Forest Health Protection

Pacific Southwest Region

Date: August 4, 2008
File Code: 3420

To: Forest Supervisor, Cleveland National Forest
Subject: New insect evidence in continuing oak mortality,
Executive Summary

Since 2002, oak mortality has occurred throughout the Descanso District, and been attributed solely to drought. Forest Health Protection discovered a wood-boring species not previously reported attacking oaks. The new discovery of insect-caused injury is believed to be playing a pivotal role in the oak mortality. Drought stress may be contributing to oak mortality and hastening decline, but is not the sole cause.

The gold-spotted oak borer, *Agrilus coxalis*, was first detected in southern California 2004. There is very limited information about this species in research literature. It is native to southeastern Arizona, Mexico and Guatemala, and believed to be introduced or expanded its range into southern California.

Evidence of *A. coxalis*-caused injury or adults was found in the areas of Pine Valley, Guatay, Descanso, Laguna Mountain and Cuyamaca State Park. *A. coxalis* larvae feed extensively on the surface of the sapwood which eventually patch-kills the cambium leading to thinning of the crown followed by mortality. Coast live oak and California black oak are both being impacted by this wood-borer. Evidence of *A. coxalis* attacks can be determined by the presence of the insect under the bark, D-shaped exit holes, woodpecker foraging and bark staining on the main bole and larger branches of oaks.

There is no previous research evidence supporting prevention and suppression options for this species. Research conducted on related species, the emerald ash borer, bronze birch borer and twolined chestnut borer, provide a guideline for prevention and suppression measures. These guidelines may reduce or prevent *A. coxalis* attacks.

- Cultural Control
  - Do not transport oak firewood or logs to limit distributional spread of *A. coxalis*.
  - Remove the bark of oaks, tarp wood or expose the wood to direct sunlight to reduce populations.
  - Chip oak wood to ensure beetle mortality
  - Sanitation cut dead or recently dying oaks with heavy infestations to limit localized growth.
- Prevention and Suppression
  - Thin stand densities to promote individual tree health and defenses.
  - Spray high-value trees to reduce attacks.
  - Inject systemic insecticides in high-value trees to kill developing beetles.
- No Management
  - Taking no action will likely result in continued oak mortality.

The presence of *A. coxalis* in southern California is a new problem to forest health in the region. The extent of this new pest is unknown. FHP will continue assessing pest distribution, host range and control options.

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