To detect recent tree mortality caused by *Phytophthora ramorum*, approximately 10,000 miles were flown in a fixed-wing aircraft over 13 million acres of host habitat in California. High-priority mortality polygons were ground-checked and sampled. The following paragraphs summarize the 2003 California Sudden oak death aerial survey, conducted by the USDA Forest Service and California Polytechnic University, San Luis Obispo. Additional funding was provided by the California State Agricultural Research Initiative.

The project objective was to identify, accurately map, and confirm new outbreaks of Sudden Oak Death (caused by *Phytophthora ramorum*) in areas in California at risk but not known to be infested. Criteria used to prioritize survey areas were: 1) counties not currently under quarantine, 2) areas near existing confirmations, and 3) areas at moderate to high-risk based on habitat and climate. Quarantine counties where the pathogen is limited in distribution were also surveyed. To determine flight lines, Ross Meentemeyer’s (Sonoma State University) *P. ramorum* risk model was used, along with abundance of host plant species (CALVEG statewide vegetation data, USDA Forest Service, Pacific Southwest Region, Remote Sensing Lab). (See Figure 1).

Approximately 10,000 miles were observed, with mortality sketched by two observers in a fixed-wing aircraft, covering over 13 million acres of host habitat. Figure 2 shows a buffered flight line map that portrays the acres flown. Northern CA counties flown include: Del Norte, Humboldt, Mendocino, and portions of Siskiyou, Trinity, Tehama, Glenn and Lake. In Southern California the survey covered: Monterey, San Benito, San Luis Obispo, Santa Barbara and portions of Ventura and Los Angeles Counties. Additionally, a band of hardwood forest along the foothills of the Sierra Nevada within portions of Kern, Tulare, Fresno, Madera, Mariposa, Tuolumne, Calaveras, Amador, El Dorado, Placer, Nevada, Yuba, Sierra, and Butte Counties was flown. Approximately 400 mortality polygons were captured and mapped using digital sketch-mapping equipment developed by the USDA Forest Service, Forest Health Technology Enterprise Team.

In addition to the fixed-wing flights, approximately 1,500 helicopter miles were flown in August to accurately record tree mortality locations and exclude tree mortality due to other causes. In the helicopter, a global positioning system (GPS) was used to navigate to approximately ¼ of the sites originally detected by the aerial survey. While hovering, GPS coordinates were re-recorded to more precisely pinpoint the locations of dead trees. Many of the tree mortality areas identified are located on remote, steep slopes with dense vegetation, far from main roads, making them difficult to access. The more accurate GPS coordinates significantly reduced time for the ground-check crews.

A total of 125 sites were visited on the ground (go to: [http://kellylab.berkeley.edu/OakMapper/viewer.htm](http://kellylab.berkeley.edu/OakMapper/viewer.htm)). On the sites visited, 69 samples were taken and submitted to California Department of Food and Agriculture lab in
Sacramento or the Rizzo lab at UC-Davis for analysis. *P. ramorum* was isolated from one sample near Plaskett Creek in Monterey County on the Los Padres National Forest. Four samples are still pending results. Samples are also being tested via PCR and any suspect areas will be re-sampled in spring 2004.

This survey covered areas not known to be infested, so the low number of *P. ramorum* confirmations is not unexpected. In 2003, all other surveys for *P. ramorum* in California also failed to detect *P. ramorum* establishment beyond the currently regulated area.

Results of field visits, reports and maps are posted at:
http://kellylab.berkeley.edu/OakMapper/viewer.htm,
http://kellylab.berkeley.edu/SODmonitoring/,
http://suddenoakdeath.org/ and