ZONE OF INFESTATION EXPANSION PROPOSAL:

GOLDSPOTTED OAK BORER

Los Angeles/Orange/San Diego Counties



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January 1, 2016

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REQUEST

It is requested that the Director of the Department of Forestry and Fire Protection (Director), with the approval of the Board of Forestry and Fire Protection (Board), pursuant to Public Resource Code (PRC) 4716, declare the existence of a Zone of Infestation for the goldspotted oak borer (GSOB) in Los Angeles and Orange County, with boundaries as defined in this document. In addition, it is also requested that the Director, with the approval of the Board, amend the existing Zone of Infestation for goldspotted oak borer in San Diego County to include additional areas as defined in this document.

This document is provided in support of these requests.

DISCUSSION

The goldspotted oak borer (GSOB - *Agrilus auroguttatus*), not native to California, was first identified in San Diego County in 2008. Subsequent dendrochronology studies have determined that the pest was actually first introduced in the county in the mid-90s, but it was masked by drought-caused tree mortality. GSOB has killed tens of thousands of trees in several communities in San Diego County and hundreds of trees in Riverside County, resulting in millions of dollars of remediation costs and property value loss. A GSOB Zone of Infestation (ZOI) for San Diego County was identified and approved by the Director and the Board in the fall of 2012. As a result of the discovery of infested trees in Riverside County, the Director and the Board established a ZOI in Riverside County in December of 2014. The designation of these ZOIs significantly helped to bolster the effort against GSOB and elevated the level of awareness of its potential threat to the state.

Unfortunately, in December of 2014, GSOB-positive oak trees were identified in northeastern Orange County. Approximately 30 trees were identified in the initial infestation. Thanks to a cooperative landowner (Orange County Parks), the Orange County Fire Authority and other local and state partners, removed and treated those trees. In August of 2015, GSOB was discovered in Los Angeles County in the community of Green Valley. Los Angeles County Fire, Forestry Division, is developing plans to remove the infested trees but treatment is pending obtaining legal authority to enter private property to conduct the work.

Additional infestations have also been discovered in San Diego County outside of the existing ZOI boundary. Infestation sites have become so numerous in the county that it now seems prudent to expand the ZOI to include all sites in the county where susceptible oak species exist. This declaration will allow state and local officials to take immediate action to mitigate new infestation sites.

Over the last three years, government agencies, the University of California and non-profit groups have made an intensive, coordinated, multiagency effort to slow the spread of the beetle. By establishing the GSOB zone of infestation in Orange and Los Angeles Counties, even greater public attention will focus on GSOB and raise the awareness of the surrounding counties and the rest of the state. In addition, the ZOI provides specific authority to the

Department of Forestry and Fire Protection, and agents acting under its authority, to control and limit the spread of the infestation under certain circumstances.

DESCRIPTION OF PROPOSED ZONE

LOS ANGELES & ORANGE (APPENDIX A & B):

Mapping criteria were developed to determine the proposed ZOI Expansion boundary. The mapping criteria are the same as were used for the original ZOI parameters and are as follows: known locations of GSOB infestation plus the estimated flight range of GSOB (The average emerald ash borer flight per year distance of 4-miles/year was utilized, Siegert et al., 2008), location of susceptible host species (*Quercus kelloggii, Q. chrysolepis, Q. agrifolia*) and the public land survey system (section, township and range). The latest vegetation data set from the Classification and Assessment with Landsat of Visible Ecological Groupings (CalVeg), US Forest Service – Pacific Southwest Region – Remote Sensing Lab was used to determine the proposed ZOI Expansion boundary. CalVeg dataset provided the dominant species and vegetation types for the large scale area.

Within each new infested county, the infestation was limited to a distinct geographic area. This resulted in one contiguous ZOI within Orange County and one contiguous ZOI within Los Angeles County. In San Diego County the ZOI was redrawn to include all susceptible host species, which resulted in one contiguous ZOI for that county as well. The description of the boundaries for the area is detailed in Table 1, 2 and 3. The area for the Los Angeles County ZOI is 42,951 acres, Orange County ZOI is 45,690 acres and San Diego County ZOI is 2,286,131 acres.

Boundary Direction	Boundary Description
Western	Lands east of Section 26, T.03S. R.09W. SBM,
	then east of Section 35, T.03S. R.09W. SBM, then
	east of Section 3, T. 04S. R.09W. SBM, then east
	of Section 10, T.04S. R.09W. SBM, then east of
	Section 15, T.04S. R.09W. SBM, then east of
	Section 22, T.04S. R.09W. SBM, then east of
	Section 27, T.04S. R.09W. SBM, then east of
	Section 35, T.04S. R.09W. SBM, then east of
	Section 1, T.05S. R.09W. SBM.
Southern	Lands north of Section 1, T.05S. R.09W. SBM, then
	north of Section 6, T.05S. R.08W. SBM, then north
	of Section 5, T.05S. R.08W. SBM, then north of
	Section 4, T.05S. R.08W. SBM.
Eastern	Lands west of Section 4, T.05S. R.08W. SBM, then
	east of Section 34, T.04S. R.08W. SBM, then east of
	Section 26, T.04S. R.08W. SBM, then east of
	Section 24, T.04S. R.08W. SBM, then east of
	Section 18, T.04S, R.07W. SBM, then east of
	Section 7, T.04S. R.07W. SBM, then east of Section

Table 1: Boundary Description of the ZOI Expansion for GSOB in Orange County.

	6, T.04S, R.07W. SBM, then east of Section 36,
	T.03S. R.08W. SBM, then east of Section 26, T.03S.
	R.08W. SBM.
Northern	Lands south of Section 26, T.03S. R.08W. SBM,
	then south of Section 27, T.03S. R.08W. SBM, then
	south of Section 28, T.03S. R.08W. SBM, then
	south of Section 29, T.03S. R.08W. SBM, then
	south of Section 30, T. 03S. R.08W. SBM, then
	south of Section 25, T.03S. R.09W. SBM, then
	south of Section 26, T.03S. R.09W. SBM.

Table 2: Boundary Description of the ZOI Expansion for GSOB in Los Angeles County.

Boundary Direction	Boundary Description
Western	Lands east of Section 22, T.07N. R.15W. SBM, then
	east of Section 28, T.07N. R.15W. SBM, then east
	of Section 33, T.07N. R.15W. SBM, then east of
	Section 4, T.06N. R.15W. SBM, then east of Section
	9, T.06N. R.15W. SBM, then east of Section 16,
	T.06N. R15W. SBM, then east of Section 21, T.06N.
	R.15W. SBM, then east of Section 28, T.06N.
	R.15W. SBM, then east of Section 34, T.06N. R.
	15W. SBM.
Southern	Lands north of Section 34, T.06N. R.15W. SBM,
	then north of Section 35, T.06N. R.15W. SBM, then
	north of Section 36, T.06N. R.15W. SBM, then
	north of Section 31, T.06N. R.14W. SBM, then
	north of Section 32, T.06N. R.14W. SBM, then
	north of Section 33, T.06N. R.14W. SBM.
Eastern	Lands west of Section 33, T.06N. R.14W. SBM, then
	west of Section 27, T.06N. R.14W. SBM, then west
	of Section 22, T.06N. R.14W. SBM, then west of
	Section 15, T.06N. R.14W. SBM, then west of
	Section 10, 1.06N. R.14W. SBM, then west of
	Section 3, 1.06N, R.14W. SBM, then west of
	Section 34, I.U/N. R.14W. SBM, then west of
	Section 27, 1.07N. R.14W. SBM.
Northern	Lands south of Section 27, 1.0/N. R.14W. SBM,
	then south of Section 28, 1.0/N. R.14W. SBM, then
	south of Section 20, 1.0/N. R.14W. SBM, then
	south of Section 19, I.U/N. K.14W. SBM, then
	south of Section 22, T.O.N. K.ISW. SBM, then
	south of Section 23, 1.0/N. K.15W. SBM, then
	south of Section 28, 1.07N. R.15W. SBIVI.

DESCRIPTION OF PROPOSED ZONE SAN DIEGO COUNTY (APPENDIX C):

The original proposed areas were intended to be amended as GSOB moved outside of the designated areas. Two new detections of GSOB in Ranchita and by Highway 76 in 2014 warranted an extension to the existing GSOB ZOI in San Diego County, Appendix C – Orange Boundary for ZOI. The mapping criteria used to create the 2014 extension were the same as those used for the original ZOI, 4 mile buffer from known infestation location, location of susceptible host species (*Quercus kelloggii, Q. chrysolepis, Q. agrifolia*) and the public land survey system (section, township and range). In 2015, a new detection in Hidden Meadows (Appendix C: blue stars) was discovered outside of the 2014 San Diego ZOI. It was decided based on the new detections occurring each year outside the current ZOI to expand the San Diego ZOI to include all areas where the susceptible host species are present. The latest vegetation data set from the Classification and Assessment with Landsat of Visible Ecological Groupings (CalVeg), US Forest Service – Pacific Southwest Region – Remote Sensing Lab was used to determine the proposed ZOI Expansion boundary based on the presence of the susceptible host species. CalVeg dataset provided the dominant species and vegetation types over a large scale area.

Boundary Direction	Boundary Description
Western	Lands east of Section 7, T.19S. R.02W. SBM, then
	east of Section 6, T.19S. R.02W. SBM, then east of
	Section 31, T.18S. R.02W. SBM, then east of
	Section 30, T.18S. R.02W. SBM, then east of
	Section 19, T.18S. R.02W. SBM, then east of
	Section 20, T.18S. R.02W. SBM, then east of
	Section 21, T.18S. R.02W. SBM, then east of
	Section 15, T.18S. R.02W. SBM, then east of
	Section 10, T.18S. R.02W. SBM, then east of
	Section 3, T.18S. R.02W. SBM, then east of
	Section 34, T.17S. R.02W. SBM, then east of
	Section 27, T.17S. R.02W. SBM, then east of
	Section 22, T.17S. R.02W. SBM, then east of
	Section 15, T.17S. R.02W. SBM, then east of
	Section 10, T.17S. R.02W. SBM, then east of
	Section 4, T.17S. R.02W. SBM, then east of
	Section 5, T.17S. R.02W. SBM, then east of
	Section 6, T.17S. R.02W. SBM, then east of
	Section 1, T.17S. R.03W. SBM, then east of
	Section 2, T.17S. R.03W. SBM, then east of
	Section 35, T.16S. R.03W. SBM, then east of
	Section 27, T.16S. R.03W. SBM, then east of
	Section 28, T.16S. R.03W. SBM, then east of
	Section 29, T.16S. R.03W. SBM, then east of
	Section 30, T.16S. R.03W. SBM, then east of

Table 3: Boundary Description of the ZOI Expansion for GSOB in San Diego County

Section 25, T.16S. R.04W. SBM, then east of
Section 24, T.16S. R.04W. SBM, then east of
Section 13, T.16S. R.04W. SBM, then east of
Section 12, T.16S. R.04W. SBM, then east of
Section 11, T.16S. R.04W. SBM, then east of
Section 2, T.16S, R.04W, SBM, then east of
Section 34, T.15S, R.04W, SBM, then east of
Section 27, T.15S, R.04W, SBM, then east of
Section 26, T.15S, R.04W, SBM, then east of
Section 23, T.15S, R.04W, SBM, then east of
Section 24, T 15S, R 04W, SBM, then east of
Section 13 T 15S R 04W SBM then east of
Section 12, T 15S, R 04W, SBM, then east of
Section 1 T 15S R 04W SBM then east of
Section 36 T 14S R 04W SBM then east of
Section 35, T.14S, R.04W, SBM, then east of
Section 26 T 14S R 04W SBM, then east of
Section 23, T.14S, R.04W, SBM, then east of
Section 14 T 14S R 04W SBM, then east of
Section 11, T.14S. R.04W. SBM, then east of
Section 2 T 1/S P 0/W SBM then east of
Section 2, T.14S. R.04W. SBM, then east of
Section 3, T.145. R.04W. SDW, then east of
Section 27, T 13S, R.04W, SDM, then east of
Section 27, T.13S. R.04W. SDM, then east of
Section 21, T.13S. R.04W. SDIVI, then east of
Section 21, 1.155. R.04W. SDIVI, then east of
Section 0, T.12S, R.04W, SDM, then east of
Section 9, 1.135. R.04W. SBIM, then east of
Section 4, 1.135. K.04W. SBIM, then east of
Section 35, 1.125, R.04W, SDM, then east of
Section 32, 1.12S. R.04W. SBM, then east of
Section 29, 1.12S. R.04W. SBM, then east of
Section 20, 1.12S. R.04W. SBM, then east of
Section 18, 1.125. R.04W. SBM, then east of
Section 7, 1.12S. R.04W. SBM, then east of
Section 12, 1.12S. R.USW. SBM, then east of
Section 30, 1.11S. R.05W. SBM, then east of
Section 35, 1.115. R.USW. SBM, then east of
Section 26, 1.115. R.05W. SBM, then east of
Section 27, 1.11S. R.USW. SBM, then east of
Section 22, 1.11S. R.05W. SBM, then east of
Section 15, 1.11S. R.05W. SBM, then east of
Section 16, 1.11S. R.05W. SBM, then east of
Section 9, 1.11S. R.USW. SBM, then east of
Section 8, 1.11S. K.USW. SBM, then east of
Section 5, 1.11S. R.05W. SBM, then east of
Section 6, T.11S. R.05W. SBM, then east of
Section 31, T.10S. R.05W. SBM, then east of
Section 24, T.10S. R.06W. SBM, then east of
Section 13, T.10S. R.06W. SBM, then east of
Section 14, T.10S. R.06W. SBM, then east of

	Section 11 T 10S R 06W SBM then east of
	Section 10, T 10S, R 06W, SBM, then east of
	Section 3 T 10S R 06W SBM then east of
	Section 33 T 0S R 06W SBM, then east of
	Section 20, T.0S. R.00W. SDW, then east of
	Section 29, 1.95. R.00W. SDM, then east of
	Section 30, 1.95. R.00W. SBM, then east of
	Section 19, 1.95. R.06 w. SBM, then east of
	Section 24, 1.9S. R.0/W. SBM, then east of
	Section 15, T.9S. R.0/W. SBM.
Southern	Lands north of Section 12, T.18S. R.08E. SBM,
	then north of Section 11, T.18S. R.08E. SBM, then
	north of Section 10, T.18S. R.08E. SBM, then
	north of Section 9, T.18S. R.08E. SBM, then north
	of Section 8, T.18S. R.08E. SBM, then north of
	Section 7, T.18S. R.08E. SBM, then north of
	Section 13, T.18S. R.07E. SBM, then north of
	Section 14, T.18S. R.07E. SBM, then north of
	Section 15, T.18S. R.07E. SBM, then north of
	Section 16, T.18S. R.07E. SBM, then north of
	Section 17, T.18S. R.07E. SBM, then north of
	Section 18, T.18S, R.07E, SBM, then north of
	Section 24, T.18S, R.06E, SBM, then north of
	Section 23, T.18S, R.06E, SBM, then north of
	Section 22, T 18S, R 06E, SBM, then north of
	Section 21, T 18S, R 06E, SBM, then north of
	Section 20, T 18S, R 06F, SBM, then north of
	Section 19 T 18S R 06F SBM, then north of
	Section 24 T 18S R 05F SBM, then north of
	Section 23, T.18S, R.05E, SBM, then north of
	Section 22, T.18S. R.05E. SBM, then north of
	Section 21, T.18S. R.05E. SBM, then north of
	Section 20, T 18S, P 05E, SBM, then north of
	Section 20, T.18S. R.05E. SDM, then north of
	Section 25, T.185, R.05E, SDM, then north of
	Section 25, 1.165. R.04E. SDIVI, then north of
	Section 27, T.185, R.04E, SDM, then north of
	Section 27, 1.18S. R.04E. SDM, then north of
	Section 28, 1.185. R.04E. SBIVI, then north of
	Section 29, 1.185. R.04E. SBIVI, then north of
	Section 30, 1.18S. R.04E. SBIM, then north of
	Section 25, 1.18S. R.03E. SBM, then north of
	Section 26, 1.18S. R.03E. SBM, then north of
	Section 27, 1.18S. R.03E. SBM, then north of
	Section 28, T.18S. R.03E. SBM, then north of
	Section 29, T.18S. R.03E. SBM, then north of
	Section 30, T.18S. R.03E. SBM, then north of
	Section 36, T.18S. R.02E. SBM, then north of
	Section 35, T.18S. R.02E. SBM, then north of
	Section 34, T.18S. R.02E. SBM, then north of
	Section 33, T.18S. R.02E. SBM, then north of
	Section 32, T.18S. R.02E. SBM, then north of
	Section 31, T.18S. R.02E. SBM, then north of

	Section 36 T 18S R 01F SBM then north of
	Section 35, T.185, R.01E, SBM, then north of
	Section 35, 1.185. R.01E. SDW, then north of
	Section 34, 1.16S. R.01E. SDW, then north of
	Section 55, 1.185. R.01E. SBM, then north of
	Section 32, T.18S. R.01E. SBM, then north of
	Section 6, T.19S. R.01E. SBM, then north of
	Section 1, T.19S. R.01W. SBM, then north of
	Section 2, T.19S. R.01W. SBM, then north of
	Section 3, T.19S. R.01W. SBM, then north of
	Section 4, T.19S. R.01W. SBM, then north of
	Section 5, T.19S. R.01W. SBM, then north of
	Section 6, T.19S. R.01W. SBM, then north of
	Section 1, T.19S, R.02W, SBM, then north of
	Section 2, T 19S, R 02W, SBM, then north of
	Section 10 T 19S R 02W SBM then north of
	Section 0 T 10S P 02W SBM then north of
	Section 9, T.105, R.02W. SDM, then north of
	Section 7 T 10S D 02W SDM
- .	Section 7, 1.195. R.02 W. SDIVI.
Eastern	Lands west of Section 1, 1.09S. R.05E. SBM, then
	west of Section 12, T.09S.R.05E. SBM, then west
	of Section 13, T.09S.R.05E. SBM, then west of
	Section 24, T.09S.R.05E. SBM, then west of
	Section 25, T.09S.R.05E. SBM, then west of
	Section 36, T.09S.R.05E. SBM, then west of
	Section 1, T.010S.R.05E. SBM, then west of
	Section 12, T.10S.R.05E. SBM, then west of
	Section 13, T.10S.R.05E. SBM, then west of
	Section 24, T.10S.R.05E. SBM, then west of
	Section 25, T.10S.R.05E, SBM, then west of
	Section 36 T 10S R 05E SBM then west of
	Section 1 T 11S R 05E SBM then west of Section
	12 T 11S R 05F SBM then west of Section 13
	T 11S P 05E SBM then west of Section 24
	T 11S D 05E SBM, then west of Section 24,
	T 11S.R.05E. SDM, then west of Section 20,
	T 119 D 0/E SDM, then see of Section 29,
	1.11S.R.00E. SBM, then west of Section 32,
	1.11S.R.06E. SBM, then west of Section 5,
	T.12S.R.06E. SBM, then west of Section 6,
	T.12S.R.06E. SBM, then west of Section 1,
	T.12S.R.05E. SBM, then west of Section 2,
	T.12S.R.05E. SBM, then west of Section 10,
	T.12S.R.05E. SBM, then west of Section 15,
	T.12S.R.05E. SBM, then west of Section 22,
	T.12S.R.05E. SBM, then west of Section 26,
	T.12S.R.05E. SBM, then west of Section 25,
	T.12S.R.05E. SBM, then west of Section 30,
	T.12S.R.06E. SBM, then west of Section 29.
	T.12S.R.06E. SBM, then west of Section 32
	T 12S R 06E SBM then west of Section 5
	T 13S R 06E SBM, then west of Section 6
	T 13S R OFF SBM than wast of Section 12

	T.13S.R.05E. SBM, then west of Section 13,
	T.13S.R.05E. SBM, then west of Section 24,
	T.13S.R.05E. SBM, then west of Section 25,
	T.13S.R.05E. SBM, then west of Section 36,
	T.13S.R.05E. SBM, then west of Section 6,
	T.14S.R.06E. SBM, then west of Section 5,
	T.14S.R.06E. SBM, then west of Section 4,
	T.14S.R.06E. SBM, then west of Section 3,
	T.14S.R.06E. SBM. then west of Section 2.
	T 14S R 06E SBM then west of Section 1
	T 14S R 06E SBM then west of Section 6
	T 14S R 07E SBM then west of Section 5
	T 14S R 07E SBM, then west of Section 8
	T 1/S R 07E SBM, then west of Section 17
	T 1/S P 07E SBM, then west of Section 21
	T 14S D 07E SDM, then west of Section 22,
	T 14S.R.07E. SDM, then west of Section 22,
	T.14S.R.0/E. SBIM, then west of Section 25,
	1.14S.R.U/E. SBIM, then west of Section 24,
	T.14S.R.0/E. SBM, then west of Section 19,
	T.14S.R.08E. SBM, then west of Section 30,
	T.14S.R.08E. SBM, then west of Section 31,
	T.14S.R.08E. SBM, then west of Section 6,
	T.15S.R.08E. SBM, then west of Section 7,
	T.15S.R.08E. SBM, then west of Section 18,
	T.15S.R.08E. SBM, then west of Section 30,
	T.15S.R.08E. SBM, then west of Section 31,
	T.15S.R.08E. SBM, then west of Section 6,
	T.16S.R.08E. SBM, then west of Section 7,
	T.16S.R.08E. SBM, then west of Section 17,
	T.16S.R.08E. SBM, then west of Section 16,
	T.16S.R.08E. SBM, then west of Section 22,
	T.16S.R.08E. SBM, then west of Section 25,
	T.16S.R.08E. SBM, then west of Section 36,
	T.16S.R.08E. SBM, then west of Section 1,
	T.17S.R.08E. SBM, then west of Section 12,
	T.17S.R.08E. SBM, then west of Section 13,
	T.17S.R.08E. SBM, then west of Section 24,
	T.17S.R.08E. SBM, then west of Section 25,
	T.17S.R.08E. SBM, then west of Section 36,
	T.17S.R.08E. SBM, then west of Section 1.
	T.18S.R.08E, SBM, then west of Section 12.
	T 18S R 08E SBM
Northern	Lands south of Section 15 T 09S R 07W SBM
Northern	then south of Section 11 T 09S R 07W SBM
	then south of Section 2 T 09S R 07W SBM,
	south of Section 35 T 088 R 07W SRM then
	south of Section 26 T 088 R 07W SRM then
	south of Section 25, TASS, R.07W, SDM, then
	south of Section 10 T OSS D OSW SDM then
	south of Section 17, TASS, ROUW, SDIVI, UICH
	south of Section 0, T.085, R.00W, SIVID, then
	soun of Section 9, 1.08S. R.06W. SBM, then south

of Section 4, T.08S. R.06W. SBM, then south of
Section 3, T.08S. R.06W. SBM, then south of
Section 2, T.08S. R.06W. SBM, then south of
Section 1, T.08S. R.06W. SBM, then south of
Section 7, T.08S. R.05W. SBM, then south of
Section 8, T.08S, R.05W, SBM, then south of
Section 9, T.08S. R.05W. SBM, then south of
Section 10, T.08S. R.05W. SBM, then south of
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TREE SPECIES DISTRIBUTION

In California, GSOB attacks have been identified in the field on two primary species, coast live oak, *Quercus agrifolia*, California black oaks, *Quercus kelloggii*, and one lesser species, canyon live oak, *Quercus chrysolepis*. In California, the range of coast live oak extends north from San Diego County along the Santa Anita Mountains and Transverse Mountain Range and north along the Coastal Mountain Range. California black oak can be found in the mountain ranges of California from Mount Laguna and Palomar Mountain in the south, north along the San Jacinto Range, along the Transverse Ranges, the Coastal Mountain Ranges, and in the Sierra Nevada and Cascade Mountain Ranges into Oregon. Between the three species of oaks susceptible to attack from GSOB, they cover most of the landscapes of California from sea level to elevations of 6,000 feet and above.

DAMAGE TO AFFECTED STANDS AND TREES

Damage caused by the goldspotted oak borer infestation include decline in growth, decreased tree vigor, and high rates of mature oak tree mortality, resulting in a decline/loss of oaks within mixed conifer stands, oak woodlands and urban forests. In Orange and Los Angeles Counties, GSOB have infested and killed hundreds of California coast live oaks. The Orange County infestation is still confined to the Weir Canyon Wilderness area, having infested roughly 150 coast live oaks. Infested trees have either been removed or treated with insecticides. Adjacent uninfested trees have been treated preventively with topical insecticides. Surveys will continue in Weir Canyon to determine efficacy of treated trees and locating newly infested trees.

The Los Angeles County infestation, which is located in the small community of Green Valley within the Angeles Nation Forest, is also exclusively effecting coast live oak and about 150 trees have been confirmed to be infested so far. Management strategies are currently being discussed and should start before GSOB flight starting in May.

In Riverside County, the GSOB infestation is still confined to the mountain community of Idyllwild in black oak, but the total number of trees now exceeds 100, and, GSOB has been discovered on San Bernardino National Forest lands adjacent to that community.

TERRAIN AND COVER IN RESPECT TO CONTROL

The terrain within the areas of infestation varies greatly in slope, elevation, aspect and cover. Slopes range from flat to steep and include all aspects, but the area where the mortality has occurred has been on flat to gentle slopes. In San Diego County, GSOB are found at elevations exceeding 6,000 feet in the mixed conifer forest of the Laguna Mountains, down to nearly sea level in coastal canyon bottoms near La Jolla, and all elevations in between where susceptible oak species are present. The infested area in Riverside County occurs in moderate mountainous terrain between 5,000 and 6,200 feet. In Orange County, the infestation is in an oak woodland in hilly terrain at about 1,000 feet elevation. The Los Angeles County infestation is in a canyon bottom at about 3,100 feet. In most cases, access and terrain currently have not hampered treatments but a tree's proximity to structures, powerlines, roads and other improvements can greatly increase the cost of management.

PROPOSED CONTROL METHODS

The proposed control methods were framed as objectives in the original ZOI request and serve as a guide in Orange and Los Angeles Counties to minimize the spread of GSOB. Some of those control methods have already been utilized in Orange County. We plan to utilize all previously recognized methods from the original San Diego ZOI request. GSOB ZOI expansion objectives are described as follows: (2012 San Diego ZOI)

- 1) Protect forest, woodlands and communities from the oak tree killing pest known as Goldspotted Oak Borer (GSOB), *Agrilus auroguttatus*.
- 2) Contain GSOB pest within the ZOI Expansion boundary in Los Angeles, Orange, Riverside and San Diego Counties
 - a. Limit the spread and severity of GSOB infestations within the ZOI by implementing Integrated Pest Management (IPM), providing educational outreach and utilizing CAL FIRE resources where appropriate, including resource management personnel, conservation camp crews, other personnel and/or equipment.
 - i. Minimize the fiscal hardship caused by GSOB attacks on private and publicly-owned lands.
 - ii. Protect natural and cultural resources threatened by GSOB attack.
 - b. Direct Timber Harvesting Plans that harvest GSOB susceptible oak species within the ZOI to comply with the Forest Practice Rules (14 CCR 957.9 Prevention Practices) and utilize feasible measures guided by IPM.
 - c. Prepare for and coordinate a rapid response should GSOB spread outside the ZOI expansion, including conducting an assessment and implementing mitigation measures with partner agencies, in order to contain the spread and limit the severity of the new GSOB population.
 - i. Network with the appropriate agencies and groups of counties and communities at risk and encourage them to develop GSOB preparedness plans.
 - ii. Evaluate the need to change the ZOI boundary for any new infestation occurring outside the current boundary.

- 3) Improve knowledge and understanding of the GSOB pest by supporting and guiding studies and research efforts in order to develop effective Integrated Pest Management and Best Management Practices for GSOB.
- 4) Minimize public hazards created by GSOB-killed trees and resulting fuel build-up through coordinated abatement.
- 5) Foster oak wood product utilization that minimizes the chance of spreading GSOB.
- 6) Seek funding, whenever grant or other funds become available, to assist with activities associated with containing the spread of the GSOB pest and mitigating its impact in infested areas.
- 7) Keep local/state/federal elected representatives, other state agencies, local/federal agencies, interest groups and the public apprised of the status and threat posed by GSOB and updated on containment and management efforts.

Partnering for Effective Education Awareness

Local, state and federal agencies, the University of California, and non-profit organizations have partnered together to help educate the public on the recognition of GSOB. Together they have participated in, producing handouts and flyers, preparing news articles and public service announcements about GSOB, and ensuring a consistent and uniform message about the pest as well as effective management practices. Town hall meetings, workshops and other public meeting engagements have been developed and delivered with the same consistent and uniform message. MAST created an Incident Action Plan (IAP) in 2012 to respond to the threat posed by the discovery of GSOB.

Infested hazard tree/brood tree removal

GSOB-infested oaks on private lands are being removed to abate life and property hazards as well as removing brood trees. Because GSOB can live in infested wood for up to a year until after the tree dies, it is critical to dispose of the material in a way which will prevent further GSOB spread. Tree removal and subsequent "safe" disposal of infested wood are currently being funded by a variety of funding bases including grants from the US Forest Service, CAL FIRE and other sources, Unit VMP funding, and county funding. Currently the most common method of direct control used is complete tree removal and transfer to a grinding facility for proper disposal of the infested wood. New control methods are being investigated and the most effective and efficient control methods will be implemented as appropriate.

Individual tree protection - Systemic and Contact Insecticides

Topical insecticide application on the boles and large branches of selected high value trees can be performed by licensed private companies. Use and application of the material requires an appropriately licensed Pest Control Applicator or Qualified Applicator. Systemic pesticides may also be effective against GSOB when applied properly. Control of the pest through insecticides is not practical on a broad scale but it is appropriate for the protection of select high-value trees.





GSO







GSOB - zone Or Intestation Expansion