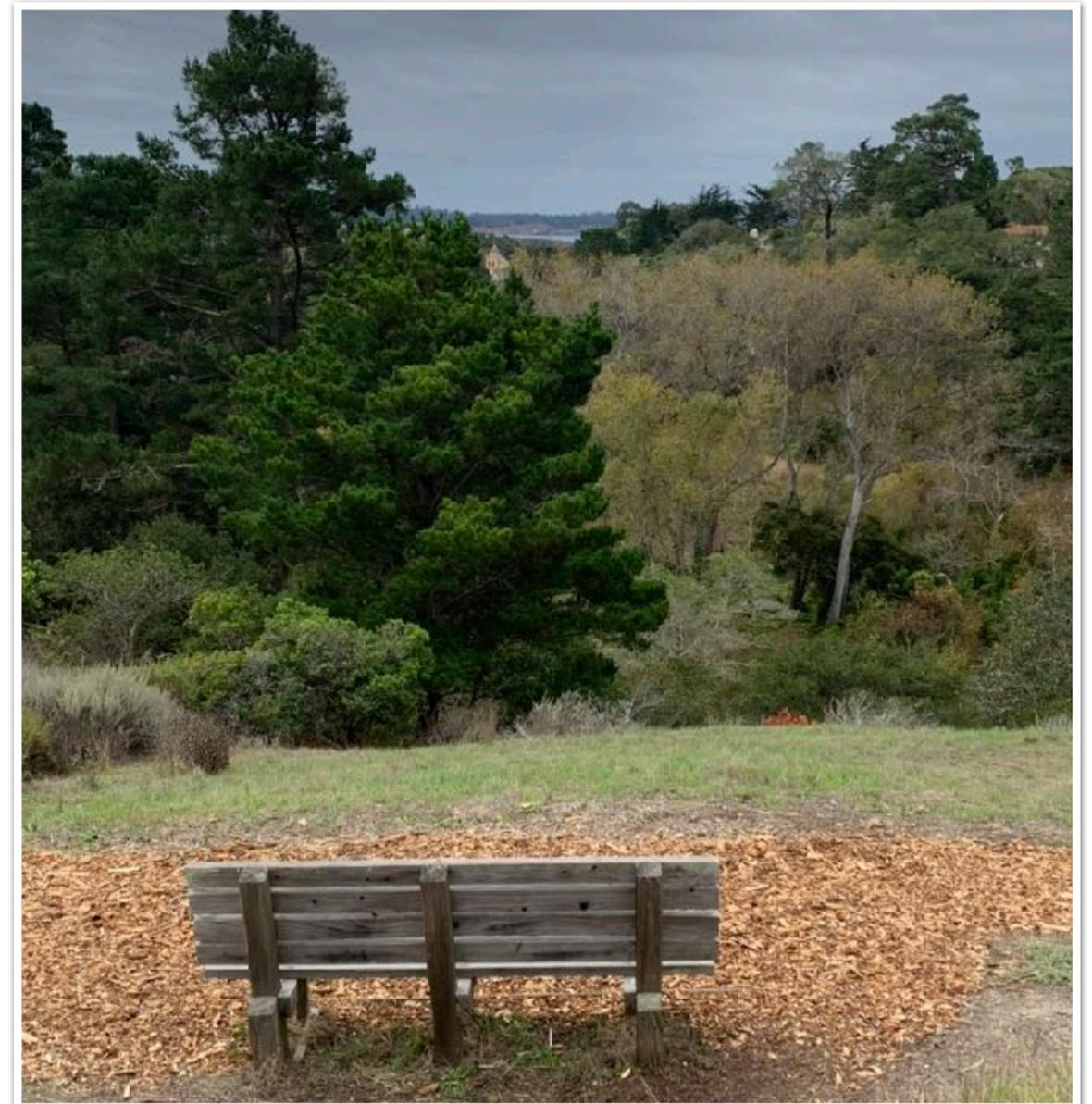
# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

Maps and posting boards located at each entrance



A place of solitude and quiet contemplation

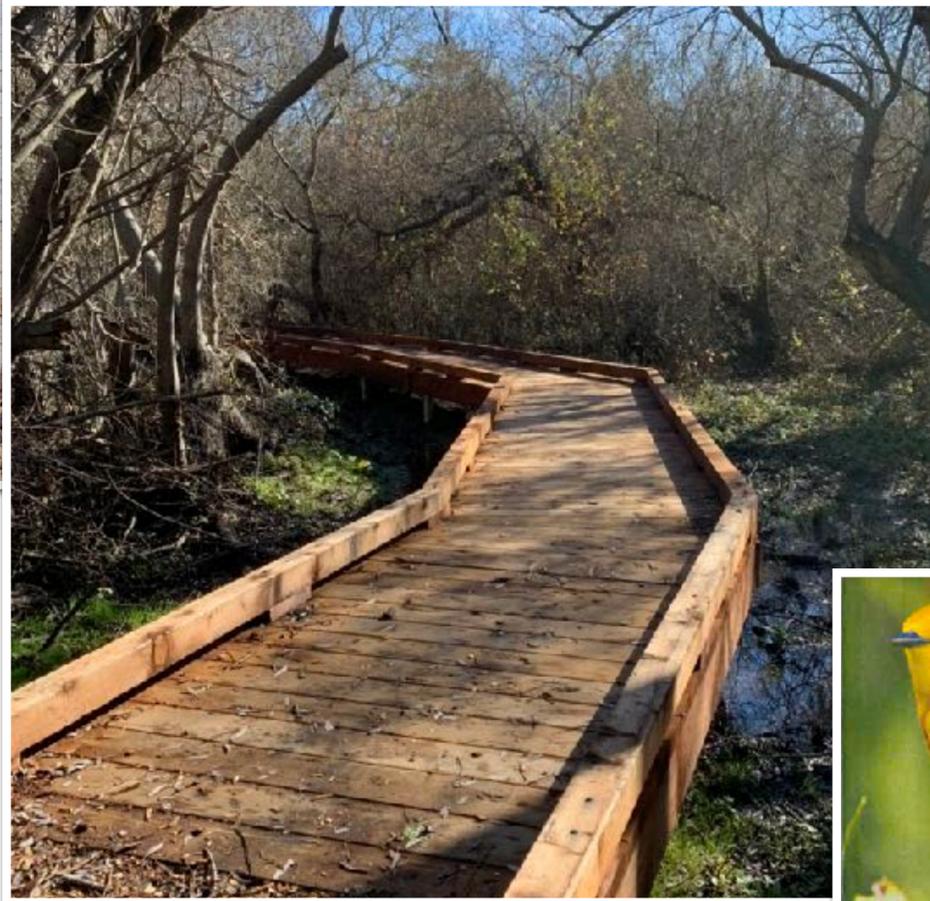


# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Boardwalks installed over bogs**

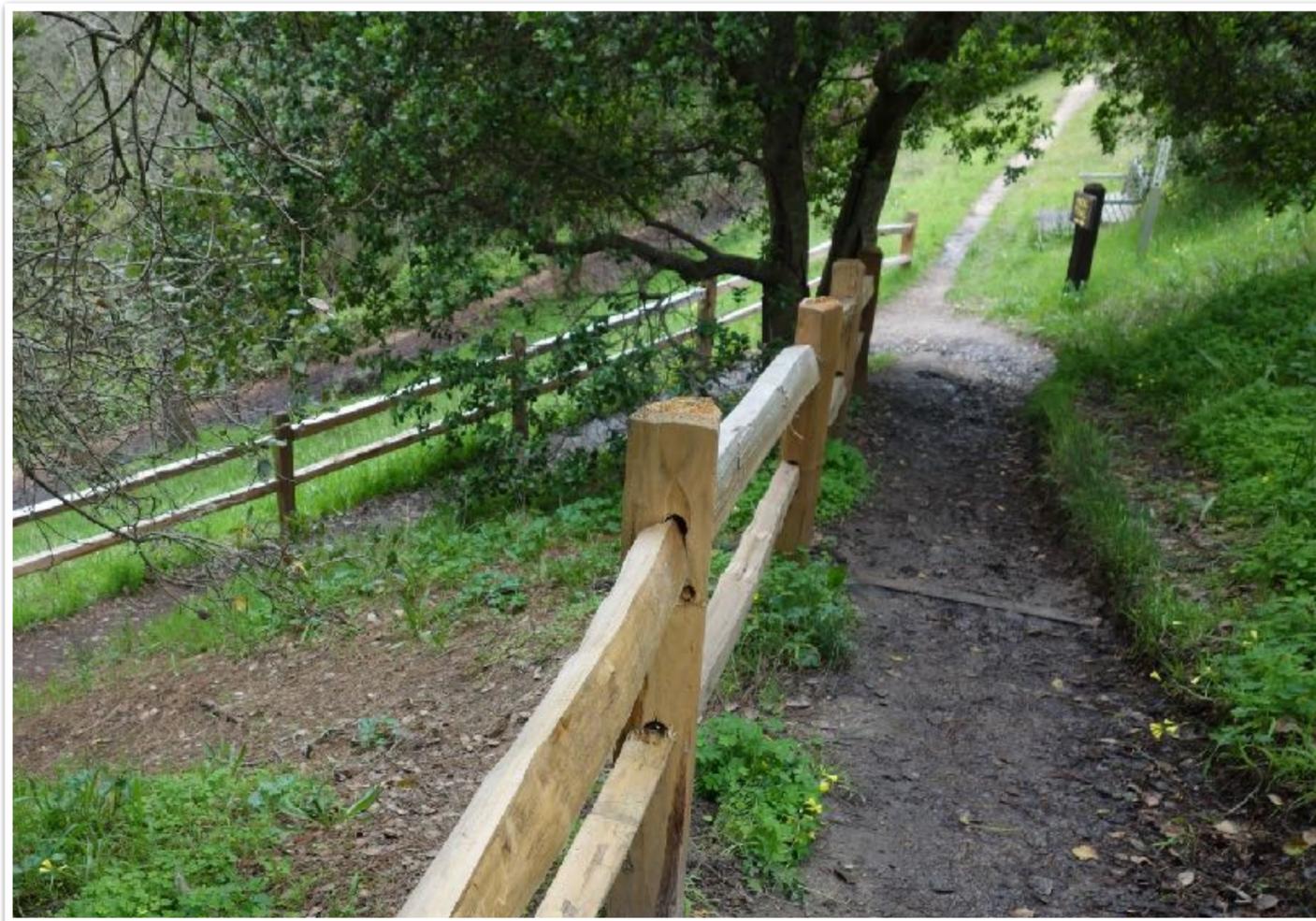
**The Preserve is used by birders, and the young and old alike**



# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Trail maintenance includes preventing trail cuts, erosion control, leveling, wood chipping, and split-rail fencing**



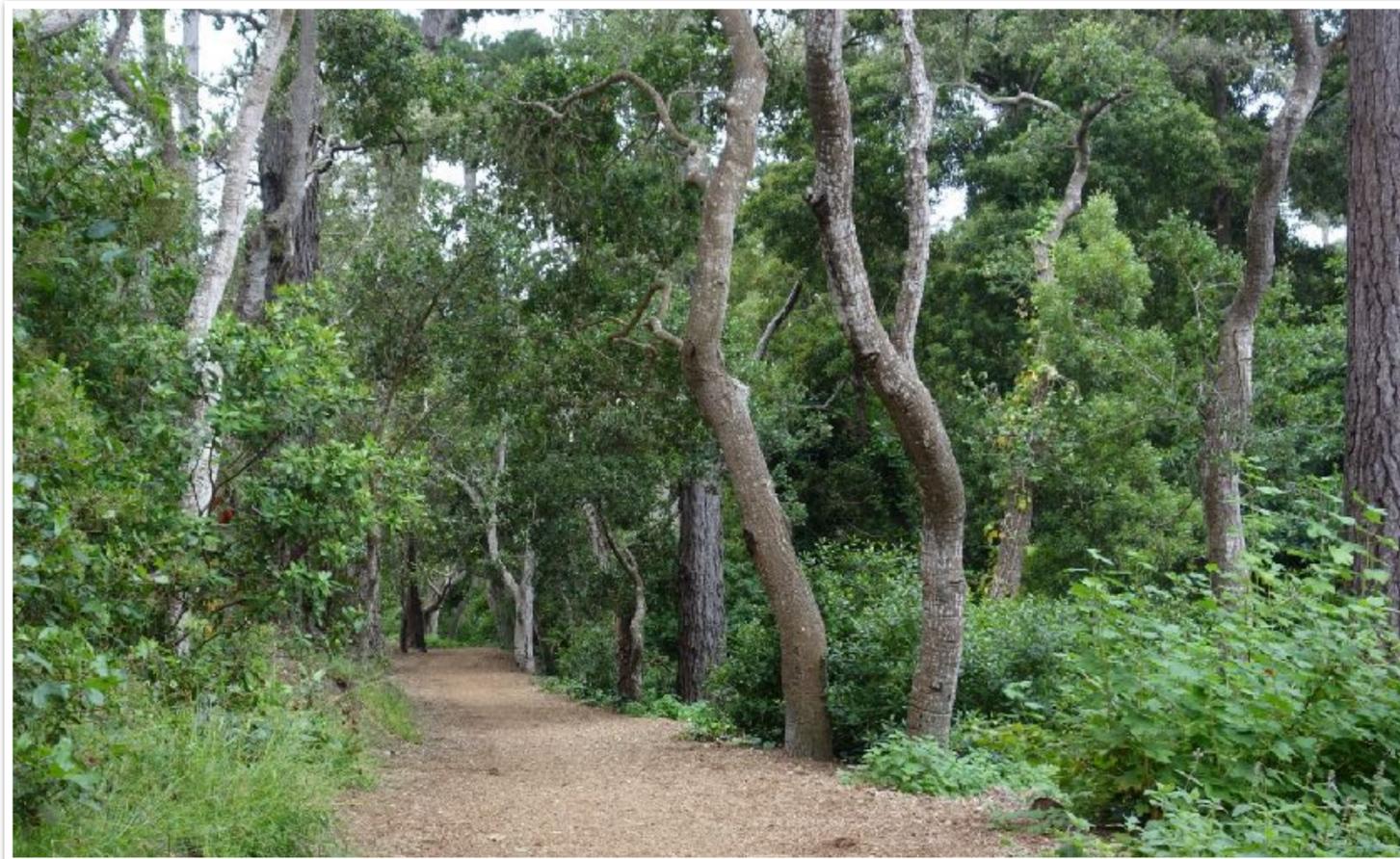
**11th Ave bridge rebuilt in 2024 as a Public Works in-house project**



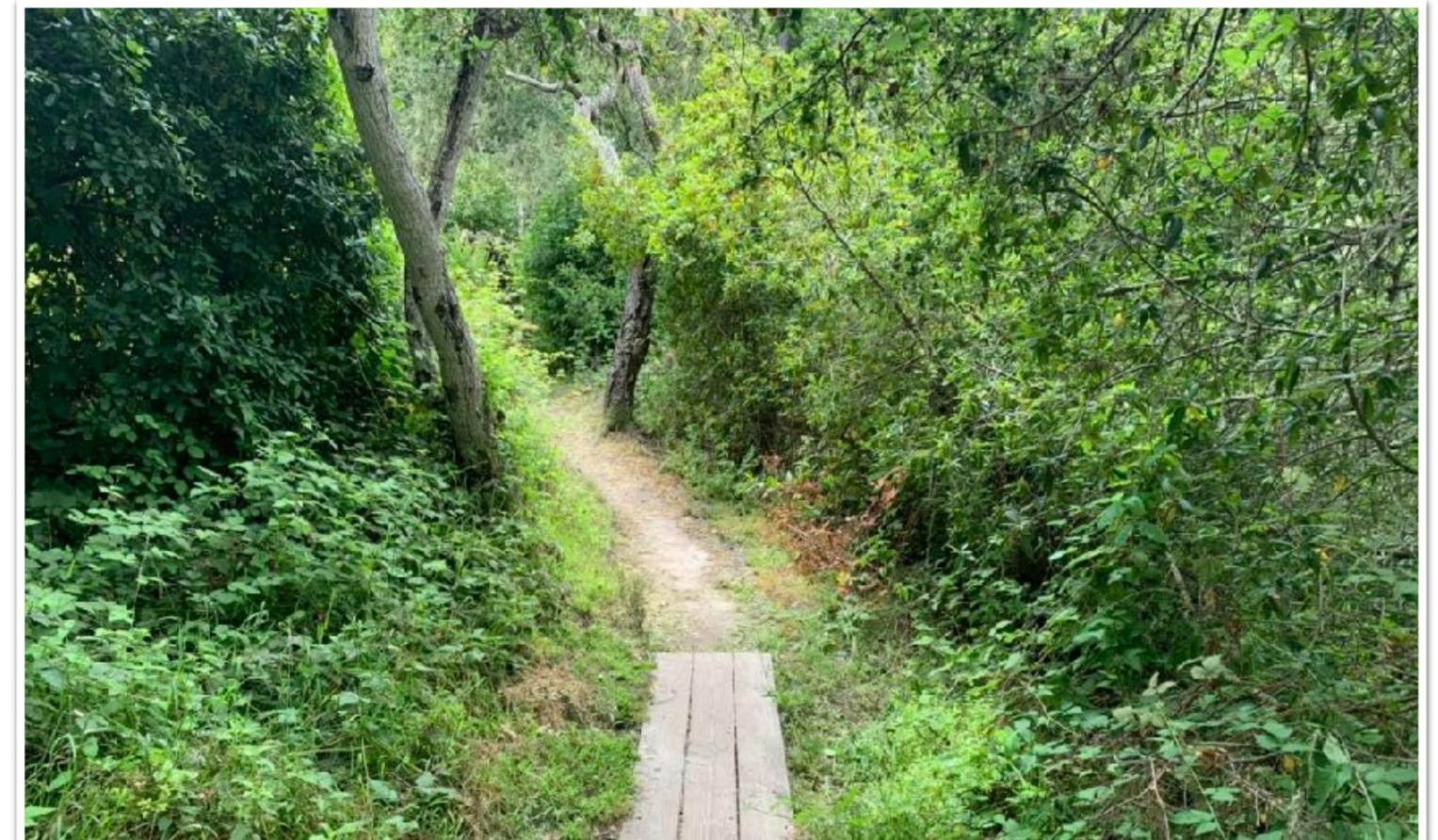
# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Beginning in spring of each year, nearly all four miles of trails, including the single-track and the main service trails are cleared of excessive vegetation**



A main service trail cleared of tree limbs to a sufficient height to maintain fire brush truck and other service vehicle access



Cleared single-track trail

# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Natural materials and a rustic aesthetic appropriate for a nature preserve is used**



# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Response to a downed pine along the Flanders driveway**

**Rootball used as a point of interest display**



**Trail moved to the side of downed tree**



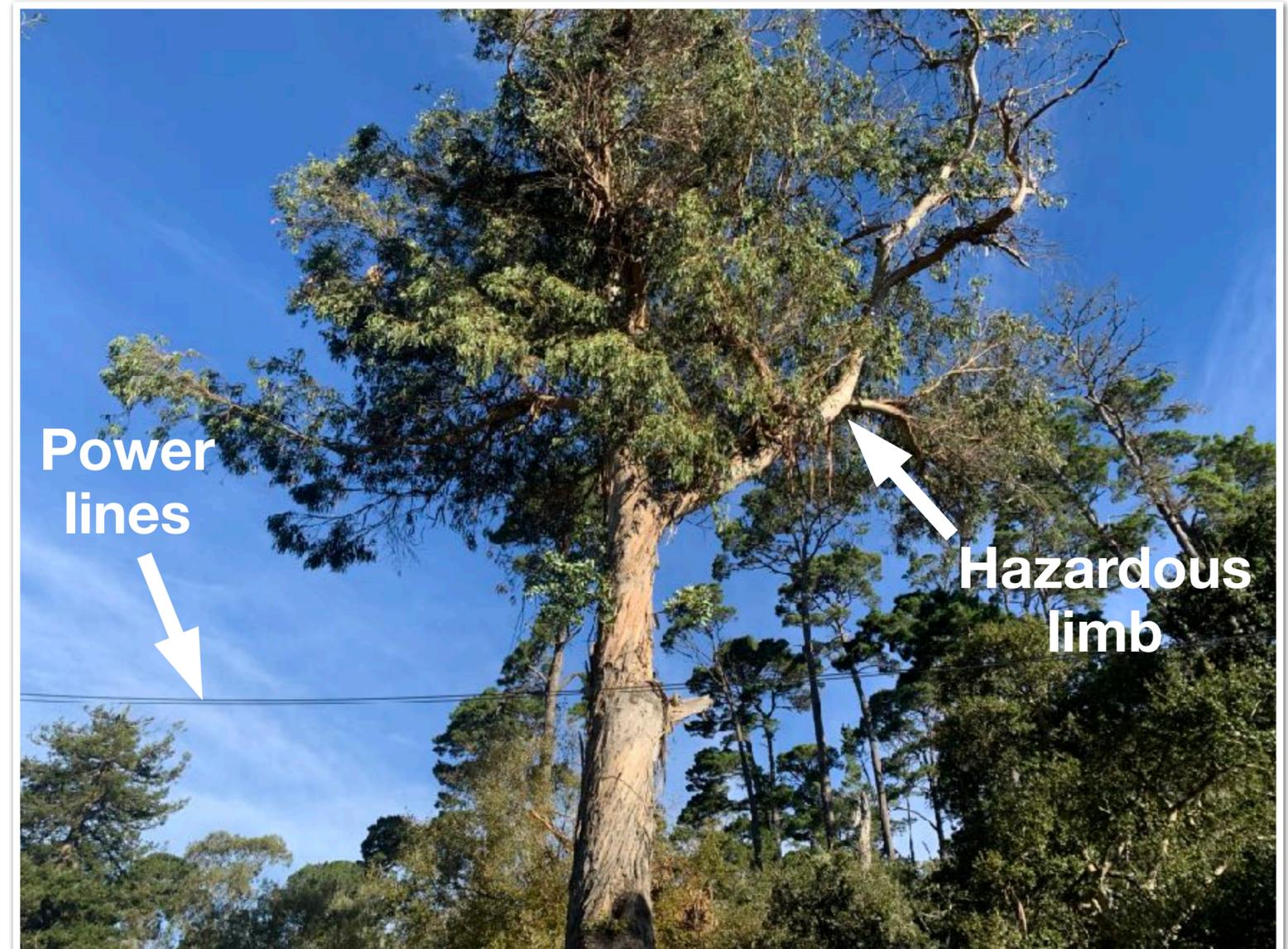
# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Trees are monitored for safety hazards throughout the year**



Dead pine along Flanders Trail slated for removal



Limb at risk of failure above power line near 11th Ave entry

# Provide Low Impact Access

- *Preserve the forested, tranquil atmosphere*

**Flanders, an integral part of the  
Preserve**



# Mission Trail Nature Preserve Master Plan

## Mission Trail Nature Preserve Master Plan

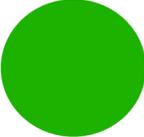
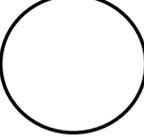
1996 plan adopted by the City Council and incorporated into the City's LCP.

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# Master Plan Implementation Status Summary

- 2009 through 2024

<b>Habitat enhancement &amp; wildfire mitigation</b>		Initial eradication programs completed; annual seasonal work plan developed and implemented
<b>One-time habitat improvement &amp; wildfire mitigation projects</b>		Stream Stability projects underway. PG&E power lines in the Preserve a wildfire risk
<b>Trail &amp; amenity installation and maintenance</b>		
<b>One-time MTNP access projects</b>		Crossing Rio Road at entry a safety issue; Carmel 4-mile walking loop linkage through Rio Park a gap
<b>Lester Rowntree Native Plant Garden</b>		Restoration needed
<b>Flanders</b>		Use consistent with the Preserve not yet implemented i.e. residence for an MTNP conservation partner

# Project Priorities

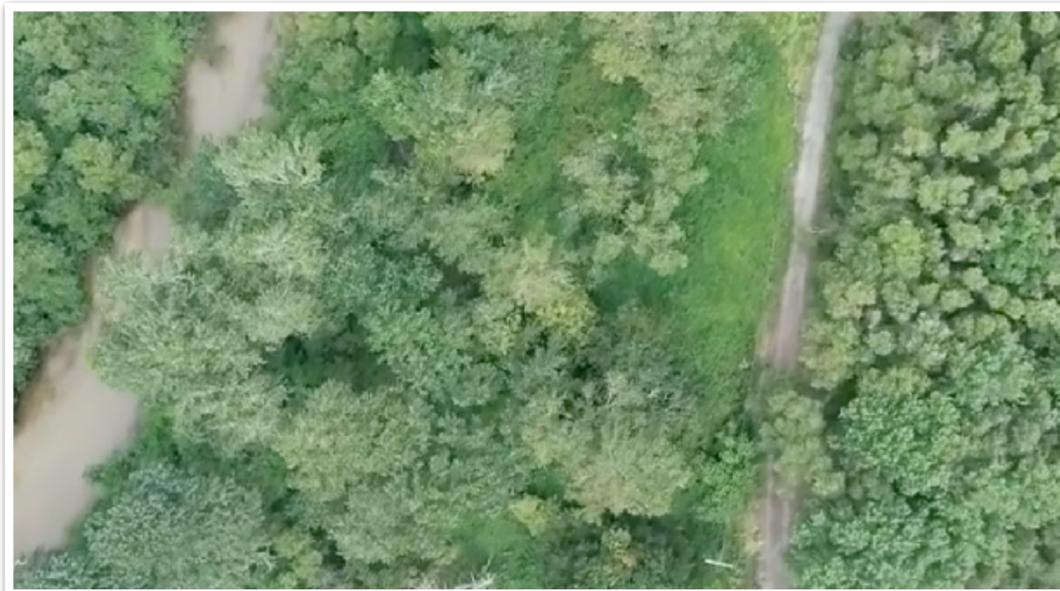
## Project Priorities

- \* *Stream Stability Project #4 (ford reduction, Doolittle Trail bridge at Redwood Grove and trail realignment)*
- \* *Stream Stability Study Projects #5 - #8*
- \* *Serra Trail French drain installations (2)*
- \* *Rowntree Native Plant Garden restoration*
- \* *PG&E power line removals*
- \* *Rio Road entry safety improvements, B2E , & Carmel 4-mile walking loop link*

**Area of Stream Stability Projects #4 & #5**



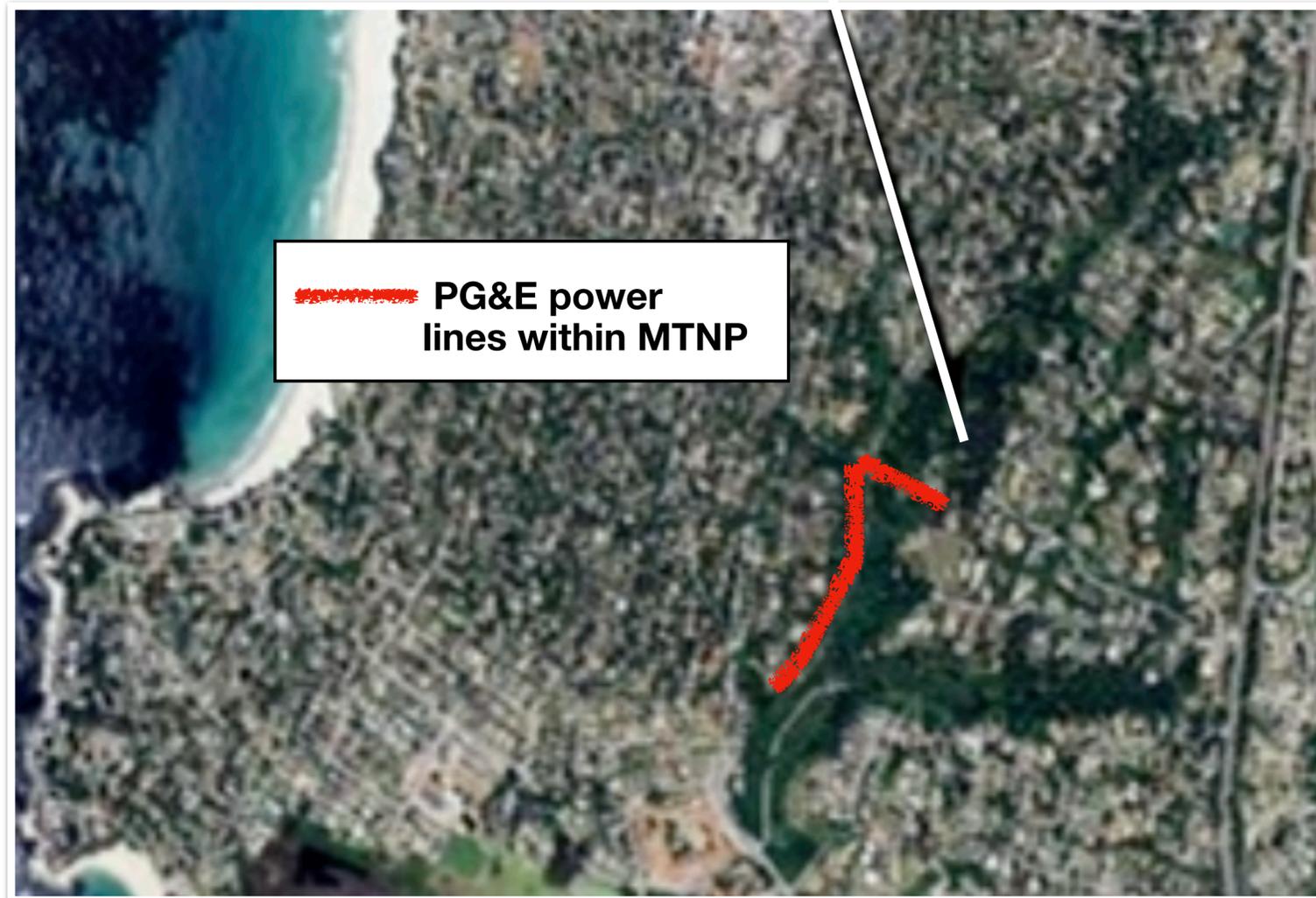
**CAWD bridge and old CAWD road (future trail)**



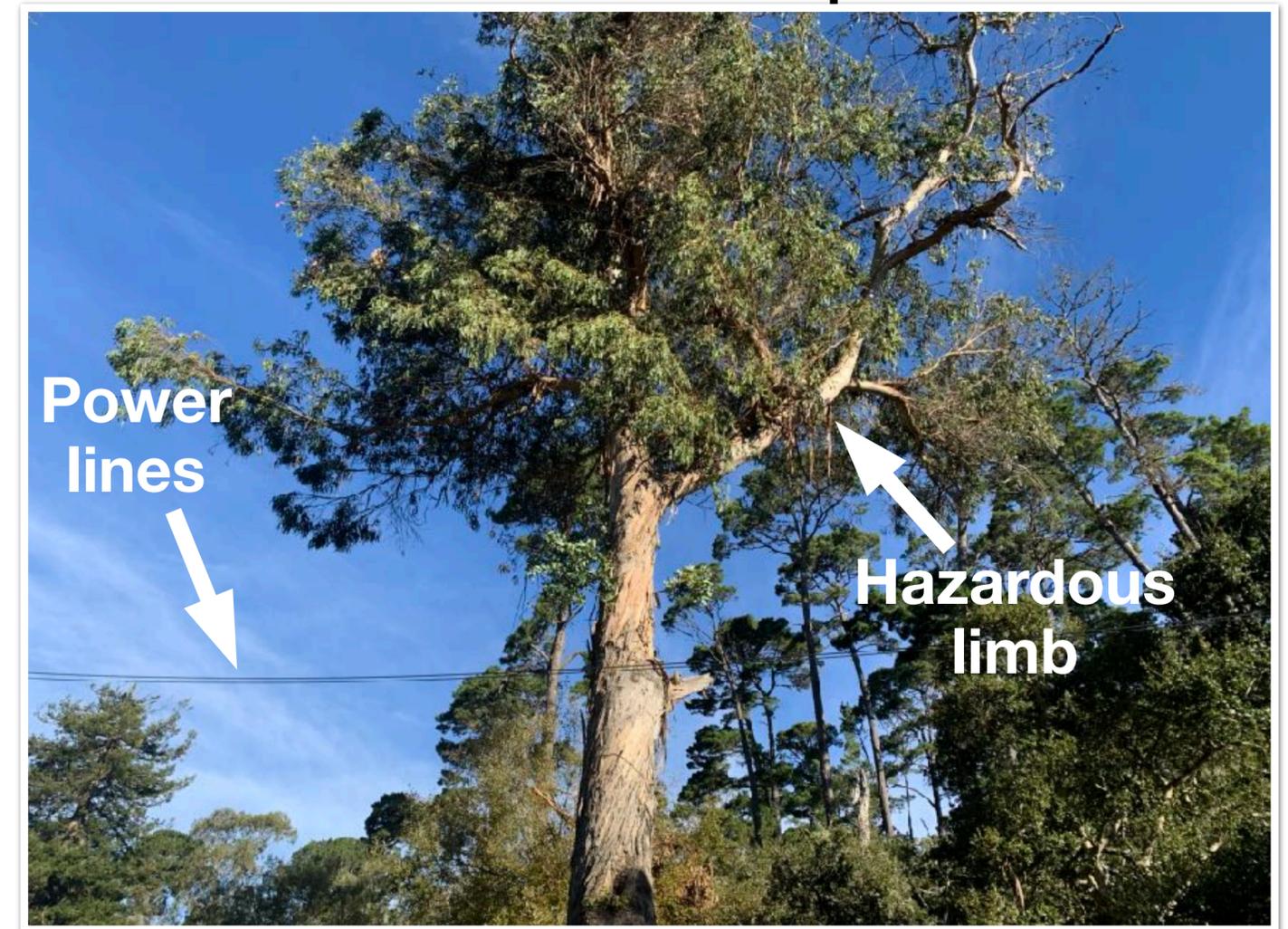
# PG&E Power Lines in the Preserve

Since 1992, more than 3,600 wildfires in California have been related to power generation, transmission and distribution, according to data from the U.S. Forest Service

Mission Trail  
Nature Preserve



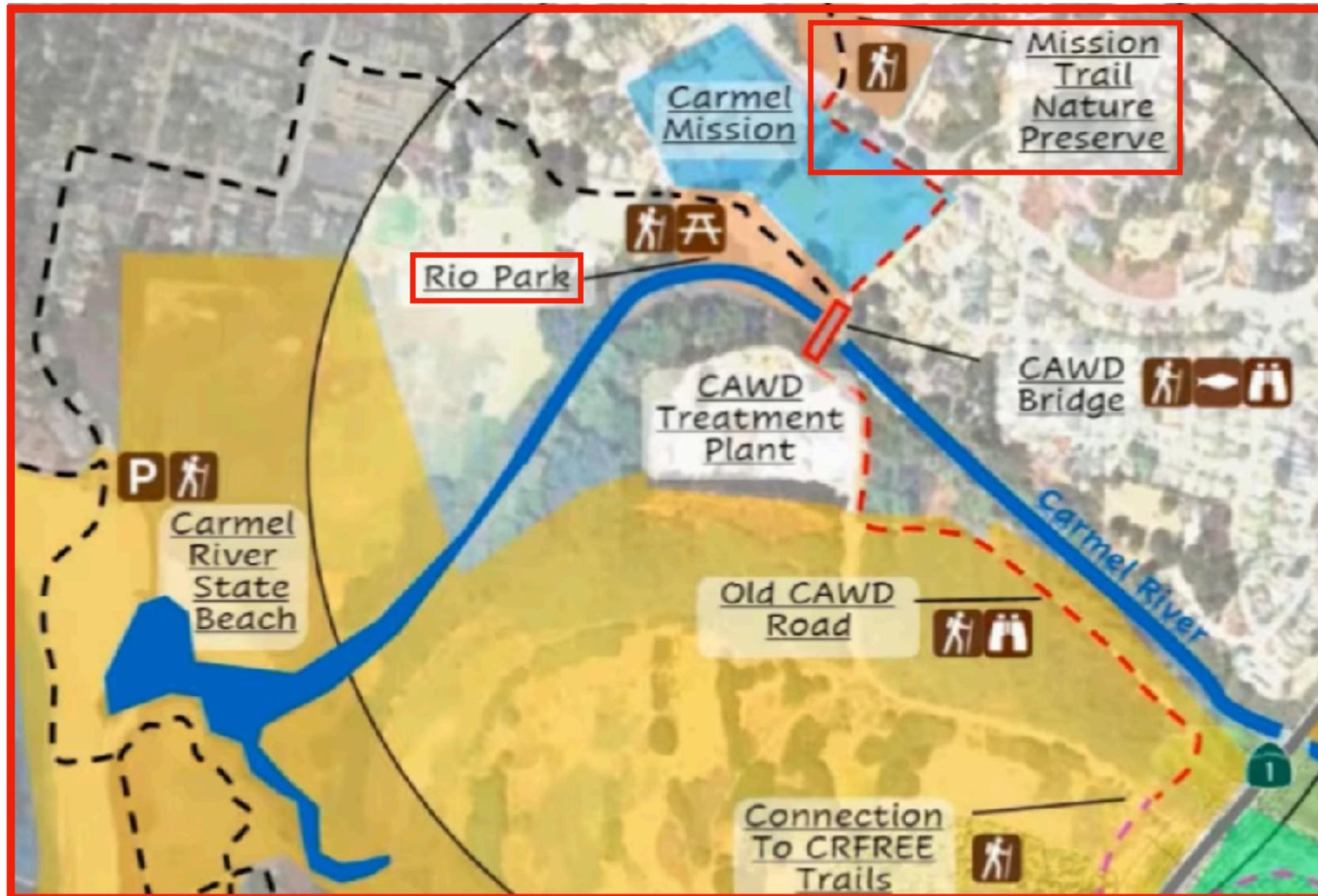
Hazardous limb above the 11th  
Avenue to Flanders PG&E power lines



# Carmel 4-Mile Walking Loop

Rio Park, a missing link on the Carmel 4-mile walking loop would improve MTNP access as a walk-in passive park and its development would be a good time to address Rio Road entry safety

The CAWD bridge (B2E) would add walking access to regional and State park trails



# A Successful Citizen-City Partnership



# Acknowledgments

**Public Works**

**Friends of Mission Trail Nature Preserve**

**Donors, Volunteers & Other Supporters**



**View from Martin Meadow**

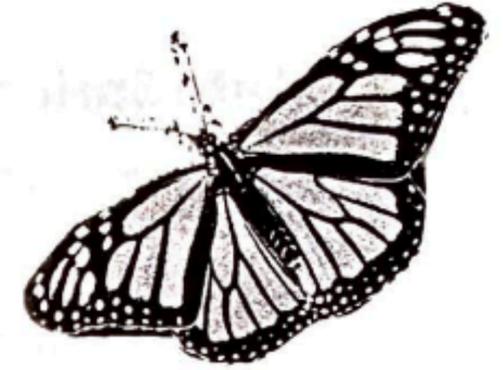


# Appendix

# MISSION TRAIL NATURE PRESERVE



# MTNP Annual Work Program



## **Guiding Principle:**

*“Active management is essential if resource values of the Preserve are to be protected and restored”*

**This means establishing an action plan for the Mission Trail Nature Preserve that includes:**

- \* Working with the staff of the City of Carmel
- \* Working with volunteers and contract workers
- \* Following an annual work plan (below) for maintenance, eradication, planting, and restoration
- \* Creating an action plan for ongoing financial support from the City of Carmel, nonprofit foundations, grant resources, and donors

# MTNP Annual Work Program

## Winter/Spring Projects:

- \* **Focus volunteers and contract workers on the removal of invasive non-native fire fuel species**  
*Genista, eucalyptus, acacia, cotoneaster, and other woody brush*
- \* **Maintain the urban-wildland interface**  
*Thin or remove excessive brush/grass. Create a fire-fuel-free perimeter buffer*
- \* **Clear or remove storm-damaged trees and other hazards**
- \* **Plant native plants**  
*Harvest and propagate local seed stock and cuttings*
- \* **Plant Monterey pine native seedlings**  
*Plant seedlings grown from locally harvested seed stock*
- \* **Maintain five Preserve entrances**  
*Maintain overhead clearance, remove debris and invasive plants, inspect operational effectiveness of gates, and repair trailhead surfaces*

# MTNP Annual Work Program

## Late Spring/Summer Projects: (Dry Season - April/September)

- \* **Grade and restore foot trails and service trails**
- \* **Resurface service trails with wood chips**  
*Serra Trail, Willow Trail, and Flanders Spur*
- \* **Selectively remove invasive species**  
*Remove ivy, periwinkle, hemlock, succulents, cotoneaster, and other invasive plants*
- \* **Thin dense public/private native vegetation to reduce fire fuel**  
*Schedule and manage annual thinning programs in conjunction with private property owners adjacent to the Preserve to reduce the build-up of fire fuels and improve the health and vigor of remaining native vegetation*
- \* **Remove hazardous or dead upper-story pine trees**
- \* **Regularly monitor and remove trees that are a threat to visitors and private property owners**
- \* **Remove encroaching willows and poison oak to restore the “Wet Meadow”**  
*The “Wet Meadow” has been a classic feature of the Rio Road entry to Mission Trail Nature Preserve. As such, it is essential that it be open and inviting to the public. As willows and poison oak naturally encroach, remove new sprouts*
- \* **Clear brush and vines from bridge structures**

# MTNP Annual Work Program

## Late Spring/Summer Projects: (Dry Season - April/September) Continued

- \* **Monitor, manage, and clear ravine drainage**

- \* **Improve and maintain amenities**

*Repair and upgrade bridges, signage, trail steps, benches, trash containers, gate entries, and the Rowntree Native Plant Garden*

- \* **Remove invasive tree species**

*Numerous non-native invasive tree species require constant vigilance. Acacia and eucalyptus are of primary concern*

- \* **Mow grasses in selected areas to reduce fire fuels and control invasive species**

*Schedule work at the optimum time to encourage the spread of native species*

- \* **Remove invasive seedlings in sites cleared of invasive trees**

*Bi-monthly culling of new invasive seedlings is required for the first few years while natives recolonize*

- \* **Remove English and Cape ivy from tree trunks**

## Late Summer/Fall Projects (September/November)

- \* **Repair stream bank erosion and clear debris to facilitate drainage**

*Remove obstructions and loose materials that would block drainage channels*

- \* **Maintain culvert pipes and box inlets to prevent flooding**

# Baseline Annual Maintenance Expenditures

<b>MTNP Baseline Maintenance Expenditures (2023/24)</b>			
	<i>(a) FMT \$'s</i>	<i>(b) City \$'s</i>	
1	<b>Clearing of Downed Tree Slash and Obstructed Trails</b>	<b>\$4,415</b>	<b>\$41,106</b>
2	<b>Removing Tree Hazards</b>	<b>\$3,483</b>	<b>\$3,802</b>
3	<b>Invasive Vegetation - Hand Pulling and Grubbing</b>	<b>\$3,428</b>	
4	<b>Other Ecological Forestry Wildfire Mitigation</b>	<b>\$5,238</b>	<b>\$33,810</b>
5	<b>Reforestation of Areas Cleared of Invasive Trees</b>	<b>\$6,922</b>	
6	<b>Trail, Bridge, and Sign Maintenance</b>	<b>\$6,432</b>	<b>\$22,814</b>
7	<b>Lester Rowntree Native Plant Garden Maintenance</b>	<b>\$5,720</b>	<b>\$7,906</b>
8	<b>Planning and Management</b>	<b>\$4,281</b>	
	<b>TOTAL</b>	<b>\$39,919</b>	<b>\$109,438</b>

*(a) FMT \$'s includes \$18,964 direct expenditure and 1,371 volunteer labor hours converted to \$20,565 at a labor rate of \$15 per hour*

*The Friends of MTNP (FMT) has provided \$176,000 in direct expenditures and 11,531 volunteer hours life to date*

*(b) Tree crew blended burden rate: \$39.61 per hour*

# Friends of MTNP Asks to City

**Ask 1: Continue funding the Public Works MTNP maintenance work**, at levels similar to this past year, plus an additional \$10K to defer half the annual cost of FOMTNP contractor (Town & Country Gardening and Landscaping) as a direct grant for reduction of fuel loads.

**Ask 2: Have Public Safety officials conduct outreach to neighbors** with parcels that border or extend into open space contiguous with the Preserve to address any gaps in fire fuel management.

**Ask 3: Underground power lines running through the MTNP.** The highest priority power line segment within the MTNP extends from the Eleventh Avenue entrance to Flanders, where the two poles, including a transformer, are smack in the middle of the pine-oak forest, and the power lines run under a hazardous limb near the bridges.