



Status of Goldspotted Oak Borer in San Diego & Adjoining Counties - May 2015

Oak mortality increased significantly in San Diego County summer and fall of 2014, following a year of high mortality in 2013. Trees are drought stressed which decreases their ability to fend off insects, including the invasive goldspotted oak borer (*Agrilus auroguttatus*; called GSOB). Prior to the introduction of GSOB in the county, oak mortality typically claimed about 1 to 3 oaks per thousand trees per year; with GSOB, these numbers increased 10 fold to 30 per thousand per year. Now, GSOB combined with the prolonged drought may raise oak mortality as high as 250 oaks per thousand per year, basically killing all the largest oaks. In Descanso, Julian, Alpine, Pine Valley, Laguna, La Posta, and Campo, they have seen waves of GSOB-caused oak mortality before, but with this latest drought, 75% of the oak canopy may be lost from woodlands around these communities. Ramona experienced significantly increased rates of GSOB-caused oak mortality in 2014 and as the drought goes into its fifth year, it is may experience similar large-scale die-offs of oaks. The infestation detected at the base of Mt. Palomar in 2014 will also bear watching.

Lands managed by the Cleveland National Forest, Cuyamaca Rancho State Park, County of San Diego Parks, City of San Diego Parks, and several Native American tribes are all significantly impacted by GSOB. As one example, William Heise County Park in Julian has had to remove and dispose of over 2,800 large oak trees killed by GSOB, and more are dying. On private property, owners are not only heartbroken about losing their oaks, but daunted by the costs of removal.

GSOB was discovered in Riverside County in late 2012 and in Orange County in late 2014. Both of these infestations are isolated and small (~60 trees each) and are believed to be linked to the import of GSOB-infested wood from San Diego County. No other counties have detected GSOB.

The Response in San Diego County

The interagency San Diego County GSOB Steering Committee meets regularly to monitor the status of GSOB, share information and recommend courses of action. The associated Outreach and Education Committee continues their effective work: maintaining the www.gsob.org website; producing outreach publications; conducting workshops for professionals and citizen scientists to incorporate them as part of the GSOB Early Warning System; designing and installing “Don’t Move Firewood” roadside signs proximal to infested areas; and incorporating a GSOB detection oak tree survey curriculum for the Cuyamaca Outdoor School which reaches about 12,000 San Diego students per year. Outreach targeting firewood cutters, sales yards and firewood consumers has been the only tool available for stemming the flow of infested firewood from moving within the county or exported out of county. The California Board of Forestry and Fire Protection has established a GSOB Zone of Infestation which delineates the infested areas in the three counties.

The San Diego County Departments of Parks and Recreation (County Parks), Public Works, Agriculture, Weights & Measures (AWM), and Farm and Home Advisor (FHA) have collaborated with other agencies and stakeholders to address this pest infestation. County Parks developed a GSOB Integrated Pest Management (IPM) Action Plan and a tree inventory system; replaces tree loss with a variety of native trees; collaborates with AWM, FHA, and US Forest Service to initiate a



barrier treatment of high value oak trees and pursues forest health grant opportunities. County Public Works collaborates with the Steering Committee to ensure regulatory compliance for GSOB-related roadside signs; removed more than 85 infested trees by County road crews or tree contractor at the cost of over \$100,000; and conducts an inventory of GSOB-impacted trees on the right-of-ways following the recommendations of the University of California Agricultural and Natural Resources Statewide Integrated Pest Management Program. Wood removed from right-of-ways is taken to the Julian or Palomar Road Station (depending on the location of the tree) and grind up to leave in a compost pile on-site. Since GSOB is a non-agricultural pest, AWM provides expertise in pesticide regulation and firewood consumer standards; supports and participates in outreach and education; and works to gain regulatory compliance when there is an infestation in a plant production nursery. AWM has partnered with California Department of Forestry and Fire Protection (CAL FIRE) and FHA to follow-up on citizen reports of GSOB attacks and to maintain a map of GSOB spread and severity. FHA develops and conducts the majority of outreach and education.

The Response in Riverside and Orange Counties

Due to the relatively small number of trees found and isolated nature of both of these infestations, an aggressive response strategy is being employed consisting of immediate removal/disposal of infested trees and selective use of pesticides to protect nearby high-value trees. Both Riverside and Orange Counties have established their own respective GSOB response groups similar to the San Diego Steering Committee, though Orange County elected to form a single “Emerging Tree Pests” group to address both GSOB and Polyphagous Shot Hole Borer (PSHB). Currently, the three counties with both GSOB and PSHB infestations are San Diego, Riverside and Orange.

What else needs to be done and how can you help?

Here are the three primary areas of emphasis that would benefit from your support:

- **Movement of infested wood** - Currently, there is little that can be done to curtail the flow of GSOB or PSHB-infested firewood to uninfested areas within or beyond the county’s borders. We rely primarily on goodwill generated by outreach and education efforts targeting the firewood industry and firewood consumers. An emerging opportunity exists to collaborate with other counties, state legislators and the California Firewood Task Force to explore regulatory options and identify funding sources for invasive wood pest inspections and enforcement of new firewood regulations.
- **Education and Outreach efforts** – The GSOB Education and Outreach sub-committee have relied on a combination of federal funds and donated staff time contributed by various partner agencies to maintain the GSOB.org website, produce O&E publications, conduct workshops, and develop teaching curriculums. Please support continued funding to maintain and enhance these efforts.
- **Integrated Pest Management (IPM)** – The use of IPM by landowners/managers needs to be encouraged and facilitated when possible to reduce GSOB’s spread and severity of damage. Removal and disposal of large infested oaks near structures is very expensive; with no assistance programs to help defray some of the cost, many trees remain standing, releasing more beetles to the area and eventually becoming a fire hazard. Many communities in the county don’t have access to tub grinders or other means for the proper disposal of infested wood; a workshop for elected officials and agencies to address this issue is being scheduled for summer 2015 in San Diego. The proper use of pesticides as a part of IPM to protect high-value oaks needs to be encouraged.

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