

**Goldspotted Oak Borer and Oak Mortality**  
**Quarterly Situation Report**  
**April 1 through June 30, 2014**

**San Diego County Parks Report** (Data provided by Roger Covalt and David Duran of Co. Parks)

The GSOB damage occurring in two of San Diego County's oak tree-dominated parks is very troubling. In addition to the aesthetic and ecosystem losses, the cost of removing dead trees is proving a huge budgetary strain. Nearly 2,000 trees have been felled in the 929 acre Heise County Park alone.

**William Heise County Park (near Julian)**

<u>Location</u>	<u># of Trees dropped due to GSOB</u>	<u>Other GSOB concerns</u>
Picnic Area # 1		Continued crown thinning, Coast live and Black oak mortality around cabins 1& 2
Entrance Drainage	4	Continued crown thinning, Coast live and Black oak mortality
RV loop		Canyon Oaks appear to have new crown thinning. Large trees affected
Cabin Loop		Coast live oaks showing thinning and stress on perimeter of area.
Volunteer loop		Canyon oaks showing signs of infestation, continued thinning throughout.
Middle Loop		Continued oak mortality, mainly Coast Live.
YC1/Pond		Canyon oaks still showing signs of infestation and crown thinning
Upper loop	1	Coast live oaks showing thinning and stress on perimeter of area.
Ranger residence # 2		<b>Huge area of mortality working outwards from residence.</b>
Next quarter will focus on removals around Residence #2 to reduce fire fuel load and eliminate overhead safety issues.		

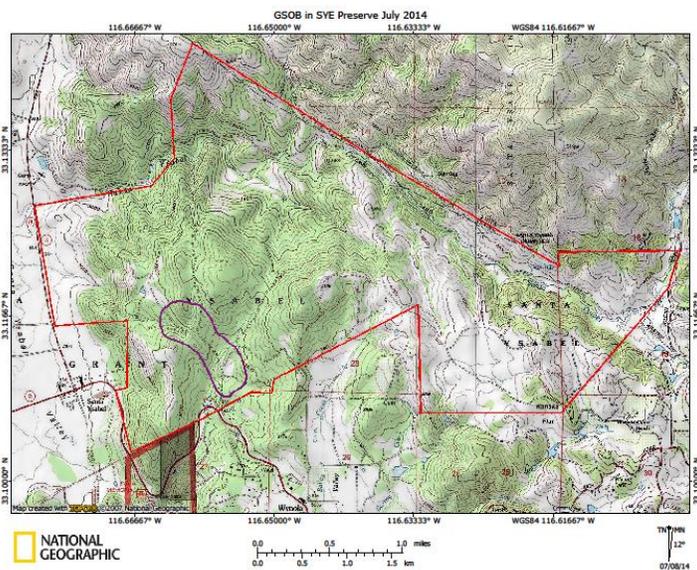
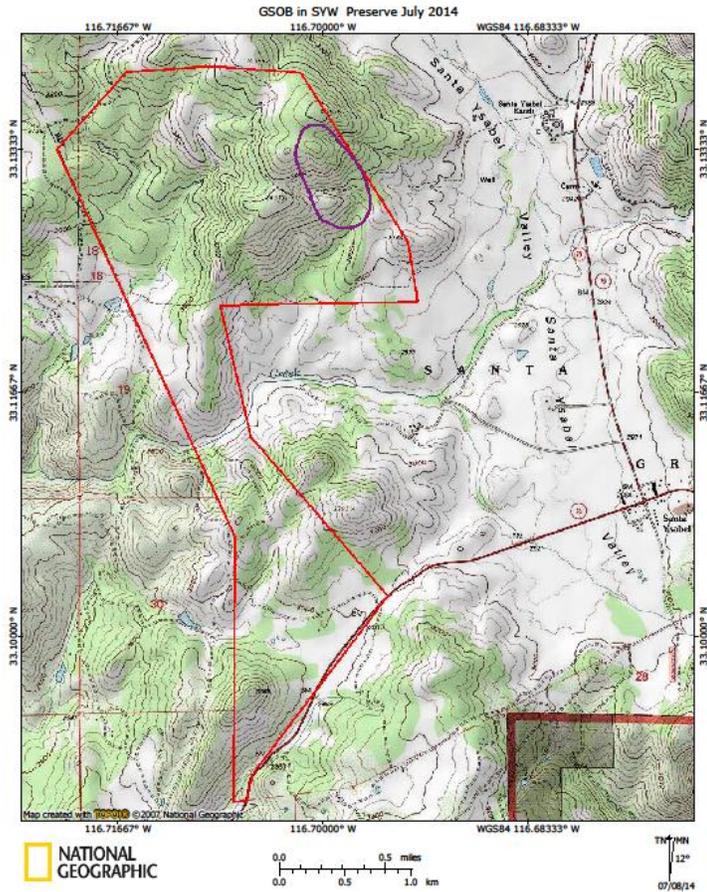
**Dos Picos County Park (near Ramona)**

<u>Location</u>	<u>New GSOB trees</u>	<u># of Trees dropped due to GSOB</u>	<u>Other GSOB concerns</u>
Campground	0	6	<b>Five new cases of GSOB found along service road at Old Youth Area.</b> Just discovered, these five trees will need to be cut down and chipped. Otherwise, canopy in all areas still looks generally healthy. We will continue to monitor trees with routine inspections and with help from GIS and aerial photographs.
Day Use, Area 1	0	0	
Day Use, Area 2	0	1	
Day Use, Area 3	0	1	
Along Service Road	5	0	

GSOB infestations are also becoming established in the County Park-managed **Santa Ysabel Preserves** (see maps of West and East preserves to the right)

Private property is also starting to be hit hard by GSOB in the Santa Ysabel area. A report recently submitted through the GSOB website by a concerned property prompted us to visit the area. There we observed significant GSOB activity with dead, dying and recently attacked trees. We were advised that some oak firewood resulting from this infestation has left the area. Fortunately, in this particular neighborhood, Engelmann oaks are mixed in with coast live oaks, so it's not likely all the oaks will be lost.

On the positive side, the neighborhood property owner's association plans to inform all homeowners about what is occurring and discuss protocols for keeping firewood from leaving the area and discuss potential treatments with pesticides and other IPM options



## GSOB Task Force Update

The initial meeting of the task force occurred on June 4 in San Diego County. There was good attendance at the venue and also participation by others either online or over the phone. After receiving a briefing on the current status of GSOB spread and mitigation efforts, there was a discussion on proposed Mission, Goals, and Objectives of the Task Force. Revisions are being made based upon comments received and they will be discussed at the next meeting (date TBD).

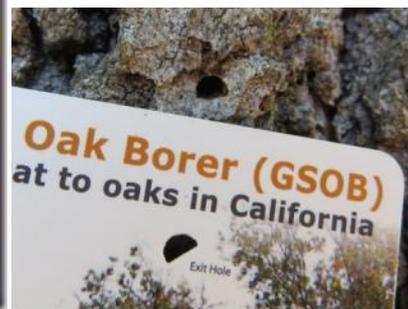
## Monitoring and Detection

### **Citizen Scientists Early Warning System (EWS) Volunteers**



Local fire safe councils, garden clubs and other groups can provide people for community-based GSOB EWS to augment agency personnel and tree professionals. Given training and handouts, they can explain the GSOB problem to people they meet while conducting detection and monitoring work.

*Idyllwild EWS Volunteers Aida Quiles, Ron Perry and Elliott Taylor inspect a black oak for D-shaped exit holes with the aid of a GSOB ID card.*



*Photos courtesy of "Idyllwild Woodies" volunteer Doris Lombard*

In addition to EWS volunteers, local, state and federal agencies working with the University of California continue to collaborate to ensure necessary follow-up on reports of possible GSOB attack in San Diego, San Bernardino, Riverside, Orange, Ventura, LA and other Southern California counties. So far, GSOB is still confined to San Diego and Riverside counties.



## San Jacinto Mountains in Riverside County Update

GSOB Early Warning System volunteers from the “Woodies” community volunteer group and the Idyllwild Garden Club have been conducting “windshield surveys” in Idyllwild and Pine Cove to identify black oaks that either failed to leaf out this spring or exhibit small or deformed leaves. They provide photos and location information of any suspect trees to the appropriate agency (CAL FIRE or USFS) and our UCR lab for follow-up to determine if GSOB is involved. Graduate student Cara Washington manages the shared database of inspection results with CAL FIRE and the Mountain Communities Fire Safe Council.

*Located near the elementary school, this large California black oak was recently identified as Idyllwild’s 31<sup>st</sup> GSOB tree. It has subsequently been removed and ground in a tub grinder.*

**Property Owners can help prevent the spread of GSOB to protect our oak trees**

This is the time of year when mountain community property owners can play a key role in early Goldspotted Oak Borer detection. Please take time to look at the black oak trees on your property and complete this form to report oaks that are displaying any of the following symptoms.

*(Check all boxes that apply and indicate the number of trees displaying each symptom)*

\_\_\_\_\_ My black oak(s) did not leaf out this year (few to no leaves.)

\_\_\_\_\_ Oak leafed out in spring but leaves are smaller than usual.

\_\_\_\_\_ My oak did not drop its dead leaves last fall like normal.

Reporting Person: \_\_\_\_\_

Address of suspect oak: \_\_\_\_\_

Contact info (ph or email): \_\_\_\_\_ (optional)

I would like to be present when my trees are evaluated.

 Black oak leaf

*If you have any questions, please call Mountain Communities Fire Safe Council at 659-6208*

**You can return this completed form to one of the following locations:**

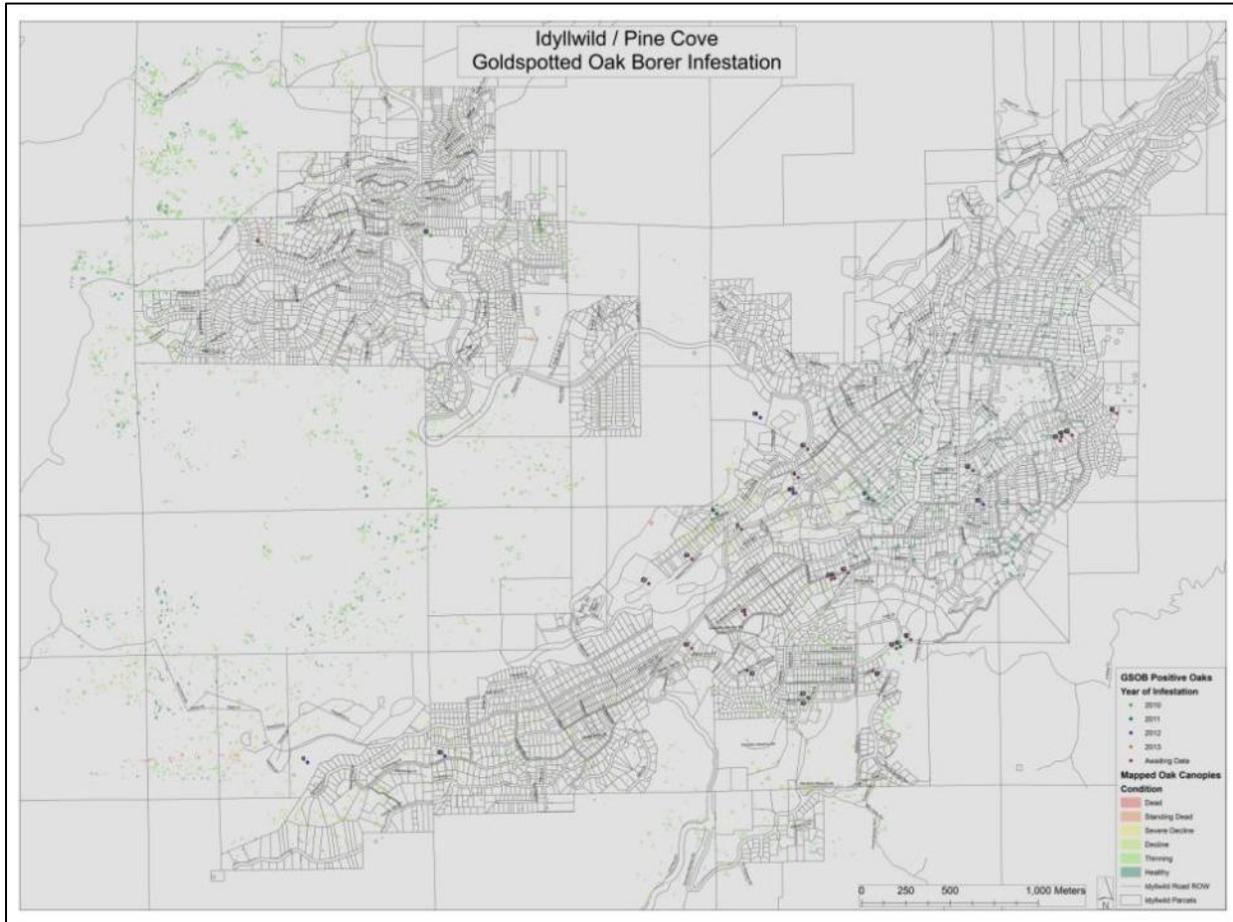
The Town Crier Office.  
Pine Cove Water District Office. 

Mountain Communities Fire Safe Council (25380 Franklin Dr.)

*Any trees that you report will be evaluated to determine if GSOB is the cause. You will be contacted with the results of the evaluation. Thank you for your help!*

*Mountain Communities Fire Safe Council ran this ad on the front page of the Idyllwild Town Crier newspaper. EWS volunteers make the initial contact with the reporting party and evaluate the trees. Any trees that are possible or probable GSOB are entered into the shared database and a follow-up inspection is conducted by the agency with jurisdiction.*

## GPS locations of infested trees in Idyllwild and Pine Cove, San Jacinto Mountains of Riverside County



In addition to mapping the infestation, we continue to collect tree rounds for dendrochronology analysis to determine when GSOB first attacked trees in Idyllwild. So far, the earliest attack we've detected in this area dates back to 2010. The infested trees identified to date have been proximal to homes, business or campgrounds, most of whom use firewood for heat.

### Reports of GSOB in San Diego County received through the GSOB.org website:

We continue to receive reports of suspected GSOB through [www.GSOB.org](http://www.GSOB.org). Several reports this quarter came from the **Ramona area**, in particular, neighbors to both the east and west of **Dos Picos County Park**. Dos Picos Park also reported additional GSOB attacks during this quarter. Other nearby activity was reported in the Mount Woodson area.

### Property Owner Informational Letter

After confirming that a property does indeed have GSOB, most property owners ask us for advice on what they should do. In addition to providing them with GSOB materials and website information, the GSOB Outreach and Education committee has developed a standardized letter to send to property owners who have had GSOB confirmed on their property. The letterhead of the responding entity can be added or it can be included in the body of an email.

**Content of the letter sent to property owners where suspected GSOB has been confirmed:**

Dear ( \_\_\_\_\_ ),

Thank you again for submitting a report about suspected goldspotted oak borer (GSOB) attack of oak trees on the [www.gsob.org](http://www.gsob.org) website. (Inspector) of (agency) evaluated the tree(s) and has confirmed that (XX) trees are infested by GSOB. GSOB is also known to be infesting other oak trees in or around your area.

**What can you do now?** We recommend that you to revisit our [www.gsob.org](http://www.gsob.org) website to help you decide what actions you might wish to consider, paying particular attention to the management options listed in *UC IPM Pest Notes Publication 74163*: <http://ucanr.edu/sites/gsobinfo/files/159957.pdf>. We urge you to be wary of false claims and potential scams not supported by scientific research. At the present time, there are no known effective treatments for saving GSOB-infested trees. Many trees may survive for several years before succumbing, all the while producing adult GSOB which may attack nearby trees. It is believed that when GSOB trees finally die, they may produce a significant surge of adult beetles into the following year. There is no public assistance program at this time to assist property owners with the costs of tree removal or infested wood disposal.

**GSOB can be quickly spread to new areas by the movement of infested firewood.** The document titled "*Best Management Practices*" provides information and options for managing GSOB-killed trees and infested wood: <http://ucanr.org/sites/gsobinfo/files/147218.pdf> .

**How do I protect my uninfested oaks?** In regards to protecting your remaining, uninfested oak trees, in addition to reading our publications, you may wish to consult a professional arborist for advice. The Professional Tree Care Association of San Diego at 619-443-6202 (or at <http://www.ptcasandiego.org/> ) is one source for locating an arborist.

If you consider the use of pesticides to protect your remaining high-value trees, it is important to note that pesticide applications must be carefully-timed to be effective and that insecticides of sufficient potency are not available for purchase or use by a homeowner; they can only be purchased and applied a pest control professional who is properly licensed by the State of California Department of Pesticide Regulation (CDPR) and registered with the San Diego County Agriculture Commissioner (for more information on pesticide licenses see <http://www.cdpr.ca.gov/docs/license/currlic.htm> ). The cost per tree for applying preventative treatments can be expensive but may be reduced if neighbors join together to have their trees treated at the same time.

Please feel free to call me if you have any questions.

Thank you,

## GSOB Early Warning System Mobile Device Applications

Full rollout of the new IOS app occurred this quarter. We currently don't have funding to pay for the programming to modify it to work on Android platforms, but Android users do have access to the MOM app.

Early Warning System (EWS)

With over a million acres of oaks in southern California, it is difficult to monitor all woodlands for new areas of infestation. We are asking woodland owners to help monitor the condition of oaks in their areas and report new cases of oak mortality by providing information to scientists and managers about declining oaks in the region. You can do this by taking part in the Early Warning System (EWS). Follow the "Help Monitor" link below to become part of the Early Warning System.

[Help Monitor](#)

### Mobile Monitoring

**Go Mobile and Report!**

Two resources have been developed to help with oak mortality and goldspotted oak borer monitoring. The GSOB Tracker mobile application is now available for Apple IOS devices. This application was designed for the novice oak surveyor that has had little to no training on GSOB and other oak pests.

- [Download GSOB Tracker](#)
- [GSOB Tracker How-To Guide](#)

For Android platform devices or for more detailed monitoring, there are online resources available at the [Managing Oak Mortality \(MOM\) website](#). This site offers general GSOB educational information; GSOB distribution maps with a variety of map views; downloadable map data and a downloadable mobile application.

To access the mapping options, just click on the arrow tab near the upper right hand corner of the home page.

To download the HTML 5 Mobile Application, click the tab in the lower left hand corner of the home

We encourage everyone to give the App a try and provide feedback for improving the product. You can load the app onto your IOS device by using the GSOB.org website or at <http://wrigis.csusb.edu/gsobios/>

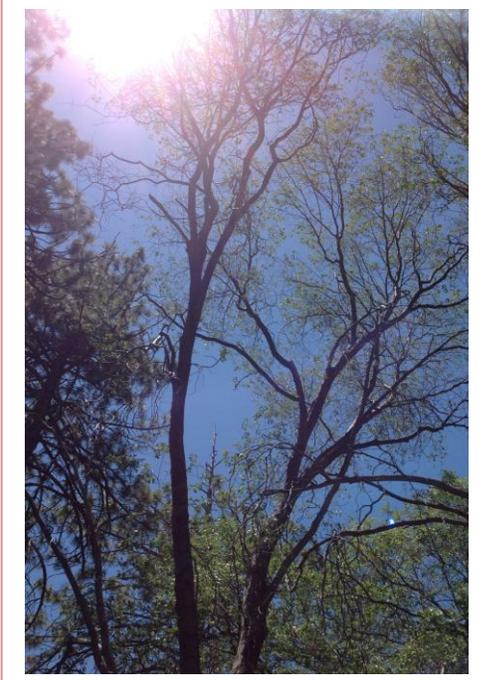
MOM for use on all platforms is at: <http://wrigis.csusb.edu/GSOB/>

## May Board of Forestry Field Tour and Meeting in Riverside

The Board's field tour included a stop in Idyllwild where they were briefed on the status of GSOB spread and mitigation efforts in the San Jacinto Mountains. They also heard from the Mountain Communities Fire Safe Council about their partnership in the GSOB effort and the participation of volunteers to conduct outreach and detection. Dr. Tom Scott and others spoke to the Board about invasive species at their meeting the following day.

## GSOB Outreach and Education

### Collaborative Tools Outreach Calendar for April through June 2014



6/22/2014	<u>Earth Day County Operations Center</u>	<u>Tracy Ellis</u>
6/21/2014	<u>San Diego County Fair - USFS GSOB Booth</u>	<u>Anabele Cornejo</u>
6/18/2014	<u>Beetle Invasion Presentation</u>	<u>Jan Gonzales</u>
6/7/2014	<u>San Diego County Fair - USFS GSOB Booth</u>	<u>Anabele Cornejo</u>
6/7/2014 - 7/6/2014	<u>San Diego County Fair</u>	<u>Jan Gonzales</u>
6/4/2014	<u>GSOB Task Force Organizational Meeting</u>	<u>Jan Gonzales</u>
6/3/2014	<u>GSOB Seminar</u>	<u>Jan Gonzales</u>
5/18/2014 - 5/22/2014	<u>ANREP 9th Biennial Conference</u>	<u>Jan Gonzales</u>
5/15/2014	<u>Board of Forestry Meeting</u>	<u>Kevin Turner</u>
5/14/2014	<u>Fire Summit - Invasive Species</u>	<u>Kevin Turner</u>
5/14/2014	<u>CA Board of Forestry Field Tour</u>	<u>Kevin Turner</u>
5/13/2014	<u>San Diego Master Gardeners 2014</u>	<u>Tracy Ellis</u>
5/9/2014	<u>DPW South County</u>	<u>Tracy Ellis</u>
5/8/2014	<u>UCCE San Diego Centennial Event</u>	<u>Jan Gonzales</u>
5/7/2014	<u>Integrated Pest Control Event</u>	<u>Tracy Ellis</u>
4/28/2014	<u>Campo Community Planning Group</u>	<u>Tracy Ellis</u>
4/25/2014	<u>Earth Day Vivian Banks Elementary</u>	<u>Tracy Ellis</u>
4/11/2014	<u>DPW North County Road Crews</u>	<u>Tracy Ellis</u>
4/10/2014	<u>Managing Oak Mortality W. Riverside County MSHCP</u>	<u>Kevin Turner</u>

### GSOB Roadside Signs

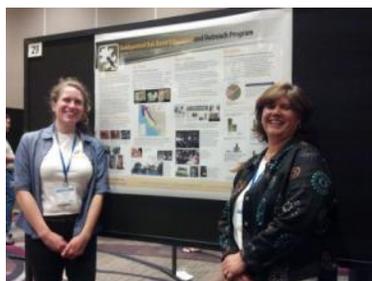
Near the end of the state's fiscal year, the California Firewood Task Force made \$2,000 available to our GSOB Outreach committee for producing roadside signs along strategic transportation corridors to warn about the dangers of moving infested firewood. Our committee had talked for some time about the need for these signs, but never had funding. We quickly put our heads together to decide on sign design, message and posting locations. The Nature Conservancy's Don't Move Firewood campaign has provided a graphic artist at no charge. The signs have been ordered, though the final locations for installing the signs have not been completely determined.



**UCCE San Diego - Goldspotted Oak Borer Education and Outreach  
Quarter 4 Report – FY 13/14 – April-June, 2014**

**Goldspotted Oak Borer (GSOB):**

- Organized and hosted the first meeting of the southern California Forest Pest Council GSOB Taskforce. Approximately 35 people representing public and private stakeholder organizations participated in this organizational meeting.
- Completed drafts of three online self-paced GSOB training modules for three audience groups: Arborists and Other Tree Care Professionals, Parks and Campground Staff and Residents and Volunteers. It is expected that these training modules will be available at the [www.GSOB.org](http://www.GSOB.org) website in the next few weeks.
- Presented a poster about GSOB at the Association of Natural Resource Extension Professionals bi-annual national conference in Sacramento, CA. Collaborated with Janice Alexander to display the GSOB and California Firewood Taskforce poster in the same vicinity for coordinated outreach.
- Provided a GSOB information display at the annual Regional Area Safety Taskforce Fire Summit: *Fire, Invasive Species and Habitat Health*, Diamond Bar, CA.
- Delivered a presentation on the impact and threat of GSOB at the San Diego County Fair as part of the *Beetle Invasion* educational series.
- Coordinated with the Cleveland National Forest to display GSOB information at the San Diego County Fair during high-traffic days.
- Displayed GSOB information in the UCCE San Diego Centennial exhibit at the San Diego County Fair and spoke with visitors about GSOB and firewood movement.
- Responded to 7 phone call and/or email inquiries regarding GSOB.
- Distributed handout materials:
  - 500 GSOB trifold brochures
  - 750 GSOB I.D. cards
  - 500 UCIPM GSOB Pest Note pamphlet
  - 75 Firewood BMP's pamphlets
  - 500 Firewood Advisory handouts
- Participated in 6 GSOB meetings/conference calls with the Education and Outreach Committee.



Left: Janice Alexander and Jan Gonzales presenting GSOB and Firewood Task Force info at the ANR Poster Session in Sacramento.  
Right: Anabele Cornejo staffed the GSOB booth at the San Diego County Fair several days.





## GSOB ID Kit Production and Distribution

There continues to be a demand for GSOB ID kits. We produced approximately 100 additional kits this quarter and handed them out at various functions. This smaller version of the kit can be more easily mailed due to its 7x6x1" size than the larger shoebox-sized kit. However, there is not room to include all the handouts, but those are on the enclosed DVD. A bark sample (with exit holes), a preserved GSOB adult beetle and an ID card are also included. Supplies have been ordered for producing additional kits.

## Pesticide as a Barrier Against GSOB Emergence Trial – 2014

In previous trials, we have had great success in preventing the emergence of adult GSOB from infested oak rounds. This year, we are conducting a repeat of the trial, but this time on standing trees. Capturing emerging beetles on tree trunks is a challenge, as you can see from the photos below.



## USFS Forest Health Protection Report – Dr. Tom Coleman

### **Survey, Detection, Monitoring**

Forest Health Protection hung purple prism traps in San Diego and Riverside Cos. A total of 28 traps were hung across the two counties by FHP. Additional traps were supplied to tribal lands in Riverside, San Bernardino, and San Diego, Cos and to the San Jacinto Ranger District, SBNF.

Forest Health Protection will fly aerial detection surveys the week of July 14th.

### **Science Activities and Findings**

Forest Health Protection, USDA FS, Pacific Southwest Research Station, UC, Davis continue to examine methods for improving GSOB monitoring techniques. During the summer of 2014, bark and leaf volatiles are being tested to improve GSOB trap catch on the Cleveland National Forest. Previous trapping studies were published in 2014 in *Environmental Entomology: Developing Monitoring Techniques for the Invasive Goldspotted Oak Borer (Coleoptera: Buprestidae) in California*, Tom W. Coleman, Yigen Chen, Andrew D. Graves, Stacy M. Hishinuma, Nancy E. Grulke, Mary Louise Flint, and Steven J. Seybold.

A manuscript addressing a mite species that parasitizes GSOB was published in 2014 in *Canadian Entomologist [Pyemotes tritici (Acari: Pyemotidae): a parasitoid of Agrilus auroguttatus and Agrilus coxalis (Coleoptera: Buprestidae) in the southwestern United States of America and southern Mexico]* by Tom W. Coleman, Michael I. Jones, Mark S. Hoddle, Laurel J. Haavik, John C. Moser, Mary L. Flint, and Steven J. Seybold.

Forest Health Protection continues to assess the changes in fuel loads associated with GSOB impacted areas. This work began in 2013 and will likely continue until 2015 on the Cleveland National Forest and surrounding areas.

### **Public Outreach, Media Coverage, Technical Assistance**

Tom Coleman presented GSOB information to the RAST Fire Summit on May 14th, 2014 and assisted Michael Puzzo of Cuyamaca Rancho State Park with developing a GSOB management plan for campgrounds and high-use areas.

**Please direct any corrections, questions or comments about the quarterly report to Kevin Turner at [kevint@ucr.edu](mailto:kevint@ucr.edu) . We welcome your future contributions to the report for any activities or information related to GSOB. For submitting information for the upcoming July through September 2014 quarterly report, please provide your input to me by close of business on October 8th. A reminder will be sent out through Collaborative Tools at the end of September.**