

# WEEDS IN WILDLAND URBAN INTERFACE FUELBREAK: CHALLENGES AND OPPORTUNITIES



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Marin Municipal Water District  
September 2004

WUI fuelbreaks spread with catastrophic wildfire..



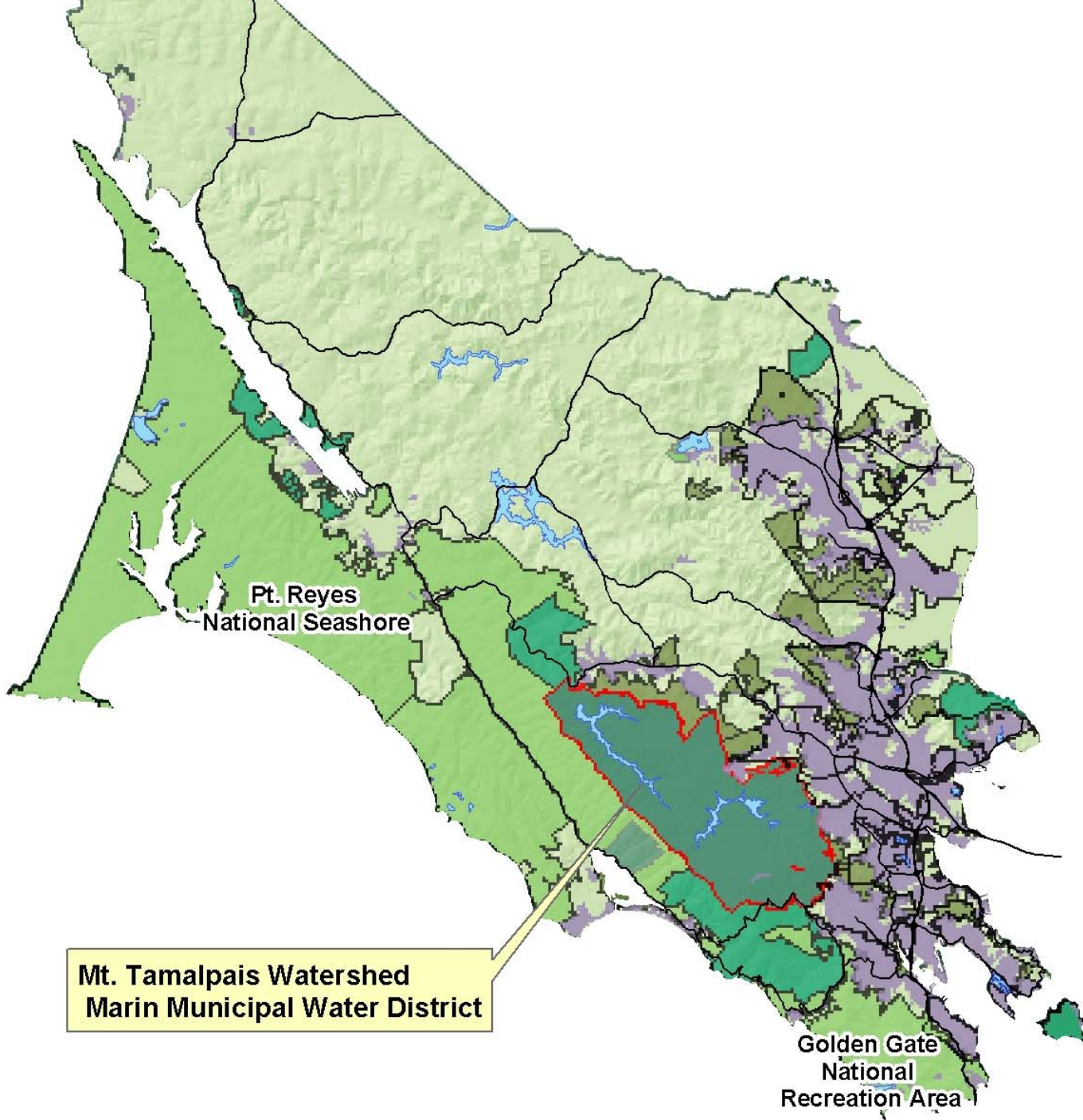
San Diego 2003

**And fuelbreaks facilitate weed  
invasions.**



**Marin Municipal Water District  
Mt. Tamalpais Watershed**

0 2 4 8 Miles



Pt. Reyes  
National Seashore

Mt. Tamalpais Watershed  
Marin Municipal Water District

Golden Gate  
National  
Recreation Area

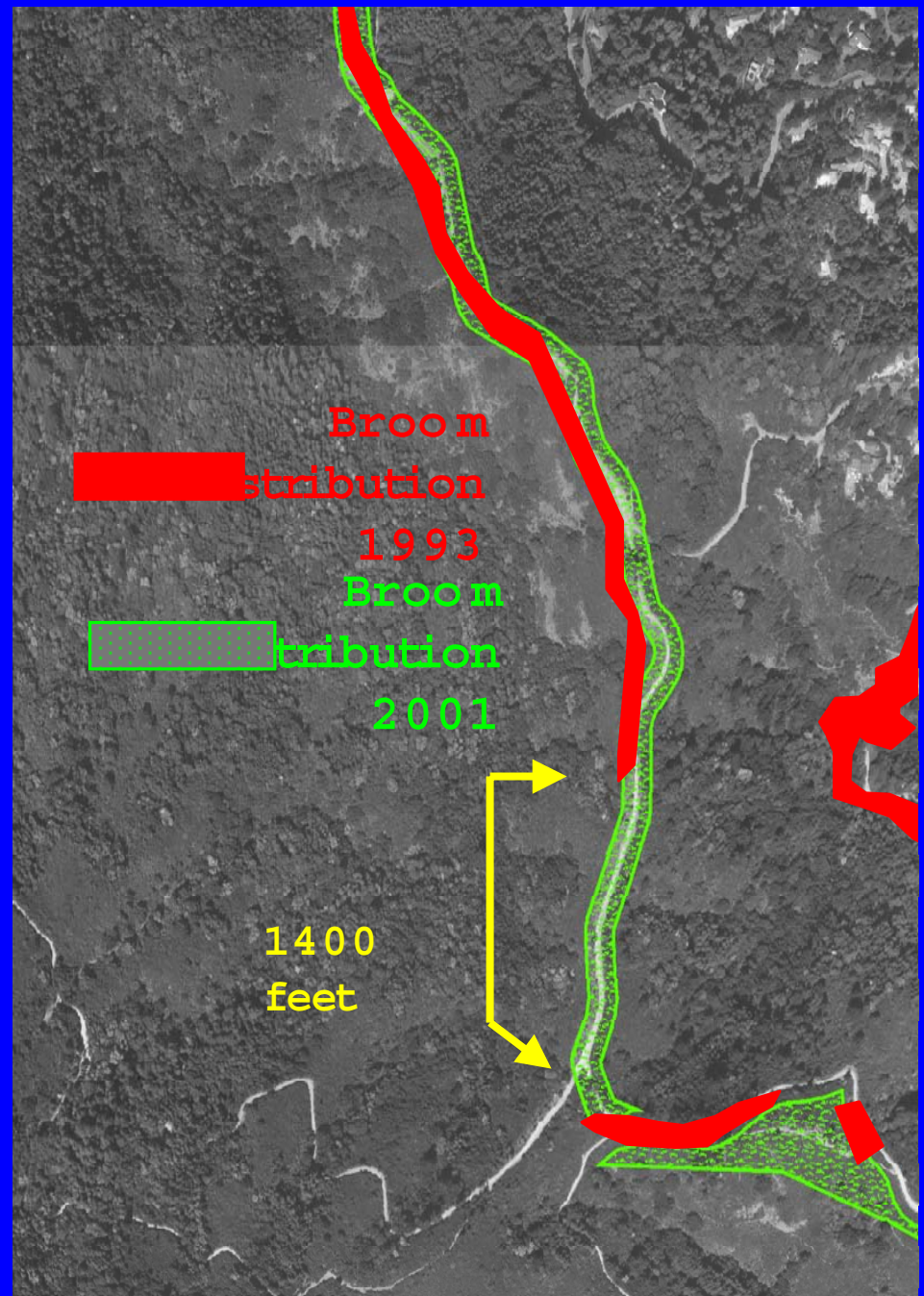


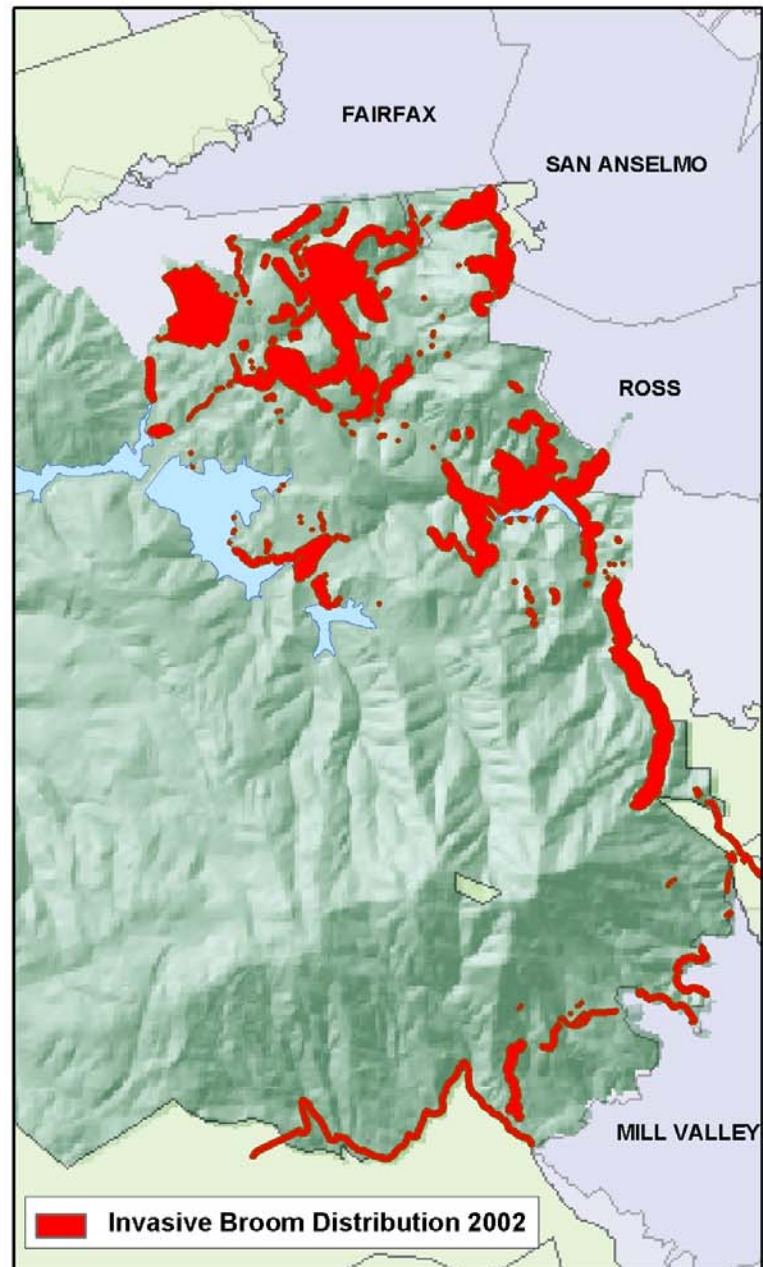
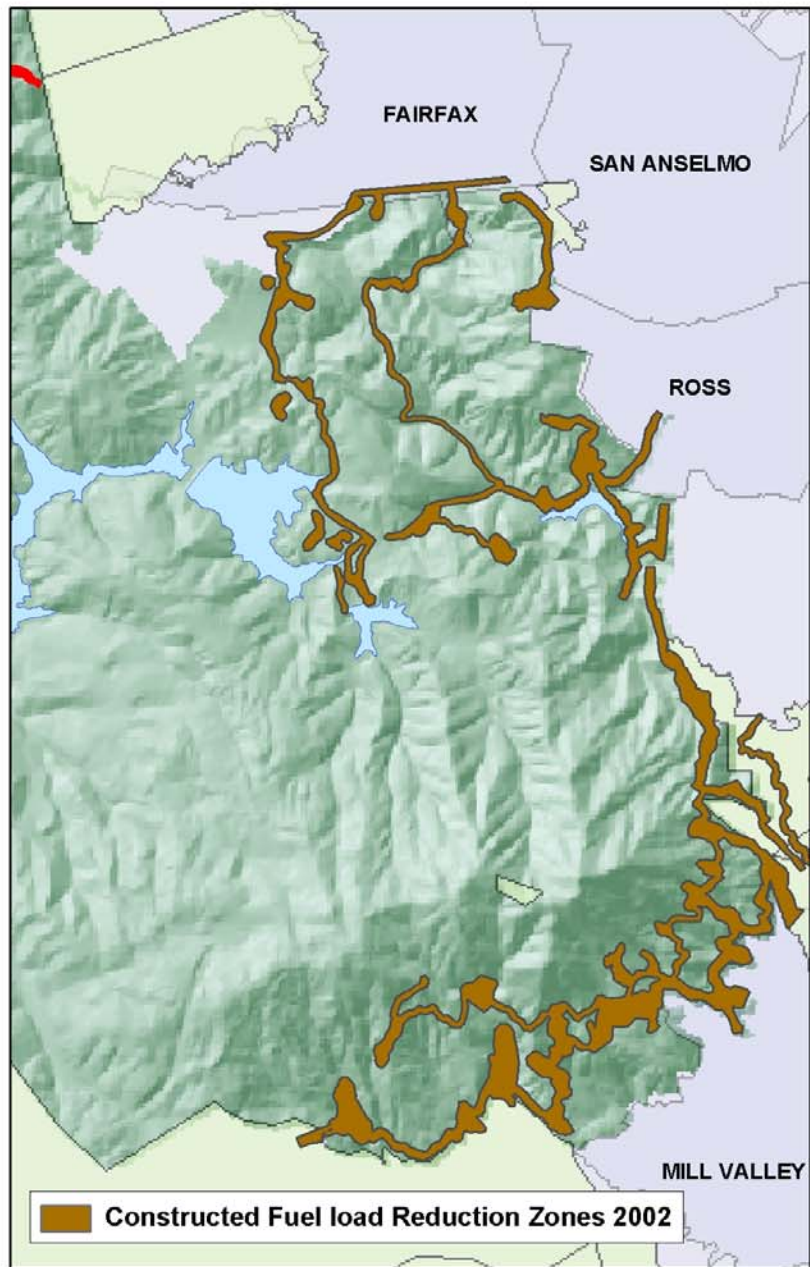
CALIFORNIA

Marin County

Between 1993 & 2001,  
French broom expanded  
1400 feet along Indian Fire  
Rd and spread from the  
road margin throughout the  
30 ft width of the fuel load  
reduction zone.

The expansion rate is  
dependent of vegetation  
type thinned, proximity to  
seed source, and  
disturbances accompanying  
fuelbreak construction.





# STAKEHOLDERS

- Marin Municipal Water District
- Other public utilities
- Bordering Public Land Managers: Federal, State, & Local
- Fire Departments: Federal, State, County & Local
- Rate payers
- Residents
- Recreationists

## **CHALLENGE:**

**Leveraging available resources to mitigate weed spread in fuelbreaks and create opportunities for improved fuelbreak management and expanded restoration**







# ENLIGHTENED SELF-INTEREST:

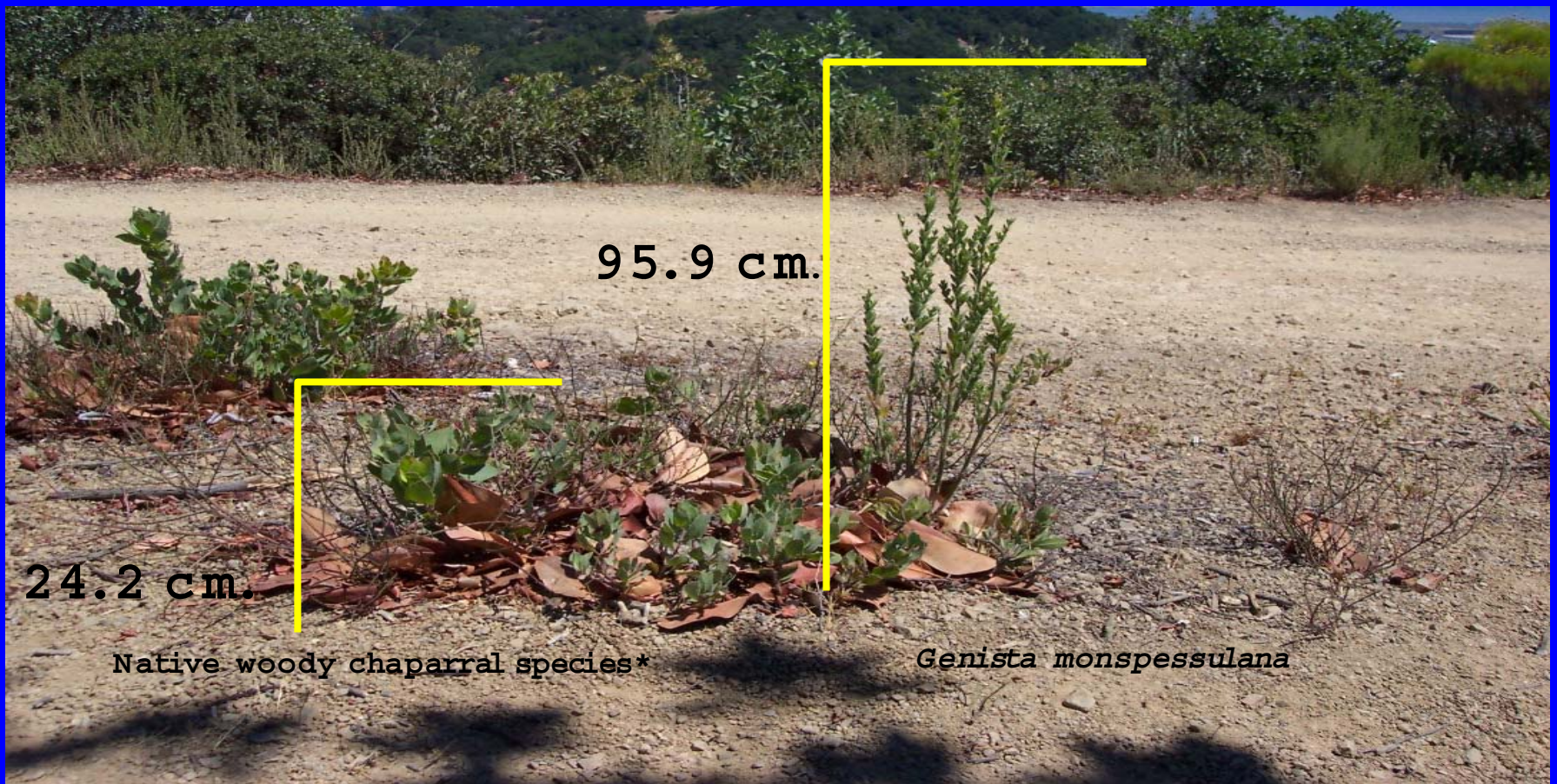
WEEDS COMPROMISE  
SAFETY AND ADD  
COSTS



# Weedy trees and shrubs compromises fuelbreaks by:

- Reducing emergency vehicle access;
- Choking off evacuation routes;
- Limiting staging area and backfire options;
- Reducing defensible space around structures; and
- Increasing fuel loads.





Six months post mow: *G. monspessulana* is significantly taller ( $p < 0.001$ ) than the previously dominant native woody species\*.

\**Adenostoma fasciculatum*, *Arbutus menziesii*, *Arctostaphylos glandulosa*, *Baccharis pilularis*, *Ericameria ericoides* and *Toxicodendron diversilobum*

Left  
untreated,



Or inadequately treated,



Invasive brooms become dominate and entrenched.





## Native Dominated



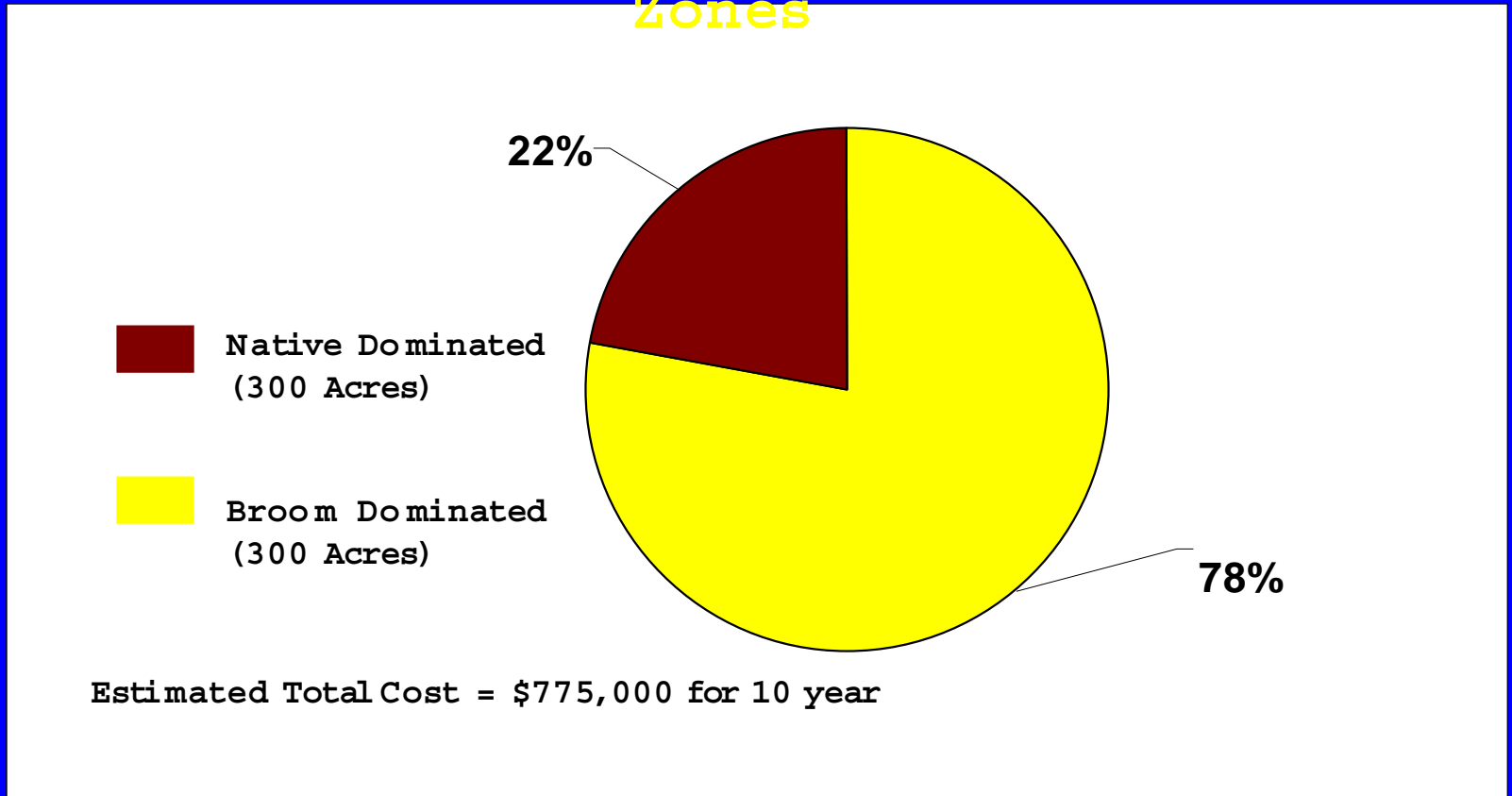
Acceptable roadside vegetation height maintained with mowing pass once every 3 to 5 years.

## Broom Dominated



Acceptable roadside vegetation height maintained with mowing pass once every 6 to 12 months.

# Estimated 10 Year Cost of Maintaining 600 Acres of Mt. Tamalpais Watershed Fuel Load Reduction Zones

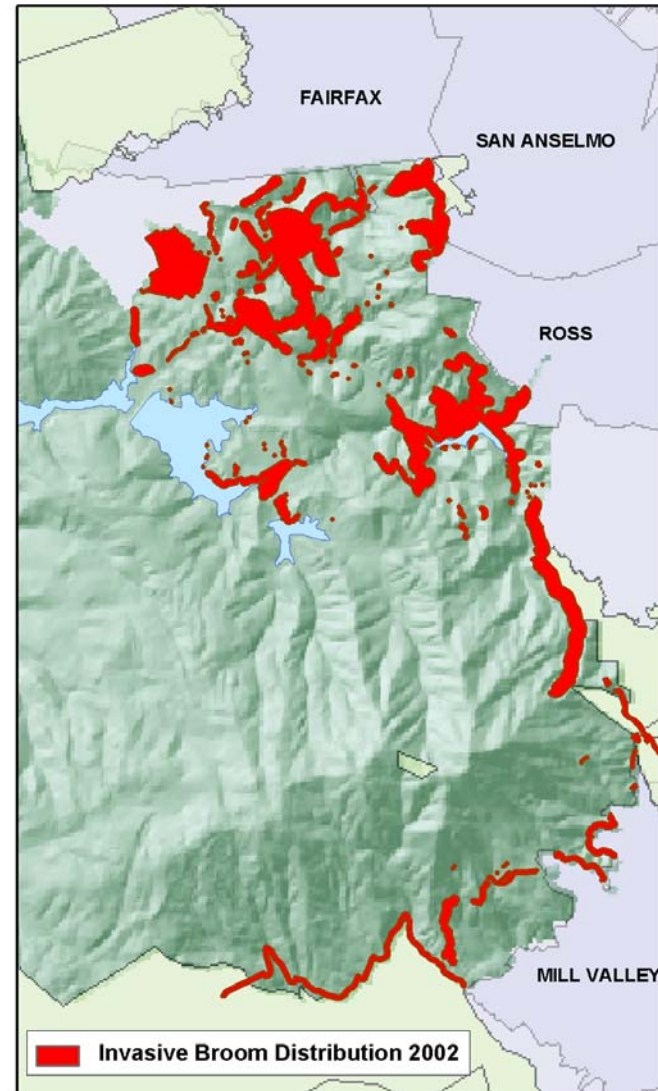


Assumes no fuelbreak or broom expansion.

**DEMONSTRATE SUCCESS**



# Successful Spread Prevention: Early Detection and Eradication of Pioneers



**There is growing public acceptance for aggressive vegetation management for the sake of fire safety.**



# Expanded Assortment of Publically Acceptable Tools:

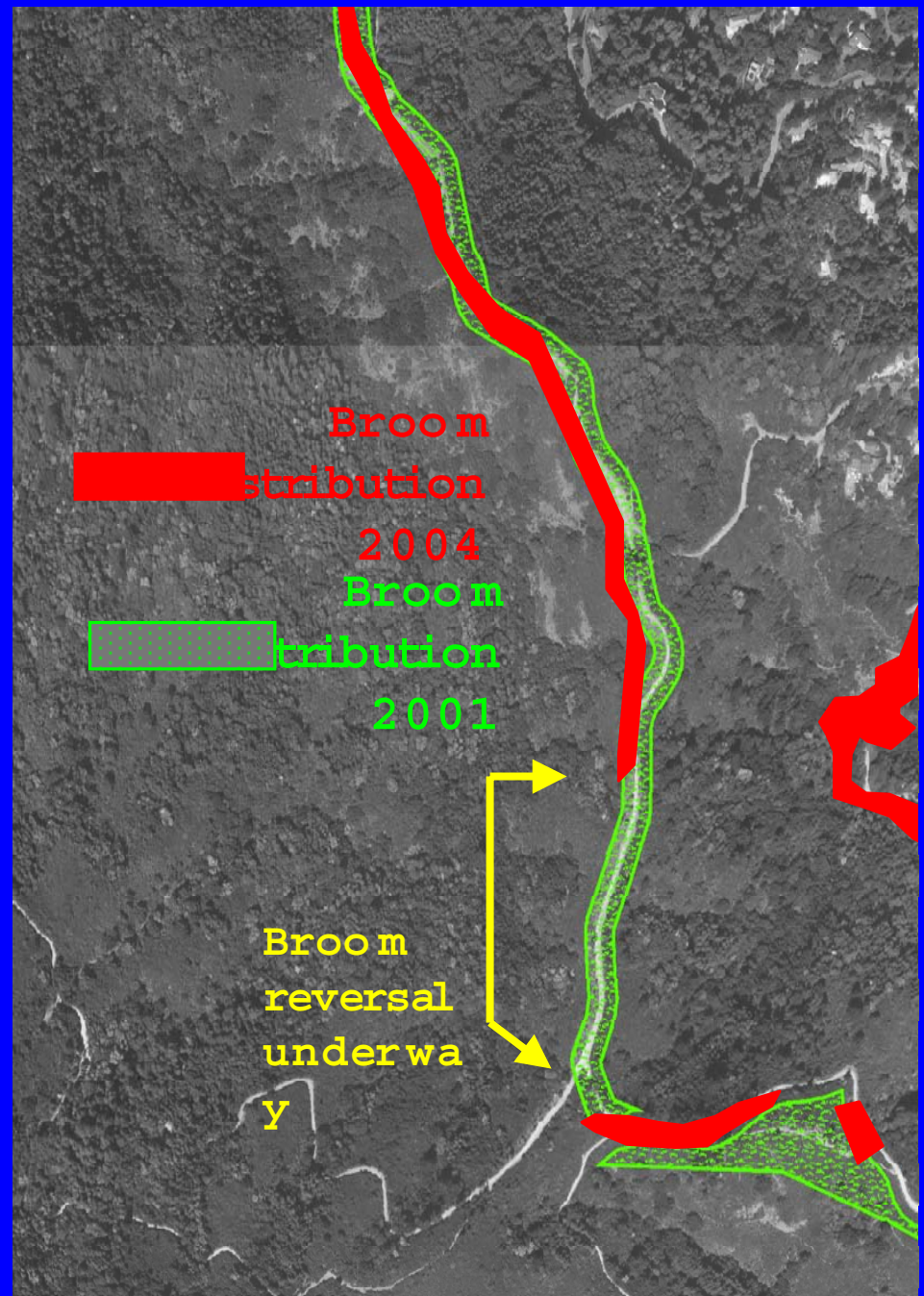


In the late 1990's, MMWD shifted approaches from broom management to broom eradication.

Method shifted from non-lethal mowing, to lethal spot herbicide application.

Prior to herbicide application, broom density in mowed fuelbreaks averaged 85,000 stems per acre.

A single application of 2% Roundup to cut stems (2 months post-mow) reduced live stem densities by 82 %.



# Successful Planning and Maintenance:

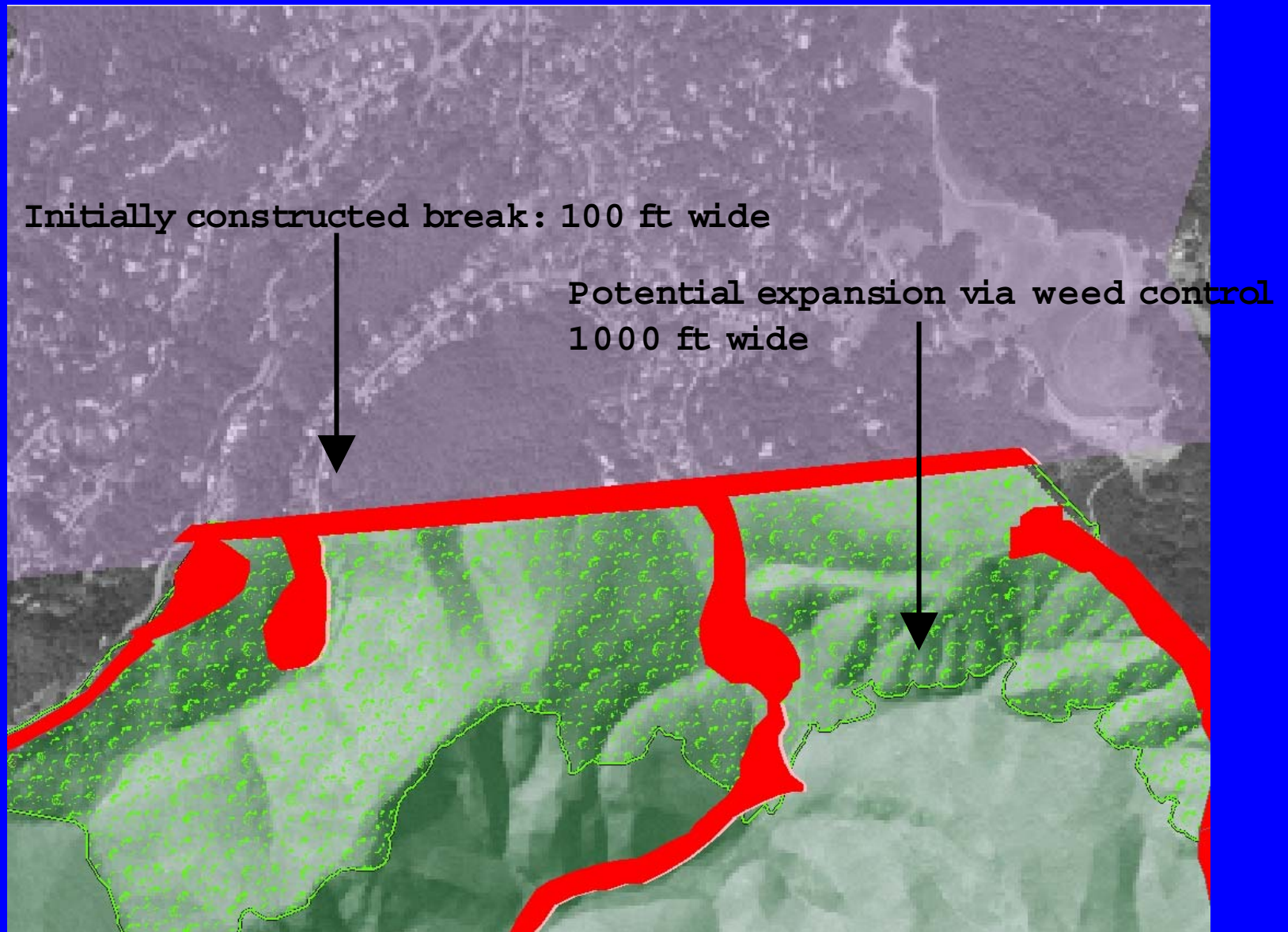
1. Construction phase should last 3-5 years.
2. Construction methods need to include lethal weed control and follow up weed suppression.
3. Funding mechanism for maintenance.
4. On-going monitoring.
5. Fuelbreak design should encompass full extent of weed stands—including weed stands on private, residential properties that abut fuelbreaks.

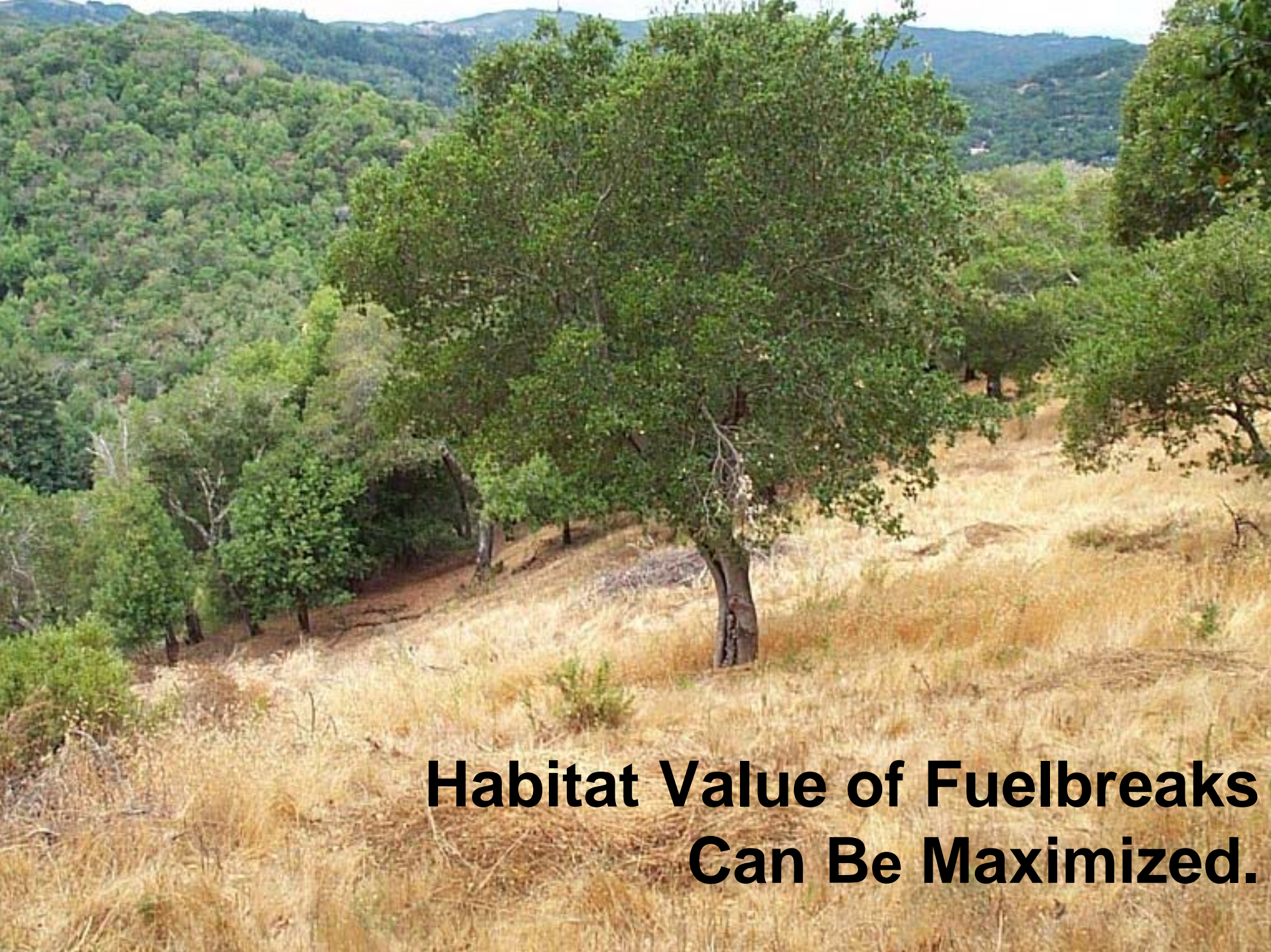


# Ultimate Success: Linking Weed and Fuelbreak Management



# Linking Weed and Fuelbreak Management





**Habitat Value of Fuelbreaks  
Can Be Maximized.**



3.31.200

MOUNT TAMALPAIS  
WATERSHED



1998

TO OLD RAILROAD GRADE  
TO INDIAN  
19

3.31.2004

# THANKS TO:

- MARIN SONOMA WEED MANAGEMENT AREA
- FIRESAFE MARIN/ MARIN COUNTY FIRE DEPT
- MARIN COUNTY OPEN SPACE DISTRICT
- POINT REYES NATIONAL SEASHORE
- GOLDEN GATE NATIONAL RECREATION AREA
- MARIN CONSERVATION CORPS

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