

2004 Early detection survey of *Phytophthora ramorum* in high-risk forests of California

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OBJECTIVES

Sudden Oak Death, caused by the recently described pathogen *Phytophthora ramorum*, is an emerging forest disease that has reached epidemic levels in coastal forests of central and northern California. Because the disease may be too extensive to broadly apply control methods, California has established an active monitoring program focused on early detection of pathogen activity at isolated locations, where it may be possible to apply chemical treatments or attempt eradication. As part of this effort, we have combined modeling efforts that evaluate the risk of disease spread with ground surveys to help target sampling efforts in the most threatened forests. The data collected have also been used to fine-tune the California risk model of *P. ramorum* establishment and spread (Meentemeyer et al. 2004).

This year, we assessed 350 sites for the presence of *P. ramorum* in 37 counties across California (Table 1). Methods and results are described below.

PLOT LOCATIONS

We divided the state into two regions based on proximity to known infestations: 1) an Early-Detection Region defined as all areas further than 10 km from a known *P. ramorum* occurrence and 2) a Region of Infestation (ROI) defined as areas within 10 km of *P. ramorum* occurrences (Figure 1). For both regions, survey locations took place only on public lands (e.g. national forest and state parks) or within road right-of-ways to avoid substantial costs associated with obtaining permission to access private property. The ROI work was supported by match funding granted from the CSU Agricultural Research Initiative to W. Mark and R. Meentemeyer.

Early-Detection Region. Using the *P. ramorum* risk model (Meentemeyer et al. 2004), 249 locations were targeted for early-detection inspection in the most susceptible habitats that occur within 200 m of a road to ensure accessibility.

Region of Infestation. For the infested region, we used a stratified-random procedure to establish 101 survey locations, which evenly distributed plot locations across all risk levels in the region (low, moderate, high, very high).

DATA COLLECTION

Early-Detection Region. Data collected in the Early-Detection Region followed the new protocol for the 2004 National *Phytophthora ramorum* Survey of Forest Environments. The system is based on two 200 m transects that intersect each other at right angles (Figure 2). One transect runs in the upslope direction from plot center, the other 90 degrees clockwise from the

center across the slope. This is not an area-based survey; transect width is simply based on how far you can see, which is dependent upon vegetation density and terrain. Along each transect, leaf samples were collected from all host species showing potential disease symptoms of *P. ramorum*. After collection, up to five of the most symptomatic leaves from no more than five individuals were kept for lab confirmation. Woody tissue samples from the trunk of oaks were collected only if foliar hosts were not present. Foliar and trunk samples were sealed in plastic bags in the field, stored in coolers in cars, and promptly sent via overnight mail to Cheryl Blomquist (CDFA) for pathogen identification in infested counties and to David Rizzo's Lab (UC Davis) in uninfested counties. Samples that could not arrive at a lab by a Friday morning were kept refrigerated and mailed on Monday.

At each site, we are also visually estimated the relative percent cover of host species present and used a Cruz-All ocular gauge to measure basal area of the forest stand from plot center. Transects that traversed non-host habitat (e.g. grassland, chaparral, barren) or crossed a physically inaccessible area were truncated.

Region of Infestation. Data collected within the Region of Infestation followed the methods used in the 2003 early-detection survey in California. At each site, two transects (30 m x 10 m) were established running perpendicular to each other from the plot center (Figure 3). The first transect runs in the upslope direction from plot center and the other runs 90 degrees clockwise from the center across the slope. Symptomatic host material and vegetation composition data were collected and processed in the same fashion as in the Early-Detection Region.

PATHOGEN DETECTION RESULTS

Early-Detection Region. *Phytophthora ramorum* was detected at 1 of 249 sites surveyed in the Early-Detection Region, but not discovered in any uninfested counties (Table 2; Figure 4ab). The pathogen (MAR002; Appendix 1) was confirmed based on DNA only - the culture was not positive. This site was discovered on state owned land at Tomales Bay State Park on the Pt. Reyes Peninsula in western Marin County, 19.5 km from the nearest confirmed infection as of 09/01/04. (Analysis of samples collected at two sites in Humboldt County (HUM326, HUM331; Appendix 1) produced inconclusive laboratory results. The first of these sites is located off Wilder Ridge Rd 14 km northwest of the nearest confirmed infections in Redway. The other site is near the coast along Mattole Road between Ferndale and Petrolia, 59 km northwest of Redway. Pathogen detection results are pending further lab analysis for two sites in San Luis Obispo County and one site in Humboldt County (SLO008, SLO100, HUM036; Appendix 1). Results are also presented by geographic region (Table 2a-2e) and by public land unit (Table 3).

Region of Infestation. *Phytophthora ramorum* was detected at 23 of 101 sites surveyed within the Region of Infestation (Figure 4ab; Appendix 1). Of the 23 sites where *P. ramorum* was detected, 12 sites were confirmed by culture and 11 were confirmed by DNA only. Note that 49 of the 101 sites surveyed were established in high or very high risk habitats; the remaining 52 sites were established in lower risk habitats for risk model validation. One site in Mendocino County (MEN030; Appendix 1) yielded inconclusive laboratory results. This location is very close (500m) to a confirmed infection in Maillard Redwoods State Reserve.

Land Ownership Patterns. Disease incidence varied among public land units (Table 3). *Phytophthora ramorum* was detected at 1 of 4 sites surveyed on land owned by the California Department of Forestry, 8 of 79 sites surveyed on California Department of Parks and Recreation, 1 of 1 sites surveyed at Marin County Open Space District, 1 of 2 sites at Marin Municipal Water District, 4 of 14 sites at Midpeninsula Regional Open Space District, 2 of 5 sites surveyed at NPS National Recreation Areas, 1 of 2 sites on San Mateo County lands, 2 of 11 sites on Santa Clara County lands, 1 of 2 sites on State Lands Commission property, 1 of 4 sites on U.S. Army Corps of Engineers land, and 2 of 144 sites surveyed on USDA Forest Service lands. These results are summarized by public land owner in Table 4.

SUMMARY & CONCLUSIONS

The presence of *Phytophthora ramorum* was assessed at 350 targeted sites in 37 counties across California. Although detected at 1 of 249 sites surveyed in the Early-Detection Region (> 10 km from a known occurrence), the pathogen was not discovered in any uninfested counties. Of the 101 sites surveyed within the Region of Infestation, *P. ramorum* was detected at 23 sites. The three sites with inconclusive pathogen results will be prioritized for resampling during Spring, 2005. These results suggest that *P. ramorum* has not spread significant distances over the past year in California's forest environments. While these results are encouraging, the extensive size of California (408,512 km²) allowed us to assess only a small fraction of the state's high-risk habitats even with targeted sampling and a relatively large sample size. Moreover, almost eighty percent of California's most threatened forests are privately owned, which presents challenging access issues for early detection and management of disease spread (Tables 5a and 5b). Given the extensive number and diversity of threatened habitats in California, risk-based site selection appears to be an effective tool for early detection monitoring and protection. This strategy may play an especially important role in identifying isolated infections before they have established significantly.

Table 1. Thirty-seven survey counties.

| | | | |
|--------------|-------------|-----------------|----------|
| Alameda | Los Angeles | San Bernardino | Solano |
| Amador | Marin | San Diego | Sonoma |
| Butte | Mendocino | San Luis Obispo | Tehama |
| Calaveras | Monterey | San Mateo | Trinity |
| Contra Costa | Napa | Santa Barbara | Tuolumne |
| Del Norte | Nevada | Santa Clara | Ventura |
| El Dorado | Orange | Santa Cruz | Yuba |
| Fresno | Placer | Shasta | |
| Humboldt | Plumas | Sierra | |
| Lake | Riverside | Siskiyou | |

Table 2. Summary of pathogen detection results for the Region of Infestation and Early-Detection Region.

| <i>P.ramorum</i> result | Region of Infestation | Early Detection | Total |
|-------------------------|-----------------------|-----------------|-------|
| Culture Positive | 12 | 0 | 12 |
| DNA Positive | 11 | 1 | 12 |
| Not Detected | 77 | 243 | 320 |
| Result Pending | 0 | 3 | 3 |
| Inconclusive | 1 | 2 | 3 |
| Total | 101 | 249 | 350 |

Table 2a – North Coast Ground Survey Sites by County

| County | Total Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|--------------|---------------------|------------------|--------------|--------------|----------------|--------------|
| Del Norte | 25 | 0 | 0 | 25 | 0 | 0 |
| Humboldt | 42 | 0 | 1 | 38 | 1 | 2 |
| Lake | 6 | 0 | 0 | 6 | 0 | 0 |
| Mendocino | 15 | 0 | 0 | 14 | 0 | 1 |
| Shasta | 4 | 0 | 0 | 4 | 0 | 0 |
| Siskiyou | 3 | 0 | 0 | 3 | 0 | 0 |
| Tehama | 1 | 0 | 0 | 1 | 0 | 0 |
| Trinity | 3 | 0 | 0 | 3 | 0 | 0 |
| Total | 99 | 0 | 1 | 94 | 1 | 3 |

Table 2b – Bay Area Ground Survey Sites by County

| County | Total Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|--------------|---------------------|------------------|--------------|--------------|----------------|--------------|
| Alameda | 3 | 0 | 0 | 3 | 0 | 0 |
| Contra Costa | 12 | 0 | 0 | 12 | 0 | 0 |
| Marin | 25 | 4 | 3 | 18 | 0 | 0 |
| Napa | 5 | 0 | 0 | 5 | 0 | 0 |
| San Mateo | 16 | 2 | 2 | 12 | 0 | 0 |
| Santa Clara | 17 | 1 | 2 | 14 | 0 | 0 |
| Santa Cruz | 15 | 2 | 1 | 12 | 0 | 0 |
| Solano | 3 | 0 | 0 | 3 | 0 | 0 |
| Sonoma | 13 | 2 | 1 | 10 | 0 | 0 |
| Total | 109 | 11 | 9 | 89 | 0 | 0 |

Table 2c – Central Coast Ground Survey Sites by County

| County | Total Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|-----------------|----------------------------|-------------------------|---------------------|---------------------|-----------------------|---------------------|
| Monterey | 16 | 1 | 2 | 13 | 0 | 0 |
| San Luis Obispo | 11 | 0 | 0 | 9 | 2 | 0 |
| Santa Barbara | 9 | 0 | 0 | 9 | 0 | 0 |
| Total | 36 | 1 | 2 | 31 | 2 | 0 |

Table 2d – South Coast Ground Survey Sites by County

| County | Total Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|----------------|----------------------------|-------------------------|---------------------|---------------------|-----------------------|---------------------|
| Los Angeles | 23 | 0 | 0 | 23 | 0 | 0 |
| Orange | 3 | 0 | 0 | 3 | 0 | 0 |
| Riverside | 8 | 0 | 0 | 8 | 0 | 0 |
| San Bernardino | 7 | 0 | 0 | 7 | 0 | 0 |
| San Diego | 38 | 0 | 0 | 38 | 0 | 0 |
| Ventura | 3 | 0 | 0 | 3 | 0 | 0 |
| Total | 82 | 0 | 0 | 82 | 0 | 0 |

Table 2e – Sierra Nevada Ground Survey Sites by County

| County | Total Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|---------------|----------------------------|-------------------------|---------------------|---------------------|-----------------------|---------------------|
| Amador | 2 | 0 | 0 | 2 | 0 | 0 |
| Butte | 4 | 0 | 0 | 4 | 0 | 0 |
| Calaveras | 3 | 0 | 0 | 3 | 0 | 0 |
| El Dorado | 3 | 0 | 0 | 3 | 0 | 0 |
| Fresno | 1 | 0 | 0 | 1 | 0 | 0 |
| Nevada | 1 | 0 | 0 | 1 | 0 | 0 |
| Placer | 2 | 0 | 0 | 2 | 0 | 0 |
| Plumas | 1 | 0 | 0 | 1 | 0 | 0 |
| Sierra | 2 | 0 | 0 | 2 | 0 | 0 |
| Tuolumne | 3 | 0 | 0 | 3 | 0 | 0 |
| Yuba | 2 | 0 | 0 | 2 | 0 | 0 |
| Total | 24 | 0 | 0 | 24 | 0 | 0 |

Table 3 – Ground Survey Sites by County and Public Land Unit

| County | Land Unit | Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|---------------|------------------------------|---------------|------------------|--------------|--------------|----------------|--------------|
| Alameda | Anthony Chabot Regional Park | 2 | 0 | 0 | 2 | 0 | 0 |
| | Redwood Regional Park | 1 | 0 | 0 | 1 | 0 | 0 |
| Amador | BLM | 2 | 0 | 0 | 2 | 0 | 0 |
| Butte | Plumas NF | 4 | 0 | 0 | 4 | 0 | 0 |
| Calaveras | BLM | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Parrots Ferry Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | Stanislaus NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Contra Costa | Briones Regional Park | 2 | 0 | 0 | 2 | 0 | 0 |
| | EBMUD | 2 | 0 | 0 | 2 | 0 | 0 |
| | Huckleberry Botanic RP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Las Trampas RW | 2 | 0 | 0 | 2 | 0 | 0 |
| | Mount Diablo SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | Redwood Regional Park | 2 | 0 | 0 | 2 | 0 | 0 |
| | Wildcat Canyon Regional Park | 1 | 0 | 0 | 1 | 0 | 0 |
| Del Norte | Del Norte Coast Redwoods SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | Jedediah Smith Redwoods SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | Mill Creek | 3 | 0 | 0 | 3 | 0 | 0 |
| | Six Rivers NF | 18 | 0 | 0 | 18 | 0 | 0 |
| El Dorado | Eldorado NF | 3 | 0 | 0 | 3 | 0 | 0 |
| Fresno | Sierra NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Humboldt | A. W. Way County Park | 1 | 0 | 0 | 1 | 0 | 0 |
| | Benbow Lake SRA | 1 | 0 | 0 | 1 | 0 | 0 |
| | BLM | 7 | 0 | 0 | 6 | 1 | 0 |
| | Humboldt Redwoods SP | 6 | 0 | 0 | 6 | 0 | 0 |
| | John B. Dewitt SRA | 1 | 0 | 1 | 0 | 0 | 0 |
| | off Lighthouse Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Mattole Rd | 2 | 0 | 0 | 1 | 0 | 1 |
| | Prairie Creek Redwoods SP | 4 | 0 | 0 | 4 | 0 | 0 |
| | Private | 2 | 0 | 0 | 1 | 0 | 1 |
| | Redwood NP | 5 | 0 | 0 | 5 | 0 | 0 |
| | Sinkyone Wilderness SP | 2 | 0 | 0 | 2 | 0 | 0 |
| Six Rivers NF | 10 | 0 | 0 | 10 | 0 | 0 | |
| Lake | BLM | 4 | 0 | 0 | 4 | 0 | 0 |
| | Robert Louis Stevenson SP | 2 | 0 | 0 | 2 | 0 | 0 |
| Los Angeles | Angeles NF | 19 | 0 | 0 | 19 | 0 | 0 |
| | Malibu Creek SP | 3 | 0 | 0 | 3 | 0 | 0 |
| | Topanga SP | 1 | 0 | 0 | 1 | 0 | 0 |
| Marin | China Camp SP | 1 | 1 | 0 | 0 | 0 | 0 |
| | Golden Gate NRA | 3 | 2 | 0 | 1 | 0 | 0 |
| | Kent Alpine Bon Tempe | 1 | 0 | 1 | 0 | 0 | 0 |
| | Lagunitas Phoenix Watershed | 1 | 1 | 0 | 0 | 0 | 0 |
| | Mount Burdell OSP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Mount Tamalpais SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Olmopoli SHP | 1 | 0 | 1 | 0 | 0 | 0 |
| | Point Reyes NS | 15 | 0 | 0 | 15 | 0 | 0 |
| | Soulajule Watershed | 1 | 0 | 0 | 1 | 0 | 0 |

| County | Land Unit | Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|-----------------|---------------------------------------|---------------|------------------|--------------|--------------|----------------|--------------|
| Marin | Tomales Bay SP | 1 | 0 | 1 | 0 | 0 | 0 |
| Mendocino | BLM | 4 | 0 | 0 | 4 | 0 | 0 |
| | Hendy Woods SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | Hopland Research and Extension Center | 1 | 0 | 0 | 1 | 0 | 0 |
| | Jackson State Forest | 3 | 0 | 0 | 3 | 0 | 0 |
| | Mailliard Redwoods SR | 3 | 0 | 0 | 2 | 0 | 1 |
| | Sinkyone Wilderness SP | 2 | 0 | 0 | 2 | 0 | 0 |
| Monterey | Andrew Molera SP | 2 | 0 | 1 | 1 | 0 | 0 |
| | Lime Kiln SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Los Padres NF | 13 | 1 | 1 | 11 | 0 | 0 |
| Napa | BLM | 2 | 0 | 0 | 2 | 0 | 0 |
| | Robert Louis Stevenson SP | 3 | 0 | 0 | 3 | 0 | 0 |
| Nevada | Tahoe NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Orange | Cleveland NF | 3 | 0 | 0 | 3 | 0 | 0 |
| Placer | Bureau of Reclamation | 1 | 0 | 0 | 1 | 0 | 0 |
| | Tahoe NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Plumas | Plumas NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Riverside | Cleveland NF | 4 | 0 | 0 | 4 | 0 | 0 |
| | San Bernardino NF | 4 | 0 | 0 | 4 | 0 | 0 |
| San Bernardino | Angeles NF | 1 | 0 | 0 | 1 | 0 | 0 |
| | Chino Hills SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | San Bernardino NF | 3 | 0 | 0 | 3 | 0 | 0 |
| | Wildwood Canyon Ranch | 1 | 0 | 0 | 1 | 0 | 0 |
| San Diego | Cleveland NF | 30 | 0 | 0 | 30 | 0 | 0 |
| | Cuyamaca Rancho SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Boulder Creek Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Dehasa Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Hauser Creek Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Japatul Rd | 2 | 0 | 0 | 2 | 0 | 0 |
| | off Pine Creek Rd | 2 | 0 | 0 | 2 | 0 | 0 |
| San Luis Obispo | Bishop Peak Natural Reserve | 1 | 0 | 0 | 1 | 0 | 0 |
| | BLM | 3 | 0 | 0 | 3 | 0 | 0 |
| | CSU San Luis Obispo | 1 | 0 | 0 | 1 | 0 | 0 |
| | Los Padres NF | 4 | 0 | 0 | 3 | 1 | 0 |
| | Morro Bay SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | off Hi Mountain Rd | 1 | 0 | 0 | 0 | 1 | 0 |
| San Mateo | Butano SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | El Corte De Madera Creek | 3 | 0 | 0 | 3 | 0 | 0 |
| | La Honda Creek | 3 | 0 | 1 | 2 | 0 | 0 |
| | Long Ridge | 1 | 1 | 0 | 0 | 0 | 0 |
| | Montara SB | 1 | 0 | 0 | 1 | 0 | 0 |
| | Pescadero Creek County Park | 1 | 0 | 0 | 1 | 0 | 0 |
| | Portola Redwoods SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Purisima Creek Redwoods | 1 | 0 | 0 | 1 | 0 | 0 |
| | Thornewood | 1 | 1 | 0 | 0 | 0 | 0 |
| | Windy Hill | 1 | 0 | 0 | 1 | 0 | 0 |
| | Wunderlich County Park | 1 | 0 | 1 | 0 | 0 | 0 |
| Santa Barbara | Gaviota SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | La Purisima Mission SHP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Los Padres NF | 7 | 0 | 0 | 7 | 0 | 0 |

| County | Land Unit | Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|--------------|-------------------------------|---------------|------------------|--------------|--------------|----------------|--------------|
| Santa Clara | Almaden Quicksilver Park | 1 | 0 | 0 | 1 | 0 | 0 |
| | Calero Reservoir | 1 | 0 | 0 | 1 | 0 | 0 |
| | Foothills | 1 | 0 | 0 | 1 | 0 | 0 |
| | Henry W. Coe SP | 2 | 0 | 0 | 2 | 0 | 0 |
| | Joseph D. Grant Park | 2 | 0 | 0 | 2 | 0 | 0 |
| | Lower Stevens Creek | 1 | 0 | 1 | 0 | 0 | 0 |
| | Monte Bello OSP | 1 | 1 | 0 | 0 | 0 | 0 |
| | Mount Madonna Park | 2 | 0 | 0 | 2 | 0 | 0 |
| | Rancho de Guadalupe | 1 | 0 | 0 | 1 | 0 | 0 |
| | Sanborn - Skyline Park | 2 | 0 | 1 | 1 | 0 | 0 |
| | Sierra Azul - C.O. | 1 | 0 | 0 | 1 | 0 | 0 |
| | Uvas Canyon | 2 | 0 | 0 | 2 | 0 | 0 |
| Santa Cruz | Big Basin Redwoods SP | 4 | 0 | 0 | 4 | 0 | 0 |
| | Castle Rock SP | 3 | 0 | 0 | 3 | 0 | 0 |
| | Henry Cowell Redwoods SP | 3 | 0 | 1 | 2 | 0 | 0 |
| | Soquel State Forest | 1 | 1 | 0 | 0 | 0 | 0 |
| | The Forest Of Nisene Marks SP | 2 | 1 | 0 | 1 | 0 | 0 |
| | Wilder Ranch SP | 2 | 0 | 0 | 2 | 0 | 0 |
| Shasta | BLM | 1 | 0 | 0 | 1 | 0 | 0 |
| | Shasta-Trinity NF | 1 | 0 | 0 | 1 | 0 | 0 |
| | Whiskeytown-Shasta NRA | 2 | 0 | 0 | 2 | 0 | 0 |
| Sierra | Tahoe NF | 2 | 0 | 0 | 2 | 0 | 0 |
| Siskiyou | Klamath NF | 3 | 0 | 0 | 3 | 0 | 0 |
| Solano | Hunter Ranch | 1 | 0 | 0 | 1 | 0 | 0 |
| | Vallejo Lakes | 2 | 0 | 0 | 2 | 0 | 0 |
| Sonoma | Austin Creek SRA | 5 | 0 | 1 | 4 | 0 | 0 |
| | Lk Sonoma Recreation Area | 2 | 1 | 0 | 1 | 0 | 0 |
| | Lk Sonoma Wildlife Mgmt Area | 2 | 0 | 0 | 2 | 0 | 0 |
| | Salt Point SP | 1 | 0 | 0 | 1 | 0 | 0 |
| | Shiloh Ranch | 1 | 0 | 0 | 1 | 0 | 0 |
| | Soda Springs Reserve | 1 | 0 | 0 | 1 | 0 | 0 |
| | Sonoma Developmental Center | 1 | 1 | 0 | 0 | 0 | 0 |
| Tehama | Shasta-Trinity NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Trinity | Shasta-Trinity NF | 1 | 0 | 0 | 1 | 0 | 0 |
| | Six Rivers NF | 2 | 0 | 0 | 2 | 0 | 0 |
| Tuolumne | off Wards Ferry Rd | 1 | 0 | 0 | 1 | 0 | 0 |
| | Stanislaus NF | 1 | 0 | 0 | 1 | 0 | 0 |
| | Yosemite NP | 1 | 0 | 0 | 1 | 0 | 0 |
| Ventura | Los Padres NF | 3 | 0 | 0 | 3 | 0 | 0 |
| Yuba | Plumas NF | 1 | 0 | 0 | 1 | 0 | 0 |
| | Tahoe NF | 1 | 0 | 0 | 1 | 0 | 0 |
| Total | | 350 | 12 | 12 | 320 | 3 | 3 |

Table 4 – Ground Survey Results by Land Owner

| LAND OWNER | Sites Visited | Culture Positive | DNA Positive | Not Detected | Result Pending | Inconclusive |
|-----------------------------------------|----------------------|-------------------------|---------------------|---------------------|-----------------------|---------------------|
| Bureau Of Land Management | 24 | 0 | 0 | 23 | 1 | 0 |
| Bureau Of Reclamation | 1 | 0 | 0 | 1 | 0 | 0 |
| CA Dept of Forestry and Fire Protection | 4 | 1 | 0 | 3 | 0 | 0 |
| CA Dept of Parks and Recreation | 79 | 2 | 6 | 70 | 0 | 1 |
| City of San Luis Obispo | 1 | 0 | 0 | 1 | 0 | 0 |
| City of Vallejo | 3 | 0 | 0 | 3 | 0 | 0 |
| East Bay Municipal Utility District | 2 | 0 | 0 | 2 | 0 | 0 |
| East Bay Regional Park District | 11 | 0 | 0 | 11 | 0 | 0 |
| Humboldt County | 1 | 0 | 0 | 1 | 0 | 0 |
| Marin County OSD | 1 | 1 | 0 | 0 | 0 | 0 |
| Marin Municipal Water District | 2 | 0 | 1 | 1 | 0 | 0 |
| Midpeninsula Regional OSD | 14 | 3 | 1 | 10 | 0 | 0 |
| NPS - National Park | 6 | 0 | 0 | 6 | 0 | 0 |
| NPS - National Recreation Area | 5 | 2 | 0 | 3 | 0 | 0 |
| NPS - National Seashore | 15 | 0 | 0 | 15 | 0 | 0 |
| San Mateo County | 2 | 0 | 1 | 1 | 0 | 0 |
| Santa Clara County | 11 | 0 | 2 | 9 | 0 | 0 |
| Sonoma County | 2 | 0 | 0 | 2 | 0 | 0 |
| State Lands Commission | 2 | 1 | 0 | 1 | 0 | 0 |
| U.S. Army Corps of Engineers | 4 | 1 | 0 | 3 | 0 | 0 |
| University Of California | 1 | 0 | 0 | 1 | 0 | 0 |
| USDA Forest Service | 144 | 1 | 1 | 141 | 1 | 0 |
| Private | 15 | 0 | 0 | 12 | 1 | 2 |
| Total | 350 | 12 | 12 | 320 | 3 | 3 |

Table 5a - High and Very High SOD Risk by Ownership Type (Statewide)

| Ownership Type | Acres of High and Very High SOD Risk | Proportion of Total |
|---------------------------------|---------------------------------------------|----------------------------|
| Bureau of Land Management | 68,617 | 2.8% |
| Department of Defense | 4,208 | 0.2% |
| Local Agencies | 57,916 | 2.4% |
| National Park Service | 56,577 | 2.3% |
| Other Federal | 672 | 0.0% |
| Other State | 24,210 | 1.0% |
| Private | 1,919,878 | 78.5% |
| CA Dept of Parks and Recreation | 148,171 | 6.1% |
| U.S. Forest Service | 164,118 | 6.7% |
| Total | 2,444,368 | 100.0% |

Table 5b - High and Very High SOD Risk by Ownership Type (Region of Infestation)

| Ownership Type | Acres of High and Very High SOD Risk | Proportion of Total |
|---------------------------------|---------------------------------------------|----------------------------|
| Bureau of Land Management | 2,668 | 0.4% |
| Department of Defense | 3,157 | 0.4% |
| Local Agencies | 48,242 | 6.5% |
| National Park Service | 12,678 | 1.7% |
| Other Federal | 17 | 0.0% |
| Other State | 6,767 | 0.9% |
| Private | 599,330 | 80.9% |
| CA Dept of Parks and Recreation | 52,496 | 7.1% |
| U.S. Forest Service | 15,292 | 2.1% |
| Total | 740,647 | 100.0% |

Figure 1. Regions of Infestation and Early Detection in California. Points are locations of *Phytophthora ramorum* presence confirmed by CDFA and maintained by COMTF as of 04/27/04. The shaded area is the Region of Infestation defined to be within 10 km of *P. ramorum* occurrences. Areas not shaded are further than 10 km from a *P. ramorum* site and are targeted for Early-Detection surveys.

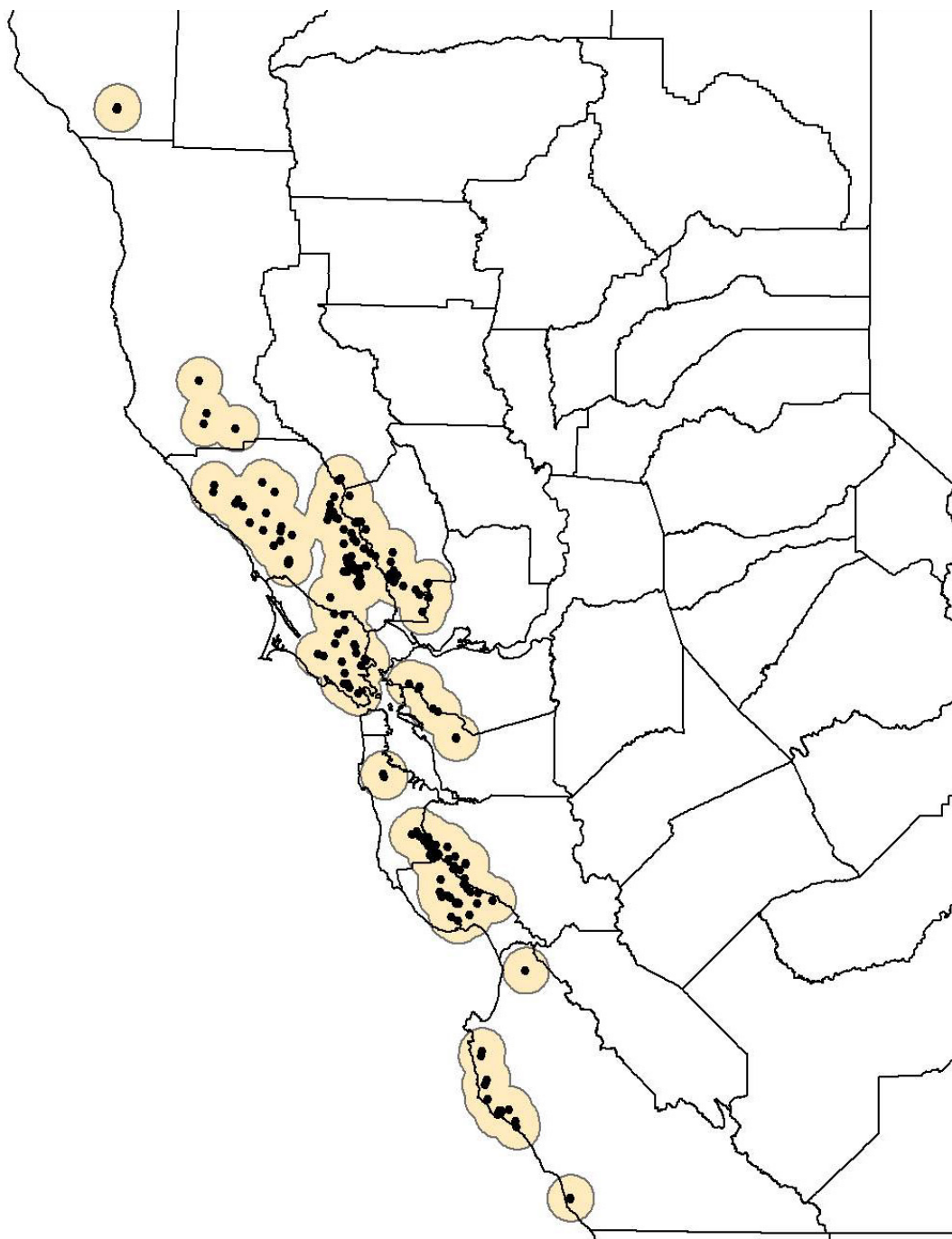


Figure 2.

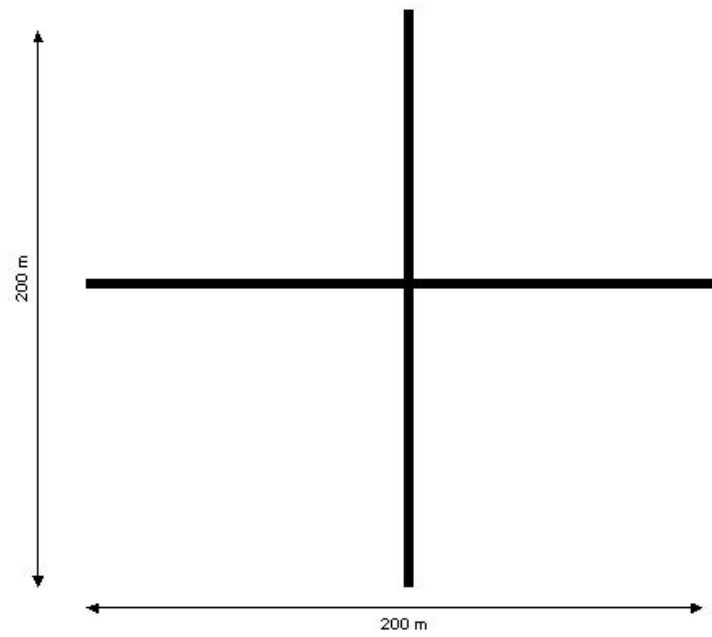


Figure 3.

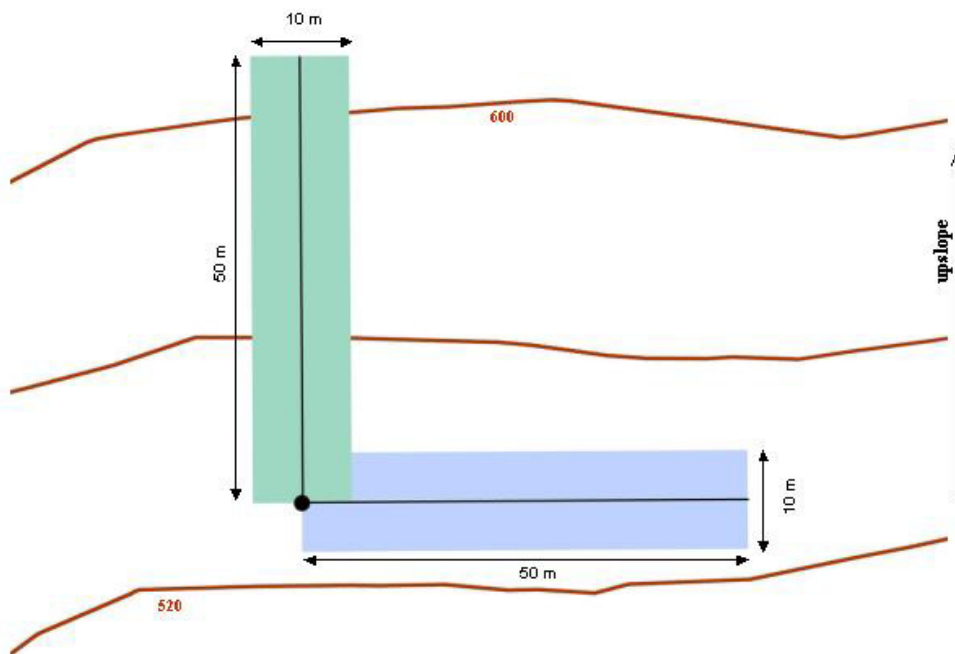


Figure 4a.

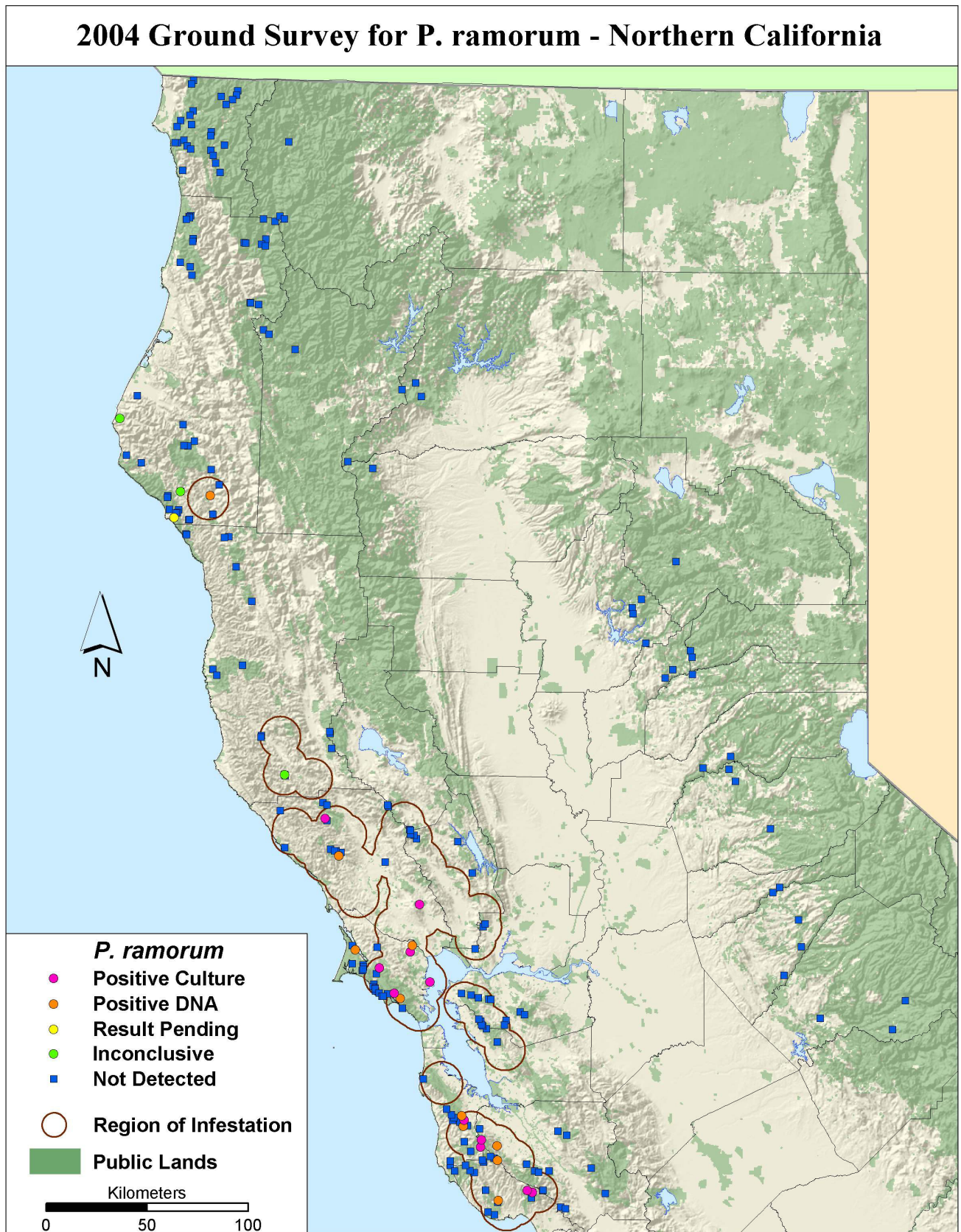
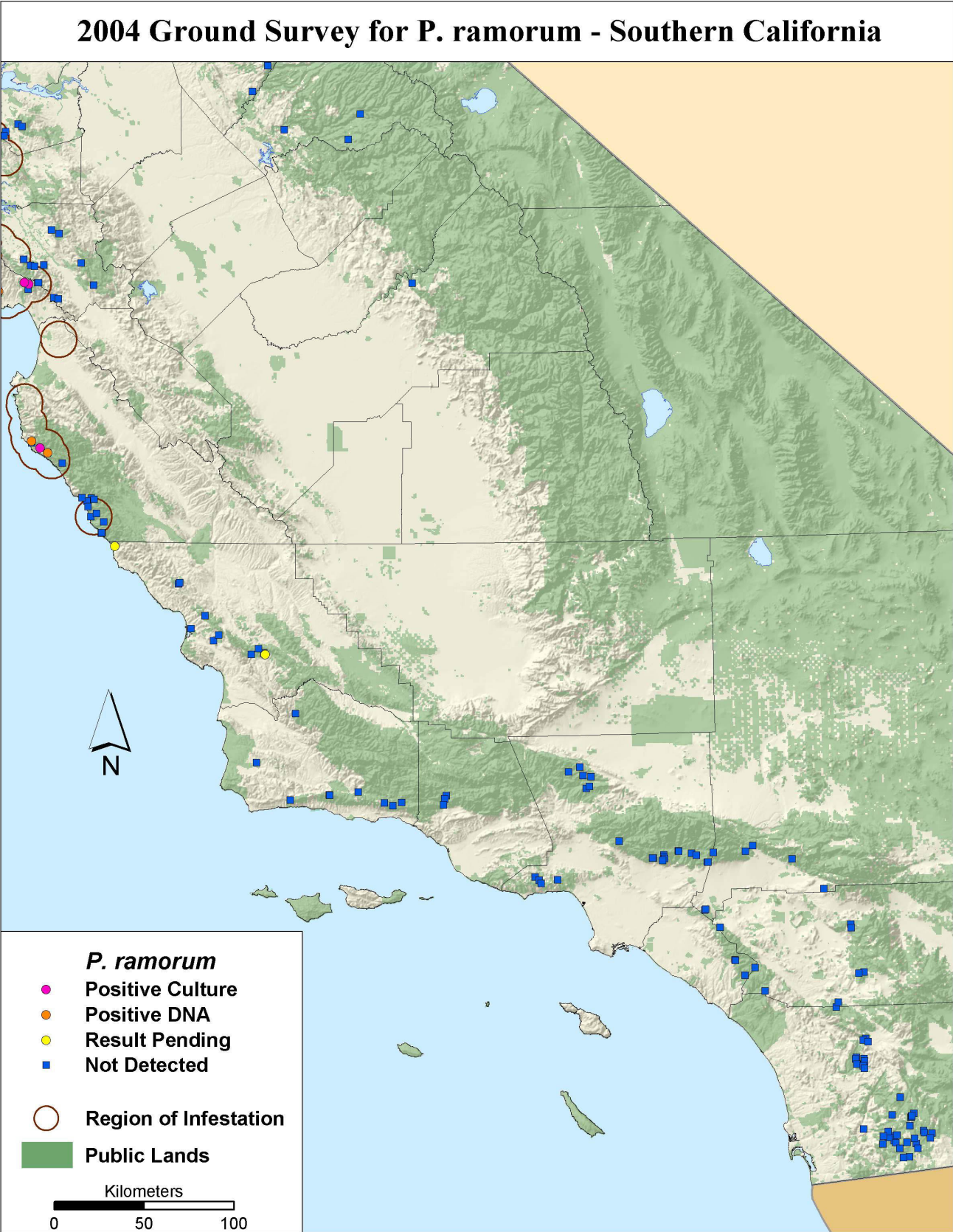


Figure 4b.



Appendix 1 – 2004 Ground Survey Results for all sites

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone | |
|--------------|--------------|---------------------|-----------------------|---------------------|---------|----------|-----|
| Alameda | ALA001 | Not Detected | Redwood | 4185229 | 573126 | 10S | |
| | ALA002 | Not Detected | Redwood | 4183743 | 575064 | 10S | |
| | ALA003 | Not Detected | Mixed Hardwoods | 4177505 | 580545 | 10S | |
| Amador | SRA401 | Not Detected | Ponderosa Pine | 4258221 | 718149 | 10S | |
| | SRA402 | Not Detected | Interior Live Oak | 4255650 | 714673 | 10S | |
| Butte | SRA007 | Not Detected | Douglas-Fir - Pine | 4398337 | 645075 | 10S | |
| | SRA012 | Not Detected | Tanoak (Madrone) | 4394125 | 640471 | 10S | |
| | SRA013 | Not Detected | Tanoak (Madrone) | 4391179 | 641070 | 10S | |
| | SRA014 | Not Detected | California Black Oak | 4376741 | 647866 | 10S | |
| Calaveras | SRA403 | Not Detected | Mixed Conifer - Pine | 4242475 | 728015 | 10S | |
| | SRA404 | Not Detected | Ponderosa Pine | 4229377 | 729763 | 10S | |
| | SRA405 | Not Detected | Chamise | 4214890 | 721753 | 10S | |
| Contra Costa | CON001 | Not Detected | Redwood | 4187453 | 572146 | 10S | |
| | CON002 | Not Detected | Redwood | 4188536 | 571104 | 10S | |
| | CON003 | Not Detected | Redwood | 4185754 | 572553 | 10S | |
| | CON004 | Not Detected | Mixed Hardwoods | 4200202 | 566982 | 10S | |
| | CON005 | Not Detected | Mixed Hardwoods | 4198621 | 575681 | 10S | |
| | CON006 | Not Detected | Mixed Hardwoods | 4188216 | 584713 | 10S | |
| | CON007 | Not Detected | Annual Grass/Forbs | 4200829 | 562097 | 10S | |
| | CON008 | Not Detected | Annual Grass/Forbs | 4198444 | 576757 | 10S | |
| | CON009 | Not Detected | Chamise | 4185920 | 583930 | 10S | |
| | CON015 | Not Detected | Annual Grass/Forbs | 4198990 | 570629 | 10S | |
| | CON301 | Not Detected | Annual Grass/Forbs | 4192638 | 591417 | 10S | |
| | CON302 | Not Detected | Annual Grass/Forbs | 4191379 | 593784 | 10S | |
| | Del Norte | DNT001 | Not Detected | Tanoak (Madrone) | 4648133 | 415341 | 10T |
| | | DNT002 | Not Detected | Pacific Douglas-Fir | 4630727 | 414220 | 10T |
| | | DNT003 | Not Detected | Annual Grass/Forbs | 4626193 | 415027 | 10T |
| DNT005 | | Not Detected | Tanoak (Madrone) | 4620848 | 424868 | 10T | |
| DNT006 | | Not Detected | Tanoak (Madrone) | 4618406 | 411578 | 10T | |
| DNT007 | | Not Detected | Tanoak (Madrone) | 4617049 | 408447 | 10T | |
| DNT008 | | Not Detected | Redwood - Douglas-Fir | 4615636 | 413227 | 10T | |
| DNT009 | | Not Detected | Tanoak (Madrone) | 4613747 | 424977 | 10T | |
| DNT010 | | Not Detected | Tanoak (Madrone) | 4613980 | 415014 | 10T | |
| DNT013 | | Not Detected | Pacific Douglas-Fir | 4646227 | 414510 | 10T | |
| DNT014 | | Not Detected | Pacific Douglas-Fir | 4641488 | 436921 | 10T | |
| DNT015 | | Not Detected | Pacific Douglas-Fir | 4640643 | 429326 | 10T | |
| DNT016 | | Not Detected | Pacific Douglas-Fir | 4639150 | 434862 | 10T | |
| DNT019 | | Not Detected | Redwood | 4628069 | 409720 | 10T | |
| DNT020 | | Not Detected | Redwood | 4624947 | 407910 | 10T | |
| DNT024 | | Not Detected | Pacific Douglas-Fir | 4602878 | 429973 | 10T | |
| DNT028 | | Not Detected | Tanoak (Madrone) | 4616577 | 431628 | 10T | |
| DNT029 | | Not Detected | Tanoak (Madrone) | 4603365 | 411352 | 10T | |
| DNT031 | | Not Detected | Pacific Douglas-Fir | 4632938 | 415647 | 10T | |
| DNT032 | | Not Detected | Tanoak (Madrone) | 4643565 | 437452 | 10T | |
| DNT033 | | Not Detected | Redwood | 4617071 | 407314 | 10T | |
| DNT034 | | Not Detected | Pacific Douglas-Fir | 4611228 | 426321 | 10T | |
| DNT037 | | Not Detected | Tanoak (Madrone) | 4622838 | 424853 | 10T | |
| DNT042 | Not Detected | Tanoak (Madrone) | 4607426 | 427629 | 10T | | |
| DNT043 | Not Detected | Pacific Douglas-Fir | 4636732 | 431885 | 10T | | |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone |
|-----------|--------------|---------------------|------------------------|----------|---------|----------|
| El Dorado | SRA004 | Not Detected | Douglas-Fir - Pine | 4310043 | 694496 | 10S |
| | SRA024 | Not Detected | California Black Oak | 4315872 | 691008 | 10S |
| | SRA400 | Not Detected | Mixed Conifer - Pine | 4287172 | 712623 | 10S |
| Fresno | SRA002 | Not Detected | Interior Live Oak | 4108155 | 281169 | 11S |
| Humboldt | HUM001 | Not Detected | Redwood - Douglas-Fir | 4569654 | 417718 | 10T |
| | HUM002 | Not Detected | Tanoak (Madrone) | 4568248 | 417386 | 10T |
| | HUM004 | Not Detected | Tanoak (Madrone) | 4555710 | 416586 | 10T |
| | HUM007 | Not Detected | Tanoak (Madrone) | 4435363 | 410125 | 10T |
| | HUM011 | Not Detected | Pacific Douglas-Fir | 4442081 | 409036 | 10T |
| | HUM012 | Not Detected | Pacific Douglas-Fir | 4441404 | 408933 | 10T |
| | HUM013 | Not Detected | Tanoak (Madrone) | 4435314 | 414694 | 10T |
| | HUM015 | Not Detected | Tanoak (Madrone) | 4434004 | 414069 | 10T |
| | HUM016 | Not Detected | Redwood | 4581026 | 416108 | 10T |
| | HUM017 | Not Detected | Redwood | 4580052 | 415459 | 10T |
| | HUM018 | Not Detected | Tanoak (Madrone) | 4580617 | 452044 | 10T |
| | HUM019 | Not Detected | Pacific Douglas-Fir | 4570693 | 453566 | 10T |
| | HUM020 | Not Detected | Tanoak (Madrone) | 4568276 | 443641 | 10T |
| | HUM021 | Not Detected | Pacific Douglas-Fir | 4568533 | 442835 | 10T |
| | HUM022 | Not Detected | Pacific Douglas-Fir | 4568085 | 451425 | 10T |
| | HUM023 | Not Detected | Pacific Douglas-Fir | 4567191 | 453557 | 10T |
| | HUM026 | Not Detected | Pacific Douglas-Fir | 4538877 | 446990 | 10T |
| | HUM027 | Not Detected | Tanoak (Madrone) | 4538221 | 450937 | 10T |
| | HUM028 | Not Detected | Redwood | 4477644 | 415449 | 10T |
| | HUM030 | Not Detected | Redwood | 4469616 | 421238 | 10T |
| | HUM031 | Not Detected | Tanoak (Madrone) | 4557741 | 411637 | 10T |
| | HUM033 | Not Detected | Tanoak (Madrone) | 4551673 | 417497 | 10T |
| | HUM036 | Result Pending | Tanoak (Madrone) | 4431545 | 412493 | 10T |
| | HUM037 | Not Detected | Tanoak (Madrone) | 4430806 | 420080 | 10T |
| | HUM038 | Not Detected | Annual Grass/Forbs | 4430583 | 419810 | 10T |
| | HUM045 | Not Detected | Redwood | 4455848 | 430167 | 10T |
| | HUM053 | Not Detected | Tanoak (Madrone) | 4433754 | 413256 | 10T |
| | HUM056 | Not Detected | Pacific Douglas-Fir | 4579444 | 457924 | 10T |
| | HUM063 | Not Detected | Pacific Douglas-Fir | 4448424 | 434294 | 10T |
| | HUM064 | Not Detected | Pacific Douglas-Fir | 4433758 | 431545 | 10T |
| | HUM065 | DNA Positive | Redwood | 4442945 | 430142 | 10T |
| | HUM070 | Not Detected | Redwood | 4580648 | 415258 | 10T |
| | HUM071 | Not Detected | Sitka Spruce - Redwood | 4579160 | 413939 | 10T |
| HUM100 | Not Detected | Pacific Douglas-Fir | 4538906 | 446837 | 10T | |
| HUM325 | Not Detected | Pacific Douglas-Fir | 4444599 | 415369 | 10T | |
| HUM326 | Inconclusive | Pacific Douglas-Fir | 4444591 | 415254 | 10T | |
| HUM327 | Not Detected | Redwood | 4467114 | 418179 | 10T | |
| HUM328 | Not Detected | Redwood | 4467204 | 416121 | 10T | |
| HUM329 | Not Detected | Annual Grass/Forbs | 4458114 | 395357 | 10T | |
| HUM330 | Not Detected | Barren/Rock | 4461641 | 387853 | 10T | |
| HUM331 | Inconclusive | Annual Grass/Forbs | 4479871 | 384154 | 10T | |
| HUM332 | Not Detected | Red Alder | 4491240 | 392372 | 10T | |
| Lake | LAK002 | Not Detected | Mixed Hardwoods | 4292780 | 522497 | 10S |
| | LAK004 | Not Detected | Mixed Hardwoods | 4327205 | 492979 | 10S |
| | LAK006 | Not Detected | Mixed Hardwoods | 4328143 | 492737 | 10S |
| | LAK007 | Not Detected | Mixed Hardwoods | 4291986 | 523006 | 10S |
| | LAK008 | Not Detected | Mixed Hardwoods | 4280935 | 533816 | 10S |
| | LAK009 | Not Detected | Douglas-Fir - Pine | 4280589 | 534313 | 10S |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone | |
|-------------|---------|-------------------|-------------------------------|---------------------|---------|----------|-----|
| Los Angeles | SOC007 | Not Detected | California Bay | 3787786 | 419851 | 11S | |
| | SOC013 | Not Detected | Ceanothus Mixed Chaparral | 3786454 | 427028 | 11S | |
| | SOC014 | Not Detected | Canyon Live Oak | 3785994 | 411681 | 11S | |
| | SOC017 | Not Detected | Mixed Hardwoods | 3785149 | 411526 | 11S | |
| | SOC019 | Not Detected | Mixed Hardwoods | 3784355 | 405634 | 11S | |
| | SOC020 | Not Detected | Mixed Hardwoods | 3783976 | 412070 | 11S | |
| | SOC027 | Not Detected | Scrub Oak | 3781261 | 436090 | 11S | |
| | SOC037 | Not Detected | Canyon Live Oak | 3784288 | 405277 | 11S | |
| | SOC051 | Not Detected | Coast Live Oak | 3831414 | 367968 | 11S | |
| | SOC053 | Not Detected | Mixed Riparian Hardwoods | 3833654 | 359864 | 11S | |
| | SOC054 | Not Detected | Coast Live Oak | 3824329 | 369381 | 11S | |
| | SOC055 | Not Detected | Lower Montane Mixed Chaparral | 3825281 | 371345 | 11S | |
| | SOC057 | Not Detected | Coast Live Oak | 3830598 | 372339 | 11S | |
| | SOC062 | Not Detected | Coulter Pine | 3794351 | 387060 | 11S | |
| | SOC066 | Not Detected | Valley Oak | 3773887 | 341792 | 11S | |
| | SOC067 | Not Detected | Sumac (Rhus) | 3782875 | 410870 | 11S | |
| | SOC069 | Not Detected | Ceanothus Mixed Chaparral | 3775748 | 339504 | 11S | |
| | SOC071 | Not Detected | Ceanothus Mixed Chaparral | 3772264 | 342734 | 11S | |
| | SOC104 | Not Detected | Mixed Soft Scrub Chaparral | 3788015 | 419783 | 11S | |
| | SOC126 | Not Detected | Buckwheat (White Sage) | 3836331 | 366246 | 11S | |
| | SOC137 | Not Detected | Coast Live Oak | 3773877 | 352086 | 11S | |
| | SOC300 | Not Detected | Lower Montane Mixed Chaparral | 3781196 | 435648 | 11S | |
| | SOC302 | Not Detected | Coulter Pine | 3785070 | 429826 | 11S | |
| | Marin | MAR001 | Not Detected | California Bay | 4222760 | 507324 | 10S |
| | | MAR002 | DNA Positive | Mixed Hardwoods | 4220772 | 508933 | 10S |
| | | MAR004 | Not Detected | California Bay | 4222323 | 519740 | 10S |
| | | MAR006 | Not Detected | Mixed Hardwoods | 4213899 | 507487 | 10S |
| | | MAR007 | Not Detected | Willow - Alder | 4211206 | 513048 | 10S |
| | | MAR008 | DNA Positive | Mixed Hardwoods | 4223834 | 537168 | 10S |
| | | MAR010 | Not Detected | California Bay | 4209271 | 519569 | 10S |
| | | MAR011 | Culture Positive | Mixed Hardwoods | 4206194 | 546497 | 10S |
| | | MAR015 | Not Detected | Pacific Douglas-Fir | 4204102 | 518621 | 10S |
| | | MAR016 | Not Detected | Pacific Douglas-Fir | 4202114 | 519369 | 10S |
| MAR017 | | Not Detected | Pacific Douglas-Fir | 4199552 | 525618 | 10S | |
| MAR018 | | Culture Positive | Northern Coast Mixed Shrub | 4200025 | 528942 | 10S | |
| MAR020 | | Not Detected | Coyote Brush | 4202891 | 518374 | 10S | |
| MAR021 | | Not Detected | Coyote Brush | 4200707 | 519603 | 10S | |
| MAR022 | | Not Detected | Coyote Brush | 4192680 | 533101 | 10S | |
| MAR024 | | Culture Positive | Mixed Hardwoods | 4220710 | 536230 | 10S | |
| MAR030 | | Not Detected | Coyote Brush | 4198187 | 522707 | 10S | |
| MAR032 | | Culture Positive | Mixed Hardwoods | 4212224 | 521099 | 10S | |
| MAR037 | | DNA Positive | Pacific Douglas-Fir | 4197514 | 532004 | 10S | |
| MAR101 | | Not Detected | Coyote Brush | 4213373 | 513038 | 10S | |
| MAR102 | | Not Detected | Mixed Hardwoods | 4212495 | 513159 | 10S | |
| MAR103 | | Not Detected | Coyote Brush | 4210642 | 512569 | 10S | |
| MAR104 | | Not Detected | Pacific Douglas-Fir | 4201884 | 519305 | 10S | |
| MAR105 | | Not Detected | Coyote Brush | 4199892 | 521336 | 10S | |
| MAR106 | | Not Detected | Pacific Douglas-Fir | 4198244 | 523354 | 10S | |
| Mendocino | | MEN001 | Not Detected | Tanoak (Madrone) | 4423291 | 418933 | 10S |
| | | MEN002 | Not Detected | Tanoak (Madrone) | 4422890 | 439837 | 10S |
| | MEN003 | Not Detected | Tanoak (Madrone) | 4422478 | 437623 | 10S | |
| | MEN005 | Not Detected | Tanoak (Madrone) | 4391246 | 452151 | 10S | |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone | |
|-----------|----------------|-------------------|-------------------------------|-------------------------------|---------|----------|-----|
| Mendocino | MEN008 | Not Detected | Pacific Douglas-Fir | 4408025 | 443903 | 10S | |
| | MEN009 | Not Detected | Redwood | 4357090 | 434046 | 10S | |
| | MEN010 | Not Detected | Mixed Hardwoods | 4319770 | 494017 | 10S | |
| | MEN014 | Not Detected | Redwood - Douglas-Fir | 4359632 | 448670 | 10S | |
| | MEN015 | Not Detected | Redwood | 4354264 | 436028 | 10S | |
| | MEN017 | Not Detected | Tanoak (Madrone) | 4423684 | 418620 | 10S | |
| | MEN022 | Not Detected | Mixed Hardwoods | 4324375 | 458818 | 10S | |
| | MEN028 | Not Detected | Redwood - Douglas-Fir | 4305735 | 471392 | 10S | |
| | MEN029 | Not Detected | Redwood - Douglas-Fir | 4325106 | 458975 | 10S | |
| | MEN030 | Inconclusive | Redwood - Douglas-Fir | 4306184 | 471190 | 10S | |
| | MEN031 | Not Detected | Redwood - Douglas-Fir | 4306265 | 471137 | 10S | |
| Monterey | MON001 | Not Detected | Redwood | 3986172 | 633693 | 10S | |
| | MON002 | Not Detected | Redwood | 3967077 | 645505 | 10S | |
| | MON003 | Not Detected | Redwood | 3966827 | 645214 | 10S | |
| | MON004 | Not Detected | Redwood | 3967010 | 645455 | 10S | |
| | MON010 | Culture Positive | Tanoak (Madrone) | 4013189 | 609631 | 10S | |
| | MON015 | Not Detected | Ponderosa Pine | 3981383 | 637224 | 10S | |
| | MON017 | Not Detected | Tanoak (Madrone) | 3975777 | 639101 | 10S | |
| | MON021 | Not Detected | Coast Live Oak | 4005073 | 622093 | 10S | |
| | MON029 | Not Detected | Pacific Douglas-Fir | 3973163 | 646288 | 10S | |
| | MON034 | Not Detected | Tanoak (Madrone) | 3984510 | 636599 | 10S | |
| | MON036 | Not Detected | Ponderosa Pine | 3985427 | 640569 | 10S | |
| | MON037 | Not Detected | Ponderosa Pine | 3977566 | 642176 | 10S | |
| | MON038 | DNA Positive | Coulter Pine | 4010622 | 613873 | 10S | |
| | MON040 | DNA Positive | Redwood | 4016799 | 604714 | 10S | |
| Napa | NAP003 | Not Detected | Mixed Hardwoods | 4260604 | 565567 | 10S | |
| | NAP009 | Not Detected | Mixed Hardwoods | 4278591 | 534287 | 10S | |
| | NAP012 | Not Detected | Mixed Hardwoods | 4276622 | 537340 | 10S | |
| | NAP013 | Not Detected | Mixed Hardwoods | 4278390 | 536195 | 10S | |
| | NAP100 | Not Detected | Mixed Hardwoods | 4275910 | 558053 | 10S | |
| | Nevada | SRA020 | Not Detected | Ponderosa Pine | 4362202 | 671364 | 10S |
| Orange | | SOC076 | Not Detected | Lower Montane Mixed Chaparral | 3726224 | 449319 | 11S |
| | | SOC143 | Not Detected | Coast Live Oak | 3717505 | 454686 | 11S |
| | SOC402 | Not Detected | Coast Live Oak | 3726095 | 449624 | 11S | |
| Placer | SRA003 | Not Detected | Douglas-Fir - Pine | 4322180 | 691659 | 10S | |
| | SRA023 | Not Detected | California Black Oak | 4316090 | 678093 | 10S | |
| Plumas | SRA006 | Not Detected | Mixed Conifer - Pine | 4417586 | 661436 | 10S | |
| Riverside | SOC073 | Not Detected | Coast Live Oak | 3742093 | 514692 | 11S | |
| | SOC074 | Not Detected | Coast Live Oak | 3716674 | 518248 | 11S | |
| | SOC075 | Not Detected | Coast Live Oak | 3744607 | 441762 | 11S | |
| | SOC079 | Not Detected | Lower Montane Mixed Chaparral | 3721715 | 460559 | 11S | |
| | SOC080 | Not Detected | Coast Live Oak | 3708379 | 465777 | 11S | |
| | SOC139 | Not Detected | Coast Live Oak | 3744189 | 514613 | 11S | |
| | SOC403 | Not Detected | California Black Oak | 3717203 | 521171 | 11S | |
| | SOC404 | Not Detected | Coast Live Oak | 3700872 | 506260 | 11S | |
| | San Bernardino | SOC025 | Not Detected | Mixed Hardwoods | 3781438 | 482950 | 11S |
| | | SOC031 | Not Detected | Mixed Hardwoods | 3786635 | 457079 | 11S |
| SOC072 | | Not Detected | Coast Live Oak | 3764312 | 500124 | 11S | |
| SOC117 | | Not Detected | Lower Montane Mixed Chaparral | 3789605 | 461268 | 11S | |
| SOC301 | | Not Detected | Canyon Live Oak | 3786372 | 439089 | 11S | |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone |
|-----------------|----------------|--------------------------|-------------------------------|-----------------|----------------|-----------------|
| San Bernardino | SOC400 | Not Detected | Annual Grass/Forbs | 3754612 | 433443 | 11S |
| | SOC401 | Not Detected | Annual Grass/Forbs | 3755019 | 433935 | 11S |
| San Diego | SOC081 | Not Detected | Coast Live Oak | 3698213 | 505080 | 11S |
| | SOC083 | Not Detected | Coast Live Oak | 3680256 | 520876 | 11S |
| | SOC084 | Not Detected | Coast Live Oak | 3679331 | 519332 | 11S |
| | SOC085 | Not Detected | Coast Live Oak | 3669868 | 515310 | 11S |
| | SOC086 | Not Detected | Coast Live Oak | 3663658 | 519530 | 11S |
| | SOC087 | Not Detected | Coast Live Oak | 3669023 | 519588 | 11S |
| | SOC088 | Not Detected | Coast Live Oak | 3666151 | 515428 | 11S |
| | SOC089 | Not Detected | Coast Live Oak | 3667665 | 519683 | 11S |
| | SOC095 | Not Detected | Coast Live Oak | 3621764 | 541912 | 11S |
| | SOC096 | Not Detected | Coast Live Oak | 3635531 | 544725 | 11S |
| | SOC098 | Not Detected | Coast Live Oak | 3626802 | 551866 | 11S |
| | SOC099 | Not Detected | Coast Live Oak | 3621573 | 535630 | 11S |
| | SOC100 | Not Detected | Coast Live Oak | 3618533 | 537936 | 11S |
| | SOC141 | Not Detected | Coast Live Oak | 3678451 | 521998 | 11S |
| | SOC142 | Not Detected | Coast Live Oak | 3664992 | 518867 | 11S |
| | SOC145 | Not Detected | Coast Live Oak | 3637732 | 546286 | 11S |
| | SOC149 | Not Detected | Coast Live Oak | 3618149 | 548005 | 11S |
| | SOC405 | Not Detected | Coast Live Oak | 3668981 | 514911 | 11S |
| | SOC406 | Not Detected | Wet Meadows | 3646995 | 539119 | 11S |
| | SOC407 | Not Detected | Lower Montane Mixed Chaparral | 3635896 | 545005 | 11S |
| | SOC408 | Not Detected | Coast Live Oak | 3636465 | 545097 | 11S |
| | SOC409 | Not Detected | Coast Live Oak | 3623783 | 555093 | 11S |
| | SOC410 | Not Detected | Coast Live Oak | 3626449 | 556108 | 11S |
| | SOC411 | Not Detected | Lower Montane Mixed Chaparral | 3627854 | 551426 | 11S |
| | SOC412 | Not Detected | Lower Montane Mixed Chaparral | 3620857 | 547206 | 11S |
| | SOC413 | Not Detected | Perennial Grass/Forbs | 3613189 | 539610 | 11S |
| | SOC414 | Not Detected | Lower Montane Mixed Chaparral | 3613558 | 543171 | 11S |
| | SOC415 | Not Detected | Lower Montane Mixed Chaparral | 3622855 | 534893 | 11S |
| | SOC416 | Not Detected | Coast Live Oak | 3625811 | 536455 | 11S |
| | SOC417 | Not Detected | Lower Montane Mixed Chaparral | 3630760 | 543811 | 11S |
| SOC418 | Not Detected | Coast Live Oak | 3623752 | 546365 | 11S | |
| SOC419 | Not Detected | Coast Live Oak | 3637130 | 534318 | 11S | |
| SOC420 | Not Detected | Buckwheat (White Sage) | 3628026 | 531591 | 11S | |
| SOC421 | Not Detected | Coast Live Oak | 3621159 | 528653 | 11S | |
| SOC422 | Not Detected | Coast Live Oak | 3624617 | 531958 | 11S | |
| SOC423 | Not Detected | Buckwheat (White Sage) | 3625549 | 532739 | 11S | |
| SOC424 | Not Detected | Coast Live Oak | 3625479 | 528932 | 11S | |
| SOC425 | Not Detected | Coast Live Oak | 3629848 | 518193 | 11S | |
| San Luis Obispo | SLO002 | Not Detected | Mixed Hardwoods | 3940700 | 689693 | 10S |
| | SLO005 | Not Detected | California Bay | 3912074 | 712361 | 10S |
| | SLO007 | Not Detected | Mixed Hardwoods | 3939952 | 689073 | 10S |
| | SLO008 | Result Pending | Coast Live Oak | 3959828 | 653051 | 10S |
| | SLO009 | Not Detected | Coast Live Oak | 3915204 | 696751 | 10S |
| | SLO011 | Not Detected | Coast Live Oak | 3901961 | 730836 | 10S |
| | SLO012 | Not Detected | Coast Live Oak | 3905268 | 734815 | 10S |
| | SLO014 | Not Detected | Coast Live Oak | 3922619 | 704401 | 10S |
| | SLO016 | Not Detected | Blue Oak | 3902924 | 737954 | 10S |
| | SLO100 | Result Pending | Coast Live Oak | 3902144 | 738680 | 10S |
| | SLO200 | Not Detected | Annual Grass/Forbs | 3908928 | 709680 | 10S |
| San Mateo | SMT001 | Not Detected | Redwood | 4139514 | 560267 | 10S |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone | |
|---------------|----------------|--------------------------|------------------------|-----------------|----------------|-----------------|-----|
| San Mateo | SMT002 | Not Detected | Redwood | 4115882 | 559328 | 10S | |
| | SMT003 | Not Detected | Mixed Hardwoods | 4143545 | 556523 | 10S | |
| | SMT004 | Not Detected | Redwood | 4140898 | 559126 | 10S | |
| | SMT006 | Not Detected | Redwood | 4117937 | 559293 | 10S | |
| | SMT008 | Not Detected | Redwood | 4138032 | 559738 | 10S | |
| | SMT009 | Not Detected | Redwood | 4137414 | 563570 | 10S | |
| | SMT011 | DNA Positive | Redwood | 4140617 | 564332 | 10S | |
| | SMT012 | DNA Positive | Redwood | 4135499 | 565225 | 10S | |
| | SMT014 | Culture Positive | Urban/Undeveloped | 4138502 | 565505 | 10S | |
| | SMT017 | Not Detected | Annual Grass/Forbs | 4135690 | 567195 | 10S | |
| | SMT019 | Not Detected | Redwood | 4123099 | 569254 | 10S | |
| | SMT021 | Culture Positive | Tanoak (Madrone) | 4125463 | 574203 | 10S | |
| | SMT025 | Not Detected | Redwood | 4127690 | 565911 | 10S | |
| | SMT027 | Not Detected | California Sagebrush | 4157975 | 544678 | 10S | |
| | SMT309 | Not Detected | Redwood | 4137336 | 563352 | 10S | |
| | Santa Barbara | SBA001 | Not Detected | California Bay | 3824912 | 226029 | 11S |
| | | SBA002 | Not Detected | California Bay | 3819635 | 256619 | 11S |
| SBA007 | | Not Detected | California Bay | 3824741 | 226341 | 11S | |
| SBA008 | | Not Detected | Coast Live Oak | 3869697 | 756490 | 10S | |
| SBA009 | | Not Detected | Coast Live Oak | 3821548 | 755118 | 10S | |
| SBA011 | | Not Detected | Coast Live Oak | 3826070 | 242320 | 11S | |
| SBA013 | | Not Detected | Coast Live Oak | 3819614 | 266409 | 11S | |
| SBA014 | | Not Detected | Coast Live Oak | 3841763 | 735741 | 10S | |
| SBA016 | | Not Detected | Coast Live Oak | 3817992 | 261241 | 11S | |
| Santa Clara | SCL001 | Not Detected | Redwood | 4096922 | 614611 | 10S | |
| | SCL002 | Not Detected | Annual Grass/Forbs | 4132512 | 616441 | 10S | |
| | SCL003 | Not Detected | Blue Oak | 4114666 | 608350 | 10S | |
| | SCL005 | Not Detected | Mixed Hardwoods | 4134371 | 612032 | 10S | |
| | SCL006 | Not Detected | Redwood | 4096181 | 617011 | 10S | |
| | SCL007 | Not Detected | Mixed Hardwoods | 4116615 | 629248 | 10S | |
| | SCL008 | Not Detected | Mixed Hardwoods | 4120037 | 580917 | 10S | |
| | SCL009 | Culture Positive | Mixed Hardwoods | 4129009 | 574418 | 10S | |
| | SCL010 | Not Detected | Mixed Hardwoods | 4117602 | 596983 | 10S | |
| | SCL011 | DNA Positive | Chamise | 4126214 | 582216 | 10S | |
| | SCL012 | Not Detected | Mixed Hardwoods | 4104867 | 605409 | 10S | |
| | SCL013 | DNA Positive | Mixed Hardwoods | 4119222 | 582738 | 10S | |
| | SCL015 | Not Detected | Blue Oak | 4114303 | 601057 | 10S | |
| | SCL019 | Not Detected | Blue Oak | 4113869 | 603241 | 10S | |
| | SCL023 | Not Detected | Chamise | 4134419 | 573259 | 10S | |
| | SCL501 | Not Detected | Mixed Hardwoods | 4104396 | 636497 | 10S | |
| SCL601 | Not Detected | Mixed Hardwoods | 4104926 | 605721 | 10S | | |
| Santa Cruz | SCZ001 | Not Detected | Redwood | 4113570 | 569124 | 10S | |
| | SCZ002 | Not Detected | Redwood | 4116000 | 566765 | 10S | |
| | SCZ007 | Not Detected | Redwood | 4113218 | 561537 | 10S | |
| | SCZ008 | Not Detected | Redwood | 4118831 | 575149 | 10S | |
| | SCZ009 | Culture Positive | Redwood | 4104762 | 597810 | 10S | |
| | SCZ010 | Not Detected | Redwood | 4104007 | 577233 | 10S | |
| | SCZ011 | DNA Positive | Redwood | 4099386 | 583616 | 10S | |
| | SCZ012 | Not Detected | Redwood | 4101053 | 599972 | 10S | |
| | SCZ014 | Not Detected | Manzanita Chaparral | 4120762 | 579135 | 10S | |
| | SCZ015 | Not Detected | Mixed Hardwoods | 4092093 | 582006 | 10S | |
| | SCZ016 | Not Detected | Coast Live Oak | 4112557 | 571413 | 10S | |

| County | Plot_ID | <i>P. ramorum</i> | CALVEG Alliance | Northing | Easting | UTM Zone |
|---------------|----------------|--------------------------|-------------------------------|---------------------|----------------|-----------------|
| Santa Cruz | SCZ020 | Not Detected | Redwood | 4098366 | 583386 | 10S |
| | SCZ022 | Not Detected | Annual Grass/Forbs | 4093517 | 578807 | 10S |
| | SCZ024 | Culture Positive | Redwood | 4103924 | 600475 | 10S |
| Shasta | SCZ025 | Not Detected | Redwood | 4117986 | 575797 | 10S |
| | SRA008 | Not Detected | Pacific Douglas-Fir | 4498334 | 523156 | 10T |
| Shasta | SRA009 | Not Detected | Mixed Conifer - Fir | 4495272 | 532903 | 10T |
| | SRA010 | Not Detected | Canyon Live Oak | 4461899 | 497568 | 10T |
| Sierra | SRA022 | Not Detected | Knobcone Pine | 4501822 | 529757 | 10T |
| | SRA018 | Not Detected | Douglas-Fir - Pine | 4373735 | 670115 | 10S |
| Siskiyou | SRA019 | Not Detected | Mixed Conifer - Pine | 4370683 | 670946 | 10S |
| | WSK004 | Not Detected | Pacific Douglas-Fir | 4580877 | 462409 | 10T |
| | WSK005 | Not Detected | Pacific Douglas-Fir | 4582221 | 460164 | 10T |
| Solano | WSK006 | Not Detected | Pacific Douglas-Fir | 4619100 | 463455 | 10T |
| | SOL001 | Not Detected | Mixed Hardwoods | 4223181 | 568170 | 10S |
| | SOL002 | Not Detected | Mixed Hardwoods | 4235550 | 572714 | 10S |
| Sonoma | SOL006 | Not Detected | Blue Oak | 4234160 | 571762 | 10S |
| | SON002 | Not Detected | Tanoak (Madrone) | 4288337 | 469562 | 10S |
| | SON003 | Not Detected | Mixed Hardwoods | 4292898 | 490572 | 10S |
| | SON005 | Not Detected | Mixed Hardwoods | 4291737 | 492625 | 10S |
| | SON008 | Not Detected | Tanoak (Madrone) | 4269978 | 494967 | 10S |
| | SON009 | Not Detected | Tanoak (Madrone) | 4268640 | 500353 | 10S |
| | SON010 | DNA Positive | Tanoak (Madrone) | 4266971 | 499287 | 10S |
| | SON011 | Not Detected | Mixed Hardwoods | 4284110 | 492879 | 10S |
| | SON012 | Not Detected | Tanoak (Madrone) | 4269233 | 497061 | 10S |
| | SON013 | Not Detected | Mixed Hardwoods | 4264541 | 522244 | 10S |
| | SON014 | Culture Positive | Redwood - Douglas-Fir | 4285273 | 491946 | 10S |
| | SON015 | Culture Positive | Pacific Douglas-Fir | 4244220 | 539986 | 10S |
| | SON017 | Not Detected | McNab Cypress | 4269361 | 497894 | 10S |
| | SON021 | Not Detected | Redwood - Douglas-Fir | 4270051 | 472416 | 10S |
| | Tehama | SRA021 | Not Detected | Pacific Douglas-Fir | 4458851 | 509943 |
| Trinity | TRI001 | Not Detected | Pacific Douglas-Fir | 4525768 | 453815 | 10T |
| | TRI002 | Not Detected | Tanoak (Madrone) | 4523652 | 456584 | 10T |
| | TRI003 | Not Detected | Pacific Douglas-Fir | 4516354 | 469751 | 10T |
| Tuolumne | SRA001 | Not Detected | Gray Pine | 4203085 | 254995 | 11S |
| | SRA005 | Not Detected | Interior Live Oak | 4194182 | 740283 | 10S |
| | SRA406 | Not Detected | Mixed Conifer - Pine | 4189088 | 248013 | 11S |
| Ventura | SOC130 | Not Detected | Lower Montane Mixed Chaparral | 3822638 | 291239 | 11S |
| | SOC131 | Not Detected | Coast Live Oak | 3817450 | 289687 | 11S |
| | SOC134 | Not Detected | Coast Live Oak | 3820926 | 290393 | 11S |
| Yuba | SRA016 | Not Detected | Douglas-Fir - Pine | 4364227 | 661696 | 10S |
| | SRA017 | Not Detected | Ponderosa Pine | 4359795 | 657949 | 10S |