

# **Goldspotted Oak Borer and Oak Mortality**

## **Quarterly Situation Report**

### **January 1 through March 31st 2011**

#### **San Diego GSOB Steering Committee**

The Steering Committee's efforts this quarter were focused on preparing a presentation for the San Diego County Board of Supervisors to update the Board on the GSOB situation and present them with positive steps they could take to help contain GSOB. Cleveland Forest Supervisor Will Metz's meeting with Supervisor Diane Jacobs on US Forest Service topics prompted the invitation to address the Board on GSOB. However, we are still waiting for the date of the hearing to be announced.

#### **Other "Political Action" This Quarter**

- On 2/23/2011 Tara Piraneo, Tom Coleman USFS FHP and Kevin Turner met with representatives of San Bernardino County, including Supervisor Neil Derry's office and the Agricultural Commissioner's office, a representative of state Senator Bob Dutton, and the Inland Empire Fire Safe Alliance to discuss methods of preventing GSOB from becoming established in San Bernardino County.
- On 3/9/11 Tom Coleman and Kevin Turner gave a GSOB presentation with and led a discussion afterward with the San Bernardino County Mountain Area Safety Taskforce (MAST) Multi-Agency Command group (MAC). Participants included San Bernardino County representatives: executive aides for 2nd and 3rd supervisorial districts; County Administrative Office; Public Works; County Fire Department; County Tree Removal Program. San Bernardino N.F. representatives: Forest Supervisor; Deputy Supervisor; Resources Officer. CAL FIRE: San Bernardino Unit Forester; Region Office representative. Other key players: City of Big Bear Lake; Southern California Edison; Arrowhead Fire Safe Council. UC Cooperative Extension: Dr. Tom Scott.
- On 2/17/11 Kevin Turner gave a GSOB presentation to Southern California Hazardous Vegetation Managers Association (SCHVMA representatives of federal, state and local firefighting/prevention agencies). Out of this presentation came an invitation to make a presentation to the Chino Hills Property Owners and the Carbon Canyon Fire Safe Council on April 20<sup>th</sup>. About 100 persons have indicated they will attend this meeting along with staff from Chino Hills State Park.

- On 3/16/11, a GSOB presentation was given to Riverside County Parks Department administration and park managers by Tom Scott, Kevin Turner and Bill Oesterlein from Riverside County Agriculture Commissioner's office. Park management agreed to collect data on firewood as well as keeping an eye out for GSOB-infested wood.
- Kevin Turner and others provided additional input for Riverside County staff in their effort to develop an effective county ordinance designed to prevent the importation of GSOB infested wood.

### **GSOB FHP Entomology – Tom Coleman USFS FHP**

#### Research

- Forest Health Protection (FHP) is collaborating with Cuyamaca Rancho State Park, UC Riverside, and CAL FIRE to assess four grinding sizes to eliminate GSOB populations from infested wood. The following treatments are being assessed: 9-minus, 3-minus, 2-minus, 1-minus, and controls.
- Studies between FHP, Pacific Southwest Research (PSW), and UC Davis are assessing debarking as a management tool for controlling GSOB populations.
- An article was published in Forest Ecology Management by FHP, Western Wildland Environmental Threat Assessment Center, and PSW concerning drought stress and GSOB injury. Coleman, T.W., N.E. Grulke, M. Daly, C. Godinez, S.L. Schilling, P.J. Riggan, and S.J. Seybold. 2011. Coast live oak, *Quercus agrifolia*, susceptibility and response to goldspotted oak borer, *Agrilus auroguttatus*, injury in southern California. doi:10.1016/j.foreco.2011.02.008
- A manuscript between FHP, UC Riverside, and PSW was submitted to an invited issue of Biocontrol. This manuscript "Can the destruction of California's oak woodlands be prevented? Potential for biological control of the goldspotted oak borer, *Agrilus auroguttatus*" is currently in review. A second manuscript was accepted to Coleopterist's Bulletin titled "Collection History and Comparison of the Interactions of the Goldspotted Oak Borer, *Agrilus auroguttatus* Schaeffer (Coleoptera: Buprestidae), with Host Oaks in Southern California and Southeastern Arizona" by Coleman and Seybold.
- UC Riverside and FHP continued surveys in March 2011 in southeastern Arizona for GSOB populations and natural enemies. Bark samples were collected from Arizona and taken into quarantine for rearing.
- FHP continues to collaborate with UC Davis, Northern Research Station, and PSW to assess the susceptibility of native oaks in California to GSOB injury.

## Outreach

- FHP has contributed/presented at GSOB outreach meetings in San Diego Co.; radio and TV interviews; and San Bernardino MAST organization.
- On-location videotaped interviews were conducted by KPBS television and radio personality Ted Joyce with GSOB experts Tom Scott (UCCE) and Tom Coleman (USFS). The television, radio and printed pieces aired/published on April 1st and focus on the damage being caused by GSOB in San Diego County. Here is a link to the interviews: [http://www.kpbs.org/news/2011/apr/01/invasive-beetle-killing-coast-live-oaks/?utm\\_source=kpbs.org&utm\\_medium=email&utm\\_campaign=user-share](http://www.kpbs.org/news/2011/apr/01/invasive-beetle-killing-coast-live-oaks/?utm_source=kpbs.org&utm_medium=email&utm_campaign=user-share)

## Firewood Management and Wood Utilization Issues –

- We convened an Informal GSOB firewood subcommittee consisting of Larry Swan, Kevin Turner, Katie Palmieri and Janice Alexander with assistance of Tom Coleman (USFS FHP), Tom Scott (UCCE) and Mathew Bokach (USFS S&P Forestry). We are pursuing a number of firewood related issues and research, including studies that will lead to improved, easily understood guidelines for calculating the required elapsed time from “tree death” until GSOB no longer infests the wood. We are also determining if full thickness bark removal is required or if a partial “rind” can be left on the wood without it becoming a threat to spread GSOB.
- Faith Campbell has been trying to spread the word about GSOB at the national level and has had several discussions with National Park Service employees about the risk from the beetle/firewood nexus. Most promising have been her comments to NPS employees on the draft NPS "firewood guidance" as she expect that guidance to be strengthened and issued soon. Faith also raised the prospect of possible risk to oaks along the Gulf of Mexico coast to state plant regulatory officials. GSOB will be one of several "pests on the horizon" that the Southern Plant Board discusses at its annual meeting later in April.
- Site visits were conducted with three major oak firewood businesses in San Diego County (Dukes, Van Winkle, Gowen) to solicit from them information on how GSOB infested-wood has been or is being moved. Kathleen Edwards of CAL FIRE and Larry Swan USFS State and Private Forestry each joined Kevin Turner to participate in some of these interviews. Dukes indicated during his interview that oak wood from GSOB's home range in the Sierra Madre Occidental in Mexico was shipped to San Diego County from Madera Chihuahua railhead in the mid 90's. This anecdote is as yet unverified.

- Larry Swan and Kevin Turner provide input for the Greater San Diego County Resource Conservation District in refining their standards for treating the GSOB-infested wood from trees removed by the RCD's tree removal program. Tom Scott and Kevin Turner also provided input to help the RCD to find an alternate utilization site after the original destination (co-gen plant in Imperial County) unexpectedly stopped accepting chips.
- Kevin Turner participated in a meeting regarding wood chip ignitability and flammability under a partnership with the USFS PSW Riverside Fire Laboratory, BLM, CAL FIRE, Riverside County Fire Department and Orange County Hazard Abatement. The study is determining the fire characteristics of wood chips from different parent materials and differing depths of application in order to develop management guidelines for their use in woodland and urban landscape settings. Currently, some GSOB-killed trees are being ground up and then put back into the landscape. Kevin has obtained oak chips to be included in the study to compare their fire characteristics to other hardwood and softwood chips. Kevin had been involved with this "chips" study as a volunteer prior to becoming the GSOB coordinator.
- Tens of thousands of tons of woody material were removed from Cuyamaca Rancho State Park and were ground into particles for bio-filters by Viramontes Express. This success was largely a result of collaboration with Park management and staff, USFS utilization expert Larry Swan, Tom Coleman, Tom Scott, Kevin Turner other partner agencies and by having a market demand for the material and a company (Viramontes) willing to travel long distance for the material.
- Particle Size Test Update: The multi-agency group determined that we needed to add a 3" minus grind to the 1", 2" and 9" minus size classes that were obtained for the study during the prior quarter. A 3" minus grind GSOB treatment study was conducted by Dr. Coleman previously, but was based on a limited sample size. In addition, 3" minus is a common standard in the wood grinding industry and adding another size class gives a better metric. Turner coordinated the collection, trucking and grinding for this added size class. Dr. Tom Coleman of USFS FHP has set up the test materials at the test location in Cuyamaca State Park. Results should be available by fall 2011.
- Bark Surface Barrier Test – This project was initiated during this reporting quarter with an initial test consisting of topically applying registered pesticides on GSOB-infested oak bolts. The idea of a bark surface barrier is to prevent GSOB emergence as adults from infested trees. In newly infested oak stands that are isolated from major GSOB outbreak areas, preventing adult emergence could reduce GSOB population pressure on the infested tree and surrounding un-infested trees. If the barrier does not prevent emergence, it may cause sufficient morbidity post-emergence to render the GSOB

adults incapable of reproducing. Results for the bolt study will be available after the adult GSOB emergence period ends later in the summer. Each pesticide used in the test will be compared against the control bolts for their effectiveness with follow-up testing to be conducted on live trees in suitable areas. This study is a partnership of Kevin Turner and Tom Scott of UC Cooperative Extension working with USFS Entomologist Sheri Smith.

### **Additional Observations and Activities in This Quarter**

- Aerial Photo interpretations suggest that on average, oaks in Descanso decline for at least three years after they are attacked by GSOB.
- Chronologies of oak death indicate that the year 2000 being the earliest date from which we have been able to observe GSOB damage in oak rounds.
- During a field interview with one of the major oak wood cutters in eastern San Diego County, we obtained anecdotal information that oak wood from GSOB's home range in the Sierra Madre Occidental in Mexico was shipped to San Diego County from Madera Chihuahua railhead in the mid 90's. This anecdotal information is as of yet unverified.
- The U.S. Forest Service, Pacific Southwest Region and Pacific Southwest Research Station hosted a meeting January 26 at the Cleveland National Forest headquarters to discuss additional research needs for GSOB. The meeting was well attended and helped to generate a road map for future GSOB research.
- Cleveland Forest staff plan to meet with Province Entomologist Tom Coleman to look at potential sites to test pesticide application.
- The Descanso Ranger District completed acorn/oak planting at Descanso Station (5 acres). There is on-going work to keep competing vegetation from encroaching.
- GSOB Early Warning System/Citizen Scientist Program - Tara Piraneo has been accepted into a PHD program with Washington State University, so, unfortunately for us, this was her last quarter working on GSOB until she returns as Dr. Piraneo! Thank you for all your hard work Tara! Tom Scott is in the process of recruiting to fill the vacancy behind her departure.

- Julie Lydick, Tom Scott, Kevin Turner, Tom Coleman, Janice Alexander and Katie Palmieri and others participated in the newly-formed California Firewood Taskforce.
- UCCE cooperator Brett Hutchinson found GSOB larvae in a coast live oak that had been considered dead in the spring /summer of 2010. Although the leaves, branches, and trunk of the tree were dead and dry, the bark near the roots was still alive and supporting GSOB larvae. This observation corroborates the conclusion of Dr. Tom Coleman, that standing dead trees are capable of supporting GSOB for over a year past the time that they appear dead. (see photo below by Brett Hutchinson)



- Three in-depth, day long workshops and training for professionals were presented this quarter in Ventura, Los Angeles and San Diego counties with 149 total in attendance.
- Out of the evaluation surveys received from participants at GSOB Workshops for Professionals, 80% rated the overall workshop 'Excellent', 99% said the workshop covered what was expected, 82% said they are 'very likely' to use information obtained from workshop and 98% responded that they are likely to share the workshop information with others.

**GSOB Website Data – (from Jan Gonzales UCCE)**

	Quarter 3 (Jan-Mar 2011)	Cumulative (Sep09-Mar11)
Hits	56,642	278,687
Page Views	18,434	83,218

**Presentations Meetings this Quarter:**

3/26/2011	<u>Native Plant Sale- Santa Rosa Plateau Eco Reserve &amp; Training</u>	<u>Tara Piraneo</u>
3/21/2011 - 4/1/2011	<u>SD County Rangers</u>	<u>Tracy Ellis</u>
3/19/2011	<u>Blue Sky Eco Reserve Docent Training</u>	<u>Tara Piraneo</u>
3/16/2011	<u>Riverside County Parks Staff Training</u>	<u>Kevin Turner</u>
3/9/2011	<u>GSOB Conference Call</u>	<u>Anabele Cornejo</u>
3/9/2011	<u>San Bernardino County MAST MAC meeting</u>	<u>Kevin Turner</u>
3/1/2011	<u>Entomological Association of Southern California</u>	<u>Tara Piraneo</u>
2/27/2011	<u>Citizen Science Training</u>	<u>Tara Piraneo</u>
2/25/2011	<u>GSOB Workshop-San Diego County</u>	<u>Jan Gonzales</u>
2/22/2011	<u>Landscape Committee Presentation (Mosaic Consulting)</u>	<u>Tara Piraneo</u>
2/17/2011	<u>Master Gardeners of Riverside Presentation</u>	<u>Tara Piraneo</u>
2/17/2011	<u>Riverside County Code Enforcement Training</u>	<u>Kevin Turner</u>
2/17/2011	<u>So. Cal. Hazardous Vegetation Managers Assoc.</u>	<u>Kevin Turner</u>
2/16/2011	<u>CFPC Statewide Firewood Task Force</u>	<u>Kevin Turner</u>
2/9/2011	<u>Del Dios/ Mt. Israel Town Council Meeting</u>	<u>Tara Piraneo</u>
2/1/2011	<u>Prof. Tree Care Assoc. Presentation</u>	<u>Tara Piraneo</u>
1/29/2011	<u>Valley Center/Friends of HH Canyon</u>	<u>Tracy Ellis</u>
1/27/2011	<u>Crestline MAC presentation</u>	<u>Tara Piraneo</u>
1/25/2011	<u>SD Children and Youth</u>	<u>Tara Piraneo</u>
1/20/2011	<u>SD City Parks Training- 2</u>	<u>Tara Piraneo</u>
1/19/2011	<u>Inland Empire Fire Safe Alliance</u>	<u>Tara Piraneo</u>
1/19/2011	<u>Meeting</u>	<u>Anabele Cornejo</u>