

### Mini data sheet on *Agrilus auroguttatus*

Added in 2013 - Deleted in 2017

**Reasons for deletion:**

*Agrilus auroguttatus* is perceived as a risk for the EPPO region and surveys have been conducted by several EPPO countries. However, trade from areas where this insect occurs is limited and European species of oak are not considered susceptible. In 2017, the Working Party on Phytosanitary Regulations agreed that it could be deleted, considering that sufficient alert has been given.

#### *Agrilus auroguttatus* (Coleoptera: Buprestidae - goldspotted oak borer)

**Why:** *Agrilus auroguttatus* (Coleoptera: Buprestidae - goldspotted oak borer) has recently been introduced into California (US) where it attacks oak trees. Although *A. auroguttatus* is a North American species probably originating from Arizona (US), its introduction into California is considered to be a serious threat to native oak species. Because extensive tree mortality has been observed in California, the Panel on Phytosanitary Measures decided that *A. auroguttatus* should be added to the EPPO Alert List.

**Where:** *A. auroguttatus* is morphologically very similar to *Agrilus coxalis* which ranges from central Mexico to Guatemala. Over the years, several authors have considered that they represented either the same species or subspecies of *A. coxalis* (*A. coxalis coxalis* and *A. coxalis auroguttatus*). At present, it seems accepted that they are distinct species; that the pest introduced into California is *A. auroguttatus*; and that *A. auroguttatus* originates from Southern Arizona (most probably from the Dragoon Mountains area).

In California, the first outbreaks were observed in 2004 in the San Diego county (Descanso, Guatay, Pine Valley), although it is suspected that the pest has probably been present since the early 2000s. In 2009, a satellite infestation was observed near La Jolla (Marion Bear Memorial Park - San Diego county). In 2012, the pest was detected in Riverside county (community of Idyllwild), approximately 60 km south of the main outbreak site in San Diego county.

**EPPO region:** absent.

**North America:** USA (Arizona, California), Mexico (Baja California Sur).

**On which plants:** *Quercus* spp. with a preference for species belonging to the red oak group. In California, *A. auroguttatus* mainly attacks *Q. agrifolia* (coast live oak), *Q. kelloggii* (California white oak), *Q. chrysolepis* (canyon live oak). In its natural range, *A. auroguttatus* is not considered as a pest, although recent surveys conducted in Southeastern Arizona revealed some injuries on *Q. emoryi* (Emory oak) and *Q. hypoleucoides* (silverleaf oak), but with low levels of infestation and tree mortality. During surveys conducted in 2008/2009, no damage was observed on 'white' oaks in Arizona, or only rarely on *Q. engelmannii* (belonging to the white oak group), in California. No mortality was observed on the latter species.

**Damage:** Symptoms of infestations are wet, dark-coloured stains on the bark surface, D-shaped adult exit holes (3 mm wide), and a reduction of foliage in the tree crown. Larvae feed in the phloem, primarily at the interface of the xylem and phloem, and bore galleries which form dark and sinuous patterns on the wood surface. After several years of continuous infestation, oak trees may die.

In California, it is estimated that since 2002, *A. auroguttatus* has contributed to the mortality of more than 80 000 oak trees over approximately 5 000 km<sup>2</sup>. The infested area continues to increase as the insect population grows and spreads.

Adults are small buprestids (about 10 mm long and 2 mm wide) with 6 golden-yellow spots on the dark green forewings and 2 spots on the edge of the thorax. Adults are rarely observed on trees. Mature larvae are about 18 mm long and 3 mm wide. They are legless, white, with two pincher-like spines at the tip of the abdomen. Pupae are found in the outer bark in pupal chambers. They resemble adults, but are commonly white in colour. Eggs (1 mm wide) are laid in bark crevices as is the case for other *Agrilus* spp. Little is known about the biology of the insect; it is believed that *A. auroguttatus* has one generation per year.

**Dissemination:** Adults can fly but preliminary experiments have indicated that they are unable to fly long distances across habitats that lack suitable host plants. As a wood borer, *A. auroguttatus* may easily be transported with untreated wood and wood products moving in trade, as well as with plants for planting. It is generally considered that *A. auroguttatus* does not attack thin branches or small trunks (diameter < 12 cm at chest height). Therefore, it seems that the risk of moving young and small trees would be lower than with wood and wood products. In the USA, it is strongly suspected that *A. auroguttatus* has been introduced into California and spread with movements of infested firewood.

**Pathway:** Plants for planting, wood and bark (including firewood), wood products of host plants from areas where *A. auroguttatus* occurs.

**Possible risks:** Oaks (*Quercus* spp.) are important forest and amenity trees in the EPPO region. As significant tree mortality has been observed in California, it is considered that *A. auroguttatus* has the potential to significantly alter the landscape and have negative impacts on the forest economy. Because of its hidden mode of life, *A. auroguttatus* can easily escape detection during visual inspections. For the moment, no trapping system has been found to be sufficiently efficient to be used in field surveys. Chemical control of wood borers either in forest or urban environments is difficult. Most of the measures taken to slow down the spread of the pest in California are to remove dead and injured trees (followed by careful handling and destruction of infested material) and request the general public not to move firewood. At present, no biological control agents are available although some larval parasitoids (e.g. *Calosota elongata*, *Atanycolus simplex*) or predators (*Agulla* sp.) have been identified.

One of the main uncertainties when considering the risk for the EPPO region is the lack of data on the susceptibility of European oak species to *A. auroguttatus*. Oak species attacked in California (*Q. agrifolia*, *Q. kelloggii*, *Q. chrysolepis*) are probably only grown for ornamental purposes in the EPPO region. But the EPPO Secretariat has no data on their economic importance for the horticultural sector. In addition, the most important forest oak species in the EPPO region belong to the 'white oak' group which are very rarely attacked by *A. auroguttatus*. Nevertheless, particular attention should be paid to alien wood borers, such as *A. auroguttatus*, which under certain circumstances can show an invasive and aggressive behaviour.

## Sources

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## INTERNET

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[http://www.fire.ca.gov/communications/communications\\_newsreleases\\_GSOB\\_Riverside.php](http://www.fire.ca.gov/communications/communications_newsreleases_GSOB_Riverside.php)

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